Using Microfin 3
A Handbook for Operational Planning and Financial Modeling

Shirley A. Lunde

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Foreword

Over the past 20 years, a microfinance industry has emerged in response to the lack of access to formal financial services for most of the world’s poor. Microfinance institutions (MFIs) serve an ever-increasing number of poor clients, but the demand for their financial services still far outstrips capacity.

To meet this demand, most MFIs plan to increase their outreach. But rapid growth strains an institution’s systems and changes its financial dynamics. Without effective business planning and projection tools, MFIs can—and often do—inadvertently undermine their own efforts.

Many MFIs have business plans, but these plans are sometimes of poor quality. They are often overly ambitious because the underlying projections are not sufficiently detailed to reveal the hurdles the institutions must overcome. And, if prepared by outsiders (as they often are, in response to requirements by potential funders), they are usually stored away after the funding is secured rather than used as ongoing management tools.

Even the best business plans and financial projections are certainly not secure predictions of the future; under the most positive circumstances, they involve assumptions that must be adjusted for changing realities. But, while a business plan is not a crystal ball, the exercise of preparing one with participation by staff at all levels helps an institution in three ways:

- It raises key strategic and operational issues that the institution’s stakeholders must address and, ultimately, resolve by consensus.
- The financial and operational planning process, if carefully done, often reveals important, but not previously understood, dynamics of the business.
- The resulting plan serves as a roadmap for reaching the institution’s goals. While there will always be deviations, a good and frequently updated plan helps management to identify when the institution is deviating and the direction in which it needs to move in order to get back on track.

In 1997 and 1998, the Consultative Group to Assist the Poorest (CGAP) commissioned and published the initial version of this handbook to help MFIs perform their own business planning—including preparing strategic and operational plans and, especially, financial projections. This previous version, entitled Business Planning and Financial Modeling for Microfinance Institutions: A Handbook, included an accompanying Excel-based financial model (Microfin) that MFIs could use to prepare sophisticated five-year financial projections. CGAP financed the development of this model and the related microfin.com website.

The Microfin model, the handbook, and the website were developed under the excellent stewardship of Charles (Chuck) Waterfield and Tony Sheldon. Microfin also benefited from the significant financial and technical contributions made by Women’s World Banking, as well as the field-testing performed by its affiliates.
In 1999, CGAP commissioned a comprehensive technical evaluation of the handbook and the Microfin model. This evaluation included a global user survey of how MFIs rated both tools. Based on the findings of this evaluation, CGAP then commissioned revisions to the handbook, Microfin, the microfin.com website and a related training module. In addition to financing and coordinating this initiative, CGAP invested considerable staff time in designing, reviewing, field-testing and publishing the updated handbook and the new 3.0 version of Microfin.

The current version of the handbook, *Using Microfin 3, A Handbook for Operational Planning and Financial Modeling*, focuses more directly on using Microfin and is structured as a software user’s guide. It explains planning and modeling concepts and provides detailed procedures for using Microfin to develop operational and financial projections. In so doing, it guides readers through Microfin, worksheet by worksheet and section by section. The handbook provides both an overall framework and general guidance for business planning, including strategic and operational planning. It also includes a brief discussion on using the resulting projections and business plan as ongoing management tools.

When piloting the updated handbook and model, CGAP realized that new users may have questions and need technical support. Therefore, for technical support options and answers to frequently asked questions about Microfin, you may refer to the CGAP website (http://www.cgap.org) or the Microfin website (http://www.microfin.com). (New MFIs may prefer to use a less complex model, then turn to Microfin when they have more experience and need a more powerful model.)

Likely, experience with Microfin—and the evolution of the microfinance industry itself—will reveal opportunities for additional improvement to these business planning tools. We always appreciate hearing from anyone who has put these tools to practical use. Send comments or suggestions by email to cgap@worldbank.org, or contact us through the CGAP offices. Our mailing address is:

CGAP, Room Q4-400  
c/o The World Bank  
1818 H Street NW  
Washington, DC 20433 USA  

The *Using Microfin 3* handbook and the Microfin model are part of CGAP’s technical guide series of publications, intended to provide practical tools for microfinance institutions. CGAP serves MFIs, donors and the microfinance industry by providing technical assistance and strategic advice, developing and disseminating technical guides, delivering training, and performing field research on innovations. CGAP also has a small grant facility that provides funding for these activities as well as for strategic investments in MFIs.

For information on CGAP’s activities, see the CGAP website at http://www.cgap.org.

Elizabeth Littlefield  
June 2001  
Chief Executive Officer  
Consultative Group to Assist the Poorest
Acknowledgments

This handbook was financed by the Consultative Group to Assist the Poorest (CGAP). The accompanying financial-projections model, Microfin, was financed by Women’s World Banking (WWB) and CGAP working in partnership.

WWB is a leading microfinance support organization, serving 45 affiliates globally. The organization was visionary in recognizing the potential benefits of Microfin and proactively tested the model among their affiliates. WWB’s contributions to Microfin, and their extensive testing, led to important changes within their own affiliate network and, ultimately, served to benefit the industry as a whole.

Jennifer Isern of CGAP coordinated the Microfin project and worked closely with all partners to evaluate and enhance Microfin and this handbook. Since 1996, when work began on the first model and handbook, she has been the key person at CGAP to design and guide the development of this tool.

The Microfin model and the business planning framework were developed by Chuck Waterfield and Tony Sheldon. Both have made key contributions to the current handbook, based on their original publication. Chuck and Tony have taken an entrepreneurial approach to developing and promoting Microfin, which has received wide acclaim from the microfinance industry. From the beginning, they have provided top quality training courses and presentations to WWB, CGAP and many other participants. Their skill in conveying difficult concepts to an enthusiastic audience has led to greater acceptance and use of the model.

Kim Craig conducted a thorough and rigorous systems review and usability test of Microfin using professional software standards. Her review and additional technical assistance led to important revisions in the final model which have improved its overall design, performance and ease of use.

Shirley Lunde wrote this new version of the handbook, translating complex concepts into a practical step-by-step guide that leads Microfin users through the modeling process. She was also one of two consultants that CGAP commissioned to perform an independent evaluation of the original handbook and the Microfin model. She based the new handbook on her understanding of how microfinance institutions use Microfin, as well as her background in software development and accounting/finance. In addition to writing the handbook, Shirley also supervised its layout and publication, developing a new, easier-to-revise format that is readily accessible in electronic form.

Sheryl Henry edited the handbook. Nathalie D’Ambrosio-Vitale and CGAP’s publications manager, Tiphaine Crenn, worked intensively on the review, publication and translations of the handbook and model. David Ferrand co-authored the independent evaluation of the original handbook and Microfin model (along with Shirley Lunde). Tom Goering of World Relief made valuable contributions to Microfin’s import/export facility.
Introduction
**Introduction**

Welcome to Microfin—a powerful business modeling tool for microfinance institutions.

Microfin is designed to support your business planning processes by generating an integrated, detailed set of five-year projections to help you assess the viability of your plan. It is authored in Microsoft® Excel and operates within your Windows environment.

**About the Handbook**

This handbook explains how to use Microfin to model your institution’s operations and to develop detailed financial projections. It also provides an overall framework and general guidance for operational planning that involves:

- defining financial products and services
- specifying marketing channels and related activity
- projecting institutional resources and expenditures—both program and administrative
- developing a financing strategy
- analyzing financial projections and indicators

It includes a brief discussion of how you can use your business plan and financial projections as ongoing management tools, and concludes with an overview of Microfin’s optional facilities for advanced modeling.

If you are new to Microfin, you may choose to begin with the first page of the handbook and read through to the finish. As you do so, you can build a practice model using the case study data in each chapter.

If you are familiar with Microfin, you can use the handbook as a reference guide to refresh your memory on a specific topic or to understand a never-before-used facility within the software. Use the table of contents or the index to locate the relevant portions of the handbook.
The Using Microfin 3 handbook is generally organized according to the individual worksheets in the Microfin model (e.g., MODEL SETUP, PRODUCTS). It includes the following chapters:

- “Introduction” presents basic information about using the handbook and planning in general, and introduces the handbook’s case study. [page 3]
- “Chapter 1, Before you Begin: A Best-practice Approach to Planning” outlines a best-practice framework for your planning process and presents the strategic plan for the FEDA case study. [page 21]
- “Chapter 2, Overview of Microfin” describes the features of your Microfin software and explains the function of each of its component sheets. [page 41]
- “Chapter 3, Installing Microfin” details the procedures for installing your Microfin software and explains the terms of your user license. [page 87]
- “Chapter 4, Creating a Microfin Model” describes the procedure for creating and saving your new projections model and for using its NAVIGATOR and MODEL SETUP sheets. [page 99]
- “Chapter 5, Defining Products and Services” details the process for defining your loan and savings products using Microfin’s PRODUCTS sheet. [page 141]
- “Chapter 6, Defining Marketing Channels to Project Client Activity” describes the procedure for generating projections of loan and savings activity using the PROGRAM (BRANCH/REGION) sheet. [page 179]
- “Chapter 7, Planning Institutional Resources and Capacity” introduces you to capacity planning for your institution’s program and administrative activities using the INST CAP sheet. [page 227]
- “Chapter 8, Projecting Program-related Resources and Capacity” provides guidance on projecting your program-related resource requirements using the PROGRAM (BRANCH/REGION) sheet. [page 259]
- “Chapter 9, Projecting Administrative Resources and Capacity” provides guidance on projecting your administrative resource requirements using the ADMIN (HEAD OFFICE) sheet. [page 307]
- “Chapter 10, Developing a Financing Strategy” describes Microfin’s process for modeling financing sources and cash flow, including detailed instructions for using the FIN SOURCES and FIN FLOWS sheets. [page 339]
- “Chapter 11, Analyzing Graphs, Projections and Indicators” provides general guidance on reviewing graphs, reports, projected financial statements and ratios using Microfin’s GRAPHS, SUMMARY REPORT and FINANCIAL STATEMENTS sheets. [page 379]
“Chapter 12, Financial Modeling as a Management Tool” discusses Microfin’s import/export facility, as well as the tools designed for sensitivity analysis and variance analysis, using the EXPORT, SCENARIOS and VAR ANALYSIS sheets. [page 425]

“Chapter 13, Optional Facilities for Advanced Modeling” describes each of Microfin’s optional analysis tools (including those on the CASELOAD, CLIENT COST, REP SCHEDULE, RETENTION and OTHER PROGS sheets), and details the optional procedures for adding features using the USER-DEFINED sheet and for creating additional language translations. [page 449]

The handbook also includes the following annexes:

- “Annex 1, Business Planning Framework” provides a general framework for strategic and operational planning. [page 471]
- “Annex 2, Microfin’s Data Requirements” identifies the information that is required to complete each of Microfin’s sheets. [page 483]
- “Annex 3, Bibliography of Business Planning Materials” provides a detailed, categorized listing of additional source materials on the subject of business planning.1 [page 491]

Finally, the handbook provides a detailed keyword Index.

**Conventions**

The handbook incorporates the following conventions:

- The names of Microfin’s component sheets (worksheets) and the sections of those sheets display in small caps (e.g., PRODUCTS, PROGRAM, ADMIN). All other references—to button titles and cell names, for example—also appear in small caps (e.g., DATA VALIDATION subsection, CHANGE METHOD button).
- Procedures with a prescribed sequence for you to follow are defined using numbered lists.
- Series of items or options without an inherent sequence are defined using bulleted lists.
- The word *choose* is used to instruct you to perform a specific action that causes the software to execute a command.
- The word *select* is used to instruct you to highlight information on a display or a choice from a drop-down list.

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1 In addition, throughout the text, footnotes refer to relevant introductory and advanced texts on specific topics so that you can pursue areas of particular interest.
References to line numbers refer to Microfin’s numbering scheme, displayed in the leftmost column of each Microfin worksheet. The format of these line numbers is #.##, where the number to the left of the decimal point represents a sequence number for each major section on the sheet, and the digits to the right of the decimal represent the sequence of the line within the designated section.

From time to time you may see references to line numbers that do not appear in your model. Microfin hides or displays portions of various sheets based on your entries. For example, if you only define one loan product, Microfin hides sections of the model that project activity for loan products two, three and four.

References to row numbers refer to Excel’s numbers which, at your option, display to the left of Microfin’s line numbers.

Wherever you see a reference to “Microfin generates” or “Microfin calculates” in a procedural section of the manual, this action must be triggered by first recalculating the model using the F9 key or the RECALC (F9) option on the Microfin toolbar. To avoid excessive repetition in the various procedural sections of the manual, it is understood that you will routinely recalculate the model as you enter data or change options in each section of each Microfin sheet.

Printed versus Electronic (Word or Acrobat) Versions

If you are working with a printed version of the handbook, use the Contents section and the Index to locate specific material of interest.

Throughout the body of the handbook, you will also find page references to related materials. For example:

For more detailed instructions on using the NAVIGATOR sheet, refer to “Using the NAVIGATOR Sheet and NAVIGATOR WIZARD as a Framework for Entering Data” on page 66.

Enter PORTFOLIO INFORMATION used to calculate historical ratios. [page 133]

If you have Microsoft Word (version 97 or later) or Adobe Acrobat installed on your computer, you can refer to an electronic copy of the handbook file² while working with Microfin.

When using an electronic version, you can choose (i.e., click your mouse on) any page number in the Contents section to automatically move to the referenced material. To return to your original position in the Contents section, choose the BACK button (←) on Word’s Web toolbar or the Acrobat toolbar.

² Note that the file contains the text of this Microsoft Word document. It should not be confused with Microfin’s Help file, which is not a Word document and may not contain exactly the same information as is included in this document.
You can also choose the page number in an internal reference (such as the NAVIGATOR reference in the example above) to move to the indicated material. To return to your original position within the document, choose the BACK button (←) on the toolbar.

**About the Audience**

Microfin is intended primarily for the senior managers of microfinance institutions, particularly those who lead the planning process. The handbook can also serve as a resource for other stakeholders, including staff, board members, advisers and funders.

Microfin is designed to be broadly inclusive and relevant for all microfinance institutions regardless of their stage of development, institutional form, lending methodology or range of services. While variations in these factors do impact the content of a specific plan, the overall planning framework is much the same for all microfinance institutions.

Every effort has been made to ensure that Microfin is easy to use; however, the software and accompanying handbook are relatively sophisticated and assume you have a basic understanding of credit methodologies and financial management, as well as experience in using Microsoft Excel and Microsoft Windows software.

**About Business Planning**

Business planning is an essential management function that includes two closely related processes:

- **strategic planning**, which establishes your institution’s mission and goals, assesses your current situation, and develops an overall strategy for the future. For additional information, refer to “Strategic Planning” on page 24 and “Annex 1, Business Planning Framework” on page 471.

- **operational planning**, which provides an implementation plan for your proposed strategy, and typically includes development of detailed financial projections. For additional information, refer to “Operational Planning” on page 24 and “Financial Modeling” on page 25.

Microfin supports your business planning process by generating a five-year financial model based on your strategic and operational plans.
About the Case Study: Freedonia Enterprise Development Association (FEDA)

Throughout the handbook, you will find figures and other examples and illustrations based on the business plan of a fictitious microfinance institution, the Freedonia Enterprise Development Association (FEDA).

You can review FEDA’s strategic plan beginning on page 32. Elements of FEDA’s operational plan are presented in various case-study sections throughout the handbook. These sections also provide detailed data that you can enter in Microfin to create your own FEDA practice model. By developing such a practice model you can experiment with Microfin and develop a more thorough understanding of its capabilities and operations.

The various figures included throughout this handbook contain samples of Microfin’s sheets and sections using the FEDA data, unless otherwise noted. Use them as a reference when you create your own model. Because many of these figures show year-one data only, you may find it helpful to refer to a completed FEDA data model, available from the microfin.com website.
Before You Begin
Chapter 1
Before You Begin: A Best-practice Approach to Planning

It is often true that, by failing to plan, an institution plans to fail.

It is equally true that the very process of planning is often more important than the plan itself. The planning process forces you to clearly analyze what you wish to accomplish, and how and when you can reasonably expect to accomplish it. The process also helps you to understand the factors that are key to your institution’s success.

Specifically, the overall process enables you to:

- clearly define your institution’s vision, mission and goals
- build consensus and motivate your staff
- create an action plan with objective targets and detailed projections
- focus and mobilize the resources required to implement the action plan
- strengthen your negotiating position with donors, commercial banks and other funding sources
- communicate vital information to external audiences such as clients, regulatory authorities and other stakeholders
- monitor performance for variances and make midcourse corrections, when necessary

A Framework for Business Planning

According to Chinese philosopher Sun Tzu, strategy without tactics is the slowest route to victory, and tactics without strategy is the noise before defeat. The same can be said of business planning; to do it well, you need an overall strategy and detailed tactics in the form of an operational plan and financial model.
Therefore, while you may be tempted to install Microfin and immediately begin generating numbers, it is vital that you lay the proper foundation for your projections. Without solid research into your institution’s mission, short- and long-term goals, clients, markets, business and competitive environment, resources, and financial position, your Microfin model is likely to be both unrealistic and misleading.

To provide this foundation, a best-practice framework for planning generally requires that you complete each of the following steps:

1. Develop a detailed strategic plan.
2. Develop a preliminary operational plan.
3. Develop a financial model to support your operational plan.
4. Refine your strategy and operational plan, as necessary.

Based upon your financial projections, you may find it necessary to revise your strategy or the elements of your operational plan, and then adjust your projections accordingly. It is not uncommon to develop three, four or even five or more versions before you are satisfied with the results.

5. Draft a formal business plan document.

The business plan formalizes the results of your strategic planning, operational planning and financial modeling activities. It generally covers a period of between one and five years.

Figure 1.1 outlines the key activities in strategic and operational planning. The vertical flow of the figure reflects the sequence of the planning process, beginning with strategic planning, which is then followed by operational planning and financial modeling (pursued in tandem). The horizontal flow reflects links between key topics.3

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3 Refer to Annex 1, Business Planning Framework [page 471] for more detailed information on strategic and operational planning.
### Figure 1.1 The Flow of Strategic and Operational Planning

<table>
<thead>
<tr>
<th>Strategic Planning</th>
<th>Operational Planning</th>
<th>Financial Modeling</th>
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<tbody>
<tr>
<td>Articulate the mission and goals</td>
<td>Define products and services</td>
<td>Set up the model and enter initial balances</td>
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<tr>
<td>Define markets and clients</td>
<td>Specify marketing channels</td>
<td>Analyze credit and savings products</td>
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<tr>
<td>Analyze the environment</td>
<td>Plan institutional resources and capacity</td>
<td>Project credit and savings activity</td>
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<tr>
<td>Competition</td>
<td></td>
<td>Estimate loan loss provision, reserve and write-offs</td>
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<td>Collaborators</td>
<td></td>
<td>Estimate required caseload</td>
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<tr>
<td>Regulatory factors</td>
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<td>Project program (or branch) expenditures</td>
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<td>Other external elements</td>
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<td>Project administrative (or head office) expenditures</td>
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<tr>
<td>Perform an institutional assessment</td>
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<td>Credit and savings program</td>
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<td>Board and management issues</td>
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<td>Human resources management</td>
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<td>Administration</td>
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<td>Financing</td>
<td>Develop a financing strategy</td>
<td>Analyze financing by source</td>
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<td>Financial management</td>
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<tr>
<td>Develop a strategy</td>
<td>Analyze financial projections</td>
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<td></td>
<td>Use business planning and financial projections as ongoing management tools</td>
<td>Perform variance analysis</td>
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</table>
Strategic Planning

It is said that if you don't know where you are going, any road will get you there. During strategic planning, you establish where you want your institution to go by assessing its current situation and developing an overall plan for the future.

Strategic planning requires you to:

- express your institution’s vision and mission
- develop broad institutional goals
- assess your institution’s past performance in achieving its goals
- devise a strategy to achieve your goals and enhance your ability to expand your outreach and achieve (or maintain) profitability

Although a detailed discussion of strategic planning is outside the scope of this handbook, “Annex 1, Business Planning Framework” (beginning on page 471) briefly describes the process, as follows:

- Articulate your institution’s mission and goals.
- Define your markets and clients.
- Conduct an environmental analysis.
- Perform an institutional assessment.
- Based on the results of these analyses, choose an appropriate strategy—generally one that focuses on maximizing outreach and profitability.
- Define objectives and general activities.

Operational Planning

During operational planning, you develop a detailed action plan to support the mission, goals and strategy of your strategic plan.

An analysis of your markets and clients indicates the products and services you should offer, as well as the markets into which you should offer them. Analysis of your environment provides guidance on where to provide services and identifies external factors that will affect your choice of marketing channels. An institutional assessment provides information on how best to provide your services, as reflected in institutional resources and capacity, financing, and analysis of financial projections.

In the course of operational planning and financial modeling, you may decide to make certain necessary changes to your strategy or implementation plan in order to achieve your outreach and profitability goals. If any element of your strategy appears unachievable, you can reevaluate the strategy or refine your operational plan. For example, if you cannot achieve the targeted expansion in the timeframe you anticipated with the funding you budgeted, you can change the strategy to expand more slowly. Alternatively, you can alter your operational plan by seeking additional funding sooner than you had originally anticipated.
Financial Modeling

Financial modeling is an integral part of a comprehensive business planning process. A well-crafted model:

- provides a template to develop detailed projections. These projections facilitate strategic and operational planning, performance/variance analysis, and decision making—thereby enhancing an institution’s ability to set and achieve goals.
- strengthens the financial planning and management skills of key staff. These skills are vital to the successful implementation of an institution’s mission and strategy.

Although the first benefit is generally regarded as more useful, the second is often more important to an institution’s success.

To develop your financial projections:

- Review Microfin’s procedural requirements, general approach and operations.
  
  For information on Microfin’s procedural approach, refer to “Overview of Microfin’s Planning Framework” on page 25.
- Review Microfin’s data requirements to ensure that you have all necessary information available.
  
  For information on Microfin’s data requirements, refer to “Annex 2, Microfin’s Data Requirements” on page 483.
- Enter your data and build your projections using the worksheets in Microfin.

Overview of Microfin’s Planning Framework

Microfin’s step-by-step approach to planning closely follows a best-practice framework and is appropriate for most microfinance institutions.

The approach concentrates on four key areas of your institution’s operations:

- products and services
- marketing channels
- institutional resources and capacity
- financing\(^4\)

Using the sheets in Microfin, you identify and analyze the crucial factors for each of these areas, based on your mission and strategic plan (figure 1.2).

## Figure 1.2 Overview of Microfin’s Business Planning Framework

<table>
<thead>
<tr>
<th>Strategic Planning</th>
<th>Operational Planning</th>
<th>Relevant Microfin Sheet</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mission and Goals</td>
<td>PRODUCTS</td>
<td>(Not directly applicable)</td>
</tr>
<tr>
<td></td>
<td>Products and Services</td>
<td>However, Microfin does include an introductory MODEL SETUP sheet to enter background information and establish modeling parameters</td>
</tr>
<tr>
<td>Markets and Clients</td>
<td>Marketing Channels</td>
<td>PRODUCTS sheet to identify and describe loan and savings products</td>
</tr>
<tr>
<td>Environmental Analysis</td>
<td>Institutional Resources</td>
<td>PROGRAM (or BRANCH/REGION sheet, depending on modeling approach) to project loan and savings activities</td>
</tr>
<tr>
<td>Institutional Assessment</td>
<td></td>
<td>INSTITUTIONAL CAPACITY to identify loan loss provision policies and institution-level expenditures</td>
</tr>
<tr>
<td>Program</td>
<td></td>
<td>PROGRAM (or BRANCH/REGION sheet, depending on modeling approach) to identify branch-level expenditures</td>
</tr>
<tr>
<td>Board/Management</td>
<td></td>
<td>ADMINISTRATIVE (or HEAD OFFICE sheet, depending on modeling approach) to identify institution-level expenditures</td>
</tr>
<tr>
<td>Human Resources</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Administration</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Financing</td>
<td>Financing</td>
<td>FINANCING SOURCES sheet to identify funding sources and associated costs, and to establish liquidity requirements</td>
</tr>
<tr>
<td></td>
<td></td>
<td>FINANCING FLOWS sheet to project sources and uses of funds, describe investment strategies, and identify possible liquidity shortfalls</td>
</tr>
<tr>
<td>Strategic Planning</td>
<td>Operational Planning</td>
<td>Relevant Microfin Sheet</td>
</tr>
<tr>
<td>-------------------------</td>
<td>-------------------------------</td>
<td>----------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Financial Management</td>
<td>Financial Management</td>
<td>MODEL SETUP sheet to enter historical financial data</td>
</tr>
<tr>
<td></td>
<td></td>
<td>PROGRAM sheet to review branch-level financial statements, if appropriate</td>
</tr>
<tr>
<td></td>
<td></td>
<td>GRAPHS sheet to review Microfin’s projections in graphical form, for easy interpretation and trend analysis</td>
</tr>
<tr>
<td>Strategy</td>
<td>Ongoing Management</td>
<td>SUMMARY sheet to review summarized financial statements and ratios, including data presented in constant and external currencies</td>
</tr>
<tr>
<td></td>
<td></td>
<td>FINANCIAL STATEMENTS sheet for institution-wide financial statements and indicators</td>
</tr>
<tr>
<td></td>
<td></td>
<td>SCENARIOS sheet for sensitivity analysis and multi-scenario comparisons</td>
</tr>
<tr>
<td></td>
<td></td>
<td>VARIANCE ANALYSIS sheet for comparing actual and projected data</td>
</tr>
</tbody>
</table>

**Procedure to develop a financial model using Microfin:**

1. Create and save your new Microfin model using the Microfin template file.

   For additional information, refer to “Chapter 4, Creating a Microfin Model” on page 99.
Using the NAVIGATOR sheet as a central location, or switchboard, from which to access and enter data in sheets throughout the model, complete steps two through ten:

2. Enter key parameters and historical financial data into the MODEL SETUP sheet. One of these parameters establishes whether you intend to model the activities of your entire institution on a consolidated basis, or to separately model the activities of individual regions or branches. Microfin adapts its structure somewhat based on your choice, as described below.

   For additional information, refer to “Chapter 4, Creating a Microfin Model” on page 99.

3. Design your credit and savings products. These products should reflect your clients’ needs, as established by the client and market analysis you performed during strategic planning.

   For additional information, refer to “Chapter 5, Defining Products and Services” on page 141.

4. For those products and services that you intend to offer, project the estimated levels of credit and savings activity. These activity levels represent the engine that drives your institution’s operations and generates its anticipated interest and fee income. (If you develop your model using a branch or regional approach, you will develop these projections separately for each branch or region within your institution.)

   For additional information, refer to “Chapter 6, Defining Marketing Channels to Project Client Activity” on page 179.

5. Based on your projected activity levels, estimate the institutional resources that you will require. Estimate your loan loss provision, loan loss reserve and loan write-offs. Define categories of anticipated expenditures, such as personnel, other operational expenses and fixed assets.

   For additional information, refer to “Chapter 7, Planning Institutional Resources and Capacity” on page 227.

6. Project your program-related (i.e., direct) expenditures, reflecting those costs necessary to achieve your projected level of activity. (If you develop your model using a branch or regional approach, you will develop these projections separately for each branch or region within your institution.)

   For additional information, refer to “Chapter 8, Projecting Program-related Resources and Capacity” on page 259.

7. After projecting program-related expenditures, project your indirect, administrative costs (or head office costs, for regional or branch models) by considering the overhead necessary to support projected program activities. You should also project institutional development costs.

   For additional information, refer to “Chapter 9, Projecting Administrative Resources and Capacity” on page 307.
8. Develop a financing strategy to ensure that you have sufficient funding, when needed, to support your anticipated operations. You analyze your financing requirements in terms of three distinct areas: operations, portfolio and other assets. Financing derives from two sources: equity (e.g., earned income, grants and equity investments) and debt (e.g., loans and savings deposits).

Based upon your estimate of financing requirements and probable sources of financing, project your cost of funds. Determine whether you are likely to have excess funds on hand (such as loan funds repaid and not yet disbursed) in order to project income from investments.

For additional information on financing strategies, refer to “Chapter 10, Developing a Financing Strategy” on page 339.

9. Once you have completed an initial set of financial projections, carefully review the information on the completed Microfin sheets to identify any necessary changes in your model.

Analyze Microfin’s graphs, summary report, and projected financial statements and indicators to evaluate whether your operational plan and financial projections are realistic. For example, you may need to increase or decrease the volume of lending or savings activity, hire additional staff, accelerate or delay the purchase of assets, or seek additional sources of funding.

For additional guidance, refer to “Chapter 11, Analyzing Graphs, Projections and Indicators” on page 379.

10. If necessary, refine your institution’s strategy and/or operational plan, and adjust your Microfin model accordingly.

General Planning Recommendations

The manner in which you prepare for and conduct your planning process greatly affects the quality of your institution’s business plan. It is vital that you adopt a comprehensive planning framework, such as the one outlined in figure 1.1 above.

The following discussion provides general recommendations for implementing the planning methodology and framework within your own institution.5

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**Budget Adequate Time and Resources**

You cannot craft good strategic and operational plans, or realistic financial projections, in just one or two days. Often, the entire research and planning process extends over a period of six to eight weeks, or more. It may include such preliminary activities as market research, staff retreats or workshops, and interviews with key stakeholders. Budget sufficient resources, both financial and nonfinancial, for the entire process.

Consider developing your plan in small, manageable phases or stages, and allowing sufficient time to reflect and reconsider your decisions between each phase. This phased approach reflects the fact that planning is an *iterative* process—one that consists of a series of small refinements to strategy, action plan and financial projections. For example, as you develop your projections, you may find that your funds or other resources are not sufficient to achieve your goals. As a result, you will need to refine your strategy or scale back your goals.

Remember that effective planning is not simply a once-a-year project. Your institution’s plan provides the basis for day-to-day operations and decision making, and for periodic performance and variance analysis. Your business plan should be updated annually. Moreover, if your institution’s internal resources or external environment changes significantly during the year, you may need to reevaluate and adjust your strategy, operational plan and/or financial projections to respond to the changes.

**Encourage Participation by All Stakeholders**

Business planning is a participatory process, drawing upon the experience and perspective of an institution’s key stakeholders—including board members, staff at all levels, key consultants and representative clients. You cannot generate realistic plans and projections solely through the work of a consultant or a few staff members.

Similarly, the process of preparing your Microfin model and projections should involve broad participation from key staff and board members. By incorporating a range of perspectives, you ensure that your model addresses the key factors that impact your ability to achieve your goals. Your projections will be more accurate, and the likelihood that your planned activities will be carried out is increased.

The process of preparing projections often gives managers important new insights into the dynamics of their institution’s operations. And the projections can serve as a benchmark against which to measure performance.

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7 *Iterative* is defined as “…a computational procedure to produce a desired result by replication of a series of operations that successfully better approximate the desired result.” *American Heritage Dictionary* (Boston, MA, Houghton Mifflin Company, 1982).
When broadly inclusive, business planning also provides an opportunity for consensus building throughout your institution and ensures that each member of your staff feels a sense of ownership over the goals and action plans that result. It develops the broad endorsement that is essential for successful implementation.

Assign Responsibility for Financial Data Gathering

Generally, it is best to assign one person the responsibility for ensuring that all necessary financial information, including historical data, is readily available during planning. This is particularly important when you schedule group time to develop your projections model.

“Annex 2, Microfin’s Data Requirements” [page 483] provides a list of the data required to complete the model, grouped by the sheet on which you enter the data.

Avoid Unrealistic Projections

The most useful business plan represents an achievable view of your institution’s future. The projections are realistic, firmly grounded in your past achievements and, perhaps, slightly aggressive.

Avoid overly optimistic or overly aggressive projections; they can set your institution up for failure and they provide a disincentive to staff who cannot meet expectations. Similarly, avoid overly pessimistic projections.

To anticipate potential changes in circumstances, some institutions supplement their primary model with additional models representing best- and worst-case scenarios.
**Case Study: FEDA’s Strategic Plan**

The Freedonia Enterprise Development Association (FEDA), a microfinance institution, was established in 1994 as a nongovernmental organization (NGO). It works with the low-income, self-employed, urban poor in Liberty, the capital city of Freedonia.8

FEDA has operated exclusively in the Brownstown Market area of Liberty, providing group loans to market vendors of fresh produce and dry goods and to small-scale producers, such as shoemakers, dressmakers and weavers. Its clients form groups of five. After meeting initial savings goals, each group member receives a loan of the same size and term, and each member cosigns for the others. Because FEDA is not legally authorized to collect savings, client savings are deposited in the local branch of Freedonia National Bank (FNB).

FEDA intends to expand its operations, first to another market area in the city, East Side, where the entrepreneurs have characteristics similar to those of the entrepreneurs in Brownstown Market. It then intends to expand throughout Liberty and to other cities in the country. FEDA sees itself as unique among the microfinance institutions in the country, combining a deep commitment to poor entrepreneurs with a commitment to becoming fully self-sustaining.

In 2000, FEDA undertook an extensive strategic planning process involving its board, management and staff, and including several meetings with selected groups of clients. The process resulted in the following strategic plan.

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8 As previously noted, throughout this handbook you will find figures and other examples and illustrations based on the business plan of a fictitious microfinance institution, the Freedonia Enterprise Development Association (FEDA). In addition, elements of FEDA’s operational plan are presented in various case-study sections at the ends of most chapters.
Freedonia Enterprise Development Association

2001 Strategic Plan

Mission and Goals Statement

Our purpose is to strengthen the economic base of the low-income self-employed of Freedonia through increased access to lending and savings services in urban areas. We intend to offer diverse products, combine cost-efficient methodologies with exemplary customer service, and become a financially self-sufficient institution.

Market and Client Analysis

<table>
<thead>
<tr>
<th>Findings</th>
<th>Implications</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Brownstone Market</strong></td>
<td>FEDA will need to enter new markets to reach more than 7,500 clients.</td>
</tr>
<tr>
<td>FEDA has 3,600 current clients (60% in commerce, 40% in production).</td>
<td>FEDA should redesign its current product to better respond to clients’ needs and to increase the retention rate.</td>
</tr>
<tr>
<td>The estimated market for financial services is 12,500 microentrepreneurs.</td>
<td>FEDA should explore the possibility of offering savings services.</td>
</tr>
<tr>
<td>The likely market penetration is 60% (or an additional 3,900 clients).</td>
<td>East Side is a promising market for expansion.</td>
</tr>
<tr>
<td>The client retention rate for second, third, and fourth loans is 70%; for subsequent cycles it is 50%.</td>
<td></td>
</tr>
</tbody>
</table>

Major findings of client surveys: Clients want larger loans and more flexible terms, and they are interested in expanded savings services.

**East Side Market**

About 70% of those interviewed expressed an interest in market-priced sources of financial services.

Estimated number of businesses and demand for loans:

- Commerce: 15,000 and 10,000
- Production: 5,000 and 4,000

**Brownstown and East Side Markets**

Most adults have participated in rotating credit and savings associations.
### Environmental Analysis

<table>
<thead>
<tr>
<th>Findings</th>
<th>Implications</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Competition</strong>&lt;br&gt;There are six other microfinance institutions in the country with more than 3,000 clients each, two of which operate in Liberty.</td>
<td>Competition is not now a significant factor, although the microfinance institutions operating in Liberty should be monitored, especially their choice of markets. If they enter FEDA’s markets, competition could become a serious factor.</td>
</tr>
</tbody>
</table>

The microfinance institutions operating in Liberty offer products and services similar to FEDA’s, though in different areas of the city, with effective interest rates about six percentage points higher. Each has about 5,000 clients.<br><br>**Collaborators**<br>Freedonia National Bank provides savings services (clients are not satisfied with the level of service).<br>Freedom International, a North American NGO, provides periodic technical assistance and training.<br><br>**Regulatory Factors.**<br>Legislation now being developed would authorize nonbank financial institutions (NBFIs) to collect savings from their clients.<br><br>**Other External Factors**<br>The inflation rate was 10% in 2000 and is projected to be 8% – 10% for the next three to five years.<br>Freedonia’s stable political and economic climate is expected to continue.<br><br>A review of the pricing structure may be appropriate.<br><br>Current needs for technical assistance are being met.<br><br>Adopting the legal structure of a nonbank financial institution could offer an opportunity to respond to clients’ interest in savings services thereby also providing an additional source of lending funds.<br><br>Although the inflation rate is stable, its effect should be factored into loan amounts.
## Institutional Assessment

<table>
<thead>
<tr>
<th>Findings</th>
<th>Implications</th>
</tr>
</thead>
</table>

### Credit and Savings Program

In 2000, the portfolio at risk was 6%, the default rate 3.5%, and portfolio growth 20%.

The low retention rate and client feedback indicate that FEDA’s current loan product is not responding to clients’ needs.

Clients show a strong interest in expanded savings services.

### Board and Management Issues

A strong, involved board brings useful skills and perspectives.

The executive director has strong skills in management and funds mobilization, but could improve her financial skills.

### Human Resource Management

The staff have the necessary skills, although a significant proportion are new to FEDA (including about 40% of loan officers).

Salaries are relatively low; loan officers are especially vocal about the increasing workload and limited pay.

### Administration

Loans are tracked on spreadsheet software and the system is becoming increasingly strained.

### Financing

FEDA has good relationships with commercial and concessional sources of financing.

Commitments for substantial funding for the next two years are in place.

With continued rapid growth, FEDA will need to control delinquency.

FEDA needs to redesign its loan product.

The board should explore the feasibility of FEDA’s providing savings services directly as a nonbank financial institution.

FEDA needs to emphasize ongoing staff training.

A review of the compensation structure may be needed.

FEDA needs to explore a new management information system (MIS).

FEDA should continue to build its relationships with funders.
Findings

Financial Management
FEDA is approaching operational profitability.

Financial reports generally become available one month later than they should.

The executive director and finance manager are interested in strengthening their analytical skills.

Implications

FEDA should continue to monitor profitability.

FEDA needs to provide financial management training for key staff.

Strategy

Over the next three to five years FEDA will develop new products and explore new markets while strengthening staff capacity and other key institutional resources.

Our credit product will be redesigned to meet the needs of repeat clients, with the aim of increasing client retention. After the redesigned product has been piloted in the Brownstown Market area, we will open a new branch in East Side. As early as feasible, we will become a nonbank financial institution and begin mobilizing savings from our clients. We will also pursue ongoing staff training, a review of staff compensation levels and development of a new MIS.

By the end of 2005, we aim to have 12,000 active clients and be consistently profitable after adjustments for subsidies.

Objectives and Activities

Products and Services

Objective
Offer lending products that attract a growing number of clients who remain in the program.

Activities
- Redesign current group lending product.
- Review pricing structure.
- Train staff in revised loan terms and conditions (see the section below on institutional resources and capacity).
Objective
Develop voluntary savings products that respond to clients’ needs and that can serve as a source of portfolio financing.

Activities
- Follow the development of legislation on nonbank financial institutions and apply for status as such an institution, to be effective for fiscal 2004.
- Develop savings product parameters.
- Train staff to implement the savings program (see the section below on institutional resources and capacity).
- Educate clients about pending savings services.

Marketing Channels

Objective
Increase market penetration in Brownstown Market area and open a new branch in East Side.

Activities
- Market the redesigned lending product in Brownstown Market area.
- Open a new branch in East Side late in fiscal 2001.

Institutional Resources and Capacity

Objective
Integrate redesigned lending products into operations and prepare for the introduction of savings products in fiscal 2004.

Activities—Board and Management Issues
- Create a committee to follow the legislation on nonbank financial institutions and to explore filing for a nonbank financial institution license effective in fiscal 2004.

Activities—Human Resource Management
- Review the salary structure.
- Train the staff in new loan terms and conditions and in savings mobilization.
- Strengthen the financial management skills of the executive director and finance manager.
**Activities—Administration**

- Continue research on a new MIS: Develop detailed user specifications, select a loan tracking system and install the new system in the first quarter of 2002.

**Financing**

**Objective**

Obtain appropriate, diversified financing for expansion.

**Activities**

Obtain capital grants and debt (concessional and commercial) to fund portfolio growth (based on financial projections).

**Financial Management**

**Objective**

Strengthen financial management capacity.

**Activities**

- Strengthen the financial management skills of the executive director and finance manager through training and technical assistance from Freedom International.
- Develop detailed financial projections.
Overview of Microfin
Chapter 2  
Overview of Microfin

Microfin version 3 is a sophisticated, Excel-based operational planning model for microfinance institutions. It is not an appropriate tool for preparing quick-and-rough financial projections.

Microfin models your institution’s financial activities for a five-year period—with monthly projections for the first two years and quarterly projections for years three through five. To generate these comprehensive projections, you enter information describing your loan and savings products, marketing activities, program-related and administrative costs, and financing strategy. Microfin’s resulting projections include an income statement, adjusted income statement, balance sheet, cash flow statement, financial ratios and numerous graphs.

Use Microfin annually as part of your planning process and refer to it regularly throughout the year to monitor and evaluate your actual performance.

Structure of Microfin (Sheets and Tools)

Microfin is an Excel workbook that consists of a number of individual, integrated worksheets (or sheets). Each of these sheets contains a distinct category of information and shares data with other sheets, as shown in the flowchart in figure 2.1.

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9 For a list of enhancements and other changes from the previous Microfin releases, refer to Microfin’s INTRO sheet or to the microfin.com website.

10 Microsoft’s Excel Help defines an Excel workbook as “the file in which you work and store your data.” The workbook consists of a number of individual worksheets, or sheets. An Excel worksheet is “the primary document you use in Microsoft Excel to store and work with data. A data worksheet consists of cells organized into columns and lines and is always part of a workbook.”
The name of each Microfin sheet appears in a nonscrolling blue box that displays at the top left corner of the sheet (figure 2.2).

Each sheet includes a number of distinct, titled sections. The title of each section of the sheet displays in a black box in the leftmost column of the sheet. Certain sections are further divided into subsections, which are generally labeled using blue text.
Each of Microfin’s sheets is identified in a series of worksheet tabs located at the bottom of the Excel window. These tabs are labeled with abbreviated forms of the names of the sheets.11

You can move to a specific sheet by choosing the related tab from the display. (As an alternative to using the tabs, you can also navigate among Microfin’s sheets using the various GO TO and OPTIONS menu items on the Microfin toolbar, or the links and buttons on specific sheets within the model.)

As you scroll through the tabs from left to right, the Microfin workbook includes the sheets listed below. To the extent possible, the sheets appear in the sequence that you will use them to enter your information.

- **INTRO (Introduction)**
- **NAVIGATOR**
- **MODEL SETUP**
- **PRODUCTS**
- **PROGRAM**
- **INST CAP (Institutional Resources and Capacity)**

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11 For easy reference, the handbook generally uses these abbreviated forms to reference the names of the sheets—e.g., INST CAP or FIN SOURCES. These names, as well as other significant elements of the model, appear in small capital letters to help guide you through the model.
Optionally, Microfin also includes the sheets listed below. They are hidden until you choose to display them by selecting options in the SETUP WIZARD or OPTIONS / MISCELLANEOUS TOOLS from the Microfin toolbar.

- OTHER PROGS (Other Programs)
- CLIENT COST and REP SCHED (Repayment Schedule)
- RETENTION
- CASELOAD
- SCENARIOS
- VAR ANALYSIS (Variance Analysis)

Microfin’s TRANSLATIONS sheet is also hidden until you select OPTIONS / LANGUAGE / SHOW TRANSLATIONS SHEET from the Microfin toolbar.

**Intro Sheet**

The INTRO sheet is the first sheet in the Microfin workbook. It automatically displays when you open the file and provides the following information:

- software version number and release date
- ownership and licensing information
- disclaimer
- contacts for support and additional information
- a pagebar with buttons to access the GETTING STARTED information, SETUP WIZARD, LICENSING TERMS and a LIST OF CHANGES BY VERSION

There are no data entry cells on this sheet.
**NAVIGATOR Sheet**

The NAVIGATOR sheet displays, and provides access to, essential data that you enter on all of Microfin’s sheets, as well as data for certain key outputs.

It is structured to follow the general informational flow of your operational planning process. As a result, you can use NAVIGATOR as a framework, or central switchboard, for entering and reviewing data on other sheets throughout the model. As you enter or edit data, you can use NAVIGATOR’s GO TO and LINKS buttons to take you directly to a related data entry section of the model.

NAVIGATOR’s lines display dynamically; sections are hidden from view until you input information on the related sheets in the model.

You can designate the amount of detail that you wish to view on the NAVIGATOR sheet by using the LEVEL 1, L2 and L3 buttons on NAVIGATOR’s pagebar. LEVEL 1 displays the least detail, while L3 displays the most detail.

The NAVIGATOR sheet also includes a NAVIGATOR WIZARD to provide an overview of the features of the sheet. This wizard is accessible from the pagebar or from OPTIONS / RUN A MICROFIN WIZARD on the Microfin toolbar.

For more detailed instructions on using the NAVIGATOR sheet or the NAVIGATOR WIZARD, refer to “Using the NAVIGATOR Sheet and NAVIGATOR WIZARD as a Framework for Entering Data” on page 66. For additional information on Microfin’s business planning framework, refer to “Overview of Microfin’s Planning Framework” on page 25.

Refer to figure 2.5 for a sample of this NAVIGATOR sheet.

**MODEL SETUP Sheet**

The MODEL SETUP maintains general information that is used throughout the model, including the modeling approach you choose for your projections—i.e., consolidated, multi-region or multi-branch.

If you select a multi-branch or multi-region approach, the sheet displays an additional BRANCH MANAGEMENT section that is not visible on a consolidated model. You can use the options on this section to add or delete sheets representing your various individual branches or regions, and to rename these sheets.

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12 If you are modeling on a branch or region basis, the NAVIGATOR sheet only includes the PROGRAM (BRANCH/REGION) data for the first branch or region. For the second and subsequent branches (or regions), you can review data using the SUMMARY REPORT section on each BRANCH (or REGION) sheet.
For detailed instructions on using this sheet, refer to “Using the MODEL SETUP Sheet to Establish a New Model” on page 110.

Refer to figure 4.1 for a sample of this MODEL SETUP sheet.

**Products Sheet**

The PRODUCTS sheet defines your institution’s current and projected credit and savings products (up to four of each). This information flows into the PROGRAM (BRANCH/REGION) sheet, where you project activity levels for your various products.

For detailed instructions on using this sheet, refer to “Using the PRODUCTS Sheet to Define Loan and Savings Products” on page 144.

Refer to figure 5.1 for a sample of this PRODUCTS sheet.

**Program (Branch/Region) Sheet**

The PROGRAM (BRANCH/REGION) sheet, the largest in Microfin, contains all of the information used to project credit and savings activity, income, loan loss provisions, staffing expenses, other operating expenses and fixed asset acquisitions.

If your model was created using a consolidated approach, the sheet is titled PROGRAM.

If your model was created using a branch or regional approach, the sheet is titled BRANCH or REGION. In this case, your model will include a separate copy of the BRANCH/REGION sheet for each of your branches or regions.

If your institution provides nonfinancial services—e.g., business development or health education—you must separate these activities from your financial activities. Because of the wide variety in possible nonfinancial services, Microfin provides limited support for generating such projections on the OTHER PROG sheet.

For detailed instructions on using this sheet, refer to “Using the PROGRAM (BRANCH/REGION) Sheet to Generate Loan and Savings Projections” on page 180 and to “Using the PROGRAM (BRANCH/REGION) Sheet to Project Program-related Resources and Capacity” on page 259.

Refer to figure 6.1 for a sample of this PROGRAM (BRANCH/REGION) sheet.

**Inst Cap Sheet**

The INST CAP sheet contains information used to project your institution’s resource requirements and capacity. This information is tightly integrated with additional resources data established on the PROGRAM (BRANCH/REGION) and ADMIN (HEAD OFFICE) sheets.
For detailed instructions on using this sheet, refer to “Using the \textit{INST CAP Sheet} to Enter General Background Information for Institutional Resources and Capacity” on page 235.

Refer to figure 7.5 for a sample of this \textit{INST CAP} sheet.

\textbf{ADMIN (HEAD OFFICE) Sheet}

On the \textit{ADMIN (HEAD OFFICE) sheet}, you enter administrative-level staffing, operational expenses and fixed asset expenditures, as well as tax calculations and in-kind subsidies. The sheet also displays aggregated data for your institution’s portfolio, income and expenses.

If your model was created using a consolidated approach, the sheet is titled \textit{ADMIN}. If your model was created using a branch or regional approach, the sheet is titled \textit{HEAD OFFICE}.

For detailed instructions on using this sheet, refer to “Using the \textit{ADMIN (HEAD OFFICE) Sheet} to Project Administrative Resources and Capacity” on page 307.

Refer to figure 9.1 for a sample of this \textit{ADMIN (HEAD OFFICE) sheet}.

\textbf{FIN SOURCES Sheet}

The \textit{FIN SOURCES} sheet identifies funding sources, establishes initial balances, defines liquidity thresholds, sets interest rates for debt sources and calculates the cost of borrowed funds—which is transferred to the \textit{ADMIN (HEAD OFFICE) sheet} as a budgeted expense.

For detailed instructions on using this sheet, refer to “Using the FINANCING SOURCES Sheet to Identify Debt and Equity Financing” on page 341.

Refer to figure 10.3 for a sample of this \textit{FIN SOURCES} sheet.

\textbf{FIN FLOWS Sheet}

The \textit{FIN FLOWS} sheet monitors cash balances for three restricted pools—operations, portfolio and other assets—and for an unrestricted pool of funds. Using this sheet, you enter receipts of new funds and any repayments of borrowed funds in order to ensure sufficient cash balances each period. The sheet includes an investment strategy section that identifies interest rates earned on unused funds and displays any investment income which is then transferred to the \textit{ADMIN (HEAD OFFICE) sheet} as a source of income.

For detailed instructions on using this sheet, refer to “Using the FINANCING FLOWS Sheet to Project Cash Flow” on page 352.

Refer to figure 10.10 for a sample of this \textit{FIN FLOWS} sheet.
**Graphs, Graph Clipboard and User Graph Sheets**

The GRAPHS and USER GRAPH sheets, and their companion tool, the GRAPH CLIPBOARD, present Microfin’s financial projections in graphical form for easy interpretation.

- The GRAPHS sheet presents various *predefined* graphs for credit, income, staffing expenses, efficiency and profitability, and financing data.
- The USER GRAPH sheet displays a *user-defined* graph of selected data from the model.
- The GRAPH CLIPBOARD sheet provides a central location from which to store and/or print one or more predefined or user-defined graphs. You can also use the graph clipboard to copy one or more graphs into another Windows-based program.

For detailed instructions on using these sheets, refer to “Generating and Reviewing Graphs Using the GRAPHS and USER GRAPH Sheets” on page 379. Also refer to “Storing, Printing or Copying Graphs to Other Windows-based Software Using the GRAPH CLIPBOARD Sheet” on page 385.

Refer to figures 11.1, 11.4 and 11.5 for samples of these sheets.

**Summary Rep Sheet**

The SUMMARY REP sheet provides concise, annual totals for the financial statements and ratio analyses generated by Microfin.

For detailed instructions on using this sheet, refer to “Reviewing the SUMMARY REPORT Sheet” on page 388.

Refer to figure 11.6 for a sample of this SUMMARY REP sheet.

**Fin Statements Sheet**

The FIN STATEMENTS sheet presents a detailed balance sheet, income statement (including adjustments), and cash flow statement, as well as key financial ratios.

For detailed instructions on using this sheet, refer to “Reviewing the FINANCIAL STATEMENTS Sheet” on page 396.

Refer to figure 11.15 for a sample Balance Sheet, figure 11.16 for an Income Statement, figure 11.17 for Cashflow Projections and 11.18 for Microfin’s Ratio Analysis calculations.
**Export Sheet**

The Export Sheet allows you to save and export data from a completed Microfin model into a much smaller data file, and to reimport information from a saved data file into a blank Microfin model.

For detailed instructions on using this sheet, refer to “Using the Export Sheet to Export or Import the Data in a Microfin Workbook” on page 425.

Refer to figure 12.1 for a sample of this Export Sheet.

**Model Structure Sheet**

The Model Structure Sheet displays a flowchart, or graphic portrayal, of Microfin’s structure and information flow. For additional information refer to “Flowcharts” on page 61.

Refer to figure 2.1 for a sample of this Model Structure Sheet.

**Inc Stat Flow Sheet**

The Inc Stat Flow Sheet summarizes the logical flow of financial (e.g., income statement) information within the model.

For additional information refer to “Flowcharts” on page 61.

Refer to figure 2.3 for a sample of this Inc Stat Flow Sheet.

**User-Defined Sheet**

The unprotected User-Defined Sheet is included in the workbook to allow you to add features to Microfin, generate supplemental report formats or create new calculations.

For detailed instructions on using this sheet, refer to “Using the User-Defined Sheet to Add Features or Supplement Calculations” on page 449.

Refer to figure 13.1 for a sample of this User-Defined Sheet.

**Miscellaneous Tools Sheets**

Microfin includes several additional sheets containing miscellaneous tools, most of which you can hide (or unhide) using the Options menu on the Microfin toolbar.

These miscellaneous tools are optional, experimental worksheets that supplement the projections generated by Microfin. As such, any information that you input on these sheets is not transferred back into the core financial projections.
SCENARIOS
The SCENARIO sheet stores key input and output data for modeling a variety of different scenarios. You can use this sheet to create comparisons and to perform sensitivity analyses.

For detailed instructions on using this sheet, refer to “Using the SCENARIOS Sheet (Scenario Manager) for Sensitivity Analysis” on page 436.

Refer to figure 12.2 for a sample of the SCENARIOS sheet.

OTHER PROGS
The OTHER PROGS sheet projects annual income and expenses related to programs other than credit and savings.

For detailed instructions on using this sheet, refer to “Using the OTHER PROGS Sheet to Analyze the Financial Implications of Other Programs” on page 465.

Refer to figure 13.6 for a sample of the OTHER PROGS sheet.

CASELOAD
The CASELOAD sheet analyzes alternatives to generate an optimal loan officer caseload, including a time analysis section.

For detailed instructions on using this sheet, refer to “Using the CASELOAD Sheet to Optimize Caseload Methodology and Design” on page 451.

Refer to figure 13.2 for a sample of the CASELOAD sheet.

CLIENT COST and REP SCHEDULE
The CLIENT COST and REP SCHEDULE sheets calculate the total cost of services from the client perspective, including effective interest rates, compulsory savings, transaction costs and group peer risk. They also include a repayment schedule.

For detailed instructions on using these sheets, refer to “Using the CLIENT COST and REP SCHEDULE Sheets to Generate Effective Interest Rates and Client Cost Analyses” on page 457.

Refer to figures 13.3 and 13.4 for samples of these sheets.
**VAR ANALYSIS**

The VAR ANALYSIS sheet displays a month-by-month comparison of actual versus projected data for the first year of your projections.

For detailed instructions on using this sheet, refer to “Using the VAR ANALYSIS Sheet to Analyze Monthly or Quarterly Performance Variances” on page 442.

Refer to figure 12.3 for a sample of the VAR ANALYSIS sheet.

**RETENTION**

The RETENTION sheet examines the implication of different client retention rates. It allows you to analyze, and experiment with, your institution’s projected retention rates.

For detailed instructions on using this sheet, refer to “Using the RETENTION Sheet to Evaluate Retention Rates” on page 464.

Refer to figure 13.5 for a sample of the RETENTION sheet.

**The User Interface**

The manner in which you interact with software is referred to as its *user interface*. Microfin’s user interface offers a number of general features and facilities that help you to navigate easily from place to place within the model, access online help text, and enter data accurately and productively.

**Microfin Toolbar**

The Microfin toolbar appears across the top of all sheets in the model.

This toolbar, new to version 3.0 of Microfin, provides access to all key features and facilities within Microfin, as described below.

**Navigator Button**

The NAVIGATOR button automatically takes you to Microfin’s NAVIGATOR sheet.

For detailed instructions on using the NAVIGATOR sheet, refer to “Using the NAVIGATOR Sheet and NAVIGATOR WIZARD as a Framework for Entering Data” on page 66.
**Go To Menu**

The options on the GO TO menu allow you to navigate directly to selected sheets (or sections within sheets) throughout the model.

- Intro Sheet
- Microfin Navigator
- Model Setup Sheet
- Product Definition Sheet
- Program-level Projections Sheet
- Institutional Resources and Capacity
- Admin Costs and Aggregate Activity Sheet
- Financing Sources
- Financing Flows

**Options Menu**

The OPTIONS drop-down menu provides a central location from which to select various tools (such as online help and wizards) and to maintain parameters within Microfin (e.g., number and names of branches, or whether to show optional sheets).

- Set Display Options
- Enable Pop-up Help System
- Enable Tutorial Help system
- Language
- Recalculation Method
- Export/import Data
- Miscellaneous tools
- User-defined Sheet
- Branch / Region issues
- Clear all data from model

- Run a Microfin WIZARD
- Get help using Microfin
- About Microfin
Set Display Options Menu
This menu includes four options that govern your user interface:

- **Show Excel Formula Bar**—controls whether Excel’s formula bar appears at the top of the Microfin screen, below the Microfin toolbar and the pagebar. While the formula bar is helpful when you wish to view and interpret Microfin’s formulas, you should normally leave it hidden in order to save screen space.
- **Show Gridlines**—determines if Microfin displays/hides Excel’s gridlines that outline cells on the sheet.
- **Show Row and Column Headers**—governs whether Microfin displays Excel’s row numbers and alphabetic column headings.
- **Use Short Toolbars**—controls the length of various labels that display on the Microfin toolbar, as well as pagebars for the PROGRAM (BRANCH/REGION) and NAVIGATOR sheets. This option ensures that the labels fit on the width of your screen. Enable it if you are using a computer monitor with a screen resolution that is less than XGA.

You can also edit many of these options in the SETUP WIZARD.

Enable Pop-up Help System
If enabled, the pop-up help system automatically displays a small window with explanatory text whenever you click on a required or optional data entry cell in the model.

On a sheet-by-sheet basis, you can drag the position of this box to any desired location in order to avoid covering essential data on the screen. The pop-up box will remain in the new location for all cells on the sheet, unless you specifically change it.

You can also edit this pop-up help option in the SETUP WIZARD.
**Enable Tutorial Help System**
The tutorial help system automatically displays a full page of online help text for a selected sheet whenever you first click on any cell in the sheet.

You can also edit this option in the **SETUP WIZARD**.

**Language Menu**
Microfin supports up to four languages. Options on the **LANGUAGE** menu determine whether the user interface for the selected Microfin model is presented in English, Spanish, French or a user-defined language. (You can also edit your language choice in the **SETUP WIZARD**.)

- English
- Español
- Français
- User-defined translation

- Show TRANSLATIONS sheet
- Import a User-Defined Language

This menu also provides options to manually enter or import a user-defined language.

For additional information on defining a new language, refer to “**Using the TRANSLATIONS Sheet to Create a User-defined Language**” on page 468.

**Recalculation Method**
Your choice of recalculation method determines when (and how often) Microfin updates all of the calculated or derived values throughout the model. You can also edit this option in the **SETUP WIZARD**.

The default value is for manual recalculation, which means that you must use the F9 key or the **RECALC** option from the Microfin toolbar to update your calculations. In most cases, you should use this default.

For additional guidance on choosing a method, refer to “**Recalculation Options**” on page 65.

**Export/Import Data**
The **EXPORT/IMPORT DATA** option automatically takes you to Microfin’s **EXPORT** sheet. This sheet allows you to store (export) or retrieve (import) a selected model.

For detailed instructions on using the **EXPORT** sheet, refer to “**Using the EXPORT Sheet to Export or Import the Data in a Microfin Workbook**” on page 425.
**Miscellaneous Tools**

Using options on the MISCELLANEOUS TOOLS menu, you can turn on or off the display of the various optional sheets within Microfin:

- Show OTHER PROGRAMS sheet
- Show COST TO CLIENT sheet
- Show RETENTION RATE ANALYSIS sheet
- Show CASELOAD sheet
- Show SCENARIO MANAGER sheet
- Show VARIANCE ANALYSIS sheet

**User-defined Sheet**

The options for the USER-DEFINED sheet allow you to add and delete user-defined sheets, or rename existing sheets.

- Add a User-Defined Sheet
- Delete Current User-Defined Sheet
- Rename current user-defined sheet

**Branch/Region Issues**

If you are modeling on a consolidated basis, this option allows you to change to branch- or region-based modeling.

If you are modeling on a branch or regional basis, this option allows you to:

- change the basis to a consolidated, branch or regional approach
- add or delete a region or branch
- rename a region or branch
- create a branch-level planning model. There are sections of the EXPORT sheet that allow you to create separate Microfin models for your various branches or regions and then to consolidate the data for these individual branches or regions into a single, consolidated Microfin model. For additional information, refer to “Using the EXPORT Sheet to Export or Import the Data in a Microfin Workbook” on page 425.

**Clear All Data From Model**

The CLEAR ALL DATA FROM MODEL option deletes all data from, and initializes, your Microfin model.
**Run a Microfin WIZARD**
This option executes any one of Microfin's wizards.

- Run the Setup Wizard ...
- Run the EXPORT Wizard ...
- Run the FIXED ASSET Wizard
- Run the NAVIGATOR Wizard

**Get Help Using Microfin**
This menu provides options to access help or technical support for Microfin.

- Show me how to "Get Started"
- Go to microfin website
- Send email to microfin technical support
- Sign up for microfin listserv
- Start help system

The second, third and fourth options require a connection to the internet. The first and final options do not.

**About Microfin**
The ABOUT MICROFIN menu provides options to display important information for your current version of the software.

- List changes by version
- View licensing terms
- View current version info

**Graphs Menu**
The GRAPHS drop-down menu allows you to select from among the many predefined graphs within Microfin.

These graphs are categorized by CREDIT, SAVINGS, INCOME, STAFFING AND EXPENSES, EFFICIENCY AND PROFITABILITY, and FINANCING.
Using Microfin

For detailed instructions on using graphs in Microfin, refer to “Generating and Reviewing Graphs Using the GRAPHIS and User GRAPHIS Sheets” on page 379.

**Draw Graph Button**
The DRAW GRAPH button allows you to view a predefined graph of a currently selected data section from any of the following sheets:

- PROGRAM (BRANCH/REGION)
- ADMIN (HEAD OFFICE)
- FIN STATEMENTS

**User Graph Button**
The USER GRAPH button allows you to generate your own custom line graphs based on the contents of a selected line of data within the model. Use this option when you wish to view information that is not otherwise available in a predefined graph.

For detailed instructions on using this feature, refer to “Creating Custom Line Graphs Using the USER GRAPHIS Sheet” on page 386.

**Recalc (F9) Button**
The RECALC button updates all calculated and derived values throughout the model, based on the information you enter and the selections you make. It performs the same function as your keyboard’s F9 key.

At a minimum, use the RECALC button after you complete each data entry section on each Microfin sheet to update all of the related outputs in the model.

**Auto Width Option**
The AUTO WIDTH button automatically resizes columns throughout the currently displayed Microfin sheet.

Depending on your local currency and the size of your institution, the column width may be too narrow to present larger numbers. In such a situation, Excel automatically displays a row of number signs (#####) to spotlight the sizing problem.

The solution is to resize the column. However, because Microfin’s sheets are protected, you cannot manually resize columns using Excel’s menu commands. Instead, choose AUTO WIDTH to resize all columns on the currently selected sheet and, therefore, ensure that all numbers display properly.

The auto-width process can take a considerable amount of time to complete on the larger sheets. To resize a single cell (or a marked range of cells), you may use Ctrl + W, instead.
Details Button

The DETAILS button allows you to display or hide certain detailed or advanced information on the following sheets:

- Program (Branch/Region)
- Admin (Head Office)
- Fin Flows

You hide/unhide this additional detail using the DETAILS button on the Microfin toolbar.

If hidden, Microfin displays a light green line (between two lines of data) to indicate that additional detailed information is available.

<table>
<thead>
<tr>
<th>3.22</th>
<th><strong>Product 1: Solidarity Group Loans</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>3.23</td>
<td><strong>Number of loans</strong></td>
</tr>
<tr>
<td>3.24</td>
<td>Number of loans maturing</td>
</tr>
<tr>
<td>3.25</td>
<td>First cycle</td>
</tr>
<tr>
<td>3.26</td>
<td>Second cycle</td>
</tr>
<tr>
<td>3.27</td>
<td>Third cycle</td>
</tr>
<tr>
<td>3.28</td>
<td>Fourth cycle</td>
</tr>
<tr>
<td>3.29</td>
<td>Fifth cycle</td>
</tr>
<tr>
<td>3.30</td>
<td>Sixth and subsequent cycles</td>
</tr>
<tr>
<td>3.31</td>
<td></td>
</tr>
<tr>
<td>3.32</td>
<td>Number of loans disbursed *</td>
</tr>
<tr>
<td>3.33</td>
<td>First cycle</td>
</tr>
<tr>
<td>3.34</td>
<td>Follow-up cycles</td>
</tr>
<tr>
<td>3.35</td>
<td>Second cycle</td>
</tr>
<tr>
<td>3.36</td>
<td>Third cycle</td>
</tr>
<tr>
<td>3.37</td>
<td>Fourth cycle</td>
</tr>
<tr>
<td>3.38</td>
<td>Fifth cycle</td>
</tr>
<tr>
<td>3.39</td>
<td>Sixth and subsequent cycles</td>
</tr>
<tr>
<td>3.40</td>
<td></td>
</tr>
<tr>
<td>3.41</td>
<td><strong>Number of active loans</strong></td>
</tr>
<tr>
<td>3.42</td>
<td>First cycle *</td>
</tr>
<tr>
<td>3.43</td>
<td>Second cycle *</td>
</tr>
<tr>
<td>3.44</td>
<td>Third cycle *</td>
</tr>
<tr>
<td>3.45</td>
<td>Fourth cycle *</td>
</tr>
<tr>
<td>3.46</td>
<td>Fifth cycle *</td>
</tr>
<tr>
<td>3.47</td>
<td>Sixth and subsequent cycles *</td>
</tr>
<tr>
<td>3.48</td>
<td></td>
</tr>
<tr>
<td>3.49</td>
<td>First loans as % of active loans</td>
</tr>
</tbody>
</table>

If displayed (unhidden), the additional information displays with a light green background to indicate that the detail can be hidden from view.
Print Button

While it is generally not practical to print an entire Microfin model in a single report, most users find it necessary to print selected portions of their models. The PRINT button allows you to generate a customized, hard-copy printout of a selected sheet (or section of a sheet) within Microfin.

Initially, this button displays a menu that allows you to customize your printout. You can assign page numbers, specify the paper size and identify the relevant time period. For lengthy sheets, you can select from among the available sections of the sheet.

A checkbox on the bottom of the window allows you to print a set of reports containing the contents of the NAVIGATOR, SUMMARY REPORT and GRAPH CLIPBOARD sheets.

To generate the printout, choose the PRINT PREVIEW button from the MICROFIN PRINT MENU.

Save Button

The SAVE button stores the current state of the model to your hard drive. It is identical to Excel’s SAVE command.

Last Loc Button

The LAST LOC button returns you to your previous location within Microfin, based on the most recent cell position of your cursor.
Help Button

The HELP button opens Microfin’s comprehensive online help facility. For additional information, refer to “Microfin Help” on page 79.

Pagebars

In addition to the Microfin toolbar, a second toolbar—referred to as a pagebar—appears on most sheets. The contents of each sheet’s specialized pagebar provide access to features that are specific to the sheet.

The following sheets include a customized pagebar:

- INTRO
- NAVIGATOR
- MODEL SETUP
- PRODUCTS
- PROGRAM (BRANCH/REGION)
- INST CAP
- ADMIN (HEAD OFFICE)
- FIN SOURCES
- FIN FLOWS
- GRAPHS
- USER GRAPH
- SUMMARY REP
- FIN STATEMENTS
- CASELOAD
- SCENARIOS

Most of the pagebar items simply allow you to navigate directly to a specific section of the sheet. Along with their labels, all such items include the following icon on the toolbar:
Other items, such as those described below, affect the sheet format or other aspects of its presentation.

- **Level (1, 2 or 3)**—determines the level of detail displayed on the NAVIGATOR sheet, where level one provides the least detail and level three the most detail.
- **Real/Nominal Values**—toggles the information displayed on the NAVIGATOR and GRAPHS sheets between real (inflation-adjusted) and nominal (unadjusted) values.
- **% Format: 1%, % Format: 1.0%, Format: 1, Format: 1.0 or Format: 1.00**—determines the numerical format for the blue, required-entry cells on the SCENARIOS sheet.
- **View Licensing Terms**—displays the text for Microfin’s user license.
- **List Changes by Version**—lists all of the enhancements made to Microfin, sorted by version number.
- **Getting Started**—explains the procedure to begin using Microfin; particularly helpful for new users.

**Flowcharts**

Microfin includes two flowcharts of its structure and information flow: MODEL STRUCTURE and INC STAT FLOW. Each appears as a separate sheet in the workbook.

The MODEL STRUCTURE sheet (figure 2.1) is a graphic portrayal of Microfin’s overall structure and information flow.

The INC STAT FLOW sheet (figure 2.3) summarizes the logical flow of financial data used to generate Microfin’s income statement.
Figure 2.3 Income Statement Flow (Inc Stat Flow) Sheet

"Income Statement" Flow to Microfin.xls Model

This sheet summarizes the logical flow of financial information in the model. Use the File Print command to print this sheet for reference. The Income Statement, the Program/Branch sheet and the Admin/Head Office sheet of this model follow this flow:

You can print either or both flowcharts to provide a general reference for using Microfin. To do so, from within the desired sheet, choose PRINT from the Microfin toolbar or from Excel’s FILE drop-down menu.
**Links Buttons**

LINKS buttons appear on various sheets throughout the model. You can use a LINKS button to display a pop-up window that lists related sections of the model. These related sections represent data input or output on a similar topic.

For example, in the illustration above, the LINKS for the LOAN INDEXING INCOME item [line 5.12] all pertain to the topic of “Indexing.”

You can highlight any item from the LINKS list and then, using the SELECT button on the window, navigate to the indicated section of the model.

**Wizards**

Wizards are small, easy-to-use programs that guide you through a software process. They are usually represented by a series of small dialog boxes, or windows. Wizards provide a user-friendly means to interact with software.

Microfin provides four optional wizards for your use. They are located on the Microfin toolbar (OPTIONS / RUN A MICROFIN WIZARD).

- **SETUP WIZARD**—allows you to customize the content and operations of your Microfin model. For additional information, refer to “Customizing the Model’s Operations Using the SETUP WIZARD” on page 101.

- **EXPORT WIZARD**—creates a small Excel data file that contains the required and optional information entered in a selected Microfin model. For additional information, refer to “Using the EXPORT WIZARD to Export a Completed Workbook” on page 426.

- **FIXED ASSET WIZARD**—guides you through the process of entering fixed assets data on the INST CAP and PROGRAM (BRANCH/REGION) sheets. For additional information, refer to “Using the FIXED ASSETS WIZARD” on page 249.

- **NAVIGATOR WIZARD**—introduces the features of Microfin’s NAVIGATOR sheet. For additional information, refer to “Using the NAVIGATOR Sheet and NAVIGATOR WIZARD as a Framework for Entering Data” on page 66.
**Keyboard Shortcuts**

Microfin supports certain of Excel’s commands, as outlined below.

**Figure 2.4 Useful Excel Commands for Navigating Microfin**

<table>
<thead>
<tr>
<th>Keystroke</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>HOME</td>
<td>Moves to the beginning of the current row of the sheet</td>
</tr>
<tr>
<td>CTRL + HOME</td>
<td>Moves to the beginning (top left) corner of the sheet</td>
</tr>
<tr>
<td>CTRL + PGUP</td>
<td>Moves to the previous sheet in the workbook</td>
</tr>
<tr>
<td>CTRL + PGDN</td>
<td>Moves to the next sheet in the workbook</td>
</tr>
<tr>
<td>ARROW</td>
<td>Moves one cell in the selected direction</td>
</tr>
<tr>
<td>END + ARROW</td>
<td>Press END to turn on Excel’s End Mode, then press an arrow key to move one block of data in the selected direction</td>
</tr>
<tr>
<td>CTRL + END</td>
<td>Moves to the last cell (bottom right) on the sheet</td>
</tr>
<tr>
<td>CTRL + W</td>
<td>Automatically adjusts the column width for a currently selected cell</td>
</tr>
<tr>
<td>Ctrl + P</td>
<td>Performs a Paste Special / Formats Only command</td>
</tr>
</tbody>
</table>

In general, Microfin does not support Excel’s CUT (CTRL + X) command. The only exception is on the USER-DEFINED sheet.

There are also limitations and/or warnings related to the use of the following Excel commands in Microfin:

- COPY (CTRL + C)
- PASTE (CTRL + V)

For additional information, refer to “General Guidelines for Entering Data” on page 75.
Recalculation Options

You have the ability to choose when, and how often, Microfin updates all of the calculated and derived values throughout your model. Microfin will not calculate or generate data accurately until the model is recalculated.¹³

Your options are to:

- manually update values using the F9 function key or the RECALC (F9) option on the Microfin toolbar
- automatically update values whenever you change the currently displayed Microfin sheet
- automatically update values whenever you add or edit any item of information that is used in a calculation

Your choice of recalculation method affects Microfin’s speed of operation—more frequent recalculations provide slower performance. The default setting (manual updates) provides the fastest performance and is generally recommended.

Automatic Error Checking

As part of Microfin’s recalculation process, Microfin executes several error-checking routines. These routines execute every time you recalculate using the F9 key or the RECALC button on the Microfin toolbar.

The error-checking routines ensure that you have not:

- altered the underlying structure of your model
- entered erroneous data that would prevent Excel from completing all of your calculations

If you get one of these error messages, read it carefully and try to solve the problem immediately. In most cases, the error results from data that you have input into the model since the last recalculation. Review the data, checking for errors such as a Space keystroke that was entered to clear out a previous entry.

If you cannot find the source of the error, it is often best to save the current file under a different name and then continue your work by retrieving the most recently saved previous version.

If you feel that any error message may be the result of a bug in Microfin, contact support@microfin.com for assistance. Your communication will help to ensure that any problem you identify is corrected in future versions of Microfin.

¹³ As previously noted, wherever you see a reference to “Microfin generates” or “Microfin calculates,” this action must be triggered by first recalculating the model using the F9 key or the RECALC button on the Microfin toolbar.
Security (Protected Worksheets)

All of the sheets in the Microfin model are protected to prevent you from accidentally overwriting important formulas. Such protection is necessary because of the complexity of the model and the many links between sheets. Without protection, it is possible to introduce serious errors into the model.

However, the protection also prevents you from making intentional modifications to the model, such as inserting a row to add a new indicator. To permit this type of user-defined modification, there are blank lines included in certain sections of the model, such as the RATIO ANALYSIS section on the FINANCIAL STATEMENTS sheet.

The structure of the workbook also has been protected to avoid accidental deletion of worksheets, or a change in the order of sheets, which can destroy formulas. Because this protection means that you cannot add new sheets to the workbook, there is an optional, blank USER-DEFINED sheet at the end of the workbook for your use. You can create additional USER-DEFINED sheets by choosing OPTIONS / USER-DEFINED SHEET / ADD A USER-DEFINED SHEET from the Microfin toolbar. For additional information refer to “Using the USER-DEFINED Sheet to Add Features or Supplement Calculations” on page 449.

Data Entry, With and Without NAVIGATOR

Microfin is designed to provide a simple-to-use, highly standardized interface for entering and managing data throughout the model.

Using the NAVIGATOR Sheet and NAVIGATOR WIZARD as a Framework for Entering Data

The NAVIGATOR sheet mirrors the flow of your operational planning process. It summarizes all of Microfin’s required and optional data input and provides GO TO buttons that allow you to navigate to related data entry sections throughout the model.

As a result, you can optionally use NAVIGATOR as a central location, or switchboard, from which to develop your financial projections.
## Overview of Microfin

### Design Financial Products

#### Number and Names of Products
- Number of loan products in use: [Number]
- Number of savings products in use: [Number]

#### Loan Product Input Section
- Loan Product 1: [Description]

#### Loan Product 2: Solvability/Savings
- Step 5: Average loan amount
  - (1) Average amounts by cycle (nominal)
  - First cycle
  - Second cycle
  - Third cycle
  - Fourth cycle
  - Fifth cycle
  - Sixth and subsequent cycles
- Step 6: Repayment Conditions
  - (1) Repayment frequency
  - (2) Effective Loan Term (months)
  - First cycle
  - Second cycle
  - Third cycle
  - Fourth cycle
  - Fifth cycle
  - Sixth and subsequent cycles
- Step 7: Compulsory/Savings
  - (1) “Ufront” savings
  - (2) “Ongoing” savings
  - Elimination of compulsory savings

### Step 4: Pricing Structure
- (1) Interest rate method
- (2) Interest charged
- (3) Fees and Commissions
- (4) “Ufront” fee or commission
- “Ongoing” fee or commission
- (4) Issuing of loans receivable

### Step 5: Analysis
- First cycle
- Second cycle
- Third cycle
- Fourth cycle
- Fifth cycle
- Sixth and subsequent cycles

### Loan Product 2 (Approve 2 not in use)
- Loan Product 3 (Approve 3 not in use)
- Loan Product 4 (Approve 4 not in use)

### Savings Input Section
- Compulsory Savings
  - Control of compulsory savings
  - Interest rate paid
  - Issuing of savings
- Savings Input 1: [Description]
- Savings Input 2: [Description]
- Savings Input 3: [Description]

### Summary Table

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<th>Microfin Navigator</th>
<th>Level 3</th>
<th>Year 1</th>
<th>Year 2</th>
<th>Year 3</th>
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### Financial Analysis
- Selection of preferred denominator
- Profitability Ratios and Lenses
- Info used in Ratio Calculation

### Problematic Financial Products

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<td>One loan product</td>
<td>Two voluntary savings products</td>
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#### Notes

- Based on AVG TOTAL ASSETS
- Calculate ratios based on AVG TOTAL ASSETS

---

**Figure 2.5a** Navigator Sheet, Level 3 Option (1 of 5)
Figure 2.5b NAVIGATOR Sheet, LEVEL 3 Option (2 of 5)

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68 Using Microfin
## Program/Level Staffing

### Staffing Titles and Linkages

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<th>Year 2</th>
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<th>Year 4</th>
<th>Year 5</th>
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<td>Borrowers</td>
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**Not used:**

### Total Number of Program Employees

**Program:**

- Program: 27, 27, 35, 52, 57

### Loan Officers as % of total program staff

- Program:
  - Loan Officers, Entry-level: 7%
  - Loan Officers, Junior level: 30%
  - Loan Officers, Senior level: 53%

### Other Op. Expenses, Titles and Linkages

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<th>Year 2</th>
<th>Year 3</th>
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### Program/Level Other Op. Costs

**Inst. Cap.:** Linked to inflation: 0%

- Adjustments in addition to inflation:
  - Program:
    - Total program salary and benefits: 95,720 (147,246)
      - 192,535 (302,470) (374,078)

### Fixed Asset Titles and Linkages

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<td>Depositors</td>
<td>Branches</td>
<td>Round up</td>
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<tr>
<td><strong>Computers</strong></td>
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### Acquisition of fixed assets

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<td><strong>Office Furniture</strong></td>
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### Admin-Level Staffing

### Admin: Microfin

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<td>Branches</td>
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<tr>
<td><strong>Runner</strong></td>
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<tr>
<td><strong>Savings Director</strong></td>
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### Program Team: Microfin

**Not used:**

### Total Number of Head office employees

**Inst. Cap.:**

- Program:
  - Executive Director: 4.0
  - Finance Manager: 6.0
  - Secretary: 6.3
  - Runner: 7.0

**Administrative:**

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<tr>
<th>Level 3</th>
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<th>Year 3</th>
<th>Year 4</th>
<th>Year 5</th>
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<td>Depositors</td>
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**Not used:**

- Program:
  - Total salary and benefits: 20,880 (34,188) (39,240) (48,555) (53,410) (196,274)
### Figure 2.5d Navigator Sheet, Level 3 Option (4 of 5)

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**Inst.Cap.**

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<th>Life Grp</th>
<th>Current Staff</th>
<th>Admin Staff</th>
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<th>Branches</th>
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**Punch-Back**

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**Admin**

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<th>Year 5</th>
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**Admin**

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70 Using Microfin
### Microfin Navigator Sheet, Level 3 Option (5 of 5)

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<td>Financing Sources</td>
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<tr>
<td><strong>Names, balances, and interest rates</strong></td>
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<td><strong>Unrestricted Sources (nominal)</strong></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Unrestricted grants</strong></td>
<td>Go to</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Greenland Dev. Agency</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Unrestricted grants</strong></td>
<td>Go to</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Equity Investments (Unrestricted)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Restricted grants for OPERATIONS</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Head Start Foundation</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Restricted Portfolio Sources (nominal)</strong></td>
<td>Go to</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Restricted grants for PORTFOLIO</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Global Renew Foundation</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Freedom Fund</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Restricted grants for OTHER ASSETS</strong></td>
<td>Go to</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Total interest paid on deposits</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Cost of borrowed funds</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Summary Report**

**Is Balance Sheet in Balance?**

**Balance Sheet**

**Income Statement**

**Cash Flow Statement**

**Financial Statements**

**Financial Statements in Constant Currency**

**Financial Statements in External Currency**

**Notes:** Use these buttons to go to the Summary Report and review the yearly information.

---

2 — Overview of Microfin
When you first open the NAVIGATOR sheet, Microfin displays a small window that asks the following question: "Would you like to see an explanation of how to use the NAVIGATOR sheet?" If you choose the YES button on this window, Microfin opens the NAVIGATOR WIZARD. This wizard displays a series of small windows to introduce the general features of the sheet.

The first window in the wizard introduces NAVIGATOR.

---

**Introduction to the Navigator System**

This Wizard will introduce you to the Navigator Sheet.

The Navigator is the best means for guiding you through the complex of your projections. The Navigator Sheet summarizes the key information from the model, provides a step-by-step review, contains easy navigational features, and highlights significant errors in your data.

---

The second window describes three options for the level of detail to be displayed on the NAVIGATOR sheet. LEVEL 1 provides the least detail and LEVEL 3 the most detail. (You can also edit the detail level using the LEVEL 1, L2 and L3 buttons on the pagebar.)

---

**Three Levels of Detail**

Data can be viewed at three different levels of detail in Navigator.

The screen currently shows LEVEL 1, which is the least amount of detail. Note that the left-hand column only contains yellow lines. The level is indicated on the top row of the screen.

When using Navigator, you can use the three left-most buttons on the Navigator Pagebar (labeled Level 1, L 2, and L 3).

However, during the demonstration, these buttons do not function. Instead, to simulate the effect of the buttons, click on either the LEVEL 2 or LEVEL 3 buttons below to see how Navigator shows different levels of detail.
The third window explains the various indicators available on the NAVIGATOR sheet to help you track your progress as you enter data into your model. Each indicator changes from “NOT DONE” to “.” when you make your first entry into the related section of the model. The indicator cannot verify that you have completed all of the entries in the section.

"Not Done" Indicators

The Navigator displays a number of "not done" indicators to help track your progress as you complete your project.

Note that these indicators are imprecise. The indicators turn off as soon as you enter some information into that section; they do not actually verify that you have completed the section. You should still do a careful review of the summary data presented on Navigator as well as a detailed review of the information on the other sheets in Microfin.

(Note: If you can’t see any of the "Not Done" indicators, you can click on the title bar of this Wizard box and drag it to the side for better viewing.)

The NAVIGATOR sheet includes a series of GO TO buttons that takes you to related data-entry sections in the model. The fourth window in the wizard provides an example of the use of these buttons.

Using the "Goto" buttons

You can move back and forth quite easily between Navigator and all sections of Microfin.

The Navigator sheet contains GO TO buttons that will take you directly to the section of Microfin where you can complete or review data.

These GO TO buttons are disabled during this demonstration, but you can use the button below to simulate what would happen when you click the button next to the row labeled "Institutional Information."

Try the button now.

Return to Navigator  Go to Institutional Info
The fifth window in the wizard describes the NAVIGATOR’s error alert feature, which displays a red “ERROR” message in the line closest to the error. Microfin displays the total number of errors in red, at the top and right of the sheet.

**Microfin Navigator Introduction Step 5 of 6**

**Error Alerts**

Microfin will notify you of a number of significant errors, such as incomplete information, amounts which are out of balance, or inadequate funding.

These errors will be highlighted by a red ERROR indicator in the left-hand column of Navigator. The total number of errors will be displayed on the right side of the top row of Navigator (to the right of the Year 5 column).

To fix errors, you will need to click on the GO TO button to move to the relevant section of Microfin where you can review and correct the error. You may want to use the on-line help to learn more about how to correct any particular section.

The final window exits the wizard and returns you to the NAVIGATOR sheet.

**Microfin Navigator Introduction Step 6 of 6**

**End of introduction to Navigator**

This completes our presentation of the main features of the Navigator tool. You can now begin to use the tool to work through the model.

Note that more lines will become visible on the Navigator pane as you complete sections elsewhere in the model. As elsewhere in Microfin, unused lines are hidden from view to make Microfin easier to use.

You can click the FINISH button now to exit the Navigator Wizard.

**Procedure to develop financial projections using NAVIGATOR:**

By following the optional NAVIGATOR-based procedure outlined below, you create your financial projections using in the same sequence as outlined in “Overview of Microfin’s Planning Framework” on page 25.

1. Open a new Microfin model and complete the entries on the SETUP WIZARD.
2. Choose the NAVIGATOR option on the Microfin toolbar.
3. From the NAVIGATOR sheet, choose the L 3 button on the pagebar in order to display all of the detailed information on this sheet.

4. Choose the first Go To button on the sheet [line 2.02, Consolidated or Multi-Branch Approach]. The button takes you to the section of the Microfin sheet that contains the indicated data entry cells—in this instance, the Modeling of Individual Branches section of the Model Setup sheet. This section includes a subsection entitled Consolidated or Multi-Branch Approach—the same text as appears on the NAVIGATOR sheet.

5. Enter all of the data in the section of the sheet with a title that matches the text on the NAVIGATOR line from which you came.

6. Choose the NAVIGATOR option on the Microfin toolbar to return to the NAVIGATOR sheet.

7. Continue through all of the lines on the NAVIGATOR sheet, entering data on the related sheets in the model.

8. When you have finished all of your entries, review the NAVIGATOR sheet, noting any Not Done indicators and any highlighted errors in your data.

**General Guidelines for Entering Data**

When you enter data into Microfin, you should observe the following general guidelines:

- **Always input monthly data, even into quarterly columns (except for interest rates and inflation rates which are always annualized).**

  While Microfin projects data for five years, it switches from monthly to quarterly projections after the second year. To avoid confusion, and to reduce the risk of input errors resulting from this transition, the model maintains a consistent, monthly basis for data input across the entire five-year period. For the final three years, Microfin automatically converts the monthly data you enter into quarterly values.

  If at any point you think you may have entered quarterly data in error, review Microfin’s graphs for significant shifts in month 25 and subsequent periods.

- **Never use the Space key to empty a cell.**

  Excel interprets a Space keystroke in a cell differently from a zero or an empty cell. To the extent possible, Microfin prohibits you from entering a Space into a data entry cell.

  If you enter a Space in Microfin, you may see a #VALUE! error message in certain mathematical formulas; Excel cannot perform the calculation. In this case, review the details of the formula and trace the variables to eliminate the space. Because Space entries do not show up on the screen, use the # columns on the left of each line to determine whether you have made such entries in any of the optional, gray data entry cells.
• Never use Excel’s Move or Cut and Paste functions.
  Although your Microfin workbook is protected, these commands can overwrite
  essential formulas and introduce inaccuracies. Microfin blocks their use, along
  with Excel’s drag-and-drop feature.

• Never use Excel’s COPY function when copying data between blue and
  gray cells.
  Excel’s COPY and PASTE commands can overwrite the background color of
  cells, using the original formatting of the cells from which you copy. To
  prevent this problem, Microfin provides CTRL + P, (i.e., an Edit / Paste Special
  / Formula command) to paste the formula or value of a highlighted cell without
  affecting the cell’s formatting.

Color Coding for Data Input Cells (Required Versus Optional Data)

Microfin allows you to model your institution’s operations at either of two levels of
detail: You can input only the minimal data required for generating the projections,
or you can introduce more precision by entering additional, optional data.

Microfin uses color schemes to define the data entry for each of these levels.¹⁴

• Bright blue cells represent essential data input. The model functions well if you
  enter only this required information. However, you must enter a value in every
  blue cell to ensure that you generate adequate and complete calculations—even
  if the number you enter is a zero (0).

  Generally, the value in a blue cell provides an initial assumption or a beginning
  balance for your projections. Microfin uses this initial value for all future
  periods, unless you specifically override it by entering a different value in an
  optional input cell.

• Gray cells represent optional data input.

  Optional cells provide tremendous flexibility and precision for modeling your
  institution’s operations. For example, you can use them to model changes in
  your initial assumptions over time. To minimize data entry, only enter an
  optional value for a period where the input value differs from the previous
  period. Do not enter an optional value if the value is the same as for the
  previous period; Microfin automatically assumes that the value is the same as
  for the previous period.

---

¹⁴ These colors may vary on some systems, depending on your computer hardware and version of
  Excel. However, the required-input cells should always appear darker than the optional-input cells.
If you enter values in the optional input cells, Microfin displays a count of your entries. This count displays in the # column that appears to the left of your entries, and on the same line (see above). Since many of your optional entries scroll off the right edge of the screen, this count highlights those places where you have entered optional data.

**Data Verification Sections**

To avoid any possibility of confusion regarding the values that Microfin uses in its calculations, Microfin displays the full set of data entry values for *every* period. It does so immediately below each data input section, in a block of cells generally entitled **DATA USED IN CALCULATIONS**.

To generate or update this information, recalculate your model using the **RECALC** button or F9.

**Initial Balance Cells**

Certain blue input cells display in Microfin’s **INITIAL BALANCE** column; others display in the **MONTH 1** column. Microfin uses the **INITIAL BALANCE** column when it requires data from the previous fiscal period for its calculations. For example, Microfin needs the historical interest rate applicable to the initial loan portfolio, because the interest rate may change in **MONTH 1**.

In other cases, Microfin does not need historical information for its calculations. In such cases, you enter the data in the **MONTH 1** column.
It may not always be readily apparent to you why blue input cells appear in one column rather than the other. Take care to ensure that you enter your information correctly.

**Percentage Entries**

In certain sections of the model, you can enter either a percentage or an amount into the same cell.

<table>
<thead>
<tr>
<th>Liquidy margin for portfolio</th>
<th>0.25</th>
<th>20,000.00</th>
</tr>
</thead>
<tbody>
<tr>
<td>User input</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

To enter:

- a **positive amount**, use a value that is greater than or equal to 1.00
- a **negative amount**, use a value that is less than or equal to -1.00
- a **positive or negative percentage**, use a value that is between –1.00 and 1.00, exclusive

If you enter a number that is greater than 1.00 into one of these cells, Microfin will ask that you confirm your entry.

**Formula Entries**

In addition to numerical values, you can enter formulas into Microfin’s required (blue) and optional (gray) data entry cells.

By using formulas, Microfin can perform basic calculations for you. For example, assume your historical records provide you with quarterly totals, and you need to enter monthly totals into Microfin. Rather than using a calculator to divide the quarterly amount of 21,309.87 by three in order to calculate a monthly amount, you can enter “=21309.87/3” directly into the data entry cell. Microfin displays the result of the division in the cell.

You can also use formulas to base your data input on relatively complex calculations or data relationships. For example, you may want to enter a formula in a data entry cell that allows you to use the results of a calculation that you created on Microfin’s USER-DEFINED sheet. For additional information refer to “Using the USER-DEFINED Sheet to Add Features or Supplement Calculations” on page 449.
Automatically Generated Data Entry

Throughout the model, you will find information that Microfin automatically calculates and/or displays, based on the data you have input. Before Microfin can calculate or display this information, or generate graphs, you must have recalculated your model using the F9 key or the RECALC button on the Microfin toolbar.

To avoid unnecessary repetition in the various procedural sections of the manual, it is understood that you will routinely recalculate your model as you enter data in each section of each sheet.

Microfin Help

Microfin includes an online help facility that you can access directly from the Microfin toolbar or, optionally, through either tutorial help or pop-up help facilities. The latter options are discussed in more detail in the sections that follow.

Your installation program (disk or internet download) includes an English version of Microfin’s online help text, with a file name of “microfin help, english.hlp.”15 To function properly, your help text file must be located in one of the following:

- the Support folder, located by default inside the folder where you originally installed the read-only Microfin template
- the folder that contains your open Microfin model

If you do not have a copy of the Microfin help file available to you, you can download the file from the Microfin web site at www.microfin.com.

Online Help Facility

Microfin’s online help facility contains most of the information in this handbook, and provides content for the tutorial help option.

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15 Additional language versions of the Help text will be made available as the translations are completed. Check the microfin web site (www.microfin.com) for availability.
You can access the online help facility by choosing the HELP option from the Microfin toolbar. When you choose HELP, the facility automatically presents the context-sensitive information that is most relevant, based on the position of your cursor on the Microfin screen. If there is no help information that is relevant to your present position in Microfin, the help facility displays its contents screen.

Microfin displays the help information in your preferred (current) language, if you have installed the related help file for this language. If you have not installed a help file in this language, or if your current language is user-defined, Microfin displays information from the English help file. If you have not installed any help file, Microfin informs you that there is no help file available.

Once accessed, the top of the help facility screen includes a number of options that allow you to navigate through the help file.
Using these options, you can:

- review a contents listing of the information in the help file
- search for information on a specific topic
- print the contents of any selected help screen
- view a graphic of the business planning framework, from which you can navigate to related help topics
- review a detailed keyword index of the information in the help file
- review a history of previously viewed help topics for the current Microfin session
- exit the help facility
- use the arrow buttons to navigate to the next or the previous help screen

**Tutorial Help Text**

If this function is enabled, Microfin’s tutorial help automatically displays a separate window with relevant information every time you move to a new sheet or a new section within the current sheet. For example, if you advance to the LIQUIDITY REQUIREMENTS section of the FIN SOURCES sheet, the tutorial help will display a window of information entitled “Set Liquidity Requirements,” similar to the one illustrated on the right below.

![Figure 10.7: LIQUIDITY REQUIREMENTS Section, FIN SOURCES Sheet](image)

### Setting Liquidity Requirements

The liquidity requirements section establishes maximum liquidity thresholds for both portfolio activity and operational expenses. Microfin uses this information in the **LIQUIDITY ANALYSIS** section of the report sheet.

### Market Rate Funds

- **Interest Rate**
- ** Borrowed Funds**
- **Unrestricted Loans**
- **Restricted Loans**
- **Portfolio Loans**

Microfin projects cash balances as of the end of each month. However, keep in mind that it is not sufficient to simply anticipate positive balances at month-end. You must provide adequate liquidity throughout the month to account for unanticipated differences in the timing of cash inflows and outflows. Such liquidity planning ensures that your loan disbursements and payroll are not delayed due to insufficient available funds.

Microfin establishes separate liquidity requirements for portfolio and for operations.

- You can define liquidity requirements for the portfolio as a percentage of monthly loan disbursements or of total portfolio, or as a fixed amount.

You can turn on/off the tutorial help option from either the SETUP WIZARD or the OPTIONS menu on the Microfin toolbar.
Pop-up Help Text

Microfin’s pop-up help displays a small window of information to describe the contents of any cell you choose with your cursor. When you move your cursor, the pop-up window automatically closes.

In order to avoid covering essential data on the screen, and on a sheet-by-sheet basis, you can drag the position of this help window to any desired location. The pop-up box will remain in the new location for all cells on the sheet, unless you specifically change it.

You can turn the pop-up help option on/off from either the SETUP WIZARD or the OPTIONS menu on the Microfin toolbar.

Performance Issues

There are three possible reasons for slow performance.

If your computer continually accesses the hard drive, this indicates that there is inadequate RAM installed or that other applications are running, using the available RAM. Exit all other applications. If the problem persists, add more RAM to your system. For additional information on Microfin’s RAM requirements, refer to “Figure 3.1 Minimum RAM Requirements” on page 88.

A third possibility is that auto-recalculation is enabled, so that Microfin is recalculating the entire spreadsheet with every new input. You can change the recalculation method using OPTIONS / RECALCULATION METHOD from the Microfin toolbar.

Limitations

Any financial model is potentially limited in its ability to accurately project results:

- There is no way to know in advance exactly how external and internal factors will affect an institution over time.
- No model can take into account all relevant factors.
- A tradeoff exists between comprehensiveness and ease of use: The more variables a model considers, the more accurate its results are, but data input and updates to the model are more complicated.
Projections always involve a margin of error and an element of uncertainty. Financial projections—particularly those beyond a horizon of one to two years—are more informed estimates to guide planning than they are scenarios likely to unfold exactly as predicted. To help you identify the factors that you should monitor most closely, you can perform a sensitivity analysis. A sensitivity analysis helps to determine the variables that are most important to your success. For additional information on sensitivity analysis, refer to “Using the SCENARIOS Sheet (Scenario Manager) for Sensitivity Analysis” on page 436.

In addition, Microfin does not support the following features and functions:

- quarterly loan payment frequencies
- multiple disbursements for a loan (Microfin assumes that the entire loan is disbursed in a single month.)
- interest calculations when rates change frequently or by substantial amounts
- grace periods for interest payments
- grace periods for principal payments that vary by loan cycle
- compulsory savings requirements defined as fixed amounts (as opposed to percentages)
- monthly variations in compulsory savings rates
- initial, effective loan terms that exceed 24 months

For assistance in working around these limitations, contact support@microfin.com.

Technical Support and Enhancement Requests

If you need help using the model, find bugs, or would like to request that new features be added, you can access Microfin technical support via email (support@microfin.com) or the web (www.microfin.com).
The website—maintained in English and Spanish languages—provides access to technical assistance, software downloads, and Microfin FAQs and other written resources.

It also includes a “What’s New” section, as well as links to training courses, Microfin’s discussion listserve and related websites.
Installing Microfin
Chapter 3
Installing Microfin

Microfin is distributed free-of-charge to microfinance organizations worldwide. You can install it on any computer in your organization and provide copies of Microfin to colleagues, as long as you observe the terms of the user license.

User License

Microfin presents the details of the user license during installation. In general, the Microfin license allows you to:

- use Microfin on any computer or network
- modify Microfin for use by others within your own organization
- distribute unaltered copies of Microfin to other organizations
- use Microfin to create and distribute reports and projections, provided that they are clearly labeled as outputs of Microfin and this handbook

You may not:

- resell, rent, lease or otherwise commercially transfer rights to Microfin or this handbook
- remove any proprietary notices from Microfin or this handbook
- permit others to use Microfin or this handbook, except under the terms identified above

Recommended Hardware and Software

Microfin runs under Microsoft Excel, version 97 or later. At a minimum, Microfin requires the following hardware and software:

- a 486 personal computer. However, performance—and, in particular, the recalculation speed—improves dramatically with a Pentium or later computer.

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16 Depending on a number of factors, such as the other programs running on your computer and the size of your model, you may find that Microfin runs unacceptably slowly in this minimum configuration. Adding RAM or using a faster computer will significantly enhance performance.
40 megabytes of random access memory (RAM), for consolidated models.\textsuperscript{17} RAM requirements do vary, however, depending on your operating system, the version of Excel you use and the other programs (such as anti-virus software) that are loaded into your computer’s memory.

- additional RAM if you use choose to model project activity for individual branch offices or regions. As a general guideline, you will need an extra seven megabytes for each additional branch or region.

**Figure 3.1 Minimum RAM Requirements**

<table>
<thead>
<tr>
<th>Model Configuration</th>
<th>Excel 97 or 2000</th>
</tr>
</thead>
<tbody>
<tr>
<td>Consolidated model</td>
<td>40 MB recommended</td>
</tr>
<tr>
<td></td>
<td>32 MB minimum</td>
</tr>
<tr>
<td>Two branch or regional sheets</td>
<td>47 MB</td>
</tr>
<tr>
<td>Three branch or regional sheets</td>
<td>54 MB</td>
</tr>
<tr>
<td>Each additional sheet</td>
<td>7 MB</td>
</tr>
<tr>
<td>Ten branch or regional sheets (maximum capacity)</td>
<td>100 MB</td>
</tr>
</tbody>
</table>

There are several ways to determine your system’s RAM. One simple method is as follows:

1. Right click your mouse on the **My Computer** icon on your desktop.
2. Choose **Properties**.
3. Choose the **General** tab, and look at the bottom right under **Computer**.

Another method is to:

1. Start Excel.
2. Choose **Help**.
3. Choose **About Microsoft Excel**.
4. Choose **System Info** to display a list of technical information regarding your computer, including its total physical memory. If the number displays in kilobytes of memory, and you have more than 24,000, then you have at least 24 MB of RAM.

\textsuperscript{17} Although Microfin may run with 32 MB of RAM, its performance is likely to be unacceptably slow.
Installation Procedure

Microfin is distributed as a self-installing executable file that you must install on your hard drive prior to use.

The installation file is approximately four megabytes (4 MB) in size. After installation, Microfin requires 11 MB of hard disk space, plus approximately 3 MB for the help file.

Procedure to install Microfin:

1. Close all of your Windows programs before you begin the Microfin installation.

2. Choose RUN from your Windows START menu.

Windows displays the following:

```
Run

[icon] Type the name of a program, folder, document, or Internet resource, and Windows will open it for you.

Open: [blank]

[button] OK [button] Cancel [button] Browse...
```
3. Using the BROWSE button, locate the installation file, usually named “microfin install.exe”. (Depending on the configuration of your Windows Explorer program, you may not see the .exe extension.)

This installation file will be located on your computer’s:
- floppy drive, if you are installing from a diskette
- CD drive, if you are installing from a CD
- hard drive in a “microfin” or “downloads” folder, if you downloaded the file from the internet, or if you received it as an email attachment

4. Select OK from the RUN window to start installing Microfin. The installation program displays the following SELECT LANGUAGE window:
5. Select a language—you can view installation information in English, French or Spanish—and choose OK. Microfin displays a WELCOME window.

6. Choose NEXT to display the READ ME FILE window, which provides general background information intended to help you install and use your new software.
7. Choose NEXT to display Microfin's LICENSE AGREEMENT.

To install the software, you must indicate your acceptance of the license terms by choosing the I AGREE button on the bottom of the window. If you do not agree, Microfin terminates the installation process.

8. Choose NEXT to display the CHOOSE DESTINATION LOCATION window. By default, your new Microfin software installs in a “Microfin” folder on your C drive.

Optionally, choose the BROWSE button to identify an alternative folder in which to install the software.
9. Choose NEXT to display the SELECT COMPONENTS window. Use the check boxes on the window to determine the Microfin components that you intend to install. At the bottom of the window, the program indicates the required disk space for the components you selected, as well as the available disk space.

![Select Components Window]

10. Choose NEXT to display the SELECT A PROGRAM MANAGER GROUP window. This determines where Microfin appears in the PROGRAMS list accessed from the Windows START menu.

By default, the installation program creates a new group name (Microfin 3) for the Microfin software. Optionally, enter the name of a new group or use the scroll bar on the window to select an existing group.

![Select Program Manager Group Window]
11. Choose NEXT to display the START INSTALLATION window, then NEXT again to install Microfin on your hard drive.

12. When the installation completes, choose FINISH from the window to exit the installation program. Microfin is now ready for your use.
Recalculation Bug in Excel 97

Excel 97’s original release and Service Release 1 (SR-1) have a serious recalculation bug that can cause Microfin to generate erroneous calculations.

Microsoft has provided a patch (the Excel 97 Auto Recalculation Patch) to correct this bug. If you are using the initial release of Excel 97, you must install the patch to ensure that Microfin functions reliably.

Microfin tests for this condition, and displays the following window if you need to update your software:

If Microfin displays the above warning, you must update your copy of Excel 97 to SR1 (if you haven’t previously installed SR1) and then install this patch. You can find information regarding this patch on the internet at www.microfin.com/excel97.htm.

After you have installed the necessary patches, you need to correctly update your Microfin calculations, as follows:

1. Start Excel.
2. Open the microfin 3.xls file.
3. Hold down both the CTRL and the ALT keys, then hit the F9 key.

Transferring Microfin to Another Computer

You must have the microfin 3.xls file installed on your computer in order to run Microfin. If the new computer already has Microfin installed, you can simply transfer Microfin’s data from your existing computer to the new computer.

If the new computer does not have Microfin installed, you must install the Microfin software.
Transferring Microfin’s Data to Another Computer

If you want to transfer Microfin’s data from your computer to another computer where Microfin is already installed, refer to “Using the EXPORT Sheet to Export or Import the Data in a Microfin Workbook” on page 425.

Transferring Microfin Software to Another Computer

If you want to install Microfin on another computer and you have the original diskettes or a CD-ROM, you can install Microfin as described in “Installation Procedure” earlier in this chapter.

If you do not have the original installation diskettes or a CD, you can do one of the following:

- Physically transfer Microfin from one computer to another. All you need is the microfin.xls file but, because the file is too large to fit on a single floppy disk, you must use one of the following options:
  - If both computers are equipped with a compatible removable storage device, such as a Zip® drive, use this device to transfer the files.
  - If your computer is networked, store the microfin workbook on a network drive to allow others to access or copy it.
  - If your computer is connected to email and can accept an attachment of at least 3 MB, zip (compress) the Microfin workbook and email the zipped file.
  - Use a cable connection and software such as LapLink® to transfer the files. Your MIS staff should be able to help you with this procedure.
  - Use a compression utility that supports disk spanning to compress the file onto more than one floppy disk for transfer. Winzip (version 7 or greater), supports disk spanning. A number of shareware compression utilities support disk spanning and are available for download from the internet. Consult your MIS staff for additional guidance.
Creating a Microfin Model
Chapter 4
Creating a Microfin Model

Microfin is distributed as a read-only Excel template file (Microfin.xls). You use this template as the basis for creating one or more new Microfin projection models for your institution.

Creating a New Model From the Microfin Template File

To create a new Microfin model, double-click on the Microfin template file (microfin 3.xls) from within Windows Explorer.

Alternatively, you can:

1. Start Excel.
2. Choose the OPEN command from the FILE drop-down menu.
3. Locate the folder containing the template file (microfin 3.xls). Microfin’s installation procedure defaults to a location of c:\microfin.
4. Double-click on the file to open it, or select the file and choose OPEN.

When Microfin starts, it runs through a series of macro procedures to prepare the model for use.

On certain systems, you may see a macro error message, such as “CAN’T FIND PROJECT OR LIBRARY” or “MACRO ERROR: RUN TIME ERROR.” This type of macro error can result if your copy of the Excel software was not properly installed. If you encounter such an error message, choose the END button. At this point, Microfin may not be usable, depending on where in the process of opening Microfin the error occurred. If you have difficulties opening or using your copy of Microfin, reinstall Excel from the original disks or try using Microfin on another computer.
Excel will generally request that you enable macros when you open the Microfin workbook.

If you are using Excel 97, Excel displays the following window:

[Image of Excel window]

If you are using Excel 2000 or greater, Excel instead displays the following digital certificate:

[Image of digital certificate]

If the digital certificate identifies the source of the macros as “MicroFinance Information Solutions,” you can enable the macros; they have not been tampered with or otherwise infected.

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18 This step varies depending on the version of Excel you are using and on your security settings. For example, if you are using Excel 2000, and your macro security is set to “High” (in TOOLS / MACROS / SECURITY), Windows automatically disables most macros. You may need to change the macro security option to “Medium” or lower to enable these macros.
Regardless of the version of Excel that you are using, you must enable macros for Microfin to function. If you do not enable macros, you will see the following message:

Customizing the Model’s Operations Using the Setup Wizard

Microfin’s Setup Wizard automatically opens each time you create a new model from the Microfin template file (Microfin 3.xls).

You can also manually start the wizard by using the Setup Wizard button on the Intro pagebar or by using Run a Microfin Wizard / Run the Setup Wizard from the Options menu on the Microfin toolbar.

The wizard presents a series of windows with options to customize the content and operations of your new model. Use of the wizard is optional; you can access each of these options directly from within Microfin, if you so choose.

Procedure to run the Setup Wizard:

1. Choose the Language (English, Spanish, French or User-defined) that you prefer to use when working with Microfin. You can create your own user-defined language or download an existing translation from the Microfin website (www.microfin.com).
Refer to “Using the TRANSLATIONS Sheet to Create a User-defined Language” on page 468 for instructions on how to develop your own language translation(s).

After you make your selections on each window, choose:
- NEXT to advance to the following window
- PREVIOUS to return to the prior window
- CANCEL to end your use of the SETUP WIZARD without saving your entries
- FINISH (on the final window) to complete your use of the wizard and enter Microfin

2. Briefly review the information on the WELCOME TO THE MICROFIN SETUP WIZARD window for an explanation of the SETUP WIZARD. Choose LEAVE THE WIZARD to exit or CONTINUE WITH THE WIZARD to complete your entries.
3. Choose whether you wish to use Microfin’s optional POP-UP HELP facility. Pop-up help displays a small window of context-sensitive information for each selected input cell in the model.

4. If you choose to use the pop-up help, Microfin displays a message window after the facility has been enabled.

5. Choose whether you wish to use Microfin’s optional TUTORIAL HELP facility. Tutorial help automatically displays a screen of relevant information from the Microfin help file whenever you advance to a new section of the model.
6. If you choose to use the tutorial help, Microfin displays a message window after the facility has been enabled.

7. Choose a RECALCULATION METHOD to determine the frequency with which Microfin updates derived values throughout the model.
Your options are as follows:

- **Manual**—updates values when you choose F9 or the RECALC (F9) option on the Microfin toolbar. This is the default.

  This is the recommended choice for most computers. It minimizes the number of times the model’s values are updated and, therefore, provides the fastest performance and most efficient data entry process.

- **When Changing Sheets**—updates values each time you move from one sheet within the model to another.

- **Automatic**—updates values each time you enter or edit an item of information in the model.

8. Select from among the various **DISPLAY OPTIONS** to customize the display of your Microfin model.

- **Show Excel’s Formula Bar**: This will show you the contents of formulas in various cells, but will take up a row of screen space. Recommendation: Turn on when you want to study formulas, via the OPTIONS menu on the Microfin toolbar.

- **Gridlines**: Display or hide the thin gridlines on each page. The gridlines are helpful for identifying the proper row and column of each cell, but may be considered unnecessary.

- **Row and Column Indicators**: Display or hide the row and column indicators used by Excel. You should display these if you are trying to trace formulas using the Formula Bar.

- **Use Short Toolbars**: If you have a screen resolution of 800 x 600, you may find that not all the toolbar buttons fit on the screen. Select this option to use shorter descriptions to ensure that everything fits.

- Check the **SHOW EXCEL’S FORMULA BAR** box to display the formula bar at the top of each Microfin sheet. The formula bar discloses the calculation formula for any selected cell.

  \[
  G75 = \text{IF(ISNUMBER(G74), G74, F75)}
  \]

- Check the **GRIDLINES** box to activate Excel’s horizontal and vertical gridlines on each Microfin sheet.

- Check the **ROW AND COLUMN INDICATORS** box to display Excel’s row numbers and alphabetic column identifiers.

- Check the **USE SHORT TOOLBARS** box if your screen resolution is 800 x 600 (SVGA) to ensure that all of the buttons on Microfin’s pagebars fit on your screen.
9. Use the **Miscellaneous Tools** window to determine which of Microfin’s optional tools you wish to include in your model. You can change any of these selections later by using the **Options** menu on the Microfin toolbar.

**Microfin Setup Wizard Step 7 of 9**

**Miscellaneous Tools**

Show the following option tools (these can be selected at any time using the **Options** menu on the Microfin Toolbar):

- **SCENARIO MANAGER SHEET**
- **COST TO CLIENT SHEET**
- **OTHER PROGRAMS SHEET**
- **VARIANCE ANALYSIS SHEET**
- **CASELOAD SHEET**
- **RETENTION RATE ANALYSIS SHEET**

- Check the **SCENARIO MANAGER SHEET** box to add the **SCENARIOS** tab to the display at the bottom of the Microfin window and unhide the **SCENARIO MANAGER** sheet in the model.
- Check the **OTHER PROGRAMS SHEET** to add the **OTHER PROGS** tab to the display at the bottom of the Microfin window and unhide the **OTHER PROGRAMS** sheet in the model.
- Check the **CASELOAD = SHEET** box to add the **CASELOAD** tab to the display at the bottom of the Microfin window and unhide the **CASELOAD CALCULATION** sheet in the model.
- Check the **COST TO CLIENT SHEET** to add the **CLIENT COST and REP SCHEDULE** tabs to the display at the bottom of the Microfin window. This also unhides the **EFFECTIVE INTEREST RATE AND COST TO CLIENT ANALYSIS** and the **REPAYMENT SCHEDULE** sheets in the model.
- Check the **VARIANCE ANALYSIS SHEET** to add the **VAR ANALYSIS** tab to the display at the bottom of the Microfin window and unhide the **VARIANCE ANALYSIS** sheet in the model.
- Check the **RETENTION RATE ANALYSIS SHEET** to add the **RETENTION** tab to the display at the bottom of the Microfin window and unhide the **RETENTION RATE ANALYSIS** sheet in the model.
10. Enter the name of your institution on the final window. The information you enter here will appear throughout the model and on all Microfin printouts.

11. Check the box on the SHOW THE GETTING STARTED GUIDE window to display the GETTING STARTED information from the online help file, after the SETUP WIZARD completes. This information introduces elements of Microfin and assists you as you begin to create your new projections.
12. Choose the FINISH button to exit the SETUP WIZARD.

13. Microfin displays a number of small pop-up windows with information based on your selections. After the pop-up windows complete, Microfin displays either the INTRO sheet or the GETTING STARTED information from the help file, depending on your previous entries.

The INTRO sheet displays background information on your model, such as the name of your institution and the time period for your financial projections.

The INTRO sheet also includes a pagebar with the following buttons:

- **GETTING STARTED**—displays information from Microfin’s help file to introduce elements of Microfin and assist you as you begin to create your new projections.
- **SETUP WIZARD**—runs Microfin’s SETUP wizard.
- **VIEW LICENSING TERMS**—displays the text of Microfin’s user license.
- **LIST CHANGES BY VERSION**—lists the enhancements to Microfin, sorted by version number.

The GETTING STARTED sheet displays information from the help file to new users as they begin to use Microfin.
4 — Creating a Microfin Model

Saving the New Microfin Model

Because the original Microfin software opens as a read-only template, you must save your new model as an Excel file (such as FEDA-2000.xls). By doing so, you preserve the original Microfin file as a template or for use in developing other sets of projections.

Procedure to save your new model:

1. Choose SAVE AS from Excel’s FILE drop-down menu.
2. You will be asked to enter a FILE NAME for your new model, and to indicate the folder in which it will be saved. After you complete your entries, choose SAVE.
Opening a Previously Saved Microfin Model

After you have saved your new model, you can open it later by double-clicking on the file name (e.g., FEDA-2000.xls) from within Windows Explorer.

Alternatively, you can:

1. Start Excel.
2. Choose the OPEN command from the FILE drop-down menu.
3. Locate the folder containing your Microfin file.
4. Double-click on the file to open it, or select the file and choose OPEN.

Upgrading a Model Developed in an Older Microfin Version

If you have an existing model that you developed in an older version of Microfin and you wish to use the data in Microfin 3, you must first create a new, blank model using Microfin 3 and then re-enter the data.

As an alternative to re-entering the data manually, you can use the facilities on the EXPORT sheet to export data from the older Microfin model into a small data file.\(^1\) You can then import the data from this data file into a blank newer-version Microfin model. For additional information, refer to “Using the EXPORT Sheet to Export or Import the Data in a Microfin Workbook” on page 425.

You cannot use this facility to transfer data from a newer version to an older version. Also, you cannot use Microfin’s TRANSFER.XLS utility to upgrade an older model to the new format.\(^2\)

Using the MODEL SETUP Sheet to Establish a New Model

The MODEL SETUP sheet (figure 4.1) establishes the basis for your financial model, including the name of your institution, time period and various modeling options. The sheet maintains the historical financial and ratio data that Microfin requires for calculations and trend analyses. It also displays the Microfin version number at the top right of the sheet.

---

\(^1\) The export facility is available in Microfin versions 2.9 or greater.

\(^2\) The transfer utility is available for Microfin versions 2.1 through 2.18.
MODEL SETUP consists of the following sections:

- CLEAR ALL DATA FROM THE MODEL [line 1.01]
- MODELING OF INDIVIDUAL BRANCHES [lines 2.01 – 2.28]
- LOAN PRODUCT PROJECTIONS APPROACH [lines 3.01 – 3.06]
- INSTITUTIONAL INFORMATION [lines 4.01 – 4.07]
- INFLATION AND INDEXING DATA [lines 5.01 – 5.22]
- HISTORICAL FINANCIAL STATEMENTS [lines 6.01 – 6.103]
- FINANCIAL RATIO ANALYSIS [lines 7.01 – 7.71]

You can navigate to any desired section of the sheet using the items on the pagebar.

Figure 4.1a MODEL SETUP Sheet (1 of 4)
### Historical Financial Statements from Previous Two Fiscal Years

<table>
<thead>
<tr>
<th></th>
<th>FY09</th>
<th>FY10</th>
</tr>
</thead>
<tbody>
<tr>
<td>Revenue</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Expenses</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Profit</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Financial Statements

<table>
<thead>
<tr>
<th>Description</th>
<th>FY09</th>
<th>FY10</th>
</tr>
</thead>
<tbody>
<tr>
<td>Revenue</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Expenses</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Profit</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Notes

- The data is used only for calculating the ratios below.
- It is not used elsewhere in the model.
### Figure 4.1c Model Setup Sheet (3 of 4)

#### Balance Sheet

<table>
<thead>
<tr>
<th></th>
<th>FY18</th>
<th>FY19</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ASSETS</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Current</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cash in Bank and Loan office</td>
<td>54,000</td>
<td>54,000</td>
</tr>
<tr>
<td>Gross Portfolio Outstandings</td>
<td>320,000</td>
<td>320,000</td>
</tr>
<tr>
<td>(Loan Loss Reserve)</td>
<td>16,000</td>
<td>16,000</td>
</tr>
<tr>
<td>Net Portfolio Outstandings</td>
<td>304,000</td>
<td>304,000</td>
</tr>
<tr>
<td>Short-term Investments</td>
<td>52,000</td>
<td>52,000</td>
</tr>
<tr>
<td>Savings reserves</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Other Current Assets</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td><strong>Sub-total, Current Assets</strong></td>
<td>546,000</td>
<td>546,000</td>
</tr>
<tr>
<td><strong>Fixed Assets</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Land</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Buildings (gross)</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Furniture and Equipment (gross)</td>
<td>24,000</td>
<td>24,000</td>
</tr>
<tr>
<td>(Accumulated Depreciation)</td>
<td>16,000</td>
<td>16,000</td>
</tr>
<tr>
<td><strong>Net Fixed Assets</strong></td>
<td>18,000</td>
<td>18,000</td>
</tr>
<tr>
<td><strong>Other Long-term Assets</strong></td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td><strong>Long-term Investments</strong></td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td><strong>Other long-term assets (net)</strong></td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td><strong>Sub-total, Long-term Assets</strong></td>
<td>18,000</td>
<td>18,000</td>
</tr>
<tr>
<td><strong>TOTAL ASSETS</strong></td>
<td>564,000</td>
<td>564,000</td>
</tr>
</tbody>
</table>

#### Liabilities

<table>
<thead>
<tr>
<th></th>
<th>FY18</th>
<th>FY19</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>CURRENT LIABILITIES</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Accounts Payable</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td><strong>Short-term Loans</strong></td>
<td>108,000</td>
<td>108,000</td>
</tr>
<tr>
<td><strong>Other Current Liabilities</strong></td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td><strong>Sub-total, Current Liabilities</strong></td>
<td>108,000</td>
<td>108,000</td>
</tr>
<tr>
<td><strong>LONG-TERM LIABILITIES</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Long-term Liabilities</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td><strong>Sub-total, Long-term Liabilities</strong></td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td><strong>TOTAL LIABILITIES</strong></td>
<td>108,000</td>
<td>108,000</td>
</tr>
</tbody>
</table>

#### Equity

<table>
<thead>
<tr>
<th></th>
<th>FY18</th>
<th>FY19</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accum. Donated equity</td>
<td>257,000</td>
<td>257,000</td>
</tr>
<tr>
<td>Donated equity, current period</td>
<td>43,000</td>
<td>43,000</td>
</tr>
<tr>
<td>Shareholder equity</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Dividends paid</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td><strong>Sub-total Equity</strong></td>
<td>297,000</td>
<td>297,000</td>
</tr>
<tr>
<td><strong>Total Equity</strong></td>
<td>297,000</td>
<td>297,000</td>
</tr>
</tbody>
</table>

#### Total Liabilities and Equity

<table>
<thead>
<tr>
<th></th>
<th>FY18</th>
<th>FY19</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>564,000</td>
<td>564,000</td>
</tr>
<tr>
<td></td>
<td>108,000</td>
<td>108,000</td>
</tr>
<tr>
<td></td>
<td>297,000</td>
<td>297,000</td>
</tr>
<tr>
<td><strong>Total Liabilities and Equity</strong></td>
<td>579,000</td>
<td>579,000</td>
</tr>
</tbody>
</table>

#### Portfolio Information

<table>
<thead>
<tr>
<th></th>
<th>FY18</th>
<th>FY19</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of active loans (exclusive)</td>
<td>54,000</td>
<td>54,000</td>
</tr>
<tr>
<td>Number of days for risk calculations</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Number of clients for whom loans were extended</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Number of months for which risk was calculated</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Number of loans with 30 days delinquency</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Number of loans with 60 days delinquency</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Number of loans with 90 days delinquency</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Average loan loss rate</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>
### Figure 4.1d Model Setup Sheet (4 of 4)

#### Financial Ratio Analysis

<table>
<thead>
<tr>
<th>Ratio Type</th>
<th>FY18</th>
<th>FY19</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gross Return on Average Total Assets</td>
<td>30.7%</td>
<td>0.7%</td>
</tr>
<tr>
<td>Gross Financial Margin</td>
<td>26.1%</td>
<td>6.6%</td>
</tr>
<tr>
<td>Cash Flow Margin</td>
<td>3.15%</td>
<td>0.0%</td>
</tr>
<tr>
<td>Net Financial Margin</td>
<td>21.4%</td>
<td>6.6%</td>
</tr>
<tr>
<td>Credit Cost Ratio</td>
<td>23.3%</td>
<td>0.0%</td>
</tr>
<tr>
<td>Loan Loss Reserve Ratio</td>
<td>0.15%</td>
<td>0.0%</td>
</tr>
<tr>
<td>Operating Expenses Ratio</td>
<td>6.4%</td>
<td>0.0%</td>
</tr>
<tr>
<td>Net Margin, after tax (ROA)</td>
<td>-4.0%</td>
<td>6.6%</td>
</tr>
<tr>
<td>Adjustments to Operating Margin</td>
<td>-4.0%</td>
<td>6.6%</td>
</tr>
<tr>
<td>Equity Multiplier</td>
<td>2.1</td>
<td>2.2</td>
</tr>
<tr>
<td>Liquidity Ratio</td>
<td>5.1</td>
<td>26.1</td>
</tr>
<tr>
<td>Efficiency and Productivity</td>
<td>36.6%</td>
<td>0.0%</td>
</tr>
<tr>
<td>Operating Costs (Avg Portfolio)</td>
<td>27.9%</td>
<td>0.0%</td>
</tr>
<tr>
<td>Loan cost per Loan Officer</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>Loan Portfolio per Loan Officer</td>
<td>40,333</td>
<td>0.0</td>
</tr>
<tr>
<td>Average cost of debt</td>
<td>7.4%</td>
<td>0.0%</td>
</tr>
<tr>
<td>Overhead percentage</td>
<td>37.6%</td>
<td>37.6%</td>
</tr>
<tr>
<td>Loan Officer as percent of total staff</td>
<td>0.0%</td>
<td>0.0%</td>
</tr>
<tr>
<td>Portfolio Quality Ratios</td>
<td>3.5%</td>
<td>3.5%</td>
</tr>
<tr>
<td>Portfolio at Risk &gt; 30 days</td>
<td>2.5%</td>
<td>0.0%</td>
</tr>
<tr>
<td>Loan Portfolio at Risk &gt; 30 days</td>
<td>2.5%</td>
<td>0.0%</td>
</tr>
<tr>
<td>Loan Loss Reserve</td>
<td>4.0%</td>
<td>3.8%</td>
</tr>
<tr>
<td>Percentage growth in revenue</td>
<td>20.0%</td>
<td>0.0%</td>
</tr>
</tbody>
</table>

#### Notes:
- All ratios are generated for the year ending FY19.
- The right-hand column in each row is filled in, a second year of ratios will be generated for trend analysis.

---

**Comments**
Procedure to complete the Model Setup sheet:

1. Optionally, if your model already has data entered in it and you want to delete this information, choose the CLEAR ALL DATA FROM MODEL button to initialize your model. [page 115]

2. Choose a MODELING approach: CONSOLIDATED, MULTI-BRANCH or MULTI-REGION. [page 116]

3. Choose a LOAN PRODUCT PROJECTIONS APPROACH, used for projecting credit activity each month: TOTAL ACTIVE CLIENTS or NEW CLIENTS. [page 121]

4. Enter INSTITUTIONAL INFORMATION, then choose RECALC (F9) to incorporate the data throughout the model. [page 122]

5. Enter INFLATION and optional INDEXING DATA, recalculate the model and review the calculated values immediately below your entries. [page 124]

6. Enter data from HISTORICAL FINANCIAL STATEMENTS, recalculate the model and review the DATA VALIDATION to ensure the accuracy of your entries. [page 125]

7. Enter PORTFOLIO INFORMATION used to calculate historical ratios. [page 133]

8. Enter additional historical data used to generate Microfin’s FINANCIAL RATIO ANALYSIS, then recalculate the model to generate the ratios and review the results. [page 133]

Each of these steps is described in the sections that follow.

Clearing the Model (Optional)

At your option, you can initialize (i.e., delete) all of the data in an existing Microfin model. You only use this option if your current model is one into which you have previously entered data. If you used the Microfin template file (microfin 3.xls) to create this model, your model is already blank.

To initialize your model, open it and choose the MODEL SETUP sheet. Then choose the button entitled CLICK THIS BUTTON ONLY TO ERASE ALL DATA FROM THIS MODEL [line 1.01].
Choosing an Approach for the Projections (Consolidated, Branch or Region)

Microfin is capable of modeling your operations on a consolidated, branch or regional basis. You choose an approach using the drop-down list entitled CONSOLIDATED OR MULTI-BRANCH APPROACH [line 2.08], located in the MODELING OF INDIVIDUAL BRANCHES section of the MODEL SETUP sheet.

Each of these approaches is described in detail in the material that follows.

**Figure 4.2a Modeling of Individual Branches Section, Model Setup Sheet (Consolidated Models)**

<table>
<thead>
<tr>
<th>Modeling of individual branches</th>
<th>2.01</th>
</tr>
</thead>
<tbody>
<tr>
<td>Explanation:</td>
<td></td>
</tr>
</tbody>
</table>

Microfin can be set up to allow modeling of individual branches using separate sheets of the model. However, doing so requires large amounts of RAM and may take more time to complete the projections. Choosing to model all activity on a single worksheet (consolidated model) reduces this burden and changes references from "Branch/Head Office" to "Region/Head office". See handbook or Help for additional explanation.

NOTE: It is STRONGLY recommended that you always do your first projections in CONSOLIDATED mode.
You may switch to Branch/Region mode later with no loss of data.

**Figure 4.2b Modeling of Individual Branches Section, Model Setup Sheet (Branch or Regional Models)**

<table>
<thead>
<tr>
<th>Modeling of individual branches</th>
<th>2.01</th>
</tr>
</thead>
<tbody>
<tr>
<td>Explanation:</td>
<td></td>
</tr>
</tbody>
</table>

Microfin can be set up to allow modeling of individual branches using separate sheets of the model. However, doing so requires large amounts of RAM and may take more time to complete the projections. Choosing to model all activity on a single worksheet (consolidated model) reduces this burden and changes references from "Branch/Head Office" to "Region/Head office". See handbook or Help for additional explanation.

NOTE: It is STRONGLY recommended that you always do your first projections in CONSOLIDATED mode.
You may switch to Branch/Region mode later with no loss of data.

![Model Setup Sheet](image)

Excel and any open workbooks are currently using the following amount of RAM memory: 17,180,000.

In addition, the Windows operating system and other open software applications occupy additional memory.

<table>
<thead>
<tr>
<th>Add New Branch/Region Page</th>
<th>Delete Last Branch/Region Page</th>
</tr>
</thead>
</table>

The default option in the drop-down list is for consolidated modeling.
Based on the approach you choose, the name or content of various sheets within the model may change.

- If you choose a branch-level approach, the name of the PROGRAM sheet changes to BRANCH 1.
- If you choose a regional approach for your model, the name of the PROGRAM sheet changes to REGION 1.
- If you choose either the branch or regional approach, the name of the ADMIN sheet changes to HEAD OFFICE.
- If you choose a branch or regional approach for your model, you will see additional buttons and data entry fields on the MODEL SETUP sheet.

Choose the ADD NEW BRANCH/REGION PAGE button [line 2.14] to add another branch sheet or region sheet to your model (up to a maximum of ten branches or regions).

By default, a new branch sheet is named BRANCH # (where # represents a number between two and ten). Likewise, a new region is named REGION # (where # represents a number between two and ten).

When you add a new branch or region sheet, Microfin copies the BRANCH 1 (or REGION 1) sheet in its entirety to the new sheet, including any information that you may have already input on the BRANCH 1 or REGION 1 sheet.

- Choose the DELETE LAST BRANCH/REGION ADDED button [line 2.14] to delete the most recently added branch (or region) sheet from your model.
- To assign your own names to Microfin’s branch or region sheets, enter the new names in the optional, gray cells in the NAME USED column, and then choose the RENAME BRANCH/REGION SHEETS button. [line 2.19]
You can change from a consolidated approach to a branch or regional approach at any time, although you will have to revise portions of your existing projections if you do so.

- Before the change, your existing PROGRAM (BRANCH/REGION) sheet contains data for your entire institution. After the change, allocate this same data among your various branches or regions using separate PROGRAM (BRANCH/REGION) sheets for each. For additional information on using this sheet, refer to “Using the PROGRAM (BRANCH/REGION) Sheet to Generate Loan and Savings Projections” on page 180 and “Using the PROGRAM (BRANCH/REGION) Sheet to Project Program-related Resources and Capacity” on page 259.

- Establish the allocation methods you wish to use for financial and nonfinancial costs on the INST CAP sheet. Review any automated links that you have established on this same sheet. For additional information on using this sheet, refer to “Using the INST CAP Sheet to Enter General Information for Institutional Resources and Capacity” on page 235.

You cannot change from branch-based or region-based projections to a consolidated model while you have more than one branch or region sheet in the model. You must first delete each additional branch or region sheet using the DELETE LAST BRANCH/REGION ADDED button [line 2.14] on the MODEL SETUP sheet. Each time you choose this button, Microfin deletes the last sheet that you added to your model.

If you revert to a consolidated model, carefully review the post-change data on your PROGRAM (BRANCH/REGION) sheet to ensure that the sheet includes all of the activity for your entire institution.

Your selection of an approach for your model is an important one that requires careful consideration of the advantages and disadvantages of each option. The sections that follow describe these advantages and disadvantages, as well as important differences in Microfin’s operation under each option.

**Consolidated Projections**

Generally, Microfin users find that a consolidated approach provides the most efficient modeling process while still providing sufficiently detailed projections to be of value. This option requires the least amount of data input and the least RAM to operate.
For consolidated models, Microfin projects the program-related activity for all of your operations (all branches in all regions) on a single PROGRAM sheet. Under this option, Microfin also includes an ANNUAL TARGETS BY BRANCH ESTIMATE section on the PROGRAM sheet to help you project loan activity.

**Figure 4.3 Advantages and Disadvantages of the Consolidated Approach**

<table>
<thead>
<tr>
<th>Advantages</th>
<th>Disadvantages</th>
</tr>
</thead>
<tbody>
<tr>
<td>Requires less data input for portfolio projections and for staffing and expenses</td>
<td>Makes it more difficult to project product growth when the activity of multiple branches is aggregated</td>
</tr>
<tr>
<td>Requires less RAM and results in smaller files and faster recalculation time</td>
<td>Makes it more difficult to estimate growth in expenses when new branches are opened</td>
</tr>
<tr>
<td>Useful for basic projections and analyses</td>
<td>Provides no breakdown of loan officer staffing by branch</td>
</tr>
<tr>
<td></td>
<td>Provides no branch-level income statements</td>
</tr>
</tbody>
</table>

**Branch Projections**

Microfin can model up to ten branches on separate sheets. If you choose the branch option, you can enter specific product-level activity, staffing and expenses for each branch. Microfin analyzes each branch as a cost center and generates an income statement for each branch.

Under this option, the PROGRAM sheet becomes BRANCH 1 and Microfin hides the ANNUAL TARGETS BY BRANCH ESTIMATE section on the BRANCH sheets.

Branch-based modeling represents the most precise approach. However, it also significantly expands the size of your model and requires more time to input the detailed data that is required to complete the projections.
Figure 4.4 Advantages and Disadvantages of the Branch or Regional Approach

<table>
<thead>
<tr>
<th>Advantages</th>
<th>Disadvantages</th>
</tr>
</thead>
<tbody>
<tr>
<td>Generates more precise projections of credit and savings activity for each branch or region, complete with branch-level or regional graphs</td>
<td>Requires substantially more time to complete data entry</td>
</tr>
<tr>
<td>Generates staffing levels by branch or region</td>
<td>Requires more RAM (up to seven MB per additional branch or region) and results in larger files and slower recalculation time</td>
</tr>
<tr>
<td>Allows allocation of administrative (or head office) expenses to each branch or region</td>
<td>(For additional information on RAM requirements, refer to “Minimum RAM Requirements” on page 88.)</td>
</tr>
<tr>
<td>Generates branch-level or regional income statements</td>
<td>Makes it more difficult to perform sensitivity analysis (for example, when a variable such as caseload changes, it must be changed for each branch or region)</td>
</tr>
<tr>
<td>Can be used as a tool by each branch or regional manager to generate own plan and projections</td>
<td>Increases risk of data inconsistency (for example, if different salary levels are input for each branch or region)</td>
</tr>
<tr>
<td></td>
<td>Allows no more than ten branch or regional modeling sheets</td>
</tr>
</tbody>
</table>

Regional Projections

If you have more than ten branches, you may prefer the regional option. This option allows you to develop projections for up to ten regional areas, each of which includes a number of branch offices. Microfin aggregates product activity levels, staffing and expenses for all of the branch offices within each region.

Under this option, the PROGRAM sheet becomes REGION 1 and Microfin also includes an ANNUAL TARGETS BY BRANCH ESTIMATE section on the REGION sheets to help you project regional loan activity.

Regional modeling may result in some small loss of precision relative to branch modeling, but the results are still highly reliable. Using this approach, you can hold your regional managers responsible for developing their own regional projections.
General Guidelines for Selecting an Approach

Often, the most practical approach is to develop initial projections using a consolidated approach. If, after you complete your initial planning, you find that you need more detailed projections, you can change the model to use a branch or regional approach. You can then add BRANCH or REGION sheets, and adjust the data on each of these sheets as appropriate.

The following guidelines may help you choose from among the three options:

- If your institution has never generated detailed financial projections before, it is generally best to develop consolidated projections.
- If your institution is developing the model on a computer with limited RAM, you must choose the consolidated approach.
- If your institution has only one loan product and four or fewer branches, you might choose a consolidated approach and define loan products that are specific to each branch (e.g., Branch 1 Product, Branch 2 Product, and so on). This approach provides portfolio and income data by branch. However, it does not disaggregate expenses by branch, so it does not produce branch-level income statements.
- If your institution has more than ten branches or regions—or if it is not feasible to develop projections for each branch due to sheet size, required RAM, and the time required to input data—you might model several of your largest branches on individual BRANCH sheets and aggregate your smaller branches on a single BRANCH sheet.
- If your institution has adequate hardware, your staff has experience in using spreadsheets and sufficient time to complete the projections, and you would like to review detailed branch-level or regional projections, you should select the branch or regional option.

If you choose to develop your model using a branch or regional approach, it is critical that your computer contain adequate RAM. As noted earlier, RAM requirements vary depending on your operating system, the version of Excel that you use and the other programs—such as anti-virus software—that are loaded into the memory of your computer.

Choosing a Method to Project Credit Activity

Microfin provides two alternative bases for projecting credit activity:

- the total number of active clients at the end of each period
- the number of new clients for each period
The approach you choose [line 3.05] applies to all loan products and all BRANCH and REGION sheets in your model.

Both approaches produce accurate results; your choice will likely depend on your individual preferences and past experience. For example, if you are accustomed to projecting credit activity based on the number of loan officers you employ, you may prefer the second option. The number of new clients is generally considered an output of the number of loan officers.

Significantly, you do not have to choose an approach immediately. When you develop your credit projections using the PROGRAM (BRANCH/REGION) sheet, you can experiment with these approaches before you make a final choice. You can change the approach at any time, using the MODEL SETUP sheet [line 3.05] or the CHANGE METHOD button [line 2.16] on the PROGRAM (BRANCH/REGION) sheet.

If you change your projection method, revise your entries on the PROGRAM (BRANCH/REGION) sheet, as necessary. For additional information, refer to the procedural information in “Project Active (or New) Loans” on page 194.

**Entering Institutional Information**

The first input section on the MODEL SETUP sheet maintains general background information on your institution and your projection period.
Procedure to enter institutional information — INSTITUTIONAL INFORMATION section, MODEL SETUP sheet:

1. Enter the NAME OF your INSTITUTION [line 4.01], unless you have already done so using the SETUP WIZARD. This name appears throughout the model and in report headings to customize your projections.

2. Enter the NAME OF your LOCAL CURRENCY, in its plural form. [line 4.02]

   You must develop your projections in your local currency unless you manage your entire financial system—including loan products, salaries and bank accounts—in an external currency. If you use another currency, you risk introducing errors into the model regarding the future values of monetary projections.

   Where appropriate, Microfin provides options to index certain values, such as loan and savings activity, to an external (foreign) currency. However, even in this case, all income and expenses must be stated in local currency. Microfin’s SUMMARY REP sheet includes a section that converts results into a foreign currency, if needed, for financial reporting purposes.

3. Enter the four-digit, calendar-basis STARTING YEAR FOR PROJECTIONS [line 4.04] and the STARTING MONTH OF FISCAL YEAR (i.e., the first calendar month of your fiscal year) [line 4.05]. Enter the month as a number between “1” and “12.” Microfin generates projections based on your fiscal year; if your fiscal year starts in July, you should input “7” and the model’s first-month column will be labeled “Jul.” As a result, the annual total columns coincide with both your financial reports for previous years and with your annual budgets and plans for future years.

   At times you may find it necessary to begin your projections in a month other than the first month of your fiscal year. For example, even though your fiscal year begins in July, you may require projections for a calendar year. You can create calendar-year projections by entering “1” (for January) in the STARTING MONTH OF FISCAL YEAR field. [4.05] Be aware, however, that your annual totals will be for 12-month periods beginning in January and will not coincide with the fiscal-year reports that you normally use.

4. Microfin displays the INITIAL FISCAL YEAR [line 4.06] based on your calendar-year entries in lines 4.04 and 4.05. In the example above, the fiscal year starts in the calendar period of July 2001, which Microfin interprets as “FY01.”

   Fiscal years appear as headings throughout Microfin.
5. Optionally, to override the defaulted fiscal year, enter the final two digits of your initial fiscal year (e.g., “02”) in the SELECT A DIFFERENT INITIAL FY cell. [line 4.07] You cannot enter more than a single year—e.g., “01/02.”

You could, for example, choose to make an entry here if you prefer to reference your fiscal year by the calendar year in which it ends, rather than the calendar year in which is starts (Microfin’s default).

6. Choose RECALC button or the F9 key to update all dates throughout the model, based on your entries.

### Entering Inflation and Indexing Data

Inflation can impact many aspects of your financial projections, including future loan sizes and payment amounts, salaries, real value analyses, and financial profitability calculations. The MODEL SETUP sheet provides a central location from which to maintain rates for inflation and various other indices used by Microfin.

**Figure 4.7 Inflation and Indexing Data Section, Model Setup Sheet**

**Procedure to enter inflation and indexing data — Inflation and Indexing Data section, Model Setup sheet:**

1. Enter the annual Inflation Rate percentage. [line 5.04] When you recalculate your model, Microfin converts your entry into monthly-equivalent values, compensating for monthly compounding effects. 21

You can link any of the following elements of your projections to this inflation rate:

- staff salaries on the STAFFING INFORMATION section of the INST CAP sheet. For additional information, refer to “Defining Categories for Staffing” on page 244.

21 Because of monthly compounding, an annual inflation rate of, say, 12 percent is equivalent not to 1 percent per month but to 0.94 percent. The formula for converting annual to monthly inflation rates is $(1 + \text{annual inflation})^{(1/12)} – 1$. 

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• operational expenses on the OTHER OPERATIONAL EXPENSES section of the INST CAP sheet. For additional information, refer to “Establishing Optional Links to Automate Projection of Other Operational Expenses” on pages 288 and 319.

• fixed assets, established in this section of the MODEL SETUP sheet.

• loan amounts on the AVERAGE LOAN AMOUNT section of the PRODUCTS sheet. For additional information, refer to “Setting Average Loan Amounts” on page 154.

Use the LINKS button to move to any of these other sections.

2. Microfin calculates the INFLATION INDEX [line 5.07] and AVG MONTHLY INFLATION SINCE MONTH 1 [line 5.08], based on your inflation entries.

3. If your loan or savings products—or any of the loans that you borrow—are indexed to an external measure, enter the annual PRODUCT INDEXING RATE. [line 5.11] For example, products are considered to be indexed if their repayments are linked to an official consumer price or inflation index or if they are processed in a foreign currency.


You establish indexing for borrowed funds on the SOURCES OF FINANCING section of the FIN SOURCES sheet. [page 344]

Microfin calculates LOAN INDEXING INCOME on the INCOME section of the PROGRAM sheet. [page 263]

Use the LINKS button to move to any of these sections.

4. Optionally, enter a PROJECTED EXCHANGE RATE to project future exchange rates—for example, when a loan is indexed to another currency. [line 5.15] If entered here, this information is for reference only and is not used elsewhere in the model.

5. Enter a FLOATING INDEX BASE RATE [line 5.19] if you plan to use a floating rate interest method for any of your loan products on the PRICING STRUCTURE section of the PRODUCTS sheet. [page 163]

6. Recalculate your model (F9).

**Entering Data from Historical Financial Statements**

In the HISTORICAL FINANCIAL STATEMENTS and FINANCIAL RATIO ANALYSIS sections of the MODEL SETUP sheet, you input financial information for the two fiscal years prior to the first year of your projections. If you do not have complete data for the current fiscal year, enter estimates. You can update your model with actual data when the information becomes available.
The format of Microfin’s financial statements may differ from the format of your own statements. If so, you will need to reorganize your data to match Microfin’s format. Generally, because Microfin’s format is quite flexible, the conversion process is straightforward and relatively easy. Note that you can always use your own financial statement formats for management and reporting purposes, even if they differ from those generated by Microfin.

If you wish, you can use Microfin’s USER-DEFINED sheet to generate financial statements in your preferred format. For additional information, refer to “Using the USER-DEFINED Sheet to Add Features or Supplement Calculations” on page 449.

If your institution provides financial services (i.e., credit and savings) and nonfinancial services (such as business training or health education), it is necessary to separate out your financial services activities for Microfin. Develop separate financial statements for each area of your operations and carefully allocate overhead among the various activities.

**Procedure to enter historical financial data — HISTORICAL FINANCIAL STATEMENTS section, Model Setup sheet:**

You enter historical data for financial statements and ratios using the HISTORICAL FINANCIAL STATEMENTS section of the MODEL SETUP sheet.

1. Enter historical data from your income statements. [page 127]
2. Enter historical data from your balance sheets. [page 128]
3. Enter historical portfolio data. [page 133]
4. Choose a denominator for ratio calculations and enter historical data for ratio calculations. [page 133] Then recalculate your model and review Microfin’s data validations to ensure the accuracy of your entries. Make any necessary corrections. Review the historical ratios and indicators that Microfin generates from your entries.

Each of these steps is described in the sections that follow.
Income Statement

Your historical income statements provide data for financial ratios, as well as a base year from which to analyze projected financial statements.

At a minimum, enter data for the fiscal year immediately preceding the first year of your projections. Use estimates, if necessary.

Optionally, you can enter an additional, prior year of historical data. By doing so, you provide Microfin with the information required to generate trends in financial ratios.

**Figure 4.9 Historical Financial Statements / Income Statement Section, Model Setup Sheet**

**Procedure to enter historical income statements — Income Statement / Historical Financial Statements section, Model Setup sheet:**

1. Enter the following historical values for financial services activities for the year immediately preceding your first projection year (leftmost Fin Serv column). Where necessary, enter a zero or an estimated value.
   - **Income on Financial Services** [line 6.11]
   - **Income on Investments** [line 6.12]
   - **Interest and Fees on Borrowed Funds** [line 6.16]
   - **Interest Paid on Savings Deposits** [line 6.17]
   - **Provision for Loan Losses** [line 6.21]
   - **Operating Costs / Program, reflecting program delivery or branch- or region-level expenses** [line 6.25]
2. Optionally, enter the following values for nonfinancial services (NFS) for the year immediately preceding your first projection year (leftmost NFS column).

- **Nonfinancial Services Income** [line 6.14]
- **Operating Costs / Program** [line 6.25]
- **Operating Costs / Administration** [line 6.26]
- **Amount of Taxes Paid** [line 6.30]
- **Income from Grants** [line 6.32]

3. Optionally, enter financial services values for a second year of history (rightmost Fin Serv column).

4. Optionally, enter nonfinancial services values for a second year of history (rightmost NFS column).

5. Recalculate your model (F9).

**Balance Sheet**

Your historical balance sheets provide data for financial ratios, as well as a base year from which to analyze projected financial statements. The information is also used to validate the initial balances you enter elsewhere in the model.
### Figure 4.10 Historical Financial Statements / Balance Sheet Section, Model Setup Sheet

**Microfin.xls — An Operational Projection Model developed for ABC**

This model was developed under contract with COAP and funded by ABC.

<table>
<thead>
<tr>
<th>Model Setup Sheet</th>
<th>FY20</th>
<th>FY20 Total</th>
<th>FY21</th>
<th>FY21 Total</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Balance Sheet</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>ASSETS</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Current Assets</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cash in Bank and Near Cash</td>
<td>$54,000</td>
<td>$54,000</td>
<td>$54,000</td>
<td>$54,000</td>
</tr>
<tr>
<td>Gross Portfolio Outstanding</td>
<td>$584,000</td>
<td>$584,000</td>
<td>$428,000</td>
<td>$428,000</td>
</tr>
<tr>
<td>(Loss) Loan Loss Reserve</td>
<td>$(10,000)</td>
<td>$(10,000)</td>
<td>$(15,000)</td>
<td>$(15,000)</td>
</tr>
<tr>
<td>Net Portfolio Outstanding</td>
<td>474,000</td>
<td>474,000</td>
<td>413,000</td>
<td>413,000</td>
</tr>
<tr>
<td><strong>Short-term Investments</strong></td>
<td>10,000</td>
<td>10,000</td>
<td>52,000</td>
<td>52,000</td>
</tr>
<tr>
<td><strong>Savings Reserves</strong></td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td><strong>Other Current Assets</strong></td>
<td>400</td>
<td>400</td>
<td>9,400</td>
<td>9,400</td>
</tr>
<tr>
<td><strong>Sub-total, Current Assets</strong></td>
<td>546,000</td>
<td>546,000</td>
<td>593,400</td>
<td>593,400</td>
</tr>
<tr>
<td><strong>Fixed Assets</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Long-term Investments</strong></td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td><strong>Other long-term assets (net)</strong></td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td><strong>Net Fixed Assets</strong></td>
<td>16,000</td>
<td>16,000</td>
<td>20,000</td>
<td>20,000</td>
</tr>
<tr>
<td><strong>Other Long-term Assets</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Total Assets</strong></td>
<td>562,000</td>
<td>562,000</td>
<td>593,400</td>
<td>593,400</td>
</tr>
<tr>
<td><strong>LIABILITIES</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Current Liabilities</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Accounts receivable</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Savings deposits</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>10,000</td>
<td>10,000</td>
<td>20,000</td>
<td>20,000</td>
<td></td>
</tr>
<tr>
<td><strong>Other Current Liabilities</strong></td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td><strong>Sub-total, Current Liabilities</strong></td>
<td>10,000</td>
<td>10,000</td>
<td>20,000</td>
<td>20,000</td>
</tr>
<tr>
<td><strong>Long-term Liabilities</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Other long-term liabilities</strong></td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td><strong>Sub-total, Long-term Liabilities</strong></td>
<td>10,000</td>
<td>10,000</td>
<td>20,000</td>
<td>20,000</td>
</tr>
<tr>
<td><strong>Total Liabilities</strong></td>
<td>562,000</td>
<td>562,000</td>
<td>593,400</td>
<td>593,400</td>
</tr>
<tr>
<td><strong>EQUITY</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Accounts paid in capital, prior period</td>
<td>287,400</td>
<td>287,400</td>
<td>287,400</td>
<td>287,400</td>
</tr>
<tr>
<td>Contributed capital, current period</td>
<td>42,000</td>
<td>42,000</td>
<td>5,000</td>
<td>5,000</td>
</tr>
<tr>
<td>Shareholder equity</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Dividend payments</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Accounts: Net Surplus (Deficit), previous period</td>
<td>$(55,000)</td>
<td>$(55,000)</td>
<td>$(55,000)</td>
<td>$(55,000)</td>
</tr>
<tr>
<td>Net Surplus (Deficit), current period</td>
<td>$(1,500)</td>
<td>$(1,500)</td>
<td>$(5,000)</td>
<td>$(5,000)</td>
</tr>
<tr>
<td><strong>Total Equity</strong></td>
<td>272,000</td>
<td>272,000</td>
<td>237,000</td>
<td>237,000</td>
</tr>
<tr>
<td><strong>Total Liabilities and Equity</strong></td>
<td>562,000</td>
<td>562,000</td>
<td>593,400</td>
<td>593,400</td>
</tr>
</tbody>
</table>

*Verification: If A = L + NE, this will be 0.*
**Procedure to enter historical balance sheets—Balance Sheet / Historical Financial Statements section, Model Setup sheet:**

1. Refer to figure 4.11 for a description of all of the balance sheet data Microfin requires. You may need to recategorize your data before you can enter the information into Microfin. If so, ensure that you have included all of your accounts in the new format.

2. Enter the historical values for Assets, Liabilities and Equity [lines 6.37 – 6.92] for the fiscal year immediately preceding your first year of projections (leftmost Fin Serv column). Where necessary, enter a zero or an estimated value.

3. Optionally, enter historical values for nonfinancial services for the fiscal year immediately preceding your first year of projections (leftmost NFS column).

4. Optionally, enter financial services values for a second year of history (rightmost Fin Serv column).

5. Optionally, enter nonfinancial services values for a second year of history (rightmost NFS column).

6. Recalculate your model (F9).

7. Review Microfin’s Verification [line 6.95] to ensure that, for each column, your assets equal the total of your liabilities plus equity. Make corrections, if necessary.

**Figure 4.11 Required Balance Sheet Information**

<table>
<thead>
<tr>
<th>Category</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Assets</strong></td>
<td></td>
</tr>
<tr>
<td>Cash in bank and near cash</td>
<td>The amounts held in all bank accounts in highly liquid form (checking, passbook savings, and the like). Microfin assumes these deposits are readily available for use.</td>
</tr>
<tr>
<td>Gross portfolio outstanding</td>
<td>The gross portfolio for your entire institution, for all loan products. As you enter data elsewhere in the model, you will need to break this amount down by product (and by branch or region, if you develop your model using a branch or regional approach).</td>
</tr>
<tr>
<td>Loan loss reserve</td>
<td>The loan loss reserve for your entire institution. Enter the value as a negative number. As you enter data elsewhere in the model, you will need to break this amount down by branch or region (but not by product) if you develop your model using a branch or regional approach.</td>
</tr>
<tr>
<td><strong>Category</strong></td>
<td><strong>Description</strong></td>
</tr>
<tr>
<td>------------------------------</td>
<td>-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Short-term investments</td>
<td>The total value of all interest-bearing short-term investments with a term of less than 12 months.</td>
</tr>
<tr>
<td>Savings reserves</td>
<td>The amount of savings deposits not available for on-lending. These reserves are monitored independent of other bank accounts or investments to ensure that they are not used for other purposes.</td>
</tr>
<tr>
<td>Other current assets</td>
<td>The value of all miscellaneous current assets, such as accounts receivable and accrued interest, that are not captured in other categories.</td>
</tr>
<tr>
<td>Land</td>
<td>The value of all land as it appears on the institution’s balance sheet.</td>
</tr>
<tr>
<td>Buildings (gross)</td>
<td>The gross value of all buildings as it appears on the balance sheet. Depreciation is entered separately, on the accumulated depreciation line below.</td>
</tr>
<tr>
<td>Furniture and equipment (gross)</td>
<td>The gross value of all fixed assets other than land and (gross) buildings as it appears on the balance sheet. As you enter data elsewhere in the model, you will need to break this amount down—by program versus administrative, or branch/region versus head office—for each of the categories of fixed assets. (Depreciation is entered separately, on the accumulated depreciation line below.)</td>
</tr>
<tr>
<td>Accumulated depreciation</td>
<td>The total amount of accumulated depreciation as it appears on the balance sheet. This amount must be entered as a negative number. As you enter data elsewhere in the model, you will need to break this amount down—by program versus administrative, or branch/region versus head office.</td>
</tr>
<tr>
<td>Long-term investments</td>
<td>The total amount of investments that are intended to be held for more than one year.</td>
</tr>
<tr>
<td>Other long-term assets (net)</td>
<td>The net value of all remaining long-term assets, such as MIS software.</td>
</tr>
</tbody>
</table>

**Liabilities**

<table>
<thead>
<tr>
<th><strong>Liabilities</strong></th>
<th><strong>Description</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Accrued expenses</td>
<td>Expenses incurred as of the date of the balance sheet, but not yet paid, such as personnel benefits.</td>
</tr>
<tr>
<td>Savings deposits</td>
<td>Total value of all savings deposits (compulsory and voluntary) held and controlled by your institution. As you enter data elsewhere in the model, you will need to break this amount down by product.</td>
</tr>
<tr>
<td>Category</td>
<td>Description</td>
</tr>
<tr>
<td>---------------------------</td>
<td>---------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Short-term loans payable</td>
<td>The value of any loan principal due to be repaid within 12 months.</td>
</tr>
<tr>
<td>Other current liabilities</td>
<td>The value of all short-term liabilities not captured in other categories, such as accounts payable and interest payable on loans, and the current portion of loans used to finance “other assets.”</td>
</tr>
<tr>
<td>Long-term loans payable</td>
<td>The value of any loans for the loan portfolio that are due to be repaid in more than 12 months.</td>
</tr>
<tr>
<td>Other long-term liabilities</td>
<td>The value of any other long-term assets, such as the principal on loans used to finance other assets and that fall due in more than one year’s time. An example is a mortgage on a building.</td>
</tr>
</tbody>
</table>

**Equity**

<table>
<thead>
<tr>
<th>Category</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accumulated donated equity</td>
<td>The cumulative value of all grants received from donors before the current fiscal year.</td>
</tr>
<tr>
<td>Donated equity, current period</td>
<td>The value of all grants received from donors during the current fiscal year.</td>
</tr>
<tr>
<td>Shareholder equity</td>
<td>Value of all investments made by shareholders.</td>
</tr>
<tr>
<td>Dividend payments</td>
<td>Cumulative value of all dividend payments made to shareholders (entered as a negative number).</td>
</tr>
<tr>
<td>Accumulated net surplus</td>
<td>The accumulated value of all surpluses and deficits (excluding donor grant income) from previous fiscal years.</td>
</tr>
<tr>
<td>Net surplus (deficit), current</td>
<td>The value of the surplus or deficit (excluding grant income) for the current fiscal year.</td>
</tr>
</tbody>
</table>

22 If your institution does not track cumulative donated equity, the total amount of donations received in the past should be recalculated from income statements for previous fiscal years. This amount can be entered on the donated equity line, and subtracted from the accumulated net surplus as it appears on the institution’s balance sheet. This will result in a large negative accumulated surplus (deficit) if the institution has relied primarily on grants to fund operations in previous years.
Entering Portfolio Information

Microfin captures portfolio information in order to generate historical ratios in the Financial Ratios Analysis section of the Model Setup sheet.

**Figure 4.12 Historical Financial Statements / Portfolio Information Section, Model Setup Sheet**

<table>
<thead>
<tr>
<th>Portfolio Information</th>
<th>FY00</th>
<th>FY99</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of active loans (end-period)</td>
<td>6,682</td>
<td>5,600</td>
</tr>
<tr>
<td>Number of days for at risk calculations</td>
<td>30</td>
<td>30</td>
</tr>
<tr>
<td>Payments in arrears &gt; 30 days (end-per)</td>
<td>14,000</td>
<td>30,349</td>
</tr>
<tr>
<td>Portfolio at risk &gt; 30 days (end-per)</td>
<td>18,000</td>
<td>360</td>
</tr>
<tr>
<td>Average initial loan size</td>
<td>360</td>
<td>360</td>
</tr>
</tbody>
</table>

Procedure to enter historical portfolio information—Portfolio Information / Historical Financial Statements section, Model Setup sheet:

As of the end of the year immediately preceding your initial projection period, complete steps one through seven:

1. Enter the **Number of Active Loans**. [line 6.98]
2. Enter the **Number of Days for At Risk Calculations**. [line 6.99]
3. Enter the amount of loan **Payments in Arrears** [line 6.100] and the amount of your **Portfolio At Risk** [line 6.101]—the outstanding principal balance for loans in arrears—based on the **Number of Days** you entered immediately above, and determined as of the end of the fiscal year.
4. Enter the **Value of Loans Written Off** [line 6.102] during the indicated year.
5. Enter your **Average Initial Loan Size**. [line 6.103]
6. Optionally, repeat the procedure for the previous year.
7. Recalculate your model (F9).

Generating Historical Ratio Analyses

Historical ratios provide a basis for trend analysis when you compare them with Microfin’s projections on the Summary Report and Financial Statements sheets. The ratios are also helpful when performing an institutional assessment during strategic planning. [page 476]
Microfin generates historical ratios for either one or two years, depending on the data you enter in the **FINANCIAL RATIOS ANALYSIS** section. This section is divided into two parts:

- The first contains information that Microfin uses to generate the ratios. Much of this information comes from your entries for the historical balance sheets and income statements. Other information you enter directly (figure 4.13).
- The second displays the calculated ratio values (figure 4.14). For a detailed explanation of these ratios and the manner in which they are calculated, refer to “Analyzing Performance Indicators and Ratios” beginning on page 404.

### Procedure to generate historical ratios — Info Used in Ratio Analysis / Financial Ratio Analysis section, Model Setup Sheet:

1. Select a basis for calculating **PROFITABILITY RATIOS** throughout Microfin. [line 7.02] You can calculate these ratios (generated on Microfin’s FIN STATEMENTS sheet):
   - **BASED ON AFTER-TAX NET INCOME** (the default)
   - **BASED ON PRE-TAX NET INCOME**

2. Select a **PREFERRED DENOMINATOR** [line 7.04] for various ratio calculations and graphical analyses. Your choices are to calculate ratios based on:
   - **AVERAGE TOTAL ASSETS** (If you are unsure, use this option.)
   - **AVERAGE PERFORMING ASSETS**
For the year immediately preceding your initial projection period, complete steps three through five:

3. Enter the INFLATION RATE [line 7.19] and the MARKET RATE FOR BORROWING. [line 7.20]

4. Enter the value of any IN-KIND SUBSIDIES [line 7.23] for the year.

5. Enter the NUMBER OF LOAN OFFICERS [line 7.24] and the TOTAL NUMBER OF STAFF [line 7.25], as of the end of the period.

Optionally, before advancing to step six, repeat steps three through five for an additional, previous year.

6. To generate a second year of historical financial ratios, enter TOTAL ASSETS (or TOTAL PERFORMING ASSETS), GROSS PORTFOLIO OUTSTANDING, LOANS PAYABLE, EQUITY, NET FIXED ASSETS and SAVINGS DEPOSITS balances into the rightmost column of the display [lines 7.08 – 7.18] for the indicated year.

7. Recalculate your model (F9) to generate and review the historical financial ratios. They display immediately below your entries.

Figure 4.14 HISTORICAL FINANCIAL STATEMENTS / FINANCIAL RATIOS Section, MODEL SETUP Sheet

<table>
<thead>
<tr>
<th>Financial Ratios</th>
<th>FY18</th>
<th>FY19</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Income Statement Analysis</td>
<td>5.2%</td>
<td>5.3%</td>
<td></td>
</tr>
<tr>
<td>Gross Return on Average Total Assets</td>
<td>5.2%</td>
<td>5.3%</td>
<td></td>
</tr>
<tr>
<td>Financial Cost Ratio</td>
<td>4.0%</td>
<td>4.1%</td>
<td></td>
</tr>
<tr>
<td>Gross Financial Margin</td>
<td>26.6%</td>
<td>26.8%</td>
<td></td>
</tr>
<tr>
<td>Loan Loss Provisions Ratio</td>
<td>2.9%</td>
<td>3.0%</td>
<td></td>
</tr>
<tr>
<td>Net Financial Margin</td>
<td>23.8%</td>
<td>23.7%</td>
<td></td>
</tr>
<tr>
<td>Operating Cost Ratio</td>
<td>23.3%</td>
<td>23.5%</td>
<td></td>
</tr>
<tr>
<td>Tax Ratio</td>
<td>0.0%</td>
<td>0.0%</td>
<td></td>
</tr>
<tr>
<td>Operating Margin, after-tax (ROA)</td>
<td>2.3%</td>
<td>2.4%</td>
<td></td>
</tr>
<tr>
<td>Operations and Grants Ratio</td>
<td>2.3%</td>
<td>2.4%</td>
<td></td>
</tr>
<tr>
<td>Net Reo, after-tax</td>
<td>2.3%</td>
<td>2.4%</td>
<td></td>
</tr>
<tr>
<td>Operating Margin, after-tax (ROA)</td>
<td>2.3%</td>
<td>2.4%</td>
<td></td>
</tr>
<tr>
<td>Adjustments to Operating Margin</td>
<td>2.3%</td>
<td>2.4%</td>
<td></td>
</tr>
<tr>
<td>Net Margin, after-tax (Adjusted ROA)</td>
<td>2.3%</td>
<td>2.4%</td>
<td></td>
</tr>
<tr>
<td>Profitability (All after-tax)</td>
<td>2.3%</td>
<td>2.4%</td>
<td></td>
</tr>
<tr>
<td>Operating Income, pre-tax</td>
<td>3.0%</td>
<td>3.1%</td>
<td></td>
</tr>
<tr>
<td>Financial Sustainability, pre-tax</td>
<td>9.8%</td>
<td>10.0%</td>
<td></td>
</tr>
<tr>
<td>Return on Equity</td>
<td>2.0%</td>
<td>2.1%</td>
<td></td>
</tr>
<tr>
<td>Adjusted Return on Equity (AROE)</td>
<td>1.9%</td>
<td>2.0%</td>
<td></td>
</tr>
<tr>
<td>Solvency</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Equity Multiplier</td>
<td>2.1</td>
<td>2.2</td>
<td></td>
</tr>
<tr>
<td>Quick Ratio</td>
<td>5.1</td>
<td>5.2</td>
<td></td>
</tr>
<tr>
<td>Efficiency and Productivity</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yield on Portfolio</td>
<td>3.0%</td>
<td>3.1%</td>
<td></td>
</tr>
<tr>
<td>Operating Costs as % Portfolio</td>
<td>2.5%</td>
<td>2.6%</td>
<td></td>
</tr>
<tr>
<td>Leads per Loan Officer</td>
<td>3.0</td>
<td>3.1</td>
<td></td>
</tr>
<tr>
<td>Loan Portfolio per Loan Officer</td>
<td>4.0</td>
<td>4.1</td>
<td></td>
</tr>
<tr>
<td>Average Cost of Debt</td>
<td>7.4%</td>
<td>7.5%</td>
<td></td>
</tr>
<tr>
<td>Overhead percentage</td>
<td>37.9%</td>
<td>38.1%</td>
<td></td>
</tr>
<tr>
<td>Loan Officers as percent of total staff</td>
<td>3.7%</td>
<td>3.8%</td>
<td></td>
</tr>
<tr>
<td>Portfolio Quality Ratios</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Portfolio in Arrears &gt; 30 days</td>
<td>2.0%</td>
<td>2.1%</td>
<td></td>
</tr>
<tr>
<td>Portfolio 60 days to 90 days</td>
<td>6.0%</td>
<td>6.1%</td>
<td></td>
</tr>
<tr>
<td>Loan Yields on Ratio</td>
<td>2.5%</td>
<td>2.6%</td>
<td></td>
</tr>
<tr>
<td>Loan Loss Reserve Ratio</td>
<td>4.0%</td>
<td>4.1%</td>
<td></td>
</tr>
<tr>
<td>Growth and Outreach</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Percentage growth in portfolio</td>
<td>3.0%</td>
<td>3.1%</td>
<td></td>
</tr>
<tr>
<td>Percentage growth in savings deposits</td>
<td>0.0%</td>
<td>0.0%</td>
<td></td>
</tr>
</tbody>
</table>
**Case Study: FEDA’s Model Setup Sheet**

After completing their strategic plan, FEDA’s staff turned their attention to preparing an operational plan—including detailed financial projections—using Microfin. They began with the MODEL SETUP sheet.

**Establishing FEDA’s Modeling Parameters**

Although FEDA expects to open a second branch later in fiscal 2001, they decided, at least initially, to model all product activity on a single sheet—i.e., to use the consolidated approach.

They chose to project loan product activity by indicating the total number of active clients each month.

Refer to figures 4.2 and 4.5.

The staff entered the name of their institution and the name of their local currency, “Freeons.” They chose the upcoming fiscal year as the starting year for their projections and entered “2001.” They entered the number “1” to establish January 2001 as the starting month of the fiscal year.

Then, they chose F9 to recalculate the model in order to implement their entries and review any error messages that might appear on the screen.

Refer to figure 4.6.

FEDA’s environmental analysis determined that the inflation rate was 10% in 2000 and was projected to be 8% - 10% for the next three to five years. FEDA’s staff decided to use the more conservative estimate of 10% in their projections for the entire five years.

FEDA does not index its financial products, so the staff left the PRODUCT INDEXING RATE blank. Likewise, they left the FLOATING BASE INDEX RATE blank.

Refer to figure 4.7.

**Entering FEDA’s Historical Data**

The staff completed the HISTORICAL FINANCIAL STATEMENTS section for fiscal 2000 and fiscal 1999 using their existing financial statements and making adjustments where necessary to fit the model’s format. They left the nonfinancial services (NFS) column empty, since FEDA only offers credit and savings services.

As they enter data, the staff notes that the model automatically calculates values in cells such as DONATED EQUITY, CURRENT PERIOD in the FY00 column. These cells are not shaded in blue or gray, so they realize that such unshaded cells contain formulas used to display values based on previously entered information.
**Income Statement**

<table>
<thead>
<tr>
<th></th>
<th>FY00</th>
<th>FY99</th>
</tr>
</thead>
<tbody>
<tr>
<td>Income on financial services</td>
<td>166,320</td>
<td>136,200</td>
</tr>
<tr>
<td>Income on investments</td>
<td>3,000</td>
<td>9,000</td>
</tr>
<tr>
<td>Interest and fees on borrowed funds</td>
<td>22,200</td>
<td>21,000</td>
</tr>
<tr>
<td>Provision for loan losses</td>
<td>20,000</td>
<td>18,000</td>
</tr>
<tr>
<td>Direct (program-related) operating costs</td>
<td>80,100</td>
<td>72,600</td>
</tr>
<tr>
<td>Indirect (administrative) operating costs</td>
<td>48,600</td>
<td>43,500</td>
</tr>
<tr>
<td>Income from grants</td>
<td>42,600</td>
<td>5,700</td>
</tr>
</tbody>
</table>

Refer to figure 4.9.

**Balance Sheet**

<table>
<thead>
<tr>
<th></th>
<th>FY00</th>
<th>FY99</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assets</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cash in bank and near cash</td>
<td>51,400</td>
<td>56,380</td>
</tr>
<tr>
<td>Gross portfolio outstanding</td>
<td>504,000</td>
<td>420,000</td>
</tr>
<tr>
<td>Loan loss reserve</td>
<td>(20,000)</td>
<td>(16,000)</td>
</tr>
<tr>
<td>Short-term investments</td>
<td>11,000</td>
<td>52,000</td>
</tr>
<tr>
<td>Other current assets</td>
<td>400</td>
<td>9,400</td>
</tr>
<tr>
<td>Furniture and equipment (gross)</td>
<td>24,000</td>
<td>24,000</td>
</tr>
<tr>
<td>Accumulated depreciation</td>
<td>(8,000)</td>
<td>(4,000)</td>
</tr>
</tbody>
</table>

|                          |       |       |
| Liabilities              |       |       |
| Short-term loans         | 108,000 | 20,000 |
| Long-term loans          | 182,000 | 290,000 |

|                          |       |       |
| Equity                   |       |       |
| Accum. donated equity, previous periods | 297,400 | 291,700 |
| Donated equity, current period | 42,600  | 5,700   |
| Accum. net surplus (deficit), previous periods | (65,620) | (55,720) |
| Net surplus (deficit), current period  | (1,580) | (9,900) |

Refer to figure 4.10.
<table>
<thead>
<tr>
<th>Portfolio information</th>
<th>2000</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of active borrowers (end of period)</td>
<td>3,600</td>
</tr>
<tr>
<td>Number of days for at-risk calculations</td>
<td>30</td>
</tr>
<tr>
<td>Payments in arrears &gt; 30 days (end of period)</td>
<td>14,000</td>
</tr>
<tr>
<td>Outstanding balance, loans in arrears &gt; 30 days (end of period)</td>
<td>30,240</td>
</tr>
<tr>
<td>Value of loans written off during period</td>
<td>16,000</td>
</tr>
<tr>
<td>Average initial loan size</td>
<td>300</td>
</tr>
</tbody>
</table>

Refer to figure 4.12.

In the financial ratio analysis section, the staff indicated that management’s usual practice is to calculate ratios based on total assets. Then, they entered the following information for fiscal 2000:

<table>
<thead>
<tr>
<th>Ratio Information</th>
<th>2000</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inflation rate (percent)</td>
<td>10</td>
</tr>
<tr>
<td>Market rate for borrowing (percent)</td>
<td>14</td>
</tr>
<tr>
<td>In-kind subsidies</td>
<td>3,000</td>
</tr>
<tr>
<td>Number of loan officers, end of period</td>
<td>12</td>
</tr>
<tr>
<td>Number of total staff, end of period</td>
<td>18</td>
</tr>
</tbody>
</table>

Refer to figure 4.13.
Chapter 5
Defining Products and Services

In developing your business plan and financial projections, you should evaluate your financial products and services independent of any other products or services that you may offer. Microfin provides tools for modeling both credit and savings products. However, if, in addition to financial services, you offer nonfinancial services such as business development, Microfin can offer only limited support. For additional information on modeling nonfinancial services, refer to “Using the OTHER PROGS Sheet to Analyze the Financial Implications of Other Programs” on page 465.

The products and services you offer should be based on the analysis of your clients and markets performed during the strategic planning process. These products and services should strike a balance between what your targeted clients value and what your institution can sustainably deliver. By meeting customers’ needs, your institution can attract and retain clients. By offering products that are efficient and minimize your financial risk, you can reach and maintain financial profitability.

A financial product is defined by its characteristics; different financial products are designed for different purposes and different clients. For example, working capital loans and loans for fixed asset purchases are two distinct products.

The defining characteristics for loan products include:

- minimum and maximum loan size
- maximum loan term
- compulsory savings requirements
- interest rate and method of calculation
- lending methodology

Savings products are defined by criteria such as:

- minimum balance requirements
- length of deposit
- mandated liquidity requirements
- interest rate
- interest calculation method

23 While most microfinance institutions provide credit services, your institution may be legally restricted from directly offering savings services.
Designing Successful Loan Products

Successful loan products serve two key aims. They:

- provide a valuable and desired service to a significant, and growing, number of clients
- enable your institution to achieve and maintain profitability

To design successful loan products, you need to understand a broad range of issues related to clients, markets, economic conditions and internal institutional factors. To design successful loan products, you need to understand a broad range of issues related to clients, markets, economic conditions and internal institutional factors.

Your loan products must be carefully designed and tested, then refined, to ensure that they work effectively and efficiently.

In addition, your products need periodic review. The review ensures that products continue to meet both your requirements and the changing demands of your clients—especially those of your repeat customers. As a result of the review, you may find it necessary to redesign your existing products or to introduce new products. Whenever you do so, use the same careful process of testing, refining and reviewing.

It is generally inadvisable to offer too large a selection of financial products. The administrative complexity involved often outweighs the perceived benefits to clients.

Key Characteristics of Product Design

Products that achieve the dual goals of client service and profitability, share four key characteristics. They:

- maximize value and minimize costs to clients
- maximize on-time repayment
- encourage client retention
- are priced for profitability

Maximize Value and Minimize Costs to Clients

Loan products should maximize value and minimize costs for clients by meeting the following standards:

- appropriate amount and term (relative to the scale and economic activity of the clients’ enterprises)
- affordable repayment amounts

---

24 An important institutional issue is to ensure that a product is not so complex in design that the institution is unable to manage it efficiently.
Maximize On-time Repayment

A high rate of on-time repayment translates into a low rate of loan default, thus preserving your portfolio and minimizing loan loss provisioning expenses. It also allows you to make new loans promptly and ensure an income stream.

Repayment rates depend largely on financial product design and on procedures for disbursement and follow-up.

Encourage Client Retention

A high retention rate is crucial if your institution is to reach the scale of operations necessary to achieve significant outreach and financial profitability. Repeat loans mean lower costs and higher income. They represent a lower credit risk, are less expensive to review and process, and have a larger average size.

High client retention also helps keep demand high; client satisfaction is the best form of promotion for your institution.

Price for Profitability

Profitability pricing ensures that loan products fully cover costs, once you achieve a sufficient scale in your operations. Your pricing structure should take into account the following elements:

- costs of operations
- provision for expected loan losses
- market-rate cost of funds
- effect of inflation
- reserves required for growth

---

25 Transaction costs are those costs of applying for, obtaining and repaying a loan. They include such items as transportation, paperwork and the value of time spent on the borrowing process and not directly in generating income (Refer to Robert Peck Christen, Banking Services for the Poor: Managing for Financial Success, Washington, D.C.: ACCION International, 1997, p. 116).

Choosing a Lending Methodology

Choosing a lending methodology is among the most crucial decisions you make in order to reach a particular client group. There are three general approaches:27

- individual lending
- solidarity group lending
- village banking

The choice of methodology is generally based on:

- client characteristics, such as social cohesion, geographic mobility, previous experience with credit, available collateral and whether urban or rural
- institutional issues, such as staff skill levels, provision of other services and commitment to group development
- loan characteristics, including size of loans, loan term and level of loan analysis required

Different methodologies call for different techniques in marketing, appraisal, disbursement and follow-up of loans. The methodology you choose must match your institution’s capacity. It also must be suitable for large-scale expansion in order to achieve the dual goals of outreach and profitability.

In developing your projections, Microfin does not require you to specifically identify your lending methodology. All of its calculations are based on individuals, regardless of the underlying methodology. For example, assume your institution uses a village banking methodology and works with groups of 20 women. When you enter an average loan size to define your product in Microfin, you enter the average loan per borrower, not per group. Similarly, when you project the volume of loan activity, you should use the number of end borrowers rather than the number of groups receiving loans.

Using the Products Sheet to Define Loan and Savings Products

Using Microfin’s PRODUCTS sheet (figure 5.1) you establish the number of loan and savings products that your institution offers, and define the terms for each of these products. The sheet consists of the following sections:

- PRODUCT NUMBERS / NAMES [lines 1.01 – 1.19]
- PRODUCT DEFINITION SUMMARY [lines 2.01 – 2.41]
- LOAN PRODUCT INPUT SECTION (one for each loan product) [lines 3.01 – 3.96]
- SAVINGS INPUT SECTION (one for each savings product) [lines 4.01 – 4.13]

You can navigate to any desired section of the sheet using the items on the pagebar.

Alternatively, you can use the NAVIGATOR sheet as a central location, or switchboard, from which to enter and edit information on this sheet. For additional information, refer to “Using the NAVIGATOR Sheet and Wizard as a Framework for Entering Data” on page 66.

Figure 5.1a Products Sheet (1 of 3)

<table>
<thead>
<tr>
<th>Product Definition Sheet</th>
<th>Initial</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Number and Names of Products</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td><strong>Product Definition Summary</strong></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Product 1 Product 2 Product 3 Product 4**

**Step 1: Average loan amount**

| First cycle loan, Month 1 | 100 | 0 | 0 | 0 |
| Second cycle loan, Month 2 | 146 | 0 | 0 | 0 |
| Third cycle loan, Month 3 | 150 | 0 | 0 | 0 |
| Fourth cycle loan, Month 4 | 900 | 0 | 0 | 0 |

**Step 2: Repayment Conditions**

<table>
<thead>
<tr>
<th>Repayment frequency</th>
<th>Monthly</th>
<th>Weekly</th>
<th>Monthly</th>
<th>Weekly</th>
</tr>
</thead>
<tbody>
<tr>
<td>Monthly loan, Month 1</td>
<td>6</td>
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<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Monthly loan, Month 2</td>
<td>6</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Monthly loan, Month 3</td>
<td>12</td>
<td>0</td>
<td>0</td>
<td>0</td>
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<tr>
<td>Monthly loan, Month 4</td>
<td>12</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

**Step 3: Compensatory Savings**

| Product 1 Product 2 Product 3 Product 4 | |
|----------------------------------------|---|---|---|---|
| Before savings amount | 10% | 6% | 6% | 6% |
| Earned savings method | 1/16 | 1/16 | 1/16 | 1/16 |
| Compensatory savings amount | 5% | 5% | 5% | 5% |

**Step 4: Pricing Structure**

<table>
<thead>
<tr>
<th>Pricing method</th>
<th>Docking</th>
<th>Docking</th>
<th>Docking</th>
<th>Docking</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intermont, Month 1</td>
<td>35.0%</td>
<td>0.0%</td>
<td>0.0%</td>
<td>0.0%</td>
</tr>
<tr>
<td>Month 2</td>
<td>35.0%</td>
<td>0.0%</td>
<td>0.0%</td>
<td>0.0%</td>
</tr>
<tr>
<td>Month 3</td>
<td>35.0%</td>
<td>0.0%</td>
<td>0.0%</td>
<td>0.0%</td>
</tr>
<tr>
<td>Month 4</td>
<td>35.0%</td>
<td>0.0%</td>
<td>0.0%</td>
<td>0.0%</td>
</tr>
</tbody>
</table>

**Savings Products**

| Product 1 Product 2 Product 3 Product 4 | |
|----------------------------------------|---|---|---|---|
| Before savings, Month 1 | 0.0% | 0.0% | 0.0% | 0.0% |
| Month 2 | 0.0% | 15.0% | 0.0% | 0.0% |
| Month 3 | 10.0% | 0.0% | 0.0% | 0.0% |
| Month 4 | 10.0% | 0.0% | 0.0% | 0.0% |

**Adjusted interest on external funds?**

| Product 1 Product 2 Product 3 Product 4 | |
|----------------------------------------|---|---|---|---|
| Adjusted interest | No | No | No | No |
Figure 5.1b Products Sheet (2 of 3)

<table>
<thead>
<tr>
<th>Product Definition Sheet</th>
<th>Initial Jan-01</th>
<th>Feb-01</th>
<th>Mar-01</th>
<th>Apr-01</th>
<th>May-01</th>
<th>Jun-01</th>
<th>Jul-01</th>
<th>Aug-01</th>
<th>Sep-01</th>
<th>Oct-01</th>
<th>Nov-01</th>
<th>Dec-01</th>
</tr>
</thead>
<tbody>
<tr>
<td>Loan Product 1: Solidarity Group Loans</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Step 1: Average Loan Amount**

**Average Loan Amount by Cycle**

- **First cycle**: 150
- **Second cycle**: 150
- **Third cycle**: 150
- **Fourth cycle**: 150
- **Fifth cycle**: 150
- **Sixth and subsequent cycles**: 150

**Step 2: Repayment Conditions**

**Repayment Frequency**

- **Monthly payments**

**Step 3: Compensatory Savings**

**Compensatory Savings**

**Step 4: Pricing Structure**

**Interest Rate Method**

- **Provisional Interest Rate**
- **Variable Rate**

**Step 5: Analysis**

**Product Definition for Solidarity Group Loans**

<table>
<thead>
<tr>
<th>Loan Type</th>
<th>Interest Rate</th>
<th>Payment Method</th>
<th>Early Repayment</th>
<th>Effective Interest</th>
<th>Cost Inc.</th>
<th>Comp. %</th>
</tr>
</thead>
<tbody>
<tr>
<td>First cycle</td>
<td>150%</td>
<td>Monthly</td>
<td>No</td>
<td>45.0%</td>
<td>35.0%</td>
<td>56.0%</td>
</tr>
<tr>
<td>Second cycle</td>
<td>150%</td>
<td>Monthly</td>
<td>No</td>
<td>45.0%</td>
<td>35.0%</td>
<td>56.0%</td>
</tr>
<tr>
<td>Third cycle</td>
<td>150%</td>
<td>Monthly</td>
<td>No</td>
<td>45.0%</td>
<td>35.0%</td>
<td>56.0%</td>
</tr>
<tr>
<td>Fourth cycle</td>
<td>150%</td>
<td>Monthly</td>
<td>No</td>
<td>45.0%</td>
<td>35.0%</td>
<td>56.0%</td>
</tr>
<tr>
<td>Fifth cycle</td>
<td>150%</td>
<td>Monthly</td>
<td>No</td>
<td>45.0%</td>
<td>35.0%</td>
<td>56.0%</td>
</tr>
<tr>
<td>Sixth and subsequent cycles</td>
<td>150%</td>
<td>Monthly</td>
<td>No</td>
<td>45.0%</td>
<td>35.0%</td>
<td>56.0%</td>
</tr>
</tbody>
</table>

**Cost Inc.**

- **45.0%**
- **35.0%**
- **56.0%**

Using Microfin
Procedure to complete the Products sheet:

1. Enter the number of loan and savings products you offer, and assign a unique name to each. [page 148]

2. Define the attributes of each of your loan products, including loan amount, repayment conditions, compulsory savings requirements and pricing structure. [page 152]

3. Establish financial and interest-rate parameters for compulsory savings. [page 168]

4. Define the attributes of each of your voluntary savings products. [page 171]

5. Review Microfin’s summary calculations for each loan and savings product, and make corrections to your entries, if necessary. [pages 166 and 151]

Each of these steps is described in the sections that follow.
**Entering Product Numbers and Names**

Microfin manages up to four separate loan products—each with an optional compulsory savings product—and four voluntary savings products. You can independently establish all of the defining characteristics for each product. For example, you can use a declining balance interest rate for one loan product and a flat interest rate for another.

To assist you in identifying your products for Microfin, you might ask the following questions:

- What products does your institution offer currently?
- What products does your institution plan to introduce in the next five years?
- Do these products have similar characteristics, such as interest rates and loan sizes?
- Are there two products designed such that clients start in one product and then tend to graduate to the second? If so, define these as separate products.
- If you have more than four loan products or more than four savings products, which products can you combine with the least loss of accuracy?

**Figure 5.2 Number and Names of Products Section, Products Sheet**

![Product Definition Sheet](image)

**Procedure to establish the number and names of your financial products — Number and Names of Products section, Products sheet:**

1. Select an option from the **NUMBER OF LOAN PRODUCTS IN USE** drop-down list to establish the number of loan products you intend to define in your model. [line 1.05]

You must include any loan product that has loans outstanding as of the first month of the projection period. This is true even if the product will be eliminated with respect to new loans at the beginning of the first year of the projections. This approach is necessary in order to project the repayments for all outstanding loans.
2. Enter the name of each of your loan products in ENTER NAME HERE. [lines 1.08 – 1.11] These descriptive names are used throughout the model to identify data for each loan product. Because of space limitations elsewhere in the model, only the first 25 characters generally appear.

3. Choose an option from the NUMBER OF SAVINGS PRODUCTS IN USE drop-down list to establish the number of voluntary savings products you intend to define in your model. [line 1.14] Note that compulsory savings (savings that borrowers are required to have in order to qualify for a loan) are considered part of the loan product and should not be included here.

4. Enter the name of each of your voluntary savings products in ENTER NAME HERE. [lines 1.16 – 1.19] These descriptive names are used throughout the model to identify information related to each savings product. Because of space limitations elsewhere in the model, only the first 25 characters generally appear.

Based upon your entries for the number of loan and savings products, Microfin hides those areas of the model that would otherwise display information for unused products. This feature simplifies your model and shortens the related printouts if you use fewer than four loan products and four savings products.

You can increase, or decrease, the number of products at any time by simply selecting a larger, or smaller, number from the drop-down list. If you decrease the number of products, however, any information that you have entered for the higher-numbered products is automatically deleted from the model. For example, if you reduce the number of your loan products from three to two, Microfin deletes any information that you have already entered for loan product three.

**If You Have More Than Four Loan Products**

If your institution has more than four loan products or more than four savings products, look for ways to combine similar products in Microfin without significantly losing accuracy.

Your analysis should give priority to those products that account for the largest share of your institution’s resources. If three products account for 90% of your activities, for example, and four others account for only 10%, then you can likely combine the smallest four products without significantly impacting the accuracy of your projections.

As a part of your analysis, you can review the manner in which Microfin manages products, as described in this chapter. For example, if two of your products are identical except for their interest rates, you may be able to model the products together by using a weighted average interest rate. This approach is often appropriate for term deposits, the interest rate of which generally varies according to the length of deposit.
Frequently, institutions with indexed loans offer products that are identical with the exception of the currency. For example, one product may be issued in local currency while the other is issued in an external currency with a lower nominal interest rate. In order to accurately project income in Microfin, you should not combine such products; they must be modeled separately.

If Your Product Terms Vary By Branch or Region
Microfin applies all product definitions consistently across the institution. If you are modeling on a branch or regional basis, this means that the definition of each product applies to all branch or regional offices. Thus, if you define savings product one with an interest rate of 12%, the model projects that all of your branches or regions pay 12% interest on savings product one.

The approach works well when you generate projections for consolidated models. However, if you develop branch- or region-based projections, it can be somewhat restrictive.

To allow for inter-branch or inter-region variations, you could simply define two or more products. Then you can use different products for different branches or regions. (Microfin does not require that you use each product in all of your branches or regions.)

For example, if your loan sizes differ significantly between large-city branches and small-city branches—but all other terms are generally the same—you can create two separate loan products with different loan sizes. Select the appropriate product for each branch, based on the size of the city in which the branch is located.

If Your Product Terms Vary by Cycle
In most microlending methodologies, loan products are structured in terms of a progressive series of loans—or cycles—where each loan cycle is associated with potentially different loan sizes and terms. First-cycle loans are typically small and short term. Later-cycle loans are generally larger in size and longer in duration, reflecting the client’s expanded business operations and demonstrate creditworthiness.

You do not have to define separate loan products in order to accommodate cyclic differences. Microfin projects activity for each of the first five loan cycles separately. However, it does aggregate activity for the sixth and subsequent loan cycles. If you expect that your clients’ loans will increase in size after the sixth cycle, you should calculate and enter weighted-average values for the last (sixth) loan cycle, then increase these amounts over time using the optional data-input cells.

If Your Product Will Be Redesigned During the Projection Period
If you intend to redesign an existing loan product during the projection period, it is generally preferable to model this redesign by changing the definition of the existing product rather than by phasing it out and introducing a new one (figures 5.5 and 5.6).
There are two main reasons for recommending this approach:

- For new loan products, Microfin assumes all clients receive first-cycle loans. This means that clients who transition from the old loan product to the new one are all treated equally by Microfin even though, in point of fact, the older clients will generally receive larger loans associated with later loan cycles.
- Introducing a redesigned product as a new product ties up two of the four possible loan product definitions.

### Reviewing the Product Definition Summary

The PRODUCT DEFINITION SUMMARY presents an overview of each of your loan and savings products. By default, this summary is hidden. To view the summary data, check the box entitled CLICK TO SHOW SECTION. [line 2.02]

After you have entered all product data on the PRODUCTS sheet and recalculated your model, use this summary to compare your financial products and identify possible data entry errors. For example, you can compare the beginning (month one) and ending (month 60) values to find possible errors in the optional information that you enter at the extreme right of the scrolling display.

#### Figure 5.3 PRODUCT DEFINITION SUMMARY Section, PRODUCTS Sheet

<table>
<thead>
<tr>
<th>Product Definition Summary</th>
<th>Initial</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Loan Products</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>First cycle loan amount</td>
<td>100</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Second cycle loan amount</td>
<td>100</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Third cycle loan amount</td>
<td>100</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Fourth cycle loan amount</td>
<td>100</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td><strong>Savings Products</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>First cycle interest rate</td>
<td>3.0%</td>
<td>0.0%</td>
<td>0.0%</td>
<td>0.0%</td>
<td>0.0%</td>
<td>0.0%</td>
<td>0.0%</td>
</tr>
<tr>
<td>Second cycle interest rate</td>
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<tr>
<td>Third cycle interest rate</td>
<td>3.0%</td>
<td>0.0%</td>
<td>0.0%</td>
<td>0.0%</td>
<td>0.0%</td>
<td>0.0%</td>
<td>0.0%</td>
</tr>
<tr>
<td>Fourth cycle interest rate</td>
<td>3.0%</td>
<td>0.0%</td>
<td>0.0%</td>
<td>0.0%</td>
<td>0.0%</td>
<td>0.0%</td>
<td>0.0%</td>
</tr>
</tbody>
</table>

28 The information for the second loan product is not part of the FEDA case study. The 36% interest rate for month one (lines 2.26 and 2.27) reflects an interest-rate change that is made later, as a result of FEDA’s financing-flows projections discussed in “Chapter 10, Developing a Financing Strategy.”
### Defining Loan Products

You define your loan products using the LOAN PRODUCT INPUT section of the PRODUCTS sheet.

#### Figure 5.4 Loan Product Input Section, Products Sheet

<table>
<thead>
<tr>
<th>Loan Product: Solidarity Group Loans</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Step 1: Average Loan Amount</strong></td>
</tr>
<tr>
<td><strong>Initial</strong></td>
</tr>
<tr>
<td><strong>January</strong></td>
</tr>
<tr>
<td><strong>February</strong></td>
</tr>
<tr>
<td><strong>March</strong></td>
</tr>
<tr>
<td><strong>April</strong></td>
</tr>
<tr>
<td><strong>May</strong></td>
</tr>
<tr>
<td><strong>June</strong></td>
</tr>
<tr>
<td><strong>July</strong></td>
</tr>
<tr>
<td><strong>August</strong></td>
</tr>
<tr>
<td><strong>September</strong></td>
</tr>
<tr>
<td><strong>October</strong></td>
</tr>
<tr>
<td><strong>November</strong></td>
</tr>
<tr>
<td><strong>December</strong></td>
</tr>
</tbody>
</table>

**Notes:**
- In the initial balance column, describe the questionnaire product definitions: postpone any advance of the product until March of the year.
- The maximum loan amount is 100,000.

### Step 2: Define repayment conditions for Solidarity Group Loans

**Monthly repayments**

<table>
<thead>
<tr>
<th>Period</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
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<th>9</th>
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<th>11</th>
<th>12</th>
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<td>6</td>
<td>6</td>
<td>6</td>
<td>6</td>
<td>6</td>
<td>6</td>
<td>6</td>
<td>6</td>
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<tr>
<td>Month 2</td>
<td>6</td>
<td>6</td>
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<td>6</td>
<td>6</td>
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<td>6</td>
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<tr>
<td>Month 4</td>
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<td>Month 8</td>
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<tr>
<td>Month 9</td>
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<tr>
<td>Month 10</td>
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<td>6</td>
<td>6</td>
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<td>6</td>
</tr>
<tr>
<td>Month 11</td>
<td>6</td>
<td>6</td>
<td>6</td>
<td>6</td>
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<td>6</td>
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<td>6</td>
</tr>
<tr>
<td>Month 12</td>
<td>6</td>
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<td>6</td>
<td>6</td>
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</tr>
</tbody>
</table>

**Notes:**
- Monthly repayments are based on the loan amount and the interest rate.
- Repayments are due on the 1st of each month.

### Step 3: Identify a Compulsory Savings for Solidarity Group Loans

<table>
<thead>
<tr>
<th>Step 3: Identify a Compulsory Savings for Solidarity Group Loans</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Compulsory Savings</strong></td>
</tr>
<tr>
<td><strong>Type</strong></td>
</tr>
<tr>
<td><strong>Value</strong></td>
</tr>
</tbody>
</table>

**Notes:**
- Compulsory savings cannot be invested in other loans.
- The savings requirement can be eliminated using option (3).

### Step 4: Set Pricing Structure for Solidarity Group Loans

<table>
<thead>
<tr>
<th>Step 4: Set Pricing Structure for Solidarity Group Loans</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Interest Rate Method</strong></td>
</tr>
<tr>
<td><strong>Flat Rate</strong></td>
</tr>
<tr>
<td><strong>Flat Rate Change</strong></td>
</tr>
<tr>
<td><strong>Flat Rate Change in Months</strong></td>
</tr>
<tr>
<td><strong>Flat Rate Change in Months</strong></td>
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<tr>
<td><strong>Flat Rate Change in Months</strong></td>
</tr>
<tr>
<td><strong>Flat Rate Change in Months</strong></td>
</tr>
</tbody>
</table>

**Notes:**
- The interest rate method is flat rate.

### Step 5: Analyze Product Definition for Solidarity Group Loans

<table>
<thead>
<tr>
<th>Step 5: Analyze Product Definition for Solidarity Group Loans</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Product Definition Table</strong></td>
</tr>
<tr>
<td><strong>Loan Amount</strong></td>
</tr>
<tr>
<td><strong>Effective Interest</strong></td>
</tr>
<tr>
<td><strong>Cumulative Total</strong></td>
</tr>
<tr>
<td><strong>Effective Interest</strong></td>
</tr>
<tr>
<td><strong>Cumulative Total</strong></td>
</tr>
<tr>
<td><strong>Effective Interest</strong></td>
</tr>
<tr>
<td><strong>Cumulative Total</strong></td>
</tr>
</tbody>
</table>

**Notes:**
- The following table analyzes the loan product using the "Loan 1" column.

---

29 Note that this illustration includes an interest-rate change for month one on line 3.69. This entry is made later, as a result of FEDA’s financing-flows projections discussed in “Chapter 10, Developing a Financing Strategy.”
Procedure to define a loan product — Loan Product Input section, Products sheet:

1. Optionally, for product two only, enable Microfin’s automated graduation option. [page 154]
2. Set the product’s average loan amount. [page 154]
3. Define the repayment conditions. [page 157]
4. Identify any compulsory savings requirements. [page 160]
5. Set the pricing structure. [page 163]
6. Briefly review the product definition summary to ensure the accuracy of your entries. [page 151]
7. Review the summary analysis table. [page 166]

Each of these steps is described in the sections that follow.

As you complete each of the above procedures, there are several possible scenarios that may require special treatment: new-product introductions, product redesign, products that are not structured by cycle, and client graduation.

Modeling Products Introduced after the Beginning of the Projection Period

If you plan to introduce a new product after the beginning of your projection period, always define the product—including its average loan size, repayment conditions and pricing structure—as of month one. As a result, the product will be included in the ANALYSIS section of this sheet.

You can enter the product as of month one without affecting your projections, since Microfin will not actually project activity for the loan product until the month in which the product is introduced on the PROGRAM (BRANCH/REGION) sheet.

Modeling Product Redesign

If you intend to redesign an existing loan product, enter the current product parameters in the INITIAL BALANCE column. Microfin needs the current data to calculate values for the outstanding portfolio.

Enter new product parameters in the optional input cells of that product’s definition section (figures 5.5 and 5.6 provide examples).
**Overriding Cycle-based Modeling**

Certain loan products are not structured by cycles. Instead, their amounts and terms—derived from an analysis of the clients and their businesses—remain steady over time.

To model such loans, you can override Microfin’s cycle-based modeling by entering *the same* loan size and term for each cycle. For example:

<table>
<thead>
<tr>
<th>Loan Cycle</th>
<th>Amount</th>
<th>Term</th>
</tr>
</thead>
<tbody>
<tr>
<td>First loan</td>
<td>500</td>
<td>6 months</td>
</tr>
<tr>
<td>Second loan</td>
<td>500</td>
<td>6 months</td>
</tr>
<tr>
<td>Third loan</td>
<td>500</td>
<td>6 months</td>
</tr>
</tbody>
</table>

In this case, Microfin still tracks the number of loans by cycle. However, average loan sizes and terms will not vary if the distribution of loans among the cycles changes over time.

**Modeling Client Graduation**

When an initial loan product no longer meets a client’s needs, some microfinance institutions offer another loan product into which the client can graduate. For example, after repaying an entry-level group loan product, a client may be able to graduate to an individual loan product that offers different terms and conditions.

Microfin provides an option to automatically model such a transition—but only from product one to product two. This *AUTOMATED GRADUATION FROM PRODUCT 1* option is located at the beginning of the LOAN PRODUCT INPUT section for loan product *two*. [line 3.03]

If you enable this option for product two, you can then enter detailed data regarding the number of clients that graduate, and when they graduate, on the PROGRAM (BRANCH/REGION) sheet’s LOAN PROJECTION INPUT section for product one.

**Setting Average Loan Amounts**

As a first step in defining your loan product, you must establish its average loan amount(s). Microfin accommodates a different average loan size for each of six loan cycles, and also allows you to index the loan amount to inflation on a monthly or annual basis. Microfin assumes that each loan is completely disbursed within a single month; multiple disbursements are beyond its capabilities.
When properly defined, these entries can accurately model the loan-size increases that your clients receive over the projection period. For example, assume a new client receives a first-cycle loan for 100 in month one. If the loan’s term is three months, the loan is fully repaid by the end of month four. At that point, your client is eligible to receive a second-cycle loan of 205. The increased size of this second loan reflects both the:

- typical increase granted by your lending program between cycles (100, entered manually)
- impact of inflation (five, calculated automatically based on your inflation rate).

The average loan amount provides Microfin with important data, both to project the loan portfolio and to understand the manner in which the product is designed and implemented. To provide this required data, gather your historical loan records for a defined period (e.g., loans disbursed during the past two months) in order to generate a sampling. Group these historical loans according to first-cycle loans, second-cycle loans, and so on. Then, calculate an average loan amount for each grouping.

**Figure 5.5a Loan Product Input / Average Loan Amount Section, Products Sheet**

**Figure 5.5b Loan Product Input / Average Loan Amount Section, Products Sheet (With Monthly Inflation)**
Procedure to define the average loan amounts—Step 1 Average Loan Amount / Loan Products Input section, Products sheet:

1. For each cycle, enter your most recent AVERAGE LOAN AMOUNTS BY CYCLE. [lines 3.09 – 3.14]

   This entry is independent of your methodology; always enter the average loan per individual borrower, not per group. For example, if you are using a village banking methodology, you enter the average loan amount for bank members, not for banks.

   If you issue the loan product in a foreign currency, you must always enter amounts into Microfin in their local currency equivalents. Microfin maintains the outstanding principal value for your disbursed loans using the PRODUCT INDEXING RATE that you entered on the MODEL SETUP sheet.

   After you recalculate Microfin, your entries are carried forward to future periods in the following section (DATA USED IN CALCULATIONS). For example, in figure 5.5, the 550 entered for the sixth cycle in month one is carried forward to month two and beyond.

2. If your average loan amount changes over time, use the optional input cells to enter new average loan sizes for the month in which they take effect. [lines 3.09 – 3.14] For an example, refer to the fifth- and sixth-cycle loans in figure 5.5.

   Generally, you only use these optional cells under the following circumstances:
   - When you plan to redesign the loan product—for example, if you conclude that your loan sizes need to be altered to better meet your clients’ needs or to improve repayment and reduce risk.
   - When an increasingly large share of your clients reach the sixth and subsequent cycles. Because the loan size you enter for this cycle is actually an average that applies to multiple cycles, it is likely to increase over time. You need to reflect this increase using manual entries, or you will underestimate both your loan portfolio and financial income.

   In certain cases, you may prefer to enter formulas, rather than amounts, in order to more accurately model your average loan amounts. For example, assume you create your model in a local currency, but you issue loans in a foreign currency. If you expect the inflation rate and the foreign-currency exchange rate to move at significantly different rates, you cannot use the inflation-rate adjustment (see below) to approximate changes in your foreign loan amounts. It will not accurately model changes in the exchange rate. Instead, you could develop a formula to accurately reflect the foreign-denominated loan amounts over time.

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30 You can only input foreign currency amounts if all the amounts you enter throughout Microfin, including salaries, operating expenses and financing, are denominated in the same currency.

31 Except in the context of the case study, the handbook presents monetary amounts independent of any specific currency.
3. Select a **LINK LOAN AMOUNTS TO INFLATION** option from the drop-down list to index your average loan amounts. [line 3.23]

Your options are as follows:

- **DO NOT AUTOMATICALLY INDEX THE AVERAGE LOAN SIZE TO INFLATION.** In this case, you must manually enter any changes in average loan amounts using Microfin’s optional, gray input cells.

- **INDEX THE AVERAGE LOAN SIZE TO INFLATION EACH MONTH,** based on the inflation rate you entered on the MODEL SETUP sheet. Figure 5.5b illustrates loan amounts that are indexed monthly to an inflation rate of 10% a year.

If your loan product is *not* issued in the local currency, you should generally choose this option. It increases the model’s local-currency loan amount such that it approximates the foreign-currency loan amount that is actually issued.

- **INDEX THE AVERAGE LOAN SIZE TO INFLATION AT BEGINNING OF EACH YEAR,** based on the inflation rate you entered on the MODEL SETUP sheet.

4. Recalculate your model (F9).

### Defining Repayment Conditions

To define a loan’s repayment conditions, you enter values for three factors that affect its principal-repayment projections:

- repayment frequency
- effective loan term
- grace period

![Figure 5.6 Loan Product Input / Repayment Conditions Section, Products Sheet](image-url)
Procedure to define repayment conditions—Step 2 Repayment Conditions / Loan Products Input section, Products sheet:

1. Select a Repayment Frequency option from the drop-down list. [line 3.27]

Your options are the following:

- **Payment Daily, Weekly or Every Two Weeks.** Although perhaps not intuitively obvious, daily, weekly and biweekly repayment frequencies can be grouped together. This is because, in all three cases, one or more payments fall due within the same month that the loan is disbursed.

- **Monthly Payments.**

- **Single End-Of-Term Payment For Loan Principal.** Note that this option only governs loan principal payments; Microfin always calculates interest on a monthly basis.

Microfin cannot calculate quarterly repayments. To approximate a loan product with quarterly payments, select the Monthly Payments option. This option assumes that loans are repaid more rapidly than is actually the case, so the projections will understate both portfolio requirements and interest income somewhat. To compensate, you can input a higher interest rate.

If you have a product with a variety of repayment frequencies—such as weekly and monthly—you should also use the Monthly Payments option. Your estimated cash flow projections will be only slightly inaccurate.

2. For each cycle, enter the Effective Loan Term, in months. [lines 3.31 – 3.36] This effective loan term represents the average number of months that clients actually take to repay their loans. For additional information, refer to “Calculating the Effective Loan Term” below.

For accuracy, Microfin uses this data to generate repayments when they are expected to be paid based on historical experience, not simply when the payments were originally scheduled to be made.

You must enter the effective loan term in months, rounded to the nearest month. Because of the way Microfin projects monthly activity, it is not possible to model loan terms defined as fractions of months. If, for example, your loan’s term is 20 weeks, enter the term as five months (20 weeks divided by 4.3 weeks per month equals 4.7 months, which is then rounded up to five).

If the term for your initial portfolio exceeds 24 months, or the term for any product is under three months, refer below to “Modeling a Loan Product when the Term for its Initial Portfolio Exceeds 24 Months” and “Modeling a Loan Product With a Term of Less Than Three Months.”
3. If you grant borrowers an initial grace period before they begin to repay principal on the loan product, enter the number of months in GRACE PERIOD.  

Grace periods affect the timing and amount of loan repayments. However, since they are relatively uncommon in microfinance, Microfin models a single, optional grace period as opposed to multiple grace periods by cycle. 

The grace period you enter must be shorter than the effective loan term for any of the loan cycles. If the grace period exceeds the loan term, Microfin displays an error message on the INPUT VALIDATION line. 

4. Recalculate your model (F9). 

**Calculating the Effective Loan Term**

In actual practice, clients often pay back their loans more quickly or more slowly than originally scheduled. To reflect this situation, Microfin uses an effective loan term—the average number of months it actually takes clients to repay their loans—when it generates the loan’s repayment stream. 

Late payments can significantly impact projections. If you fail to account for them, you overstate both projected loan disbursements and commission income, and also misstate loan officer caseloads. Consider a loan of 100 with a contractual loan term of four months and principal payments of 25 per month. If your clients repay the loan in five months, on average, rather than the scheduled four, Microfin’s projections should be based on five installments of 20 rather than four installments of 25. 

If you do not know your product’s effective loan term, you can calculate it by analyzing a representative sampling of your historical loan records. For each loan, measure the time period from the date of the initial disbursement to the date of the final repayment. Thus, for a loan with a three-month grace period and six monthly installments, the effective loan term is nine months. 

Alternatively, a loan paid in advance will have an effective term that is shorter than the loan’s scheduled (or contractual) term. 

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32 Microfin does not provide for a grace period on interest payments. For institutions that grant such a grace period, cash flow will be slightly overstated because the model assumes that interest income comes in monthly. 

33 Microfin handles loan defaults in a different way than it does late payments. The portion of the month’s loan disbursements projected to be in default is dropped from the repayment calculations and never flows back to the institution. The loan loss provisions are then increased to offset the uncollectible portfolio. For more information on how Microfin projects loan defaults, refer to “Generating Loan Loss Provisions and Reserves” on page 268. 

---
**Modeling a Loan Product when the Term for its Initial Portfolio Exceeds 24 Months**

Microfin can model new activity based upon any loan term you choose to enter. However, it cannot perform accurate calculations if the average effective term for your existing product’s initial loan portfolio exceeds 24 months.

In such an event, you have several options.

- If the product accounts for a small share of your total portfolio, you could exclude the product from your analysis.
- If the product accounts for a small share of your portfolio and its initial term does not exceed 36 months, you could model the term as 24 months. This approach involves some imprecision, but it captures most of the essential information.
- If the product represents a significant share of your total portfolio, the current version of Microfin cannot produce reliable results and you should use another model to project repayments for your initial outstanding portfolio.

**Modeling a Loan Product With a Term Shorter than Three Months**

Because Microfin switches from monthly to quarterly calculations after year two, it cannot precisely model loans with terms shorter than three months during years three through five. Such loans will be fully repaid in the same period as they are disbursed, and the clients will receive yet another loan during the same period—an impossible situation to model.

Thus, for any loan cycle in which the loan term is shorter than three months, the model increases the term to three months beginning in year three. In most cases, this results in only a minor loss in accuracy.

**Identifying Compulsory Savings**

Many microfinance institutions impose a savings requirement on clients who receive loans. Referred to here as *compulsory savings*, the amounts are also called mandatory savings, forced savings or collateral savings (because they provide collateral for the loan).

Because compulsory savings are directly linked to a loan, Microfin considers them to be a part of the loan product rather than an independent savings product.

Microfin projects compulsory savings amounts whether the savings deposits are held by the microfinance institution or by another organization. These amounts indicate the magnitude of savings being mobilized, and they also impact the loan’s cost to the client. You define the entity that controls savings on the SAVINGS INPUT section of the PRODUCTS sheet (figure 5.11).
Distinguish Between Compulsory And Voluntary Savings

Because the economic impact of compulsory savings can be quite different from that of voluntary savings, it is important to distinguish between the two.

- Voluntary savings products channel otherwise idle resources from certain clients to other clients who invest them in productive activities. As a result of such financial intermediation, your institution increases the amount of productive resources in the economy.

- By contrast, compulsory savings involve funds that are not necessarily idle. The borrower-saver may actually prefer to use these funds for productive investment, but must instead deposit them as savings in order to receive a loan. Therefore, the net increase in productive resources is only equal to the difference between the loan amount and the compulsory savings amount. Moreover, compulsory savings raise the cost of loans to your clients; the clients must pay interest on the full loan amounts while their economic resources increase only by the net amount that they actually receive.

You can distinguish between compulsory and voluntary savings by applying the following criteria:

- If your clients are required to save in order to borrow, the required savings are compulsory. This is true regardless of whether the requirement is imposed before the loan is disbursed or as an addition to each loan repayment.

- If clients save more than the required amount, only the required amount is considered compulsory. The balance is considered to be voluntary savings, even if you can legally use it as loan collateral.

---

34 In most cases, clients cannot access their compulsory savings while they have a loan outstanding. Therefore, the potential benefit to the client of having emergency funds on reserve cannot be realized.

Procedure for defining compulsory savings—Step 3 Compulsory Savings / Loan Products Input section, Products sheet:

1. Enter an Up-Front Savings percent to establish the amount that a client-borrower must have on deposit before the client can receive a new loan. [line 3.53]

   If your savings requirement is based on a fixed amount (e.g., 20 per loan) rather than a percentage, simply calculate an equivalent percentage and enter it into the model. For example, if all of your clients must have 20 in up-front savings, and your average loan size for all loans in all cycles is 200, your savings requirement is equal to 10%.

   You cannot change this rate over time, although you can eliminate the requirement. If your institution does not actually hold the savings, this is not a problem because compulsory savings amounts do not appear on your balance sheet and are not used for loan funds. If you do control savings, and if the rate change is significant, you can model compulsory savings using one of your four voluntary savings products. However, this means you will be required to make certain additional savings estimates, and Microfin will automatically treat the compulsory savings as if they are held by your institution.

2. Select a Based On option from the drop-down list to determine the basis for calculating the Up-Front Savings requirement. [line 3.53]

   Your options are:
   - a Percentage of the Cumulative Total of All Loans Received. For example, assume that the compulsory savings requirement is 10%. Further, assume that your client had previously received a loan of 100 and will now receive a loan of 200. The client must have 30 in savings on deposit (i.e., 10% of the cumulative total of 300) in order to qualify for the loan.
   - a Percentage of the Requested Loan Amount. For example, if your client requests a loan of 200 and your compulsory savings requirement is 10%, the client must have 20 on deposit to qualify for the loan.36

3. Enter an Ongoing Savings percent to establish the amount that a borrower must deposit with each loan repayment. [line 3.55] Enter zero (0) here if you have no ongoing compulsory savings requirement.

   The required amount is calculated as a percentage of the monthly principal payment. For example, if your ongoing savings requirement is 10% and your client makes five monthly loan-principal payments of 20 each, the client must deposit two in compulsory savings with each payment. By the time the loan is repaid, the client will have accumulated a total of ten in compulsory savings.

36 Savings are sometimes required one or more months before loan disbursement. Because Microfin does not model this alternative, cash balances will be slightly understated in such cases (if the microfinance institution holds the savings accounts).
If your savings requirement is stated as a fixed amount, calculate an equivalent percentage and enter it into the model.

You cannot change this rate over time, except to eliminate compulsory savings altogether (as discussed below).

4. You can establish both an up-front and an ongoing savings requirement for your loan product.

5. If you anticipate the total elimination of the compulsory savings requirement in a future month, enter the month (from one to 60) during which these savings accounts will be closed. [line 3.57]

If, after eliminating the requirement, you wish to transfer some or all of the compulsory savings balances to a voluntary savings product, you must do so manually using the SAVINGS PROJECTION section of the PROGRAM (BRANCH/REGION) sheet.

### Setting the Pricing Structure

You define your loan product’s pricing structure using the STEP 4 PRICING STRUCTURE section of the PRODUCTS sheet.

#### Figure 5.8 Loan Product Input / Pricing Structure Section, Products Sheet

Because your institution’s primary source of earned income is its loan portfolio, appropriate pricing for its credit services is crucial. Periodically, review your pricing to take into account altered circumstances such as changes in inflation rates, the cost of funds, default rates and your institutional cost structure.

If yours is a young institution, the initial cost of your operations will likely exceed the amounts that you collect in interest and fees. Regardless, your pricing decisions should enable you to cover all of your costs and generate a reserve for growth once your operations reach a sufficient volume.

37 Note that this illustration includes an interest-rate change for month one on line 3.69. This entry is made later as a result of FEDA’s financing-flows projections discussed in “Chapter 10, Developing a Financing Strategy.”
Figure 5.9 Possible Options for Modeling Fees and Commissions

<table>
<thead>
<tr>
<th>Type of Fee</th>
<th>Basis of Calculation</th>
<th>Fixed Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>up-front</td>
<td>of loan amount</td>
<td>per loan</td>
</tr>
<tr>
<td>ongoing</td>
<td>of monthly principal payment</td>
<td>per month</td>
</tr>
</tbody>
</table>

**Procedure to establish your pricing structure—Step 4 Pricing**

**Structure / Loan Products Input section, Products sheet:**

1. Select the **INTEREST RATE METHOD** that you use to calculate interest income for your loan product. [line 3.61] The method you choose applies to both the initial portfolio and all new loans issued during the projection period.

   Your interest-calculation options are:

   - DECLINING BALANCE, calculated based on the outstanding loan balance each payment period. This method is generally used by commercial banks. For declining balance loans, the amount of interest decreases with each payment. In the absence of fees, the nominal and effective interest rates are identical.
   - FLAT, calculated based on the original, face amount of the loan. This method yields a much higher effective interest rate than does the declining balance method, since it always calculates interest as if the entire loan amount were still outstanding.
   - FLOATING RATE, calculated based on the FLOATING INDEX BASE RATE you enter on the MODEL SETUP sheet, plus the INTEREST RATE you enter on line 3.68 of this sheet.

2. You can change your loan’s interest method once during the projection period. To do so, check the box entitled **MODIFY INTEREST RATE METHOD IN A FUTURE MONTH**. [line 3.61] You cannot change your method more than once.

3. If you elect to change your interest method, Microfin displays two additional entries:

   - Select the interest-rate method you intend to **CHANGE TO**. [line 3.63]
   - Enter the **MONTH** (from one to 60) during which the change will take effect. [line 3.65]
4. Enter an annual **INTEREST RATE** for your initial portfolio. [line 3.68] Microfin uses this rate for your initial portfolio until the loans are fully repaid.

Always enter this rate in terms of its nominal, annualized equivalent. For example, if you charge 4% a month, enter the rate as 48%. If you charge 4% every four weeks, enter the rate as 52% (4% multiplied by 13 four-week periods per year).

If your loan product is indexed, enter the nominal rate here; Microfin separately projects any additional income resulting from indexing.

5. If your interest rate will **CHANGE** over time, enter the new interest rate in the month in which the change takes effect. [line 3.69] There are limitations to Microfin’s interest calculations if your interest rate changes are frequent or substantial.38

6. Enter any **UP-FRONT FEES OR COMMISSIONS** that you charge for the loan.39 [line 3.73]
   - If the fee or commission is a percentage of the loan amount, enter a value less than 1.0. For example, Microfin interprets an entry of 0.05 as 5%.
   - If the fee or commission is a fixed amount, enter a value greater than or equal to 1.0.

If your product has more than one up-front or ongoing fee or commission, you may be able to combine the fees before entering them into the model. For example, you can combine a 1% processing fee and a 2% technical assistance fee (both charged on the initial loan amount) and enter them as a 3% up-front fee. However, if one up-front fee is calculated as a percentage (3%) and a second fee is calculated as a fixed amount (ten per loan), you must estimate an effective rate that approximates the income from the two fees (perhaps 3.5%).

7. Enter any **ONGOING FEES OR COMMISSIONS** charged for the loan. [line 3.76]

8. You can enter both up-front and ongoing fees or commissions.

---

38 When the interest rate is changed, Microfin takes the outstanding portfolio at that moment and projects it to be repaid over the next x months, where x is the current average loan term. During these months, this portion of the portfolio is charged the old interest rate (e.g., 30%), while all new loans are charged the new rate (e.g., 36 %). But if the interest rate changes a second time (e.g., to 40%) before the old portfolio (at 30 %) is fully repaid, the portion of the old portfolio still outstanding will now be charged 36 % in the model. Thus, there can be some inaccuracies in interest calculations if interest rate changes are frequent or extreme. But the error might not be significant if, for example, the model assumes that a small portion of the total portfolio is charged 36 % rather than 30 % for a few months.

39 Fees and commissions often account for a significant share of credit program income. In countries where there is a regulatory limit on interest rates, or where interest is culturally prohibited, fee income is often structured to make up a particularly large share of lending income.
9. Optionally, you can enter insurance amounts—for example, amounts used to ensure loan repayment in the event of the borrower’s death—in the same manner as you enter any other fee that you charge on your loan product. However, Microfin considers the insurance payments as income rather than a liability, as is most often the case with insurance payments.

To estimate the amount you will have to pay out of the insurance fund, you should also define an expense line using the OTHER OPERATIONAL EXPENSES section of the PROGRAM (BRANCH/REGION) sheet. Microfin then considers the difference between the income and expense to be profit.

10. If, as a hedge against inflation, your loan product is tied to an index, check the INDEXING OF LOANS RECEIVABLE box. For example, your loans may be denominated in a foreign currency (perhaps U.S. dollars) that is less likely than your local currency to lose value due to inflation. As another example, your local-currency loans may be tied to an official inflation index to ensure that you do not lose value. In this case, to ensure that you are repaid an amount with purchasing power that is equivalent to the amount you lent, your clients will repay more principal than they initially received.

If you check this box, you must enter a the PRODUCT INDEXING RATE on the MODEL SETUP sheet. The interest rate you charge does not need to include an inflation risk premium.

Analyze the Loan Product

Use the STEP 5 ANALYSIS section of the PRODUCTS sheet to review a summary analysis of your loan product, as it is defined for month one.

This analysis does not capture changes that are introduced after the first month.

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40 The other option for modeling insurance is to exclude the insurance fee from the loan projections and, instead, to treat insurance as a separate financial service entered as OTHER EARNED INCOME on the PROGRAM (BRANCH/REGION) sheet.
This analysis also does not capture products that are initially defined on this sheet after month one. Therefore, as previously noted, if you plan to introduce a new product after the beginning of the projection period, define the product as of month one. That way, it will appear in this ANALYSIS.

The loan ANALYSIS presents the following information, by cycle: [lines 3.83 – 3.91]

- **LOAN SIZE**, from your previous entries on the sheet
- **PERCENT INCREASE**, in loan size over the previous cycle
- **EFFECTIVE TERM**, from your previous entries on the sheet
- **AVERAGE MONTHLY PAYMENT**, including principal, interest and any ongoing commissions or fees. Use the data to gauge whether the loan payments are within the clients’ capacity to repay. If the payments appear to be too high, you can lengthen the loan term or reduce the loan amount.
- **CUMULATIVE TIME**, in months and years, indicating how long it takes a client to progress to the next loan size/cycle.
- **EFFECTIVE INTEREST**, unadjusted and real. The effective interest rate is the rate you earn on the loan, including interest, commissions and indexing income. It is presented in both nominal (unadjusted) and real (inflation-adjusted) terms. The effective interest rate can vary from cycle to cycle because of differences in the various terms established for the loan.41
- **COST INCLUDING COMPULSORY SAVINGS**, indicates the cost of the loan from the perspective of the client. This calculation treats compulsory savings as a reduction in the loan amount that the client receives, and thus as an increase in the cost of the loan. (Note that the values in this column are not accurate until you enter the INTEREST RATE PAID on savings deposits in the SAVINGS INPUT section of this sheet.)

If you wish to review a more precise calculation of your loan’s effective interest rates and costs to the client, you can use Microfin’s optional CLIENT COST sheet. You can navigate to this sheet using the GO TO COST TO CLIENT button. [line 3.95]

The CLIENT COST sheet includes:

- a more precise specification of the loan’s terms and conditions
- transactions costs to the client that are based on methodology and program design
- financial implications of peer lending guarantees

For additional information, refer to “Using the CLIENT COST and REP SCHEDULE Sheets to Generate Effective Interest Rates and Client Cost Analyses” on page 457.

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Defining Savings Products

You define general parameters for both compulsory and voluntary savings using the SAVINGS INPUT section of the PRODUCT sheet.

Microfin projects compulsory savings deposits, voluntary savings depositors, and the average deposits per saver on the SAVINGS PROJECTION section of the PROGRAM (BRANCH/REGION) sheet. For additional information, refer to “Generating Savings Projections” on page 211.

Establishing General Parameters for Compulsory Savings

You use the SAVINGS INPUT section to establish general requirements that are applicable to all loan products with compulsory savings. You previously established loan-specific compulsory savings requirements in the LOAN PRODUCT INPUT section of this sheet (figure 5.7).

Figure 5.11 SAVINGS INPUT / COMPULSORY SAVINGS Section, PRODUCTS Sheet

Procedure to define general compulsory savings requirements—

**COMPULSORY SAVINGS / SAVINGS INPUT section, PRODUCTS sheet:**

These requirements are not product specific; they apply to all of your loan products.

1. Select a CONTROL OF COMPULSORY SAVINGS option from the drop-down list to establish the entity that holds and manages these savings. [line 4.01] This option also determines whether your institution pays interest on savings.

Your options are:

- **COMPULSORY SAVINGS NEVER APPEAR ON THE MFI BALANCE SHEET.**
  Use this option if compulsory savings amounts are held by an independent commercial bank or are controlled by client groups, as is the case in many village banking methodologies. Microfin will project compulsory savings amounts, but they will not appear on your balance sheet and will not be included in the funds available to finance your portfolio. Also, you will not pay interest on the compulsory savings balance.
- **COMPULSORY SAVINGS ALWAYS APPEAR ON THE MFI BALANCE SHEET.** Use this option if you collect and manage compulsory savings. These savings will appear on your balance sheet and will be included in the funds available to finance your portfolio (depending on an option you select on the FIN FLOWS sheet). You will pay any interest on the savings balance.

- **COMPULSORY SAVINGS DOES NOT APPEAR ON THE MFI BALANCE SHEET UNTIL THE MONTH INDICATED BELOW.** Use this option if you do not currently hold these savings, but plan to do so in the future.

2. If you chose the third option immediately above, enter the **STARTING MONTH** (one through 60) in which the change will take effect. [line 4.03]

3. Enter the annual **INTEREST RATE PAID** on compulsory savings, whether or not your institution pays the interest. [line 4.06] If your savings are indexed, enter only the nominal interest rate.

   If you do not hold the compulsory savings amounts, Microfin assumes that you do not pay the interest and, therefore, does not treat it as an expense. In this case, it uses the rate only for the cost to the client calculations—the higher the interest earned by the client, the lower the total client cost.

4. If you hold the compulsory savings, and they therefore appear on your balance sheet, enter the **PERCENT TO BE HELD IN RESERVE.** This is the amount required either to satisfy legal requirements or to provide for ongoing depositor withdrawals. [line 4.10]

   The amount of savings in reserve appears on the **SAVINGS RESERVES** line of the balance sheet, increased by the **SAVINGS RESERVES** interest rate you enter in the **INCOME ON INVESTMENTS** section of the FIN FLOWS sheet.

   If you do not hold the savings, Microfin considers the reserve requirement to be 100%—i.e., none of the savings amount is available for your on-lending or investments.

5. Check the **INDEXING OF SAVINGS** box if the value of your compulsory savings balance is tied to an external value. [line 4.13]

   If savings are indexed, you—or the commercial bank, if you do not control the savings—will incur a cost of funds in addition to the interest that is paid. This cost displays as the **INDEXING EXPENSE ON DEPOSITS** in the **FINANCIAL COSTS** section of the PROGRAM (BRANCH/REGION) sheet. For additional information on calculating this cost, refer to “Reviewing Financial Costs” on page 266.
Designing Voluntary Savings Products

Savings services are generally considered to be as important as credit services, reflecting the fact that virtually all people—even those who are not microentrepreneurs—have savings of one sort or another.42

Properly designed, voluntary savings represent a secure and liquid investment that clients can draw on for personal expenses, investments or emergencies. They permit clients to exercise more discretion over deposits and withdrawals than is the case with compulsory savings, and they do not have to be linked to a credit program.

Voluntary savings products, such as demand deposits and certificates of deposit, are designed around three general parameters:43

- minimum and maximum amounts for deposits and withdrawals, plus any minimum balance requirements
- frequency of deposits and withdrawals—e.g., on demand, during regularly scheduled meetings, at the end of a deposit cycle. Generally, the less frequent the withdrawals, the higher the interest rate paid. The rate compensates the client for restricted access and reflects the long-term investment potential for the institution, as well as its lower transaction costs.
- interest rate paid on deposits. Experience suggests that clients value security, ease of deposit and flexible withdrawal options more than they value high interest rates.

Not every institution has the capacity to provide voluntary savings services directly; these services require a high level of financial skill, discipline and prudence, when risking public deposits in lending programs or other-investment opportunities. Your institution must be legally authorized to hold deposits, be able to manage the legal and regulatory issues involved with savings mobilization,44 be consistently profitable, and have a rigorous financial management system in place before it can even consider accepting deposits. Many institutions that lack these attributes may instead prefer to collaborate with a local bank.


44 In most countries, banking regulations restrict the collection of savings deposits to formally accredited financial institutions. The decision about whether to formalize is one of the most crucial that a microfinance institution will face. For an additional discussion, refer to “Board and Management Issues” in “Annex 1, Strategic Planning Framework” on page 477.
Establishing Parameters for Voluntary Savings Products

Parameters for voluntary savings products (on the SAVINGS INPUT section on the PRODUCTS sheet) are identical to those for compulsory savings, except that Microfin assumes all voluntary savings are under your direct control. Thus, voluntary savings balances always appear on your balance sheet (in the current liabilities section, under savings deposits), and you are always charged for the related interest expense.

Figure 5.12a SAVINGS INPUT / VOLUNTARY SAVINGS PRODUCTS Section, PRODUCTS Sheet (Year One)
Figure 5.12b SAVINGS INPUT / VOLUNTARY SAVINGS PRODUCTS Section, PRODUCTS Sheet (Years Four and Five)\(^ {45} \)

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<th>Savings Product 1</th>
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<td>Value used for calculations</td>
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<tr>
<td>Percent to be held in reserve</td>
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<tr>
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Procedure to enter voluntary savings parameters—SAVINGS INPUT section, PRODUCTS sheet:

1. Enter the annual INTEREST RATE PAID to depositors for the voluntary savings product. [line 4.06]

2. Enter the PERCENT (of the voluntary savings balance) to be HELD IN RESERVE. [line 4.10] This is an amount that is either legally imposed or that you consider necessary to cover anticipated depositor withdrawals.

3. If you wish to index these savings to an external value, check the INDEXING OF SAVINGS box. [line 4.13]

4. Recalculate your model (F9).

5. Repeat the procedure for each voluntary savings product.

---

45 Note that the voluntary savings products are implemented in the first quarter of year four.
Case Study: FEDA’s Loan and Savings Products

Defining FEDA’s Financial Products

At the end of 2000, FEDA offered a single loan product, Solidarity Group Loans, and had no voluntary savings products. The institution required all borrowers to maintain compulsory savings, which Microfin treats as part of the loan product.

FEDA’s strategy calls for redesigning its loan product to better meet its clients’ needs. Staff determined that this redesign could be reflected in the model by treating FEDA’s lending activity as a single loan product whose parameters will change as of January 2001, the first year of the projections. Because FEDA has no plans to introduce new loan products in the next five years, they selected the ONE LOAN PRODUCT option on the PRODUCTS sheet and named it “Solidarity Group Loans.”

FEDA intends to convert to a nonbank financial institution in year four, which will make it eligible to collect savings deposits. Its management expects to offer two voluntary savings products: a voluntary savings account, called “Passbook Savings” that replaces the current compulsory savings, and a range of term deposits to be modeled as a single product called “Term Deposits.”

Refer to figure 5.2.

Setting FEDA’s Loan Amounts and Repayment Conditions

At the end of 2000, FEDA offered a single loan product. Clients formed groups of five and, after meeting initial savings goals, each client received a loan of the same size and term. Each group member cosigned for the others. All loans required monthly payments. The loan progression was very rigid. FEDA did not offer a grace period on repayments. Contractual loan terms were 12 months on all products, although clients generally took an extra month to fully repay their loans.
FEDA’s Old Loan Product (Initial Balance Column)

<table>
<thead>
<tr>
<th>Loan Cycle</th>
<th>Average Amount (Freeons)</th>
<th>Average Effective Term (Months)</th>
</tr>
</thead>
<tbody>
<tr>
<td>First</td>
<td>100</td>
<td>13</td>
</tr>
<tr>
<td>Second</td>
<td>200</td>
<td>13</td>
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<tr>
<td>Third</td>
<td>300</td>
<td>13</td>
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<tr>
<td>Fourth</td>
<td>400</td>
<td>13</td>
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<tr>
<td>Fifth and subsequent</td>
<td>400</td>
<td>13</td>
</tr>
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</table>

FEDA’s strategic analysis found that the client retention rate was disturbingly low, dropping from 70% to 50% after the fourth loan. Clients complained about the small loans, particularly the ceiling of 400 freeons, and about the rigid 12-month loan terms. The analysis found no serious complaints about the solidarity group methodology.

Based on this information, management decided to redesign the loan product as of January 2001. After the first three cycles, loan amounts and terms will no longer be fixed, but rather are determined by the client’s credit history and needs. (Thus, the numbers entered in the model for the projections are averages.)

FEDA’s Redesigned Loan Product (Month One Column)

<table>
<thead>
<tr>
<th>Loan Cycle</th>
<th>Average Amount (Freeons)</th>
<th>Average Effective Term (Months)</th>
</tr>
</thead>
<tbody>
<tr>
<td>First</td>
<td>100</td>
<td>6</td>
</tr>
<tr>
<td>Second</td>
<td>200</td>
<td>6</td>
</tr>
<tr>
<td>Third</td>
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<td>Fourth</td>
<td>400</td>
<td>9</td>
</tr>
<tr>
<td>Fifth</td>
<td>500</td>
<td>9</td>
</tr>
<tr>
<td>Sixth and subsequent</td>
<td>550 - 750</td>
<td>12</td>
</tr>
</tbody>
</table>

46 The average contractual term is 12 months for all cycles. However, on average, clients took an extra month to fully repay loans. Thus, the average effective term is 13 months for all cycles.
Under the terms of the redesigned product, loans can increase as justified, with a new ceiling of 1,000 freeons per borrower. Management decided that larger amounts could not be granted under the solidarity group approach. It expects the average loan size in the sixth and subsequent cycles to increase gradually, from 550 freeons in January 2001 to 650 in January 2002 to 750 in January 2003. Average loan amounts are expected to increase annually by the rate of inflation.

Shorter initial loan terms will allow clients to progress more quickly to larger loans. And raising the ceiling to 1,000 freeons will respond to clients’ complaint that small loans constrain their growth.

The redesigned loan product will not include a grace period.

Refer to figures 5.5a and 5.6.

**Defining FEDA’s Compulsory Savings Requirements**

FEDA has required clients to save 10% of their requested loan amount before disbursement. These savings have been held at Freedonia National Bank (FNB). Clients have expressed dissatisfaction with FNB’s service, but FEDA is not legally allowed to hold savings deposits.

When FEDA converts to a nonbank financial institution in the fourth year of its strategic plan, it plans to eliminate the compulsory savings requirement. In month 37, FEDA will replace compulsory savings with their voluntary Passbook Savings product.

Refer to figure 5.7.

**Setting FEDA’s Pricing Structure**

FEDA has charged 30% annual interest using declining balance calculations. FEDA also charges a 3% fee on all loans at the time of disbursement (entered in the model as 0.03). All lending has been transacted in local currency, with no indexing to external values.

Management decided to leave the current pricing structure in place, at least initially. If the profitability projections turn out to be unacceptable, it will reprice the loan product. 47

Refer to figure 5.8.

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47 If you refer to the FEDA data in the figure or in the completed model, you will note that there is an interest-rate change to 36% for month one, line 3.69. This entry is made _later_ in the course of the case study, as a result of analysis after FEDA’s financing-flows projections are completed, as discussed in “Chapter 10, Developing a Financing Strategy.”
Setting the General Parameters for FEDA’s Compulsory Savings Products

The compulsory savings required by FEDA are held by the Freedonia National Bank, which pays depositors an interest rate of 8% a year.

Access to these savings is blocked while the client has an outstanding loan and can be seized by FEDA if the client fails to repay the loan. The funds are not otherwise available for FEDA’s use.

Refer to figure 5.11.

Defining FEDA’s Voluntary Savings Products

Starting in year four, FEDA plans to begin offering two voluntary savings products. Passbook Savings will offer an interest rate equal to inflation, projected at 10% a year. Term Deposits will pay interest ranging between 12% and 18%, depending on the term, with the average rate expected to be 15%.

Pending legislation allowing nonbank financial institutions will probably mandate that 25% of any savings deposits be placed in short-term reserve deposits, with the rest available for on-lending at the institution’s discretion. FEDA’s management expects to establish a reserve of 40% of Passbook Savings (with the additional 15% to be held for supplemental liquidity) and the mandated 25% of Term Deposits.

As with loans, savings accounts will not be indexed to any external value.

Refer to figure 5.12a/b.
Defining Marketing Channels
Chapter 6
Defining Marketing Channels to Project Client Activity

Once you have defined the credit and savings products that you will offer, you identify your marketing channels and project the anticipated volume of your credit and savings activity.

Possible marketing channels include existing offices and branches, new branches, credit windows physically located within other organizations, and alliances with banks or other financial institutions.

You develop credit and savings projections based on your choice of marketing channels and the specific strategy you choose to pursue, such as developing new products for your existing markets or approaching new markets. You should also consider your:

- existing and anticipated environment
- target clients, especially those representing the market segments that exhibit the greatest projected demand for your services
- current and potential competitive advantages, such as a strong branch network
- overall marketing strategy

You should pursue growth in a realistic and measured way, so that you do not exceed either your assessment of market potential or your administrative capacity.

Experience strongly suggests that the optimal marketing strategy is founded on a strong, decentralized, branch-based distribution system.48 By decentralizing authority for loan processing and collections, the responsibility for lending decisions rests with those closest to the clients—the credit staff. However, standardized systems, procedures and products across branches ensure consistency for such activities as staff training, loan processing, and portfolio and financial reporting.

Microfin follows this branch-based approach; it provides the option to project client activity by branch or region, yet centralizes projections for administrative and financing activities.

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Using the Program (Branch/Region) Sheet to Generate Loan and Savings Projections

You use the Program (Branch/Region) sheet to project both marketing activities, as described in this chapter, and program-related resources and capacity, as described in “Chapter 8, Projecting Program-related Resources and Capacity” on page 259.

This is the largest sheet in Microfin. If you are modeling on a consolidated basis, you enter data for your entire institution on one Program (Branch/Region) sheet. If you are modeling on a branch or regional basis, you enter data for each branch or region on a separate copy of the sheet.

Microfin uses the data in the following sections to project credit and savings activity:

- Program (Branch/Region) Summary Report [lines 1.01 – 1.146]
- Loan Projection Input [lines 2.01 – 2.85]
- Loan Product Output [lines 3.01 – 3.76]
- Savings Projection [lines 4.01 – 4.56]

The final sections of the sheet generate various program-related income and expense projections for your resources plan:

- Income [lines 5.01 – 5.19]
- Financial Costs [lines 6.01 – 6.25]
- Loan Loss Provision and Write-off [lines 7.01 – 7.35]
- Number of Branches [lines 8.01 – 8.04]
- Loan Officer Analysis [lines 9.01 – 9.52]
- Program-Level Staffing [lines 10.01 – 10.94]
- Program-Level Other Operating Expenses [lines 11.01 – 11.46]
- Program-Level Fixed Assets [lines 12.01 – 12.88]
- Administrative Nonfinancial Cost Allocation, branch and regional models only [lines 13.01 – 13.06]
- Branch/Regional Income Statement, branch and regional models only [lines 14.01 – 14.32]
- Branch/Regional Income Statement Analysis, branch and regional models only [lines 15.01 – 15.17]

You can navigate to any desired section of the sheet using the items on its pagebar.

Alternatively, you can use the Navigator sheet as a central location, or switchboard, from which to enter and edit information on this sheet. For additional information, refer to “Using the Navigator Sheet and Navigator Wizard as a Framework for Entering Data” on page 66.
6 — Defining Marketing Channels to Project Client Activity

Figure 6.1a Program Branch (Region) Sheet (1 of 6)

Program Branch, Prog.

Program Summary

<table>
<thead>
<tr>
<th>Branch/Region</th>
<th>Number of Branches</th>
<th>Total Number of Branches</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Branch/Region</th>
<th>Number of Regions</th>
<th>Total Number of Regions</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Branch/Region</th>
<th>Number of Programs</th>
<th>Total Number of Programs</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Branch/Region</th>
<th>Number of Activities</th>
<th>Total Number of Activities</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: The above table provides a summary of the program branch and region details. The table includes information on the number of branches, regions, programs, and activities across different regions.

---

additional note:

- The program summary table helps in understanding the distribution and breakdown of various program elements across different regions and branches.
- The table provides a clear visualization of the program's structure and helps in identifying any regional variances or concentrations.
### Figure 8.1b Program (Branch/Region) Sheet (2 of 6)

#### Loan Product Input Section

Review the four steps outlined to the right for each loan product you are using.

**Loan Product 1: Solidarity Group Loans**

**Step 1: Initial Balances**

**Step 2: Number of active loans**

**Step 3: Total number of active loans**

**Step 4: Paydown rates**

### Program Level Projection Sheet

<table>
<thead>
<tr>
<th>Month</th>
<th>Initial Balance</th>
<th>Paydown</th>
<th>Total Paydown</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jan-91</td>
<td>0</td>
<td>0.02%</td>
<td>0.02%</td>
</tr>
<tr>
<td>Feb-91</td>
<td>0</td>
<td>0.02%</td>
<td>0.02%</td>
</tr>
<tr>
<td>Mar-91</td>
<td>0</td>
<td>0.02%</td>
<td>0.02%</td>
</tr>
<tr>
<td>Apr-91</td>
<td>0</td>
<td>0.02%</td>
<td>0.02%</td>
</tr>
<tr>
<td>May-91</td>
<td>0</td>
<td>0.02%</td>
<td>0.02%</td>
</tr>
<tr>
<td>Jun-91</td>
<td>0</td>
<td>0.02%</td>
<td>0.02%</td>
</tr>
<tr>
<td>Jul-91</td>
<td>0</td>
<td>0.02%</td>
<td>0.02%</td>
</tr>
<tr>
<td>Aug-91</td>
<td>0</td>
<td>0.02%</td>
<td>0.02%</td>
</tr>
<tr>
<td>Sep-91</td>
<td>0</td>
<td>0.02%</td>
<td>0.02%</td>
</tr>
<tr>
<td>Oct-91</td>
<td>0</td>
<td>0.02%</td>
<td>0.02%</td>
</tr>
<tr>
<td>Nov-91</td>
<td>0</td>
<td>0.02%</td>
<td>0.02%</td>
</tr>
<tr>
<td>Dec-91</td>
<td>0</td>
<td>0.02%</td>
<td>0.02%</td>
</tr>
<tr>
<td>Total</td>
<td>0</td>
<td>0.24%</td>
<td>0.24%</td>
</tr>
</tbody>
</table>

### Program Level Summary Sheet

**Initial Balance:**

- Jan-91: 0
- Feb-91: 0
- Mar-91: 0
- Apr-91: 0
- May-91: 0
- Jun-91: 0
- Jul-91: 0
- Aug-91: 0
- Sep-91: 0
- Oct-91: 0
- Nov-91: 0
- Dec-91: 0
- Total: 0

**Paydown:**

- Jan-91: 0.02%
- Feb-91: 0.02%
- Mar-91: 0.02%
- Apr-91: 0.02%
- May-91: 0.02%
- Jun-91: 0.02%
- Jul-91: 0.02%
- Aug-91: 0.02%
- Sep-91: 0.02%
- Oct-91: 0.02%
- Nov-91: 0.02%
- Dec-91: 0.02%
- Total: 0.24%

**Total Paydown:**

- Jan-91: 0.02%
- Feb-91: 0.02%
- Mar-91: 0.02%
- Apr-91: 0.02%
- May-91: 0.02%
- Jun-91: 0.02%
- Jul-91: 0.02%
- Aug-91: 0.02%
- Sep-91: 0.02%
- Oct-91: 0.02%
- Nov-91: 0.02%
- Dec-91: 0.02%
- Total: 0.24%

### Notes

- Initial balance is zero for all months.
- Paydown rate is consistent at 0.02%.
- Total paydown is calculated by multiplying the initial balance by the paydown rate for each month.

---

**Using Microfin**

118.18  Number of active loans: 0

118.20  Number of clients: 0

118.22  Number of clients in the program: 0

118.24  Number of clients leaving the program: 0

118.26  Number of clients remaining in the program: 0

118.28  Number of clients that have defaulted: 0

118.30  Notes: None
## Figure 6.1c  PROGRAM (Branch/Region) Sheet (3 of 6)

### Loan Product Output Section

<table>
<thead>
<tr>
<th>Program Area</th>
<th>Interest Rate</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
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<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>11</th>
<th>12</th>
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</thead>
<tbody>
<tr>
<td>Aggregate Loan Summary</td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of active loans</td>
<td>2,800</td>
<td>2,522</td>
<td>2,455</td>
<td>2,398</td>
<td>2,359</td>
<td>2,326</td>
<td>2,293</td>
<td>2,259</td>
<td>2,226</td>
<td>2,200</td>
<td>2,177</td>
<td>2,156</td>
<td></td>
</tr>
<tr>
<td>Product 1: Solidarity Group Loan</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>General conditions</td>
<td>80%</td>
<td>80%</td>
<td>80%</td>
<td>80%</td>
<td>80%</td>
<td>80%</td>
<td>80%</td>
<td>80%</td>
<td>80%</td>
<td>80%</td>
<td>80%</td>
<td>80%</td>
<td></td>
</tr>
<tr>
<td>Total Loan Portfolio</td>
<td>20,000</td>
<td>18,000</td>
<td>16,000</td>
<td>14,000</td>
<td>12,000</td>
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<td>6,000</td>
<td>4,000</td>
<td>2,000</td>
<td>0</td>
<td>0</td>
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<tr>
<td>Total portfolio summary</td>
<td>80%</td>
<td>80%</td>
<td>80%</td>
<td>80%</td>
<td>80%</td>
<td>80%</td>
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<td>80%</td>
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<tr>
<td>Total equity</td>
<td>70,402</td>
<td>70,402</td>
<td>70,402</td>
<td>70,402</td>
<td>70,402</td>
<td>70,402</td>
<td>70,402</td>
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<td>70,402</td>
<td>70,402</td>
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</tr>
<tr>
<td>Total number of loans</td>
<td>2,800</td>
<td>2,522</td>
<td>2,455</td>
<td>2,398</td>
<td>2,359</td>
<td>2,326</td>
<td>2,293</td>
<td>2,259</td>
<td>2,226</td>
<td>2,200</td>
<td>2,177</td>
<td>2,156</td>
<td></td>
</tr>
<tr>
<td>1st lien as a % of equity</td>
<td>80%</td>
<td>80%</td>
<td>80%</td>
<td>80%</td>
<td>80%</td>
<td>80%</td>
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<td>80%</td>
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### Savings Projection Section

<table>
<thead>
<tr>
<th>Savings Project</th>
<th>Loans</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Savings</td>
<td>20,000</td>
</tr>
<tr>
<td>Savings Prod 1: Passbook Savings</td>
<td>10,000</td>
</tr>
<tr>
<td>Savings Prod 2: Term Deposits</td>
<td>10,000</td>
</tr>
<tr>
<td>Average balance per loan</td>
<td>$10,000</td>
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</tbody>
</table>

### Savings Proc 3: [Savings Prod 3 not in use]

### Savings Proc 4: [Savings Prod 4 not in use]

### Voluntary Savings Summary

<table>
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<tr>
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</thead>
<tbody>
<tr>
<td>Savings Proc 5</td>
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<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
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<tr>
<td>Savings Proc 6</td>
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<td>0</td>
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<td>Savings Proc 7</td>
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<td>Savings Proc 8</td>
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<tr>
<td>Savings Proc 9</td>
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<td>Savings Proc 10</td>
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<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

### Notes

1. These savings deposits are not controlled by the institution and do not appear on the balance sheet.

2. There are no options to enter the volume of savings. See HELP for a complete explanation.

3. There are no options to enter the volume of savings. See HELP for a complete explanation.
### Income Section

<table>
<thead>
<tr>
<th>Program Year</th>
<th>Initial</th>
<th>LC</th>
<th>Feb-Mar</th>
<th>Apr-May</th>
<th>Jun-Aug</th>
<th>Sep-Nov</th>
<th>Dec-Jan</th>
</tr>
</thead>
</table>

**Note:** The MFI does not report compulsory savings, therefore those financial costs do not appear as a cost to the MFI.

### Financial Costs

<table>
<thead>
<tr>
<th>Financial Cost</th>
<th>Initial</th>
<th>LC</th>
<th>Feb-Mar</th>
<th>Apr-May</th>
<th>Jun-Aug</th>
<th>Sep-Nov</th>
<th>Dec-Jan</th>
</tr>
</thead>
<tbody>
<tr>
<td>Loan Loss Provision and Write-off</td>
<td>0.00%</td>
<td>0.00%</td>
<td>0.00%</td>
<td>0.00%</td>
<td>0.00%</td>
<td>0.00%</td>
<td>0.00%</td>
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</table>

### Number of Branches

<table>
<thead>
<tr>
<th>Branch Type</th>
<th>Initial</th>
<th>LC</th>
<th>Feb-Mar</th>
<th>Apr-May</th>
<th>Jun-Aug</th>
<th>Sep-Nov</th>
<th>Dec-Jan</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>1,152</td>
<td>1,152</td>
<td>1,152</td>
<td>1,152</td>
<td>1,152</td>
<td>1,152</td>
<td>1,152</td>
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</tbody>
</table>

### Loan Officer Analysis

<table>
<thead>
<tr>
<th>Loan Officer Type</th>
<th>Initial</th>
<th>LC</th>
<th>Feb-Mar</th>
<th>Apr-May</th>
<th>Jun-Aug</th>
<th>Sep-Nov</th>
<th>Dec-Jan</th>
</tr>
</thead>
<tbody>
<tr>
<td>Loan Officer</td>
<td>1,152</td>
<td>1,152</td>
<td>1,152</td>
<td>1,152</td>
<td>1,152</td>
<td>1,152</td>
<td>1,152</td>
</tr>
</tbody>
</table>

### Other Earned Income

<table>
<thead>
<tr>
<th>Other Earned Income</th>
<th>Initial</th>
<th>LC</th>
<th>Feb-Mar</th>
<th>Apr-May</th>
<th>Jun-Aug</th>
<th>Sep-Nov</th>
<th>Dec-Jan</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>0.00%</td>
<td>0.00%</td>
<td>0.00%</td>
<td>0.00%</td>
<td>0.00%</td>
<td>0.00%</td>
<td>0.00%</td>
</tr>
</tbody>
</table>

### Program Outcome

<table>
<thead>
<tr>
<th>Program Outcome</th>
<th>Initial</th>
<th>LC</th>
<th>Feb-Mar</th>
<th>Apr-May</th>
<th>Jun-Aug</th>
<th>Sep-Nov</th>
<th>Dec-Jan</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>0.00%</td>
<td>0.00%</td>
<td>0.00%</td>
<td>0.00%</td>
<td>0.00%</td>
<td>0.00%</td>
<td>0.00%</td>
</tr>
</tbody>
</table>

### Internal Cost Charges

<table>
<thead>
<tr>
<th>Cost Charge</th>
<th>Initial</th>
<th>LC</th>
<th>Feb-Mar</th>
<th>Apr-May</th>
<th>Jun-Aug</th>
<th>Sep-Nov</th>
<th>Dec-Jan</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>0.00%</td>
<td>0.00%</td>
<td>0.00%</td>
<td>0.00%</td>
<td>0.00%</td>
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</tr>
</tbody>
</table>

### Program Outcome

<table>
<thead>
<tr>
<th>Program Outcome</th>
<th>Initial</th>
<th>LC</th>
<th>Feb-Mar</th>
<th>Apr-May</th>
<th>Jun-Aug</th>
<th>Sep-Nov</th>
<th>Dec-Jan</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>0.00%</td>
<td>0.00%</td>
<td>0.00%</td>
<td>0.00%</td>
<td>0.00%</td>
<td>0.00%</td>
<td>0.00%</td>
</tr>
</tbody>
</table>
### Program-level Staffing

<table>
<thead>
<tr>
<th>Program Area</th>
<th>Total</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>11</th>
<th>12</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Balance</strong></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td><strong>Jan-01</strong></td>
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<tr>
<td><strong>Mar-02</strong></td>
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<td><strong>Jan-05</strong></td>
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<td><strong>Mar-08</strong></td>
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<td><strong>Jan-11</strong></td>
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<td><strong>Jan-17</strong></td>
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<tr>
<td><strong>Mar-20</strong></td>
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</tr>
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</table>

### Program-level Other Op. Exp.

<table>
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<th>2</th>
<th>3</th>
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</thead>
<tbody>
<tr>
<td><strong>Balance</strong></td>
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</tr>
<tr>
<td><strong>Jan-01</strong></td>
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</tr>
<tr>
<td><strong>Mar-02</strong></td>
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<td></td>
</tr>
<tr>
<td><strong>Jan-05</strong></td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td><strong>Mar-08</strong></td>
<td></td>
<td></td>
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<td></td>
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</tr>
<tr>
<td><strong>Jan-11</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td><strong>Mar-14</strong></td>
<td></td>
<td></td>
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<td></td>
<td></td>
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<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td><strong>Jan-17</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
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</tr>
<tr>
<td><strong>Mar-20</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Notes
- The figures are for the year ending March 31, 2020.
- All data are subject to change.
Optionally, choose the DETAILS button on Microfin’s toolbar to see detailed breakdowns by cycle, product, activity and aging category.

The name and content of the PROGRAM (BRANCH/REGION) sheet varies depending on the modeling approach you chose on the MODEL SETUP sheet. [page 116]

If you selected:

- a **consolidated** approach, the name of this sheet is PROGRAM. You use it to model all program-related activity. It includes a facility for each product that allows you to estimate active loans by branch, if applicable.

- a **branch-based** approach, you will have one sheet for each branch office to be modeled. The sheets are named BRANCH 1, BRANCH 2 and so on, by default. You use a copy of the sheet to model credit and savings activities, staffing, income and other operational expenses for each branch. Each branch is treated as a unique profit center.

- a **region-based** approach, you will have one sheet for each region to be modeled. The sheets are named REGION 1, REGION 2 and so on, by default. The sheet includes a facility that, for each product, allows you to estimate active loans for each branch in the region. You use a copy of the sheet to model credit and savings activities, staffing, income and other operational expenses for each region. Each region is treated as a unique profit center.
Procedure to complete the marketing-related content of the Program (Branch/Region) sheet:

1. Optionally, add or delete branches or regions, as necessary. [page 187]
2. Generate loan portfolio projections for each product. [page 191]
3. Review the credit graphs for your loan products. [page 204]
4. Review the loan portfolio projections. [page 210]
5. Generate savings projections for each product. [page 211]
6. Review the savings mobilization summary. [page 215]
7. Review the savings graphs for your savings products. [page 216]

Each of these steps is described in the sections that follow.

Changing the Number of Branch or Region Sheets

If you selected a branch or regional modeling approach on the MODEL SETUP sheet, you can easily add or delete a branch or region sheet (figure 4.2b).

If you add a branch or region, Microfin copies the existing BRANCH/REGION 1 sheet and inserts this new sheet (entitled BRANCH X OR REGION X, where X equals the next highest number) immediately after the highest-number existing branch sheet.

If this process takes longer than five minutes and your computer continually accesses its hard drive during this period, you have probably exceeded your available RAM. You may need to interrupt the process and reboot your computer. (For additional information on Microfin’s RAM requirements, refer to “Figure 3.1 Minimum RAM Requirements” on page 88.)

Before you try the process again, close any open software applications that use RAM. If the problem persists, your only alternative is to add RAM to your computer.

If you delete a branch or region, Microfin removes the sheet entitled BRANCH/REGION X, where X equals the highest numbered sheet.
Procedure to add a branch or region—Modeling of Individual Branches section, Model Setup sheet:

1. Use the SAVE option on the Microfin toolbar (or from Excel’s drop-down FILE menu) to save your work before you attempt to add a branch or region sheet.

2. From the MODEL SETUP sheet, choose the ADD NEW BRANCH (REGION) button. [line 2.14]

Microfin copies the first branch or region sheet, including any data you have entered, when it creates this new sheet. To reduce your data entry workload, it is generally advisable to complete all of the credit and savings projections and the expenses for your first branch or region before you replicate the sheet.

3. You can assign your own names to the new branch sheet(s) using the BRANCH NAMES section of the MODEL SETUP sheet. [lines 2.19 – 2.28]

Enter the desired text in the gray cells of the NAME USED column, then choose the RENAME BRANCH SHEETS button on the MODEL SETUP sheet to implement the new names. Any name text you enter cannot be more than ten characters in length, and can only include the following characters: A through Z, 0 through 9, and “.”. Any other characters will cause the process to fail.

4. Test the model’s recalculation time with the new sheet by choosing the RECALC button on the Microfin toolbar or your F9 key. If this process takes an unreasonably long time and your computer continually accesses the hard drive, you may have exceeded your existing RAM.

5. If, at this point, you decide not to add the branch or region sheet, you have the option to close Microfin without saving your file. To continue after closing, reopen the file that you previously saved.
**Procedure to delete a branch or region—Modeling of Individual Branches section, Model Setup sheet:**

1. Use the SAVE option on the Microfin toolbar (or from Excel’s drop-down FILE menu) to save your work before you attempt to delete a branch or region sheet.

2. From the MODEL SETUP sheet, choose the DELETE LAST BRANCH (REGION) ADDED button. [line 2.14]

3. If, at this point, you decide not to remove the branch or region sheet, you have the option to close Microfin without saving your file. To continue after closing, simply reopen the previously saved version of your Microfin file.

**Reviewing the Program Summary Report Data**

Because you enter such a large amount of information on the PROGRAM (BRANCH/REGION) sheet, Microfin automatically provides a concise data summary section at the top of the sheet (figure 6.2).

After completing the entries for all of your loan and savings products, and recalculating your model, use this PROGRAM (BRANCH/REGION) SUMMARY REPORT to review and analyze the information you have entered.

If you are modeling on a consolidated basis, this information is identical to the data in the PROJECT CREDIT AND SAVINGS ACTIVITY section on the NAVIGATOR sheet. However, if you are modeling on a branch or regional basis, the NAVIGATOR sheet only reflects the data for the first branch or region. For the second and subsequent branches (or regions), you can review summary data from this PROGRAM (BRANCH/REGION) SUMMARY REPORT section on each BRANCH or REGION sheet, or by referring to the AGGREGATE ACTIVITY section of the ADMIN (HEAD OFFICE) sheet.
<table>
<thead>
<tr>
<th>Program Summary Report</th>
<th>Initial</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Number of active loans</strong></td>
<td>3,600</td>
<td>4,704</td>
<td>6,977</td>
<td>8,721</td>
<td>10,466</td>
<td>11,961</td>
</tr>
<tr>
<td><strong>Total Loan Portfolio</strong></td>
<td>504,000</td>
<td>754,189</td>
<td>1,390,860</td>
<td>2,052,710</td>
<td>2,977,650</td>
<td>3,772,847</td>
</tr>
<tr>
<td><strong>Total Voluntary Savings Deposits</strong></td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td><strong>Total Complimentary Savings</strong></td>
<td>70,000</td>
<td>122,087</td>
<td>225,054</td>
<td>341,330</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td><strong>Total Earnings Income</strong></td>
<td>242,042</td>
<td>484,175</td>
<td>781,141</td>
<td>1,127,717</td>
<td>1,567,737</td>
<td>1,867,737</td>
</tr>
<tr>
<td><strong>Other Earnings Income</strong></td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td><strong>Financial Costs</strong></td>
<td>35,193</td>
<td>46,550</td>
<td>53,663</td>
<td>77,009</td>
<td>150,063</td>
<td></td>
</tr>
<tr>
<td><strong>Cost of borrowed funds</strong></td>
<td>25,123</td>
<td>32,056</td>
<td>52,093</td>
<td>42,451</td>
<td>41,103</td>
<td></td>
</tr>
<tr>
<td><strong>Loan Loss Provision and Write-off</strong></td>
<td>34,026</td>
<td>61,166</td>
<td>94,367</td>
<td>133,768</td>
<td>168,397</td>
<td></td>
</tr>
<tr>
<td><strong>Loan Loss Write-off</strong></td>
<td>22,199</td>
<td>41,754</td>
<td>64,744</td>
<td>94,211</td>
<td>125,115</td>
<td></td>
</tr>
<tr>
<td><strong>Ending Loan Loss Reserve</strong></td>
<td>20,000</td>
<td>31,055</td>
<td>50,210</td>
<td>85,102</td>
<td>124,059</td>
<td>167,041</td>
</tr>
<tr>
<td><strong>Loan Officer Analysis</strong></td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td><strong>Total number of branches</strong></td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td><strong>Program level staffing</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Loan Officers</strong></td>
<td>23</td>
<td>23</td>
<td>36</td>
<td>36</td>
<td>40</td>
<td></td>
</tr>
<tr>
<td><strong>Credit Supervisors</strong></td>
<td>2</td>
<td>2</td>
<td>3</td>
<td>3</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td><strong>Loan Officers, Junior level</strong></td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td><strong>Operations Mgr/Branch Mgr</strong></td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td><strong>Employee benefits</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Total number of program employees</strong></td>
<td>27</td>
<td>27</td>
<td>35</td>
<td>52</td>
<td>57</td>
<td></td>
</tr>
<tr>
<td><strong>Program level Other Op. Exp.</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Rent</strong></td>
<td>5,403</td>
<td>5,940</td>
<td>6,954</td>
<td>14,035</td>
<td>15,791</td>
<td></td>
</tr>
<tr>
<td><strong>Utilities</strong></td>
<td>1,009</td>
<td>1,980</td>
<td>2,776</td>
<td>4,792</td>
<td>5,271</td>
<td></td>
</tr>
<tr>
<td><strong>Transportation</strong></td>
<td>20,000</td>
<td>20,000</td>
<td>39,000</td>
<td>51,000</td>
<td>63,000</td>
<td></td>
</tr>
<tr>
<td><strong>General Office Expense</strong></td>
<td>10,134</td>
<td>14,900</td>
<td>18,092</td>
<td>32,005</td>
<td>40,288</td>
<td></td>
</tr>
<tr>
<td><strong>OPEI, Maintenance, Insurance</strong></td>
<td>627</td>
<td>660</td>
<td>753</td>
<td>1,056</td>
<td>1,031</td>
<td></td>
</tr>
<tr>
<td><strong>Miscellaneous expenses</strong></td>
<td>2,037</td>
<td>4,185</td>
<td>6,395</td>
<td>25,219</td>
<td>30,416</td>
<td></td>
</tr>
<tr>
<td><strong>Total program expenses</strong></td>
<td>10,029</td>
<td>50,081</td>
<td>61,706</td>
<td>130,301</td>
<td>157,626</td>
<td></td>
</tr>
<tr>
<td><strong>Program level Fixed Assets</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Number of units acquired [OUTPUT]</strong></td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td><strong>Computers</strong></td>
<td>2</td>
<td>2</td>
<td>1</td>
<td>2</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td><strong>Accredited Office Furniture</strong></td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td><strong>Employee Furniture Groupings</strong></td>
<td>11</td>
<td>16</td>
<td>21</td>
<td>5</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td><strong>Total number of units</strong></td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td><strong>Cost of new acquisitions</strong></td>
<td>6,602</td>
<td>4,672</td>
<td>7,767</td>
<td>12,566</td>
<td>15,551</td>
<td></td>
</tr>
<tr>
<td><strong>Computers</strong></td>
<td>4,237</td>
<td>4,672</td>
<td>7,767</td>
<td>12,566</td>
<td>15,551</td>
<td></td>
</tr>
<tr>
<td><strong>Accredited Office Furniture</strong></td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td><strong>Employee Furniture Groupings</strong></td>
<td>2,365</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td><strong>Net value of fixed assets</strong></td>
<td>9,014</td>
<td>11,853</td>
<td>16,619</td>
<td>23,995</td>
<td>29,796</td>
<td></td>
</tr>
</tbody>
</table>
Generating Loan Portfolio Projections

To begin the process of generating financial projections, you complete the entries on the LOAN PROJECTION INPUT section of each PROGRAM (BRANCH/REGION) sheet.

### Figure 6.3 Loan Projection Input Section, PROGRAM (BRANCH/REGION) Sheet

<table>
<thead>
<tr>
<th>Program</th>
<th>Loan Projection Input Section</th>
<th>Initial</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>11</th>
<th>12</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Balance</td>
<td>Jan</td>
<td>Feb</td>
<td>Mar</td>
<td>Apr</td>
<td>May</td>
<td>Jun</td>
<td>Jul</td>
<td>Aug</td>
<td>Sep</td>
<td>Oct</td>
<td>Nov</td>
<td>Dec</td>
</tr>
<tr>
<td></td>
<td>Review the loan steps outlined on the right for each loan product you are using</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Step 1: Initial balances**

**Step 2: Project number of active loans for this product**

**Step 3: Project client retention rates for this product**

**Step 4: Review graphs for the loan product**

**Loan Product 1: Solidarity Loans**

| Initial number of active loans | 201 |
| Total number of active loans  | 202 |
| First cycle                   | 203 |
| Second cycle                  | 204 |
| Third cycle                   | 205 |
| Fourth cycle                  | 206 |
| Fifth cycle                   | 207 |
| Sixth and subsequent cycles   | 208 |
| Initial balance and repayment status | 209 |
| Total gross starting balance  | 210 |
| Net generated repayments      | 211 |
| Partially entered repayments  | 212 |
| Repayment unsecured calculations | 213 |
| Total number of active loans  | 214 |

**Step 2: Project number of active loans for Solidarity Loans**

**Branch consolidation estimate**

### Annual targets by Branch

<table>
<thead>
<tr>
<th>Annual targets by Branch</th>
<th>Initial</th>
<th>Year 1</th>
<th>Year 2</th>
<th>Year 3</th>
<th>Year 4</th>
<th>Year 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Balance</td>
<td>300</td>
<td>300</td>
<td>1,500</td>
<td>2,500</td>
<td>3,500</td>
<td>4,500</td>
</tr>
</tbody>
</table>

**Step 3: Retention rates**

**Step 4: Review graphs for Solidarity Loans**

---

Note: This document contains technical details and formulas related to financial projections and loan portfolio management. For a comprehensive understanding, please refer to the full document or relevant sections that discuss generating loan portfolio projections, including initial balances, repayment schedules, and retention rates.
To properly use and interpret these projections, you may wish to complete the “Optional Exercise in Projecting the Portfolio” on page 218 before you develop the remainder of your model. The exercise explores Microfin’s approach to calculating loan portfolio projections by integrating loan product definitions from the PRODUCTS sheet with loan product activity from the PROGRAM sheet.

**Procedure to project the loan portfolio for each product:**

Complete the following steps for each product that you have defined on the PRODUCTS sheet:

1. Enter initial balances for active loans. [page 192]
2. Project the number of active loans. [page 194]
3. Enter client retention rates. [page 200]
4. Review graphs for the loan product. [page 204]

If you are modeling on a consolidated basis, the entries apply to your entire institution.

If you are modeling on a branch or regional basis, the entries apply only to the specific branch or region associated with each copy of the PROGRAM (BRANCH/REGION) sheet. Repeat the process for each branch or region.

**Enter Initial Balances**

If your loan product is in use as of the beginning of the projection period, you must enter initial data regarding the number of loans, their distribution by cycle and the outstanding balance in the portfolio.

If your product is not in use as of the beginning of the projection period, you should leave the entries in this section blank.

**Figure 6.4 Loan Projection Input / Initial Balances Section, Program (Branch/Region) Sheet**

<table>
<thead>
<tr>
<th>Loan Product 1: Solidarity Group Loans</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Step 1: Initial Balances</strong></td>
</tr>
<tr>
<td>21 Initial number of active loans</td>
</tr>
<tr>
<td>22 Total number of active loans</td>
</tr>
<tr>
<td>23 First cycle</td>
</tr>
<tr>
<td>24 Second cycle</td>
</tr>
<tr>
<td>25 Third cycle</td>
</tr>
<tr>
<td>26 Fourth cycle</td>
</tr>
<tr>
<td>27 Fifth cycle</td>
</tr>
<tr>
<td>28 Spherical</td>
</tr>
<tr>
<td>29 Initial balance and engagement area</td>
</tr>
<tr>
<td>311 Averaged outstanding balance</td>
</tr>
<tr>
<td>312 Averaged retained payments</td>
</tr>
<tr>
<td>313 Revised retained payments</td>
</tr>
<tr>
<td>314 Revised retained calculations</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Initial Balance</th>
<th>Initial Engagement</th>
<th>Averaging</th>
<th>Presentation</th>
<th>Revised Retained</th>
</tr>
</thead>
<tbody>
<tr>
<td>$950,000</td>
<td>2.02</td>
<td>1.5</td>
<td>55.5555</td>
<td>49.8460</td>
</tr>
<tr>
<td>$90,000</td>
<td>2.02</td>
<td>1.5</td>
<td>55.5555</td>
<td>49.8460</td>
</tr>
</tbody>
</table>

**Notes:**
- Enter initial balances for Solidarity Group Loans.
- Input initial balances for the loan product.
- Data input for this section is required for the model to function correctly.
- Initial balances and engagement area are required for the model to function correctly.
- Averaged outstanding balance and retained payments are required for the model to function correctly.
Procedure to enter initial balances for active products—Step 1 Initial Balances / Loan Projection Input section, Program sheet:

Always enter active-loans data in this section, regardless of your choice of Loan Product Projections Approach (i.e., active loans or new clients).

1. Enter the Total Number of Active Loans, as of the end of the month immediately preceding the first month of your projections. [line 2.02]

2. Enter a Percentage (%) breakdown of the active loans for each cycle. [lines 2.03 – 2.07] Generally, you can round these percentages to the nearest 10% without a significant loss in accuracy. If necessary, make a considered estimate or sample your historical loan records. For more information, refer to “Data Requirements and Methodology for Estimating Client Loan Data” on page 489.

Distributions can vary depending on the loan product’s age, growth rate, client retention, and the relative loan terms for the cycles. If your terms are similar across cycles and you have had steady growth in your portfolio, you will generally have more loans in the earlier cycles than in the later cycles. If your loan terms vary by cycle, these percentages can vary significantly. For example, if your first loans are for three months and all other loans are for six, you could have twice as many clients in the second cycle as in the first.

Microfin uses these percentages to calculate the distribution of initial, active loans by cycle. The distribution then provides data to project future loan disbursements. For example, if you have 100 loans in the third cycle, Microfin projects disbursements of new fourth-cycle loans when those third-cycle loans mature.

3. Microfin automatically calculates the required percentage for the sixth and subsequent cycles in order to reach a total of 100%. [line 2.08]

4. Enter the Initial Gross Outstanding Balance for your loan product as of the end of the month immediately preceding the first month of your projections. [line 2.11]

5. Recalculate your model (F9).

6. Microfin automatically calculates the Auto-Generated Repayments for your initial portfolio. [line 2.12]

The calculation uses the data in the Effec Term and Amount columns [lines 2.02 – 2.08], which automatically display from your entries on the Products sheet. It assumes that the same number of loans mature each month—i.e., that the loan product has been stable, with little growth in disbursements in recent months.

---

49 This link is the reason that it is important to ensure that the information input in the initial balance column on the Products sheet reflects the existing loan product, not a proposed redesign.
7. Optionally, you may enter **manually entered repayment amounts** [line 2.13] and choose **RECALC (F9)** to override the auto-generated repayments.

You use this option if Microfin’s repayment assumptions are not accurate for your loan product. For example, if the number of active loans for your product has grown significantly in recent months, the auto-generated repayments overstate payment amounts in the early months and understate payments in the later months.

You can also use this option if you have more precise payment data available to you, from your MIS records.

8. Microfin uses the **repayments used in calculations** data [line 2.14] to project your portfolio in the **loan product output** section on this sheet.

---

**Project Active (or New) Loans**

Unlike many other models that project active loans based on an estimate of loan officers or on the amount of available funding, which then determine the number of clients, Microfin employs a market-driven approach that projects loans based on an estimate of client demand.\(^{50}\)

The estimated demand for your financial products is drawn from your strategic analysis of clients, markets, the broader environment, institutional capacity and financing, conducted as a part of your strategic planning process. For example, your institutional assessment may have identified significant internal weaknesses that you must address before you can undertake a major client expansion, or a need for additional sources of financing to fund the expansion.

Your active or new loan projections—when combined with data from the **products** sheet, and the client retention rate data on this sheet—generate your loan portfolio and financial income. Microfin uses projected loans data to project the number of loan officers and other staff required, as well as certain of the operating expenses and fixed assets.

These loan projections also define the shape of your growth curve for both active clients and loan portfolio, which in turn impact your analyses for institutional resources and financing.\(^{51}\)

Because of the complexities involved in projecting demand for your products, you may find it necessary to return and revise these estimates based on information you discover as you complete your model.

---

\(^{50}\) For example, FEDA estimated the market for its working capital loans in the Brownstown Market area to be 12,500 clients and, based on its market analysis, expects to reach 75 percent of them within five years. Also, as a result of its strategic analysis, FEDA’s expects to expand from 3,600 to 7,500 borrowers in the Brownstown Market area within five years. FEDA incorporated this analysis into its operational planning and financial modeling.

\(^{51}\) This is directly true when projecting the number of active clients. It is indirectly true when projecting the number of new clients, because the retention rate is also required to determine total activity levels.
### Figure 6.5a Loan Projection Input / Number of Active Loans Section, Program (Branch/Region) Sheet (Consolidated Models, Active Loans Method)

<table>
<thead>
<tr>
<th>Program-level Projections Sheet</th>
<th>Initial</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>11</th>
<th>12</th>
</tr>
</thead>
<tbody>
<tr>
<td># Balance</td>
<td>Apr-01</td>
<td>May-01</td>
<td>Jun-01</td>
<td>Jul-01</td>
<td>Aug-01</td>
<td>Sep-01</td>
<td>Oct-01</td>
<td>Nov-01</td>
<td>Dec-01</td>
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<tr>
<td>Step 2: Numeral active loans</td>
<td>Change method</td>
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<tr>
<td>Step 2: Project number of active loans for Solidarity Group Loans</td>
<td>Change method</td>
<td></td>
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<td>Change method</td>
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</tbody>
</table>

#### Branch consolidation estimate

Case if your model is being used as a single sheet, it is similar to the aggregate growth rate for a multiple branch to be applied at different rates. The spreadsheet below can be used to estimate unallocated growth for any branch, either by the beginning of the second month, the third month, or the end of the year. The growth rates will reflect the actual growth for the entire period.

### Figure 6.5b Loan Projection Input / Number of Active Loans Section, Program (Branch/Region) Sheet (Consolidated Model, New Clients Method)

<table>
<thead>
<tr>
<th>Program-level Projections Sheet</th>
<th>Initial</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>11</th>
<th>12</th>
</tr>
</thead>
<tbody>
<tr>
<td># Balance</td>
<td>Apr-01</td>
<td>May-01</td>
<td>Jun-01</td>
<td>Jul-01</td>
<td>Aug-01</td>
<td>Sep-01</td>
<td>Oct-01</td>
<td>Nov-01</td>
<td>Dec-01</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Step 2: Numeral new loans</td>
<td>Change method</td>
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<td></td>
</tr>
<tr>
<td>Step 2: Project number of loans for Solidarity Group Loans</td>
<td>Change method</td>
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<tr>
<td>Change method</td>
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</tr>
</tbody>
</table>

#### Branch consolidation estimate

Case if your model is being used as a single sheet, it is similar to the aggregate growth rate for a multiple branch to be applied at different rates. The spreadsheet below can be used to estimate unallocated growth for any branch, either by the beginning of the second month, the third month, or the end of the year. The growth rates will reflect the actual growth for the entire period.

---

52 The information in this illustration is not part of the FEDA case study. Note that, by the end of the first year, the Total Number of Active Loans on line 2.41 in this illustration is similar to that for the active-loans method above.
Microfin’s procedure to project loans (described below) varies slightly depending on the following factors:

- **modeling approach** from the MODEL SETUP sheet: CONSOLIDATED, BRANCH or REGION. If you are modeling on a consolidated or regional basis, this section includes an additional data input subsection entitled ANNUAL TARGETS BY BRANCH. This information does not display for branch-based models.

- **number of loan products** from the PRODUCTS sheet. You complete this process once for every product.

- **LOAN PRODUCTS PROJECTION APPROACH** (i.e., method) from the MODEL SETUP sheet: ACTIVE LOANS or NEW CLIENTS. The values that you enter into the cells depend on your choice.

- **Microfin’s AUTOMATED GRADUATION feature**, selected on the PRODUCTS sheet. If your clients graduate from product one to product two, your client retention rate for product one should decrease at higher loan cycles, as clients shift to product two. As they transition, these graduating clients are considered to be first-cycle borrowers for product two. Thus, you must incorporate them into your demand estimate for product two when you project active loans.

### Procedure to project the number of active loans (or new clients)— Loan Projection Input / Step 2 Number of Active Loans Section, Program (Branch/Region) sheet:

1. Microfin automatically displays your LOAN PRODUCT PROJECTIONS APPROACH from the MODEL SETUP sheet. Depending on your choice of approach, your projections will be based either on the total active loans or the total number of new clients.

2. Optionally, use the CHANGE METHOD button to change the LOAN PRODUCT PROJECTIONS APPROACH for all of your products. This button takes you to the MODEL SETUP sheet, where you made the original choice of approach.

*If you are modeling on a consolidated or regional basis, complete the ANNUAL TARGETS BY BRANCH information (steps three through ten below).* If you are modeling on a branch basis, go to step 11:

<table>
<thead>
<tr>
<th>Year</th>
<th>Initial Balance</th>
<th>Year 1</th>
<th>Year 2</th>
<th>Year 3</th>
<th>Year 4</th>
<th>Year 5</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2.500</td>
<td>4,500</td>
<td>9,000</td>
<td>18,000</td>
<td>36,000</td>
<td>72,000</td>
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<td>3,000</td>
<td>6,000</td>
<td>12,000</td>
<td>24,000</td>
<td>48,000</td>
</tr>
<tr>
<td></td>
<td></td>
<td>4,000</td>
<td>8,000</td>
<td>16,000</td>
<td>32,000</td>
<td>64,000</td>
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<tr>
<td></td>
<td></td>
<td>5,000</td>
<td>10,000</td>
<td>20,000</td>
<td>40,000</td>
<td>80,000</td>
</tr>
<tr>
<td></td>
<td></td>
<td>6,000</td>
<td>12,000</td>
<td>24,000</td>
<td>48,000</td>
<td>96,000</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Total Estimated Active Loans</th>
<th>Year 1</th>
<th>Year 2</th>
<th>Year 3</th>
<th>Year 4</th>
<th>Year 5</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>100</td>
<td>180</td>
<td>360</td>
<td>720</td>
<td>1,440</td>
</tr>
<tr>
<td>Monthly base growth</td>
<td>100</td>
<td>180</td>
<td>360</td>
<td>720</td>
<td>1,440</td>
</tr>
<tr>
<td>Annual growth</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td>Total number of active loans</td>
<td>100</td>
<td>180</td>
<td>360</td>
<td>720</td>
<td>1,440</td>
</tr>
</tbody>
</table>

### Notes:

- The table above illustrates the annual targets for an example scenario. Adjust the values according to your specific modeling requirements.
- Ensure that the projections align with your organization’s strategic goals and resource capacity.
- Regularly review and adjust the projections based on market trends and feedback from clients.
3. If you have more than one branch, enter the names of each of your branches under **ANNUAL TARGETS BY BRANCH**, in the leftmost column. [lines 2.19 – 2.28]

4. Microfin automatically displays the **INITIAL BALANCE** for your first branch [line 2.19], based on your entry for **TOTAL NUMBER OF ACTIVE LOANS** above [line 2.02].

5. If you have more than one branch, enter the **INITIAL BALANCES** for your additional branches. [lines 2.20 – 2.28]

Microfin reduces the **INITIAL BALANCE** for your first branch [line 2.19] by the total amount of these entries.

6. For **YEAR 1** through **YEAR 5**, enter your annual projections for active loans (or new clients) for each of your branches. [lines 2.19 – 2.28]

If you are modeling on:
- **a consolidated basis**, the sum of your entries should equal the total number of active loans (or new clients) for your entire program
- **a regional basis**, the sum of your entries should equal the total number of active loans (or new clients) for your entire region

If you have enabled Microfin’s **AUTOMATED GRADUATION** feature on the PRODUCTS sheet [line 3.03], then for product two only, *always enter only the number of new clients* who immediately choose product two for their first loans—i.e., those who take initial loans from this product, but do not graduate to this product from product one. In this one instance, Microfin ignores your choice of projection method (i.e., active loans or new clients).

7. Microfin calculates the **TOTAL ESTIMATED ACTIVE LOANS** (or **NEW CLIENTS**) for your loan product after you recalculate your model. [line 2.29]

8. Microfin generates the **AVERAGE MONTHLY LINEAR GROWTH**—i.e., the growth rate if loans grow by the same number each month, resulting in a straight line. [line 2.30]

9. If you are modeling active loans, Microfin generates the **AVERAGE MONTHLY PERCENTAGE GROWTH**—the growth rate if loans grow by the same percentage each month, resulting in an upwardly curving line. [line 2.31]

10. Microfin automatically transfers the **AVERAGE MONTHLY PERCENT GROWTH** to the first month of each fiscal year. [line 2.35] This percentage becomes the default monthly growth rate applied to the number of active clients for each year of the projections.
Regardless of your modeling approach (consolidated, branch or regional), complete steps 11 through 16:

11. To override Microfin’s default monthly growth rates for each year, you may enter a percent or fixed amount in the **INPUT ACTUAL MONTHLY GROWTH rate** [line 2.36]. For example, you can use these entries to account for a mid-year branch opening or to adjust for seasonal variations in demand.

If you are modeling on a branch basis and, therefore, did not enter branch estimates in **ANNUAL TARGETS BY BRANCH** above, this line is a **required entry** and will generate your **MONTHLY GROWTH rates**. [line 2.37]

You may use a negative entry (percentage or amount) to project a decrease in active loans or to phase out or eliminate a loan product. As noted previously, you can enter a percentage by using a number that is between –1.00 and +1.00.

12. Microfin displays the **MONTHLY GROWTH rates** to be used in subsequent calculations [line 2.37] based on a combination of the data from lines 2.35 and 2.36.

13. If you have enabled Microfin’s **AUTOMATED GRADUATION** feature for product two on the **PRODUCTS** sheet, Microfin displays the **NUMBER GRADUATED** in the period. [line 2.39] This display is based on the data you enter for client **RETENTION RATES** later on this sheet (discussed below).

14. If you are modeling **new** clients, Microfin displays the **NUMBER OF DESERTERS** [line 2.40] in the period. This display is based on the data you enter for client retention later on this sheet (discussed below).

15. Microfin calculates the **TOTAL NUMBER OF ACTIVE LOANS**. [line 2.41 or 2.42, depending on your **LOAN PRODUCT PROJECTIONS APPROACH**] This calculation is based on your **MONTHLY GROWTH rate** [line 2.37], and the number of active loans in the previous period.

16. Optionally, choose the **NUMBER OF ACTIVE LOANS BY CYCLE** graph from the **GRAPHS / CREDIT** option on the Microfin toolbar to briefly review your projections for reasonableness. The outer shape of the graph represents the total number of active loans. (Note that the cycle-based information in this graph is not accurate until you later enter **RETENTION RATE** data on this sheet.)

You will review all of Microfin’s product-specific and aggregate credit graphs at a later point in the process.

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53 You can display the same graph by choosing the **DRAW GRAPH** button on the Microfin toolbar. The graph that displays when you choose this button depends on the position of your cursor within the model; therefore, you should have your cursor somewhere within the **LOAN PROJECTION INPUT** section for the selected loan product in order to generate the **NUMBER OF ACTIVE LOANS BY CYCLE** graph.
Modeling Seasonal Changes in Demand

Microfinance institutions often experience seasonal surges and drop-offs in demand. There are five main reasons for such seasonal changes, each of which is modeled differently in Microfin:

- New clients request loans. You model this seasonal change by increasing your product’s ACTUAL MONTHLY GROWTH rate. [line 2.36 on this sheet]
  - If you are projecting based on active loans, enter the growth (percentage or quantity) in terms of the total number of active loans. As noted previously, enter a percentage using a number that is between −1.00 and +1.00. Keep in mind that this revised growth will apply to all subsequent months in the fiscal year.
  - If you are projecting based on new clients, enter the growth (percentage or quantity) in terms of the number of new clients.

- Inactive clients return to request a new loan. You model this change by increasing the CLIENT RETENTION RATE [lines 2.44 – 2.49 on this sheet] for the period in question. However, you should exercise care. Microfin applies the client retention rate to the number of loans that mature each period, therefore, attempting to model returning clients in this fashion can distort your projections. In theory, the retention rate for a month can exceed 100% if your intent is to draw in a large number of dormant clients.

- Clients repay loans early in order to receive new, larger loans. It is difficult to model this scenario with precision. Unless early repayment is a common and accepted practice among your clients, you should not attempt to model it in Microfin. To do so, you would need to artificially shorten your product’s EFFECTIVE LOAN TERM on the PRODUCTS sheet because Microfin determines loan maturation based on this term and the month the loan is disbursed.

- Clients pay off their loans as scheduled but request significantly larger follow-on loans. To model this change in demand, manually increase the AVERAGE LOAN AMOUNT on the PRODUCTS sheet during the high-demand months and then reduce it when demand for loan amounts returns to normal levels.

- Your institution offers a special, seasonal product. You model this situation by defining a seasonal loan product on the PRODUCTS sheet. Then, project seasonal demand for this product on the PROGRAM (BRANCH/REGION) sheet. This approach assumes that your clients have at least two active loans, one standard and one seasonal.
Enter Client Retention Rates

When your client repays a loan, there are three possible outcomes:

- **retention**—the client receives another loan from the next cycle of the *same* product.
- **dropout**—the client ceases to borrow from your institution because of a lack of interest or because you reject the loan application.
- **graduation**—the client advances to a different loan product within your institution. Importantly, Microfin does not consider these clients to be retained because its retention formula is product-specific.

It is crucial that your institution retain or graduate its existing clients (i.e., maintain high retention and/or graduation rates and a low dropout rate) in order to achieve the scale required for significant outreach and profitability. As previously noted, clients who have historically made regular, on-time repayments represent a lower credit risk and demand less staff time. Their loans are less expensive to review and process than are new-client loans. Also, their loans are generally larger, generating more income. Finally, for every client you retain, you save the costs you would otherwise incur to identify and screen potential replacements.

Closely monitor your products’ retention and graduation rates and, to maximize them, conduct surveys to discover why clients leave. Possible reasons include:

- a poor repayment history, indicating that the clients are not desirable as repeat customers
- external reasons, related to adverse changes in the economy or political situation, in the client’s market, or in the client’s household
- internal reasons, related to the quality of your institution’s products or its service.⁵⁴ If you lose clients because of poor product design (such as aspects of your lending methodology or loan terms and conditions) or poor service (such as delays in providing repeat loans), you might consider redesigning your loan products or credit procedures.

---

Microfin measures client retention based on the percentage of clients who progress from one loan cycle to the next within the *same* loan product:

\[
\text{Number of clients during month that receive loans from cycle } x + 1 \div \text{Number of clients during month that repay a loan from cycle } x
\]

For example, assume that you receive the final repayment for 100 first-cycle loans during month 12. During that same month, you issue 80 second-cycle loans. Your second-cycle retention rate is 80% (80/100). Microfin considers the remaining 20% to have dropped out of this product, even if they have transferred to another loan product. Therefore, to maintain the same number of active loans for this product, you must add 20 new clients as first-cycle borrowers.

If you have only one loan product, your retention rate is inversely related to your dropout or desertion rate (a commonly used indicator in microfinance). However, for an institution with multiple loan products, the retention rate is not necessarily one (1) minus the desertion rate, since the retention rate for a product must reflect the shifting of clients from one of your products to another. For example, if a significant share of clients who borrow based on product one graduate to product two after the third cycle, the retention rate for product one should be lower beginning with the fourth cycle.

Microfin assumes that follow-on loans are disbursed in the same month as the previous loans are repaid. If your institution is slow to process these follow-on loans, this assumption is not accurate and Microfin overstates the size of the portfolio and the timing of related fees and interest income.

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55 The desertion rate is often a time-related formula (for example, the number of clients who left in the previous 12 months), while Microfin is linked to the loan cycle term.
Procedure to project retention rates — Step 3 Retention Rates / Loan Projection Input section, Program sheet:

1. For each cycle, enter the CLIENT RETENTION RATES PER CYCLE [lines 2.45 – 2.49] in the blue cells of the INITIAL BALANCE column, as of the beginning of the projection period.

If your retention rate varies from cycle to cycle, you can reflect this in the rates for later loan cycles. You can input any projected changes in retention rates for future projection periods by entering new rates in the optional, gray input cells. If you use your first-cycle loan as a screening mechanism, your retention rate for the second-cycle loan may be relatively low. Also, if you redesign your loan product during the projection period, your rates may improve. Because Microfin’s retention rates are highly dependent on the loan term, if you change the loan term you may need to adjust your retention rates as well.

If you do not routinely track your retention rates, you can calculate them by analyzing a sample of existing loan data. For additional information, refer to “Data Requirements and Methodology for Estimating Client Loan Data” on page 489.

2. Because variations in retention rates can have a major impact on your projections, you may want to conduct a detailed analysis using the RETENTION sheet. [page 464] Optionally, choose the GO TO RETENTION RATE WORKSHEET button to advance to this sheet. [line 2.43] For additional information, refer to “Using the RETENTION Sheet to Evaluate Retention Rates” on page 464.

3. Microfin calculates a REFERENCE ANNUALIZED RETENTION RATE. [line 2.57 – 2.61]

This annualized rate represents the percentage of clients that have entered the program and still remain active after 12 months, based on your projected retention rates and loan terms. For example, if your retention rate is 80% and your loan term is three months, after a year you will retain only 41% of your clients (e.g., 0.8^4, or 80% x 80% x 80% x 80%—based on four cycles in a year). However, your annualized rate increases to 64% if the term increases to six months (80% x 80%—based on two cycles in a year). The annualized rate increases to 80% with a 12-month term.

A new percentage displays for any period in which either variable changes.

4. Optionally, you may enter a THRESHOLD [line 2.56] representing the minimum percentage of your clients that you feel should remain as clients after 12 months. By default, this threshold is 66%.

Microfin highlights (in red) any REFERENCE ANNUALIZED RETENTION RATES that fall below the threshold.

5. Microfin displays the PERCENTAGE OF CLIENTS REACHING THE SIXTH CYCLE based on each period’s loan terms and retention rates by cycle. [line 2.62] Compare this value to your actual experience to verify the accuracy of your retention rate entries.
6. Microfin displays the NUMBER OF DESERTERS THIS MONTH/QUARTER for each period, representing the number of clients that dropped out during the period. [line 2.63] It provides useful information to help you analyze the implications of your retention rates.

7. If you have enabled Microfin’s AUTOMATED GRADUATION feature, enter a CLIENT GRADUATION RATE, cycles two through six, for product one only. [lines 2.65 – 2.70]

   For each cycle, these entries represent the percentage of your clients that you expect to advance from product one to the first loan cycle for product two, as of the beginning of the cycle. For example, you may require that your clients complete at least two lending cycles in product one before they are eligible to advance to product two. Your graduation rate for cycle two is therefore 0%.

8. Microfin displays a VERIFICATION OF RETENTION/GRADUATION RATE. [line 2.77] It indicates an error if the sum of your retention rate and graduation rates exceeds 100% for any cycle in any period. This total must always be less than 100%, to account for dropouts.

9. Microfin displays a year-five total for the NUMBER OF ACTIVE CLIENTS [line 2.79] and five-year totals for the projected NUMBER OF ACTIVE/NEW CLIENTS [line 2.80] and CLIENTS LEAVING the program [line 2.82]. If you have enabled the graduation option, it also includes a five-year total for NUMBER OF CLIENTS GRADUATING [line 2.81].

   Compare these numbers with your market estimates. You need sufficient projected demand to cover the number of clients who enter and leave your program, as well as the clients who remain active. If your retention rates are low, it is quite possible to have more former clients than current clients, and to fully (or overly) saturate your geographic market with former and current clients.

   Your projected NUMBER OF ACTIVE CLIENTS is the engine that drives the rest of Microfin’s projections (e.g., income, expenses, financing requirements). It is imperative that your projections are realistic and achievable. If they are not, your financial projections will be highly inaccurate.

**Modeling the Phasing Out of a Loan Product**

If the TOTAL NUMBER OF ACTIVE LOANS [line 2.41 or 2.42] reaches zero, Microfin considers the product to have been eliminated and, therefore, the retention rates to be zero—even though they do not appear as zeros on the sheet.

As your current outstanding loans are repaid, the number of active loans will gradually drop to zero.

While your projected number of loans remains positive, Microfin respects the retention rates that you input into the model and considers clients who repay their loans eligible to renew them—even if that causes the number of active loans to exceed the projections. So it is possible for an institution to *grandfather* clients, allowing those who already receive the product to continue receiving it, but excluding any new clients from eligibility for that product.
Reviewing the Credit Graphs

Microfin provides a variety of credit graphs and graphing tools that assist you in analyzing and interpreting the data for each loan product. You can access any of these graphs from the GRAPHS drop-down menu on the Microfin toolbar.

The graphs are located on the GRAPHS and GRAPH CLIPBOARD sheets, and accessed from the Graphs option on the Microfin toolbar. For additional information on using the graphs-related sheets, refer to “Generating and Reviewing Graphs Using the GRAPHS and USER GRAPH Sheets” on page 379.

You can toggle between real and nominal values for several of the graphs by using the “$” REAL/NOMINAL button on the pagebar.

Product-specific Graphs

Microfin provides three credit-related graphs designed for specific loan products.

Number of Active Loans by Cycle

This area graph details the number of active loans for a selected product, by month and by cycle. You can use the outer curve of the graph to verify your projected growth rates and total number of active clients.

Figure 6.7 Number of Active Loans by Cycle
You can also use this graph to assess the effect of changes in client retention rates: Wider bands in later cycles reflect increasing numbers of repeat clients while wider bands in early cycles show a high proportion of clients that borrow smaller amounts and require more staff time.

If your loan product has a relatively short loan term and your retention rates are high, clients move quickly to higher-cycle loans. Inversely, clients drop out quickly if you have short loan terms and your retention rates are not high.

If you draw an imaginary vertical line from any month on the horizontal access, the graph provides a visual indication of the distribution of clients by cycle.

**Credit Income by Product**

This area graph shows the total financial income generated by the loan product, by month. It also breaks down income into the following components, if applicable: interest income, fees and commissions, and income generated from indexing the loan balance to an external value.

**Figure 6.8 Credit Income by Product**

Disbursements and Repayments by Product

This line graph tracks monthly disbursements and monthly repayments. Any gap between the two indicates growth (or shrinkage) in the portfolio.

Disbursements change as the number or sizes of your loans change. Repayments generally change with disbursements, when adjusted for a delay based on the loan term.
The graph may show significant, periodic spikes—particularly if you have substantial differences in loan terms from one cycle to the next or if your loan product’s terms have changed. Such spikes indicate shifts in lending activity—for example, when groups of clients repay in full and then simultaneously request loan renewals in the same period.

Compare these spikes against the NUMBER OF LOANS DISBURSED PER MONTH graph (figure 6.12) to understand the dynamics.

Consolidated-data Graphs

Microfin provides five credit-related graphs that include consolidated data for all loan products.

Number of Active Loans by Product

This area graph shows the number of loans by product. Use it to identify the relative importance of different loan products to your total number of active loans. The total area under the graph represents the total number of active loans.
Figure 6.10 Number of Active Loans by Product

This area graph shows your total portfolio over time, categorized by product. Aggressive growth in the number of clients, combined with increasing average loan sizes, can result in a very substantial growth in your portfolio. Such growth must be financed.

Figure 6.11 Loan Portfolio by Product
Because even moderate inflation rates can make your portfolio appear to be growing faster than is actually the case, it is generally helpful to display real values for this graph (using the $ REAL/NOMINAL button on the pagebar). By graphing real values, you can determine if your portfolio, after adjustment for the effect of inflation, is actually increasing over time.

If you have more than one product, compare the distribution of clients on the NUMBER OF ACTIVE LOANS, BY PRODUCT graph (above) with the distribution of your portfolio on this graph. If your loan sizes vary significantly, a small number of clients may control a large percentage of your portfolio.

**Number of Loans Disbursed per Month**
This area graph details your disbursements per month, by product. Odd shapes or spikes may result from loan terms that differ significantly from one cycle to another or from client growth rates that change substantially over time.

**Figure 6.12 Number of Loans Disbursed per Month**

![Number of loans disbursed per month graph](image)

**Average Overall Loan Size, by Product**
This line graph portrays the average size of all loans disbursed by month, for each product. The average size generally increases over time, as clients receive larger, higher-cycle loans. It plateaus as the loan distribution between cycles stabilizes.

Use the $ REAL/NOMINAL button on the pagebar to view this graph based on real values. Real values help you to determine if your average loan size, after adjustment for the effect of inflation, is increasing over time.
Average Loan Term by Product

This line graph shows the average loan term of all loans disbursed by month for each product. The average term generally increases over time if later-cycle loans have longer terms than early-cycle loans.

Figure 6.14 Average Loan Term by Product
Reviewing the Portfolio Projections

Microfin generates complete portfolio projections in the **LOAN PRODUCT OUTPUT** section of the **PROGRAM (BRANCH/REGION)** sheet. It does so by combining data from the **LOAN PRODUCT INPUT** section of this sheet with data from the **LOAN PRODUCT DEFINITION** section on the **PRODUCTS** sheet.

If you are modeling on a consolidated basis, these projections represent the portfolio for your entire program. If you are modeling on a branch or regional basis, the projections represent the portfolio for the specific branch or region associated with each sheet.

**Aggregate Loan Activity**

The **LOAN PRODUCT OUTPUT / AGGREGATE LOAN ACTIVITY** section of the **PROGRAM (BRANCH/REGION)** sheet summarizes the main elements of your portfolio.

**Figure 6.15 Loan Product Output / Aggregate Loan Activity Section, Program (Branch/Region) sheet**

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>11</th>
<th>12</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Aggregate Loan Activity</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Number of active loans</strong></td>
<td>3,600</td>
<td>3,600</td>
<td>3,600</td>
<td>3,600</td>
<td>3,600</td>
<td>3,600</td>
<td>3,600</td>
<td>3,600</td>
<td>4,000</td>
<td>3,950</td>
<td>4,240</td>
<td>4,480</td>
</tr>
<tr>
<td><strong>Total portfolio</strong></td>
<td>3,800</td>
<td>3,800</td>
<td>3,800</td>
<td>3,800</td>
<td>3,800</td>
<td>3,800</td>
<td>3,800</td>
<td>3,800</td>
<td>4,000</td>
<td>3,950</td>
<td>4,240</td>
<td>4,480</td>
</tr>
<tr>
<td><strong>Total disbursements, all products</strong></td>
<td>2,000</td>
<td>2,000</td>
<td>2,000</td>
<td>2,000</td>
<td>2,000</td>
<td>2,000</td>
<td>2,000</td>
<td>2,000</td>
<td>2,000</td>
<td>2,000</td>
<td>2,000</td>
<td>2,000</td>
</tr>
<tr>
<td><strong>Total repayments, all products</strong></td>
<td>3,000</td>
<td>3,000</td>
<td>3,000</td>
<td>3,000</td>
<td>3,000</td>
<td>3,000</td>
<td>3,000</td>
<td>3,000</td>
<td>3,000</td>
<td>3,000</td>
<td>3,000</td>
<td>3,000</td>
</tr>
<tr>
<td><strong>Total number of loans disbursed</strong></td>
<td>3,500</td>
<td>3,500</td>
<td>3,500</td>
<td>3,500</td>
<td>3,500</td>
<td>3,500</td>
<td>3,500</td>
<td>3,500</td>
<td>3,500</td>
<td>3,500</td>
<td>3,500</td>
<td>3,500</td>
</tr>
<tr>
<td><strong>First loans as % of active loans</strong></td>
<td>30%</td>
<td>30%</td>
<td>30%</td>
<td>30%</td>
<td>30%</td>
<td>30%</td>
<td>30%</td>
<td>30%</td>
<td>30%</td>
<td>30%</td>
<td>30%</td>
<td>30%</td>
</tr>
</tbody>
</table>

It also generates various indicators of portfolio activity, including:

- **NUMBER OF ACTIVE LOANS** [lines 3.02 – 3.06]
- **TOTAL LOAN PORTFOLIO** [lines 3.09 – 3.13]
- **TOTAL DISBURSEMENTS, ALL PRODUCTS** [line 3.17]
- **TOTAL REPAYMENTS, ALL PRODUCTS** [line 3.18]
- **TOTAL NUMBER OF LOANS DISBURSED** [line 3.19]
- **FIRST LOANS AS % OF ACTIVE LOANS** [line 3.20]

**Product-specific Loan Activity**

Below the aggregate data, Microfin displays similar information by product, by period (figure 6.16). Optionally, choose the **DETAILS** button on Microfin’s toolbar to see a detailed breakdown by loan cycle.
For each product, this subsection displays the following detailed information regarding the NUMBER OF LOANS:

- NUMBER OF LOANS MATURING, BY PERIOD [lines 3.24 – 3.31]
- NUMBER OF LOANS DISBURSED [lines 3.32 – 3.40]
- NUMBER OF ACTIVE LOANS [lines 3.41 – 3.48]
- FIRST LOANS AS A % OF ACTIVE LOANS [line 3.49]

It also presents the following PORTFOLIO ACTIVITY information, by product:

- LOAN DISBURSEMENTS [lines 3.52 – 3.59]
- TOTAL MONTHLY REPAYMENTS [lines 3.60 – 3.69]
- INDEXING INCOME [line 3.70]
- LOAN WRITE-OFFS [line 3.71]
- GROSS OUTSTANDING PORTFOLIO (NOMINAL AND REAL) [lines 3.72 and 3.76]
- AVERAGE OUTSTANDING LOAN BALANCE [line 3.73]
- AVERAGE LOAN DISBURSEMENT SIZE (NOMINAL AND REAL) [lines 3.74 – 3.75]

**Figure 6.16 Loan Product Output / Product # Section, Program (Branch/Region)**

Sheet

**Generating Savings Projections**

Microfin projects both compulsory and voluntary savings (figure 6.17 and 6.18a/b).

To generate compulsory savings projections, it combines information from the PRODUCTS sheet with your loan-activity projections on this PROGRAM sheet.
Microfin calculates voluntary savings by multiplying the number of savers (depositors) by the average savings per depositor. You can project the number of savers as:

- a percentage of borrowers (source one)
- a user-defined number, representing market demand from nonborrowers (source two)

If you choose, you can use both sources simultaneously. For example, you can model the number of savers who also borrow (i.e., borrower/savers) using source one, and the number of savers who do not borrow (nonborrower/savers) using source two.

Figure 6.17 SAVINGS PROJECTION / VOLUNTARY SAVINGS PRODUCTS Section, PROGRAM (BRANCH/REGION) Sheet (Year One)
Procedure to project compulsory and voluntary savings — SAVINGS
Projection section, Program (Branch/Region) sheet:

1. For each loan product, enter the INITIAL BALANCE for TOTAL COMPULSORY
SAVINGS as of the beginning of the projection period. [line 4.05] Enter this
balance whether or not your institution actually holds these savings deposits
(as determined by your entries on the PRODUCTS sheet).

If your compulsory savings balances are not broken down by loan product, use
an estimate. The aggregate total for the compulsory savings will be reliable—
with the possible exception of the rare case where you eliminate compulsory
savings for one product but not for another.

2. Choose the DETAILS button on the Microfin toolbar; then recalculate your
model to review the detailed projections.
If you are projecting voluntary savers based on a percentage of borrowers, complete steps three and four below. If you are only projecting voluntary savers based on a user-defined number of borrowers, go to step five.

3. Enter the **Initial Balance** for **Number of Depositors** [line 4.30] representing that portion of your savings depositors who are borrowers.

For future periods, Microfin calculates these depositors based on the actual number of borrowers from the Loan Product Output section above, and the percentages you enter in step four. Note that the number of depositors changes based on changes in the number of borrowers.

4. Enter the **Input (% of Borrowers Saving)** for each loan product. [lines 4.21 – 4.24] This entry represents the percentage of borrowers that are projected to use this voluntary savings product. For example, if you have two loan products, you might estimate that 60% of product-one borrowers also open voluntary savings accounts, but that only 30% of product-two borrowers do so.

You can enter more than 100% to model a savings-led strategy, such as that adopted by cooperatives and credit unions, and vary your percentages each month to account for changes in demand.

If you are projecting voluntary savers based on a user-defined number of depositors, complete steps five and six. Otherwise, go to step seven.

5. Enter the **Initial Balance** for **Number of Depositors** representing that portion of your savings depositors who are not borrowers. [line 4.34]

For future periods, Microfin calculates depositors by adding the growth in depositors in the period (based on your entry in step six) to the number of depositors from the previous period.

6. Enter a **Monthly Growth** in depositors (either as a percentage or a fixed number) who are not borrowers. [line 4.32] As noted previously, enter a percentage by using a number that is between –1.00 and +1.00.

If you are projecting the start of a voluntary savings program, then your first input on this line will be a number greater than 1.00, indicating the number of initial depositors in the first month of your new savings program. In the following month, you will likely choose to input a monthly growth percentage in depositors by using a number that is between –1.00 and +1.00.

If you enter data in the quarterly columns in years three, four and five, use monthly values; Microfin automatically converts them to quarterly figures.

7. Microfin calculates the **Total Number of Depositors** [line 4.35] by adding the depositors from each of the above sources.
8. Enter the initial voluntary savings portfolio balance in TOTAL SAVINGS PORTFOLIO. [line 4.41]

For future periods, Microfin calculates the TOTAL SAVINGS PORTFOLIO by multiplying the TOTAL NUMBER OF DEPOSITORS [line 4.35] by the AVERAGE SAVINGS AMOUNT PER DEPOSITOR [line 4.40, and based on your entry in line 4.38 from step nine].

9. Enter an INPUT value for AVERAGE SAVINGS PER DEPOSITOR [line 4.38], either as a percentage or a fixed number representing monthly growth. As previously noted, enter a percentage by using a number that is between -1.00 and +1.00.

If you are projecting the start of a voluntary savings program, then your first input on this line will be a number greater than 1.00, indicating the number of initial depositors in the first month of your new savings program. In the following month, you will likely choose to input a monthly growth percentage in depositors by using a number that is between –1.00 and +1.00.

If you enter data in the quarterly columns in years three, four and five, use monthly values; Microfin automatically converts them to quarterly figures.

10. Microfin calculates the AVERAGE SAVINGS AMOUNT PER DEPOSITOR [line 4.40] and the PERCENT GROWTH in your savings portfolio [line 4.42], based on your entries.

Reviewing the Voluntary Savings Mobilization Summary

Microfin generates a summary of your voluntary savings portfolio in the VOLUNTARY SAVINGS MOBILIZATION SUMMARY / SAVINGS PROJECTION section of the PROGRAM (BRANCH/REGION) sheet.

Figure 6.19a SAVINGS PROJECTION / VOLUNTARY SAVINGS SUMMARY Section, PROGRAM (BRANCH/REGION) Sheet (Year One)
The summary presents detailed information, by product, for the:

- **NUMBER OF VOLUNTARY DEPOSITORS** [lines 4.45 – 4.49]
- **TOTAL VOLUNTARY SAVINGS DEPOSITS** [lines 4.52 – 4.56]

It also calculates the **PERCENT CHANGE IN DEPOSITORS** each period. [line 4.50]

### Reviewing the Savings Graphs

Microfin provides a variety of savings graphs and graphing tools that assist you in analyzing and interpreting the data for each voluntary savings product.

The graphs are located on the **GRAPH SHEET** sheet and can be accessed from the **GRAPH SHEET** option on the Microfin toolbar. For additional information on using the graph-related sheets, refer to “Generating and Reviewing Graphs Using the GRAPH SHEETS” on page 379.

You can toggle between real and nominal values for the graphed information by using the $ REAL/NOMINAL button on the pagebar.

Microfin provides three **SAVINGS** graphs:

- **NUMBER OF DEPOSITORS, BY PRODUCT**
- **AMOUNT OF DEPOSIT**
- **AVERAGE DEPOSITS, BY PRODUCT**

### Number of Depositors, by Product

This area graph presents the number of savings depositors by compulsory and voluntary savings products.

In the example below, the institution phases out compulsory savings in month 37 and introduces a new voluntary savings product.
Figure 6.20 Number of Depositors by Product

This graph portrays the amount of savings deposits by compulsory and voluntary savings products. Compulsory savings display regardless of whether your institution controls the funds.

Figure 6.21 Amount of Deposits

This graph portrays the amount of savings deposits by compulsory and voluntary savings products.
**Average Deposits, by Product**

This line graph displays the amount of savings deposits for each *voluntary* savings product.

Use the $ REAL/NOMINAL button on the pagebar to view this graph based on real values. Real values help you to determine if your average deposit size, after adjustment for the effect of inflation, is increasing over time.

**Figure 6.22 Average Deposits by Product**

---

**Optional Exercise in Projecting the Portfolio**

The following exercise is designed to demonstrate Microfin’s portfolio calculations on the PROGRAM (BRANCH/REGION) sheet. It assumes that you have already entered the FEDA case study data for loan product one on the PRODUCTS sheet.

*Using the PRODUCTS sheet, complete steps one through six:*

1. Increase the **NUMBER OF LOAN PRODUCTS IN USE** to two. [line 1.05]
2. Assign your new product the name “Test Product.” [line 1.09]
3. In the **LOAN PRODUCT INPUT** section for the new loan product, enter an average loan amount of “100 for each” cycle. [lines 3.09 – 3.14] The product is not indexed to inflation. [line 3.23]
4. Payments are made monthly for this loan product [line 3.27], the effective loan term is three months for all cycles [lines 3.31 – 3.36], and there is no grace period [line 3.46].
5. Enter an Up-Front Compulsory Savings requirement of 10%, based on the requested loan amount. [line 3.53]

6. Select a declining balance Interest Rate Method [line 3.61], and enter an interest rate of 12% [line 3.68] and an up-front commission of 1%, entered as “0.01.” [line 3.73]

Using the Program (Branch/Region) sheet, complete steps seven through 20:

7. Choose the LN Input button on the pagebar to advance to the Loan Projection Input section, then scroll to the input area for your new loan product.

8. Set the initial balance for the total number of active loans to zero (0). [line 2.02]

9. Under Number of Active Loans for This Product for product two, enter an input amount for year one of “100.” [line 2.36] Enter the same growth number, 100, on this line in the first month/quarter for years two, three, four and five.

   If you are modeling using a consolidated or regional approach, you may leave the Annual Targets by Branch section blank.

10. Enter a Retention Rate of 100% for each cycle. [lines 2.45 – 2.49]

11. Recalculate your model (F9), then choose the Graphs button on the Microfin toolbar to review the product-specific Credit graphs. You should see a straight line starting at 0 clients and increasing to 6000 clients. By the end of the fifth year, most clients should be in the sixth cycle.

12. When you have finished, return to the Program (Branch/Region) sheet. Choose the LN Output button on the pagebar to advance to Loan Product Output section, then scroll to the output area for your new loan product.

13. Review Microfin’s calculations for Number of Active Loans and Portfolio Activity [beginning with line 3.41] to understand the relationships between your entries and Microfin’s projections.

   Among the more important information, Microfin displays the total Number of Active Loans on line 3.41, the same information you reviewed on the graph.

   Microfin displays the Number of Loans Disbursed on line 3.32. The value increases by 100 every three months as a result of both the continual steady growth in new clients and the 100% retention rate.

   Microfin displays the Loan Disbursements amount on line 3.52. It increases every three months.

   

Using Microfin          219
14. Choose the DETAIL button on the Microfin toolbar to add cycle-based information to the LOAN PRODUCT OUTPUT display.

Review the calculations for NUMBER OF LOANS [beginning on line 3.23], specifically the flow of clients through the loan cycles, to understand Microfin’s projections. Note that clients start in cycle one and gradually move to higher cycles every three months, as they repay their first-cycle loans [line 3.25] and receive cycle-two loans. This pattern continues and expands every three months. The number of clients in cycles one through five plateaus at 300. [lines 3.41 – 3.47]

15. Review the cycle-based calculations for PORTFOLIO ACTIVITY. [beginning on line 3.51]

Follow the flow of funds through the loan cycles to understand Microfin’s projections. You will see that the loan disbursements [lines 3.52 – 3.58] and total monthly repayments [lines 3.60 – 3.68] for cycles one through five plateau at 10,000. The gross outstanding portfolio levels out at 20,000 for each cycle. [line 3.72]

16. Choose the LN INPUT button on the pagebar, then reduce the retention rates for your product from 100% to 50%. Do not recalculate your model.

17. Choose the GRAPHS menu from the Microfin toolbar, then choose and review the CREDIT / NUMBER OF LOANS BY CYCLE graph.

18. Recalculate your model and review the same graph. Note that the impact of your revised retention rates is to drastically reduce the number of clients that reach the sixth cycle. Still, the total number of active clients by the end of the five years remains at 6,000 clients. Because of the low retention rates, combined with the very short loan term of three months, most clients are in either the first or second cycle.

19. Return to the PROGRAM (BRANCH/REGION) sheet. Choose the LN OUTPUT button on the pagebar, then scroll down to your new loan product. Study the cycle-based information for number of loans [line 3.23] to review the impact of your change.

The number of disbursed, first-cycle loans [line 3.33] starts at 100, but then must increase to 150 starting in month four. This is necessary to support the growth of 100 active clients projected in the LOAN INPUT section, as well as the 50 new clients required to replace the 50 clients that have deserted.

The number of first cycle loans to be disbursed continues to climb throughout the five years, in an attempt to sustain real growth in the face of increasingly large numbers of deserters. Likely, it is unrealistic to achieve such a large number of new clients. Low retention rates, when combined with short loan terms, create in an unsustainable scenario.
20. Choose the GRAPHS menu to again review the CREDIT graphs. Carefully interpret the information on each graph. Note the amounts in month 60 for disbursements (203,000), repayments (197,000), total loan portfolio (400,000) and average loan size (100).

Using the PRODUCTS sheet, complete step 21:

21. Change the average loan amounts by cycle for your new product to 100, 200, 300, 400, 500 and 600. [lines 3.09 – 3.14] Change the effective loan term by cycle to three, four, five, six, seven, and eight months. [lines 3.31 – 3.36]

Using the PROGRAM (BRANCH/REGION) sheet, complete steps 22 through 25:

22. Change the retention rates to 80% for all cycles. [lines 2.44 – 2.49] Do not recalculate the model.

23. Choose the GRAPHS menu and review the CREDIT graphs for the impact of these changes.

Now recalculate the model. Note any differences both in the shape of the graphs and in the amounts for disbursements, repayments, portfolio and average loan size.

You should see significantly larger monetary values due to the increases in loan amounts at higher cycles. You should also note that the graphs no longer appear as straight lines, but rather are influenced by the variety of loan amounts and terms. If you study the detailed data on the LOAN OUTPUT section of the sheet, you will find it more difficult to interpret the calculations, as the situation has become much more complex.

24. Continue to experiment, as time permits.

25. When you are finished, reset the number of loan products in use to one on the PRODUCTS sheet. Your action will delete all of your entries for the new, second loan product and return your model to its original state.
**Case Study: FEDA’s Marketing Channels**

**Entering FEDA’s Initial Balances**

FEDA projected that it will have 3,600 active clients at the end of 2000, all with Solidarity Group loans. FEDA’s staff entered this number on the model’s PROGRAM (BRANCH/REGION) sheet as the total number of active loans. They also entered an estimated distribution of these clients by loan cycle, as prepared by FEDA’s credit supervisor.

<table>
<thead>
<tr>
<th>Loan Cycle</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>First</td>
<td>33</td>
</tr>
<tr>
<td>Second</td>
<td>33</td>
</tr>
<tr>
<td>Third</td>
<td>20</td>
</tr>
<tr>
<td>Fourth</td>
<td>8</td>
</tr>
<tr>
<td>Fifth</td>
<td>4</td>
</tr>
<tr>
<td>Sixth and subsequent</td>
<td>2</td>
</tr>
<tr>
<td>Total</td>
<td>100</td>
</tr>
</tbody>
</table>

Referencing FEDA’s balance sheet, the staff determined that FEDA had a gross outstanding balance for its single loan product of 504,000 freeons; they entered that figure as the INITIAL GROSS OUTSTANDING BALANCE. They elected to use the repayment stream projections automatically generated by Microfin, since they were deemed to be sufficiently accurate.

Refer to figure 6.4.

**Projecting FEDA’s Active Loans**

FEDA’s market study showed that the institution has the potential to grow from 3,600 to 7,500 clients in its current market area, Brownstown Market, by the end of the five-year plan. In addition, FEDA intends to open a second branch office, in East Side, in August 2001. This branch is expected to expand to 4,500 clients by the end of 2005, bringing the total number of clients to 12,000.

Having decided on the MODEL SETUP sheet to model multiple branches using a consolidated approach, FEDA’s staff used the ANNUAL TARGETS BY BRANCH section to project loan activity by branch for each year.
On the MODEL SETUP sheet the staff had chosen to project credit activity by the number of *active* clients rather than by the number of *new* clients each month.

**FEDA’s Projected Number of Active Loans (2001 - 2005)**

<table>
<thead>
<tr>
<th>Branch</th>
<th>Initial</th>
<th>2001</th>
<th>2002</th>
<th>2003</th>
<th>2004</th>
<th>2005</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brownstone Market</td>
<td>3,600</td>
<td>4,500</td>
<td>5,500</td>
<td>6,250</td>
<td>7,000</td>
<td>7,500</td>
</tr>
<tr>
<td>East Side</td>
<td>0</td>
<td>300</td>
<td>1,500</td>
<td>2,500</td>
<td>3,500</td>
<td>4,500</td>
</tr>
</tbody>
</table>

They accepted Microfin’s estimated average monthly growth rates for years two through five, but refined the estimates to account for the opening of the second branch by entering “0.02” in month one and “0.032” in month nine. The resulting projections showed slower growth in the first eight months and faster growth in the following four months in order to reach the correct projected number of clients at the end of the first year.

Refer to figure 6.5a.

**Analyzing FEDA’s Client Retention Rates**

Historically, FEDA has had poor client retention rates. On average, 70% of clients continue through the second, third and fourth cycles. However, retention rates for later cycles drop to 50%, primarily because of the 400 freon loan ceiling.

Confident that the redesign of the loan product will address their clients’ most serious complaints, FEDA’s management expects a rapid improvement in the client retention rate. They originally modeled this retention using the optional analysis on the RETENTION sheet.

**FEDA’s Projected Client Retention Rates (Percent)**

<table>
<thead>
<tr>
<th>Loan Cycle</th>
<th>Initial Balance</th>
<th>Month 1</th>
<th>Month 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Second</td>
<td>70</td>
<td>80</td>
<td>90</td>
</tr>
<tr>
<td>Third</td>
<td>70</td>
<td>85</td>
<td>90</td>
</tr>
<tr>
<td>Fourth</td>
<td>70</td>
<td>85</td>
<td>90</td>
</tr>
<tr>
<td>Fifth</td>
<td>50</td>
<td>70</td>
<td>80</td>
</tr>
<tr>
<td>Sixth</td>
<td>50</td>
<td>70</td>
<td>70</td>
</tr>
</tbody>
</table>
Management reviewed their loan-demand projections. They saw that even with the significant improvement in retention rates, FEDA will still need to attract slightly more than 17,000 new clients in the next five years [line 2.80] to reach its expansion targets, and that nearly 9,000 of these clients will drop out during the five years [line 2.82]. Therefore, high client retention will need to be a primary goal in the coming years.

Refer to figure 6.6.

**Projecting FEDA’s Compulsory and Voluntary Savings**

At the end of 2000, FEDA’s borrowers had 70,000 freeons of compulsory savings on deposit at Freedonia National Bank—an amount projected to grow to over 340,000 freeons by the end of year three.

Refer to figure 6.17.

When FEDA begins offering voluntary savings in the first quarter of year four (after terminating the compulsory savings requirement in month 37) management estimates that 60% of borrowers will transfer their compulsory savings to the new voluntary savings accounts.

As client confidence and awareness increase, the percentage of borrowers with voluntary savings is projected to increase by five percentage points each quarter, reaching 80% in the first quarter of year five. To reflect this trend, the staff enter 60% in the Y4Q1 column, 65% in the Y4Q2 column, 70% in the Y4Q3 column, 75% in the Y4Q4 column, and 80% in the Y5Q1 column.

In addition, FEDA expects nonborrowers to open Passbook Savings accounts starting in the second quarter of year four. It estimates 100 new accounts a month during year four and then a 5% monthly increase in accounts in year five [line 4.32, modeled by entering 100 in the Y4Q2 column and 0.05 in the Y5Q1 column].

FEDA expects these voluntary depositors to maintain the same average savings balances as were held in the compulsory savings accounts, projected at about 40 freeons. Because of the shift from monthly to quarterly calculations, this initial balance of 40 freeons must be generated by entering a monthly equivalent, or one-third of the amount, for the first quarter of year four [line 4.38, column Y4Q1], resulting in an average balance of about 40 freeons for the quarter when Microfin converts to quarterly calculations. Average savings account balances are expected to increase by 5% a month in year four and by 3% a month in year five [line 4.38, modeled by entering 0.05 in the Y4Q2 column and 0.03 in the Y5Q1 column].

---

56 Rather than calculating the quarterly amount yourself, you can enter “=40/3” or simply “40/3” to let Microfin perform the calculation.
FEDA will also begin offering Term Deposits (savings product two) in the first quarter of year four. Management estimates that 5% of borrowers will open accounts, with that share growing to 10% by the beginning of year five [line 4.21, modeled by entering 5%, 6%, 7%, 8% and 10% in columns Y4Q1 through Y5Q1].

In addition, FEDA expects nonborrowers to open 25 new accounts a month starting in the second quarter of year four [line 4.32, beginning in column Y4Q2]. The average balance for Term Deposits is expected to start at 150 freeons and grow by 3% a month [line 4.38, modeled by entering 50, or 150 divided by three, in the Y4Q1 column, and 0.03 in the Y4Q2 column].

Refer to figures 6.18a/b.
Planning
Institutional
Resources
and Capacity
Chapter 7
Planning Institutional Resources and Capacity

Before you begin entering data for institutional resources and capacity, you should develop a clear plan to mobilize the personnel and other resources necessary to deliver your products and services.

Your resources and capacity plan should be based on the institutional assessment from your strategic plan and on your product and marketing projections. Such a resources plan:

- establishes clear priorities. Your chances for success are reduced if you attempt to do too many things at once.
- reinforces key factors that create and maintain a strong market position
- improves those aspects of your institution that require strengthening
- demonstrates a clear commitment to institutional development. It does so by funding such areas as staff training and management information systems.
- creates a framework that you can use to gauge whether you have met your agreed-on benchmarks (such as staff training or specific MIS projects) and improved overall performance (the goal of institutional strengthening).
- projects the timing and costs of each priority activity, and includes the costs in appropriate sections of your budget.

Developing an Overall Resources Plan

Your resources plan should anticipate your institution’s requirements and related expenditures for the following items:

- staffing, including your loan officers and all of the other personnel within your institution
- other operational expenses such as occupancy, utilities, transportation, repairs and maintenance, insurance, professional fees, and general office expenses
- fixed assets, including both tangible assets (such as furniture, equipment and vehicles) and intangible assets (such as MIS software)
- land and buildings
- the value of in-kind subsidies
- loan loss provisioning and write-offs
For staffing, other operational expenses and tangible fixed assets, Microfin distinguishes between the following expense categories:

- **direct expenses**—those incurred by the program (or branch or region, depending on your approach)
- **indirect expenses**—those considered to be administrative (or incurred by the head office, in branch or regional models)

Your resources plan should do the same; you will be required to enter the direct and indirect expenses on separate sheets in the model. As explained in more detail in *Implementing the Resources Plan in Microfin* later in this chapter, direct expenditures appear on the PROGRAM (BRANCH/REGION) sheet and indirect expenditures on the ADMIN (HEAD OFFICE) sheet.

In part, this distinction between direct and indirect expenses is required to facilitate models developed using a branch or regional approach. For these models, the direct, program-related expenditures may be divided among two or more BRANCH or REGION sheets in order to provide supplemental income statements for each branch or region.

**Figure 7.1 Expenditure Categories (and Related Sheets) for Projecting Institutional Resources and Capacity**

<table>
<thead>
<tr>
<th></th>
<th>Consolidated Models</th>
<th>Branch Models</th>
<th>Regional Models</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Direct Expenses</strong></td>
<td>Referred to as <em>Program Expenses</em></td>
<td>Referred to as <em>Branch Expenses</em></td>
<td>Referred to as <em>Region Expenses</em></td>
</tr>
<tr>
<td></td>
<td>Modeled on the PROGRAM sheet</td>
<td>Modeled on one or more BRANCH sheets</td>
<td>Modeled on one or more REGION sheets</td>
</tr>
<tr>
<td><strong>Indirect Expenses</strong></td>
<td>Referred to as <em>Administrative Expenses</em></td>
<td>Referred to as <em>Head Office Expenses</em></td>
<td>Modeled on the HEAD OFFICE sheet</td>
</tr>
<tr>
<td></td>
<td>Modeled on the ADMIN sheet</td>
<td>Modeled on the HEAD OFFICE sheet</td>
<td>Modeled on the HEAD OFFICE sheet</td>
</tr>
</tbody>
</table>
Planning Expenditures for Staffing, Other Operational Expenses, and Fixed Assets

The minimum information that you will need to project staffing, other operational expenses and fixed assets are outlined below. Include data for both current requirements and anticipated requirements for the five-year period of your projections.

Your staffing plan should include the following elements, at a minimum:

- a list of all job titles you use for both the program and administrative positions within your institution
- monthly salary and benefits for each position
- projected staffing levels for each position—or the basis for automated projections. For additional information on automated projections, refer to *Automating the Expenditure Projections (Optional, Advanced Feature)* below.

Your operational expenses plan should include the following elements:

- a list of all your expense categories (e.g., occupancy, transportation, utilities, general office) for both program and administrative expenses
- projected monthly expenses for each category—or the basis for automated projections

Your fixed assets plan should include the following elements:

- a list of all of your fixed asset categories (e.g., computers, office furniture, vehicles) for both program and administrative expenses
- quantities, initial purchase value, total life and remaining life for existing assets in each category
- initial accumulated depreciation
- projected monthly asset acquisitions, including costs, quantities and useful life—or the basis for automated projections
- projected building purchases and sales
- projected land purchases and sales

As your institution grows, it may become more efficient—and, thus, more profitable—as a result of economies of scale. For example, you may be able to significantly expand your client base while incurring relatively small increases in overhead costs.
You can see the impact of economies of scale on your institution by monitoring your OPERATING COST RATIO. This ratio provides an indication of your institutional efficiency by comparing your total operating costs to your assets. Microfin calculates and displays your operating cost ratio on line 4.29 of the FIN STATEMENTS sheet. In addition, you can generate a graph of your operating cost ratio over time by selecting GRAPHS / EFFICIENCY AND PROFITABILITY / OPERATING COST RATIO from the Microfin toolbar.

Experience demonstrates that most institutions experience benefits from economies of scale when they reach a level of between 5,000 and 10,000 active clients. Further growth generally requires a proportional investment in administrative support in order to maintain service quality.

Automating the Expenditure Projections (Optional, Advanced Feature)

Microfin provides optional facilities—located on the INST CAP sheet—to automate projections for some or all of your staffing, operational expenses and fixed asset acquisitions.

If you choose to automate your projections, you base the projected value on another item of information within the model. For example, you could project the number of your credit managers by linking credit manager projections to the number of loan officers—or perhaps to the number of borrowers in any period.

If you are modeling on a branch or regional basis, these automated links apply to all branches or all regions in your model.

Figure 7.2 Sample of Optional Facility for Automated Projections
By using Microfin’s automated facilities, you can make realistic projections without
the need for manual entries in each period. However, if you intend to use this
optional facility, you should carefully evaluate the basic relationships between your
expenditures (for staffing, operational expenses and fixed assets) and the various
Microfin variables you can use to project them. Figure 7.3 lists all of the variables
you can use as a basis for automated projections, both by expenditure category and
program/administrative classification.

**Figure 7.3 Link Variables for Automated Projections, By Expense Category**

<table>
<thead>
<tr>
<th></th>
<th>Staffing Expenses</th>
<th>Other Operational Expenses</th>
<th>Fixed Asset Expenses</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Program (Direct) Expenses</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Loan Officers</td>
<td></td>
<td>Loan Officers</td>
<td>Loan Officers</td>
</tr>
<tr>
<td>Borrowers</td>
<td></td>
<td>Borrowers</td>
<td>Program-related</td>
</tr>
<tr>
<td>Depositors</td>
<td></td>
<td>Depositors</td>
<td>Staff Other Than</td>
</tr>
<tr>
<td>Branches</td>
<td></td>
<td>Branches</td>
<td>Loan Officers (Not</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Loan Officers)</td>
</tr>
<tr>
<td><strong>Administrative (Indirect) Expenses</strong></td>
<td>Loan Officers</td>
<td>Loan Officers</td>
<td>Program Staff</td>
</tr>
<tr>
<td></td>
<td>Borrowers</td>
<td>Borrowers</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Depositors</td>
<td>Depositors</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Branches</td>
<td>Branches</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Program Staff</td>
<td>Program Staff</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

If you enter more than one link variable for the same staff position, operational
expense or fixed asset acquisition, Microfin adds together the requirements for each
link variable in order to project the expenditure. For example, if you hire one teller
for every 4,000 borrowers and every 4,000 depositors—and you have 12,000
borrowers and 8,000 depositors—you need a total of five tellers (three for borrowers
and two for depositors).

You can only define the basis for each link once for the entire five years of the
projection period—i.e., you cannot modify these relationships over time. For
example, if you assume you will hire one branch manager for every two branches,
and the size of your branches increases dramatically, you cannot change the
relationship to hire one branch manager for every one branch. Under certain
circumstances, this can be limiting, and you may wish to use the automated feature
along with manual overrides, where necessary.
You can override Microfin’s automated projection for any expenditure category and for any time period, on the related PROGRAM (BRANCH/REGION) or ADMIN (HEAD OFFICE) sheet.

Both “Chapter 8, Projecting Program-related Resources and Capacity” and “Chapter 9, Projecting Administrative Resources and Capacity” include detailed procedures for establishing the various automated projections, and for manually overriding them, where appropriate.

You should note that, while these automated links are generally useful to project program-related expenditures, they may be less appropriate for administrative expenditures. This is because program-related expenditures often represent variable costs, but many administrative expenditures are fixed costs. For example, your institution likely has one Executive Director and one Finance Manager, regardless of its size or structure. Therefore, these administrative staffing positions will not be automated. Instead, you should manually enter the information for such staff positions on the ADMIN (HEAD OFFICE) sheet.

**Implementing the Resources Plan in Microfin**

You implement your resources plan, as well as project institutional resources and capacity, using sections of three Microfin sheets: INST CAP, PROGRAM (BRANCH/REGION) and ADMIN (HEAD OFFICE).

- The INST CAP sheet contains general parameters that apply to both program-related and administrative expenditures.
- The PROGRAM (BRANCH/REGION) sheet projects direct—or program-related—expenditures. If you are modeling on a branch or regional basis, each BRANCH or REGION sheet projects the direct expenditures for one branch or region.
- The ADMIN (HEAD OFFICE) sheet projects indirect—or administrative—expenditures.

![Figure 7.4 Excerpt from MODEL STRUCTURE Sheet, Illustrating the Various Sheets Involved in Projecting Institutional Resources and Capacity](image)
You can use the INST CAP sheet, with its various LINKS and Go TO buttons, as a central location from which to enter the required resources and capacity information on all three sheets.

Alternatively, you can use the NAVIGATOR sheet to guide your data entry for projecting institutional resources and capacity. For more detailed instructions on using the NAVIGATOR sheet, refer to “Using the NAVIGATOR Sheet and NAVIGATOR WIZARD as a Framework for Entering Data” on page 66.

**Procedure to project institutional capacity — INST CAP sheet, PROGRAM (Branch/Region) sheet, and Admin (Head Office) sheet:**

**Using the INST CAP sheet, complete steps one through seven:**

1. Choose a cost allocation method, for branch and regional models only. [page 238]
2. Establish policies for loan loss provisioning. [page 242]
3. Define titles for staffing categories. [page 244]
4. Define categories for other operational expenses. [page 246]
5. Define categories for fixed assets. [page 247]
6. Define categories for in-kind subsidies. [page 251]
7. Optionally, enable the option to enter adjustments to the cash flow analysis. [page 252]

**Using the PROGRAM (Branch/Region) sheet, complete steps eight through 14:**

8. Project any additional sources of income for your credit and savings program. [page 263]
9. Review financial costs. [page 266]
10. Generate the loan loss provision and write-off. [page 268]
11. Define the number of branches, for consolidated and regional models only. [page 272]
12. Project loan officer requirements and program-related staffing. [page 273]

If you choose to automate any portion of your staffing projections, return to the INST CAP sheet to establish the automated links, then review and optionally adjust the automated projections using the PROGRAM (Branch/Region) sheet.
13. Project program-related other operational expenses. [page 289]

If you choose to automate any portion of your operational expense projections, return to the INST CAP sheet to establish the automated links, then review and optionally adjust the automated projections using the PROGRAM (BRANCH/REGION) sheet.

14. Project program-related expenditures for fixed assets. [page 293]

If you choose to automate any portion of your fixed asset projections, return to the INST CAP sheet to establish the automated links, then review and optionally adjust the automated projections using the PROGRAM (BRANCH/REGION) sheet.

Using the ADMIN (HEAD OFFICE) sheet, complete steps 15 through 21:

15. Project administrative staffing requirements. [page 314]

If you choose to automate any portion of your staffing projections, return to the INST CAP sheet to establish the automated links, then review and optionally adjust the automated projections using the ADMIN (HEAD OFFICE) sheet.

16. Project administrative other operational expenses. [page 319]

If you choose to automate any portion of your operational expense projections, return to the INST CAP sheet to establish the automated links, then review and optionally adjust the automated projections using the ADMIN (HEAD OFFICE) sheet.

17. Project administrative expenditures for fixed assets. [page 323]

If you choose to automate any portion of your fixed asset projections, return to the INST CAP sheet to establish the automated links, then review and optionally adjust the automated projections using the ADMIN (HEAD OFFICE) sheet.

18. Project expenditures for land and buildings. [page 327]

19. Project other operational assets. [page 329]

20. Calculate taxes. [page 331]

21. Project in-kind subsidies. [page 332]

Each of these steps is described in the procedural sections of chapters 7, 8, and 9.
Using the INST CAP Sheet to Enter General Background Information for Institutional Resources and Capacity

To project your institution’s resources and capacity, you first enter general, institution-wide information on the following sections of the INST CAP sheet:

- **COST ALLOCATION METHODS**, branch and regional models only [lines 1.01 – 1.04]
- **LOAN PROVISIONING AND WRITE-OFF POLICIES** [lines 2.01 – 2.16]
- **STAFFING INFORMATION** [lines 3.01 – 3.42]
- **OTHER OPERATIONAL EXPENSES** [lines 4.01 – 4.40]
- **FIXED ASSET CATEGORIES** [lines 5.01 – 5.25]
- **OTHER ADMIN INFO** [lines 5.26 – 5.47]
- **ADJUSTMENTS TO CASH FLOW** [lines 6.01 – 6.04]

You will supplement this general information with additional entries on the PROGRAM (BRANCH/REGION) and ADMIN (HEAD OFFICE) sheets in order to project institutional resources and capacity. For additional information, refer to “Chapter 8, Projecting Program-related Resources and Capacity” on page 259 and “Chapter 9, Projecting Administrative Resources and Capacity” on page 307.

You can analyze your completed resources and capacity data using the facilities on the GRAPHS sheet and the aggregate activity sections on the ADMIN (HEAD OFFICE) sheet (available from the OUTPUTS option on the pagebar).

You can navigate to any desired section of the sheet using the items on its pagebar.
**Institutional Resources and Capacity**

**Loan provisioning and write-off policies**

The loan provisioning and write-off policies are used to account for potential losses on loans. The table below shows the provisioning rates for different loan categories.

<table>
<thead>
<tr>
<th>Loan Category</th>
<th>Provision Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-30 days</td>
<td>0%</td>
</tr>
<tr>
<td>31-60 days</td>
<td>10%</td>
</tr>
<tr>
<td>61-90 days</td>
<td>20%</td>
</tr>
<tr>
<td>91-180 days</td>
<td>30%</td>
</tr>
<tr>
<td>Over 180 days</td>
<td>40%</td>
</tr>
</tbody>
</table>

**Staffing information**

**Loan Officer Titles**

- **Regular Loan Officer**
- **Panel Loan Officer**

**Salary & Benefit Adjustments**

- **Adjust salaries for inflation at beginning of each fiscal year**

**Program-level Staffing**

- **Credit Manager**
- **Bank Teller**
- **Security Guard**
- **Savings Director**

**Admin-level Staffing**

- **Executive Director**
- **Human Resources Director**
- **Savings Director**

**Links**

- [Go to Program]

**Figure 7.5a INST CAP Sheet (1 of 3)**
## Other Operational Expenses

<table>
<thead>
<tr>
<th>Program-level Other Op. Exp.</th>
<th>Names used</th>
<th>Monthly</th>
<th>Annually</th>
<th>Officers</th>
<th>Peg Staff</th>
<th>Borrowers</th>
<th>Depositors</th>
<th>Branches</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rent</td>
<td>Used</td>
<td>100%</td>
<td>456.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Utilities</td>
<td>Used</td>
<td>100%</td>
<td>156.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Transportation</td>
<td></td>
<td>104%</td>
<td>40.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>General Office Expenses</td>
<td></td>
<td>100%</td>
<td>100.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Repairs, Maintenance, Insurance</td>
<td></td>
<td>100%</td>
<td>56.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Admin-level Other Op. Exp.</th>
<th>Names used</th>
<th>Monthly</th>
<th>Annually</th>
<th>Officers</th>
<th>Admin Staff</th>
<th>Borrowers</th>
<th>Depositors</th>
<th>Branches</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rent</td>
<td>Used</td>
<td>104%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Utilities</td>
<td>Used</td>
<td>100%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Transportation</td>
<td></td>
<td>100%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>General Office Expenses</td>
<td></td>
<td>100%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Repairs, Maintenance, Insurance</td>
<td></td>
<td>100%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Board Expenses</td>
<td></td>
<td>100%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Staff Training</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Fixed Asset Categories

<table>
<thead>
<tr>
<th>Program-level Fixed Assets</th>
<th>Names used</th>
<th>Cost per unit</th>
<th>Life (yrs)</th>
<th>Link to maintain any combination of the following</th>
</tr>
</thead>
<tbody>
<tr>
<td>Computers</td>
<td>Computers</td>
<td>$2,000</td>
<td>80%</td>
<td>5.0</td>
</tr>
<tr>
<td>Assorted Office Furniture</td>
<td>Assorted Office Furniture</td>
<td>$1,000</td>
<td>100%</td>
<td>7.0</td>
</tr>
<tr>
<td>Employee Furniture-Groundings</td>
<td>Employee Furniture-Groundings</td>
<td>$200</td>
<td>100%</td>
<td>7.0</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Admin-level Fixed Assets</th>
<th>Names used</th>
<th>Cost per unit</th>
<th>Life (yrs)</th>
<th>Link to maintain any combination of the following</th>
</tr>
</thead>
<tbody>
<tr>
<td>Computers</td>
<td>Computers</td>
<td>$2,000</td>
<td>80%</td>
<td>5.0</td>
</tr>
<tr>
<td>Assorted Office Furniture</td>
<td>Assorted Office Furniture</td>
<td>$1,000</td>
<td>100%</td>
<td>7.0</td>
</tr>
<tr>
<td>Vehicles</td>
<td>Vehicles</td>
<td>$20,000</td>
<td>100%</td>
<td>6.0</td>
</tr>
</tbody>
</table>

## Planning Institutional Resources and Capacity

### Using Microfin

237
Procedure to project institutional capacity using the Inst Cap sheet:

1. Choose a cost allocation method, for branch and regional models only. [page 238]
2. Establish policies for loan loss provisioning. [page 242]
3. Define titles for staffing categories. [page 244]
4. Define categories for other operational expenses. [page 246]
5. Define categories for fixed assets. [page 247]
6. Define categories for in-kind subsidies. [page 251]
7. Optionally, enable the option to enter adjustments to the cash flow analysis. [page 252]

Each of these steps is described in the sections that follow.

Choosing a Cost Allocation Method (Branch and Regional Models)

Microfin distinguishes between direct (program- or branch/region-level) expenses and indirect (administrative or head office) expenses, as previously noted. If you are modeling on a branch or region basis, Microfin allocates head office expenses to the branches/regions in order to generate complete branch/region income statements and to determine branch/region profitability.
In performing these allocations, Microfin distinguishes between two categories of indirect expenses:

- financial costs, including all interest payments on portfolio financing loans and unrestricted loans\(^{57}\)
- indirect nonfinancial costs, including personnel expenses, other operational expenses, and depreciation and amortization expenses identified on the HEAD OFFICE sheet

You define and/or review your institution’s cost allocation policies using the following sections of Microfin:\(^{58}\)

- COST ALLOCATION METHOD section on the INST CAP sheet
- FINANCIAL COSTS section on each PROGRAM (BRANCH/REGION) sheet
- ADMINISTRATIVE NONFINANCIAL COST ALLOCATION section on each PROGRAM (BRANCH/REGION) sheet

The cost-allocation data on each PROGRAM (BRANCH/REGION) sheet is not accurate until you have completed your entries for administrative nonfinancial costs on the ADMIN (HEAD OFFICE) sheet and for financing on the FIN SOURCES and FIN FLOWS sheets.

**Figure 7.6 Cost Allocation Method Section, INST CAP Sheet (Branch or Regional Models Only)**

---

57 The interest paid on savings is calculated directly for each branch/region based on its savings projections and therefore does not need to be allocated back to the branch/region. Interest paid on loans restricted to the financing of other assets is considered an administrative expense rather than a financing cost.

58 Microfin does not actually calculate these financial costs until you have completed the data entry sections on the FIN SOURCES and FIN FLOWS sheets.
If you are modeling on a consolidated basis, certain portions of these sections are not used and therefore are not displayed.

**Procedure to establish a cost allocation method:**

For branch- or region-based projections only, you determine the basis for Microfin’s cost allocations using the COST ALLOCATION METHOD section of the INST CAP sheet (figure 7.6).

**Using the INST CAP sheet:**

1. Select a method to ALLOCATE FINANCIAL COSTS [line 1.02] and a method to ALLOCATE ADMINISTRATIVE, NONFINANCIAL COSTS [line 1.04] from the ADMIN (HEAD OFFICE) sheet.

Your options are:

- **AS % OF BRANCH/REGIONAL LOAN PORTFOLIO** (the most likely choice for financial costs)
- **AS % OF BRANCH/REGIONAL DIRECT NONFINANCIAL EXPENSES** (the most likely choice for indirect nonfinancial expenses)

In either case, Microfin automatically generates allocations based on data you enter throughout the model.

2. Choose the first GO TO BRANCH (or GO TO REGION) button [line 1.02] to move to the FINANCIAL COSTS section of your first BRANCH or REGION sheet (figure 7.7).

Using the PROGRAM (BRANCH/REGION) sheet:

3. The FINANCIAL COSTS section on each BRANCH or REGION sheet displays an allocation of INTEREST PAID ON DEPOSITS [line 6.02] if your institution controls savings, and an ALLOCATION OF THE COST OF BORROWED FUNDS, [line 6.18] based on the data from the FINANCIAL COSTS section of the ADMIN (HEAD OFFICE) sheet. (This financial-costs data originates on the FIN SOURCES and FIN FLOWS sheets.)

4. For each branch or region sheet, Microfin calculates the allocation percentage [line 6.22] based on the allocation method you have selected on the INST CAP sheet.

5. Return to the INST CAP sheet.

Using the INST CAP sheet:

6. Choose the second GO TO BRANCH (or GO TO REGION) button [line 1.04] to move to the ADMINISTRATIVE NONFINANCIAL COST ALLOCATION section of the PROGRAM (BRANCH/REGION) sheet (figure 7.8).

Using the PROGRAM (BRANCH/REGION) sheet:

7. The ADMINISTRATIVE NONFINANCIAL COST ALLOCATION section [beginning on line 13.01] on each branch or region sheet reflects the allocated portion of the total administrative, nonfinancial expenses from the ADMIN (HEAD OFFICE) sheet. These head office expenses include salary and benefits, other operational expenses, and depreciation/amortization.

8. For each BRANCH or REGION sheet, Microfin calculates the allocation percentage [line 13.05] based on the allocation method you select on the INST CAP sheet.

You can return to each BRANCH or REGION sheet to review Microfin’s final financial and nonfinancial cost allocations after you have completed your entries for administrative nonfinancial costs on the ADMIN (HEAD OFFICE) sheet and for financing on the FIN SOURCES and FIN FLOWS sheets.
Establishing Policies for Loan Loss Provisioning

The loan loss reserve is an estimate of the amount of principal in your outstanding portfolio that may be uncollectible over time. The expense required to increase or decrease the reserve each period is the loan loss provision.

You define your institution’s loan loss reserve and provisioning policies in the following sections of the model:

- **Loan Provisioning and Write-off Policies** on the INST CAP sheet (described below)
- **Loan Loss Provision and Write-off** on the PROGRAM (BRANCH/REGION) sheet. For additional information, refer to “Generating Loan Loss Provisions and Reserves” on page 268.

Defining Provisioning Policies on the INST CAP Sheet

You establish general, institution-wide provisioning policies using the **Loan Provisioning and Write-off Policies** section on the INST CAP sheet. These policies include the frequency with which loans are written off, your aging categories and your reserve percentages.

**Figure 7.9 Loan Provisioning and Write-off Policies Section, INST CAP Sheet**

![Loan Provisioning and Write-off Policies Section](image)

**Procedure to define general institution-wide provisioning policies**

**Loan Provisioning and Write-off Policies section, INST CAP sheet:**

1. Select a **Loan Write-off Frequency** for your institution from the drop-down list. [line 2.02]

   For the first two years only, Microfin allows you to write off unrecoverable loans on a monthly, quarterly, semiannual or annual basis. During the final three years, Microfin performs the calculation quarterly, regardless of the selection you make here.
2. Enter a number of days in the TO column to define the upper range of your aging brackets. [lines 2.09 – 2.13] This information updates the aging categories in the FROM and TO columns.

Microfin calculates loan loss provisions and reserves based on a projected portfolio aging using these six aging brackets. The first aging bracket [line 2.09] establishes your current loans, or those loans for which repayments are projected to be made on time. Microfin uses the sixth bracket [line 2.14], and your write-off frequency, to determine the portion of the portfolio to be written off.

In the period immediately following a period in which loans are written off, Microfin automatically sets the percentage of loans that fall into:

- the sixth bracket to zero
- the first and second brackets to the target established for portfolio at risk from the PROGRAM (BRANCH/REGION) sheet
- the next three brackets to the remaining portfolio (100%, less the percent of loans in the first two brackets)

Microfin combines the aging information you enter here with each product’s targeted PORTFOLIO AT RISK rate—entered on the PROGRAM (BRANCH/REGION) sheet—to generate portfolio aging data.

3. For each of your loan products, enter a RESERVE % for each aging bracket to identify the percentage on which to base the reserve calculation. [lines 2.09 — 2.13]

These percentages typically increase as the number of days in the related past-due period increases. Microfin sets the value in the final bracket (line 2.14) at 100%, requiring that all loans falling into this category be written off in full.

Microfin multiplies the value of the outstanding portfolio in each bracket by the percentages you enter here to calculate the targeted loan loss reserve amount each period.

4. Check the NEGATIVE LOAN LOSS PROVISIONS box to prohibit negative provision calculations—i.e., a negative, noncash expense. [line 2.16]

If your portfolio quality improves significantly over time, Microfin may consider the portfolio to be over-provisioned. If Microfin projects that your reserves exceed the amount required to cover projected loan losses, it will generate a negative loan loss provision (i.e., a negative expense) in order to reduce your reserve to what it considers the mandated level. To avoid this situation, check the BLOCK NEGATIVE LOAN LOSS PROVISIONS box.

---

60 Microfin assumes that write-offs have been made at the end of the fiscal year preceding month one.
Defining Categories for Staffing

Before you begin using the staffing sections of the model, categorize your institution’s staff according to either:

- program (branch/region) personnel
- administrative (head office) personnel

You establish general staffing parameters in the STAFFING INFORMATION section of the INST CAP sheet. These parameters include the job titles of program and administrative personnel, and an option to link salary projections to inflation.

Figure 7.10 STAFFING INFORMATION Section, INST CAP Sheet

Later, you will enter and review additional staffing data in the following sections of the model:

- **Loan Officer Analysis and Program-Level Staffing** on the Program (Branch/Region) sheet, as described in “Chapter 8, Projecting Program-related Resources and Capacity.” [page 259]
- **Admin-Level Staffing** on the Admin (Head Office) sheet, as described in “Chapter 9, Projecting Administrative Resources and Capacity.” [page 307]

You can also review staffing data in the Loan Officer Analysis and Program-Level Staffing sections of this sheet.
Procedure to define staff job titles and, optionally, link salaries to inflation — Staffing Information section, Inst Cap sheet:

1. Enter a JOB TITLE in both long and short versions (i.e., singular and plural) for the persons on your staff that work directly with your loan clients. [lines 3.03 – 3.04] Because microfinance institutions refer to these people as loan officers or by a variety of other titles, your entries here allow you to customize your model.

2. Check the ADJUST SALARIES FOR INFLATION box if you wish Microfin to automatically adjust salary and benefit amounts in the first month of each fiscal year. [line 3.06] To do so, Microfin uses the INFLATION RATE from the Model Setup sheet.

   If you do not check this box, you must manually adjust your staff salaries, whenever appropriate, using the MONTHLY SALARY AND BENEFITS portions of the Staffing sections on the Program (Branch/Region) sheet.

3. If you choose to adjust your salaries for inflation, you can enter an ADDITIONAL ADJUSTMENT as a positive or negative percentage. [line 3.07] A positive entry increases salaries by more than inflation; a negative number increases salaries by less than inflation.

4. Enter the titles of your PROGRAM-LEVEL STAFF positions. [lines 3.12 – 3.25] If you are modeling on a branch or regional basis, enter your BRANCH- or REGION-LEVEL STAFF positions.

   If you have more staff positions than input lines, combine positions with similar salary levels. For each position, Microfin multiplies the number of staff by the salary that you enter on the Program (Branch/Region) and Admin (Head Office) sheets in order to generate total personnel costs. Thus, combining two or more staff positions with similar salaries helps to ensure the accuracy of your projections.

   If a staff position is considered to be part program and part administrative, enter it in both the program and administrative staffing sections. 61 Later, when you project staffing levels, you can split the cost of the position between the two categories—for example, 40% for the program-expense entry and 60% in the administrative-expense entry. 62

5. Enter the titles of your ADMIN-LEVEL STAFF positions. [lines 3.28 – 3.42] If you are modeling on a branch or region basis, enter your HEAD OFFICE STAFF positions here.

   If you have more staff positions than input lines, combine positions with similar salary levels.

---

61 Limit your use of this approach to avoid making Microfin’s calculations too cumbersome, and using up the available lines for staff positions.

62 If you are modeling multiple branches or regions, take care not to overstate the total allocations. For example, if the split is 50 percent program and 50 percent administrative and you have two branches, enter 0.5 on the Head Office sheet and 0.25 on each Branch sheet.
Defining Categories for Other Operational Expenses

Other operational expenses include your remaining expenses at the program and administrative levels, with the exception of financial costs, loan loss provisioning, personnel/staffing expenses and depreciation.

Before you begin using the other operational expense sections of the model, categorize your institution’s operational expenses according to either:

- program (branch/region) expenses
- administrative (head office) expenses

If your accounting system does not already perform this categorization, make an estimate. 63

You establish operational expense categories in the OTHER OPERATIONAL EXPENSES section of the INST CAP sheet.

Figure 7.11 OTHER OPERATIONAL EXPENSES Section, INST CAP Sheet

63 There are many approaches for categorizing expenses, some of which are quite complex. For further discussion see CGAP, “Cost Allocation for Multi-Service Micro-Finance Institutions” (CGAP Occasional Paper 2, World Bank, Washington, D.C., 1998).
Later, you will enter and review other operational expense data in the following sections of the model:

- **OTHER OPERATIONAL EXPENSES** on the **PROGRAM (BRANCH/REGION)** sheet, described in “Chapter 8, Projecting Program-related Resources and Capacity” [page 259]
- **HEAD OFFICE OTHER OPERATIONAL EXPENSES** on the **ADMIN (HEAD OFFICE)** sheet, described in “Chapter 9, Projecting Administrative Resources and Capacity” [page 307]

**Procedure to define other operational expense categories — Other Operational Expenses section, Inst Cap sheet:**

Do not include financial costs, depreciation and miscellaneous expenses, as they are automatically included elsewhere in the model.

1. Enter a CATEGORY description for each of your program-related other operational expenses. [lines 4.04 – 4.19] If you are modeling on a branch or regional basis, enter your branch- or region-level expense descriptions.

2. Enter a CATEGORY description for each of your administrative other operational expenses. [lines 4.25 – 4.40] If you are modeling on a branch or region basis, enter your head office expense categories.

**Defining Categories for Fixed Assets, Buildings and Other Assets**

Microfin’s projections for fixed assets include capital expenditures for furniture and equipment, buildings, and other miscellaneous assets, as well as periodic depreciation and amortization expenses. Using these projections, you can develop a fixed assets acquisition plan and, therefore, ensure sufficient levels of required assets and adequate funding for capital expenditures.

Before you begin using the fixed assets sections of the model, categorize your institution’s assets according to:

- fixed assets (e.g., furniture and equipment)
- buildings
- other assets (such as MIS software)

For the fixed assets category only, further categorize your assets according to:

- program (branch/region) assets
- administrative (head office) assets

All buildings and intangibles are automatically considered to be administrative assets.
Microfin calculates depreciation using the straight-line method; as a result, the calculated amounts may not match the depreciation expense that is calculated by your accounting system. Any difference is not a cause for concern, for two reasons:

- Depreciation is a noncash expense and therefore does not influence your cash flow.
- Depreciation is generally a very small percentage of your total expenses; any differences in calculation method have little impact on your overall financial picture.

You establish general asset parameters in the Fixed Asset Categories and Other Admin-Level Info sections of the Inst Cap sheet.

**Figure 7.12 Fixed Asset Categories Section, Inst Cap Sheet**

<table>
<thead>
<tr>
<th>Program level Fixed Assets</th>
<th>Cost per unit</th>
<th>Life (year)</th>
<th>Links</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name</td>
<td>Cost</td>
<td>Life</td>
<td>Link to name or any combination of the following</td>
</tr>
<tr>
<td>Computer</td>
<td>$2,000</td>
<td>8</td>
<td>Offfice, Non-Office, Program, Branch, Roundup</td>
</tr>
<tr>
<td>Assigned Office Furniture</td>
<td>$1,000</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>Employee Furniture Groups</td>
<td>$1,000</td>
<td>10</td>
<td></td>
</tr>
</tbody>
</table>

**Figure 7.13 Other Admin-Level Info Section, Inst Cap Sheet**

<table>
<thead>
<tr>
<th>Building Categories</th>
<th>Names used</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>not used</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Other Assets Categories</th>
<th>Names used</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>not used</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>In-Kind Subsidy Analysis</th>
<th>Names used</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>not used</td>
</tr>
</tbody>
</table>
Later, you will enter and review additional fixed assets data in the following sections of the model:

- **PROGRAM-LEVEL FIXED ASSETS** on the **PROGRAM (BRANCH/REGION)** sheet
- **ADMIN-LEVEL FIXED ASSETS** on the **ADMIN (HEAD OFFICE)** sheet
- **LAND AND BUILDING ANALYSIS** on the **ADMIN (HEAD OFFICE)** sheet
- **OTHER ASSETS ANALYSIS** on the **ADMIN (HEAD OFFICE)** sheet

**Procedure to define fixed asset categories:**

Optionally, you can use Microfin’s **FIXED ASSETS WIZARD** to guide you through the data entry process on the **INST CAP** and **PROGRAM (BRANCH/REGION)** sheets in the model.

If you choose to enter your fixed assets data without using the wizard, the procedure to define fixed asset categories using the **INST CAP** sheet is as follows:

1. Define your program-related fixed asset categories.
2. Define your administrative fixed asset categories.
3. Define your building categories.
4. Define your other asset categories.

**Using the Fixed Assets Wizard**

Microfin includes an optional wizard for projecting fixed assets. It leads you, step-by-step, through the process of entering required information for each fixed asset category using the **INST CAP** and **PROGRAM (BRANCH/REGION)** sheets.

Although the wizard does not include entries on the **ADMIN (HEAD OFFICE)** sheet, the process for entering data on this sheet is the same as the process for entering fixed asset data on the **PROGRAM (BRANCH/REGION)** sheet.
Figure 7.14 Outline of the Fixed Assets Wizard

<table>
<thead>
<tr>
<th>Step</th>
<th>Description</th>
<th>Sheet</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Enter names for each category of fixed assets</td>
<td>INST CAP</td>
</tr>
<tr>
<td>2</td>
<td>Enter a base purchase price per unit for each category and an associated inflation rate</td>
<td>INST CAP</td>
</tr>
<tr>
<td>3</td>
<td>Enter a projected useful life for each category (five-year minimum)</td>
<td>INST CAP</td>
</tr>
<tr>
<td>4a</td>
<td>Advance to the PROGRAM sheet</td>
<td></td>
</tr>
<tr>
<td>4b</td>
<td>Enter the initial purchase value for each category</td>
<td>PROGRAM</td>
</tr>
<tr>
<td>5</td>
<td>Enter the total accumulated depreciation value for all program-related fixed assets</td>
<td>PROGRAM</td>
</tr>
<tr>
<td>6</td>
<td>Enter the on-hand quantity and remaining useful life for the items in each category. If the useful lives vary, you can break your entries into a maximum of three separate groupings</td>
<td>PROGRAM</td>
</tr>
<tr>
<td>7a</td>
<td>Return to the INST CAP sheet</td>
<td>INST CAP</td>
</tr>
<tr>
<td>7b</td>
<td>Optionally, enter links to project fixed assets based on the number of loan officers, non-officer program staff, program staff, and branches.</td>
<td>INST CAP</td>
</tr>
</tbody>
</table>

Defining Categories for Fixed Assets, Buildings and Other Assets

Group your assets into categories before you enter them into Microfin. For example, you can enter an Employee Furnishings category rather than separate categories for the employee’s desk, chair and file cabinet.

It is not appropriate to enter line items for every individual fixed asset; such detail is unnecessary and Microfin does not have sufficient input lines.
Procedure to define categories for fixed assets, buildings and other assets—Fixed Asset Categories and Other Admin-level Info sections, Inst Cap sheet:

Using the FIXED ASSET CATEGORIES section of the INST CAP sheet, complete steps one and two:

1. Enter the CATEGORY names for each of your program (or branch/region) fixed assets. [lines 5.04 – 5.12]

   Include all fixed assets, such as furniture, computer equipment and vehicles, that are considered program (or branch/region) assets. Do not include buildings or intangibles.

2. Enter the CATEGORY names for each of your administrative (or head office) fixed assets. [lines 5.16 – 5.24]

   Include all fixed assets, such as furniture, computer equipment, and vehicles, that are considered administrative (or head office) assets. Do not include buildings or intangibles.

Using the OTHER ADMIN-LEVEL INFO section of the INST CAP sheet, complete steps three and four:

3. Enter the category names for each of your buildings. [lines 5.30 – 5.34]

   Include all buildings that you own and that appear on your balance sheet. They are treated as ADMIN (HEAD OFFICE) assets. Microfin depreciates them over a user-defined period of at least five years.

   Do not include the land that you own; it is identified separately on the ADMIN (HEAD OFFICE) sheet.

4. Enter the category names for each of your other assets. [lines 5.37 – 5.40]

   Identify any significant other assets, such as MIS software or the costs associated with a change in legal structure. They are treated as ADMIN (HEAD OFFICE) assets.

Defining Categories for In-kind Subsidies

In-kind subsidies are noncash contributions that can, for example, take the form of free or subsidized technical assistance, training scholarships, donated office space, or donated furniture and vehicles.

If you receive such contributions, you should consider the value of these subsidies in your financial and profitability analyses.
Microfin does not include the value of in-kind subsidies in its primary financial statements. They only appear in the ADJUSTMENTS TO INCOME STATEMENT section of the income statement, and are used to calculate the ADJUSTED RETURN ON ASSETS and FINANCIAL SELF-SUFFICIENCY indicators. For additional information, refer to “Profitability Indicators” on page 409.

You define categories for your in-kind subsidies using the OTHER ADMIN-LEVEL INFO / IN-KIND SUBSIDY ANALYSIS section of the INST CAP sheet.

**Figure 7.15 Other Admin-level Info / In-kind Subsidy Analysis Section, Inst Cap Sheet**

![Image](108x420 to 461x473)

Later, you will manually project in-kind subsidies using the IN-KIND SUBSIDY ANALYSIS section of ADMIN (HEAD OFFICE) sheet.

**Procedure to define in-kind subsidy categories:**

Using the OTHER ADMIN-LEVEL INFO / IN-KIND SUBSIDY ANALYSIS section on the INST CAP sheet, enter the CATEGORY names for each of your in-kind subsidies. [lines 5.43 – 5.47]

It is not appropriate to enter line items for every in-kind subsidy; such detail is unnecessary and Microfin does not have sufficient input lines. Instead, group the subsidies into a maximum of five categories.

**Entering Adjustments to the Cash Flow Analysis**

Microfin provides an option on the INST CAP sheet that allows you to more precisely model your institution’s cash inflows and outflows.

**Figure 7.16 Adjustments to Cash Flow Analysis Section, Inst Cap Sheet**

![Image](108x390 to 461x403)

Generally, you model expenses in the periods they are incurred (i.e., on an accrual basis). For example, you include payroll taxes in your monthly salaries and benefits as the expense is incurred, even if you pay the taxes quarterly. This practice generates more accurate profit and loss calculations and more precise financial ratios.
However, to generate more precise cash flow projections in Microfin, you may decide to enter adjustments that reflect the actual timing of your cash outflows. For example, without an adjustment, Microfin’s cash flow projections will erroneously assume that your accrued payroll expenses reflect actual cash disbursements—that you pay your taxes monthly rather than quarterly. If such expenditures are significant, you may want to make use of this feature in Microfin.

If you have a significant amount of prepaid expenses, they may also require adjustments to generate accurate cash flow projections. For example, if you pay $2,400 in annual office rent in January, you will model the rent expense in Microfin as $200 per month. However, you may want to adjust the cash flow projection to reflect the actual cash outflow in January.

To enter these types of cash-flow adjustments, you check the ADJUSTMENTS TO CASH FLOW ANALYSIS box on the INST CAP sheet, and Microfin then displays the accruals sections of the model, as follows:

- **PROGRAM (BRANCH/REGION) sheet: STAFFING and OTHER OPERATIONAL EXPENSES sections**
- **ADMIN (HEAD OFFICE) sheet: STAFFING and OTHER OPERATIONAL EXPENSES sections**

You can enable Microfin’s cash flow adjustments facility at any time.

It is generally advisable to first complete your model with this feature disabled. Later, if you wish to refine your projections and you think these adjustments will have a significant impact, you can enable this feature and enter the adjustments.

**Procedure to enter cash flow adjustments:**

You enable and enter cash flow adjustments using the ADJUSTMENTS TO CASH FLOW section of the INST CAP sheet and related sections of the PROGRAM (BRANCH/REGION) and ADMIN (HEAD OFFICE) sheets. Optionally, you can use the LINKS button on the INST CAP sheet to navigate to these related sheets.

**On the INST CAP sheet, complete step one:**

1. Check the **USE DETAILED ADJUSTMENTS TO CASH FLOW SECTIONS box.**
   [line 6.03]
On the PROGRAM (BRANCH/REGION) sheet, complete steps two and three:

2. Navigate to the PROGRAM-LEVEL STAFFING section. Microfin displays TOTAL PROGRAM SALARY AND BENEFITS. [line 10.94]

```
<table>
<thead>
<tr>
<th>Program-Level Expenses</th>
<th>Total Balance</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total program salary and benefits</td>
<td>6,645</td>
<td>6,645</td>
<td>6,645</td>
<td>7,095</td>
<td>7,095</td>
<td>7,095</td>
<td>7,095</td>
<td>7,095</td>
<td>7,095</td>
<td>7,095</td>
<td>7,095</td>
</tr>
</tbody>
</table>
```

To restate this expense on a cash basis:

- Enter the initial BALANCE ON ACCRUED EXPENSES. [line 10.98]
- Enter the portion of the salary expense that is accrued but not paid during the period. [line 10.95]
- Enter that portion of any prior-period accruals that is paid out in cash during this period. [line 10.97]

3. Navigate to the PROGRAM-LEVEL OTHER OPERATING EXPENSES section. Microfin displays TOTAL PROGRAM OPERATING EXPENSES. [line 11.40]

```
<table>
<thead>
<tr>
<th>Program-Level Expenses</th>
<th>Total Balance</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total program expenses</td>
<td>2,797</td>
<td>2,803</td>
<td>2,509</td>
<td>2,915</td>
<td>2,915</td>
<td>2,915</td>
<td>2,915</td>
<td>3,093</td>
<td>3,971</td>
<td>4,443</td>
<td></td>
</tr>
</tbody>
</table>
```

To restate this expense on a cash basis:

- Enter the initial BALANCE ON ACCRUED EXPENSES. [line 11.44]
- Enter the portion of the operating expense that is accrued but not paid during the period. [line 11.41]
- Enter that portion of any prior-period accruals that is paid out in cash during this period. [line 11.43]

On the ADMIN (HEAD OFFICE) sheet, complete steps four and five:

4. Navigate to the ADMIN-LEVEL STAFFING section. Microfin displays TOTAL SALARY AND BENEFITS. [line 1.85]

```
<table>
<thead>
<tr>
<th>Admin-Codes and Aggregate Activity Sheet</th>
<th>Initial Balance</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total salary and benefits</td>
<td>1,740</td>
<td>1,740</td>
<td>1,740</td>
<td>1,740</td>
<td>1,740</td>
<td>1,740</td>
<td>1,740</td>
<td>1,740</td>
<td>1,740</td>
<td>1,740</td>
<td></td>
</tr>
</tbody>
</table>
```

To restate this expense on a cash basis:

- Enter the initial BALANCE ON ACCRUED EXPENSES. [line 1.85]
To restate this expense on a cash basis:

- Enter the initial **BALANCE ON ACCRUED EXPENSES**. [line 1.89]
- Enter the portion of the salary expense that is accrued but not paid during the period. [line 1.86]
- Enter that portion of any prior-period accruals that is paid out in cash during this period. [line 1.88]

5. Navigate to the **ADMIN-LEVEL OTHER OPERATING EXPENSES** section. Microfin displays **TOTAL ADMIN-LEVEL OTHER OPERATING EXPENSES**. [line 2.40]

<table>
<thead>
<tr>
<th>Activity Sheet</th>
<th>Balance Apr-01</th>
<th>May-01</th>
<th>Jun-01</th>
<th>Jul-01</th>
<th>Aug-01</th>
<th>Sep-01</th>
<th>Oct-01</th>
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<tr>
<td>240 Total admin-level oper. exp</td>
<td>2,352</td>
<td>2,404</td>
<td>2,415</td>
<td>2,421</td>
<td>2,440</td>
<td>2,452</td>
<td>2,464</td>
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<tr>
<td>241 - Prior-period accrual</td>
<td>1,390</td>
<td>2,392</td>
<td>2,403</td>
<td>2,417</td>
<td>2,440</td>
<td>2,452</td>
<td>2,464</td>
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<tr>
<td>243 - Cash-operating expenses</td>
<td>5.5%</td>
<td>5.5%</td>
<td>5.5%</td>
<td>5.5%</td>
<td>5.1%</td>
<td>4.8%</td>
<td>4.8%</td>
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</tbody>
</table>

To restate this expense on a cash basis:

- Enter the initial **BALANCE ON ACCRUED EXPENSES**. [line 2.44]
- Enter the portion of the operating expense that is accrued but not paid during the period. [line 2.41]
- Enter that portion of any prior-period accruals that is paid out in cash during this period. [line 2.43]
Case Study: FEDA’s Institutional Resources and Capacity

After reviewing the options on the INST CAP sheet, FEDA’s staff and management made the decisions outlined below. Note that, on the MODEL SETUP sheet, they had opted not to model individual branches, so the section on cost allocation methods does not apply.

Establishing FEDA’s Loan Loss Provisioning Policies

In keeping with FEDA’s policy, the staff indicated that loan write-offs will be reviewed and processed every six months.

They completed the section on loan loss provisioning rates to reflect the following: FEDA considers loans less than seven days overdue to be current, with no provisioning. Loans eight - 30 days overdue are provisioned at 10%. Loans 31 - 60 days overdue are provisioned at 25%, loans 61 - 90 days overdue are provisioned at 50%, loans 91 - 180 days overdue are provisioned at 75%, and loans more than 180 days overdue are provisioned at 100% and written off every six months.

Refer to figure 7.9.

Defining FEDA’s Staffing Categories

FEDA refers to members of its field staff as “Loan Officer,” with a short form of “Officer.” The plural forms are “Loan Officers” and “Officers.”

They opted for salary and benefit adjustments at the beginning of each fiscal year, because FEDA’s board generally grants an increase equal to the inflation rate.

In addition to its loan officers, FEDA considers its Credit Supervisor, Bookkeeper, and Operations Manager part of the program-related staffing. All other existing staff are considered administrative. In August 2001, when another branch office is to open, FEDA will shift the operations manager to the position of branch manager of the old branch and hire a branch manager for the new one. So the staff members update the job title to include both positions—i.e., “Operations/Branch Manager.” They indicate that a Bookkeeper also will work in the new branch. Starting in year four, when savings products are introduced, both branches will add the following positions: Teller and Security Guard.

For administrative-level staffing, the staff entered the following positions: “Executive Director,” “Finance Manager,” “Secretary,” and “Messenger.” They also entered “MIS Supervisor,” “Human Resources Director,” and “Savings Director”—positions FEDA intends to add.

Refer to figure 7.10.
Defining FEDA’s Operational Expense Categories
For program-related operational expense categories the staff specify “Rent,” “Utilities,” “Transportation,” “General Office Expenses,” and “Repairs, Maintenance, and Insurance.”

For administrative-level operational expense categories they enter “Rent,” “Utilities,” “Transportation,” “General Office Expenses,” “Repairs, Maintenance, and Insurance,” “Professional Fees and Consultants,” “Board Expenses,” and “Staff Training.”

Refer to figure 7.11.

Defining FEDA’s Categories for Fixed Assets, Buildings and Other Assets
For program-related fixed asset categories, the staff enter “Computers,” “Assorted Office Furniture,” and “Employee Furniture Groupings.” For Computers, they specify a base cost per unit of 2,000 freeons, projected to increase at 80% of inflation, and a life of five years. For Assorted Office Furniture, they enter a base cost per unit of 1,000 freeons, projected to increase at 100% of inflation, and a life of seven years. They also indicate that Employee Furniture Groupings cost 200 freeons per unit, a cost projected to increase at 100% of inflation, and have a life of seven years.

For administrative-level fixed asset categories, they enter “Computers,” “Assorted Office Furniture,” and “Vehicles.” For Computers, they repeat the information entered in the program-related asset section. For Assorted Office Furniture, they specify a base cost per unit of 1,500 freeons, projected to increase at 100% of inflation, and a life of seven years. They indicate that Vehicles initially cost 20,000 freeons per unit, will increase in cost at 100% of inflation, and have a life of six years.

As FEDA owns no buildings, the staff leave the building categories section blank.

For other assets categories they specify an “MIS” system.

Refer to figures 7.12 and 7.13.

Determining FEDA’s Cash Flow Adjustments
FEDA decided not to use the detailed adjustments to cash flow sections for the initial plan.

Refer to figure 7.16.
Projecting Program-related Resources and Capacity
Chapter 8
Projecting Program-related Resources and Capacity

After you have entered key institutional information on the INST CAP sheet, you implement the direct-expenses portion of your resources plan and project program-related resources and capacity using the final sections of the PROGRAM (BRANCH/REGION) sheet. If you are developing your Microfin model using a branch or regional approach, your program-related expenditures may be divided among two or more BRANCH or REGION sheets in order to provide supplemental income statements for each branch or region within your institution. If so, your entries apply only to the specific branch or region on the selected sheet.

If you intend to use Microfin’s automated projections for staffing, other operational expenses or fixed assets, you will also enter information into relevant portions of the INST CAP sheet.

Using the PROGRAM (BRANCH/REGION) Sheet to Project Program-related Resources and Capacity

To project program-related resources and capacity, you complete the following sections on the PROGRAM (BRANCH/REGION) sheet:

- **INCOME**
- **LOAN LOSS PROVISION AND WRITE-OFF**
- **NUMBER OF BRANCHES** (for consolidated and regional models, only)
- **LOAN OFFICER ANALYSIS**
- **PROGRAM-LEVEL STAFFING**
- **PROGRAM-LEVEL OTHER OPERATIONAL EXPENSES**
- **PROGRAM-LEVEL FIXED ASSETS**
### Figure 8.1a Program (Branch/Region) Sheet (1 of 3)

**Resource-related Sections Only**

#### Program-level Projections Sheet

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<tr>
<td>Total Earned Income</td>
<td>15,485</td>
<td>15,814</td>
<td>16,589</td>
<td>16,971</td>
<td>17,093</td>
<td>16,950</td>
<td>16,852</td>
<td>21,254</td>
<td>22,804</td>
<td>25,109</td>
<td>28,872</td>
<td>29,050</td>
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<tr>
<td>Total Income, all products</td>
<td>15,485</td>
<td>15,814</td>
<td>16,589</td>
<td>16,971</td>
<td>17,093</td>
<td>16,950</td>
<td>16,852</td>
<td>21,254</td>
<td>22,804</td>
<td>25,109</td>
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#### Financial Costs

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#### Number of Branches

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#### Loan Officer Analysis

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### Notes

1. The MFI does not account for operating savings; therefore these financial costs do not appear as a cost to the MFI.

2. Notes: The number of cases branches overtime. This number is only used in some automated expense calculations.

3. Display advanced input lines for loan officer calculation.
### Figure 8.1b Program (Branch/Region) Sheet (2 of 3)

#### Resource-related Sections Only

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**Program-level Staffing**

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<td>Credit Supervisor</td>
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**Job Description and number OUTPUT**

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**Final number of program employees**

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**Analysis**

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**Monthly Staffing (per person)**

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<th>Monthly Staffing (per person)</th>
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**Monthly Staffing (per person) OUTPUT**

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**Program-level Other Op. Exp.**

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8 – Projecting Program Resources and Capacity

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Using Microfin: 261
You may also enter information using the following PROGRAM sections of the INST CAP sheet:

- **STAFFING INFORMATION**
- **OTHER OPERATIONAL EXPENSES**
- **FIXED ASSET CATEGORIES**

You can navigate to any desired section of these sheets using the items on the sheet’s pagebar.

**Procedure to complete the resources-related sections of the PROGRAM (Branch/Region) sheet:**

1. Project any additional sources of income for your credit and savings program. [page 263]
2. Review financial costs. [page 266]
3. Generate the loan loss provision and write-off. [page 268]
4. Define the number of branches, for consolidated and regional models only. [page 272]

5. Project loan officer requirements and program-related staffing. [page 273]

If you choose to automate any portion of your staffing projections, return to the INST CAP sheet to establish the automated links, then review and optionally adjust the automated projections using the PROGRAM (BRANCH/REGION) sheet.

6. Project program-related other operational expenses. [page 289]

If you choose to automate any portion of your operational expense projections, return to the INST CAP sheet to establish the automated links, then review and optionally adjust the automated projections using the PROGRAM (BRANCH/REGION) sheet.

7. Project program-related expenditures for fixed assets. [page 293]

If you choose to automate any portion of your fixed asset projections, return to the INST CAP sheet to establish the automated links, then review and optionally adjust the automated projections using the PROGRAM (BRANCH/REGION) sheet.

Each of these steps is described in the sections that follow.

**Projecting Additional Sources of Income**

Microfin automatically projects financial income based on your marketing projections for lending activities, combined with the income structure you established for each of your financial products and optional entries for other earned income. It summarizes that income, by product, on the INCOME section of the PROGRAM (BRANCH/REGION) sheet.

**Figure 8.2 INCOME Section, PROGRAM (BRANCH/REGION) Sheet**

<table>
<thead>
<tr>
<th>5.10 Total Earnings</th>
<th>5.11 Total Earned Income</th>
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<tr>
<td></td>
<td>15,045 16,141 15,568 16,971 17,093 16,050 16,652 21,524 22,804 25,109 25,872 20,050</td>
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<tr>
<td></td>
<td>15,485 16,141 16,589 16,971 17,093 16,050 16,652 21,524 22,804 25,109 25,872 20,050</td>
</tr>
</tbody>
</table>

Optional, choose the DETAILS button on Microfin’s toolbar to see a detailed breakdown for your interest and commission income.
Procedure to enter additional sources of income—INCOME section, 
PROGRAM (BRANCH/REGION) sheet

You can review Microfin’s income projections and supplement them to include other earned income, using the INCOME section of the PROGRAM (BRANCH/REGION) sheet. If you are modeling on a consolidated basis, the income data applies to your entire program. If you are modeling on a branch or region basis, your data applies only to the specific branch or region on the sheet.

1. At the top of the section, Microfin summarizes your TOTAL EARNED INCOME [line 5.01] and TOTAL INCOME, ALL PRODUCTS. [line 5.02]
2. Microfin displays your TOTAL INCOME, by product. [line 5.04]
3. Microfin calculates the INTEREST INCOME for each of your loan products, including the income from your existing portfolio and the income projected for your new portfolio. [lines 5.05 – 5.08]
4. Microfin calculates the up-front and ongoing COMMISSION INCOME for each loan product. [line 5.09 – 5.11]
5. Microfin calculates any LOAN INDEXING INCOME [line 5.12] for products that are linked to inflation, based on your entries in INDEXING OF LOANS RECEIVABLE on the PRODUCTS sheet and in PRODUCT INDEXING RATE on the MODEL SETUP sheet.
6. Optionally, you may enter PENALTY INCOME. [line 5.13]
    Microfin does not automatically project penalty income. If penalties represent a significant source of income for your institution, calculate and manually enter an estimate of that income. You can also enter a formula here to calculate your penalty income or to transfer penalty income from a more sophisticated formula that you have created on a USER-DEFINED sheet. For additional information, refer to “Using the USER-DEFINED Sheet to Add Features or Supplement Calculations” on page 449.
7. Microfin calculates the MONTHLY YIELD ON PORTFOLIO ratio for your product. [line 5.14]
8. Optionally, enter any OTHER EARNED INCOME. [lines 5.16 – 5.19]
    As an alternative, you can establish more detailed calculations for other income using the USER-DEFINED sheet and create a formula to display the results here.

You can also enter a formula here to establish a more detailed calculation for your other earned income or to transfer this income from a more sophisticated formula that you have created on a USER-DEFINED sheet. For additional information, refer to “Using the USER-DEFINED Sheet to Add Features or Supplement Calculations” on page 449.
**Reviewing Income Graphs**

Microfin provides a variety of income graphs and graphing tools that assist you in analyzing and interpreting the data for each loan product.

The graphs are located on the GRAPHS sheet and accessed from the GRAPHS option on the Microfin toolbar. For additional information on using the graphs-related sheets, refer to “Generating and Reviewing Graphs Using the GRAPHS and User GRAPHS Sheets” on page 379.

Microfin provides two aggregate INCOME graphs.

**Total Credit Income**

This area graph projects total earned income, by period. It separately identifies the income for each loan product, for investment income and other earned income.

**Figure 8.3 Total Credit Income**

![Total Credit Income Graph]

**Yield by Product**

This line graph displays the annual yield, by product. This yield presents all interest, commissions and indexing income for each period as a percentage of the average loan portfolio.
You may find Microfin’s yield calculations surprising. If the yield is higher or lower than you expected, you may wish to use Microfin’s Cost to Client sheet in order to better understand how the yield is derived. For additional information, refer to “Using the CLIENT COST and REP SCHEDULE Sheets to Generate Effective Interest Rates and Cost-to Client Analyses” on page 457.

If you introduce a loan product with an up-front commission, you may find that the yield starts very high and then drops to a more stable level. This occurs because, in the first months, your institution receives significant commission income. When compared to a relatively small loan portfolio, the income generates a temporarily higher yield.

**Reviewing Financial Costs**

Microfin presents a summary of your financial costs on the FINANCIAL COSTS section of the PROGRAM (BRANCH/REGION) sheet (figure 8.5).

- For branch or regional models, this section includes only branch-specific or region-specific costs. To see costs for your entire institution, refer to the FINANCIAL COSTS section of the ADMIN (HEAD OFFICE) sheet (figure 8.6).
- For consolidated models, these costs are institution-wide and are the same as the costs displayed on the ADMIN (HEAD OFFICE) sheet.
Microfin calculates TOTAL INTEREST PAID ON DEPOSITS [line 6.03], including interest on both COMPULSORY SAVINGS [line 6.04] and each voluntary savings product [6.05 – 6.08]. However, if you do not directly manage your compulsory savings, Microfin does not calculate the interest paid on those deposits.

If applicable, Microfin displays your TOTAL INDEXING EXPENSE ON DEPOSITS, with detail by product. [line 6.10 – 6.16] If your savings deposits appear on your balance sheet, this expense is calculated for any savings product that is indexed based on the definitions from the PRODUCTS sheet and the MODEL SETUP sheet.

Microfin calculates the TOTAL COST OF BORROWED FUNDS [line 6.23], including costs for both portfolio loans and unrestricted loans.64 If you are modeling on:

- a consolidated basis, these costs are transferred from the ADMIN (HEAD OFFICE) sheet
- a branch or region basis, these costs are allocated from the ADMIN (HEAD OFFICE) sheet based on the allocation method you chose on the INST CAP sheet. The ALLOCATION METHOD displays on line 6.20 and the actual percentage ALLOCATED to the branch or region displays on line 6.22.

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64 Borrowing costs associated with asset loans are included in the OPERATIONAL EXPENSES section of the ADMIN (HEAD OFFICE) sheet.
Microfin calculates the **TOTAL FINANCIAL COSTS** as the sum of the **TOTAL INTEREST PAID ON DEPOSITS** and the **COST OF BORROWED FUNDS**.

### Generating Loan Loss Provisions and Reserves

You enter product-specific provisioning data and review Microfin’s calculated amounts for the loan loss provision, write-off amount, and reserve, plus several provisioning-related indicators in the LOAN LOSS PROVISION AND WRITE-OFF section of the PROGRAM (BRANCH/REGION sheet).

### Figure 8.7 Loan Loss Provision and Write-off Section, Program (Branch/Region) Sheet

### Projecting the Loan Loss Provision, Write-off and Reserve

You enter the remaining information for calculating your provision, write-off and reserve using the LOAN LOSS PROVISION AND WRITE-OFF section of the PROGRAM (BRANCH/REGION) sheet. If you are modeling on a consolidated basis, your entries apply to your entire program. If you are modeling on a branch or region basis, your entries apply only to the specific branch or region on the sheet.

Optionally, choose the DETAILS button on Microfin’s toolbar to see detailed breakdowns by aging category and by product.
**Procedure to model loan loss provisioning, write-offs and reserve policies — Loan Loss Provision and Write-off section, Program (Branch/Region) sheet:**

1. For each product, enter a percentage to establish the PORTFOLIO AT RISK > X DAYS as of the beginning of the projection period. [line 7.04] X represents the upper end of your second aging bracket, as defined on the INST CAP sheet and automatically reflected here.

   Portfolio at risk is the outstanding balance of all loans that you consider overdue, expressed as a percentage of the total portfolio immediately after unrecoverable loans have been written off. The portfolio at risk figure generally increases over time, and then decreases in the month that you write off delinquent loans.

   If your portfolio at risk will vary over time, you can manually adjust the percentages for future projection periods. However, such changes in the portfolio at risk do not take effect until after the next period in which loans are written off.

2. For each product, enter an ANNUAL LOAN WRITE-OFF RATIO, expressed as an annual percentage of your outstanding loan portfolio. [line 7.06] For example, if you expect to write off 50,000 in a year in which your ending portfolio is 1,000,000, your rate is 5%. If you schedule your write-offs more frequently, the figure entered here should still be 5% for the year.

   If your write-off ratio will vary over time, you can manually adjust the percentage for future projection periods. Changes in the write-off ratio do not take effect until after the next period in which loans are written off.

3. For each product, Microfin calculates approximate PORTFOLIO AGING percentages for all of your aging brackets [lines 7.08 – 7.14] based on your previous entries for PORTFOLIO AT RISK and ANNUAL LOAN WRITE-OFF RATIO.

<table>
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<tr>
<th>Program Level Projections Sheet</th>
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<th>Jan-01</th>
<th>Feb-01</th>
<th>Mar-01</th>
<th>Apr-01</th>
<th>May-01</th>
<th>Jun-01</th>
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<td>7.09 Current (less than 7 days)</td>
<td>0.0%</td>
<td>0.0%</td>
<td>0.0%</td>
<td>0.0%</td>
<td>0.0%</td>
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<tr>
<td>7.10 Fast due 0-30 days</td>
<td>4.0%</td>
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<td>7.11 Fast due 31-60 days</td>
<td>6.0%</td>
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<td>7.12 Fast due 61-90 days</td>
<td>3.0%</td>
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<tr>
<td>7.13 Fast due 91-180 days</td>
<td>1.0%</td>
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<td>7.14 Fast due more than 180 days</td>
<td>0.0%</td>
<td>0.3%</td>
<td>0.6%</td>
<td>0.9%</td>
<td>1.2%</td>
<td>1.5%</td>
<td>0.0%</td>
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This information appears **only** if you choose the DETAILS button on the Microfin toolbar.
Immediately after your oldest loans are written off, the sum of the CURRENT LOANS bracket plus the first PAST DUE bracket [lines 7.09 and 7.10] equals 1 - PORTFOLIO AT RISK RATE—of which, 60% is allocated to current loans and 40% to the first aging bracket. Each month, the portfolio quality gradually degrades until loans are once again written and the percentages readjust upwards. For example, in the above illustration, the current loans decrease from 86% of the portfolio in the initial balance to 84.5% in month five. After loans are written off in month six, this percentage returns to 86%.

Any changes to portfolio quality that you entered using the optional input cells of lines 7.04 - 7.07 are also recognized immediately after loans are written off.

After each write-off, the percentage of loans in the last (i.e., oldest) aging bracket is set to zero (0%). For example, refer to the initial balance and month-six data in the above illustration. This percentage gradually increases each month, based on your ANNUAL LOAN WRITE-OFF RATIO.

The percentages for the middle aging brackets remain constant. [lines 7.11 - 7.13]

4. Enter an ENDING LOAN LOSS RESERVE amount as of the beginning of the projection period. [line 7.30]

Unlike the balance sheet entry on the MODEL SETUP sheet, enter this reserve amount (or the reserve designated for the branch/region, if you are modeling multiple branches/regions) as a positive number.

5. Based on your entries, for each product, Microfin calculates a LOAN LOSS PROVISION amount [lines 7.16 – 7.20], LOAN WRITE-OFF amount [lines 7.23 – 7.27], ENDING LOAN LOSS RESERVE [lines 7.30 – 7.34], and TARGETED LOAN LOSS RESERVE [lines 7.37 – 7.41].

This information appears only if you choose the DETAILS button on the Microfin toolbar.

6. Microfin generates the following provision-related ratios:
   - PROVISIONING AS % OF DISBURSEMENTS [line 7.21]
   - WRITE-OFF AS % OF PORTFOLIO [line 7.28]
   - LOAN LOSS RESERVE RATIO—i.e., the ending reserve as a percentage of the outstanding portfolio [line 7.35]
Reviewing the Provisioning Calculations

Microfin uses aging parameters from the INST CAP sheet, coupled with portfolio at risk and loan write-off rates from the PROGRAM (BRANCH/REGION) sheet, to project portfolio quality. In essence, you generate the provision and reserve amounts by the choices you make on these two sheets. However, you should note that Microfin cannot actually project the aging by number of days, based on the loan disbursements and repayments information projected in the model.

After Microfin generates an aging at the program, branch or regional level, it uses the relevant provisioning rates to determine the appropriate ending reserve. More conservative (i.e., higher) provisioning rates result in a higher ending reserves and thus higher monthly provisions on the income statement.

After Microfin determines the necessary ending reserve, it calculates the monthly required provision as:

\[ \text{Ending reserve, current period} - \text{Ending reserve, previous period} + \text{Write-offs, current period} \]

Microfin assumes that the quality of your portfolio gradually deteriorates between write-offs, and moves loans into an unrecoverable category at the rate determined by your annual loan write-off rate. As a result, the percentage of current loans decreases until loans are written off, then returns to the original percentage after the write-off. The result is a saw-tooth pattern for portfolio at risk and loan loss reserve that is typical of financial institutions; the size of the reserve depends on the quality of the portfolio and the frequency of write-offs.

You can review Microfin’s calculated amounts for the loan loss provision, loan write-off amount and ending loan loss reserve, plus several provisioning-related indicators on the PROGRAM (BRANCH/REGION) sheet. Also, review the PORTFOLIO QUALITY ratios in the RATIO ANALYSIS section of the FIN STATEMENTS sheet.

Finally, you can see a visual representation of your monthly loan loss provision on the EXPENSES BY MONTH graph. Refer to page 287 for a sample of this graph.

When you review the graph, you may see occasional, large spikes in the loan loss provision. There are three causes for these spikes:

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65 Under certain circumstances, such as when an institution has a declining portfolio, it is possible to have a negative loan loss provision.
You may have projected a change in your PORTFOLIO AT RISK and/or your LOAN WRITE-OFF RATIO variables on the PROGRAM (BRANCH/REGION) sheet. Changes in these rates affect the quality of your loan portfolio and thus the level of the loan loss provision that is necessary to maintain an adequate reserve.

Because of Microfin’s internal logic, any changes you introduce in these two portfolio quality variables take effect only after the next loan write-off period (monthly, quarterly, semi-annually, or annually, as determined on the INST CAP sheet). You can minimize these spikes if you choose a monthly write-off frequency. Even if, in practice, you do not write loans off monthly, this practice will provide accurate results and ratios in your projections.

Any changes in the portfolio quality indicators that generate an improvement in portfolio quality can result in a negative loan loss provision. You can disable negative provisions by selecting the BLOCK NEGATIVE LOAN LOSS PROVISIONS box on the INST CAP sheet.

If the growth rate for your portfolio increases, it is necessary to increase the amount of the provision in order to accurately project your potential future losses.

Defining the Number of Branches (Consolidated and Regional Models Only)

If you are modeling on a consolidated or regional basis, use the NUMBER OF BRANCHES section on the PROGRAM (or REGION) sheet to establish the total number of branches in your institution (or in each region). The default is a single (i.e., one) branch or region.

Microfin requires the number of branches for its optional, automated staffing and expense calculations.

Figure 8.8a NUMBER OF BRANCHES Section, PROGRAM (Branch/Region) Sheet (Year One)
Procedure to establish the number of branches in your institution or region — Number of Branches section, Program (or Region) sheet:

1. For your program or region, enter the NUMBER OF BRANCHES in operation as of the beginning of your projection period. [line 8.03]
2. If the number of your branches varies over time, you can manually adjust these numbers for each future projection period. [line 8.03]

Projecting Program-related Staffing Requirements

You enter and review program staffing data in the LOAN OFFICER ANALYSIS and PROGRAM-LEVEL STAFFING sections of the PROGRAM (BRANCH/REGION) sheet (figures 8.9 and 8.12).

If you choose to automate any of your staffing projections, you also use the STAFFING INFORMATION / PROGRAM-LEVEL STAFFING section of the INST CAP sheet (figure 8.11).

Procedure to define program-related staffing requirements:

1. Project loan officer requirements. [page 273 and page 279]
2. Optionally, you may establish links to automatically project staffing levels. [page 279]
3. Define program-related staffing and associated salary costs and, optionally, override any automated projections. [page 281]
4. Review staffing graphs. [page 285]

Projecting Loan Officer Requirements

Loan officers are vital to the success of your institution; they typically make up more than half the staff of a microfinance institution, and originate and monitor all lending activity. As a result, Microfin singles out this staff position for extensive analysis, using the LOAN OFFICER ANALYSIS section of the PROGRAM (BRANCH/REGION) sheet.
### Figure 8.9a Loan Officer Analysis Section, Program (Branch/Region) Sheet (Without Advanced Input Lines)

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<th>Program-level aggregates</th>
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<td>Senior Loan Officers in program loans</td>
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### Figure 8.9b Loan Officer Analysis Section, Program (Branch/Region) Sheet (With Advanced Input Lines)

<table>
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<th>Program sheet aggregates</th>
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### Table Explanation
- **Control variables:**
  - Easy level
  - Secondary level
  - Intermediate level
  - Senior level
  - Minimum hiring size
- **New hiring and transfers to/ from senior loan officer:**
  - Senior loan officer hiring
  - Senior loan officer transfer
  - Senior loan officer exit
- **Promotions:**
  - Promote from secondary level
  - Promote from intermediate level
  - Promote from senior level
- **Staffing levels by category:**
  - Senior level
  - Intermediate level
  - Secondary level

### Notes
- Display advanced input lines for loan officer calculation.
Microfin models loan officer staffing by level of experience for the first two years of the projections, but shifts to an averaging method in years three through five. It estimates the average caseload to be midway between the caseloads of intermediate-level and senior-level loan officers, although you can override this average figure (on the PROGRAM (BRANCH/REGION) sheet beginning in year three), if necessary.

The loan officer analysis is one of the most complex elements of Microfin. Because Microfin is a market-driven, not a loan-officer driven, model—and therefore bases its portfolio projections on an estimate of market size and penetration—this analysis focuses on the number of loan officers that are necessary to meet your portfolio growth targets.

Fundamentally, Microfin assumes that loan officers work with an identifiable caseload (i.e., number of active loans). You establish this target caseload for each loan product.

Microfin provides a basic and an advanced approach to project your loan officer requirements. The general procedure is the same under both approaches (as outlined below); however, there are more data entry cells in the advanced approach. If you choose:

- the basic procedure, you enter projected CASELOAD and CONTROL VARIABLES for the initial number of loan officers, the percentage of caseload that can be managed by staff at each experience level, and the minimum hiring size. Microfin then automatically projects NEW HIRING for entry-level loan officers, which you can manually override. Optional data entry lines for hiring of other experience levels, and for LAYOFFS and TRANSFERS OUT are hidden.
- the advanced procedure, you can enter NEW HIRING and TRANSFERS IN for all experience levels, and you also enter data for LAYOFFS and TRANSFERS OUT for all experience levels. You might, for example, consider using these advanced input lines if you are creating detailed branch-level projections.

Procedure to project loan officer requirements—Loan Officer Analysis section, Program (Branch/Region) sheet:

Unless otherwise noted, all steps apply to both the basic and advanced approach.

1. To choose the basic data entry procedure, leave the DISPLAY ADVANCE INPUT LINES box unchecked. [line 9.02]

To choose the more advanced data entry procedure, check this box. [line 9.02]
For each loan product, complete steps two through four:

2. Optionally, choose the GO TO CASELOAD SHEET button [line 9.04] to navigate to the CASELOAD sheet, where you can experiment with your caseload design and methodology. Return to this section of the PROGRAM (BRANCH/REGION) sheet when you are finished.

For additional information, refer to “Using the Caseload Sheet to Optimize Caseload Methodology and Design” on page 451.

3. Enter the OPTIMAL OFFICER CASELOAD. [line 9.06]

The target caseload represents your expectations for an experienced loan officer that works with a single product. It does not represent your average caseload. If your loan officers work with more than one product, enter the caseload an officer would be expected to reach if the officer worked only with the product for which you are entering this data.66

For additional information, refer to “Estimating Full-time Equivalent Caseloads” immediately following.

4. Microfin calculates the SENIOR OFFICERS FOR PROJECTED LOANS [line 9.08], representing the projected NUMBER OF ACTIVE LOANS (from the LOAN PRODUCT OUTPUT section on this sheet) divided by the optimal caseload [line 9.07].

For your program (or branch or region), complete steps five through ten:

5. Microfin categorizes loan officers according to four levels of experience. For each experience level, enter a % OF OPTIONAL CASELOAD [lines 9.12 – 9.14]; Microfin sets the percent for SENIOR-LEVEL officers at 100% [line 9.15].

Each entry must fall between 15%67 and 100%, and should gradually increase as the experience level increases. Typical entries are 25% for the entry level, 50% for the secondary level, and 75% for the intermediary level.68

66 Microfin needs to know the full-time-equivalent caseload for each product. For example, assume product one has a full-time-equivalent caseload of 400 and product two a caseload of 100. Your average senior loan officer may currently work with 300 clients, but her caseload would change if the product mix were to change. If you project that the number of clients for product two increases relative to product one, her average caseload will drop.

67 If you enter a value of less than 15%, Microfin hires a large number of loan officers. As their experience levels increase, their capacity increases dramatically in future months, often resulting in significant over-capacity for the institution.

68 In the example in figure 8.9, entry-level officers work with a caseload of 87 clients (25 percent of the optimal caseload of 350) for four months, after which time they are promoted to secondary level. At the secondary level, they work with a caseload of 175 (50 percent of 350). At the intermediate level, officers work with a caseload of 260 (75 percent of 350). Finally, they are promoted to senior level, where they work with a full caseload of 350 clients.
6. For each experience level, in the PROMOTION column, enter the number of months of experience the loan officer requires in order to advance to the next experience level. [lines 9.12 – 9.14] For example, if it takes your loan officers a period of one year to reach a full caseload, you might enter four months for each of the first three levels.

7. Enter the MINIMUM HIRING SIZE to establish the smallest number of loan officers you will hire at any one time in order to minimize hiring and orientation/training costs. [line 9.16] For example, most microfinance institutions prefer to cluster the hiring of new loan officers in order to coordinate introductory training.

8. Enter the initial number of loan officers at each level in STAFFING LEVELS BY CATEGORY. [lines 9.39 – 9.42]

9. Microfin suggests NEW HIRING for entry-level loan officers in each period to ensure that the total loan officer capacity is sufficient to meet projected demand. [line 9.22]

10. You can OVERRIDE Microfin’s suggested entry-level hiring. [line 9.23]

For advanced input only, complete steps 11 and 12. For basic input, skip to step 13.

11. Optionally, enter new hiring (or transfers in from other branches/regions) for SECONDARY LEVEL, INTERMEDIATE LEVEL and SENIOR LEVEL officers. [lines 9.25 – 9.27] These entries only appear if you checked DISPLAY ADVANCED INPUT LINES at the top of this section.

12. Optionally, enter LAYOFFS (or TRANSFERS OUT to other branches/regions), by experience level to model reductions in your staff. [lines 9.29 – 9.32] These entries only appear if you checked DISPLAY ADVANCED INPUT LINES at the top of this section.

Enter layoffs or transfers as positive numbers. If your entry exceeds the existing number of officers at the indicated level, Microfin displays an error message.

Generally, you should only make entries here if your model projects significant over-capacity [line 9.48]; these projections are estimates, and you can ignore a slight over-capacity.

For basic and advanced input, complete the remaining steps:

13. Microfin projects PROMOTIONS [line 9.34-9.37] based on length of employment relative to the PROMOTION periods you enter in this section. For example, if it takes six months to advance from entry level to secondary level, and you hire a new entry-level loan officer in month one, that loan officer is promoted to secondary level in month seven.

15. Microfin calculates any SHORTFALL OR EXCESS in loan officers [line 9.47], based on senior-level equivalents—i.e., the number of officers at each level multiplied by the level’s % OF OPTIMAL CASELOAD [lines 9.12 – 9.15].

16. Microfin displays a graphical CAPACITY ANALYSIS [line 9.48], which visually portrays the shortfall or excess from the previous line. A “.” entry indicates ideal capacity, a “+!” indicates an excess of one loan officer, and a “-!” indicates a shortfall of one loan officer.

Generally, Microfin does not show under-capacity unless you have overridden the automated hiring schedule or entered significant layoffs or transfers.

Microfin may show over-capacity when loan officers are promoted to higher experience levels, especially if your entry-level caseload is very low. Their capacity may increase faster than your number of active clients. Microfin’s requirement that entry-level caseloads be set to at least 15% of the senior-level caseload is designed to minimize this effect.

Over-capacity can also result when staff productivity (that is, caseload) is projected to increase more rapidly than active clients. In this situation, it may be logical to shift loan officers to other positions or to lay them off.

Finally, you may project over-capacity as a result of insufficient demand if your number of active clients stagnates or declines.

17. If necessary, you can adjust projected HIRING [using lines 9.22 – 9.27] to prevent over- or under-capacity. Optionally, enter a value of “0” to prohibit hiring in any period.

Generally, you should only make these manual adjustments if your model projects significant over-capacity [line 9.48]; the projections are estimates, and you can ignore a slight over-capacity. 69

18. Microfin calculates four staff-productivity indicators for your review:
   - CASELOAD PER LOAN OFFICER [line 9.49]
   - PORTFOLIO PER OFFICER [line 9.50]
   - LOANS DISBURSED PER OFFICER, PER MONTH [line 9.51]
   - NEW CLIENTS, PER OFFICER, PER MONTH [line 9.52]

Rarely, if ever, will your long-term average caseload reach your optimal caseload, because it is unlikely that all of your institution’s loan officers will be at the senior level.

69 Do not be concerned about a small, temporary over-capacity. An over-capacity of one or two officers for a period of a few months has no significant impact on the overall projections. Any gains in fine-tuning will be offset by the complication involved in readjusting these manual overrides each time the client projections change. You should minimize the use of manual adjustments, as they interfere with sensitivity analysis tests.
**Estimating Full-time Equivalent Caseloads**

Optimal full-time-equivalent caseloads are best established based on a careful study of loan-officer time allocation and an analysis of each product’s lending methodology.70

However, you can estimate caseloads by determining, for each product, the percentage of a loan officer's time that is spent with clients. For example, assume an average senior loan officer works with 250 clients—200 for product one and 50 for product two (figure 8.10). If your loan officer estimates that she spends 60% of her time with product-one clients and 40% of her time with product-two clients, the full-time-equivalent caseloads (i.e., the number of clients divided by the percentage share of work time) are 333 for product one and 125 for product two.

**Figure 8.10 Estimating Full-time-equivalent Caseloads**

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<thead>
<tr>
<th></th>
<th>Clients</th>
<th>Percentage Share of Work Time</th>
<th>Full-time-Equivalent Caseload</th>
</tr>
</thead>
<tbody>
<tr>
<td>Product 1</td>
<td>200</td>
<td>60%</td>
<td>333</td>
</tr>
<tr>
<td>Product 2</td>
<td>50</td>
<td>40%</td>
<td>125</td>
</tr>
<tr>
<td>Total</td>
<td>250</td>
<td>100%</td>
<td></td>
</tr>
</tbody>
</table>

Always compare your full-time-equivalent caseload calculations with best practice targets for comparable microfinance institutions (that is, those with similar lending methodologies and types of markets and clients).

As an alternative, Microfin provides an optional CASELOAD sheet that you can use to perform a more detailed analysis. For additional information, refer to “Using the CASELOAD Sheet to Optimize Caseload Methodology and Design” on page 451.

**Establishing Optional Links To Automate Program-related Staffing Projections (Advanced Feature)**

You can establish links on the INST CAP sheet to automate Microfin’s projection of the staffing levels based on such variables as the number of loan officers, borrowers, depositors or branches (figure 8.11). By clearly linking staffing to key activities, these links may help you to make realistic projections without requiring manual inputs in each period when additional staff may be hired.

For a general overview of Microfin’s automated projections, refer to “Automating the Expenditure Calculations (Optional, Advanced Feature)” on page 230.

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You can override your automated entries when necessary, by manually entering the projected expenses. For additional information, refer to the “Defining Program-related Staffing” section that follows.

Procedure to establish automatic links for staffing projections — Staffing Information section, INST Cap sheet:

If you are modeling on a branch or regional basis, your automated-link entries on the INST Cap sheet apply to all branches or regions.

For each automated program-related (or branch or regional) staff position, complete steps one through five [using lines 3.11 – 3.25]:

1. If the number of staff for the position is to be calculated based on the number of loan OFFICERS, enter the number of loan officers that would require you to hire one new person for this position (in the OFFICERS column).

   For example, if you hire one supervisor for every 12 loan officers, enter “12” in this cell. If you hire two assistants for every one loan officer, enter “0.5” in this cell—i.e., you have 0.5 loan officers for each assistant.

2. If you calculate staff based on the number of BORROWERS, enter the number of borrowers that would require you to hire one new person for this position (in the BORROWERS column).
3. If you calculate staff based on the number of DEPOSITORS (savers), enter the number of depositors that would require you to hire one new person for this position (in the DEPOSITORS column).

4. If you calculate staff based on the number of your BRANCH offices, enter the number of branches that would require you to hire one new person for this position (in the BRANCHES column).

5. Microfin only projects hiring of full-time staff members using these automated links. Enter an optional ROUND UP value to determine the point at which Microfin will hire a new, full-time person if it projects a less-than-full-time staffing need. (This is an advanced option; you can leave ROUND UP blank, and Microfin will not round up.)

For example, if you hire one credit supervisor for every 12 loan officers, and you have 24 loan officers in a particular month, you need 2.0 credit supervisors (i.e., 24 / 12). Now, assume you hire two more loan officers the next month; you need 2.17 credit supervisors (26 / 12). Because Microfin only projects hiring for full-time staff, it is not possible to hire .17 supervisors. You could choose to immediately hire the third full-time supervisor or, alternately, decide to wait. You use the optional ROUND UP entry to control whether Microfin will add a new credit supervisor in this situation. If your ROUND UP entry is less than or equal to .17, Microfin will hire the supervisor. If the ROUND UP entry is greater than .17, you have not met the requirement and Microfin will not yet hire the supervisor.

Assume you have decided to wait until the you have 28 officers before you hire a new supervisor. To determine the ROUND UP value in this case, divide the number of officers (28) by the link value (12). The result is 2.33 officers per supervisor. This means you need a ROUND UP of .33 to trigger the hiring.

**Manually Defining Program-related Staffing (Branch- or Region-level Staffing) and Related Salary Costs**

If you did not enter links for automated program-related staffing projections on the STAFFING INFORMATION section of the INST CAP sheet, you manually enter current and projected levels for your program staff, excluding loan officers. You do so using the PROGRAM-LEVEL STAFFING section of the PROGRAM (BRANCH/REGION) sheet.

If you entered links for automated staffing projections, you may optionally use the entries on this section of the PROGRAM (BRANCH/REGION) sheet to override those automatic projections.

You also use this section to enter salary amounts for every PROGRAM-LEVEL position, regardless of whether the related staffing projections are automatically generated or entered manually.
# Procedure to project program-related staffing and salary costs – Program-level Staffing section, Program (Branch/Region) sheet

If you are modeling on a consolidated basis, your entries apply to your entire program. If you are modeling on a branch or regional basis, your entries apply only to the specific branch or region on the selected sheet.

To project staffing levels, complete steps one through six:

1. Microfin displays all of your program-related staff positions [lines 10.04 – 10.18], based on your entries in the STAFFING INFORMATION section of the INST Cap sheet.

2. Microfin displays “Auto” in the INITIAL BALANCES column for any position which is being projected based on the automated links on the INST Cap sheet. Otherwise, it displays “Manual.”
3. If your staffing projections are manual, enter anticipated staffing levels for each position. [lines 10.04 – 10.18]

If your staffing projections for any position are automated, you may optionally use these entries to override the automated calculations in any period. If you do not make an entry for any period, Microfin resumes the automated projections.

If a staff position is considered to be part program and part administrative, it will appear in both the program and administrative staffing sections. You should split the position between the two categories. For example, you might enter “0.4” here for the program-expense entry and “0.6” on the ADMIN (HEAD OFFICE) sheet for the administrative-expense entry.71

In multiservice institutions, senior program managers may only work part of the time on financial services. In such a case, enter the percentage of time dedicated to financial services here—perhaps 75%—but enter the full salary and benefits (see below). When Microfin generates costs, only 75% of the full salary appears as a cost for these positions; the remaining 25% must be covered by other services that are not directly reflected in Microfin’s projections.

4. Microfin projects staffing by position. [lines 10.19 – 10.34] For each period, it displays this anticipated staffing based upon both automated calculations and your manual entries.

5. Microfin calculates two ratios in the ANALYSIS section:
   - **LOAN OFFICERS AS % OF TOTAL PROGRAM STAFF** [line 10.37]
   - **ACTIVE LOANS PER PROGRAM STAFF PERSON** [line 10.38]

6. Microfin provides an unprotected line that you can use to create your own staffing ratio. [line 10.39]

**To project salary and benefits, complete steps seven through 11:**

7. Microfin displays all of your program-related staff positions, based on your entries in the STAFFING INFORMATION section of the INST CAP sheet. [lines 10.40 – 10.58] It includes a breakdown of loan officers by experience level.

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71 If you are modeling multiple branches or regions, take care not to overstate the total allocations. For example, if the split is 50% program and 50% administrative and you have two branches, enter “0.5” on the HEAD OFFICE sheet and “0.25” on each BRANCH sheet.
8. Enter the **MONTHLY SALARY AND BENEFITS** expense, per staff person, for each position. [lines 10.41 – 10.58]

To calculate this expense amount, add all annual costs—salary, insurance, payroll taxes, bonuses, pension, and all other benefits—and divide the total by 12. Enter a *monthly* amount, even if you are making optional entries in the quarterly columns for years three, four and five.

You should enter a salary amount for every staff position in the month-one column, even if the position is not staffed until later in the projection period. That way, Microfin can automatically adjust the salary each year for inflation (assuming you chose to do so on the INST CAP sheet). When the position is filled, the starting salary will be in line with salaries for other positions.

9. Microfin displays the **MONTHLY SALARY AND BENEFITS** cost that it projects, per person, for each staff position. [lines 10.59 – 10.77] Microfin automatically converts the information to quarterly costs, beginning in year three.

If you enabled the **SALARY AND BENEFITS ADJUSTMENT OPTION** on the INST CAP sheet, the amounts are automatically adjusted for inflation (plus or minus any additional percentage you have defined) in the first month of each fiscal year.

You can override any automatic increases by entering a *monthly* amount for any period. [lines 10.41 – 10.58 above] For example, you might choose this option if the salary for one staff position is expected to increase at a different rate than that for other staff positions.

10. Microfin displays the **TOTAL SALARY** cost for each staff position. [lines 10.78 – 10.93] To do so, it multiplies the number of staff in each position by the cost per person.

11. Microfin summarizes the **TOTAL PROGRAM SALARY** cost for all positions. [line 10.94]

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72 Linking staff compensation to performance is an effective way to promote increased productivity and quality. Microfin cannot, of course, determine whether individual staff are meeting the targets established for any incentive pay schemes. As a result, you must estimate average incentive bonuses and incorporate them in your average monthly salary and benefit cost.
Reviewing Staffing Graphs

Microfin provides a variety of staffing graphs and graphing tools that assist you in analyzing and interpreting the data for your institution’s program-related and administrative staffing. Note that the information on these graphs is not complete until you enter administrative staffing data in “Projecting Administrative Staffing Requirements” on page 314.

The graphs are located on the GRAPHS sheet and accessed from the GRAPHS option on the Microfin toolbar. For additional information on using the graphs-related sheets, refer to “Generating and Reviewing Graphs Using the GRAPHS and User GRAPHS Sheets” on page 379.

Microfin provides four STAFFING graphs: STAFFING COMPOSITION, STAFFING RATIOS, ACTIVITY LEVELS PER OFFICER, and EXPENSES BY MONTH.

Staffing Composition

This area graph projects your anticipated staffing, by general category: loan officers, other program staff, administrative staff.

Figure 8.13 Staffing Composition

Staffing Ratios

This line graph displays the percentage of your staff that work as loan officers, in other program-related positions, and in administrative positions.
**Figure 8.14 Staffing Ratios**

This line graph displays the average caseload for your staff that work as loan officers, for your total program staff, and for your total staff.

Keep in mind that caseload is strongly affected by your lending methodology. You can improve this indicator over time by streamlining your operations and by increasing your retention rates.

**Figure 8.15 Activity Levels per Officer**

This line graph displays the average caseload for your staff that work as loan officers, for your total program staff, and for your total staff.
Expenses by Month
This area graph displays total expenses, separated according to type. Personnel costs represent one type of expense. (Note that the data represented on the graph is not complete until you have projected expenditures for all expense categories.)

Figure 8.16 Expenses by Month

Projecting Program-related Other Operational Expenses
Other operational expenses include your remaining expenses at the program level, with the exception of financial costs and depreciation.

You enter and review program-related operational expense data in OTHER OPERATIONAL EXPENSES section of the PROGRAM (BRANCH/REGION) sheet (figure 8.18). If you choose to automate any of your operational expense projections, you also use the OTHER OPERATIONAL EXPENSES / PROGRAM-LEVEL OTHER OPERATIONAL EXPENSES section of the INST CAP sheet (figure 8.17).

Procedure to project other operational expenses:
1. Optionally, establish links to automatically project operational expenses. [page 288]
2. Define the amount of your program-related operational expenses, or override the automated projections. [page 289]
3. Review the expense graphs. [page 292]

Using Microfin
Establishing Optional Links To Automate Other Operational Expense Projections (Advanced Feature)

You can establish links to automatically project the operational expenses on the PROGRAM (BRANCH/REGION) sheet based on such variables as the number of loan officers, total program staff, borrowers, depositors or branches (figure 8.17). By clearly linking expenses to key activities, these links help you to make realistic projections without requiring you to make manual entries in each period that the expense levels change. For a general overview of Microfin’s automated projections, refer to “Automating the Expenditure Calculations (Optional, Advanced Feature)” on page 230.

You can choose to automatically adjust the projected amounts for the effect of inflation using this same section of the model. For example, in figure 8.17, Utilities are linked to 100% of annual inflation with a base rate of 150 per branch. (If the annual inflation rate is 10%, then 100% of the rate is 10%.) Each year, the expense is equal to 150 multiplied by the number of branches, then increased by the cumulative inflation rate since year one—based on the INFLATION RATE you entered on the MODEL SETUP sheet.

By way of contrast, Transportation expenses are projected to increase by less than inflation—80% of the annual rate. If the annual inflation rate is 10%, then 80% of the inflation rate is 8% (i.e., 10% x .8).

In the same figure, the base rate for General Office Expenses is 40 plus 100% of the monthly inflation rate. In this case, the expense is not constant throughout the year; but increases each month based on the inflation rate.

This inflation adjustment is independent of the other, automated links. If you enter an inflation adjustment but do not use the automated links, Microfin applies the inflation adjustment to your manual entries for operational expenses.

Figure 8.17 Other Operational Expenses / Program-level Other Operational Expenses Section, INST CAP Sheet

73 The cumulative inflation rate is calculated on a simple, not a compound, basis.
You can override your automated entries when necessary, by manually entering the projected expenditures on the PROGRAM (BRANCH/REGION) sheet. For additional information, refer to the “Defining Program-related Other Operational Expenses” section that follows.

**Procedure to establish automatic links for other operational expense projections — Other Operational Expenses section, INST Cap sheet:**

If you are modeling on a branch or regional basis, your automated-link entries on the INST Cap sheet apply to all branches or regions.

For each automated program-related expense category, complete steps one through six [using lines 4.04 – 4.19]:

1. If the amount of the expense is to be adjusted for inflation, enter the percent of the inflation rate (entered on the MODEL SETUP sheet) by which to adjust the expense. For example, if the annual inflation rate is 10% and you enter “80%,” Microfin increases expense by 8%.

   If the expense is adjusted for inflation monthly, enter the percent in the MONTHLY column. If the expense is adjusted for inflation annually, enter the percent in the ANNUALLY column.

2. If the amount of the expense is calculated based on the number of loan OFFICERS, enter the monthly expense amount that is incurred for each loan officer (in the OFFICERS column). For example, if you spend 100 in transportation for every loan officer, enter “100” in this cell.

3. If the amount of the expense is calculated based on the number of PROGRAM STAFF, enter the monthly expense amount that is incurred for every staff person in the PROGRAM STAFF column.

4. If the amount of the expense is calculated based on the number of BORROWERS enter the monthly expense amount that is incurred for every borrower (in the BORROWERS column).

5. If the amount of the expense is calculated based on the number of DEPOSITORS enter the monthly expense amount that is incurred for every depositor (in the DEPOSITORS column).

6. If the amount of the expense is calculated based on the number of BRANCHES enter the monthly expense amount that is incurred for every branch (in the BRANCHES column).

**Defining Program-related Other Operational Expenses**

If you did not enter links for automated expense projections on the OTHER OPERATIONAL EXPENSES section of the INST Cap sheet, you manually enter requirements for your program-related operating expenses—excluding depreciation, financial costs and miscellaneous expenses. You do so using the PROGRAM-LEVEL OTHER OPERATING EXPENSES section of the PROGRAM (BRANCH/REGION) sheet.
If you entered links for automated expense projections, you can use the entries on this section of the PROGRAM (BRANCH/REGION) sheet to override those automatic projections.

If you are projecting your expenses manually, you must realistically estimate all changes in expense amounts throughout the projection period, including those stemming from inflation. Unfortunately, it is common to underestimate future operational expenses when developing financial projections, a practice that results in exaggerated estimates of profitability. As a result, you should use manual projections only if you have separately prepared a long-range budget, based on a thorough analysis of your future requirements.

**Figure 8.18 Program-level Other Operational Expenses Section, Program (Branch/Region) Sheet**

**Procedure to project program-related other operational expenses or override automated projections — Other Operational Expenses Section, Program (Branch/Region) sheet:**

If you are modeling on a consolidated basis, your entries apply to your entire program. If you are modeling on a branch or regional basis, your entries apply only to the specific branch or region on the selected sheet.

1. Microfin displays all of your PROGRAM OTHER OP EXPENSE categories based on your entries on the INST CAP sheet. [lines 11.03 – 11.19]

2. Microfin displays “Auto” in the INITIAL BALANCES column for any expense that is being projected based on links on the INST CAP sheet. Otherwise, it displays “Manual.”
3. If your **PROGRAM OTHER OPERATING EXPENSE** projections are to be projected manually, enter anticipated monthly expenses for each category. [lines 11.04 – 11.19] In years three, four and five, Microfin automatically converts your monthly entries to the required quarterly amounts.

If your projections for any expense are automated, you may optionally use these entries to override the automated calculations in any period. If you do not make an entry for any period, Microfin resumes the automated projections.

Use the accrual accounting method for your entries, in order to generate realistic monthly income statements. If you pay an expense once a year, for example, enter the equivalent monthly amounts. For additional information, refer to “Entering Adjustments to the Cash Flow Analysis” on page 252.

4. For automated as well as manual **PROGRAM OTHER OPERATING EXPENSE** projections, enter a percentage or an amount for **MISCELLANEOUS EXPENSES**. [line 11.20] If you enter a number that is between –1.00 and +1.00 (i.e., a percentage), Microfin calculates **MISCELLANEOUS EXPENSES** as a percentage of total cash operational expenses.

5. Microfin projects expenses by category. [lines 11.22 – 11.39] For each period, it displays anticipated expenses based upon automated calculations plus your manual entries.

6. Microfin calculates your **TOTAL PROGRAM OPERATING EXPENSES**. [line 11.40]

7. If you chose to adjust your expenses from an accrual basis to a cash basis for Microfin’s cash flow analysis, Microfin displays lines that are otherwise hidden. [lines 11.41 – 11.44] For additional information, refer to “Entering Adjustments to the Cash Flow Analysis” on page 252.

8. Microfin calculates a **PROGRAM OTHER OPERATIONAL EXPENSES / PORTFOLIO** ratio to help you gauge the accuracy of your cost projections. [line 11.45] If this ratio declines substantially over time, you have likely underestimated your operating expenses.

9. Microfin provides an unprotected line that you can use to create your own expense ratio. [line 11.46]
Reviewing Expense Graphs

Microfin provides a variety of expense graphs and graphing tools that assist you in analyzing and interpreting the projected data for your institution’s expenditures. Note that the information for the graphs is not complete until you enter administrative expense data in “Projecting Administrative Other Operational Expenses” on page 319, and financing costs as described in “Using the FINANCING SOURCES Sheet to Identify Debt and Equity Financing” on page 341 and “Using the FINANCING FLOWS Sheet to Project Cash Flow” on page 352.

The graphs are located on the GRAPHS sheet and accessed from the GRAPHS option on the Microfin toolbar. For additional information on using the graphs-related sheets, refer to “Generating and Reviewing Graphs Using the GRAPHS and User GRAPHS Sheets” on page 379.

Microfin provides two expense-related graphs.

Expenses by Month

This area graph displays total expenses, separated according to type. Operational expenses represent one type of expense on the graph.

Figure 8.19 Expenses by Month
**Cost Structure**

This area graph, categorized as an **EFFICIENCY AND PROFITABILITY GRAPH**, displays total expenses, separated according to type.

**Figure 8.20 Cost Structure**

The graph is helpful in analyzing your institution’s efficiency over time. If your EXPENSE graph show an upward trend in your expenses, but your portfolio grows faster than your expenses, you are actually becoming more efficient. This graph highlights such efficiency trends by expressing each expense category as a percentage of your portfolio.

The outer shape of the graph represents total expenses as a percentage of the portfolio. You can compare it to the average yield (or effective interest rate) to determine whether or not your pricing structure generates sufficient income to cover your costs.

**Projecting Program-related Expenditures for Fixed Assets**

Microfin’s program-related projections for fixed assets include capital expenditures for furniture and equipment as well as periodic depreciation expenses. Using these projections, you can implement a fixed assets acquisition plan to ensure that you have sufficient assets available to meet your requirements as well as adequate funding for those capital expenditures.

You enter and review fixed assets data in the **PROGRAM-LEVEL FIXED ASSETS** section of the **PROGRAM (BRANCH/REGION) sheet** (figure 8.22).

If you choose to automate any of your asset expenditure projections, you also use the **FIXED ASSET CATEGORIES / PROGRAM-LEVEL FIXED ASSETS** section of the **INST CAP sheet** (figure 8.21).
Procedure to project program-related expenditures for other fixed assets:

1. Optionally, establish links to automatically project fixed asset expenditures. [page 294]
2. Define initial balances for program-related fixed assets. [page 296]
3. Define acquisitions and depreciation for program-related fixed assets. [also page 296]

Establishing Optional Links To Automatically Project Fixed Asset Acquisitions (Advanced Feature)

You can establish links to automatically project fixed asset acquisitions on the PROGRAM (BRANCH/REGION) sheet based on such variables as the number of loan officers, non-officer program staff, total program staff, or number of branches. By clearly linking acquisitions to key activities, these links help you to make realistic projections without the need for extensive manual entries.

For a general overview of Microfin’s automated projections, refer to “Automating the Expenditure Calculations (Optional, Advanced Feature)” on page 230.

Procedure to establish automated fixed asset projections — Fixed Asset Categories section, INST CAP sheet:

If you are modeling on a branch or regional basis, your automated link entries on the INST CAP sheet apply to all branches or regions.
1. Enter the BASE COST PER UNIT.

2. If the projected acquisition cost per unit is to be adjusted for inflation, enter the % INFLATION (i.e., the percentage of the annual inflation rate from the MODEL SETUP sheet) by which to adjust the purchase price each year.

3. Enter the asset’s projected USEFUL LIFE (in years). Microfin requires a minimum useful life of five years for all assets acquired during the projection period.

4. If the number of units is calculated based on the number of LOAN OFFICERS, enter the number of loan officers (in the OFFICERS column) that trigger the purchase of one unit. For example, if you purchase one computer for every three loan officers, enter “3” in this cell.

5. If the number of units is calculated based on the number of NONOFFICERS (i.e., all program staff excluding loan officers), enter the number of nonofficers that trigger the purchase of one unit.

6. If the number of units is calculated based on the number of PROGRAM STAFF (i.e., all program staff, including loan officers), enter the number of program staff that trigger the purchase of one unit.

7. If the number of units is calculated based on the number of BRANCHES, enter the number of branches that trigger the purchase of one unit.

8. Microfin only projects acquisitions of whole units using these automated links. Enter an optional ROUND UP value to determine the point at which Microfin will recommend purchasing a new, whole unit when it projects the need for a partial unit. (This is an advanced option; you can leave ROUND UP blank, and Microfin will not round up.)

For example, if you purchase one vehicle for every six loan officers, and you have 12 loan officers, you need 2.0 vehicles (i.e., 12 / 6). Now assume you hire two loan officers the next month; you need 2.33 vehicles (14 / 6). Microfin only projects acquisitions for whole units; it is not possible to purchase .33 vehicles. You could choose to immediately purchase the third vehicle or, alternately, decide to wait. You use the optional ROUND UP entry to control whether Microfin will buy a new vehicle in this situation. If your ROUND UP entry is less than or equal to .33, Microfin will purchase the vehicle. If the ROUND UP entry is greater than .33, you have not met the requirement and Microfin will not yet project the purchase.
Defining Program-related Fixed Asset Expenditures

You define the initial balances for program-related fixed assets using the PROGRAM-LEVEL FIXED ASSETS section of the PROGRAM (BRANCH/REGION) sheet. If you did not enter links for automated asset-expenditure projections on the FIXED ASSET CATEGORIES section of the INST CAP sheet, you manually project fixed asset acquisitions using this same section.

If you entered links for automated expense projections, you can use the entries on this section of the PROGRAM (BRANCH/REGION) sheet to override those automatic projections.

Figure 8.22 PROGRAM-LEVEL FIXED ASSETS Section, PROGRAM (BRANCH/REGION) Sheet

Optionally, choose the DETAILS button on Microfin’s toolbar to see a detailed breakdown for units to be replaced during the projection period.
Procedure to project program-related fixed assets — Program-level Fixed Assets section, Program (Branch/Region) sheet:

If you are modeling on a consolidated basis, your entries apply to your entire program. If you are modeling on a branch or regional basis, your entries apply only to the specific branch or region on the selected sheet.

For your initial assets in each asset category, complete steps one through seven:

1. Enter the initial purchase value (i.e., capitalized, undepreciated values) for each asset category as of the beginning of the projection period. [lines 12.06 – 12.14] This is a total cost for the category, not the cost per unit.

2. Microfin sums these balances to calculate the total gross value. [line 12.15]

3. Microfin displays the total life (in years)—reflecting your entries from the INST CAP sheet—and a monthly depreciation for each category. [lines 12.06 – 12.14]. The monthly depreciation is estimated as the \((\text{initial purchase value} / \text{total life}) / 12\).

4. Enter a negative number representing the total accumulated depreciation for all of the asset categories as of the beginning of the projection period. [line 12.16].

5. Microfin calculates the net value of the assets. [line 12.17]

6. Enter the quantity (i.e., the number of individual units in the category) and the remaining life in years for up to three groups within each category, based upon the age of the assets. [lines 12.06 – 12.14] Since it is unlikely that you purchased all of the assets at the same time, each group represents a subset of the assets in each category with the same remaining useful life.

Microfin uses this information to project the acquisition of replacement units. For example, if you have three computers with a remaining life of two years, and another four computers with a remaining life of three years, Microfin projects the purchase of three new computers at the end of two years (when the first group of computers is fully depreciated), and another four at the end of three years.

7. Microfin displays the total quantity for all groups. [lines 12.06 – 12.14]

For projected acquisitions in each asset category, complete steps eight through 16:

8. Microfin displays all of your program-level fixed assets categories based on your entries on the INST CAP sheet. [lines 12.20 – 12.60]

9. Microfin displays “Auto” in the initial balance column for any expense that is being projected based on links on the INST CAP sheet. Otherwise, it displays “Manual.”
10. If your acquisitions are projected manually, enter the anticipated NUMBER OF UNITS ACQUIRED for each category, for each period. In years three, four and five, Microfin automatically converts your monthly entries to the required quarterly amounts.

If your projections for any asset category are automated, you may optionally use these entries to override the automated calculations in any period. If you do not make an entry for any period, Microfin resumes the automated projections.

11. Microfin displays the NUMBER OF UNITS ACQUIRED based upon your manual and automated acquisitions.

If you did not enter a manual acquisition in any period (above), Microfin may still project acquisitions for that period—representing either automated new purchases or replacements for your initial assets.

12. If you chose the DETAILS button for this sheet, Microfin displays the REPLACEMENT UNITS required for each asset category. If necessary, you can override these projected purchases by entering data in the related input section.

13. Microfin displays the TOTAL NUMBER OF UNITS, representing the sum of the initial units, acquisitions, and replacement units, less all retirements.

14. Microfin displays a COST AND VALUE analysis of your program-related fixed assets, including:
   - COST OF NEW ACQUISITIONS—the number of new acquisitions multiplied by the unit cost from the INST CAP sheet (base cost as adjusted by inflation).
   - UNDEPRECIATED COST (gross value) of all assets and a total NET VALUE—which transfer to the balance sheet.
   - project DEPRECIATION for each period (calculated as unit cost / useful life) and ACCUMULATED DEPRECIATION—which transfer to the income statement and balance sheet, respectively.

Fully depreciated assets are automatically removed from the analysis; they are deducted from the UNDEPRECIATED VALUE and the ACCUMULATED DEPRECIATION amounts.

15. Microfin generates the following indicator: NET FIXED ASSETS PER BRANCH / PROGRAM STAFF PERSONS.

16. Microfin provides an unprotected line that you can use to create your own ratio.
Reviewing Asset Graphs

Microfin provides asset graphs and graphing tools that assist you in analyzing and interpreting the data for your institution’s staffing. Note that the information is not complete until you enter administrative assets data in “Projecting Administrative Other Operational Expenses” on page 319.

The graphs are located on the GRAPHS sheet and accessed from the GRAPHS option on the Microfin toolbar. For additional information on using the graphs-related sheets, refer to “Generating and Reviewing Graphs Using the GRAPHS and User GRAPHS Sheets” on page 379.

Microfin provides two principal asset-related graphs: ASSET COMPOSITION and USE OF FUNDS, included among the FINANCING graphs. You can also review depreciation data on the EXPENSES and COST STRUCTURE graphs, discussed in the previous “Reviewing Expense Graphs” section.

Asset Composition

This area graph displays the overall growth in your assets, and also how those assets are utilized by your institution. If the band for cash drops to zero for any period, you have a negative cash balance, indicating that your financing strategy is not yet complete.

The ASSET COMPOSITION graph and its companion LIABILITY AND EQUITY COMPOSITION graph illustrate your sources and uses of funds.

Figure 8.23 Asset Composition
Use of Funds
This area graph displays cash outflows, separated according to type. Other assets represent the purchase of new assets by your institution.

Figure 8.24 Use of Funds
Case Study: FEDA’s Program-related Resources and Capacity

Projecting FEDA’s Program-related Loan Loss Provisioning

FEDA estimates that its portfolio at risk for more than 30 days will be 10%. It had estimated write-offs of 3.5% of its portfolio for 2000, and decided to use this write-off rate for all future projections.

The loan loss reserve, as of 31 December 2000 on the balance sheet, is 20,000 freeons.

Refer to figure 8.7.

Defining FEDA’s Branches

In the NUMBER OF BRANCHES section, FEDA’s staff indicated that a second branch will open in the first quarter of year four.

Refer to figure 8.8b.

Setting the Links for FEDA’s Loan Officer Projections

FEDA’s lending methodology permits experienced field staff to work with a caseload of 350 clients, so its staff entered this caseload size for month one.

Loan officers generally take 12 months to move up to the senior level and a full caseload (entered as four months in each of the three PROMOTION cells). Beginning staff generally work with 25% of a full caseload, secondary staff with 50%, and intermediate staff with 75% (entered in the three % OPTIMAL CASELOAD cells).

FEDA generally hires new loan officers in groups of at least three in order to coordinate staff orientation and training. The staff entered this minimum hiring size into the model.

At the end of 2000, FEDA had 13 loan officers, five of whom had been with FEDA for nine months (i.e., intermediate level), and eight for more than a year (i.e., senior level). Staff entered these numbers in the initial balance column.

Refer to figure 8.9.
As of the end of 2000, at the program level, FEDA had 13 loan officers, one credit supervisor, one bookkeeper and one operations manager. They decide to use Microfin's automated staffing projections feature, so they use the INST CAP sheet to fill in the section for automating staffing projections. They planned to hire:

- one credit supervisor for every 12 loan officers and to ROUND UP by 0.3 (that is, a second supervisor will be hired with the 16th loan officer, since $16 / 12 = 1.3$)
- one branch manager and one bookkeeper for each branch that opens
- one teller for every 4,000 borrowers and for every 6,000 depositors, and to ROUND UP by 0.2
- two security guards for each branch starting in year four. They entered 0.5 to reflect these plans (that is, to indicate that a security guard will be hired for each 0.5 of a branch).

Refer to figure 8.11.

The staff moved to the PROGRAM (BRANCH/REGION) sheet, chose F9 to recalculate the model, and examined the results. The projections show that the number of credit supervisors will start at one and increase to four in year five, as loan officers are hired. This seems logical, as does the calculation for branch managers, which shows that a second one will be hired when the second branch opens.

Projections show that another bookkeeper will be hired when the second branch opens. However, Microfin projects the hiring of tellers starting in month one, even though FEDA will not offer teller services until year four, with the introduction of voluntary savings. So, the staff entered zeroes in the input section for tellers and for security guards from month one through the first quarter of year four to override the automatic projection. After recalculating the model, they saw their changes take effect: Microfin recommends hiring four tellers and four security guards in year four and additional tellers by the end of year five.

Refer to figure 8.12.

Since the credit supervisor and branch manager positions will be filled by promoting existing loan officers, the staff returned to the LOAN OFFICER ANALYSIS section, activated the DISPLAY ADVANCED INPUT LINES feature, and indicated a layoff or transfer out of three senior loan officers in August 2001 (input as 3 rather than -3). After recalculating the model, FEDA’s staff decided to increase the hiring in August, so they entered “10” in the August column indicating the addition of ten new loan officers in that month.

Refer to figure 8.9b.
Projecting FEDA’s Program-related Staff Salaries

Research conducted during strategic planning showed that salaries will need to rise by 20% - 25% to be competitive. Management decided to raise all salaries by 20% in January 2001 (as reflected in the month-one salary amounts), and then to increase them annually by the inflation rate.

Refer to figure 8.11.

The staff projected the new, higher monthly cost for each position as of January 2001—including salaries, benefits and payroll taxes—and entered this information in the month one column. Thereafter, the model will automatically increase the salaries by the inflation rate in the first month of each fiscal year.

<table>
<thead>
<tr>
<th>Staff Position</th>
<th>Salary/Benefits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Loan officer, entry level</td>
<td>270 freeons</td>
</tr>
<tr>
<td>Loan officer, secondary level</td>
<td>320 freeons</td>
</tr>
<tr>
<td>Loan officer, intermediate</td>
<td>360 freeons</td>
</tr>
<tr>
<td>Loan officer, senior</td>
<td>450 freeons</td>
</tr>
<tr>
<td>Credit supervisor</td>
<td>450 freeons</td>
</tr>
<tr>
<td>Branch manager</td>
<td>525 freeons</td>
</tr>
<tr>
<td>Bookkeeper, teller, security guard</td>
<td>270 freeons</td>
</tr>
</tbody>
</table>

Even though the new branch manager, bookkeeper, teller and security guard will all be hired in later months, the staff entered the fiscal 2001 salaries for these positions in the month-one column of the salary section. As a result, the salaries will automatically be adjusted for inflation (and converted to their quarterly equivalents, if necessary)—but no expenses will be recognized until the positions are staffed.

Refer to figure 8.12.

Projecting FEDA’s Program-related Other Operational Expenses

To generate projections of FEDA’s program-related other operational expenses, the staff first distinguished program-expense from administrative-expense categories. Then, since they had opted for automated projections, they entered the following links on the INST CAP sheet:
Refer to figure 8.17.

They also entered the following data on the PROGRAM (BRANCH/REGION) sheet.

<table>
<thead>
<tr>
<th>Category</th>
<th>Expense Amount</th>
<th>Inflation Adjustment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rent</td>
<td>450 freeons per branch per month</td>
<td>Adjusted annually at 100%</td>
</tr>
<tr>
<td>Utilities</td>
<td>150 freeons per branch per month</td>
<td>Adjusted annually at 100%</td>
</tr>
<tr>
<td>Transportation</td>
<td>100 freeons per loan officer per month</td>
<td>Adjusted annually at 80%</td>
</tr>
<tr>
<td>General office expenses</td>
<td>40 freeons per employee per month</td>
<td>Adjusted monthly at 100%</td>
</tr>
<tr>
<td>Repairs, maintenance, and insurance</td>
<td>50 freeons per branch per month</td>
<td>Adjusted monthly at 100%</td>
</tr>
</tbody>
</table>

Refer to figure 8.18.

**Entering Initial Balances for FEDA’s Program-related Fixed Assets**

FEDA’s staff entered initial balance information for the following program-related fixed assets as of the end of 2000:

**Category** | **Expense Amount**
---|---
Miscellaneous | 8% of total program-related other expenses
<table>
<thead>
<tr>
<th>Asset</th>
<th>Purchase Amount</th>
<th>Remaining Life</th>
</tr>
</thead>
<tbody>
<tr>
<td>Two computers purchased three years ago</td>
<td>4,000 freeons, total</td>
<td>2 years</td>
</tr>
<tr>
<td>One set of office furniture purchased four years ago</td>
<td>1,000 freeons</td>
<td>3 years</td>
</tr>
<tr>
<td>Sixteen sets of employee furniture groupings, one for each employee.</td>
<td>3,000 freeons</td>
<td>Divided by approximate age: seven units with three years remaining, four units with four years remaining, and five units with five and a half years remaining.</td>
</tr>
<tr>
<td>Accumulated depreciation</td>
<td>-3,000 freeons (i.e., as a negative number)</td>
<td></td>
</tr>
</tbody>
</table>

Refer to figure 8.22.

**Planning FEDA’s Fixed Asset Acquisitions at the Program Level**

FEDA decided to link each fixed asset category to a key output of the model in order to automatically generate its fixed asset acquisition schedule. Returning to the INST CAP sheet, the staff estimated that a branch office needs one computer for every eight program staff. They chose a ROUND UP factor of 0.3, so that each time the number of staff exceeds a multiple of eight staff persons by an amount of 2.4 persons or more (i.e., 8 x 0.3) they will purchase another computer.

FEDA plans to purchase one set of general office furniture for each branch office and so entered 1.0 in the appropriate column. They set ROUND-UP to 0, meaning that they will purchase a set each time a branch opens.

They linked employee furniture groupings to the number of program staff, using a ratio of one unit of furniture for each program staff person. They set ROUND-UP to 0, indicating that they will purchase a set each time an employee is hired.

Refer to figure 8.21.

Returning to the PROGRAM (BRANCH/REGION) sheet, they carefully reviewed the information output by Microfin—including number of units acquired, total number of units, cost of acquisitions, and book value and depreciation totals. They studied the ratio that Microfin automatically generated (NET FIXED ASSETS PER BRANCH/PROGRAM STAFF PERSON) and decided that the projections seemed realistic.

Refer to figure 8.22.
Projecting Administrative Resources and Capacity
Chapter 9
Projecting Administrative Resources and Capacity

You implement the indirect-expenses portion of your resources plan, and project administrative resources and capacity, using the ADMIN (HEAD OFFICE) sheet. If you intend to use Microfin’s automated projections for staffing, other operational expenses or fixed assets, you will also enter information into relevant portions of the INST CAP sheet.

Using the ADMIN (HEAD OFFICE) Sheet to Project Administrative Resources and Capacity

Microfin’s process for projecting administrative resources and capacity follows the same logic as for projecting program–related resources. You complete the following sections on the ADMIN (HEAD OFFICE) sheet:

- ADMIN-LEVEL STAFFING [lines 1.01 – 1.85]
- ADMIN-LEVEL OTHER OPERATING EXPENSES [lines 2.01 – 2.45]
- ADMIN-LEVEL FIXED ASSETS [lines 3.01 – 3.89]
- LAND AND BUILDING ANALYSIS [lines 4.01 – 4.25]
- OTHER ASSETS ANALYSIS [lines 5.01 – 5.17]
- TAX CALCULATIONS [lines 6.01 – 6.05]
- IN-KIND SUBSIDY ANALYSIS [lines 7.01 – 7.14]
<table>
<thead>
<tr>
<th>Admin Heads and Aggregates</th>
<th>Admin Office Sheet (1 of 5)</th>
<th>Jan-00</th>
<th>Feb-00</th>
<th>Mar-00</th>
<th>Apr-00</th>
<th>May-00</th>
<th>Jun-00</th>
<th>Jul-00</th>
<th>Aug-00</th>
<th>Sep-00</th>
<th>Oct-00</th>
<th>Nov-00</th>
<th>Dec-00</th>
</tr>
</thead>
<tbody>
<tr>
<td>Admin Level Staffing</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>321 Exec Director</td>
<td>Manual</td>
<td>1.0</td>
<td>1.0</td>
<td>1.0</td>
<td>1.0</td>
<td>1.0</td>
<td>1.0</td>
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<td>1.0</td>
<td>1.0</td>
<td>1.0</td>
<td>1.0</td>
</tr>
<tr>
<td>322 Finance Manager</td>
<td>Manual</td>
<td>1.0</td>
<td>1.0</td>
<td>1.0</td>
<td>1.0</td>
<td>1.0</td>
<td>1.0</td>
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<td>1.0</td>
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<tr>
<td>323 Secretary</td>
<td>Manual</td>
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<td>1.0</td>
<td>1.0</td>
<td>1.0</td>
<td>1.0</td>
<td>1.0</td>
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</tr>
<tr>
<td>324 Runner</td>
<td>Manual</td>
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<td>1.0</td>
<td>1.0</td>
<td>1.0</td>
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<td>1.0</td>
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<tr>
<td>325 MIS Executive</td>
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<td>1.0</td>
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<td>1.0</td>
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<tr>
<td>326 Human Resources Officer</td>
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</tr>
<tr>
<td>327 Strategic Director</td>
<td>Manual</td>
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<td>1.0</td>
<td>1.0</td>
<td>1.0</td>
<td>1.0</td>
<td>1.0</td>
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<td>1.0</td>
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<td>1.0</td>
</tr>
<tr>
<td>328 Strategic Director</td>
<td>Manual</td>
<td>1.0</td>
<td>1.0</td>
<td>1.0</td>
<td>1.0</td>
<td>1.0</td>
<td>1.0</td>
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<td>1.0</td>
<td>1.0</td>
<td>1.0</td>
<td>1.0</td>
</tr>
<tr>
<td>329 Total #of Head Office employees</td>
<td>Manual</td>
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<td>1.0</td>
<td>1.0</td>
<td>1.0</td>
<td>1.0</td>
<td>1.0</td>
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#### Total grand value

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#### Other Assets Analysis

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#### In-Kind Subsidy Analysis

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**Using Microfin**

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## Loan Product Output Section

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## Savings Projection Section

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## Loan Loss Provision and Write-off

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**NOTE:** These average deposits are not controlled by the institution and do not appear on the balance sheet.
### Figure 9.1d Admin (Head Office) Sheet (4 of 5)

#### Loan Officer Analysis

<table>
<thead>
<tr>
<th>Category</th>
<th>Jan'01</th>
<th>Feb'01</th>
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### Program-level Staffing

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### Admin-level Staffing

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### Program-level Other Op. Exp.

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### Admin-level Other Op. Exp.

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**Notes:**
- Please note that the table contains data for various categories over different months, indicating the staffing levels and other administrative resources. The data is essential for understanding the capacity and resource allocation across different phases of the project.
### Admin Level Fixed Assets

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#### Program-level Fixed Assets

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### Staffing Information

- **STAFFING INFORMATION** [lines 3.01 – 3.42]
- **OTHER OPERATIONAL EXPENSES** [lines 4.01 – 4.40]
- **FIXED ASSET CATEGORIES** [lines 5.01 – 5.25]
The ADMIN (HEAD OFFICE) sheet includes the following output and analysis sections, which do not require data entry. For additional guidance in analyzing this information, refer to “Reviewing Institution-wide Analyses on the ADMIN (HEAD OFFICE) Sheet” on page 420.

- **Loan Product Output Section** [lines 8.01 – 8.37]
- **Savings Projection Section** [lines 9.01 – 9.25]
- **Income Section** [lines 10.01 – 10.09]
- **Financial Costs** [lines 11.01 – 11.17]
- **Loan Provisioning and Write-off Policies** [lines 12.01 – 12.05]
- **Loan Officer Analysis** [lines 13.01 – 13.11]
- **Number of Branches** [lines 14.01 – 14.02]
- **Program-level Staffing** [lines 15.01 – 15.38]
- **Admin-level Staffing** [lines 16.01 – 16.40]
- **Program-level Other Operating Expenses** [lines 17.01 – 17.24]
- **Admin-level Other Operating Expenses** [lines 18.01 – 18.25]
- **Program-level Fixed Asset Categories** [lines 19.01 – 19.17]
- **Admin-level Fixed Assets** [lines 20.01 – 20.17]
- **Land and Building Analysis** [lines 21.01 – 21.17]
- **Other Assets Analysis** [lines 22.01 – 22.11]
- **Overhead Allocation** [lines 23.01 – 23.07]
- **Tax Calculations** [lines 24.01 – 24.03]
- **In-kind Subsidy Analysis** [lines 25.01 – 25.07]

You can navigate to any desired section of the sheet using the items on its pagebar.

If you are modeling on a branch or regional basis, Microfin allocates administrative/head office expenses to your branches or regions. As a result, the model can generate complete branch/region income statements to determine branch/region profitability. For additional information, refer to “Choosing a Cost Allocation Method (Branch and Regional Models)” on page 238.

**Procedure to complete the resources-related sections of the Admin (Head Office) sheet:**

1. Project administrative staffing requirements. [page 314]

   If you choose to automate any portion of your staffing projections, return to the INST CAP sheet to establish the automated links, then review and optionally adjust the automated projections using the ADMIN (HEAD OFFICE) sheet.
2. Project administrative other operational expenses. [page 319]

If you choose to automate any portion of your operational expense projections, return to the INST CAP sheet to establish the automated links, then review and optionally adjust the automated projections using the ADMIN (HEAD OFFICE) sheet.

3. Project administrative expenditures for fixed assets. [page 323]

If you choose to automate any portion of your fixed asset projections, return to the INST CAP sheet to establish the automated links, then review and optionally adjust the automated projections using the ADMIN (HEAD OFFICE) sheet.

4. Project expenditures for land and buildings. [page 327]

5. Project administrative other assets. [page 329]

6. Calculate taxes. [page 331]

7. Project in-kind subsidies. [page 332]

Each of these steps is described in the sections that follow.

**Projecting Administrative Staffing Requirements**

You enter and review administrative staffing data in the ADMIN-LEVEL STAFFING section of the ADMIN (HEAD OFFICE) sheet (figure 9.3) and, optionally, the STAFFING INFORMATION section of the INST CAP sheet (figure 9.2).

**Procedure to define staffing requirements — ADMIN-LEVEL STAFFING section, ADMIN (HEAD OFFICE) sheet:**

1. Optionally, you may establish links to automatically project staffing levels. [page 314]

2. Manually define administrative staffing and related salary costs and, optionally, override any automated projections. [page 316]

3. Review staffing graphs. [page 319]

**Establishing Optional Links To Automate Administrative Staffing Projections (Advanced Feature)**

You can establish links to automate Microfin’s projection of the staffing levels on the INST CAP sheet based on such variables as the number of loan officers, borrowers, depositors, branches or program staff (figure 9.2). By linking administrative staffing to key activities, these links may help you to make realistic projections without requiring manual inputs in each period when additional staff may be hired.
However, while it is often useful to establish links for program staff, it is generally less appropriate to define such links for administrative staff. This is because many expenditures for administrative positions are fixed, rather than variable, in nature.

For a general overview of Microfin’s automated projections, refer to “Automating the Expenditure Calculations (Optional, Advanced Feature)” on page 230.

### Procedure to establish automatic links in staffing projections — Staffing Information section, Inst Cap sheet:

For each administrative (or head office) staff position, complete steps one through six [using lines 3.27- 3.42]:

1. If the number of staff for the position is to be calculated based on the number of loan OFFICERS, enter (in the OFFICERS column) the number of loan officers that will require you to hire one new person for this administrative position.

2. If you calculate staff based on the number of BORROWERS, enter (in the BORROWERS column) the number of borrowers that will require you to hire one new person.

3. If you calculate staff based on the number of DEPOSITORS (savers), enter (in the DEPOSITORS column) the number of depositors that will require you to hire one new person.

4. If you calculate staff based on the number of your BRANCH offices, enter (in the BRANCHES column) the number of branches that will require you to hire one new person.

5. If you calculate staff based on the number of your PROGRAM STAFF, enter (in the PROGRAM STAFF column) the number of branches that will require you to hire one new person.

6. Enter an optional ROUND UP value to determine the point at which Microfin will recommend the hiring of a new, full-time person when it projects a less-than-full-time staffing need. (This is an advanced option; you can leave ROUND Up blank, and Microfin will not round up.)
Defining Administrative-level Staffing and Related Salary Costs

If you did not enter links for automated staffing projections on the STAFFING INFORMATION section of the INST CAP sheet, you manually enter the requirements for your administrative staff using the ADMIN-LEVEL STAFFING section of the ADMIN (HEAD OFFICE) sheet.

If you entered links for automated staffing projections, you can use the entries on this section of the ADMIN (HEAD OFFICE) sheet to override those automatic projections.

You also use this section to enter salary amounts for every ADMIN-LEVEL position, regardless of whether the related staffing projections are automatically generated or entered manually.

**Figure 9.3 Administrative-level Staffing Section, Admin (Head Office) Sheet**
Procedure to project administrative-related staffing and salary costs — Admin-level Staffing section, Admin (Head Office) sheet:

Regardless of your modeling basis, your entries apply to your entire organization. However, if you are modeling on a branch or regional basis, Microfin will allocate your entries to each branch or region.

This procedure is similar to the procedure for entering Program-level Staffing.

To project staffing levels, complete steps one through five:

1. Microfin displays all of your administrative staff positions based on your entries on the INST CAP sheet. [lines 1.02 – 1.17]

2. Microfin displays “Auto” in the INITIAL BALANCE column for any position that is being projected based on links on the INST CAP sheet. Otherwise, it displays “Manual.”

3. If your staffing projections are to be generated manually, enter anticipated staffing levels for each position. [lines 1.02 – 1.17]

   If your staffing projections for any position are automated, you may optionally use these entries to override the automated calculations in any period. If you do not make an entry for any period, Microfin resumes the automated projections.

   If a staff position is considered to be part program and part administrative, it will appear in both the program and administrative staffing sections. You should split the position between the two categories. For example, you might enter “0.4” on the Program (Branch/Region) sheet for the program-expense entry and “0.6” here for the administrative-expense entry.

   In multiservice institutions, administrative staff may only work part-time on financial services. In such a case, enter the percentage of time dedicated to financial services here—perhaps 75%—but enter the full salary and benefits (see below). When Microfin generates costs, only 75% of the full salary appears as a cost for these projections; the remaining 25% must be covered by other services that are not directly reflected in Microfin’s projections.

4. Microfin projects staffing by position. [lines 1.18 – 1.34] For each period, it displays anticipated staffing based upon automated calculations plus your manual entries.

5. Microfin calculates a Head Office Staff as a % of Total Staff ratio. [line 1.36]
To project salary and benefits, complete steps six through ten:

6. Microfin displays all of your administrative-related staff positions based on your entries in the STAFFING INFORMATION section of the INST CAP sheet. [lines 1.37 – 1.52]

7. Enter the MONTHLY SALARY AND BENEFITS expense per staff person for each position. [lines 1.37 – 1.52]

To calculate this expense amount, add all annual costs—salary, insurance, payroll taxes, bonuses, pension, and all other benefits—and divide the total by 12 months. Enter a monthly amount, even if you make optional entries in the quarterly columns for years three, four and five.

You should enter a salary for every staff position in month-one column, even if the position is not staffed until later in the projection period. That way, Microfin can automatically adjust the salary each year for inflation (assuming you chose to do so on the INST CAP sheet). When the position is filled, the starting salary will be in line with salaries for other positions.

8. Microfin displays the MONTHLY SALARY AND BENEFITS cost that it projects, per person, for each staff position. [lines 1.53 – 1.68] Microfin automatically converts the information to quarterly costs, beginning in year three.

If you enabled the SALARY AND BENEFITS ADJUSTMENT OPTION on the INST CAP sheet, the amounts are automatically adjusted for inflation (plus or minus any additional percentage you have defined) in the first month of each fiscal year.

You can override any automatic increases by entering a monthly amount for any period. [lines 1.38 – 1.52] For example, you might choose this option if the salary for one staff position is expected to increase at a different rate than that of other staff positions.

9. Microfin displays the TOTAL ADMIN-LEVEL SALARY AND EXPENSES for each staff position. [lines 1.70 – 1.84] To do so, it multiplies the number of staff in each position by the cost per person.

10. Microfin displays the TOTAL SALARY AND BENEFITS. [line 1.85]
Reviewing Staffing Graphs

Microfin provides a variety of staffing graphs and graphing tools that assist you in analyzing and interpreting the data for your institution’s staffing. For samples of Microfin’s staffing graphs, refer to “Reviewing Staffing Graphs” on page 285.

The graphs are located on the GRAPHS sheet and accessed from the GRAPHS option on the Microfin toolbar. For additional information on using the graphs-related sheets, refer to “Generating and Reviewing Graphs Using the GRAPHS and User GRAPHS Sheets” on page 379.

Projecting Administrative Other Operational Expenses

Other operational expenses include your remaining expenses at the administrative level, with the exception of financial costs, loan loss provisioning, taxes, subsidies, and fixed asset acquisitions and depreciation.

You enter and review operational expense data in the ADMIN-LEVEL OTHER OPERATIONAL EXPENSES section of the ADMIN (HEAD OFFICE) sheet (figure 9.5). If you chose to automate any of your operational expense projections, you also use the OTHER OPERATIONAL EXPENSES / ADMIN-LEVEL OTHER OPERATIONAL EXPENSES section of the INST CAP sheet (figure 9.4).

Procedure to project other operational expenses:

1. Optionally, establish links to automatically project operational expenses. [page 319]
2. Define the amount of your administrative-related operational expenses, or override the automated projections. [page 321]
3. Review the expense graphs. [page 323]

Establishing Optional Links To Automate Projection of Other Operational Expenses (Advanced Feature)

You can establish links to automatically project other operational expenses on the ADMIN (HEAD OFFICE) sheet based on such variables as the number of loan officers, total administrative staff, borrowers, depositors or branches. By linking expenses to key activities, these links may help you to make realistic projections without requiring you to make manual entries in each period that the expense levels change.

However, while it is useful to establish links for program expenses, it is generally less appropriate to define links for administrative expenses. This is because many administrative expenditures are fixed, rather than variable, in nature.

For a general overview of Microfin’s automated projections, refer to “Automating the Expenditure Calculations (Optional, Advanced Feature)” on page 230.
You can choose to automatically adjust the projected amounts for the effect of inflation using this same section of the model. For example, in figure 9.4, Utilities are linked to 100% of monthly inflation. (If the annual inflation rate is 10%, then 100% of the rate is 10%.) Each month, the expense is increased by the cumulative inflation rate since month one — based on the Inflation Rate you entered on the Model Setup sheet.

The inflation adjustment is independent of the other, automated links. If you enter an inflation adjustment but do not use the automated links, Microfin applies the inflation adjustment to your manual entries for other operational expenses.

**Figure 9.4 Other Operational Expenses / Admin-level Other Operational Expenses Section, Inst Cap Sheet**

<table>
<thead>
<tr>
<th>Administrative Resources and Capacity</th>
<th>Institutional Resources and Capacity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Admin Level Other Op. Exp.</td>
<td>Rent</td>
</tr>
<tr>
<td>4.22</td>
<td>100%</td>
</tr>
<tr>
<td>4.25 Rent</td>
<td>100%</td>
</tr>
<tr>
<td>4.24 Utility</td>
<td>100%</td>
</tr>
<tr>
<td>4.27 Transportation</td>
<td>100%</td>
</tr>
<tr>
<td>4.28 General Office Expenses</td>
<td>100%</td>
</tr>
<tr>
<td>4.30 Property, Maintenance, Insurance</td>
<td>100%</td>
</tr>
<tr>
<td>4.31 Professional Fees, Consultants</td>
<td>100%</td>
</tr>
<tr>
<td>4.32 Staff Training</td>
<td>100%</td>
</tr>
<tr>
<td>4.33 Other</td>
<td>100%</td>
</tr>
<tr>
<td>4.34 Other</td>
<td>100%</td>
</tr>
<tr>
<td>4.35 Other</td>
<td>100%</td>
</tr>
<tr>
<td>4.36 Other</td>
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<tr>
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<td>100%</td>
</tr>
<tr>
<td>4.39 Other</td>
<td>100%</td>
</tr>
<tr>
<td>4.40 Other</td>
<td>100%</td>
</tr>
</tbody>
</table>

You can override your automated entries when necessary, by manually entering the projected expenses. For additional information, refer to the “Defining Administrative-level Other Operational Expenses” section that follows.

**Procedure to establish automated other operational expense projections — Other Operational Expenses section, Admin (Head Office) sheet:**

For each administrative expense category, complete steps one through six [using lines 4.25 – 4.40]:

1. If the amount of the expense is to be adjusted for inflation, enter the percent of the inflation rate (from the Model Setup sheet) by which to adjust the expense. For example, if the annual inflation rate is 10%, and you enter “80%,” then the expense will increase by 8%.

   If the expense is adjusted for inflation monthly, enter the percent in the Monthly column. If the expense is adjusted for inflation annually, enter the percent in the Annually column.

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74 The cumulative inflation rate is calculated on a simple, not a compound, basis.
2. If the amount of the expense is calculated based on the number of loan officers, enter the monthly expense amount that is incurred for each loan officer (in the OFFICERS column). For example, if you spend 100 in transportation for every loan officer, enter “100” in this cell.

3. If the amount of the expense is calculated based on the number of ADMIN STAFF, enter the monthly expense amount that is incurred for every staff person (in the ADMIN STAFF column).

4. If the amount of the expense is calculated based on the number of BORROWERS, enter the monthly expense amount that is incurred for every borrower (in the BORROWERS column).

5. If the amount of the expense is calculated based on the number of DEPOSITORS, enter the monthly expense amount that is incurred for every depositor (in the DEPOSITORS column).

6. If the amount of the expense is calculated based on the number of BRANCHES, enter the monthly expense amount that is incurred for every branch (in the BRANCHES column).

**Defining Administrative-level Other Operational Expenses**

If you did not enter links for automated expense projections on the OTHER OPERATIONAL EXPENSES section of the INST CAP sheet, you manually enter requirements for your administrative-level operating expenses. You do so using the HEAD OFFICE OTHER OPERATIONAL EXPENSES section of the ADMIN (HEAD OFFICE) sheet.

If you entered links for automated expense projections, you can use the entries on this section of the ADMIN (HEAD OFFICE) sheet to override those automatic projections.

**Figure 9.5 Admin-Level Other Operational Expenses Section, Admin (Head Office) Sheet**
**Procedure to project administrative-level other operational expenses**  
— **Admin-level Other Operational Expenses section, Admin (Head Office) sheet:**

Regardless of your modeling basis, your entries apply to your entire organization. However, if you are modeling on a branch or region basis, Microfin will allocate your entries to each branch or region.

This procedure is similar to the procedure for entering Program-level Other Operating Expenses.

1. Microfin displays all of your Admin-level Other Op Expense categories based on your entries on the INST CAP sheet. [lines 2.02 – 2.18]

2. Microfin displays “Auto” in the Initial Balance column for any expense that is being projected based on links on the INST CAP sheet. Otherwise, it displays “Manual.”

3. If your Admin-level Other Op Expense projections are manual, enter anticipated monthly expenses for each category. [lines 2.03 – 2.18] In years three, four and five, Microfin automatically converts your monthly entries to the required quarterly amounts.

   If your projections for any expense are automated, you may optionally use these entries to override the automated calculations in any period. If you do not make an entry for any period, Microfin resumes the automated projections.

   Use the accrual accounting method for your entries in order to generate realistic monthly income statements. If you pay an expense once a year, for example, enter the equivalent monthly amount. For additional information, refer to “Entering Adjustments to the Cash Flow Analysis” on page 252.

4. Enter Miscellaneous Expenses as a percentage or an amount. [line 2.19] If you enter a number that is between –1.00 and +1.00 (i.e., a percentage), Microfin calculates Miscellaneous Expenses as a percentage of total cash administrative expenses.

5. Microfin projects expenses by category. [lines 2.21 – 2.39] For each period, it displays anticipated expenses based upon automated calculations plus your manual entries.

6. Microfin calculates your Total Admin-level Other Operating Expenses. [line 2.40]

7. If you chose to adjust your expenses from an accrual basis to a cash basis for Microfin’s cash flow analysis, Microfin displays lines that are otherwise hidden. [lines 11.41 – 11.44] For additional information, refer to “Entering Adjustments to the Cash Flow Analysis” on page 252.

8. Microfin calculates an Admin-level Other Operational Expenses / Portfolio ratio to help you gauge the accuracy of your cost projections. [line 2.45] If this ratio declines substantially over time, you have likely underestimated your operating expenses.
Reviewing Expense Graphs

Microfin provides a variety of expense graphs and graphing tools that assist you in analyzing and interpreting the data for your institution’s staffing. For samples of Microfin’s expense graphs, refer to “Reviewing Expense Graphs” on page 292.

The graphs are located on the GRAPHS sheet and accessed from the GRAPHS option on the Microfin toolbar. For additional information on using the graphs-related sheets, refer to “Generating and Reviewing Graphs Using the GRAPHS and User GRAPH Sheets” on page 379.

Projecting Administrative Expenditures for Fixed Assets

Microfin’s projections for fixed assets include capital expenditures for furniture and equipment, buildings and land, as well as periodic depreciation. Using these projections, you can develop a fixed assets acquisition plan and, therefore, ensure sufficient levels of required assets, as well as adequate funding for capital expenditures.

You enter and review administrative fixed assets data in the ADMIN-LEVEL FIXED ASSETS section on the ADMIN (HEAD OFFICE) sheet. If you chose to automate any of your asset expenditure projections, you also use the FIXED ASSET CATEGORIES section of the INST CAP sheet.

Procedure to project administrative expenditures for other fixed assets:

1. Optionally, establish links to automatically project fixed asset expenditures. [page 323]
2. Define initial balances for administrative fixed assets. [page 325]
3. Define acquisitions and depreciation for administrative fixed assets. [also page 325]

Establishing Optional Links To Automatically Project Fixed Asset Acquisitions (Advanced Feature)

You can establish links to automatically project fixed asset acquisitions on the ADMIN (HEAD OFFICE) sheet based on such variables as the number of program staff, administrative staff, total staff or number of branches (figure 9.6). By linking acquisitions to key activities, these links may help you to make realistic projections without the need for extensive manual entries.

However, while it is useful to establish links for program-asset acquisitions, it is generally less appropriate to define links for administrative assets. This is because many administrative acquisitions are fixed, rather than variable, in nature.

For a general overview of Microfin’s automated projections, refer to “Automating the Expenditure Calculations (Optional, Advanced Feature)” on page 230.
You can override your automated entries when necessary, by manually entering the projected expenses in the appropriate section on the ADMIN (HEAD OFFICE) sheet. For additional information, refer to the “Defining Administrative-level Fixed Assets” section that follows.

**Procedure to establish automated fixed asset projections — Fixed Asset Categories section, Inst Cap sheet:**

For each administrative (head office) fixed asset category, complete steps one through eight [using lines 5.15 – 5.24]:

1. Enter the **BASE COST PER UNIT** for any new purchases.
2. If the cost per unit is to be adjusted for inflation, enter the **% INFLATION** (i.e. the percentage of the annual inflation rate from the MODEL SETUP sheet) by which to adjust the purchase price each year.
3. Enter the asset’s projected useful **LIFE** (in years). Microfin requires a minimum useful life of five years for all assets acquired during the projection period.
4. If the number of units is calculated based on the number of **PROGRAM STAFF** (i.e., total program staff), enter the number of program staff that trigger the purchase of one unit.
5. If the number of units is calculated based on the number of **ADMIN STAFF**, enter the number of administrative staff that trigger the purchase of one unit.
6. If the number of units is calculated based on the number of **TOTAL STAFF** (i.e., program and administrative staff), enter the number of staff that trigger the purchase of one unit.
7. If the number of units is calculated based on the number of **BRANCHES**, enter the number of branches that trigger the purchase of one unit.
8. Microfin only projects acquisitions of *whole* units using these automated links. Enter an optional **ROUND UP** value to determine the point at which Microfin will recommend purchasing a new unit when it projects the need for a partial unit. (This is an advanced option; you can leave ROUND UP blank and Microfin will not round up.)
Defining Administrative-level Fixed Assets

If you did not enter links for automated asset-expenditure projections on the FIXED ASSET CATEGORIES section of the INST CAP sheet, you manually enter administrative-level fixed assets. You do so using the ADMIN-LEVEL FIXED ASSETS section on the ADMIN (HEAD OFFICE) sheet.

If you entered links for automated expense projections, you can use the entries on this section of the ADMIN (HEAD OFFICE) sheet to override those automatic projections.

Procedure to project administrative-level fixed assets — ADMIN-LEVEL FIXED ASSETS section, ADMIN (HEAD OFFICE) sheet:

Regardless of your modeling basis, your entries apply to your entire organization. However, if you are modeling on a branch or region basis, Microfin will allocate your entries to each branch or region.

This procedure is similar to the procedure for entering PROGRAM-LEVEL FIXED ASSETS.

Optionally, choose the DETAILS button on the Microfin toolbar to see a detailed breakdown for units to be replaced during the projection period.
For your initial assets in each asset category, complete steps one through seven:

1. Enter the INITIAL PURCHASE VALUE (i.e., capitalized, undepreciated values) for each asset category as of the beginning of the projection period. [lines 3.06 – 3.15]. This is a total cost for all units in the category, not the cost per unit.

2. Microfin sums these balances to calculate the TOTAL GROSS VALUE. [line 3.16].

3. Microfin displays the TOTAL LIFE (IN YEARS)—reflecting your entries from the INST CAP sheet—and a MONTHLY DEPRECIATION for each category [lines 3.07 – 3.15]. The monthly depreciation is estimated as the (INITIAL PURCHASE VALUE / TOTAL LIFE) / 12.

4. Enter a negative number representing the total ACCUMULATED DEPRECIATION for all of the ADMIN-LEVEL asset categories as of the beginning of the projection period. [line 3.17]

5. Microfin calculates the NET VALUE of the assets. [line 3.18]

6. Enter the QUANTITY (i.e., the number of individual units in the category) and the REMAINING LIFE IN YEARS for up to three groups within each category, based upon the age of the assets. [lines 3.07 – 3.15] Since it is unlikely that you purchased all of the assets at the same time, each group represents a subset of the assets with the same remaining useful life.

Microfin uses this information to project the acquisition of replacement units. For example, assume you have three computers, each with a remaining life of two years, and another four computers, each with a remaining life of three years. Microfin projects the purchase of three new computers at the end of two years (when the first group of computers is fully depreciated), and the purchase of another four at the end of three years.

7. Microfin displays the TOTAL QUANTITY for all groups. [lines 3.07 – 3.15]

For projected acquisitions in each asset category, complete steps eight through 16:

8. Microfin displays all of your ADMIN-LEVEL FIXED ASSETS categories based on your entries on the INST CAP sheet. [lines 3.21 – 3.61]

9. Microfin displays “Auto” in the INITIAL BALANCES column for any expense that is being projected based on links on the INST CAP sheet. Otherwise, it displays “Manual.”

10. If your acquisition projections are manual, enter the anticipated NUMBER OF UNITS ACQUIRED for each category, for each period. [lines 3.21 – 3.30] In years three, four, and five, Microfin automatically converts your monthly entries to the required quarterly amounts.

If your projections for any asset category are automated, you may optionally use these entries to override the automated calculations in any period. If you do not make an entry for any period, Microfin resumes the automated projections.
11. Microfin displays the NUMBER OF UNITS ACQUIRED based upon your manual and automated acquisitions. [lines 3.31 – 3.40]

If you did not enter a manual acquisition in any period (above), Microfin may still project acquisitions for that period, representing either automated new purchases or replacements for initial assets.

12. If you chose the DETAILS button for this sheet, Microfin will display the REPLACEMENT UNITS required for each asset category. [lines 3.41 – 3.50] If necessary, you can override these projected purchases by entering a number in the related input section. [lines 3.21 – 3.30]

13. Microfin displays the TOTAL NUMBER OF UNITS, representing the sum of the initial units, acquisitions, and replacement units, less all retirements. [lines 3.51 – 3.61]

14. Microfin displays a COST AND VALUE analysis of your administrative-level fixed assets [lines 3.62 – 3.87], including the following:

- **COST OF NEW ACQUISITIONS**—the number of new acquisitions multiplied by the unit cost from the INST CAP sheet (base cost as adjusted by inflation) [lines 3.63 – 3.73]
- **UNDEPRECIATED COST** (gross value) of all assets [lines 3.74 – 3.84] and a total **NET VALUE** [line 3.86]—which transfer to the balance sheet
- **projected DEPRECIATION** for each period (calculated as unit cost / useful life) and **ACCUMULATED DEPRECIATION** [lines 3.87 and 3.85]—which transfer to the income statement and balance sheet, respectively

Fully depreciated assets are automatically removed from the analysis; they are deducted from the UNDEPRECIATED VALUE and the ACCUMULATED DEPRECIATION amounts.

15. Microfin generates the following indicator: **NET FIXED ASSETS / ADMIN STAFF PERSONS.** [line 3.88]

16. Microfin provides an unprotected line that you can use to create your own ratio. [line 3.89]

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**Projecting Expenditures for Land and Buildings**

You project the value of any land acquired or sold, the value and accumulated depreciation for initial building assets, and capital expenditures and depreciation for future building acquisitions using the LAND AND BUILDING ANALYSIS section of the ADMIN (HEAD OFFICE) sheet. Microfin considers all of the land and buildings that you carry on your balance sheet to be administrative. If you are modeling on a branch or region basis, Microfin allocates the depreciation expenses to your branches or regions.75

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75 This approach can lead to inaccuracies if some branch offices own buildings while others rent. The branches that rent will bear rental costs and a percentage of the depreciation of buildings used for other branch offices. In these rare cases, the errors should represent relatively small amounts.
Microfin maintains land at its initial, capitalized cost on the balance sheet; it does not appreciate or depreciate it over the projection period, with one exception. Depending on your entry in REVALUE FIXED ASSETS on the MODEL SETUP sheet [line 5.22], Microfin may adjust the value of your land based on inflation.

**Procedure to project buildings — LAND AND BUILDING ANALYSIS section, ADMIN (HEAD OFFICE) sheet:**

1. Enter the anticipated cost of any PURCHASES OR SALES OF LAND, using a negative number to represent a sale. [line 4.03]

   Microfin never depreciates land, but will appreciate your land values if you choose the REVALUE FIXED ASSETS option on the MODEL SETUP sheet.

2. Microfin displays the TOTAL VALUE OF LAND [line 4.04], calculated as the initial land balance from the HISTORICAL FINANCIAL STATEMENTS on the MODEL SETUP sheet plus the purchases and sales entered here.

   For your initial assets in each building category, complete steps three through nine [using the Initial Balances column]:

3. Enter the INITIAL BALANCE (i.e., capitalized, undepreciated costs) for each building category as of the beginning of the projection period. [lines 4.07 – 4.12] This represents a total cost for each category, not the cost per unit.

4. Microfin sums these initial balances to calculate the TOTAL MONTH’S BUILDING ACQUISITION. [line 4.13]

5. Enter a negative number representing the total ACCUMULATED DEPRECIATION for all of the building categories as of the beginning of the projection period. [line 4.21]

6. Microfin calculates the NET VALUE of the buildings. [line 4.22] This must match the initial balance entered on the balance sheet.
7. Enter the **AVERAGE REMAINING LIFE OF INITIAL ASSETS, IN YEARS**. [line 4.23] You can use a single decimal position to represent a portion of a year. For example, if you have an asset with a remaining useful life of 3½ years, you can enter it as “3.5.”

8. Microfin calculates the **MONTHLY ESTIMATED DEPRECIATION** for the initial assets [line 4.24] as the \( \text{(NET VALUE / AVERAGE REMAINING LIFE)} / 12 \).

9. Enter the **DEPRECIATION PERIOD (IN YEARS)** for all future building acquisitions during the projection period. [line 4.25] This period must be at least five years.

For projected acquisitions in each building category, complete steps ten through 16:

10. Enter anticipated **ACQUISITIONS** for each building category, for each period. [lines 4.07 – 4.12] Enter building sales as negative numbers.

11. Microfin sums the monthly acquisitions for all building categories to calculate the **TOTAL MONTH’S BUILDING ACQUISITION**. [line 4.13]

12. Microfin displays the accumulated **UNDEPRECIATED COST** for each of your building categories. [lines 4.14 – 4.19]

13. Microfin calculates the accumulated **TOTAL GROSS VALUE**, representing the capitalized, undepreciated costs for all initial assets plus all acquisitions to date. [line 4.20]

14. Microfin calculates the total **MONTHLY DEPRECIATION** for your building assets based on the useful life you chose. [line 4.24]

15. Microfin calculates **ACCUMULATED DEPRECIATION** [line 4.21] by adding the **MONTHLY DEPRECIATION** for the current period to the **ACCUMULATED DEPRECIATION** from the prior period. This calculation is an estimate; however, any inaccuracies will not significantly affect your projections.

16. Microfin calculates the **NET VALUE OF BUILDINGS** [line 4.22] by subtracting the **ACCUMULATED DEPRECIATION** from the **TOTAL GROSS VALUE**.

**Projecting Administrative Other Assets**

You project current balances and amortization for initial other assets, and capital expenditures and amortization for new acquisitions, using the **OTHER ASSETS ANALYSIS** section of the **ADMIN (HEAD OFFICE)** sheet.

Microfin considers *all* of the other assets that you carry on your balance sheet to be administrative and will automatically amortize them over a five-year period.
Procedure to project other assets—Other Assets Analysis section, Admin (Head Office) sheet:

For your initial assets in each asset category, complete steps one through five:

1. Enter the INITIAL BALANCE (i.e., capitalized, unamortized costs) for each asset category as of the beginning of the projection period. [lines 5.02 – 5.06] This represents a total cost for each category, not the per-unit cost.

2. Microfin sums these initial balances to calculate the TOTAL MONTH’S ACQUISITION. [line 5.07]

3. Enter a negative number representing the total ACCUMULATED AMORTIZATION for all of the asset categories as of the beginning of the projection period. [line 5.14]

4. Enter the AVERAGE REMAINING LIFE OF INITIAL ASSETS, IN YEARS. [line 5.16]

5. Microfin calculates the MONTHLY ESTIMATED AMORTIZATION for the initial assets [line 5.17] as the (NET VALUE / AVERAGE REMAINING LIFE) / 12.

For projected acquisitions in each asset category, complete steps six through 12:

6. Enter anticipated ACQUISITIONS for each category, for each period. [lines 5.02 – 5.06] Enter asset sales as negative numbers.

7. Microfin sums the monthly acquisitions for all asset categories to calculate the TOTAL MONTH’S ACQUISITION. [line 5.07]

8. Microfin displays the accumulated UNAMORTIZED BOOK VALUE for each of your asset categories. [lines 5.08 – 5.12]

9. Microfin calculates the accumulated TOTAL GROSS VALUE [line 5.13], representing the capitalized, unamortized costs for all initial assets plus all acquisitions and sales to date.
10. Microfin estimates the total MONTHLY AMORTIZATION for all assets based on a useful life of five years. [line 5.17]

11. Microfin calculates ACCUMULATED AMORTIZATION [line 5.14] by adding the MONTHLY AMORTIZATION for the current period to the ACCUMULATED AMORTIZATION from the prior period. This calculation is an estimate; however, any inaccuracies will not significantly affect your projections.

12. Microfin calculates the NET VALUE OF OTHER LONG-TERM ASSETS [line 5.15] by subtracting the ACCUMULATED AMORTIZATION from the TOTAL GROSS VALUE.

Calculating Taxes

Many microfinance institutions are required to pay taxes. However, the basis for tax calculations varies widely from institution to institution and from country to country.

Using the TAX CALCULATIONS section on the ADMIN (HEAD OFFICE) sheet, you can project the amount of taxes you will pay.

**Figure 9.10 Tax Calculations Section, Admin (Head Office) Sheet**

**Procedure to project taxes—Tax Calculations section, Admin (Head Office) sheet:**

1. Enter a manually calculated AMOUNT OF TAXES PAID in each period to project your institution’s tax liability. [line 6.02] Alternatively, you can enter a formula into this cell to calculate these taxes.

For particularly complex situations, you can model your tax payments on the USER-DEFINED sheet, and then enter a formula here to transfer in the resulting amount. For additional information, refer to “Using the USER-DEFINED Sheet to Add Features or Supplement Calculations” on page 449.
2. Enter an **ADJUSTMENT FOR SUBSIDIZED LOANS** to reduce your tax expense if any of your loans payable (i.e., borrowed funds) are priced at less than market rates. This is necessary because, even if you borrow at concessional rates, Microfin’s financial sustainability calculation reflects the amount of interest you would pay at **market rates**. However, if you had paid this higher market rate, the additional interest expense would have reduced your tax liability. As a result, Microfin needs an estimate of how much your projected taxes would be reduced if you had actually paid the market rate on all your debt.

This tax adjustment ensures the accuracy of Microfin’s sustainability and adjusted return on assets calculations, but has **no** impact on projected cash flow.

**Projecting In-kind Subsidies**

In-kind subsidies are noncash contributions—for example, free or subsidized technical assistance, training scholarships, donated office space, and donated vehicles.

You project the value of in-kind subsidies using the **IN-KIND SUBSIDY ANALYSIS** section of the **ADMIN (HEAD OFFICE)** sheet.

**Figure 9.11 IN-KIND SUBSIDY ANALYSIS Section, ADMIN (HEAD OFFICE) Sheet**

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<tbody>
<tr>
<td>Subsidies received</td>
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<td>Technical Assistance</td>
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<td>Total in-kind subsidies received</td>
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</table>

**Procedure to project in-kind subsidies — IN-KIND SUBSIDY ANALYSIS section, ADMIN (HEAD OFFICE) sheet:**

1. For each category of subsidy, enter the cash-equivalent value of the in-kind **SUBSIDIES RECEIVED**. [lines 7.02 – 7.07]

2. If the cash-equivalent value changes over time, use the optional, gray cells to update the value of these contributions in the appropriate periods. [lines 7.02 – 7.07]

3. Microfin displays the **TOTAL IN-KIND SUBSIDIES RECEIVED**. [line 7.14]
Case Study: FEDA’s Administrative Resources and Capacity

Projecting FEDA’s Administrative Staffing Levels

In 2000, FEDA's administrative staff consisted of an executive director, a finance manager, a secretary and a messenger. In addition, the institution plans to hire an MIS director at the beginning of year two to supervise the new management information system, a savings director in the last quarter of year three to prepare for the new services to be offered in year four, and a human resources director at the beginning of year two to work with the growing number of staff.

The staff decided to input these staffing patterns manually rather than use the automated feature of Microfin, since the positions will not be directly linked to levels of activity.

Refer to figure 9.3.

Projecting FEDA’s Administrative Salary and Benefits Expenses

Just as for the program staff, the salaries of FEDA's administrative staff were considered to be about 20% below market rates, so they were included in the 20% salary increases effective in January 2001. Taking into account these raises, the staff estimated monthly salary and benefit costs for administrative staff are as follows:

<table>
<thead>
<tr>
<th>Staff Position</th>
<th>Salary/Benefits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Executive director</td>
<td>750 freeons</td>
</tr>
<tr>
<td>Finance manager</td>
<td>540 freeons</td>
</tr>
<tr>
<td>Secretary</td>
<td>270 freeons</td>
</tr>
<tr>
<td>Messenger</td>
<td>180 freeons</td>
</tr>
</tbody>
</table>

FEDA also estimated the costs for the future positions, at 2001 monthly rates:

<table>
<thead>
<tr>
<th>Title</th>
<th>Salary/Benefits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Savings director</td>
<td>450 freeons</td>
</tr>
<tr>
<td>Human resources director</td>
<td>400 freeons</td>
</tr>
<tr>
<td>MIS supervisor</td>
<td>450 freeons</td>
</tr>
</tbody>
</table>
They entered all salaries in the month-one column—even those for positions not yet filled—so that the model will automatically adjust the amounts annually for inflation.

Refer to figure 9.3.

**Projecting FEDA’s Other Operational Expenses at the Administrative Level**

FEDA’s staff prepared the following budget estimates for other operational expenses at the administrative level:

<table>
<thead>
<tr>
<th>Category</th>
<th>Expense Amount</th>
<th>Inflation Adjustment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rent</td>
<td>450 freeons per month</td>
<td>Adjusted annually</td>
</tr>
<tr>
<td>Utilities</td>
<td>150 freeons per month</td>
<td>Adjusted monthly</td>
</tr>
<tr>
<td>Transportation</td>
<td>675 freeons per month</td>
<td>Adjusted monthly</td>
</tr>
<tr>
<td>General office expenses</td>
<td>100 freeons per administrative employee per month</td>
<td>Adjusted monthly</td>
</tr>
<tr>
<td>Repairs, maintenance, and insurance</td>
<td>75 freeons per month</td>
<td>Adjusted monthly</td>
</tr>
<tr>
<td>Professional fees and consultants (audits, computer support, and a variety of short-term consultancies)</td>
<td>250 freeons per month</td>
<td>Adjusted annually</td>
</tr>
<tr>
<td>Board expenses</td>
<td>100 freeons per month</td>
<td>Adjusted monthly</td>
</tr>
<tr>
<td>Staff training</td>
<td>2,000 freeons in year one, 3,000 freeons in year two, and 4,000 freeons per year in years three through five (entered as monthly equivalents)</td>
<td>Adjusted monthly</td>
</tr>
<tr>
<td>Miscellaneous expenses</td>
<td>5% of total administrative other operational expenses</td>
<td></td>
</tr>
</tbody>
</table>
The staff entered all the base amounts in the ADMIN-LEVEL OTHER OPERATIONAL EXPENSES section on the ADMIN (HEAD OFFICE) sheet, except for general office expenses. For this expense category they used an automated link on the INST CAP sheet. The staff also entered inflation adjustments on the INST CAP sheet.

Refer to figures 9.4 and 9.5.

**Developing FEDA’s Fixed Asset Acquisition Plan at the Administrative Level**

To begin the fixed asset analysis at the administrative level, FEDA's staff entered the following information about the institution's existing assets:

<table>
<thead>
<tr>
<th>Asset</th>
<th>Purchase Amount</th>
<th>Remaining Life</th>
</tr>
</thead>
<tbody>
<tr>
<td>Three computers</td>
<td>6,000 freeons, total</td>
<td>1.5 years</td>
</tr>
<tr>
<td>Assorted office furniture</td>
<td>2,000 freeons</td>
<td>4 years</td>
</tr>
<tr>
<td>One vehicle</td>
<td>8,000 freeons</td>
<td>18 months</td>
</tr>
<tr>
<td>Accumulated depreciation, total</td>
<td>(5,000) freeons</td>
<td></td>
</tr>
</tbody>
</table>

FEDA's staff decided to use manual entries to plan the acquisition of new administrative fixed assets. They budgeted for the purchase of three additional computers at the beginning of year two, when FEDA expects to purchase a new MIS system, and another computer in the first quarter of year four. They also budgeted for the purchase of an additional office furniture grouping at the beginning of each fiscal year. These purchases are in addition to the automatic replacement of fully depreciated equipment that is projected by the model.

Refer to figure 9.7.

**Analyzing FEDA’s Land and Buildings**

In 2000, FEDA owned no land or buildings and had no plans to acquire any during the next five years. The staff left the land and the building analysis sections of Microfin blank.

Refer to figure 9.8.
Analyzing FEDA’s Other Assets

FEDA’s strategic plan identified an urgent need to upgrade the MIS system, and budgeted 50,000 freeons in month 13. The MIS is treated as an asset and amortized over a five-year period.

Refer to figure 9.9.

Analyzing FEDA’s In-kind Subsidies

As an affiliate of the Freedom International network, FEDA receives free technical assistance. FEDA's staff estimates the value of this support at 6,000 freeons a year for years one and two. They project it will increase to 12,000 freeons per year in years three through five, as FEDA will receive additional support for its transformation to a regulated financial institution.

FEDA's staff entered these figures as their monthly equivalents of 500 freeons a month for years one and two and 1,000 freeons a month starting in year three. While the technical assistance is not an actual expense for FEDA, it is factored into the financial profitability calculations generated by Microfin.

Refer to figure 9.11.
Developing a Financing Strategy
Chapter 10
Developing a Financing Strategy

A comprehensive financing strategy ensures that the resources you need to finance your planned activities are available to you, and within the timeframe that you need them.

Microfin models your financing strategy using two sheets:

- **FIN SOURCES** identifies specific funding sources, the costs associated with each source and other financing information.
- **FIN FLOWS** projects new receipts from these funding sources along with any repayments of loan principal, and also projects the investment income from any unused funds

Classifying Financing Sources

Microfin supports a variety of debt and equity funding sources, including both unrestricted and restricted funds.

**Figure 10.1 Financing Options Supported by Microfin**

<table>
<thead>
<tr>
<th>Debt Sources</th>
<th>Equity Sources</th>
</tr>
</thead>
<tbody>
<tr>
<td>Savings, compulsory</td>
<td>Earned income, financial products</td>
</tr>
<tr>
<td>Savings, voluntary</td>
<td>Earned income, investments</td>
</tr>
<tr>
<td>Loans, concessional</td>
<td>Grants (or Donor Equity)</td>
</tr>
<tr>
<td>Loans, commercial</td>
<td>Shareholder investments</td>
</tr>
</tbody>
</table>

Microfin’s rules for prioritizing the use of resources are illustrated in figure 10.15, and discussed in detail in “Microfin’s Allocation Priorities” on page 363.
Unrestricted Funds

Unrestricted funds are those that you can use for any purpose.

Unrestricted financing sources include:

- all income earned from financial services and investments
- unrestricted grants
- all equity investments
- unrestricted loans
- savings, if defined as unrestricted\(^{76}\)

Restricted Funds

Restricted funds can only be used to finance specific types of activities. They create challenges for cash flow planning and often constrain management’s control over the institution’s operations. You should therefore strive to maximize availability of unrestricted funding, particularly grants.

Microfin monitors available debt and equity funding for three restricted purposes—operations, portfolio and other assets (figure 10.2).\(^{77}\)

Figure 10.2 Restricted Sources of Funding

<table>
<thead>
<tr>
<th>For Operations</th>
<th>For Portfolio</th>
<th>For Other Assets</th>
</tr>
</thead>
<tbody>
<tr>
<td>Restricted Grants</td>
<td>Restricted Grants</td>
<td>Restricted Grants</td>
</tr>
<tr>
<td>Restricted Loans</td>
<td>Restricted Loans</td>
<td>Restricted Loans</td>
</tr>
<tr>
<td>Percentage of Savings (if so defined by the user)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

\(^{76}\) A note of warning on the modeling of unrestricted loans and savings: Microfin groups unrestricted loans with restricted portfolio loans on the balance sheet and treats the interest expense on these loans as a financial cost, including it in the interest and fees on borrowed funds on the income statement. It also treats interest paid on savings deposits—whether they are deemed restricted or unrestricted—as a financial cost. But it includes restricted loans for other assets (such as a mortgage on a building) in other long-term liabilities on the balance sheet. It also includes the cost of these loans in the ADMINISTRATIVE-LEVEL OTHER OPERATIONAL EXPENSES section of the ADMIN/HEAD OFFICE sheet, rather than treating it as a financial cost. This is done to more accurately determine the gross financial margin on the income statement. For an institution that uses unrestricted loans or savings to fund other assets, the balance sheet categories (for the loans) and the interest allocations (for the loans and savings) will be inaccurate. A recommended solution is to designate the portion of any unrestricted loans that is used for other assets as a “restricted loan for other assets.”

\(^{77}\) The restrictions on donor financing can vary in degree. While Microfin can model basic restrictions—limiting the use of a donor's funds to one of the three restricted pools—it cannot apply more complex restrictions, such as limiting funds to financing loans in a particular branch office or to funding operations over a particular period of time. The implications of such restrictions for cash flow should be carefully projected in a supplemental analysis.
Operations
Restricted grants are the only financing sources that Microfin allows you to restrict to operations. Otherwise, Microfin assumes that all operational costs are financed out of unrestricted sources, ideally from earned income.

Portfolio
You can restrict both grants and loans to portfolio financing, along with a percentage of savings. You established a savings reserve when you defined your savings products on the PRODUCTS sheet. Any remaining savings are either restricted to portfolio financing or are treated as unrestricted, depending on your entry on the SOURCES OF FINANCING section of this FIN SOURCES sheet.

Other Assets
You can restrict both grants and loans to financing other assets. Since this pool of funds is used to finance machinery and equipment, land, buildings and other major assets, any funding designated for one or more of these purposes is included—such as mortgage financing to purchase a building or funds donated to invest in an MIS system.

Using the Financing Sources Sheet to Identify Debt and Equity Financing
You enter key financing information using the FIN SOURCES sheet (figure 10.3). Most of this information carries over to the FIN FLOWS sheet.

FIN SOURCES includes the following sections:

- SOURCES OF FINANCING [lines 1.01 – 1.54]
- INITIAL ALLOCATION OF AVAILABLE ASSETS [lines 2.01 – 2.11]
- LIQUIDITY REQUIREMENTS [lines 3.01 – 3.14]
- MARKET RATE COST OF FUNDS [lines 4.01 – 4.04]
- INTEREST RATES FOR BORROWED FUNDS [lines 5.01 – 5.32]
- CALCULATION OF FINANCIAL COSTS [lines 6.01 – 6.27]

You can navigate to any desired section of the sheet using the items on the pagebar.
Figure 10.3a Fin Sources Sheet (1 of 2)

<table>
<thead>
<tr>
<th>Sources of Financing</th>
<th>Total</th>
<th>Jan</th>
<th>Feb</th>
<th>Mar</th>
<th>Apr</th>
<th>May</th>
<th>Jun</th>
<th>Jul</th>
<th>Aug</th>
<th>Sep</th>
<th>Oct</th>
<th>Nov</th>
<th>Dec</th>
</tr>
</thead>
</table>

**Unrestricted Sources**

<table>
<thead>
<tr>
<th>Source</th>
<th>Name used</th>
<th>Future interest rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Earnings</td>
<td>Not indexed</td>
<td></td>
</tr>
<tr>
<td>Unallocated reserves</td>
<td>Not indexed</td>
<td></td>
</tr>
</tbody>
</table>

**Restricted Sources**

<table>
<thead>
<tr>
<th>Source</th>
<th>Name used</th>
<th>Future interest rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Restricted reserves</td>
<td>Not indexed</td>
<td></td>
</tr>
</tbody>
</table>

**Restricted Portfolio Sources**

<table>
<thead>
<tr>
<th>Source</th>
<th>Name used</th>
<th>Future interest rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Portfolio</td>
<td>Not indexed</td>
<td></td>
</tr>
</tbody>
</table>

**Restricted Other Assets**

<table>
<thead>
<tr>
<th>Source</th>
<th>Name used</th>
<th>Future interest rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non-Portfolio</td>
<td>Not indexed</td>
<td></td>
</tr>
</tbody>
</table>

**Treatment of Savings**

<table>
<thead>
<tr>
<th>Source</th>
<th>Name used</th>
<th>Future interest rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Savings</td>
<td>Not indexed</td>
<td></td>
</tr>
</tbody>
</table>

**Initial Allocation of Available Assets**

<table>
<thead>
<tr>
<th>Source</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cash</td>
<td>5,100</td>
</tr>
<tr>
<td>Total Available Assets</td>
<td>66,400</td>
</tr>
</tbody>
</table>

**Allocations of the above amount**

<table>
<thead>
<tr>
<th>Source</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Restricted for operating</td>
<td>50,000</td>
</tr>
<tr>
<td>Restricted for other assets</td>
<td>12,000</td>
</tr>
</tbody>
</table>

**Notes:**
- All amounts and movements on the initial allocation sheet represent funds that may or may not be available for financing. This section allocates these assets to ensure proper financial reporting and use.
Procedure to complete the Fin Sources Sheet:

1. Identify specific funding sources, along with their initial balances and interest rates. [page 344]
2. Identify any applicable restrictions for allocating initial cash and investment balances. [page 347]
3. Set liquidity requirements. [page 348]
4. Establish the market rate cost of funds. [page 350]
5. Review Microfin’s calculation of financial costs. [page 351]

Note that these calculations are not accurate until you enter all required financing information, including outstanding loan balances, on the Fin Flows sheet.

Each of these steps is described in the sections that follow.
Identifying Sources of Financing

Microfin maintains four separate funding pools:

- unrestricted resources
- restricted sources for operations
- restricted sources for portfolio
- restricted sources for other assets

You use the SOURCES OF FINANCING section of this sheet to identify all financing sources that are currently active, or will be available, during the projection period. You also enter their initial balances.

Figure 10.4 SOURCES OF FINANCING Section, FIN SOURCES Sheet

For all sources of borrowed funds, you establish the interest rates immediately to the right of the initial balances. You may optionally change any interest rate for future periods using the INTEREST RATES FOR BORROWED FUNDS section of the same sheet (figure 10.5).
In developing your financing strategy, you may identify financing needs for which you have not yet identified a source. In such cases, you can enter unidentified sources under one or more types of funding and then include the anticipated amounts in your operational plan.

Alternatively, you could use Microfin’s default financing option, which automatically fills any liquidity gaps based on parameters that you establish on the FIN FLOWS sheet. This method is generally preferred because it automatically updates default financing based on changes in overall cash disbursements and receipts. For additional information, refer to “Enabling Automated Default Financing Sources” on page 358.

Procedure to identify funding sources — SOURCES OF FINANCING and INTEREST RATES FOR BORROWED FUNDS sections, FIN SOURCES sheet:

Using the SOURCES OF FINANCING section, complete steps one through nine:

1. Enter names or other descriptive text to identify each of your UNRESTRICTED Sources of funding, including:
   - up to six UNRESTRICTED GRANTS [lines 1.04 – 1.09]
   - up to six UNRESTRICTED LOANS [lines 1.11 – 1.16]
   - up to four sources of EQUITY INVESTMENTS [lines 1.18 – 1.21]

   If your sources for any category exceed the number of available input lines, choose the sources that can most logically be combined. Generally, you should separately identify your major sources of funds and combine your minor sources. However, to ensure accurate calculation of financial costs, combine loans based on their interest rates.

2. Enter names or other text to identify up to six RESTRICTED GRANTS FOR OPERATIONS funding sources. [lines 1.24 – 1.29]

3. Enter names or other text to identify each of your RESTRICTED PORTFOLIO funding sources, including:
   - up to six RESTRICTED GRANTS FOR PORTFOLIO [lines 1.32 – 1.37]
   - up to six RESTRICTED LOANS FOR PORTFOLIO [lines 1.39 – 1.44]
4. Enter names or other text to identify each of your RESTRICTED OTHER ASSETS funding sources, including:
   - up to three RESTRICTED GRANTS FOR OTHER ASSETS [lines 1.47 – 1.49]
   - up to two RESTRICTED LOANS FOR OTHER ASSETS [lines 1.51 – 1.52]

5. Enter INITIAL BALANCES for any unrestricted grants that will have activity during the projection period. [lines 1.04 – 1.09] These are the amounts that you have received to date from each grantor.

Microfin then displays these balances for your reference in the FINANCING BY SOURCE section of the FIN FLOWS sheet, to ensure that your projections do not exceed the approved grant amounts.

6. Enter INITIAL BALANCES for any unrestricted loans that will have activity during the projection period. Your entry represents the total outstanding principal balances—i.e., the amounts currently due. [lines 1.11 – 1.16]

You must enter an initial balance for each lender, even if the amount is zero, to ensure the accuracy of Microfin’s interest expense calculation.

You should reconcile these initial balances with the loans payable amount on your opening balance sheet.

7. Enter INITIAL BALANCES for any unrestricted equity investments that will have activity during the projection period. [lines 1.18 – 1.21]

You should reconcile these initial balances with the related equity amount on your opening balance sheet.

8. Enter INITIAL BALANCES for all of your restricted funding sources (operational grants, portfolio grants, portfolio loans, other asset grants and other asset loans). [1.22 – 1.52]

9. For all of your restricted and unrestricted loans, enter the annual INTEREST RATE that you pay for these borrowed funds. [lines 1.11 – 1.16 and 1.39 – 1.52]

Microfin uses this rate to calculate financial costs. It calculates interest rates based on the declining balance of the loan, as this is the approach generally used by commercial banks. If a loan has a grace period for interest payments, you should enter zero as the INTEREST RATE until the first month in which interest is charged (step ten, below).

Lenders may charge periodic commissions or fees in addition to the interest rate on their loans. For simplicity, Microfin has only one input line per financing source; to model the effect of commissions or other fees, enter the effective interest rate you will pay rather than the nominal interest rate. You can use Microfin’s CLIENT COST sheet to calculate the effective interest rate for any loan, including a loan for which your institution is the borrower/client. For additional information, refer to “Using the CLIENT COST and REP SCHEDULE Sheets to Generate Effective Interest Rates and Client Cost Analyses” on page 457.
If your interest rates vary over time, use the INTEREST RATES FOR BORROWED FUNDS section to complete step ten. Otherwise, continue with step 11 using the SOURCES OF FINANCING section:

10. If your interest rates vary over time, choose the FUTURE INTEREST RATE button [line 1.09, 1.37 and 1.49] to advance to the INTEREST RATES FOR BORROWED FUNDS section of this sheet. Here, you can manually adjust the interest rate for each future projection period. These rates are used to calculate the financing costs of your loans payable.

When you have completed your entries, choose the RETURN TO NAMING SOURCES button.

11. If you wish to index the principal amount for any of your loans (based on the indexing rate you entered on the MODEL SETUP sheet) enter a “1” in the INDEXING column. [lines 1.11 – 1.16 and 1.39 – 1.52]

12. Select an option from the TREATMENT OF SAVINGS drop-down list to establish the manner in which you intend to manage savings deposits. [line 1.54] As mentioned previously, you can restrict the use of savings deposits (net of any savings reserves established on the PRODUCTS sheet) to your portfolio or you can consider the deposits to be unrestricted resources.78

Identifying Restrictions on Use of Initial Available Assets

Theoretically, you can use your cash and short- and long-term investments as financing sources. However, the use of certain of these assets may be restricted.

For example, assume you have 100,000 in initial assets, distributed among your bank accounts and investments. Of this, 60,000 are restricted for lending and 20,000 for operations, based on the original restrictions placed on these funds by the donor. The balance of 20,000 is available for any purpose your management deems appropriate.

You enter the allocation for initial assets, and identify any applicable restrictions, using the INITIAL ALLOCATION OF AVAILABLE ASSETS section of the FIN SOURCES sheet.

Figure 10.6 INITIAL ALLOCATION OF AVAILABLE ASSETS Section, FIN SOURCES Sheet

78 Although savings can be deemed unrestricted, microfinance institutions must be vigilant in safeguarding savings mobilized from clients and other sources; therefore, it is not recommended that you treat savings as unrestricted in Microfin.
Procedure to allocate available assets among Microfin’s funding pools

— Initial Allocation of Available Assets section, Fin Sources sheet:

1. Microfin displays your initial Balances for cash, short-term investments and long-term investments, based on values you entered on the Model Setup sheet. [lines 2.03 – 2.05] It also calculates the total of these amounts as total available assets. [line 2.06]

These amounts provide the initial balances data on the Fin Flows sheet.

2. Enter the portion of your total available assets that are Restricted for Portfolio Financing. [line 2.08]

3. Enter the portion of your total available assets that are Restricted for Operational Financing. [line 2.09]

4. Enter the portion of your total available assets that are Restricted for Financing Other Assets. [line 2.10]

5. Microfin calculates the portion of funds that are available for unrestricted use based on your entries immediately above. [line 2.11]

Setting Liquidity Requirements

The Liquidity Requirements section establishes minimum liquidity thresholds for both portfolio activity and operational expenses. Microfin uses this information in the Liquidity Analysis section of the Fin Flows sheet. [page 371]

Figure 10.7 Liquidity Requirements Section, Fin Sources Sheet

Microfin projects cash balances as of the end of each month. However, keep in mind that it is not sufficient to simply anticipate positive balances at month-end. You must provide adequate liquidity throughout the month to account for unexpected differences in the timing of cash inflows and outflows. Such liquidity planning ensures that your loan disbursements and payroll are not delayed due to insufficient available funds.
Microfin establishes separate liquidity requirements for portfolio and for operations.

- You can define liquidity requirements for the portfolio as a percentage of monthly loan disbursements or of total portfolio, or as a fixed amount.
- Microfin calculates liquidity requirements for operations either as a percentage of monthly cash expenses or as a fixed amount.

As previously noted, Microfin will not allow you to use a balance in restricted operational funding to cover a liquidity shortfall in portfolio financing. Likewise, you cannot use a balance in restricted portfolio funding to cover a liquidity shortfall in operational financing.

**Procedure to set liquidity requirements — Liquidity Requirements section, Fin Sources sheet:**

1. Select a Portfolio Liquidity Calculation Method from the drop-down list. [line 3.02]

   Your options are:
   - Percentage of Monthly Portfolio Disbursements
   - Percentage of the Total Portfolio
   - Fixed Amount

2. Based on your choice of calculation method, enter the User Input liquidity margin for portfolio amount [line 3.05] to be used in calculating the Portfolio Liquidity Margin [line 3.07].

If you chose to calculate your portfolio liquidity margin based on:

- a Percentage of Monthly Portfolio Disbursements, enter a value less than 1.00. Microfin multiplies the monthly disbursement amount by this percentage to calculate the liquidity margin.
- a Percentage of the Total Portfolio calculations, enter a value less than 1.00. Microfin multiplies the total portfolio by this percentage to calculate the liquidity margin.
- a Fixed Amount, enter a value greater than or equal to 1.00. Microfin uses this amount as the liquidity margin.
For example, if you project 100,000 in loan disbursements during the month, you might want to target an amount equal to one week’s disbursements as a minimum liquidity threshold. This liquidity margin protects against instances when loans are disbursed early in a month, but repayments are made towards the end of the month. Enter 0.25 as a liquidity margin, and Microfin will increase portfolio financing requirements by this percentage in each period.

3. Enter a USER INPUT liquidity margin for operations amount [line 3.12] to be used in calculating the OPERATIONAL LIQUIDITY MARGIN [line 3.14].

If you choose to calculate your operational liquidity margin based on:

- a percentage of monthly cash expenses, enter a value less than 1.00. Microfin multiplies the monthly cash expense amount by this percentage to calculate the liquidity margin.
- a fixed amount, enter a value greater than or equal to 1.00. Microfin uses this amount as the liquidity margin.

Establishing the Market Rate Cost of Funds

Microfin uses information from the MARKET RATE COST OF FUNDS section to distinguish between commercial and concessional loans on the projected balance sheets, and to calculate financial adjustments in certain profitability indicators on the FIN STATEMENTS sheet, such as the ADJUSTED RETURN ON ASSETS and FINANCIAL SUSTAINABILITY.

Procedure to establish market rate cost of funds — MARKET RATE COST OF FUNDS section, Fin Sources sheet:

1. Enter the annual MARKET RATE that you would have to pay in order to borrow funds from a local commercial bank. [line 4.01]
2. Enter a THRESHOLD rate between 70% and 100%. [line 4.04] This rate is used to distinguish between commercial and concessional loans on the balance sheet. Financial adjustments on the adjusted income statement are calculated using the precise difference between the actual rate and the market rate, regardless of the threshold value.
Microfin multiplies the annual MARKET RATE by this percentage to calculate the minimum interest rate applicable to commercial loans. A loan with an interest rate that is:

- greater than or equal to this minimum rate is considered to be a commercial loan, even though its rate is slightly lower than the market rate. For example, if the market rate is 14% and the threshold is 90%, a loan with a 13% interest rate is still classified as a commercial loan on the balance sheet.

- less than this minimum rate is considered to be a concessional loan. In the above example, a loan with an interest rate of 12% is classified as a concessional loan on the balance sheet.

### Reviewing Financial Costs Calculations

The CALCULATION OF FINANCIAL COSTS section automatically calculates costs for all borrowed funds based upon the interest rates you entered on this sheet and the outstanding loan balances from the Fin Flows sheet. The information is used in the FINANCIAL COSTS sections of the PROGRAM (BRANCH/REGION) and ADMIN (HEAD OFFICE) sheets, as well as various income and expense sections.

#### Figure 10.9 CALCULATION OF FINANCIAL COSTS Section, FIN SOURCES Sheet

<table>
<thead>
<tr>
<th>Financing Sources</th>
<th>Total</th>
<th>Jan</th>
<th>Feb</th>
<th>Mar</th>
<th>Apr</th>
<th>May</th>
<th>Jun</th>
<th>Jul</th>
<th>Aug</th>
<th>Sep</th>
<th>Oct</th>
<th>Nov</th>
<th>Dec</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Calculation of Financial Costs</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6.02 Interest paid on deposits</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Weighted Avg. Cost of Savings</td>
<td></td>
<td></td>
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<td></td>
<td></td>
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</tr>
<tr>
<td>6.03 Financial cost of Deposits</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>6.04 Weighed Avg. Cost of Deposits</td>
<td></td>
<td></td>
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<td></td>
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<td></td>
</tr>
<tr>
<td>6.13 Financial cost of Unrestricted Loans</td>
<td></td>
<td></td>
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<td></td>
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<td></td>
</tr>
<tr>
<td>6.14 Weighed Avg. Cost of Unrestricted Loans</td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6.15 Financial cost of Portfolio Loans</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>6.16 Weighed Avg. Cost of Portfolio Loans</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6.17 Financial cost of Other Assets</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6.18 Weighed Avg. Cost of Other Assets</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note that until you have completed the entries on the Fin Flows sheet, this financial cost information is incomplete.

The information includes:

- **INTEREST PAID ON DEPOSITS** [line 6.02]
- **WEIGHTED AVERAGE COST OF SAVINGS** [line 6.03]
- **FINANCIAL COST OF UNRESTRICTED LOANS**, by loan [lines 6.05 – 6.12]
- **WEIGHTED AVERAGE COST OF UNRESTRICTED LOANS**, in total [6.13]
- **FINANCIAL COST OF PORTFOLIO LOANS**, by loan [lines 6.15 – 6.21]
- **WEIGHTED AVERAGE COST OF PORTFOLIO LOANS**, in total [6.22]
- **FINANCIAL COST OF LOANS FOR OTHER ASSETS**, by loan [lines 6.24 – 6.26]
- **WEIGHTED AVERAGE COST OF OTHER ASSET LOANS**, in total [6.27]
Using the **FINANCING Flows Sheet to Project Cash Flow**

The Fin Flows sheet projects the cash flow in each of Microfin’s four funding pools—unrestricted sources and restricted sources for operations, portfolio and other assets.

Along the top of the sheet, Microfin displays ending balances for each of these pools of funds for each period. These balances are based on the cumulative inflows and outflows of funds generated by your entries throughout the model, including the amounts you enter on this sheet. Microfin also calculates and displays the total excess or shortfall in liquidity, factoring in the desired liquidity requirements you established on the Fin Sources sheet. This display allows you to readily monitor your cash position; it always appears at the top of the window, even as you scroll down or right to other sections of the sheet. Any shortfall amounts are highlighted in red.

If your model includes one or more periods with a negative cash balance, Microfin displays a warning immediately above the Automated Default Sources section.
### Figure 10.10a Fin Flows Sheet, (1 of 3)

#### Financing Flows

<table>
<thead>
<tr>
<th>Financing Flow</th>
<th>Total</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>11</th>
<th>12</th>
</tr>
</thead>
<tbody>
<tr>
<td>Initial</td>
<td>$54,409</td>
<td>$2,212</td>
<td>$4,548</td>
<td>$3,205</td>
<td>$1,053</td>
<td>$3,205</td>
<td>$1,053</td>
<td>$3,205</td>
<td>$1,053</td>
<td>$3,205</td>
<td>$1,053</td>
<td>$3,205</td>
<td>$1,053</td>
</tr>
<tr>
<td>Trailing</td>
<td>$62,409</td>
<td>$2,212</td>
<td>$4,548</td>
<td>$3,205</td>
<td>$1,053</td>
<td>$3,205</td>
<td>$1,053</td>
<td>$3,205</td>
<td>$1,053</td>
<td>$3,205</td>
<td>$1,053</td>
<td>$3,205</td>
<td>$1,053</td>
</tr>
</tbody>
</table>

#### Automating default sources

- Use default sources to maintain positive cash balance.

#### Financing by Source

<table>
<thead>
<tr>
<th>Source</th>
<th>1</th>
<th>2</th>
<th>3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Earned income (incl. inter.)</td>
<td>15,000</td>
<td>16,000</td>
<td>16,000</td>
</tr>
<tr>
<td>Change in available savings</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Automated Default Sources</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Other assets</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Unrestricted surplus</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Restricted surplus</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Unrestricted grants</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Other restricted grants</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>GlobalNet/Agencies</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Committed grants</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Unrestricted grants</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Committed grants</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Uncommitted grants</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Other restricted grants</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Investment income</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

#### Investment Strategy

- Invest in opportunities for a return beyond the cost of capital.

#### Income on Investments

- This section calculates income from investments and shows the impact on cash flow.

#### Short-term investments

- Return on short-term investments.

- Long-term investments

- Dividends received

- Income from short-term investments

- Income from long-term investments

- Total income on investments

- Total equity

- Total net income

- Net income after tax

- Cash available for distribution

- Dividends paid

- Net income available for distribution

- Retained earnings

- Total assets

- Total liabilities

- Net worth

- Total equity
### Financing Flows

#### Operational Financing

<table>
<thead>
<tr>
<th>Period</th>
<th>Jan-01</th>
<th>Feb-01</th>
<th>Mar-01</th>
<th>Apr-01</th>
<th>May-01</th>
<th>Jun-01</th>
<th>Jul-01</th>
<th>Aug-01</th>
<th>Sep-01</th>
<th>Oct-01</th>
<th>Nov-01</th>
<th>Dec-01</th>
</tr>
</thead>
<tbody>
<tr>
<td>Income</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

#### Portfolio Financing

<table>
<thead>
<tr>
<th>Period</th>
<th>Jan-01</th>
<th>Feb-01</th>
<th>Mar-01</th>
<th>Apr-01</th>
<th>May-01</th>
<th>Jun-01</th>
<th>Jul-01</th>
<th>Aug-01</th>
<th>Sep-01</th>
<th>Oct-01</th>
<th>Nov-01</th>
<th>Dec-01</th>
</tr>
</thead>
<tbody>
<tr>
<td>Income</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

#### Note

- The section shows the financing of cash operational expenses.
- The table above represents the income from the operational and portfolio financing.

---

**Figure 10.10b Income Sheet, (2 of 3)**

This section shows the financing of cash operational expenses.
Figure 10.10c Fin Flows Sheet, (3 of 3)

<table>
<thead>
<tr>
<th>Financing Flows</th>
<th>I</th>
<th>II</th>
<th>III</th>
<th>IV</th>
<th>V</th>
<th>VI</th>
<th>VII</th>
<th>VIII</th>
<th>IX</th>
<th>X</th>
<th>XI</th>
<th>XII</th>
</tr>
</thead>
<tbody>
<tr>
<td>Beginning restricted resources</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>New restricted grants for other assets</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>New unrestricted grants</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>New subscriptions, other assets</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Change in shares</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Total financing before restricted</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

Summary of financing before unrestricted

<table>
<thead>
<tr>
<th>Source of unrestrict financing</th>
<th>I</th>
<th>II</th>
<th>III</th>
<th>IV</th>
<th>V</th>
<th>VI</th>
<th>VII</th>
<th>VIII</th>
<th>IX</th>
<th>X</th>
<th>XI</th>
<th>XII</th>
</tr>
</thead>
<tbody>
<tr>
<td>Beginning unrestrict resources</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Earned income</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>New Unrestricted Grants</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>New Unrestricted Donations</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
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<td>0</td>
</tr>
<tr>
<td>New Unrestricted Gifts</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>New Unrestricted Subscriptions</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>New unrestrict investments</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Total available unrestricted resources</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

In addition to the funds identified above, it is important to note that funds to cover liquidity:

- Calculation of liquidity shortfall
- Note: The adoption of liquidity ratio level is determined when there are absolute restrictions and unrestricted resources to cover liquidity.

- Liquidity analysis
- Note: This section includes details of liquidity level and determines if there are absolute restrictions and unrestricted resources to cover liquidity.
FIN FLOWS includes the following sections:

- **AUTOMATED DEFAULT SOURCES** [lines 1.01 – 1.02]
- **FINANCING BY SOURCE** [lines 2.01 – 2.100]
- **INVESTMENT STRATEGY** [lines 3.01 – 3.21]
- **INCOME ON INVESTMENTS** [lines 4.01 – 4.23]

It also includes the following analysis sections, for which no data entry is required:

- **OPERATIONAL FINANCING** [lines 5.01 – 5.37]
- **PORTFOLIO FINANCING** [lines 6.01 – 6.54]
- **FINANCING OF OTHER ASSETS** [lines 7.01 – 7.35]
- **SUMMARY OF FINANCING BEFORE UNRESTRICTED** [lines 8.01 – 8.05]
- **UNRESTRICTED FINANCING** [lines 9.01 – 9.66]
- **LIQUIDITY ANALYSIS** [lines 10.01 – 10.10]

You can navigate to any desired section of the sheet using the items on the pagebar.

Optionally, choose the DETAILS button on Microfin’s toolbar to see detailed breakdowns by funding source and asset category.

**Procedure to complete the Fin Flows sheet:**

1. Identify financing flows, by source. [page 356]
2. Optionally, enable automated default financing sources. [page 358]
3. Develop an investment strategy. [page 360]
4. Project interest rates paid on investments. [page 361]
5. Analyze financing flows and liquidity. [page 363]

Each of these steps is described in the sections that follow.

**Identifying Financing Flows by Source**

The FINANCING BY SOURCE section displays both inflows (committed or likely receipts) and outflows (scheduled or anticipated principal repayments) for each financing source from the FIN SOURCES sheet. It also maintains a running balance for each source.
Procedure to identify financing flows, by source — Financing by Source section, Fin Flows sheet:

1. At the top of this section, Microfin automatically displays monthly balances for EARNED INCOME (excluding indexing income) [line 2.03] and the CHANGE IN AVAILABLE SAVINGS deposits [line 2.04].

2. Microfin also displays a monthly projection and balance for each automated default source [lines 2.07 – 2.10], if the automated default financing sources option is enabled. For additional information on this option, refer to “Enabling Automated Default Financing Sources” on page 358.

For each financing source, enter monthly projections for committed receipts and other likely cash receipts. [lines 2.11 – 2.99]

For loans, include scheduled and other anticipated repayments of principal as negative values. The related interest payments for these loans are updated and are modeled in the INTEREST RATES FOR BORROWED FUNDS section on the FIN SOURCES sheet.

It can be problematic to model disbursements and repayments for multiple loans in a single line on the sheet. As an alternative, you can use Microfin’s USER-DEFINED sheet to provide the detail for each source. 79 For additional information on the USER-DEFINED sheet, refer to “Using the USER-DEFINED Sheet to Add Features or Supplement Calculations” on page 449.

79 You can then link the net change for all these loans to one line in the FIN. FLOWS sheet. To do so, you enter a formula on the FIN. FLOWS sheet that references the net change value you calculated on the USER-DEFINED sheet.
3. For equity investments, optionally enter the projected amount of dividend payments as a negative value. [line 2.37]

4. Choose RECALC (F9) to update the BALANCES for each funding source, displayed immediately under each projections input line.

When you recalculate, Microfin also updates the ENDING balances at the top of the sheet. [lines 1 – 4] Any balance that appears in red indicates a cash flow shortage (or a liquidity shortfall, in the case of line 5) that you should analyze and correct.

For example, in the illustration below, in month 17, Microfin projects a 15,000 shortage of operations resources and a total shortfall including liquidity requirements of 15,000. This operations shortfall exists despite the 25,000 surplus from restricted other-assets resources and 213,821 in unrestricted resources. The restricted other-assets sources cannot be used to finance operations; and while unrestricted resources can be used to cover the operations deficit, in this case the unrestricted resources are not sufficient to cover the designated liquidity requirement.

5. Microfin displays your EQUITY MULTIPLIER ratio. [line 2.100] This ratio is calculated as TOTAL ASSETS / TOTAL EQUITY, and measures your leverage—i.e., the degree to which your assets are financed by debit.

6. Review the ENDING balances at the top of the sheet [lines 1 – 4] and adjust your funding projections, as necessary.

**Enabling Automated Default Financing Sources**

To facilitate experimentation and sensitivity analysis, and to minimize the ongoing work otherwise required to maintain positive liquidity balances in your projections, Microfin provides an option to automatically generate default financing sources.

This approach minimizes the ongoing effort that would otherwise be required to maintain liquidity balances in your projections. It frees you from the need to review ending cash positions for each month—and to then adjust your funding and investment projections to account for surpluses or deficits—each time you enter data or otherwise change your model.

If you choose to enable this automated financing option, Microfin displays additional fields in the AUTOMATED DEFAULT SOURCES section [lines 1.03 – 1.06], as well as a new monthly projection and balance for each automated default source [lines 2.06 – 2.10] on the FINANCING BY SOURCE section of the sheet.

---

80 The information in this illustration is not part of the FEDA case study.
If your model projects a liquidity surplus for any month that includes an outstanding default loan balance, Microfin automatically makes a repayment on the automated default loan source. For example, in the following illustration, Microfin pays off an 11.099 outstanding default loan balance in the fourth quarter of year four.

It is important that you do not enable the default sources option until after you have completed the other information on the sheet. This approach allows you to project your anticipated funding by source and then to identify any potential funding shortfalls, which you can then address using the AUTOMATED DEFAULT SOURCES option. Note that Microfin’s recalculation speed is notably slower when this option is enabled.

**Procedure to automate default funding sources — AUTOMATED DEFAULT SOURCES section, FIN Flows sheet:**

1. Check the AUTOMATED DEFAULT SOURCES box to enable the default financing option. [line 1.01] Microfin generates two default financing sources—an unrestricted grant and an unrestricted loan.

   Using this option slows Microfin’s recalculation time considerably. To enhance performance, you may prefer to enable this option only after you have completed your initial projections and are performing a sensitivity analysis.

2. Enter the PERCENTAGE FROM UNRESTRICTED GRANTS to indicate the percentage of any necessary default financing that is to come from the unrestricted grants default funding source. [line 1.04]

   For example, if the projected shortfall for a given month is 100,000 and you selected 25% grant funding, Microfin injects 25,000 of new grant funding.
3. Microfin automatically calculates the PERCENTAGE FOR UNRESTRICTED LOANS [line 1.05], based on the formula: 1 — PERCENTAGE FROM UNRESTRICTED GRANTS.

For example, if the projected shortfall for a given month is 100,000 and you entered 25% in PERCENTAGE FROM UNRESTRICTED GRANTS above, Microfin injects 25,000 of new grant funding and 75,000 of new loan funding (i.e., 75%).

4. Enter an ANNUAL INTEREST RATE for the default loan funding source. [line 1.06] If you wish to index the default loan source to an external value, enter the sum of the nominal and indexing interest rates.

Developing an Investment Strategy

In the INVESTMENT STRATEGY section of the Fin Flows sheet, you determine how Microfin manages any excess funds. This allows you to maximize your institution’s investment income.

Figure 10.13 INVESTMENT STRATEGY Section, Fin Flows Sheet

<table>
<thead>
<tr>
<th>Financing Flows</th>
<th>Jan</th>
<th>Feb</th>
<th>Mar</th>
<th>Apr</th>
<th>May</th>
<th>Jun</th>
<th>Jul</th>
<th>Aug</th>
<th>Sep</th>
<th>Oct</th>
<th>Nov</th>
<th>Dec</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Selling int. on marketable securities</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>25,000</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>2 Selling int. on marketable securities, portfolio</td>
<td>50,000</td>
<td>36,000</td>
<td>29,732</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>3 Selling int. on marketable securities, other assets</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>25,000</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>4 Selling uncollectible receivables, bad debt</td>
<td>12,408</td>
<td>10,909</td>
<td>18,837</td>
<td>13,579</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>5 Loan shortfall (i.e., shortfall expected to be injected)</td>
<td>62,409</td>
<td>21,212</td>
<td>14,754</td>
<td>63,923</td>
<td>95,653</td>
<td>76,956</td>
<td>119,056</td>
<td>115,781</td>
<td>130,067</td>
<td>141,839</td>
<td>78,305</td>
<td>36,515</td>
</tr>
</tbody>
</table>

Investment Strategy

NOTE: The information in the illustrations for this procedure is not part of the FEDA case study.

Procedure to establish an investment strategy — INVESTMENT STRATEGY section, Fin Flows sheet:

1. If you have a negative cash or liquidity balance for any projection period, Microfin displays a warning at the top of this section. [line 3.02] Correct this condition before you proceed.
2. Microfin displays the total of your CASH AND INVESTMENTS BALANCES [line 3.03], immediately followed by balances for each funding pool [lines 3.04 – 3.07].

3. Below, it displays your MINIMUM LIQUIDITY LEVEL [line 3.09], and calculates your cash and investment BALANCE IN EXCESS OF MINIMUM LIQUIDITY [line 3.10]. This represents the amount available to you for investment, and is the same as the EXCESS/SHORTFALL [line 5] at the top of the sheet.


5. If you wish to reduce the proposed amount of cash invested in short-term investments, you can OVERRIDE the model’s default calculation with your own amount [line 3.14].

6. If you intend to invest any of your excess cash in LONG-TERM INVESTMENTS, enter the total amount of the investment manually. [line 3.18]

If your long-term investments exceed the available excess liquidity at any point during the projection period, Microfin displays an error message. [line 3.16]

7. Microfin calculates the resulting AMOUNT OF CASH DEPOSITS [line 3.21] as the total cash [3.03] less short-term and long-term investments. [lines 3.15 and 3.19]

If the sum of your short- and long-term investments exceeds the available excess liquidity at any point during the projection period, Microfin displays an error message, as noted above.

**Projecting Income on Investments**

The INCOME ON INVESTMENTS section projects your investment income based on the annualized interest rates you earn on the following investments.

- cash deposits
- short-term investments
- savings reserves
- long-term investments
Procedure to calculate income from investments — Income on Investments section, Fin Flows sheet:

1. Enter the annual INTEREST RATE you earn on CASH DEPOSITS. [line 4.04] Microfin calculates the INCOME FROM LIQUIDITY DEPOSITS [line 4.06] based on this interest rate and the cash-deposits balance from the INVESTMENT STRATEGY section.

2. Enter the annual INTEREST RATE you earn on SHORT-TERM INVESTMENTS. [line 4.09] Microfin calculates the INCOME FROM SHORT-TERM INVESTMENTS [line 4.11] based on this interest rate and the balance from the INVESTMENT STRATEGY section.

3. Enter the annual INTEREST RATE you earn on SAVINGS RESERVES. [line 4.14] Microfin calculates the INCOME FROM INVESTMENT OF RESERVES [line 4.16] based on the total savings balance from the balance sheet and the reserve percent from the PRODUCTS sheet.

4. Enter the annual INTEREST RATE you earn on LONG-TERM INVESTMENTS. [line 4.19] Microfin calculates the INCOME FROM LONG-TERM INVESTMENTS [line 4.21] based on this interest rate and the balance from the INVESTMENT STRATEGY section.

5. Microfin calculates the TOTAL INCOME ON INVESTMENTS [line 4.23] as the sum of the calculated income for cash, short-term investments, savings reserves, and long-term investments.
Analyzing Financing Flow and Liquidity

In separate sections, Microfin calculates the inflows and outflows of funds for each of the following funding pools, and displays the ending balance for each:

- restricted for operations [OPERATIONAL FINANCING section, figure 10.17]
- restricted for portfolio [PORTFOLIO FINANCING section, figure 10.18]
- restricted for other assets [FINANCING OF OTHER ASSETS section, figure 10.19]
- unrestricted [UNRESTRICTED FINANCING section, figure 10.21]

In addition, Microfin displays a summary of the balances for your restricted funding pools (SUMMARY OF FINANCING BEFORE UNRESTRICTED section, figure 10.20) and a liquidity analysis (LIQUIDITY ANALYSIS section, figure 10.22).

Figure 10.15 Microfin’s Priorities for Allocating Unrestricted Funds

<table>
<thead>
<tr>
<th>Unrestricted Sources</th>
<th>Allocation Priorities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Earned Income</td>
<td>First: Operations</td>
</tr>
<tr>
<td>Unrestricted Grants</td>
<td>Second: Portfolio</td>
</tr>
<tr>
<td>Unrestricted Loans</td>
<td>Third: Other Assets</td>
</tr>
<tr>
<td>Equity Investments</td>
<td></td>
</tr>
<tr>
<td>Percentage of Savings(^\text{82})</td>
<td></td>
</tr>
</tbody>
</table>

Microfin’s Allocation Priorities

In projecting the activities in each of its funding pools, Microfin applies the following general rules and priorities:

- Microfin first uses restricted sources to cover needs for each of the three restricted pools. For example, assume Microfin projects portfolio growth of 75,000 in a specific period. If you have a 100,000 balance in the restricted portfolio funding pool, Microfin allocates 75,000 of these restricted funds to cover the portfolio growth.

\(^{82}\) If so designated by you.
In the event of a shortfall in a restricted pool, Microfin uses unrestricted funds to cover the deficit. For example, assume Microfin projects portfolio growth of 150,000 in a specific period. If you have a 100,000 balance in the restricted portfolio funding pool and another 90,000 in the unrestricted pool, Microfin first allocates the 100,000 in restricted funds, then uses 50,000 of unrestricted funds to cover the shortfall.

If your model has a shortfall in more than one restricted pool, Microfin must allocate unrestricted resources among these competing pools. If the unrestricted resources cannot cover all of the projected deficits in the restricted pools, Microfin rations funds. First, it covers all operational expenses. Any remaining unrestricted funds are applied first to portfolio growth, then to other asset purchases. In actual practice, management determines the use of unrestricted resources; but, by understanding Microfin's prioritization rules, you can better interpret the projected shortfalls.

If, after applying restricted and unrestricted funds, Microfin still calculates a shortfall, you will see:
- a negative (red) ending balance for the restricted pool [lines 1 – 3]. Any negative ending balances indicate that cash levels are overdrawn for the period, as with the (20,000) portfolio figure in the right-hand column of figure 10.16.
- a zero (0) in the ENDING UNRESTRICTED RESOURCES AVAILABLE [line 4] as these funds have been exhausted.
- a negative (red) value in the EXCESS/SHORTFALL INCLUDING LIQUIDITY [line 5]. A negative number here indicates that there is inadequate cash to meet minimum liquidity requirements, as with the (35,000) figure in the right-hand column of figure 10.16, representing the shortfall of 20,000 to meet portfolio needs and the shortfall of 15,000 to cover liquidity requirements.

If you enabled the AUTOMATED DEFAULT FINANCING option, Microfin will automatically cover all shortfalls in your projections.
### Figure 10.16 Sample Allocation of Resources in Microfin, With and Without Sufficient Funding

<table>
<thead>
<tr>
<th></th>
<th>Sufficient Funding</th>
<th>Insufficient Funding</th>
</tr>
</thead>
<tbody>
<tr>
<td>Balance, restricted for portfolio [line 6.03]</td>
<td>100,000</td>
<td>100,000</td>
</tr>
<tr>
<td>Projected growth in portfolio [lines 6.06 + 6.07]</td>
<td>150,000</td>
<td>150,000</td>
</tr>
<tr>
<td>Debt and equity financing sources [lines 6.33 + 6.50]</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Balance before use of unrestricted funds [line 6.52]</td>
<td>(50,000)</td>
<td>(50,000)</td>
</tr>
<tr>
<td>Unrestricted funds used for portfolio [line 6.53]</td>
<td>50,000</td>
<td>30,000</td>
</tr>
<tr>
<td>Ending restricted resources, portfolio [line 6.54]</td>
<td>0</td>
<td>(20,000)</td>
</tr>
<tr>
<td>Total available unrestricted funds [line 9.59]</td>
<td>75,000</td>
<td>30,000</td>
</tr>
<tr>
<td>Unrestricted funds used for portfolio [line 9.63]</td>
<td>50,000</td>
<td>30,000</td>
</tr>
<tr>
<td>Ending unrestricted resources available [line 9.66]</td>
<td>25,000</td>
<td>0</td>
</tr>
<tr>
<td>Minimum liquidity [line 3.09]</td>
<td>15,000</td>
<td>15,000</td>
</tr>
<tr>
<td>Liquidity shortfall [line 10.10]</td>
<td>0</td>
<td>(35,000)</td>
</tr>
<tr>
<td>Excess/shortfall, including minimum liquidity [line 5]</td>
<td>10,000</td>
<td>(35,000)</td>
</tr>
</tbody>
</table>

### Reviewing Operational Financing Projections

Microfin displays a summary of the activity in your restricted, operations pool in the OPERATIONAL FINANCING section.

Optionally, choose the DETAILS button on Microfin’s toolbar to see a detailed breakdown by source.

---

83 The example assumes no shortfall in restricted resources for operational financing or other asset financing.
**Procedure to review and edit operational financing — Operational Financing section, Fin Flows sheet:**

1. **Microfin** displays the **BEGINNING RESTRICTED RESOURCES** balance in the pool. [line 5.03]

2. From this beginning balance, Microfin subtracts **OPERATIONAL EXPENSES**. [lines 5.05 – 5.09] These expenses include **FINANCIAL COSTS**, **PROGRAM and ADMINISTRATIVE OPERATING COSTS**, and the **AMOUNT OF TAXES PAID**.

3. To this beginning balance, Microfin adds back **NONCASH OPERATING EXPENSES**. [lines 5.12 – 5.13] These expenses include **DEPRECIATION AND AMORTIZATION** and any **CHANGES IN ACCRUED EXPENSES**.

The optional entries described in steps four and five are advanced options, and are not necessary or appropriate for most models.

4. Optionally, you can enter a net increase or decrease (using a negative number) in **OTHER CURRENT ASSETS** for any period. [line 5.15] An increase reduces the funds available in this pool.

5. Optionally, you can enter a net increase or decrease (using a negative number) in **OTHER CURRENT LIABILITIES** for any period. [line 5.16] An increase increases the funds available in this pool.

6. Microfin calculates the **BALANCE BEFORE USE OF UNRESTRICTED funds**. [line 5.19]

7. If this balance is negative, Microfin adds as much of the **MONTH’S INCOME** generated during the period [line 191] as available or necessary to bring the balance to zero, whichever is smaller. Such income is considered to be unrestricted funding.

<table>
<thead>
<tr>
<th>Financing Flows</th>
<th>Total</th>
<th>Jan-03</th>
<th>Feb-03</th>
<th>Mar-03</th>
<th>Apr-03</th>
<th>May-03</th>
<th>Jun-03</th>
<th>Jul-03</th>
<th>Aug-03</th>
<th>Sep-03</th>
<th>Oct-03</th>
<th>Nov-03</th>
<th>Dec-03</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ending res. resources, operational</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Beginning restricted resources</td>
<td>51,100</td>
<td>36,863</td>
<td>29,732</td>
<td>23,845</td>
<td>21,984</td>
<td>20,145</td>
<td>19,371</td>
<td>20,326</td>
<td>21,595</td>
<td>22,085</td>
<td>19,307</td>
<td>16,329</td>
<td>15,905</td>
</tr>
<tr>
<td>Ongoing restricted resources</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Less: Operational Expenses</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
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<tr>
<td>Financial Costs</td>
<td>3,776</td>
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<td>2,376</td>
<td>2,376</td>
<td>2,376</td>
<td>2,376</td>
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<td>2,376</td>
<td>2,376</td>
<td>2,376</td>
<td>2,376</td>
<td>2,376</td>
</tr>
<tr>
<td>Program Operating Costs</td>
<td>8,000</td>
<td>8,000</td>
<td>8,000</td>
<td>8,000</td>
<td>8,000</td>
<td>8,000</td>
<td>8,000</td>
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<tr>
<td>Administration Operating Costs</td>
<td>4,373</td>
<td>3,373</td>
<td>3,373</td>
<td>3,373</td>
<td>3,373</td>
<td>3,373</td>
<td>3,373</td>
<td>3,373</td>
<td>3,373</td>
<td>3,373</td>
<td>3,373</td>
<td>3,373</td>
<td>3,373</td>
</tr>
<tr>
<td>Administrative Operating Costs</td>
<td>12,073</td>
<td>12,073</td>
<td>12,073</td>
<td>12,073</td>
<td>12,073</td>
<td>12,073</td>
<td>12,073</td>
<td>12,073</td>
<td>12,073</td>
<td>12,073</td>
<td>12,073</td>
<td>12,073</td>
<td>12,073</td>
</tr>
<tr>
<td>Less: Noncash Operating Expenses</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Depreciation and Amortization</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Changes in accrued expenses</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Less: net in other current assets</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Less: net in other current liabilities</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Balance before use of unrestricted</td>
<td>8,073</td>
<td>8,073</td>
<td>8,073</td>
<td>8,073</td>
<td>8,073</td>
<td>8,073</td>
<td>8,073</td>
<td>8,073</td>
<td>8,073</td>
<td>8,073</td>
<td>8,073</td>
<td>8,073</td>
<td>8,073</td>
</tr>
<tr>
<td>Net restricted grants for operations</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Total: Net restricted grants for operations</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Available: Net restricted grants for operations</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Ending res. resources, operational</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>
8. If, after adding the MONTH’S INCOME, the fund balance still remains negative, Microfin applies any available UNRESTRICTED FUNDS to make up the shortfall. [line 5.20]

9. Microfin calculates the BALANCE AFTER USE OF UNRESTRICTED. [line 5.21]

10. Microfin displays NEW RESTRICTED OPERATIONS GRANTS [lines 5.23 – 5.35] from the FINANCING BY SOURCE section on this sheet.

11. Microfin then calculates the ENDING RESTRICTED RESOURCES in the funding pool. [line 5.37] This ending balance is carried forward as the beginning balance for the next period.

Reviewing Portfolio Financing Projections

Microfin displays a summary of the activity in your restricted, portfolio pool in the PORTFOLIO FINANCING section.

Optionally, choose the DETAILS button on Microfin’s toolbar to see a detailed breakdown of savings and funding activity.

Figure 10.18 PORTFOLIO FINANCING Section, FIN FLOWS Sheet
Procedure to review portfolio financing — PORTFOLIO FINANCING section, Fin Flows sheet:

1. Microfin displays the BEGINNING RESTRICTED RESOURCES balance in the pool [line 6.03], then adjusts it for LOAN REPAYMENTS [line 6.06] and LOAN DISBURSEMENTS [line 6.07], DEBT FINANCING [lines 6.11 – 6.33] and EQUITY FINANCING [lines 6.35 – 6.50].

2. Microfin displays the BALANCE BEFORE USE OF UNRESTRICTED funds. [line 6.52]

3. If Microfin’s calculations result in a negative fund balance, Microfin applies any available unrestricted funds to make up the shortfall [line 6.53] and calculates the ENDING RESTRICTED RESOURCES in the funding pool [line 6.54]. This ending balance is carried forward as the beginning balance for the next period.

Reviewing Other Assets Financing Projections

Microfin displays a summary of the activity in your restricted, other assets pool in the FINANCING OF OTHER ASSETS section.

Optionally, choose the DETAILS button on Microfin’s toolbar to see a detailed breakdown of asset transactions and related funding sources.

Figure 10.19 Financing of Other Assets Section, Fin Flows Sheet
Procedure to review and edit financing for other assets — Financing of Other Assets section, Fin Flows sheet:

1. Microfin displays the BEGINNING BALANCE in the pool [line 7.03], then adjusts it for CHANGES IN OTHER ASSET balances [lines 7.05 – 7.11] and NEW FINANCING [lines 7.14 – 7.31].

2. Optionally, you can enter a net increase or decrease (using a negative number) in OTHER LONG-TERM LIABILITIES [line 7.30] for any period. An increase increases the funds in this pool. (This advanced option is rarely necessary.)

3. Microfin displays the BALANCE BEFORE USE OF UNRESTRICTED funds. [line 7.33]

4. If Microfin’s calculations result in a negative fund balance, Microfin applies any available UNRESTRICTED FUNDS to make up the shortfall. [line 7.34]

5. Microfin calculates the ENDING RESTRICTED RESOURCES in the funding pool. [line 301] This ending balance is carried forward as the beginning balance for the next period.

Reviewing Summary Restricted Financing Projections

The SUMMARY OF FINANCING BEFORE UNRESTRICTED section summarizes the ending balances (before the use of unrestricted sources) from each of the three restricted financing sections on the sheet.

Figure 10.20 Summary of Financing Before Unrestricted Section, Fin Flows Sheet

Microfin uses this information to allocate unrestricted financing on this sheet.
## Reviewing Unrestricted Financing Projections

The **UNRESTRICTED FINANCING** section reconciles the activity in the unrestricted funding pool.

### Figure 10.21 UNRESTRICTED FINANCING Section, Fin Flows Sheet

<table>
<thead>
<tr>
<th>Financial Flow</th>
<th>Jan-01</th>
<th>Feb-01</th>
<th>Mar-01</th>
<th>Apr-01</th>
<th>May-01</th>
<th>Jun-01</th>
<th>Jul-01</th>
<th>Aug-01</th>
<th>Sep-01</th>
<th>Oct-01</th>
<th>Nov-01</th>
<th>Dec-01</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Ending restr. resources, operations</td>
<td>50,000</td>
<td>36,062</td>
<td>29,732</td>
<td>26,045</td>
<td>30,433</td>
<td>36,646</td>
<td>193,599</td>
<td>62,525</td>
<td>159,062</td>
<td>120,525</td>
<td>64,017</td>
<td>16,190</td>
</tr>
<tr>
<td>2. Ending restr. resources, portfolio</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>3. Ending restr. resources, other assets</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>4. Ending unrestricted resources, audit</td>
<td>12,480</td>
<td>10,529</td>
<td>19,877</td>
<td>11,549</td>
<td>28,540</td>
<td>38,578</td>
<td>30,458</td>
<td>43,475</td>
<td>45,568</td>
<td>46,714</td>
<td>52,088</td>
<td>57,914</td>
</tr>
<tr>
<td>5. Beginning unrestricted, before provisions</td>
<td>62,480</td>
<td>23,202</td>
<td>14,354</td>
<td>63,923</td>
<td>85,033</td>
<td>74,856</td>
<td>140,085</td>
<td>105,283</td>
<td>179,685</td>
<td>143,486</td>
<td>79,385</td>
<td>36,515</td>
</tr>
</tbody>
</table>

### Procedure to review the activity in the unrestricted financing pool – UNRESTRICTED FINANCING section, Fin Flows sheet:

1. **Microfin displays the BEGINNING BALANCE in the pool.** [line 9.03]

2. **It adjusts the pool for EARNED INCOME EXCLUDING INDEXING INCOME** [line 9.05], **NEW UNRESTRICTED LOANS** [lines 9.07 – 9.21], **NEW UNRESTRICTED GRANTS** [lines 9.23 – 9.37], and **NEW EQUITY INVESTMENTS** [lines 9.47 – 9.57].

3. **Microfin summarizes the USE OF UNRESTRICTED FUNDS to cover shortfalls in restricted funds.** [lines 9.61 – 9.64]

4. **Microfin calculates the ENDING UNRESTRICTED RESOURCES in the funding pool.** [line 9.66] This ending balance is carried forward as the beginning balance for the next period.

As previously noted, if the unrestricted sources are not sufficient to cover all of the financing needs, funds are applied first to operations, then to the portfolio, and finally to other assets.
Analyzing Liquidity

The LIQUIDITY ANALYSIS section of the FIN FLOWS sheet indicates whether you have sufficient funds on hand to cover the desired liquidity targets that you established on the FIN SOURCES sheet.

**Figure 10.22 LIQUIDITY ANALYSIS Section, FIN FLOWS Sheet**

In this analysis, Microfin compares the desired liquidity requirements with the ending restricted balances for both portfolio and operations. If restricted sources are inadequate to cover liquidity requirements, Microfin displays the LIQUIDITY SHORTFALL NEEDING COVERAGE with unrestricted sources. [line 10.06]

If the total shortfall exceeds your available unrestricted sources, Microfin displays a negative balance as the LIQUIDITY SHORTFALL. [line 10.10]

In the illustration above, there are no restricted sources in the third quarter of year four (as shown by the zeroes in lines 1, 2 and 3 in the blue band at the top of the sheet). Management needs 148,732 to cover the liquidity threshold for the portfolio [line 10.04] and 17,148, for operations. The total liquidity requirements are 165,880. [line 10.06] There are only 151,082 in unrestricted sources [line 10.08], resulting in a LIQUIDITY SHORTFALL of 14,798 [line 10.10].

In the following quarter, although all restricted resources are depleted, there are sufficient unrestricted resources to more than cover any shortfall. As a result, there are 80,827 in excess liquidity. [line 5 in the blue band]

---

84 The information in this illustration is not part of the FEDA case study.
Reviewing the Financing Graphs

Microfin provides a variety of financing graphs and graphing tools that assist you in analyzing and interpreting your financing strategy.

The graphs are located on the GRAPHS and accessed from the Graphs option on the Microfin toolbar. For additional information on using the graphs-related sheets, refer to “Generating and Reviewing Graphs Using the GRAPHS and USER GRAPH Sheets” on page 379.

New Financing, Per Month

This area graph details new financing, by source, by month. Generally, it will display significant spikes representing receipts of large grants or loans. For loans, it graphs net funding (receipts less payments). If the net loan funds are negative, it does not include the negative amount.

Figure 10.23 New Financing, Per Month
**Use of Funds**

This area graph identifies the application of funds, by month and by funding pool.

**Figure 10.24 Use of Funds**

![Use of Funds Graph]

**Asset Composition**

This area graph displays the overall growth in assets, over time, as well as the manner in which they are used. When viewed in conjunction with the Liability and Equity Composition graph, you have an overall view of your sources and uses of funds.

**Figure 10.25 Asset Composition**

![Asset Composition Graph]
Liability and Equity Composition
This area graph displays the overall growth in liabilities and equity, over time. When viewed in conjunction with the Assets Composition graph, you have an overall view of your sources and uses of funds.

Figure 10.26 Liability and Equity Composition

Equity Multiplier
This line graph indicates your level of leverage (the ratio of total assets to total equity).

Figure 10.27 Equity Multiplier
Case Study: FEDA’s Financing Strategy

Identifying FEDA’s Sources Of Financing

Management prepared the following summary of FEDA’s financing sources. The staff entered certain of the information on the Fin Sources sheet and the remainder of the information on the Fin Flows sheet.

FEDA has the following grant commitments:

- Global Reach Foundation. FEDA has already received 120,000 freeons from a three-year grant for portfolio financing (200,000 freeons total).
- Head Start Foundation. The foundation approved 50,000 freeons for fiscal 2001 and 50,000 freeons for fiscal 2002 for program expansion. These funds are restricted, half for operations and half for fixed assets.

FEDA also has tentative commitments for grants from the following organizations:

- Greenland Development Agency (GDA). Discussions are ongoing for up to 500,000 freeons for three years, starting in 2002. GDA usually gives unrestricted grants.
- Freedom Transformation Fund. Freedom International has grant funds available to capitalize institutions that are transforming to formal financial institutions. It normally provides up to 500,000 freeons in the year before the formalization process is to be completed, to be used for portfolio financing.

FEDA has the following loans outstanding:

- International Development Corporation (IDC). The loan has a balance of 110,000 freeons at 3% interest, and is to be used for portfolio financing.
- Freedonia National Bank (FNB). The loan is for 180,000 freeons at 14%, to be used for portfolio financing. The relationship with FNB has proven successful, and the bank expressed interest in renewing and even significantly expanding the loan.

FEDA is exploring a new potential loan source. The managing director of FUNDALL, an apex funding institution, had contacted FEDA to discuss a line of credit of up to 500,000 freeons at 8% interest, for use as portfolio financing.

Reflecting a decision by FEDA’s board, the staff restricted the use of savings to loan portfolio financing. Earlier, as a part of defining FEDA’s savings products, the staff had established the institution’s savings reserve levels.

Refer to figures 10.4 and 10.11.
For the **Initial Allocation of Available Assets**, the staff reviewed FEDA's initial balance sheet, which showed available cash and investments of 62,400 freeons. Of this amount, 50,000 freeons represents the balance from a fund that is restricted for portfolio financing. The remaining balance is available for unrestricted use.

Refer to figure 10.6.

Management established a **Liquidity Margin for Portfolio** of 25% of monthly loan disbursements, and a **Liquidity Margin for Operations** of 33% of monthly cash expenses.

Refer to figure 10.7.

The staff established an initial **Market Rate Cost of Funds** of 14%. This rate is expected to remain constant for the foreseeable future.

FEDA considers any interest rate that is at least 90% of this value to be market rate.

Refer to figure 10.8.

### Projecting FEDA’s Financing Flows

FEDA's staff continued to model the institution's financing strategy by entering all confirmed and likely financing receipts and repayments. All loan payments are entered as negative numbers.

- **International Development Corporation (IDC).** Principal repayments start in June 2003. FEDA will make semiannual payments of 15,000 freeons over the next three and a half years, and a final payment of 20,000 freeons in the second quarter of year six. No new funds are expected from IDC.

- **Global Research Foundation.** FEDA is scheduled to receive its final disbursement of 80,000 freeons in June 2001.

- **Head Start Foundation.** Disbursements of 25,000 freeons for operations and 25,000 freeons for fixed assets are scheduled for March 2001 and March 2002.

- **Greenland Development Agency (GDA).** FEDA's staff felt that they could negotiate disbursements of 200,000 freeons at the beginning of years two and three, and 100,000 freeons at the beginning of year four.

- **Freedonia National Bank (FNB).** The staff expected to convert FEDA's current loan into a line of credit of up to 300,000 freeons starting in August 2001. They entered a new disbursement of 120,000 freeons in that same month in order to bring the balance up to 300,000 freeons.
FUNDALL. After recalculating and reviewing the model, the staff determined that FEDA will experience funding shortfalls beginning in early 2002. As a result, they plan to begin using the FUNDALL line of credit in December of 2001, requesting 100,000 freeons at the end of each quarter of five successive quarters.

Freedom Transformation Fund. Beginning in year three, FEDA will urgently need the 500,000 freeons available through Freedom International. The staff planned to request 250,000 freeons in the first quarter of year three and the remaining 250,000 in the third quarter of year three.

Refer to figure 10.11.

After entering all expected financing, the staff recalculated the model and noted that FEDA will experience a significant funding shortfall by year five. They reviewed the income and expense graphs using the GRAPHS sheet and found that FEDA would be only marginally profitable. Since FEDA is charging less interest than other microfinance institutions, they decided to increase their interest rate from 30% to 36% in January 2001, when they launch the redesigned loan product.

Refer to figure 5.8.

After increasing FEDA’s interest rate, the revised graphs show that FEDA will achieve full financial sustainability in the second half of year two and about 120% of financial sustainability by year five.

Refer to figure 11.24.

The staff reviewed FEDA's INVESTMENT STRATEGY. They noted that Microfin automatically shifts excess funds to short-term investments. They decided that, since FEDA has several lines of credit, they will not establish any long-term investments.

Refer to figure 10.13.

FEDA does not earn interest on cash deposits. It earns 8% on short-term investments and savings reserves and would earn 12% on long-term investments if it had any.

After entering these interest rates, the staff recalculated the model and noted that FEDA will generate nearly 40,000 freeons in investment income over the five-year period, depending upon when they choose to repay the line of credit to FNB.

Refer to figure 10.14.

The staff noted a shortfall (including liquidity requirements) of nearly 15,000 in the third quarter of year four. As a result, after completing the other entries on the sheet, they chose to enable Microfin’s default funding source option.

They specified that unrestricted grants should represent 25% of any default funding and entered an annual interest rate of 14% for any default-financing loans.

Refer to figure 10.12.
Analyzing Graphs, Projections and Indicators
Chapter 11
Analyzing Graphs, Projections and Indicators

Business planning is an iterative process. Often, when you analyze your initial projections, you will find it necessary to implement a series of small adjustments or refinements to your model.

Microfin provides a variety of graphs, summary reports, financial statements and performance indicators that you can use to analyze Microfin’s projections in depth. In general, these facilities distill and summarize the financial data to highlight significant elements, as well as key operating and financial relationships. As a result, they are particularly valuable when refining an initial projection or when applying Microfin’s projected data to management decision making.

This chapter describes these graphs, reports, statements and indicators.85

Generating and Reviewing Graphs Using the GRAPHS and USER GRAPH Sheets

Microfin provides a variety of predefined graphs to assist you in analyzing and interpreting your data (figure 11.2). They are located on the GRAPHS sheet and accessible from the GRAPHS menu on the Microfin toolbar.

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Throughout the model, Microfin includes an asterisk symbol (*) to indicate that the data on a line so marked appears on a predefined graph. To display the related graph, select the line with your cursor and then choose the DRAW GRAPH button on the Microfin toolbar.

**Figure 11.2 List of Predefined Graphs in Microfin**

<table>
<thead>
<tr>
<th>Category</th>
<th>Graph Name</th>
<th>Sample on Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Credit (product specific)</td>
<td>Number of Active Loans, by Cycle</td>
<td>204</td>
</tr>
<tr>
<td></td>
<td>Credit Income, by Product</td>
<td>205</td>
</tr>
<tr>
<td></td>
<td>Disbursements and Repayments, by Product</td>
<td>206</td>
</tr>
<tr>
<td>Credit (aggregate)</td>
<td>Number of Active Loans, by Product (This graph does not display for branch or regional models.)</td>
<td>207</td>
</tr>
<tr>
<td></td>
<td>Loan Portfolio, by Product</td>
<td>207</td>
</tr>
<tr>
<td></td>
<td>Number of Loans Disbursed per Month</td>
<td>208</td>
</tr>
<tr>
<td></td>
<td>Average Overall Loan Size, by Product</td>
<td>209</td>
</tr>
<tr>
<td></td>
<td>Average Loan Term, by Product</td>
<td>209</td>
</tr>
<tr>
<td>Savings86</td>
<td>Number of Depositors, by Product</td>
<td>216</td>
</tr>
<tr>
<td></td>
<td>Amount of Deposits</td>
<td>217</td>
</tr>
<tr>
<td></td>
<td>Average Deposits, by Product</td>
<td>218</td>
</tr>
</tbody>
</table>

86 These graphs only appear in models with savings products.
You may note that the lines in your graphs begin to smooth in month 25, the point at which Microfin changes from monthly to quarterly data. To incorporate the quarterly information in the graphs, Microfin needs to generate three data points for each quarter. It does this by extrapolating between the beginning and ending points for the quarter. This extrapolation produces smoother lines than the precise monthly data from the first 24 months.

**Procedure to generate a predefined graph:**

1. Select a desired graph from the GRAPHS drop-down menu on the Microfin toolbar.
2. Microfin displays this graph on the GRAPHS sheet, along with descriptive text (to the right of each graph) that is intended to help you understand and use the information presented.
3. If you wish to copy an image of this graph (i.e., a duplicate picture of it) to the GRAPH CLIPBOARD sheet, choose GRAPH CLIPBOARD from the pagebar.

4. If you are modeling on a branch or regional basis, select either the AGGREGATE button or BRANCH/REGIONAL button to define the data to be included on the graphic. The default is for aggregate-level data.

5. If you chose the branch or regional information button, use the drop-down list to select the specific branch or region that you wish to graph.

### Nominal versus Real Values

It can be difficult to interpret financial projections in environments with moderate to high inflation. To aid in this analysis, Microfin can display graphs with financial information in either nominal or real (inflation-adjusted) terms.

You can change between nominal and real values using the $ REAL/NOMINAL button on the pagebar.

### Area Graphs versus Line Graphs

Microfin’s line graphs highlight changes in a selected item of information (e.g., loan disbursements, loan repayments, product yield, personnel) over time. The horizontal axis generally represents intervals of time. The data at each point in time (a number or a percentage) is plotted against a scale on the vertical axis. These plotted values are then connected by a line; the steeper the line between any two points, the greater the magnitude of the change.

A line graph can include more than one item of information, each of which is plotted independent of other data on the graph. In the example below, the graph includes lines representing the percentage of loan officers, other program staff and head office staff. The positions of the data lines along the vertical axis establish the relative magnitudes of each. For example, loan officers represent a much larger percentage of total staffing than do head office staff; thus they are higher on the vertical axis.
Area graphs display data as a band of color rather than as a line. The area graph in the example below displays staffing data similar to the line graph above—except that it plots the number of staff rather than the percentage. One color band represents loan officers, another represents other program staff and a third represents head office staff. The sum of the three provides the number of total staff in the institution.

The topmost edge of an area graph generally represents the same information as a numeric line graph, emphasizing the magnitude of change over time.

Similar to a line graph, an area graph visually portrays the relative allocation of the various data items on the graph. The relative size of the color band indicates the magnitude of each item of information. By looking at the size of each color band on the graph, you can readily see changes in the distribution of the data over time. In the example, the proportion of other staff members increases over time, although they still make up a small portion of total staff. Loan officers make up the most significant portion of staff.
The area graph differs from a line graph in that each color band, representing one data item, is not independent of other data on the graph. Instead, the color bands are stacked on top of each other, such that the line at the top represents the sum of all the data items below it. For example, in the graph above in month one, there are 13 loan officers, three program staff and four head office staff, for a total of 20. If you read the line along the top of the uppermost color band, it hits the vertical axis at 20 in month one.

Area graphs are limited in the sense that they cannot display negative numbers. Because the amounts for each data component are stacked on top of each other, a negative number disappears from view—in essence, it hides behind the other data components in the graph. Microfin can generate negative numbers, such as when a lack of adequate funding results in a negative cash balance for one or more periods. In such an event, Microfin displays a warning message beneath the graph.

**Graphing Trends (Advanced Feature)**

The **SHOW TRENDS** and **CAPTURE TRENDS** buttons on the **GRAPHS** sheet work together to provide comparison values for the following graphed ratios:

- **OVERHEAD PERCENTAGE**, on the **EFFICIENCY AND PROFITABILITY / OVERHEAD PERCENTAGE** graph
- **OPERATING COST RATIO**, on the **EFFICIENCY AND PROFITABILITY / OPERATING COST RATIO** graph
- **FINANCIAL SUSTAINABILITY**, on the **EFFICIENCY AND PROFITABILITY / OPERATIONAL AND FINANCIAL SUSTAINABILITY** graph
- **AVERAGE RETURN ON EQUITY**, on the **EFFICIENCY AND PROFITABILITY / AROA AND AROE** graph
- **EQUITY MULTIPLIER**, on the **FINANCING / EQUITY MULTIPLIER** graph

**CAPTURE TRENDS** freezes the values of these key ratios based on the current data in your model. Then after you have implemented changes to the model’s data—such as adjusting your interest rates, loan sizes or inflation rates—**SHOW TRENDS** displays the current values and the captured (frozen) values on the same graph (figure 11.3).

By displaying both sets of ratios, you can analyze the implications of your changes.
Storing, Printing or Copying Graphs to Other Windows-based Software Using the GRAPH CLIPBOARD Sheet (Advanced Feature)

You can paste copies of one or more graphs from the GRAPH sheet and/or the USER GRAPH sheet into Microfin’s GRAPH CLIPBOARD. To copy a graph to the clipboard, generate a graph, then choose the GRAPH CLIPBOARD button from the pagebar. Repeat the procedure for each additional graph.

The clipboard stores these graphs as pictures, which means that they always represent the values in your model at the time each graph was generated. If you later make changes in the model, the graphs on the GRAPH CLIPBOARD are not updated based on those changes; you need to regenerate the graphs and recopy them to the CLIPBOARD. This feature makes the clipboard particularly useful for creating and storing graphs for different scenarios.

If you wish to print a series of graphs, you can copy the graphs onto the clipboard and print them using the PRINT button on the Microfin toolbar, or the PRINT or PRINT PREVIEW commands from Excel’s FILE menu.

You can easily copy and paste the graph image from the clipboard into documents and other presentations. To do so, simply:

- Select (click on) the desired graph on the CLIPBOARD.
- Use the Window’s key combination of CTRL + C to copy the graph.
- Use CTRL + V to paste the image in another Windows-based application.
Creating Custom Line Graphs Using the User Graphs Sheet

Microfin allows you to generate your own custom line graphs based on the contents of a line of data within the model.

You do so using the User Graph option on the Microfin toolbar and the User Graphs sheet. This User Graph option is available from the following sheets:

- Products
- Program
- Admin
- Fin Flows
- Fin Statements

Unlike the predefined graph you generate by using the Draw Graph button, this user-defined graph includes only the data on the selected line.
**Procedure to generate user-defined graphs — USER GRAPHS sheet:**

1. Using your cursor, select a desired line of data on any Microfin sheet.
2. Select the USER GRAPHS button from the Microfin toolbar.
3. Microfin displays a graph of the selected data on the USER GRAPHS sheet.
4. Enter a TITLE to describe your graph.
5. Enter text to label your X AXIS. This axis describes the information that Microfin displays in the selected line of the source sheet.
6. Enter text to label your Y AXIS. It describes the information that Microfin displays in the columns of the source sheet (usually time periods).
7. Choose RECALC (F9) to update the labels on the graph.
8. If you wish to copy an image of this graph (i.e., a picture of it) to the GRAPH CLIPBOARD sheet, choose the GRAPH CLIPBOARD button at the top of the sheet. Microfin generates a copy of your graph on the CLIPBOARD.
9. To return to the sheet that contains the graphed data, choose the RETURN FROM GRAPH button.

---

**User-Defined Graph**

<table>
<thead>
<tr>
<th>Title</th>
<th>Loan Disbursements Line Graph</th>
</tr>
</thead>
<tbody>
<tr>
<td>X-Axis</td>
<td>Disbursements</td>
</tr>
<tr>
<td>Y-Axis</td>
<td>Number of Loans</td>
</tr>
</tbody>
</table>

**Explanation:** To create a user-defined graph, go to any of the sheets where the USER GRAPH button on the Microfin toolbar is visible. Place the cursor on the line you wish to graph and then click the USER GRAPH button. Enter the TITLE and AXES labels you wish on the lines above and then hit RECALC.
### Summary Report Sheet

The SUMMARY REP sheet provides a concise overview of Microfin's major outputs, summarized on an annual basis. These outputs are categorized as described in the following sections.

#### Balance Sheet

<table>
<thead>
<tr>
<th>Year</th>
<th>FY00</th>
<th>FY01</th>
<th>FY02</th>
<th>FY03</th>
<th>FY04</th>
<th>FY05</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ASSETS</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cash in Banks and Cash</td>
<td>56,200</td>
<td>51,000</td>
<td>56,413</td>
<td>94,916</td>
<td>129,842</td>
<td>173,449</td>
</tr>
<tr>
<td>Non-Performing Assets</td>
<td>401,000</td>
<td>405,000</td>
<td>722,224</td>
<td>1,251,080</td>
<td>1,947,800</td>
<td>2,852,091</td>
</tr>
<tr>
<td>Tack-Downs &amp; Other Currents</td>
<td>61,400</td>
<td>61,400</td>
<td>102,200</td>
<td>93,200</td>
<td>98,800</td>
<td>103,640</td>
</tr>
<tr>
<td>Net Fixed Assets</td>
<td>20,000</td>
<td>16,000</td>
<td>16,291</td>
<td>52,966</td>
<td>51,001</td>
<td>55,000</td>
</tr>
<tr>
<td>Long-term Investments in Other Assets</td>
<td>0</td>
<td>0</td>
<td>40,000</td>
<td>30,000</td>
<td>20,000</td>
<td>10,000</td>
</tr>
<tr>
<td><strong>TOTAL ASSETS</strong></td>
<td>541,700</td>
<td>562,000</td>
<td>921,229</td>
<td>1,525,200</td>
<td>2,256,423</td>
<td>3,055,690</td>
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</table>

#### Liabilities

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<thead>
<tr>
<th>Year</th>
<th>FY00</th>
<th>FY01</th>
<th>FY02</th>
<th>FY03</th>
<th>FY04</th>
<th>FY05</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>LIABILITIES</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Savings Deposits</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>759,024</td>
</tr>
<tr>
<td>Conventional Loans</td>
<td>310,000</td>
<td>110,000</td>
<td>216,000</td>
<td>61,000</td>
<td>59,000</td>
<td>59,000</td>
</tr>
<tr>
<td>Commercial Loans</td>
<td>100,000</td>
<td>100,000</td>
<td>90,000</td>
<td>90,000</td>
<td>90,000</td>
<td>90,000</td>
</tr>
<tr>
<td>Other Liabilities</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td><strong>TOTAL LIABILITIES</strong></td>
<td>310,000</td>
<td>210,000</td>
<td>250,000</td>
<td>100,000</td>
<td>50,000</td>
<td>500,000</td>
</tr>
</tbody>
</table>

#### Equity

<table>
<thead>
<tr>
<th>Year</th>
<th>FY00</th>
<th>FY01</th>
<th>FY02</th>
<th>FY03</th>
<th>FY04</th>
<th>FY05</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accum. Donated Equity</td>
<td>291,700</td>
<td>297,900</td>
<td>346,000</td>
<td>476,000</td>
<td>212,000</td>
<td>1,420,000</td>
</tr>
<tr>
<td>Accumulated Depreciation</td>
<td>5,000</td>
<td>4,000</td>
<td>1,600</td>
<td>90,000</td>
<td>10,000</td>
<td>10,000</td>
</tr>
<tr>
<td>Shareholder Equity (less debt)</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td><strong>Mechanical Net Surplus</strong></td>
<td>(55,000)</td>
<td>(87,200)</td>
<td>(70,771)</td>
<td>(7,000)</td>
<td>254,423</td>
<td>631,267</td>
</tr>
<tr>
<td><strong>TOTAL EQUITY</strong></td>
<td>231,700</td>
<td>222,000</td>
<td>391,229</td>
<td>713,000</td>
<td>1,079,423</td>
<td>2,154,956</td>
</tr>
</tbody>
</table>

#### Total Liabilities and Equity

<table>
<thead>
<tr>
<th>Year</th>
<th>FY00</th>
<th>FY01</th>
<th>FY02</th>
<th>FY03</th>
<th>FY04</th>
<th>FY05</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Balance Sheet Verification</strong></td>
<td>541,700</td>
<td>562,000</td>
<td>921,229</td>
<td>1,525,200</td>
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#### Income Statement

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<th>FY03</th>
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<td>160,320</td>
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<td><strong>Total Operating Income</strong></td>
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<td>105,120</td>
<td>146,524</td>
<td>219,070</td>
<td>250,000</td>
<td>393,309</td>
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<td>42,600</td>
<td>136,000</td>
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<td>103,700</td>
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<td>108,100</td>
<td>282,524</td>
<td>419,070</td>
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<tr>
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<td>42,600</td>
<td>136,000</td>
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<td><strong>Total Income Before Expenses</strong></td>
<td>108,700</td>
<td>108,100</td>
<td>282,524</td>
<td>419,070</td>
<td>450,000</td>
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#### Cashflow Projections

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<th>FY03</th>
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<th>FY05</th>
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<td>300,421</td>
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<td><strong>Net Cash Flow</strong></td>
<td>23,632</td>
<td>94,165</td>
<td>27,789</td>
<td>36,922</td>
<td>81,339</td>
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<td><strong>Net Change in Equity</strong></td>
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<tr>
<td><strong>Total Cash Flow</strong></td>
<td>23,632</td>
<td>94,165</td>
<td>27,789</td>
<td>36,922</td>
<td>81,339</td>
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#### Financing Sources

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### Summary Report Sheet (2 of 3)

#### Ratio Analysis

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<th>FY10</th>
<th>FY11</th>
<th>FY12</th>
<th>FY13</th>
<th>FY14</th>
<th>FY15</th>
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<tbody>
<tr>
<td><strong>Portfolio Quality</strong></td>
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<tr>
<td>Loan Loss Ratio</td>
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<td>3.5%</td>
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<td><strong>Profitability</strong></td>
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<tr>
<td>Net Interest Margin</td>
<td>3.8%</td>
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<td>3.0%</td>
<td>2.9%</td>
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<td>3.0%</td>
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#### Financial Statements in Constant Currency

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<th>FY10</th>
<th>FY11</th>
<th>FY12</th>
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<th>FY14</th>
<th>FY15</th>
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<tbody>
<tr>
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<tr>
<td>Cash in Bank and Near Cash</td>
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#### Notes

- This financial information is stated in terms of constant FY01 Fears.
- Note: The financial information is stated in terms of constant FY01 Fears.
### Figure 11.6c Summary Report Sheet (3 of 3)

<table>
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<tr>
<th>Financial Statements in Constant Ext. Currency</th>
<th>FY99</th>
<th>FY90</th>
<th>FY91</th>
<th>FY92</th>
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<td>Cash in Bank and Near Cash</td>
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<td>Short-term Inv. &amp; other curr assets</td>
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### Financial Statements in External Currency

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<th>FY91</th>
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<th>FY95</th>
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</tr>
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<td>Cash in Bank and Near Cash</td>
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<tr>
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<tr>
<td>Donated equity, current period</td>
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<td><strong>Income Statement</strong></td>
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<td>Total Financial Income</td>
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</tr>
<tr>
<td>Total Financial Costs</td>
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<td>Gross Financial Margin</td>
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<td>Provision for loan losses</td>
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<td></td>
</tr>
<tr>
<td>Net Financial Margin</td>
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<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Program Operating Exp</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Administrative Operating Exp</td>
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</tr>
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<td>Amount of taxes paid</td>
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</tr>
<tr>
<td>Net income from operations (after taxes)</td>
<td></td>
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<td>Grant Income</td>
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<td>Excess of Income over Expenses</td>
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</tr>
</tbody>
</table>

**NOTE:** This section expresses the financial statements in constant values (i.e., inflated) in an external currency.
Balance Sheet

The BALANCE SHEET section of the SUMMARY REPORT [lines 1.01 – 1.24] summarizes your assets, liabilities and equity over the projection period.

**Figure 11.7 Balance Sheet Section, Summary Report Sheet**

<table>
<thead>
<tr>
<th>Summary Output Report</th>
<th>FY99</th>
<th>FY00</th>
<th>Year 1</th>
<th>Year 2</th>
<th>Year 3</th>
<th>Year 4</th>
<th>Year 5</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Balance Sheet</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>1.01 ASSETS</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.02 Cash in Bank and Near Cash</td>
<td>56,380</td>
<td>51,430</td>
<td>56,410</td>
<td>64,716</td>
<td>130,440</td>
<td>173,440</td>
<td>220,490</td>
</tr>
<tr>
<td>1.03 Net Portfolio Outstanding</td>
<td>400,000</td>
<td>494,000</td>
<td>722,224</td>
<td>1,261,000</td>
<td>1,947,004</td>
<td>2,052,091</td>
<td>3,014,556</td>
</tr>
<tr>
<td>1.04 Shortterm Inv, Other curr ass</td>
<td>61,490</td>
<td>11,430</td>
<td>103,234</td>
<td>93,278</td>
<td>89,090</td>
<td>353,040</td>
<td>793,080</td>
</tr>
<tr>
<td>1.05 Net Fixed Assets</td>
<td>20,000</td>
<td>16,300</td>
<td>19,300</td>
<td>52,400</td>
<td>51,981</td>
<td>55,800</td>
<td>45,210</td>
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<tr>
<td>1.06 Long-term Inv &amp; Other LT assets</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>40,600</td>
<td>30,000</td>
<td>20,000</td>
<td>10,000</td>
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<tr>
<td><strong>1.07 TOTAL ASSETS</strong></td>
<td>541,780</td>
<td>562,890</td>
<td>901,229</td>
<td>1,532,000</td>
<td>2,256,423</td>
<td>3,455,750</td>
<td>4,682,162</td>
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<td>1.08 <strong>LIABILITIES</strong></td>
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<td>1.09</td>
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</tr>
</tbody>
</table>

To view more detailed information, you can choose the BALANCE SHEET button [line 1.01] to navigate to the BALANCE SHEET section on the FINANCIAL STATEMENTS sheet.

Income Statement

The INCOME STATEMENT section of the SUMMARY REPORT [lines 2.01 – 2.13] summarizes your income and expenses over the projection period.

**Figure 11.8 Income Statement Section, Summary Report Sheet**

<table>
<thead>
<tr>
<th>Summary Output Report</th>
<th>FY99</th>
<th>FY00</th>
<th>Year 1</th>
<th>Year 2</th>
<th>Year 3</th>
<th>Year 4</th>
<th>Year 5</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Income Statement</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>2.01 Total Financial Income</td>
<td>105,200</td>
<td>189,320</td>
<td>249,374</td>
<td>493,492</td>
<td>700,037</td>
<td>1,134,707</td>
<td>1,512,555</td>
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<tr>
<td>2.02 Total Financial Costs</td>
<td>21,000</td>
<td>22,200</td>
<td>35,133</td>
<td>62,556</td>
<td>53,403</td>
<td>27,009</td>
<td>156,000</td>
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<tr>
<td>2.03 Gross Financial Margin</td>
<td>144,200</td>
<td>167,120</td>
<td>214,241</td>
<td>430,936</td>
<td>646,531</td>
<td>1,007,708</td>
<td>1,356,547</td>
</tr>
<tr>
<td>2.04 Provision for loan losses</td>
<td>10,000</td>
<td>26,000</td>
<td>34,545</td>
<td>65,166</td>
<td>94,107</td>
<td>133,799</td>
<td>159,387</td>
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<tr>
<td>2.05 Net Financial Margin</td>
<td>105,200</td>
<td>141,120</td>
<td>189,695</td>
<td>365,770</td>
<td>512,424</td>
<td>873,909</td>
<td>1,212,547</td>
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<tr>
<td>2.06 Program Operating Exp</td>
<td>72,600</td>
<td>86,100</td>
<td>138,496</td>
<td>207,460</td>
<td>283,370</td>
<td>453,835</td>
<td>537,201</td>
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<td>2.07 Administrative Operating Exp</td>
<td>43,500</td>
<td>44,500</td>
<td>53,270</td>
<td>86,665</td>
<td>97,315</td>
<td>112,363</td>
<td>121,668</td>
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<td>2.08 Amount of fees paid</td>
<td>0</td>
<td>0</td>
<td>0</td>
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<td>0</td>
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<tr>
<td>2.10 Net income from operations after tax</td>
<td>(9,990)</td>
<td>(14,590)</td>
<td>(15,571)</td>
<td>71,771</td>
<td>287,623</td>
<td>372,834</td>
<td>537,200</td>
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<tr>
<td>2.11 Grant Income</td>
<td>5,700</td>
<td>42,600</td>
<td>130,000</td>
<td>200,000</td>
<td>700,000</td>
<td>103,700</td>
<td>0</td>
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<td>2.12 Excess of Income over Expenses</td>
<td>(4,290)</td>
<td>41,900</td>
<td>110,429</td>
<td>321,771</td>
<td>965,623</td>
<td>476,534</td>
<td>537,200</td>
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<td>2.13 Adjustments to Operating Margin</td>
<td>49,983</td>
<td>92,129</td>
<td>174,559</td>
<td>230,790</td>
<td>273,655</td>
<td>0</td>
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</tbody>
</table>

If you wish to view more detailed information, you can choose the INCOME STATEMENT button [immediately above line 2.01] to navigate to the INCOME STATEMENT section on the FINANCIAL STATEMENTS sheet.
Cash Flow Projections

This CASHFLOW PROJECTIONS section of the SUMMARY REPORT [lines 3.01 – 3.06] summarizes your sources and uses of funds over the projection period.

Figure 11.9 CASHFLOW PROJECTIONS Section, SUMMARY REPORT Sheet

<table>
<thead>
<tr>
<th>Summary Output Report</th>
<th>P090</th>
<th>P090</th>
<th>P091</th>
<th>P092</th>
<th>P093</th>
<th>P094</th>
<th>P095</th>
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<tr>
<td>Cashflow Projections</td>
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<td></td>
</tr>
<tr>
<td>3.01 Cashflow from operations (a)</td>
<td>27,289</td>
<td>155,950</td>
<td>390,421</td>
<td>529,975</td>
<td>720,147</td>
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<tr>
<td>3.02 Total Other Sources (b)</td>
<td>1,749,672</td>
<td>3,249,523</td>
<td>4,619,688</td>
<td>6,796,114</td>
<td>8,720,536</td>
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<tr>
<td>3.03 Total Other Uses (c)</td>
<td>1,000,948</td>
<td>3,645,626</td>
<td>4,895,080</td>
<td>7,368,278</td>
<td>9,403,146</td>
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<tr>
<td>3.04 Net change in equity (d)</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.05 Plus: Grant Income (e)</td>
<td>130,000</td>
<td>260,000</td>
<td>790,000</td>
<td>103,780</td>
<td>6</td>
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<tr>
<td>3.06 Ending balance</td>
<td>96,613</td>
<td>84,916</td>
<td>129,843</td>
<td>173,448</td>
<td>218,089</td>
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</tbody>
</table>

If you wish to view more detailed information, choose the CASHFLOW button [immediately above line 3.01] to navigate to the CASHFLOW PROJECTIONS section on the FINANCIAL STATEMENTS sheet.

Financing Sources

The FINANCING SOURCES section of the SUMMARY REPORT [lines 4.01 – 4.13] summarizes your sources of funds by the various restricted and unrestricted financing pools. All default financing sources are referred to as “Not Identified” on this sheet.

Figure 11.10 FINANCING SOURCES Section, SUMMARY REPORT Sheet

<table>
<thead>
<tr>
<th>Financing Sources</th>
<th>PY090</th>
<th>PY090</th>
<th>PY091</th>
<th>PY092</th>
<th>PY093</th>
<th>PY094</th>
<th>PY095</th>
</tr>
</thead>
<tbody>
<tr>
<td>New Unrestricted Grants – Identified</td>
<td>0</td>
<td>200,000</td>
<td>200,000</td>
<td>100,000</td>
<td>0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>New Restricted grants for operations</td>
<td>25,000</td>
<td>25,000</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>New restricted grants for portfolio</td>
<td>0</td>
<td>0</td>
<td>500,000</td>
<td>0</td>
<td>0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Non-restricted grants for other assets</td>
<td>25,000</td>
<td>25,000</td>
<td>0</td>
<td>0</td>
<td>0</td>
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<td></td>
</tr>
<tr>
<td>Unrestricted loans – Identified</td>
<td>0</td>
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<td>0</td>
<td>0</td>
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<td></td>
</tr>
<tr>
<td>Restricted loans for OTHER ASSETS</td>
<td>510,000</td>
<td>810,000</td>
<td>500,000</td>
<td>560,000</td>
<td>1,520,000</td>
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<tr>
<td>Equity Investments (Unrestricted)</td>
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<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

If you wish to view more detailed information, you can choose the FINANCING SOURCES button [immediately above line 4.01] to navigate to the FINANCING BY SOURCE section on the FINANCING FLOWS sheet.

Ratio Analysis

The RATIO ANALYSIS section of the SUMMARY REPORT [lines 5.01 – 5.21] displays a variety of indicators, categorized according to: PORTFOLIO QUALITY, PROFITABILITY, SOLVENCY, EFFICIENCY AND PRODUCTIVITY, and GROWTH AND OUTREACH.
If you wish to view more detailed data, choose the RATIOS button [immediately above line 5.01] to navigate to the RATIO ANALYSIS section on the FINANCIAL STATEMENTS sheet.

**Financial Statements in Constant Currency**

This section of the SUMMARY REPORT [lines 6.01 – 6.42] displays the annual BALANCE SHEET and INCOME STATEMENT data, adjusted for the impact of inflation.

The projected information on these statements is based on your INFLATION RATE from the MODEL SETUP sheet. However, in order to generate statements for two historical years, as well as the five projected years, you must enter the annualized INFLATION RATE [line 6.02] for the year that is two years prior to the initial year of your projections.
Figure 11.12 Financial Statements in Constant Currency Section, Summary Report Sheet

<table>
<thead>
<tr>
<th>Summary Output Report</th>
<th>FY99</th>
<th>FY00</th>
<th>FY01</th>
<th>FY02</th>
<th>FY03</th>
<th>FY04</th>
<th>FY05</th>
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<tbody>
<tr>
<td>Financial Statements in Constant Currency</td>
<td></td>
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</tr>
</tbody>
</table>

**Balance Sheet**

0.01 Inflation rate, FY99: 10.0%

0.02 Cash in Bank and Near Cash: 62,016 51,460 51,254 70,179 97,639 116,645 135,671

0.03 Net Portfolio Outstanding: 444,660 464,660 466,660 1,014,560 1,492,677 1,978,885 2,333,795

0.04 Short-term Inv & Other Current Assets: 67,540 11,460 50,015 77,150 74,290 243,342 497,342

0.05 Net Fixed Assets: 22,000 16,000 12,537 43,290 39,054 38,112 38,077

0.06 Long-term Invest & Other LT Assets: 0 0 0 33,050 23,539 13,960 6,260

0.07 TOTAL ASSETS: 595,950 582,000 819,299 1,258,677 1,690,785 2,366,344 2,907,254

0.08 Liabilities:

0.09 Savings deposits: 0 0 0 0 0 5,128,233 912,646

0.10 Commercial Loans: 341,000 110,000 100,000 504,132 435,763 376,557 322,597

0.11 Commercial Loans: 0 150,000 272,727 165,269 0 0 0

0.12 Other liabilities: 0 0 0 0 0 0 0

0.13 TOTAL LIABILITIES: 341,000 299,000 405,626 669,421 435,763 376,557 388,480 1,235,526

0.14 Equity:

0.15 Accumulated deficit, prior periods: 320,070 297,460 309,091 300,430 540,947 984,875 946,068

0.16 Donated equity, current period: 6,270 42,880 118,182 206,612 525,929 76,819 0

0.17 Shareholder equity (less deferred): 0 0 0 0 0 0 0

0.18 Accumulated net surplus: (72,182) (67,590) (71,610) (5,705) 194,157 431,157 733,021

0.19 TOTAL EQUITY: 254,958 272,800 355,663 589,256 529,024 1,471,064 1,671,729

0.20 TOTAL LIABILITIES AND EQUITY: 595,958 562,800 819,299 1,258,677 1,690,785 2,366,344 2,907,254

**Income Statement**

0.21 Total financial income: 153,720 109,320 226,704 407,904 594,243 775,320 939,799

0.22 Total financial costs: 23,100 22,200 31,800 51,600 41,167 53,213 98,670

0.23 Total income: 130,620 87,120 194,904 356,287 542,076 722,107 841,126

0.24 Provision for receivables: 9,880 20,400 30,951 53,007 70,889 91,395 96,352

0.25 Net financial margin: 110,740 66,720 164,304 326,490 472,187 630,712 742,776

0.26 Program Operating Exp: 79,880 82,000 125,800 171,415 210,646 256,946 333,566

0.27 Administrative Operating Exp: 47,880 49,800 48,427 71,533 73,114 76,745 75,547

0.28 Amortization of capital: 0 0 0 0 0 0 0

0.29 Net income from operations (after tax): (10,800) (15,800) (110,419) 59,375 190,116 256,651 333,677

0.30 Grant income: 6,270 42,880 118,182 206,612 525,929 76,819 0

0.31 Excess of income over Expenses: (4,530) 41,020 107,663 265,026 725,336 325,470 333,677

0.32 Adjustments to operating margin: 0 0 0 45,421 76,140 131,149 167,832 169,918

Financial Statements in Constant External Currency

If you have defined an exchange rate on the MODEL SETUP sheet, this FINANCIAL STATEMENTS IN CONSTANT EXTERNAL CURRENCY section [lines 7.01 – 7.43] displays the constant financial statements data as translated into the external currency. Microfin displays the CURRENT EXCHANGE RATE on line 7.02.

You enter the name of the NAME OF THE EXTERNAL CURRENCY on this sheet. [line 7.03]
### Financial Statements in External Currency

If you have defined an exchange rate on the MODEL SETUP sheet, the FINANCIAL STATEMENTS IN EXTERNAL CURRENCY section [lines 8.01 – 8.44] displays your annual financial statements data as translated into the external currency and adjusted (inflated) for the impact of inflation on the external currency.

You enter the ANNUAL INFLATION RATE OF THE EXTERNAL CURRENCY on this sheet. [line 8.03]

---

**Financial Statements in External Currency**

<table>
<thead>
<tr>
<th>Summary Output Report</th>
<th>FY09</th>
<th>FY10</th>
<th>FY11</th>
<th>FY12</th>
<th>FY13</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Balance Sheet</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ASSETS</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cash in Bank and Near Cash</td>
<td>8,938</td>
<td>9,357</td>
<td>13,617</td>
<td>15,798</td>
<td>18,089</td>
</tr>
<tr>
<td>Total Receivables</td>
<td>17,554</td>
<td>17,940</td>
<td>20,156</td>
<td>23,036</td>
<td>28,747</td>
</tr>
<tr>
<td>Short-term Inv. &amp; Other Current Assets</td>
<td>12,509</td>
<td>12,374</td>
<td>9,665</td>
<td>32,205</td>
<td>65,726</td>
</tr>
<tr>
<td>Net Fixed Assets</td>
<td>2,338</td>
<td>5,839</td>
<td>5,267</td>
<td>5,082</td>
<td>3,744</td>
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<tr>
<td>Long-term Inv. &amp; Other LT Assets</td>
<td>0</td>
<td>4,428</td>
<td>3,005</td>
<td>1,941</td>
<td>828</td>
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<tr>
<td><strong>TOTAL ASSETS</strong></td>
<td>109,240</td>
<td>167,824</td>
<td>226,238</td>
<td>314,713</td>
<td>317,834</td>
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</tbody>
</table>

**Liabilities**

<table>
<thead>
<tr>
<th></th>
<th>FY09</th>
<th>FY10</th>
<th>FY11</th>
<th>FY12</th>
<th>FY13</th>
</tr>
</thead>
<tbody>
<tr>
<td>Current Liabilities</td>
<td>6,108</td>
<td>69,256</td>
<td>58,162</td>
<td>118,404</td>
<td>164,737</td>
</tr>
<tr>
<td>Long-term Liabilities</td>
<td>41,262</td>
<td>51,783</td>
<td>22,126</td>
<td>139,277</td>
<td>126,146</td>
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<tr>
<td><strong>TOTAL LIABILITIES</strong></td>
<td>47,422</td>
<td>70,539</td>
<td>80,288</td>
<td>257,681</td>
<td>240,783</td>
</tr>
</tbody>
</table>

**Income Statement**

<table>
<thead>
<tr>
<th></th>
<th>FY09</th>
<th>FY10</th>
<th>FY11</th>
<th>FY12</th>
<th>FY13</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Financial Income</td>
<td>30,227</td>
<td>64,374</td>
<td>79,332</td>
<td>193,326</td>
<td>125,307</td>
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<tr>
<td>Total Financial Costs</td>
<td>4,258</td>
<td>6,082</td>
<td>5,356</td>
<td>7,005</td>
<td>11,156</td>
</tr>
<tr>
<td>Net Financial Income</td>
<td>25,969</td>
<td>47,418</td>
<td>73,977</td>
<td>186,321</td>
<td>114,151</td>
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<tr>
<td>Program Operating Exp</td>
<td>18,787</td>
<td>23,961</td>
<td>20,868</td>
<td>39,073</td>
<td>44,475</td>
</tr>
<tr>
<td>Administrative Operating Exp</td>
<td>8,457</td>
<td>6,520</td>
<td>9,749</td>
<td>15,232</td>
<td>10,872</td>
</tr>
<tr>
<td>Interest Expenses Paid</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td><strong>Net Income from Operations (after taxes)</strong></td>
<td>(1,403)</td>
<td>7,095</td>
<td>26,580</td>
<td>33,053</td>
<td>44,189</td>
</tr>
<tr>
<td><strong>Operating Income</strong></td>
<td>15,754</td>
<td>27,619</td>
<td>70,123</td>
<td>94,441</td>
<td>50,016</td>
</tr>
<tr>
<td><strong>Excess of Income over Expenses</strong></td>
<td>14,355</td>
<td>35,457</td>
<td>96,712</td>
<td>133,907</td>
<td>44,189</td>
</tr>
</tbody>
</table>

**Adjustments to Operating Margin**

<table>
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<th>FY10</th>
<th>FY11</th>
<th>FY12</th>
<th>FY13</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>6,056</td>
<td>10,152</td>
<td>17,486</td>
<td>21,048</td>
<td>22,656</td>
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</table>
### Microfin Financial Statements in External Currency Section, Summary Report Sheet

<table>
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<tr>
<th>Financial Statements in External Currency</th>
<th>Year 1</th>
<th>Year 2</th>
<th>Year 3</th>
<th>Year 4</th>
<th>Year 5</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Note:</strong> This section expresses the financial statements in current values (i.e., inflated) in an external currency.</td>
<td></td>
<td></td>
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</tr>
<tr>
<td><strong>Balancing Statement:</strong></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td><strong>Balance Sheet:</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ASSETS &amp; LIABILITIES:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>ASSETS:</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cash &amp; Short-term Investments</td>
<td>5,913</td>
<td>9,574</td>
<td>13,471</td>
<td>16,568</td>
<td>19,201</td>
</tr>
<tr>
<td></td>
<td>88,518</td>
<td>141,137</td>
<td>282,011</td>
<td>272,585</td>
<td>317,638</td>
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<tr>
<td></td>
<td>12,647</td>
<td>10,512</td>
<td>10,257</td>
<td>33,779</td>
<td>69,703</td>
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<tr>
<td></td>
<td>2,354</td>
<td>5,974</td>
<td>5,202</td>
<td>5,359</td>
<td>5,974</td>
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<tr>
<td></td>
<td>4,510</td>
<td>3,112</td>
<td>1,919</td>
<td>671</td>
<td></td>
</tr>
<tr>
<td></td>
<td>110,441</td>
<td>171,700</td>
<td>234,249</td>
<td>330,093</td>
<td>411,456</td>
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<tr>
<td><strong>CASH &amp; LIQUID EQUIVALENTS:</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>LIABILITIES:</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cash &amp; Short-term Investments</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>71,719</td>
<td>129,105</td>
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<tr>
<td></td>
<td>25,735</td>
<td>69,173</td>
<td>89,159</td>
<td>52,535</td>
<td>45,658</td>
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<td>36,764</td>
<td>22,648</td>
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<tr>
<td></td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>3</td>
<td>0</td>
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<tr>
<td></td>
<td>62,498</td>
<td>91,321</td>
<td>89,159</td>
<td>124,253</td>
<td>174,161</td>
</tr>
<tr>
<td><strong>TAXES PAYABLE:</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>REVENUE &amp; EXPENSES:</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>INCOME Statement:</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>NET INCOME:</strong></td>
<td>41,665</td>
<td>52,989</td>
<td>74,680</td>
<td>135,637</td>
<td>133,899</td>
</tr>
<tr>
<td><strong>TOTAL INCOME:</strong></td>
<td>41,665</td>
<td>52,989</td>
<td>74,680</td>
<td>135,637</td>
<td>133,899</td>
</tr>
<tr>
<td><strong>INCOME Statement:</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>NET INCOME:</strong></td>
<td>41,665</td>
<td>52,989</td>
<td>74,680</td>
<td>135,637</td>
<td>133,899</td>
</tr>
<tr>
<td><strong>TOTAL INCOME:</strong></td>
<td>41,665</td>
<td>52,989</td>
<td>74,680</td>
<td>135,637</td>
<td>133,899</td>
</tr>
<tr>
<td><strong>REVENUE &amp; EXPENSES:</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>NET INCOME:</strong></td>
<td>41,665</td>
<td>52,989</td>
<td>74,680</td>
<td>135,637</td>
<td>133,899</td>
</tr>
<tr>
<td><strong>TOTAL INCOME:</strong></td>
<td>41,665</td>
<td>52,989</td>
<td>74,680</td>
<td>135,637</td>
<td>133,899</td>
</tr>
</tbody>
</table>

### Reviewing the Financial Statements Sheet

Microfin produces three detailed financial statements—balance sheet, income statement and cash flow—along with a variety of performance indicators on separate sections of the FINANCIAL STATEMENTS sheet.

---

88 The information in this illustration is not part of the FEDA case study.
Analyzing the Balance Sheet

The BALANCE SHEET section presents assets, liabilities and equity in a format that is particularly appropriate for microfinance institutions.

### Figure 11.15 Balance Sheet Section, Financial Statements Sheet

#### Initial Balances are due

<table>
<thead>
<tr>
<th>Financial Statements</th>
<th>Balance Sheet</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ASSETS</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. <strong>Current Assets</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.1 Cash and Cash Equivalents</td>
<td>$94,000</td>
<td></td>
</tr>
<tr>
<td>1.2 Accounts Receivable</td>
<td>$18,000</td>
<td></td>
</tr>
<tr>
<td>1.3 Long-Term Investments</td>
<td>$11,000</td>
<td></td>
</tr>
<tr>
<td>1.4 Fixed Assets</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.4.1 Land</td>
<td>$0</td>
<td></td>
</tr>
<tr>
<td>1.4.2 Buildings and Equipment (net)</td>
<td>$34,000</td>
<td></td>
</tr>
<tr>
<td><strong>Total Assets</strong></td>
<td>$153,000</td>
<td></td>
</tr>
</tbody>
</table>

#### Liabilities

<table>
<thead>
<tr>
<th>Financial Statements</th>
<th>Balance Sheet</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Current Liabilities</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.1 Operating Expenses</td>
<td>$0</td>
<td></td>
</tr>
<tr>
<td>2.2 Income Statement</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Total Liabilities</strong></td>
<td>$0</td>
<td></td>
</tr>
</tbody>
</table>

**TOTAL LIABILITIES**

<table>
<thead>
<tr>
<th>Financial Statements</th>
<th>Balance Sheet</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Equity</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. <strong>Equity</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Total Equity</strong></td>
<td>$150,000</td>
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</tr>
</tbody>
</table>

**TOTAL LIABILITIES AND EQUITY**

<table>
<thead>
<tr>
<th>Financial Statements</th>
<th>Balance Sheet</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Final Statement</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Ending Balance</strong></td>
<td>$150,000</td>
<td></td>
</tr>
</tbody>
</table>

---

Using Microfin 397
As you review your projected balance sheet, consider the following:

- Is the cash reserve sufficient to cover unanticipated expenses without leaving excess idle cash?
- Is the portfolio growing at a rate that enhances profitability, but does not strain institutional capacity?
- Is your investment in fixed assets sufficient to meet your institution’s needs, but not so high as to divert funds from income-generating assets?
- Is the mix between liability and equity funding appropriate for your institution, given its economic context and stage of development?

**Initial Balance Verification**

The statement begins with an INITIAL BALANCE VERIFICATION. [line 1.02]

- If the initial balances you entered on the MODEL SETUP sheet do not correspond to the initial balances you entered elsewhere throughout the model, you have one or more input errors in your data and Microfin displays a warning message here.
- If Microfin warns of discrepancies, review the INIT BALANCE VERIFICATION column on the sheet (generally, displayed in pink). This column compares the data in the next two (generally pink and white) columns on this sheet—FROM MODEL SETUP PAGE and INITIAL BALANCE—and reports any differences. For any line in the balance sheet with a nonzero value in the INIT BALANCE VERIFICATION column, locate and correct the data entry error.  

**Format**

Microfin’s BALANCE SHEET categorizes assets and liabilities according to current and long term, and presents them in order of liquidity (from most liquid to least liquid).

Borrowed funds are categorized according to commercial and concessional sources.

---

89 Microfin offers a useful way of detecting where the data input error is located: Enable the Excel formula bar using the OPTIONS menu on the Microfin Toolbar, and then place your cursor on the cells in columns E and F for the line items that are out of balance. The formula bar for each cell indicates the related sheet and cell where the data was entered. By tracking down the entry location, you can easily make corrections.
Microfin categorizes equity, or net worth, according to the following categories:

- **donated equity**—the cumulative total of all grants received (previous and current periods)
- **shareholder equity and dividend payments**—amounts received from, and paid to, shareholders
- **accumulated surplus (or deficit) of earned income over expenses**—the amount of internally generated retained earnings or losses (previous and current periods)

This breakdown allows you to track the portion of your equity (from both previous and current periods) that was contributed by others relative to the share that you have generated from your own earnings.

**Analysis**

At the bottom of the balance sheet [lines 1.64 and 1.65], Microfin calculates your **EQUITY MULTIPLIER** and **QUICK RATIO** indicators.

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Value 1</th>
<th>Value 2</th>
<th>Value 3</th>
<th>Value 4</th>
<th>Value 5</th>
<th>Value 6</th>
<th>Value 7</th>
<th>Value 8</th>
<th>Value 9</th>
<th>Value 10</th>
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</thead>
<tbody>
<tr>
<td>Equity Multiplier</td>
<td>2.06</td>
<td>2.08</td>
<td>2.60</td>
<td>1.62</td>
<td>1.02</td>
<td>1.92</td>
<td>1.79</td>
<td>2.04</td>
<td>2.05</td>
<td>2.05</td>
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<tr>
<td>Quick Ratio</td>
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<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
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<td>0.0</td>
<td>7.8</td>
<td>7.8</td>
<td>7.8</td>
</tr>
</tbody>
</table>

For a detailed discussion of each ratio, refer to “**Analyzing Performance Indicators and Ratios**” on page 404.

**Data Verification**

Immediately below the indicators, Microfin displays three lines of data verification information. [lines 1.67 – 1.70]
Analyzing the Income Statement

Microfin’s INCOME STATEMENT highlights key relationships and margins from your operations.

**Figure 11.16 Income Statement Section, Financial Statements Sheet**

<table>
<thead>
<tr>
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</tr>
</thead>
<tbody>
<tr>
<td><strong>Income Statement</strong></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>2.81</td>
<td>2.82</td>
<td>2.83</td>
<td>2.84</td>
<td>2.85</td>
<td>2.86</td>
<td>2.87</td>
<td>2.88</td>
<td>2.89</td>
<td>2.90</td>
<td>2.91</td>
<td>2.92</td>
<td>2.93</td>
<td>2.94</td>
<td>2.95</td>
<td>2.96</td>
<td>2.97</td>
<td>2.98</td>
<td>2.99</td>
<td>3.00</td>
<td>3.01</td>
<td>3.02</td>
</tr>
<tr>
<td><strong>Financial Income</strong></td>
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<tr>
<td><strong>Costs &amp; Expenses</strong></td>
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<td><strong>Net Income</strong></td>
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<td></td>
</tr>
</tbody>
</table>

**Adjustments to Income Statement**

Note: Adjustments to financial ratios exclude any loans paid by the institution.


**Income Statement Analysis**

Note: This choice of denominator is made in the MODEL SETUP sheet in the financial ratios section.

**Calculating ratios based on AUS TOTAL Assets**

| 4.00 | 4.01 | 4.02 | 4.03 | 4.04 | 4.05 | 4.06 | 4.07 | 4.08 | 4.09 | 4.10 | 4.11 | 4.12 | 4.13 | 4.14 | 4.15 | 4.16 | 4.17 | 4.18 | 4.19 | 4.20 | 4.21 | 4.22 |

**Note:** The following ratios are stated on an annualized equivalent.

- Non-financial Income
- Net Financial Income
- Net Operating Margin (
- Operating Expenses
- Operating Expenses
- Operating Expenses
- Operating Expenses
- Operating Expenses
- Operating Expenses
- Operating Expenses
Format

The income statement:

- sums the income from your credit and savings program and your investments to arrive at TOTAL FINANCIAL INCOME. [line 2.08]
- deducts the FINANCIAL COSTS of borrowed funds and savings deposits to arrive at the GROSS FINANCIAL MARGIN. [line 2.15] This margin reflects your institution’s spread—i.e., the difference between your earnings from financial services and your expenditures for debt financing.
- deducts the PROVISION FOR LOAN LOSSES [line 2.17] for the period (or the cost of poorly performing loans) from the GROSS FINANCIAL MARGIN to arrive at the NET FINANCIAL MARGIN [line 2.19]. This is the amount available to cover your operating expenses, which are summarized next.
- summarizes the program or branch/region-level expenses (direct costs) that generate income and help to deliver services. [lines 2.22 – 2.25]
- summarizes the administrative or head office expenses (indirect costs) that result from activities that support program operations. [lines 2.26 – 2.29]
- subtracts TOTAL OPERATING COSTS (program and administrative) from the NET FINANCIAL MARGIN to arrive at the NET INCOME FROM OPERATIONS BEFORE TAXES, or operating margin [line 2.32]. This operating margin projects whether your operations will generate a surplus or deficit. A net income of zero indicates operational self-sufficiency—i.e., earned income covers all expenses.
- subtracts the AMOUNT OF TAXES PAID [line 2.34] from the NET INCOME FROM OPERATIONS BEFORE TAXES to arrive at the NET INCOME FROM OPERATIONS AFTER TAXES. [line 2.36]
- adds grant revenues to the NET INCOME FROM OPERATIONS to arrive at the total EXCESS OF INCOME OVER EXPENSES. [line 2.43]

Adjustments

Before you can ascertain your institution's true bottom line, however, you must adjust your income statement for the effect of subsidies and inflation. [lines 2.45 – 2.54]

<table>
<thead>
<tr>
<th>Adjustments to Income Statement</th>
<th>Links</th>
</tr>
</thead>
<tbody>
<tr>
<td>245</td>
<td></td>
</tr>
<tr>
<td>246</td>
<td></td>
</tr>
<tr>
<td>247 Net income from operations</td>
<td>(3,715)</td>
</tr>
<tr>
<td>After taxes</td>
<td>(1,190)</td>
</tr>
<tr>
<td>248 (Adjustments to Operating</td>
<td>3,527</td>
</tr>
<tr>
<td>Margin)</td>
<td>3,057</td>
</tr>
<tr>
<td>249 Subsidized cost of funds</td>
<td>1,000</td>
</tr>
<tr>
<td>adjustment</td>
<td>1,000</td>
</tr>
<tr>
<td>250 Initial adjustment of equity</td>
<td>2,000</td>
</tr>
<tr>
<td>251 In-kind subsidies</td>
<td>500</td>
</tr>
<tr>
<td>252 Adjusted return from oper.</td>
<td>(7,252)</td>
</tr>
<tr>
<td>after tax</td>
<td>(5,292)</td>
</tr>
</tbody>
</table>

Microfin makes three adjustments, based on your entries elsewhere in the model:

- subsidized cost of funds [line 2.50]
- inflation [line 2.51]
- in-kind subsidies [line 2.52]
The post-adjustment net income [ADJUSTED RETURN FROM OPERATIONS, line 2.54] indicates whether or not you can operate on a sustainable, commercial basis. You should make these adjustments a part of your analysis, even if they are not included in your audited financial statements.⁹⁰

Based on these three adjustments to your operating margin, you can analyze your ADJUSTED RETURN FROM OPERATIONS to see whether your earned income will cover your adjusted operating and financial costs.

**Subsidized Cost of Funds Adjustment**
Subsidized funds (concessional financing) conceal the cost that you would otherwise incur if you had to finance your portfolio using market-rate funds from local commercial sources.

The value of the subsidy you receive as a result of concessional financing is expressed as:

\[(\text{Market rate cost of funds} \times \text{Average funding liabilities for the period}) - \text{Actual financial costs}\]

**Inflation Adjustment**
Inflation erodes the value of your institution's equity. This adjustment factors in the effect of inflation on your equity base.

This effect can be expressed as:⁹¹

\[\text{Inflation rate} \times (\text{Average equity} - \text{Average net fixed assets})\]

**In-kind Subsidies Adjustment**
This adjustment factors in the operating subsidies you receive from the services you obtain at less than their full cost. It represents an estimate of the amount that you would have to pay if all in-kind subsidies, such as discounted office space or donated labor, were not available.

**Analysis**
Microfin calculates ratios [lines 2.56 – 2.77] that compare your income and expenses to your average total assets or average performing assets, depending on the option you chose on the MODEL SETUP sheet.

⁹⁰ Financial regulations in many countries, especially those in Latin America, do require that adjustments for the effect of inflation be included in the audited financial statements (including a revaluation of fixed assets).

⁹¹ The formula reflects the fact that funds invested in fixed assets are not eroded by inflation. See CGAP, "Microcredit Interest Rates" (CGAP Occasional Paper 1, World Bank, Washington, D.C., 1996) for an explanation of the formula.
For a detailed discussion of many of these ratios, refer to “Analyzing Performance Indicators and Ratios” on page 404.

### Reviewing the Cash Flow Projections

Microfin generates CASH FLOW PROJECTIONS from information on the income statement and balance sheet.

#### Figure 11.17 Cash Flow Projections Section, Financial Statements Sheet

<table>
<thead>
<tr>
<th>Financial Statements</th>
<th>Jan-01</th>
<th>Feb-01</th>
<th>Mar-01</th>
<th>Apr-01</th>
<th>May-01</th>
<th>Jun-01</th>
<th>Jul-01</th>
<th>Aug-01</th>
<th>Sep-01</th>
<th>Oct-01</th>
<th>Nov-01</th>
<th>Dec-01</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Cash Flow Projections</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.12</td>
<td>Net income from operations</td>
<td>(1,794)</td>
<td>(1,248)</td>
<td>(1,239)</td>
<td>(948)</td>
<td>(942)</td>
<td>(950)</td>
<td>(2,224)</td>
<td>(195)</td>
<td>(1,217)</td>
<td>96</td>
<td>295</td>
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<tr>
<td>3.14</td>
<td>Non-cash operating items</td>
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<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>3.15</td>
<td>Loan repayments received</td>
<td>20,462</td>
<td>10,076</td>
<td>87,513</td>
<td>85,158</td>
<td>96,391</td>
<td>102,564</td>
<td>106,927</td>
<td>115,027</td>
<td>127,323</td>
<td>137,362</td>
<td>146,811</td>
</tr>
<tr>
<td>3.16</td>
<td>Net increase in borrowings</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>3.17</td>
<td>Net increase in short-term investments</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
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<td>0</td>
</tr>
<tr>
<td>3.18</td>
<td>Net decrease in long-term investments</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>3.19</td>
<td>Net increase in other current assets</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>3.20</td>
<td>Net decrease in other current liabilities</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
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<td>0</td>
</tr>
<tr>
<td>3.21</td>
<td>Net increase in other long-term liabilities</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>3.22</td>
<td>Total Short-term Liabilities (b)</td>
<td>20,462</td>
<td>10,076</td>
<td>87,513</td>
<td>85,158</td>
<td>96,391</td>
<td>102,564</td>
<td>106,927</td>
<td>115,027</td>
<td>127,323</td>
<td>137,362</td>
<td>146,811</td>
</tr>
<tr>
<td>3.24</td>
<td>Other current assets</td>
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<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
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</tr>
<tr>
<td>3.25</td>
<td>Other current liabilities</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>3.26</td>
<td>Net decrease in periodic expenses</td>
<td>20,000</td>
<td>10,265</td>
<td>78,553</td>
<td>84,380</td>
<td>96,391</td>
<td>102,564</td>
<td>106,927</td>
<td>115,027</td>
<td>127,323</td>
<td>137,362</td>
<td>146,811</td>
</tr>
<tr>
<td>3.27</td>
<td>Net increase in in-process</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
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<tr>
<td>3.28</td>
<td>Net decrease in deferred expenses</td>
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<tr>
<td>3.29</td>
<td>Net decrease in other total expenses</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
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</tr>
<tr>
<td>3.30</td>
<td>Total Other Expenses (c)</td>
<td>56,253</td>
<td>40,639</td>
<td>139,060</td>
<td>80,440</td>
<td>96,803</td>
<td>83,580</td>
<td>100,500</td>
<td>205,274</td>
<td>190,600</td>
<td>170,500</td>
<td>149,570</td>
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<tr>
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<td>Changes in equity position</td>
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<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>3.32</td>
<td>Net increase in in-process</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
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<td>0</td>
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<td>0</td>
</tr>
<tr>
<td>3.33</td>
<td>Net decrease in deferred expenses</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
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<td>0</td>
</tr>
<tr>
<td>3.34</td>
<td>Net decrease in other total expenses</td>
<td>0</td>
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<td>0</td>
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<td>0</td>
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</tr>
<tr>
<td>3.35</td>
<td>Total Other Income (d)</td>
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<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>3.36</td>
<td>Net income (e)</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>3.37</td>
<td>Net income (e)</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>3.38</td>
<td>Net income (e)</td>
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<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
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</tr>
</tbody>
</table>
By analyzing projected cash flow, you can identify items that account for significant inflows and outflows of funds in each period. If any items appear to be higher or lower than expected, you can revise related entries in the model.

**Format**

The CASH FLOW statement begins with NET INCOME FROM OPERATIONS [line 3.02] from the income statement and:

- adds back noncash expenses—such as depreciation, amortization, and the loan loss provision—to derive the CASH FLOW FROM OPERATIONS. [line 3.10]
- summarizes OTHER SOURCES of funds, derived from changes in balance sheet accounts. [lines 3.12 – 3.24]
- summarizes OTHER USES of funds, derived from changes in balance sheet accounts. [lines 3.26 – 3.38]
- summarizes the NET CHANGE IN EQUITY. [line 3.43]
- displays GRANT INCOME. [line 3.45]
- calculates the NET CASH FLOW [line 3.47] as the sum of CASH FLOW FROM OPERATIONS, total OTHER SOURCES of funds, total OTHER USES of funds, the NET CHANGE IN EQUITY and GRANT INCOME.
- calculates the ENDING BALANCE for cash [line 3.51] by adding the BEGINNING CASH BALANCE (from the balance sheet) to the NET CASH FLOW.
- compares the calculated ENDING BALANCE for cash to the ending cash balance on the balance sheet, and notes any differences. [line 3.53] You should investigate and correct any differences. 92

**Analyzing Performance Indicators and Ratios**

Performance indicators and financial ratios represent key operational and financial relationships for your institution. They can be effective aids to your financial analysis and decision making, as they distill the most meaningful information from your financial statements and present that information in a concise format. Ratios can also provide benchmarks to gauge future performance. 93 For additional information, refer to “Using the VAR ANALYSIS Sheet to Analyze Monthly Performance Variances” on page 442.


Theoretically, you can monitor a virtually infinite number of indicators and group them in many different ways. In actual practice, you should choose a manageable number of indicators to track based on your institution’s operations and capital structure; these factors determine the information that is most relevant to you. The process of analyzing the projected ratios, over time and in conjunction with one another, can help you to fine tune and finalize your financial projections.

The RATIO ANALYSIS section of the FIN STATEMENTS sheet organizes Microfin’s indicators into five categories:

- PORTFOLIO QUALITY
- PROFITABILITY
- SOLVENCY
- EFFICIENCY AND PRODUCTIVITY
- GROWTH AND OUTREACH

The primary ratios for each category are described below. Additional, secondary ratios—described in the online help text—appear on the sheet only if you choose the ADVANCED RATIOS button on the pagebar.

---

Figure 11.19 Microfin’s Performance Indicators and Ratios

<table>
<thead>
<tr>
<th>Portfolio Quality</th>
<th>Profitability[^95]</th>
<th>Solvency</th>
<th>Efficiency and Productivity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Loan write-off ratio [line 4.06]</td>
<td>Adjusted return on total assets (or performing)[^96] [line 4.14]</td>
<td>Up ratio [line 4.23 – 4.24]</td>
<td>Borrowers per loan officer [line 4.30]</td>
</tr>
<tr>
<td>Up to two user-defined ratios [lines 4.07 – 4.08]</td>
<td>Adjusted return on equity (AROE) [line 4.15]</td>
<td></td>
<td>Portfolio per loan officer [line 4.31]</td>
</tr>
<tr>
<td></td>
<td>Up to two user-defined ratios [lines 4.16 – 4.17]</td>
<td></td>
<td>Average cost of debt [line 4.32]</td>
</tr>
</tbody>
</table>

[^95]: Calculated using pretax or after-tax net income, depending on your selection on the MODEL SETUP sheet.

[^96]: The denominator depends on your selection on the MODEL SETUP sheet.
### Growth and Outreach

| Admin other op expenses/portfolio [line 4.37] | Secondary |
| Net fixed assets/admin staff [line 4.38] | Secondary |
| Up to two user-defined ratios [lines 4.39 – 4.40] | Secondary |

#### Lending
- Total loan portfolio [line 4.45] Primary
- Overall growth in portfolio [line 4.46] Primary
- Number of active loans [line 4.47] Primary
- Overall growth in borrowers [line 4.48] Primary
- Client dropout rate [line 4.49] Primary
- First loans as % of active loans [line 4.50] Secondary

#### Voluntary Savings
- Total voluntary savings deposits [line 4.52] Primary
- Percentage change in savings deposits [line 4.53] Primary
- Number of voluntary depositors [line 4.54] Primary
- Percentage change in depositors [line 4.55] Primary

#### Compulsory Savings
- Compulsory savings as % of portfolio [line 4.57] Secondary
- Up to three user-defined ratios [lines 4.59 – 4.61] Secondary

### Portfolio Quality Indicators

The quality of your loan portfolio determines your institution’s overall operational and financial health. Your portfolio is likely your largest asset and the primary source of your earned income. Also, most of your program expenses typically relate to disbursing and collecting loans. Therefore, prudent portfolio management lies at the heart of your operations.

Three key indicators of portfolio quality are: portfolio at risk, loan loss reserve ratio and loan write-off ratio. Microfin uses the percentages that you entered for the portfolio at risk and loan write-off ratio to calculate the loan loss reserve for the balance sheet and the loan loss provision for the income statement.
**Portfolio at Risk**

Outstanding balance of overdue loans  
Gross portfolio outstanding

Portfolio at risk is arguably the most important indicator of portfolio quality. It measures the outstanding balance for all loans in arrears, expressed as a percentage of the outstanding portfolio. Thus, it shows the share of the portfolio that would have to be written off if all loans in arrears prove uncollectible.

The earlier in the repayment cycle that a loan falls into arrears, the greater the percentage of the portfolio that is at risk.

Portfolio at risk is generally aged—i.e., reported as of a certain number of days (for example, 1, 30 or 60) after the scheduled repayment date.

**Loan Loss Reserve Ratio**

Loan loss reserve  
Gross portfolio outstanding

The loan loss reserve ratio highlights the relationship between two balance sheet accounts: the loan loss reserve and the gross portfolio outstanding. It represents that portion of your outstanding loan portfolio that you expect will never be repaid.

The projected ratio should reflect your historical default rate, and account for any significant changes in external circumstances or internal capabilities (such as an increasingly stable economy or improved training for loan officers).97

Prudent financial management and full disclosure both mandate that the ratio reflect the maximum level of potentially unrecoverable loans.

**Loan Write-off Ratio**

Amount of loans written off  
Average outstanding portfolio

The loan write-off ratio represents the loans that you think you will need to write off during the period as a percentage of your average outstanding portfolio—i.e., the share of your portfolio lost due to bad loans.

---

This ratio largely depends on your write-off policy: Which loans do you write off and how frequently do you write them off? Writing off loans reflects prudent financial management, not a legal acknowledgment that borrowers no longer owe you the funds. Often, collection efforts on defaulted loans continue after the loans have been written off.

**Profitability Indicators**

Your ultimate financial goal as an institution is full financial self-sufficiency. Operating subsidies (in the form of grants or in-kind contributions) may only be available to you for a limited period of time and in limited amounts. To ensure that you can continue to serve your clients, you must be able to cover an increasing share of your costs with income from financial services and investments.

Microfin calculates profitability ratios based either on after-tax or pre-tax net income, depending on your selection from the MODEL SETUP sheet. [line 7.02]

**Adjusted Return on Performing Assets**

\[
\frac{\text{Adjusted net income}}{\text{Average performing assets}}
\]

From a financial perspective, you invest assets (such as your portfolio, investments and equipment) in order to generate a financial return. It is important to gauge how well you manage your assets, and how much income you generate after all expenses (including subsidies) are deducted.

One indicator for doing so is the adjusted return on assets. It correlates your adjusted net income with your asset base. There are two common ways to calculate your asset base: average performing assets and average total assets. ⁹⁸

Performing assets are those assets over which your management has operational control in its effort to maximize profitability. They generally consist of cash and bank deposits, any other interest-bearing deposits, your gross loan portfolio outstanding, and any long-term investments.

Your management must continually shift funds among these assets to maximize returns and minimize risk. Viewed in this light, the adjusted return on average performing assets is an important gauge of management's operating performance.

---

⁹⁸ In Microfin’s annual ratios are based on averages for the year, while monthly ratios are based on data only for the month.
**Adjusted Return on Total Assets**

\[
\frac{\text{Adjusted net income}}{\text{Average total assets}}
\]

A return ratio with average total assets as the denominator gauges your management’s performance in deploying funds among all assets, not just the performing assets. As such, it says more about your long-term strategy for managing assets and liabilities than it does about your management’s operating performance.

**Solvency Indicator**

The term solvency refers to the financial soundness and capital structure of your institution, as reflected on your balance sheet.

**Equity Multiplier**

\[
\frac{\text{Total assets}}{\text{Total equity}}
\]

The equity multiplier measures the degree to which your assets are financed through debt—i.e., your leverage.

If you have no debt, your equity multiplier is 1.0.

If your balance sheet includes savings, commercial or concessional loans, or other forms of debt, you have leveraged your equity base using debt financing in order to increase your asset base. A higher investment in assets generally means a larger portfolio. Therefore, by leveraging debt, you can increase your scale of operations and your income-generating activities.

**Efficiency and Productivity Indicators**

Efficiency and productivity ratios gauge how well you use your limited resources. By efficiently using resources, you can provide services to clients at the lowest possible cost. The higher your institution’s productivity, the more output (e.g., earned income, loans) you generate for each unit of input (e.g., operating expenses, loan officers).

**Yield on Portfolio**

\[
\frac{\text{Credit program income}}{\text{Average portfolio outstanding}}
\]

Yield on portfolio measures the income generated by your portfolio.

For an institution with a highly productive portfolio, income as a percentage of average loans outstanding should equal its effective interest rate. In actual practice, your yield is generally lower because of arrears and defaults on loan principal, which usually mean interest has been paid late or not at all.
Operating Cost Ratio

Operating expenses
Average portfolio outstanding

The operating cost ratio measures operating expenses (excluding the cost of funds and loan loss provision) as a percentage of the average portfolio. Thus, it shows the costs you incur relative to your lending activity. According to best practice standards, a ratio of between 15% and 25% is considered reasonable.

Borrowers per Loan Officer

Average number of borrowers
Average number of loan officers

The ratio of borrowers to loan officers measures your credit staff’s caseload and is a gauge of their productivity.

A higher caseload per officer means that more clients are served. However, bigger is not always better. The optimal caseload depends on many factors, including:

- lending methodology
- average loan size
- number of repeat clients
- maturity of the program

If you exceed your optimal caseload, you risk increasing your delinquency and default rates due to inadequate loan review and follow-up.

If this ratio falls below expectations, evaluate your credit operations to see if you can improve productivity and efficiency, perhaps by offering better training or incentives, or by implementing a more efficient process for reviewing, approving and disbursing loans.
Portfolio per Loan Officer

Average portfolio outstanding
Average number of loan officers

Portfolio per loan officer also gauges the productivity of your credit staff. Since your portfolio is your main income-generating asset, it is important to measure the average amount of your portfolio that each loan officer manages.

If this ratio falls below expectations, evaluate your credit operations to see if you can improve productivity and efficiency.

Growth and Outreach Indicators

Growth and outreach indicators encompass both lending and savings programs.

Total Loan Portfolio

Gross portfolio at end of period

The value of your portfolio at the end of each period is an important gauge of your program’s outreach.

Overall Growth in Portfolio

Gross portfolio at end of period — Gross portfolio at beginning of period
Gross portfolio at beginning of period

As noted earlier, your lending program’s projected growth rate should be ambitious enough to steadily increase client outreach and institutional profitability, yet not place too great a strain on capacity. Your historical growth rate, adjusted for changes you implement to increase operating efficiency, provides a good basis for comparison.

Number of Active Loans

Active loans at end of period

As with the value of these loans, the projected number of active loans is a gauge of your credit operation’s expected outreach.

99 The number of clients and the portfolio per loan officer can also be tracked to gauge the efficiency of each credit officer, both over time and relative to others. One credit officer might make many small loans to new clients, while another might make fewer but larger loans to repeat clients. Thus, loan officers' performance should be evaluated on the basis of both the number of clients reached and the total amount disbursed.
Overall Growth in Borrowers

\[
\text{[First-time borrowers} - (\text{Active borrowers, end of period} - \text{Active clients, beginning of period})] \\
\text{Active clients at beginning of period}
\]

Borrower growth indicates how quickly your lending program is increasing outreach.

Client Dropout Rate

\[
1 - \frac{\text{Number of repeat loans issued during period}}{\text{Number of loans paid off during period}}
\]

As noted earlier, retaining a high percentage of clients is key to a microfinance institution's capacity to expand efficiently and profitably. Loans to repeat clients involve lower credit risk, are larger, and require less staff time than loans to new clients. Thus, a high dropout rate means high costs to maintain the projected portfolio, since staff must invest time in locating, screening and overseeing many first-time borrowers.

Total Voluntary Savings Deposits

\[
\text{Amount of savings deposits at end of period}
\]

As with the value of your portfolio, the amount of voluntary savings you have on deposit is an important gauge of your outreach.

Percentage Change in Savings Deposits

\[
\frac{\text{(Amount of deposits at end of period} - \text{Amount of deposits at beginning of period})}{\text{Amount of deposits at beginning of period}}
\]

Growth in savings mobilization is another gauge of how quickly you are increasing outreach in your savings program.

Number of Voluntary Depositors

\[
\text{Voluntary depositors at end of period}
\]

Number of depositors is a further measure of your outreach.
**Percentage Change in Depositors**

(\text{Depositors at end of period} - \text{Depositors at beginning of period})

Depositors at beginning of period

Growth in savings depositors is another gauge of how quickly you are increasing your outreach.

**Reviewing the Efficiency and Profitability Graphs**

Microfin provides a variety of efficiency and profitability graphs and graphing tools that assist you in analyzing your operations. You can access any of these graphs from the GRAPHS drop-down menu on the Microfin toolbar.

The graphs are located on the GRAPHS sheet, and accessed from the Graphs option on the Microfin toolbar. For additional information on using the graphs-related sheets, refer to “Generating and Reviewing Graphs Using the GRAPHS and USER GRAPH Sheets” on page 379.

Microfin provides six EFFICIENCY AND PROFITABILITY graphs:

- Cost Structure (% of Total/Performing Assets)
- Income and Expenses
- Overhead Percentage
- Operating Cost Ratio
- Operational and Financial Profitability
- AROE and AROE

Depending on your choice in the PROFITABILITY RATIOS AND TAXES drop-down list on the MODEL SETUP sheet, your ratios will reflect either pretax or after-tax data.

**Cost Structure (% of Total/Performing Assets)**

This area graph highlights trends in your institution’s efficiency by expressing the amount in each expense category as a percentage of the average total assets or average performing assets, depending on your choice of denominator from the MODEL SETUP sheet, line 7.04.

The outer shape of the graph illustrates your total expenses as a percentage of your total or performing assets. You can compare this amount to the average yield, or average effective interest rate, necessary to generate sufficient income to cover costs.
**Figure 11.20 Cost Structure (% of Total Assets)**

This line graph compares total income to total expenses per the income statement before adjustments.

**Figure 11.21 Income and Expenses**

This line graph compares total income to total expenses per the income statement before adjustments.
**Overhead Percentage**

As your institution grows, its administrative (or head office) expenses should decrease as a percentage of total operating expenses, due to economies of scale. This line graph displays trends in your institution’s overhead percentage. It includes personnel, other operating expenses and depreciation.

**Figure 11.22 Overhead Percentage**

![Overhead Percentage Graph]

**Operating Cost Ratio**

This line graph plots your institution’s operating cost ratio.

This ratio is one of the most significant efficiency indicators. It compares total operating costs (program and administrative personnel, operating expenses, and depreciation) to the outstanding portfolio. If your portfolio is growing faster than your expenses, then you are becoming increasingly efficient.
Operational and Financial Sustainability

This line graph displays both operational and financial sustainability over time.

Operational sustainability is defined as: earned income / (operating expenses + financial costs + loan loss provisions). Financial sustainability extends the definition of operating expenses in the operational sustainability formula to include adjustments for inflation, subsidies and in-kind donations.

Figure 11.23 Operating Cost Ratio

Figure 11.24 Operational and Financial Sustainability
AROA and AROE

This line graph presents both the ADJUSTED RETURN ON ASSETS (AROA) indicator and the ADJUSTED RETURN ON EQUITY (AROE) indicator. These indicators have been adjusted for inflation, subsidies and in-kind donations.

If your institution is highly leveraged (refer to the EQUITY MULTIPLIER graph on page 374), you will have a relatively large gap between AROA and AROE.

Figure 11.25 AROA and AROE

Reviewing Branch or Regional Income Statements and Analyses on the PROGRAM (BRANCH/REGION) Sheet

If you are modeling on a branch or region basis, Microfin generates an income statement and an income statement analysis for each branch or region (figures 11.26 and 11.27) on the PROGRAM (BRANCH/REGION) sheet. These income statements do not appear in consolidated models.

Optionally, choose the DETAILS button from the Microfin toolbar to display a detailed breakdown of financial income, by product.
The BRANCH/REGION INCOME STATEMENT section [lines 14.01 – 14.32] displays the income from operations for each of your branches or regions. Microfin displays your branch/regional financial income based on the projected activity for the branch or region from the LOAN PROJECTION INPUT section of this sheet. Microfin allocates financial costs and investment income based on the allocation methods you chose on the INST CAP sheet.

The BRANCH/REGION INCOME STATEMENT ANALYSIS section [lines 15.01 – 15.14], displays each income and expense category from the branch (or region) income statement, expressed as an annualized percentage of the branch/region’s average outstanding loan portfolio. Because Microfin does not generate branch or regional balance sheets, it cannot calculate these ratios using average total assets or average performing assets as a denominator, as it does for the institution-wide ratios.
Generating Branch/Regional Graphs

You can generate many of Microfin’s predefined graphs based on the information from a single, selected branch or region. For additional information on generation branch or regional graphs, refer to “Generating and Reviewing Graphs Using the GRAPHS and USER GRAPHS Sheets” beginning on page 379.

You can also generate your own custom graphs based on the contents of a line of branch-specific or region-specific data within the model. For additional information, refer to “Creating Custom Line Graphs Using the USER GRAPHS Sheet” on page 386.

Reviewing Institution-wide Analyses on the Admin (Head Office) Sheet

The ADMIN/HEAD OFFICE sheet includes a number of sections that aggregate or otherwise report on institution-wide data that you have entered throughout the model. They include the following:

- **LOAN PRODUCT OUTPUT** [lines 8.01 – 8.38]
- **SAVINGS PROJECTION** [lines 9.01 – 9.23]
- **INCOME** [lines 10.01 – 10.09]
- **FINANCIAL COSTS** [lines 11.01 – 11.16]
- **LOAN LOSS PROVISION AND WRITE-OFF** [lines 12.01 – 12.05]
- **LOAN OFFICER ANALYSIS** [lines 13.01 – 13.11]
- **NUMBER OF BRANCHES** (on branch and regional models only) [lines 14.01 – 14.02]
- **PROGRAM (BRANCH/REGION) STAFFING** [lines 15.01 – 15.38]
- **ADMINISTRATIVE (HEAD OFFICE) STAFFING** [lines 16.01 – 16.40]
- **PROGRAM (BRANCH/REGION) OTHER OPERATIONAL EXPENSES** [lines 17.01 – 17.24]
- **ADMINISTRATIVE (HEAD OFFICE) OTHER OPERATIONAL EXPENSES** [lines 18.01 – 18.25]
- **PROGRAM (BRANCH/REGION) FIXED ASSETS** [lines 19.01 – 19.17]
- **ADMINISTRATIVE (HEAD OFFICE) FIXED ASSETS** [lines 20.01 – 20.17]
- **LAND AND BUILDING ANALYSIS** [lines 21.01 – 21.17]
- **OTHER ASSETS ANALYSIS** [lines 22.01 – 22.11]
- **OVERHEAD ALLOCATION** (on branch and regional models only) [lines 23.01 – 23.07]
- **TAX CALCULATIONS** [lines 24.01 – 24.03]
- **IN-KIND SUBSIDY ANALYSIS** [lines 25.01 – 25.07]
There is no data entry in any of these sections. Instead, the sections summarize data that you have entered elsewhere throughout the model, and are provided as an analysis tool.

Figure 11.28a Aggregate Analysis Sections, ADMIN (HEAD OFFICE) Sheet (1 of 3)
<table>
<thead>
<tr>
<th>Loan Officer Analysis</th>
<th>Balance</th>
<th>1</th>
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<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>11</th>
<th>12</th>
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<tr>
<td>1050 Shifting levels by category</td>
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<td></td>
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<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>1055 Directing/Managing</td>
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<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>1057 Directing/Leading</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>1059 Instructing/Leading</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>1061 Other</td>
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<td>5</td>
<td>5</td>
<td>5</td>
<td>5</td>
<td>5</td>
<td>5</td>
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<td>5</td>
<td>5</td>
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<td>1065 Supervisors</td>
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<td>13</td>
<td>13</td>
<td>13</td>
<td>13</td>
<td>13</td>
<td>13</td>
<td>13</td>
<td>13</td>
<td>13</td>
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<td></td>
</tr>
<tr>
<td>1067 Sales</td>
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<td>12</td>
<td>12</td>
<td>12</td>
<td>12</td>
<td>12</td>
<td>12</td>
<td>12</td>
<td>12</td>
<td>12</td>
<td>12</td>
<td>12</td>
<td></td>
</tr>
<tr>
<td>1071 Product/Portfolio</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1075 Other</td>
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<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
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<tr>
<td>1091 Total number of Loan Officers</td>
<td>30,769</td>
<td>30,766</td>
<td>30,763</td>
<td>30,762</td>
<td>30,761</td>
<td>30,760</td>
<td>30,759</td>
<td>30,758</td>
<td>30,757</td>
<td>30,756</td>
<td>30,755</td>
<td>30,754</td>
<td></td>
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<tr>
<td>1091 Loan Officers per month</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
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<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td></td>
</tr>
</tbody>
</table>

**Number of Branches**

| 1401 Branches | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |

**Program-level Staffing**

| 1602 Job desc. and number | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |

**Admin-level Staffing**

| 1602 Job desc. and number | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |

| 1726 Other Op. Exp. | 450 | 450 | 450 | 450 | 450 | 450 | 450 | 450 | 450 | 450 | 450 | 450 |
| 1732 Transportation | 1,250 | 1,250 | 1,250 | 1,250 | 1,250 | 1,250 | 1,250 | 1,250 | 1,250 | 1,250 | 1,250 | 1,250 |
| 1736 General/Office Expense | 640 | 640 | 640 | 640 | 640 | 640 | 640 | 640 | 640 | 640 | 640 | 640 |
| 1738 Property Maintenance/Insurance | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 |
| 1740 Miscellaneous expenses | 257 | 257 | 257 | 257 | 257 | 257 | 257 | 257 | 257 | 257 | 257 | 257 |
| 1742 Program Other Op. Exp. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

**Admin-level Other Op. Exp.**

| 1720 Data | 450 | 450 | 450 | 450 | 450 | 450 | 450 | 450 | 450 | 450 | 450 |
| 1736 Transportation | 1,250 | 1,250 | 1,250 | 1,250 | 1,250 | 1,250 | 1,250 | 1,250 | 1,250 | 1,250 | 1,250 |
| 1738 General/Office Expense | 640 | 640 | 640 | 640 | 640 | 640 | 640 | 640 | 640 | 640 | 640 |
| 1740 Property Maintenance/Insurance | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 |
| 1742 Program Other Op. Exp. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

**Program-level Other Op. Exp.**

| 1720 Data | 450 | 450 | 450 | 450 | 450 | 450 | 450 | 450 | 450 | 450 | 450 |
| 1736 Transportation | 1,250 | 1,250 | 1,250 | 1,250 | 1,250 | 1,250 | 1,250 | 1,250 | 1,250 | 1,250 | 1,250 |
| 1738 General/Office Expense | 640 | 640 | 640 | 640 | 640 | 640 | 640 | 640 | 640 | 640 | 640 |
| 1740 Property Maintenance/Insurance | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 |
| 1742 Program Other Op. Exp. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
### Administration Costs and Aggregated Activity Sheet

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<tr>
<th>Program-Level Fixed Assets</th>
<th>Initial</th>
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<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
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<td>0</td>
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<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
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<tr>
<td>Undepreciated cost</td>
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<td>0</td>
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<tr>
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<td>6,000</td>
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<tr>
<td>Administrative Office Furniture</td>
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<td>Vehicles</td>
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<tr>
<td>Total gross value</td>
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<td>17,512</td>
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<tr>
<td>Net value of fixed assets</td>
<td>11,000</td>
<td>12,000</td>
<td>12,000</td>
<td>12,000</td>
<td>12,000</td>
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<td>12,000</td>
<td>12,000</td>
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</tr>
<tr>
<td>Less: Accumulated Depreciation</td>
<td>235</td>
<td>235</td>
<td>235</td>
<td>235</td>
<td>235</td>
<td>235</td>
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<td>235</td>
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<tr>
<td>Net fixed assets/Rathered</td>
<td>0</td>
<td>0,000</td>
<td>0,000</td>
<td>0,000</td>
<td>0,000</td>
<td>0,000</td>
<td>0,000</td>
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<td>0,000</td>
<td>0,000</td>
<td>0,000</td>
</tr>
</tbody>
</table>

### Land and Building Analysis

#### Land Analysis

| Total acres of land | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

#### Building Analysis

| Total months building occupation | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Underlying cost | - | - | - | - | - | - | - | - | - | - | - | - |
| Total gross value | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Less: Accumulated Depreciation | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Net value of buildings | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

#### Other Assets Analysis

| Total months of acquisition | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Acquired on hand | - | - | - | - | - | - | - | - | - | - | - | - |
| Total gross value | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Less: Accumulated Depreciation | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Net value of other long-term assets | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

#### Tax Calculations

| Amount of taxes paid | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Adjustments for baddelections | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

### In-Kind Subsidy Analysis

| Total in-kind subsidies received | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Adjusted for baddelections | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
Financial Modeling as a Management Tool
Chapter 12
Financial Modeling as a Management Tool

Business planning does not end when you complete your initial operational plan and financial model. Your business plan and its financial projections should serve as ongoing tools for management.

Microfin provides facilities such as the EXPORT, SCENARIO and VARIANCE ANALYSIS sheets to assist you in evaluating business alternatives and monitoring your institution’s long-term performance.

Using the EXPORT Sheet to Export or Import the Data in a Microfin Workbook

Microfin includes an optional export/import facility that allows you to extract the essential data from a Microfin model—including all required and optional data entry—and to store the data in a small Excel data file.

Using this same facility and one of the extracted data files, you can import the data back into a blank Microfin workbook to restore your projections.

There are a number of uses for this export/import facility and the resulting, smaller Excel data files. You can:

- archive projections data
- easily transfer projections from one computer to another
- email projections
- transfer projections from an older version of Microfin into a newer version (i.e., the Excel data files are upwardly compatible from version 2.9 to 3.0)
- integrate data from multiple projections files into a single Microfin workbook
The export/import facility cannot, however:

- transfer projections from a newer version of Microfin into an older version (i.e., the Excel data files are not downwardly compatible)
- correct errors that sometimes occur in formulas that reference other sheets; but it does alert you to the existence of these errors so that you can review and correct them

**Figure 12.1 Export Sheet**

1. Open the Microfin workbook from which you intend to export data.
2. Select MISCELLANEOUS TOOLS / EXPORT-IMPORT SHEET from the GO TO menu on the Microfin toolbar.

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100 The illustration includes a display of summary numbers from the last import procedure.
3. On the EXPORT sheet, choose the EXPORT DATA button. Microfin displays the five-step EXPORT WIZARD. (You can also run this wizard from OPTIONS / RUN A MICROFIN WIZARD on the Microfin toolbar.)

4. Briefly review the information on the WELCOME window for an explanation of the wizard.

Microfin Export Wizard Step 1 of 5

Welcome to the Export Wizard!

This wizard will help you export the data you have entered into the model to a small data file. That file may be emailed, stored on your hard drive as a backup, used to save a scenario, transfer your data to another computer via floppy disk, or create a branch-level planning worksheet for your branch staff.

As you proceed, click the NEXT button to move to the next step. If you change your mind and wish to return to a previous step, click the PREVIOUS button. You may click the CANCEL button to leave the Export Wizard at any time.

Next  Previous  Cancel  Finish

5. After you make your selections on each window in the wizard, choose:
   - NEXT to advance to the following setup window
   - PREVIOUS to return to the prior window
   - CANCEL to end your use of the EXPORT WIZARD without saving your entries
   - FINISH (on the final window) to complete your use of the wizard and return to Microfin.
6. Enter descriptive text to fully describe the projections to be exported. To insert a line break within your text, use the SHIFT + ENTER keys.

**Scenario Description**

Enter a description to be stored with this data. Try to be explicit, because when you retrieve this data a few weeks from now, you'll forget what the scenario is.

| Description: | PECA Data Set  
2001 - 2005  
Final Projections |

This description displays when you import the data into another Microfin model to ensure that you import the correct information.

7. If you would like to include the data from the model’s USER-DEFINED sheet(s) in the exported data file, check the INCLUDE USER-DEFINED SHEETS IN THE EXPORT PROCESS box. This option results in a larger data file and a slower export/import process.

**Include User-Defined Sheets**

Microfin offers the option to include all customization of the User-Defined Sheets in the Export process. These sheets will be recreated in the new Microfin file during the Import process. Including the User-Defined Sheets slows the Export process and also results in a larger data file. Select this option only if you have customized the User-Defined Sheets.
8. If you would like to create a branch- or region-specific data file that contains data from the MODEL SETUP, PRODUCTS and INST CAP sheets only, check the CREATE A DATA FILE FOR BRANCH / REGION PLANNING box.

Create a Branch-level planning model

You may use the Export process to create a data file with information from MODEL, SETUP, PRODUCTS, and INST, CAP. When this data file is imported into a new Microfin file, it will create a version of Microfin that can be used by Branch or Regional Managers to develop a plan for their own Branch/Region. They have access ONLY to the BRANCH sheet, where they can set their projections. Data on products, inflation, etc., is drawn from information you provide via the Export data file. When they finish, they can use the IMPORT process to send their branch-level plan back to you.

If you check this box, Microfin displays a verification window:

Create a data file that will generate a Branch/Region planning model

When the information from the data file is reimported into a Microfin model, your branch or regional staff can only access and edit branch- or region-level data. After their edits are complete, they can re-export the data into another, small Excel file that can be consolidated with the data files from your other branches or regions. For additional information, refer to “Creating a Branch- or Region-specific Planning Model” and “Consolidating Branch or Regional Planning Models” below.
9. Choose the Finish button to begin the export process—or the Cancel button to abort. The entire export process may take several minutes.

10. While the process is running, Microfin automatically maintains a small progress display at the top of the sheet.

11. After the export process finishes, Microsoft prompts you to enter a file name for this new Excel data file and establish the location where the data file will be saved.

Do not enter an extension (e.g., “.xls”) as part of the file name. Microfin automatically defines the extension.
12. Choose the OK button to complete the process and return to Microfin.

Creating a Branch- or Region-specific Planning Model

At your option, Microfin can create planning models that contain institution-wide data on the MODEL SETUP, PRODUCTS, and INST CAP sheets only. You can then distribute copies of this planning model to your branch or regional personnel, who enter additional information that is specific to the branch or region.

Later, you can collect the completed planning models from your branches or regions and then consolidate them to create institution-wide projections. For additional information, refer to “Consolidating Branch or Regional Planning Models” on page 435.

Procedure to create a branch/region planning model — EXPORT sheet:

1. Open Microfin’s blank template file and complete the entries on the SETUP WIZARD.

2. On the MODEL SETUP sheet, choose either a branch-based approach to create a branch planning model, or region-based approach to create a regional planning model. [line 2.08] Then add the desired number of branch or region sheets. [line 2.14]

3. Enter all of the institution-wide data on the MODEL SETUP sheet. For information on using this sheet, refer to “Using the MODEL SETUP Sheet to Establish a New Model” on page 110.

4. Enter all institution-wide data on the PRODUCTS sheet. For information on using this sheet, refer to “Using the PRODUCTS Sheet to Define Loan and Savings Products” on page 144.

5. Enter all institution-wide data on the INST CAP sheet. For information on using this sheet, refer to “Using the INST CAP Sheet to Enter General Information for Institutional Resources and Capacity” on page 235.

6. On the EXPORT sheet, choose the EXPORT DATA button to create an Excel data file containing the information you have entered. For detailed instructions on creating this data file, refer to “Using the EXPORT WIZARD to Export a Complete Workbook” on page 426.
7. Distribute a copy of the Excel data file (and a copy of Microfin, if not already installed) to each of your branches or regions.

8. Ask the staff at each of your branch or regional offices to install Microfin and import the contents of the Excel data file as described in “Importing or Restoring a Workbook” immediately below.

Because the staff are importing from a branch/region data file, Microfin displays an additional window at the beginning of the import process, to which they should answer YES:

9. Then, ask the staff to enter their branch-specific or region-specific data on the PROGRAM (BRANCH/REGION) sheet in the resulting Microfin model.

10. When your staff have completed their entries, they should re-export the Microfin data to create a new Excel data file and return that new file to you for consolidation. (During the export process from the branch/region planning model, the EXPORT WIZARD will not display the step-four window with the check box to create a branch/region planning model.)

For detailed instructions on consolidating data files, refer to “Consolidating Branch or Regional Planning Models” on page 435.

**Importing or Restoring a Workbook**

When you import saved data into an existing Microfin model, you have two options. You can import from a data file that contains:

- all of the data in your Microfin model
- only the data that relates to an individual branch or region within your model

**Procedure to import a saved Microfin workbook – Export sheet:**

1. Open the Microfin workbook into which you intend to import data.
2. Select MISCELLANEOUS TOOLS / EXPORT-IMPORT SHEET from the GO TO menu on the Microfin toolbar.
3. On the EXPORT sheet, choose the IMPORT DATA button.
4. Microfin displays a message window, then asks you to identify the data file that you intend to import:

![Microfin Notification]

NOTE: On the next screen, select the name of the data file you wish to import.

![Open]

5. Microfin displays the scenario description that you entered when the data file was created, to verify that you are importing the correct data set. Choose YES to continue.

![Microsoft Excel]

NOTE: This file has the following scenario description:

Description: Frederica Enterprise Development Asia Model
Forecast Period Beginning with Fiscal Year 2001
Final Projections

Do you want to import data from this file?

![Yes No]
6. Microfin displays a warning to notify you that the import process will erase all data from the existing, open model. Choose YES to proceed.

Microfin may display one or more additional notification windows before it actually begins the import process.

7. When the import process is complete, Microfin compares certain five-year summary values from the original model—such as TOTAL ASSETS and ENDING CASH BALANCE—with the same summary values in the restored model. It also informs you of any discrepancies.

Generally, these summary values will be identical in the original and new models. However, they may differ if you are importing data created from an older version of Microfin; enhancements to Microfin’s design may have impacted the calculations.

8. If Microfin notes any differences in these values between the two models, choose the SHOW SUMMARY NUMBERS button at the top of the sheet to display additional information:

<table>
<thead>
<tr>
<th>Summary of Year 5 Numbers</th>
<th>Original</th>
<th>New</th>
</tr>
</thead>
<tbody>
<tr>
<td>Release Number of Microfin</td>
<td>2.00</td>
<td>2.00</td>
</tr>
<tr>
<td>Release Date of Microfin</td>
<td>23-Jan-01</td>
<td>9-Feb-01</td>
</tr>
<tr>
<td>Total Assets</td>
<td>4,689,045</td>
<td>4,693,802</td>
</tr>
<tr>
<td>Total Financial Income</td>
<td>1,513,283</td>
<td>1,513,283</td>
</tr>
<tr>
<td>Ending Cash Balance</td>
<td>216,499</td>
<td>216,499</td>
</tr>
<tr>
<td>Total Loan Portfolio</td>
<td>3,772,497</td>
<td>3,772,497</td>
</tr>
</tbody>
</table>

9. Review the comparison data carefully and investigate the source of any differences. Make any necessary changes to the data in your new model.

To assist you in this effort, Microfin provides a list of design changes by version number. To review this information, choose ABOUT MICROFIN / LIST CHANGES BY VERSION from Microfin’s OPTIONS menu.
Consolidating Branch or Regional Planning Models

You consolidate the various branch or regional data files created by your field-office staff using your original Microfin model and the facilities on the EXPORT sheet.

Procedure to consolidate multiple branch or region workbooks — Export sheet:

1. Open the Microfin workbook from which you created the planning-model data files for your branches or regions.

2. From the EXPORT sheet, choose the IMPORT button and select one of the completed data files that you received from your branch or regional offices. Microfin displays the description of the selected file for verification:

   Microsoft Excel

   NOTE: This file has the following scenario description:
   Description: From branch planning model
   To consolidated model
   Do you want to import data from this file?
   [ ] Yes [ ] No

3. Choose YES and Microfin displays the following window:

   Microsoft Excel

   Enter the NUMBER of the Branch Page to use for this data [must be between 1 and 10]:
   [ ] OK [ ] Cancel

   3

4. Enter a sequence number (between one and ten) to identify the specific branch or region sheet into which the data will be imported. This number represents the position of this branch or region sheet among all of the branch or region sheets in the model. Then choose OK. Microfin displays a verification window:

   Choose branch sheet of Master Microfin

   Do you wish to load this data onto branch sheet 2
   [ ] Yes [ ] No
5. Choose YES to import the data, NO to cancel the procedure. Microfin displays the following window to indicate that the data has imported successfully.

![Microsoft Excel](image)

SUCCESS: It appears that the data has imported correctly.

6. Repeat the import process for each data file provided by your various branch or regional offices.

7. Review and edit the projections in the consolidated model, as appropriate.

**Using the SCENARIOS Sheet (Scenario Manager) for Sensitivity Analysis**

As you develop your financial projections, you will likely encounter elements of your plan which involve a greater degree of uncertainty than do other elements. For example, you may find it difficult to accurately project inflation rates for the next five years. Similarly, you may be uncertain regarding your institution’s ability to attract the projected number of new clients. In order to complete your projections, you make educated guesses, but the uncertainty remains.

To address these uncertainties, you can perform a sensitivity analysis. This analysis helps you to determine how sensitive your projections are to variations in the underlying assumptions. For example, you can analyze the impact of small underestimations or overestimations in the inflation rate on key projections in your model. Similarly, you can quantify the implications of a lower-than-anticipated client-growth rate on your plan.

Sensitivity analysis can also highlight those elements of your plan that have the greatest potential impact on your projected performance. As a result, performing such an analysis can help you to better understand the dynamic interactions that influence your institution’s future, and allow you to refine your strategy and projections as appropriate.

**Performing a Sensitivity Analysis**

Sensitivity analysis requires that you generate two or more alternative scenarios. Microfin provides a SCENARIOS sheet to assist you in creating, evaluating and documenting your sensitivity analyses.

If you do not see the SCENARIO tab on the bottom of your Microfin screen, select MISCELLANEOUS TOOLS / SHOW SCENARIO MANAGER from the OPTIONS drop-down menu.
### Scenario Manager Sheet

**Explanation**

- The Scenario Manager Sheet allows you to compare the model and output indicators for different scenarios. This provides an overview of the sensitivity of your projections to various factors. The end of this sheet also provides a section for recording different scenarios you record within the Export utility.

#### Step 1: Decide how many rows to display

- **Number of input lines to show**: 5 (Maximum of 20)
- **Number of output lines to show**: 5 (Maximum of 30)

This will automatically show the indicated number of rows in the Scenario summary section (further down in **Step 4**).

#### Step 2: Define input and output rows

1. Write descriptions of key input and output rows in the "Description" column.
2. Create a formula in the "Formula" column that draws a value from another in the model.
3. Click the DEMO button to fill in its display.

**WARNING:** This will overwrite the first two rows of the input and output sections!

After you enter how the formulas are created, you may delete this demo information with the DEL key.

4. Assign an appropriate numerical format to the "Format" column.
5. First, select all of the cells to be formatted.
6. Next, click on the PageSet button that provides the desired numerical format.

#### Step 3: Create a scenario

Develop a scenario by modifying all input variables in microfin and reviewing the graphs until you have completed the scenario. You should modify most of the variables you modify in the input section below.

#### Step 4: Copy the scenario to one of the columns

Once the scenario is fully defined, you can use the COPY button to copy these values to one of the ten columns. You can then alter any information in microfin to create a new scenario, and then return here to view the output copied to that column.

#### Scenario Manager Sheet

<table>
<thead>
<tr>
<th>Name</th>
<th>Base</th>
<th>Inflation</th>
<th>Interest Rate</th>
<th>Clients</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stan 1</td>
<td>Stan 2</td>
<td>Stan 3</td>
<td>Stan 4</td>
<td>Stan 5</td>
</tr>
<tr>
<td>Copy</td>
<td>Clear</td>
<td>Copy</td>
<td>Clear</td>
<td>Copy</td>
</tr>
<tr>
<td>Stan 1</td>
<td>Stan 2</td>
<td>Stan 3</td>
<td>Stan 4</td>
<td>Stan 5</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Key Inputs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Description</td>
</tr>
<tr>
<td>Inflation rate, Year 5</td>
</tr>
<tr>
<td>Number of clients, Year 6</td>
</tr>
<tr>
<td>Interest rate, Year 5</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Key Outputs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Description</td>
</tr>
<tr>
<td>Financial Sustainability, Year 6</td>
</tr>
<tr>
<td>OpCap Cost Rate, Year 5</td>
</tr>
<tr>
<td>Portfolio, Year 5</td>
</tr>
</tbody>
</table>

#### Step 5: Name and describe the scenario

- **Name**: Use the options below to provide a name and description for the scenario.

#### Step 6: [Optional] Store the complete scenario using Export

If you wish, go to the EXPORT sheet and store the complete scenario so that it may be reviewed at a later time.
General procedure to perform a sensitivity analysis — Scenarios sheet:

1. Evaluate your initial projections to determine whether they are consistent with your institutional and program objectives. After you have generated what you consider to be an optimal scenario, you can begin to develop alternative scenarios for comparative purposes.

2. Use Excel’s SAVE AS command to store your original scenario. Alternatively, you may use Microfin’s EXPORT facility to store these projections in a small data file. For additional information, refer to “Using the EXPORT Sheet to Export or Import the Data in a Microfin Workbook” beginning on page 425.

3. Identify the key input variables for your sensitivity analysis. These are the items of entered data that you consider to be the most uncertain (e.g., inflation rate, number of clients) or the most essential (e.g., interest rate, retention rate), and that you believe will have a significant impact on your projections.

4. Identify the key outputs (items of calculated or projected data) that you wish to monitor (e.g., operational sustainability, operating cost ratio). The graphs and ratios are useful tools for this purpose.

5. Change, or flex, the values for each of your input variables, as appropriate.

6. Analyze the impact of each change on the key outputs that you have selected.

7. If you find the scenario to be helpful or informative, you may store it for future reference. Microfin provides ten columns (one per scenario) for this purpose. To do so, SAVE your file.

8. Repeat the process, as necessary, for each scenario.

Creating and Storing Scenarios

Microfin’s Scenarios sheet allows you to analyze the impact that variations in key data-input assumptions have on a variety of important outputs. You can create and store up to ten different custom scenarios using Microfin’s Scenarios sheet. Each scenario includes the same user-defined input and output components, only the data values vary among the scenarios.

You are limited to a maximum of 20 inputs and 30 outputs for your scenarios. If you wish to save a comprehensive scenario—not just the key input and output values maintained on this sheet—in order to recreate it at a later date, you should use Microfin’s EXPORT tool instead. For additional information, refer to “Using the EXPORT Sheet to Export or Import the Data in a Microfin Workbook” on page 425.

The major activities required to create and store your scenarios are as follows:

1. Define the elements of each scenario—i.e., the specific input and output data elements. [page 439]

2. Generate the data for each scenario by editing the input values in Microfin, then create, name, and save each scenario. [page 441]
**Procedure to define the elements of the scenarios — Scenarios sheet:**

The most significant inputs and outputs are different for each business plan; they cannot be predefined. Instead, Microfin provides you with full control over the definition of these inputs and outputs. Defining these key inputs and outputs is, perhaps, the most critical step in the process; they require careful consideration.

1. **Define the Number of Input Lines To Show** for your scenarios. [line 1.03]
   Each input line represents a single data element—a key item of information that you intend to modify in order to generate the different scenarios. You should create an input line for each value that you expect to have a significant impact on your projections.

   You are limited to 20 input lines. Microfin automatically hides all unused lines.

2. **Define the Number of Output Lines To Show** for your scenarios. [line 1.04]
   Each output line represents a single data element—a key item of projected or calculated information that you intend to monitor for your various scenarios. You should create an output line for each important value that you expect will change as a result of changes in inputs.

   You are limited to 30 output lines. Microfin automatically hides all unused lines.

*For each input line, complete steps three through five:*

3. **Enter a Description** for each of the key inputs in your scenario. [lines 2.07 – 2.26]

   For example, if you wish to see the impact of inflation, you can identify one input line as **Inflation Rate, End of Year 5**. \(^{101}\) For different scenarios, you will enter different inflation rates.

   In choosing the input variables to modify, consider the following:
   - What would happen if you changed the effective interest rate?
   - What would happen if you changed the effective loan term?
   - What would happen if you changed the client retention rates?
   - What impact would a higher long-term loan default rate have?
   - What would happen if you succeeded in increasing the caseload for your loan officers?

---

\(^{101}\) Note that, as defined, this input line will only indicate the inflation rate as of the end of year five. It will not indicate the other inflation rates throughout the five years or the month the inflation rate reached its final level. If you wish more detail, you should define additional input lines.
4. Create a Formula to link each input line to a value entered in Microfin. [lines 2.07 – 2.26] Optionally, you can use the DEMO button [line 1.12] to fill in the first two input and output lines with sample descriptions and formulas so that you can see what a completed input link looks like.

To create your own formula, follow the standard Excel procedure:

- With your cursor on the desired FORMULA cell [lines 2.07 – 2.26] choose the equal (=) key on your keyboard.
- Using your mouse and cursor, identify the sheet/cell that you intend to reference as input for your scenario.
- After you have selected the cell, choose the ENTER key to complete the formula.

If you need additional assistance, refer to Excel’s online Help facility. As a starting point, search for the key word of “formulas” in the CONTENTS AND INDEX section.

5. Assign an appropriate numerical format to your new link formula.

Because the SCENARIOS sheet is protected, you must use the various format buttons on the pagebar for this purpose. Select the cell you wish to format, then choose on the appropriate format button from the pagebar.

For each output line, complete steps six through eight:

6. Enter a Description for each of the key outputs in your scenario. [lines 2.30 – 2.59]

Typically, you will define output values as of the end of year five, such as TOTAL ACTIVE CLIENTS, ALL PRODUCTS, END OF YEAR 5 or ADJUSTED ROA, END OF YEAR 5.

7. Create a Formula to link each output line to a value generated by Microfin. [lines 2.07 – 2.26] Optionally, you can use the DEMO button [line 1.12] to fill in the first two input and output lines with sample descriptions and formulas so that you can see what a completed output link looks like.

8. Assign an appropriate numerical format to your new link formula.

Because the SCENARIOS sheet is protected, you must use the various format buttons on the pagebar for this purpose. Select the cell you wish to format, then choose on the appropriate format button from the pagebar.
Procedure to generate and store for each scenario — Scenarios sheet:

In generating data for a scenario, you are playing “What If.” Every scenario represents a possible alternative business outcome, or set of circumstances—one that differs from your primary projections in one or more important ways. As such, each requires careful consideration.

1. Throughout your model, edit the input variables as necessary to fashion your scenario. While you can modify the values in any blue or gray input cells that you deem appropriate, you should focus on the scenario’s key input items that you defined on the Scenarios sheet. If you modify too many inputs in a scenario, it can be difficult to isolate the source of a resulting change in an output value.

   Be sure to note each input variable that you change, and the pre-change value, so that you can restore the original data at a later point in the analysis.

2. Choose RECALC (F9). If you have constructed your automated links appropriately, all of the key outputs will automatically update.

3. Carefully review your new scenario using the scenario outputs, as well as Microfin’s summary reports, graphs, financial statements, ratios and NAVIGATOR sheet to ensure that you have correctly implemented your scenario and considered all its implications.

4. Implement changes to the scenario, as necessary.

5. Optionally, repeat the process for additional scenarios.

6. When you are satisfied with the data in your scenario, choose the COPY button [line 2.02] in any one of the ten scenario columns to copy the current scenario’s key inputs and outputs into the cells in the column. This action replaces any information that is currently stored in the column.

7. Optionally, you may clear the data from any column by choosing that column’s CLEAR button. [line 2.03] You may provide a brief description of the scenario using the gray input cells at the head of each column.

8. Enter a NAME to briefly describe the scenario. [line 2.05]

9. Enter a more detailed NAME and DESCRIPTION for the scenario. [lines 2.66 – 2.75]

10. If you would like to keep a complete copy of all of the data for this scenario—not just the key input and output values—use Microfin’s EXPORT sheet to create a data file. Enter the FILE NAME for the scenario. [lines 2.66 – 2.75]

11. Restore your Microfin data to its original state, excluding the information on this Scenarios sheet.

12. Save your Microfin model.

13. Optionally, repeat the process for additional scenarios.
Using the VAR ANALYSIS Sheet to Analyze Monthly or Quarterly Performance Variances

You can use your financial projections as targets, or benchmarks, against which to measure your actual performance. By comparing your actual results with projected benchmarks, you can assess your institution’s progress toward achieving the quantitative goals in its plan.

If actual results differ significantly from your projections, you are faced with the following two possible explanations, each of which calls for a different course of action.

- Your strategy is unrealisic. For example, your growth projections might be too ambitious given your institution’s capacity, or your expected financing may not have materialized. In this case, you need to revise your strategy, projected objectives and activities in order to devise an achievable plan.

- Your strategy is realistic, but you encounter problems in implementing it. Examples include a failure to review, disburse and follow up on loans promptly or to offer training programs for your loan officers to strengthen their performance. In any of these instances, you need to refocus your efforts on your key objectives and activities as articulated in the plan, so that implementation improves.

In either case, your business plan provides an important reference point.

You can also use your plan and financial projections to gauge how well your institution is achieving its broader goals and objectives by comparing your progress against such objectives as:

- outreach—number of clients, amount of disbursements
- resource mobilization—commercial and concessional debt, grant funds, savings deposits
- staffing levels—number of loan officers, caseload per loan officer
- institutional development activities—implementation of an MIS, number of loan officers trained

Microfin’s optional VARIANCE ANALYSIS tool compares your actual data—as input by you—with Microfin’s projected data. It does so on a month-by-month or a quarterly basis, for the first year of your financial projections.
12. Financial Modeling as a Management Tool

**Figure 12.3a Data Entry Columns, VAR ANALYSIS Sheet**

### Variance Analysis

#### Income Statement

<table>
<thead>
<tr>
<th></th>
<th>Total</th>
<th>Jan-01</th>
<th>Feb-01</th>
<th>Mar-01</th>
<th>Apr-01</th>
<th>May-01</th>
<th>Jun-01</th>
<th>Jul-01</th>
<th>Aug-01</th>
<th>Sep-01</th>
</tr>
</thead>
<tbody>
<tr>
<td>Revenue</td>
<td>$15,500</td>
<td>$16,700</td>
<td>$16,000</td>
<td>$16,725</td>
<td>$17,168</td>
<td>$17,549</td>
<td>$19,000</td>
<td>$21,259</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Costs</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Expenses</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Net Income</td>
<td>$15,500</td>
<td>$16,700</td>
<td>$16,000</td>
<td>$16,725</td>
<td>$17,168</td>
<td>$17,549</td>
<td>$19,000</td>
<td>$21,259</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Financials</td>
<td>$15,500</td>
<td>$16,700</td>
<td>$16,000</td>
<td>$16,725</td>
<td>$17,168</td>
<td>$17,549</td>
<td>$19,000</td>
<td>$21,259</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Balance Sheet

<table>
<thead>
<tr>
<th></th>
<th>$102,000</th>
<th>$103,000</th>
<th>$104,000</th>
<th>$105,000</th>
<th>$106,000</th>
<th>$107,000</th>
<th>$108,000</th>
<th>$109,000</th>
<th>$110,000</th>
<th>$111,000</th>
<th>$112,000</th>
<th>$113,000</th>
<th>$114,000</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cash</td>
<td>$91,400</td>
<td>$92,000</td>
<td>$92,600</td>
<td>$93,200</td>
<td>$93,800</td>
<td>$94,400</td>
<td>$95,000</td>
<td>$95,600</td>
<td>$96,200</td>
<td>$96,800</td>
<td>$97,400</td>
<td>$98,000</td>
<td>$98,600</td>
</tr>
<tr>
<td>Accounts Payable</td>
<td>$50,000</td>
<td>$50,500</td>
<td>$51,000</td>
<td>$51,500</td>
<td>$52,000</td>
<td>$52,500</td>
<td>$53,000</td>
<td>$53,500</td>
<td>$54,000</td>
<td>$54,500</td>
<td>$55,000</td>
<td>$55,500</td>
<td>$56,000</td>
</tr>
<tr>
<td>Total Liabilities</td>
<td>$141,400</td>
<td>$142,000</td>
<td>$142,600</td>
<td>$143,200</td>
<td>$143,800</td>
<td>$144,400</td>
<td>$145,000</td>
<td>$145,600</td>
<td>$146,200</td>
<td>$146,800</td>
<td>$147,400</td>
<td>$148,000</td>
<td>$148,600</td>
</tr>
<tr>
<td>Total Assets</td>
<td>$243,400</td>
<td>$244,000</td>
<td>$244,600</td>
<td>$245,200</td>
<td>$245,800</td>
<td>$246,400</td>
<td>$247,000</td>
<td>$247,600</td>
<td>$248,200</td>
<td>$248,800</td>
<td>$249,400</td>
<td>$250,000</td>
<td>$250,600</td>
</tr>
</tbody>
</table>

### Ratio Analysis

<table>
<thead>
<tr>
<th>Ratio</th>
<th>Total</th>
<th>Jan-01</th>
<th>Feb-01</th>
<th>Mar-01</th>
<th>Apr-01</th>
<th>May-01</th>
<th>Jun-01</th>
<th>Jul-01</th>
<th>Aug-01</th>
<th>Sep-01</th>
<th>Oct-01</th>
<th>Nov-01</th>
<th>Dec-01</th>
</tr>
</thead>
<tbody>
<tr>
<td>EPS</td>
<td>6.0%</td>
<td>4.4%</td>
<td>4.2%</td>
<td>4.0%</td>
<td>3.8%</td>
<td>3.6%</td>
<td>3.4%</td>
<td>3.2%</td>
<td>3.0%</td>
<td>2.8%</td>
<td>2.6%</td>
<td>2.4%</td>
<td>2.2%</td>
</tr>
<tr>
<td>Current Ratio</td>
<td>1.0</td>
<td>1.00</td>
<td>1.00</td>
<td>1.00</td>
<td>1.00</td>
<td>1.00</td>
<td>1.00</td>
<td>1.00</td>
<td>1.00</td>
<td>1.00</td>
<td>1.00</td>
<td>1.00</td>
<td>1.00</td>
</tr>
<tr>
<td>Debt-to-Equity</td>
<td>0.50</td>
<td>0.50</td>
<td>0.50</td>
<td>0.50</td>
<td>0.50</td>
<td>0.50</td>
<td>0.50</td>
<td>0.50</td>
<td>0.50</td>
<td>0.50</td>
<td>0.50</td>
<td>0.50</td>
<td>0.50</td>
</tr>
<tr>
<td>Interest Coverage</td>
<td>2.0</td>
<td>2.00</td>
<td>2.00</td>
<td>2.00</td>
<td>2.00</td>
<td>2.00</td>
<td>2.00</td>
<td>2.00</td>
<td>2.00</td>
<td>2.00</td>
<td>2.00</td>
<td>2.00</td>
<td>2.00</td>
</tr>
</tbody>
</table>

102 The information on the VAR ANALYSIS sheet is not part of the FEDA case study.
### Figure 12.3b Variance Columns, VAR ANALYSIS Sheet

**Table: Variance Analysis**

<table>
<thead>
<tr>
<th>Variances</th>
<th>December 31</th>
<th>March 31</th>
<th>June 30</th>
<th>December 31</th>
<th>March 31</th>
<th>June 30</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Income Statement</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Total Financial Income</strong></td>
<td>15,550</td>
<td>15,495</td>
<td>100%</td>
<td>32,398</td>
<td>31,528</td>
<td>102%</td>
</tr>
<tr>
<td><strong>Financial Costs</strong></td>
<td>2,375</td>
<td>2,375</td>
<td>100%</td>
<td>7,152</td>
<td>7,125</td>
<td>101%</td>
</tr>
<tr>
<td><strong>Loss on Borrowings</strong></td>
<td>0</td>
<td>0</td>
<td>0%</td>
<td>0</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td><strong>Operating Income</strong></td>
<td>13,175</td>
<td>13,123</td>
<td>100%</td>
<td>25,246</td>
<td>24,403</td>
<td>101%</td>
</tr>
<tr>
<td><strong>Net Operating Income</strong></td>
<td>10,195</td>
<td>10,124</td>
<td>100%</td>
<td>22,219</td>
<td>22,276</td>
<td>102%</td>
</tr>
<tr>
<td><strong>Net Financial Income</strong></td>
<td>10,195</td>
<td>10,124</td>
<td>100%</td>
<td>22,219</td>
<td>22,276</td>
<td>102%</td>
</tr>
<tr>
<td><strong>Operating Costs</strong></td>
<td>1,290</td>
<td>1,290</td>
<td>100%</td>
<td>2,575</td>
<td>2,529</td>
<td>101%</td>
</tr>
<tr>
<td><strong>Depreciation</strong></td>
<td>1,290</td>
<td>1,290</td>
<td>100%</td>
<td>2,575</td>
<td>2,529</td>
<td>101%</td>
</tr>
<tr>
<td><strong>Cost of Goods Sold</strong></td>
<td>1,290</td>
<td>1,290</td>
<td>100%</td>
<td>2,575</td>
<td>2,529</td>
<td>101%</td>
</tr>
<tr>
<td><strong>Total Operating Costs</strong></td>
<td>13,980</td>
<td>13,929</td>
<td>100%</td>
<td>27,769</td>
<td>27,546</td>
<td>101%</td>
</tr>
<tr>
<td><strong>Net Income</strong></td>
<td>13,792</td>
<td>13,771</td>
<td>100%</td>
<td>24,674</td>
<td>24,474</td>
<td>101%</td>
</tr>
<tr>
<td><strong>Available for Distribution</strong></td>
<td>13,792</td>
<td>13,771</td>
<td>100%</td>
<td>24,674</td>
<td>24,474</td>
<td>101%</td>
</tr>
<tr>
<td><strong>Balance Sheet</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Assets</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Current Assets</strong></td>
<td>15,050</td>
<td>15,110</td>
<td>100%</td>
<td>31,098</td>
<td>31,058</td>
<td>101%</td>
</tr>
<tr>
<td><strong>Operating Assets</strong></td>
<td>15,050</td>
<td>15,110</td>
<td>100%</td>
<td>31,098</td>
<td>31,058</td>
<td>101%</td>
</tr>
<tr>
<td><strong>Net Financial Assets</strong></td>
<td>15,050</td>
<td>15,110</td>
<td>100%</td>
<td>31,098</td>
<td>31,058</td>
<td>101%</td>
</tr>
<tr>
<td><strong>Current Liabilities</strong></td>
<td>15,050</td>
<td>15,110</td>
<td>100%</td>
<td>31,098</td>
<td>31,058</td>
<td>101%</td>
</tr>
<tr>
<td><strong>Total Liabilities</strong></td>
<td>15,050</td>
<td>15,110</td>
<td>100%</td>
<td>31,098</td>
<td>31,058</td>
<td>101%</td>
</tr>
<tr>
<td><strong>Liabilities</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Total Liabilities</strong></td>
<td>15,050</td>
<td>15,110</td>
<td>100%</td>
<td>31,098</td>
<td>31,058</td>
<td>101%</td>
</tr>
<tr>
<td><strong>Stockholders' Equity</strong></td>
<td>15,050</td>
<td>15,110</td>
<td>100%</td>
<td>31,098</td>
<td>31,058</td>
<td>101%</td>
</tr>
<tr>
<td><strong>Stockholders' Equity</strong></td>
<td>15,050</td>
<td>15,110</td>
<td>100%</td>
<td>31,098</td>
<td>31,058</td>
<td>101%</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Ratio Analysis</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Equity Ratio</strong></td>
<td>15,050</td>
<td>15,110</td>
<td>100%</td>
<td>31,098</td>
<td>31,058</td>
<td>101%</td>
</tr>
<tr>
<td><strong>Debt Ratio</strong></td>
<td>15,050</td>
<td>15,110</td>
<td>100%</td>
<td>31,098</td>
<td>31,058</td>
<td>101%</td>
</tr>
<tr>
<td><strong>Leverage Ratio</strong></td>
<td>15,050</td>
<td>15,110</td>
<td>100%</td>
<td>31,098</td>
<td>31,058</td>
<td>101%</td>
</tr>
</tbody>
</table>

**Note:** The above table represents variance analysis data for different financial statements and ratios, showing comparisons between different periods.
The VARIANCE ANALYSIS sheet includes the following sections:

- INCOME STATEMENT
- BALANCE SHEET
- RATIO ANALYSIS

During the initial year of your projections, you enter actual monthly or quarterly data for your entire institution, not branch- or region-specific data. For a monthly variance analysis, enter actual amounts into the twelve monthly columns on the sheet. For a quarterly analysis, enter quarterly amounts in only those monthly columns that represent the end of a quarter. Microfin summarizes this data and compares it with your original financial projections. It then displays cumulative, monthly performance variances at the extreme right of the sheet.

Procedure to analyze performance variances — V ARIANCE ANALYSIS sheet:

If you do not see the VAR ANALYSIS tab on the bottom of your Microfin screen, select MISCELLANEOUS TOOLS / SHOW VARIANCE ANALYSIS sheet from the OPTIONS drop-down menu.

In the INCOME STATEMENT section, for each month during your first year of projections, complete steps one through 12 [using lines 1.01 – 1.32]:

1. Enter your actual INCOME EARNED FROM LOANS [line 1.03], OTHER EARNED INCOME [line 1.04], and INVESTMENT INCOME [line 1.05].
2. Microfin calculates TOTAL FINANCIAL INCOME. [line 1.06]
3. Enter your actual INTEREST ON LOANS [line 1.09] and INTEREST PAID ON DEPOSITS [line 1.10].
4. Microfin calculates TOTAL FINANCIAL COSTS [line 1.11] and GROSS FINANCIAL MARGIN [line 1.13].
5. Enter your PROVISION FOR LOAN LOSSES. [line 1.15]
6. Microfin calculates NET FINANCIAL MARGIN. [line 1.17]
7. Enter your actual program-related and administrative OPERATING COSTS. [lines 1.20 and 1.21]
8. Microfin calculates TOTAL OPERATING COSTS [line 1.22] and NET INCOME FROM OPERATIONS, BEFORE TAXES. [line 1.24]
9. Enter your actual AMOUNT OF TAXES PAID. [line 1.26]
10. Microfin calculates NET INCOME FROM OPERATIONS, AFTER TAXES. [line 1.28]
11. Enter your actual GRANT INCOME. [line 1.30]
12. Microfin calculates EXCESS OF INCOME OVER EXPENSES. [line 1.32]
In the BALANCE SHEET section, for each month during your first year of projections, complete steps 13 through 26 [using lines 2.01 – 2.24]:

13. Microfin displays data in the INITIAL BALANCE column, based on the initial balances from the FINANCIAL STATEMENTS sheet.
14. Enter your actual balances for CASH IN BANK AND NEAR CASH [line 2.02] and GROSS PORTFOLIO OUTSTANDING. [line 2.03]
15. Enter your actual balance for the LOAN LOSS RESERVE [line 2.04] as a negative number.
16. Microfin calculates your NET PORTFOLIO OUTSTANDING [line 2.05] by subtracting the loss reserve from the gross portfolio.
17. Enter your actual balances for SHORT TERM INVESTMENTS [line 2.06], NET FIXED ASSETS [line 2.07] and LONG TERM INVESTMENTS [line 2.08].
18. Microfin calculates TOTAL ASSETS. [line 2.09]
19. Enter your actual balances for SAVINGS DEPOSITS [line 2.12], CONCESSIONAL LOANS [line 2.13], COMMERCIAL LOANS [line 2.14] and OTHER LIABILITIES [line 2.15].
20. Microfin calculates TOTAL LIABILITIES. [line 2.16]
21. Microfin calculates ACCUMULATED DONATED EQUITY, PREVIOUS PERIOD [line 2.19], based on the accumulated equity from the previous period plus DONATED EQUITY, CURRENT PERIOD [line 2.20].
22. Microfin displays DONATED EQUITY, CURRENT PERIOD [line 2.20], based on your GRANT INCOME entry [line 1.30, above].
23. Enter your actual balance for SHAREHOLDER EQUITY, less any dividend payments. [line 2.21]
24. Microfin calculates ACCUMULATED NET SURPLUS [line 2.22], based on the accumulated surplus from the previous period, plus your current-period NET INCOME FROM OPERATIONS, AFTER TAXES entry [line 1.28, above].
25. Microfin displays TOTAL EQUITY. [line 2.23]
26. Microfin displays a VERIFICATION line [line 2.24] to ensure that your TOTAL ASSETS equal the sum of your TOTAL LIABILITIES plus TOTAL EQUITY.

In the RATIO ANALYSIS section, for each month during your first year of projections, complete steps 27 through 34 [using lines 3.01 – 3.45]:

27. Enter the actual percentage for PORTFOLIO AT RISK as a decimal value. [line 3.03]
28. Enter your actual, annual MARKET RATE COST OF FUNDS [line 3.10] and monthly INFLATION RATE [line 3.11].
29. Enter your actual IN-KIND SUBSIDIES. [line 3.14]
30. Enter your total, actual NUMBER OF ACTIVE LOANS [line 3.24], NUMBER OF LOAN OFFICERS [line 3.25] and TOTAL NUMBER OF EMPLOYEES [line 3.30].
31. Enter the actual percentage for CLIENT DROPOUT RATE as a decimal value. [line 3.39]

32. Enter your total actual NUMBER OF VOLUNTARY DEPOSITORS. [line 3.44]

33. Based on your entries in this section and in the INCOME STATEMENT and BALANCE SHEET sections above, Microfin calculates and displays more than twenty ratios and indicators, in the following categories:

   - PORTFOLIO QUALITY [lines 3.02 – 3.05]
   - PROFITABILITY [lines 3.06 – 3.17]
   - SOLVENCY [lines 3.18 – 3.20]
   - EFFICIENCY AND PRODUCTIVITY [lines 3.21 – 3.22]
   - GROWTH AND OUTREACH LENDING [lines 3.33 – 3.40]
   - VOLUNTARY SAVINGS [lines 3.41 – 3.45]

34. For each month during the first projection year, and for each line on the sheet, Microfin displays variance data in three separate columns ACTUAL, BUDGET and VARIANCE. This information displays in the rightmost columns of the sheet (figure 12.3b).

<table>
<thead>
<tr>
<th></th>
<th>Actual</th>
<th>Actual to</th>
<th>Jan-01</th>
<th>Actual</th>
<th>Actual to</th>
<th>Feb-01</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Budget</td>
<td>Variance</td>
<td></td>
<td>Budget</td>
<td>Variance</td>
<td></td>
</tr>
</tbody>
</table>

In the INCOME STATEMENT and BALANCE SHEET sections, the VARIANCE is expressed as a percentage—ACTUAL / BUDGET—where 100% indicates that there is no variance from the budgeted amount.

In the RATIOS section, the VARIANCE displays the difference between the two ratios—ACTUAL - BUDGET—where 0.0% indicates there is no variance from the budgeted amount. Note that variances do not display for ratios considered to be of secondary importance. Instead, the lines appear with dots or gray shading. For an example, refer to line 3.07 or line 3.12.

**Incorporating Microfin into the Annual Planning Process**

In addition to providing benchmarks for ongoing variance analysis, the business planning and financial modeling process can provide a foundation for your annual planning cycle.

As you begin to plan for the new year, your management and staff can review the prior strategic analysis and update it to recognize any significant changes, such as new competitors, new market opportunities, or changes in staff composition. Then, you can revise your strategy as necessary and update the detailed objectives and activities in your operational plan for the coming year.

Based on these revised plans, you can revise Microfin’s financial projections to account for any changes and to project for the coming five-year period.
Optional Facilities for Advanced Modeling
Chapter 13
Optional Facilities for Advanced Modeling

Financial modeling is an iterative process—one that generally involves considerable experimentation before the projections are complete. Microfin provides a number of tools that allow you to experiment with input values and perform analyses that help you to develop and refine your model. It also includes facilities that you can use to customize your model’s operations.

These tools and facilities, described in this chapter, are available on the following Microfin sheets:

- USER-DEFINED sheet(s) to add new features or supplement Microfin’s automatic calculations
- CASELOAD sheet to optimize caseload design
- CLIENT COST and REP SCHEDULE sheets to analyze effective interest rates and costs to the client
- RETENTION sheet to evaluate retention rates
- OTHER PROGS sheet to analyze the financial impact of programs other than financial services
- a TRANSLATIONS sheet that you can use to establish your own language alternative

Using the USER-DEFINED Sheet to Add Features or Supplement Calculations

Microfin’s sheets and overall structure are protected to guard against accidental changes to formulas or other errors. Although a necessary precaution, it can limit Microfin’s usefulness for technically skilled users. To allow you to add calculations or design additional features, Microfin includes a USER-DEFINED sheet. This sheet is fully unprotected.
You can use the USER-DEFINED sheet to develop a custom report or analysis format that extracts information from elsewhere in the model. For example, you could create a management report for your board that mirrors a report format currently generated by your management information system.

You can also use it to generate supplemental calculations that then feed back into the model, such as a complex tax calculation that does not fit into the single input line on the ADMIN (HEAD OFFICE) sheet. This new tax formula can draw on key outputs from elsewhere in the model—such as total assets and specific income and expense lines—and then apply the formula to calculate the amount of taxes owed. You could then input a simple formula on the tax input line on the ADMIN (HEAD OFFICE) sheet that references this new calculation formula on the USER-DEFINED sheet.

While you could achieve similar results by creating an independent Excel workbook and using formulas to link cells between it and Microfin, that approach is far more complicated. It requires you to maintain links between independent files.

There are a number of other areas in the model where the USER-DEFINED sheet is particularly useful, as described below.

While Microfin models your credit and savings products in great detail, it is less detailed in modeling other financial services (considered independent operational areas). The INCOME section of the PROGRAM (BRANCH/REGION) sheet provides three user-defined lines for entering OTHER EARNED INCOME. You can use these lines to project income from other services—or you can develop detailed projections on a USER-DEFINED sheet and a formula to transfer the results to the PROGRAM sheet. (For an explanation of how to separate services, refer to “Entering Data from Historical Financial Statements” on page 125.)

If you have more debt sources of financing than fit on the entry lines of the FIN SOURCES sheet, you may find it problematical to model disbursements and repayments for multiple loans in a single line. As an alternative, create a USER-DEFINED sheet to provide the detail for each product. Then, develop a formula to link the sum for these loans to the FIN FLOWS sheet.

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103 Information in the illustration is not part of the FEDA case study.
You can also use the USER-DEFINED sheet if your institution has a small insurance pool to protect its loans. You could create user-defined projections for anticipated income and transfer the results to the OTHER EARNED INCOME line on the PROGRAM (BRANCH/REGION) sheet. You could then create projections of outlays and transfer these results into one of the OTHER OPERATIONAL EXPENSES lines on the PROGRAM (BRANCH/REGION) sheet.

Creating Additional USER-DEFINED Sheets

Using the OPTIONS menu on the Microfin toolbar, you can create an additional USER-DEFINED sheet, immediately after the original one.

You can add as many of these USER-DEFINED sheets as you wish, assuming that your computer has sufficient RAM available to support the additional sheets.

Deleting or Renaming a Selected USER-DEFINED Sheet

You can delete a USER-DEFINED SHEET using the USER-DEFINED SHEET / DELETE CURRENT USER-DEFINED SHEET option from Microfin’s OPTIONS menu. Microfin deletes the currently selected sheet.

You can rename a USER-DEFINED SHEET using the USER-DEFINED SHEET / RENAME CURRENT USER-DEFINED SHEET option from Microfin’s OPTIONS menu. Microfin renames the currently selected sheet.

Using the CASELOAD Sheet to Optimize Caseload Methodology and Design

The CASELOAD sheet allows you to experiment with your caseload design and methodology. For a new loan officer, it projects the number of clients by month, based on the loan product’s term and retention rate, and the number of new clients processed per month.

Optionally, you can use this sheet to help you determine if the caseload is realistic, from the perspective of a basic time allocation study. It helps you to determine the maximum workload by entering the amount of time the loan officer works with each client and the distribution of time in his/her overall schedule.

This analysis is accurate only if your loan officers work with a single product.
The CASELOAD sheet includes the following sections:

- **INPUT VARIABLES**
- **OUTPUT SUMMARIES**
- **OUTPUT DETAIL**

**Figure 13.2a CASELOAD Sheet (1 of 2)**

<table>
<thead>
<tr>
<th>Case Calculation Sheet</th>
<th>Case Calculation Sheet</th>
</tr>
</thead>
<tbody>
<tr>
<td>Key outputs</td>
<td>Year 1</td>
</tr>
<tr>
<td>Loan disbursed per month</td>
<td>27</td>
</tr>
<tr>
<td>Casteload projections</td>
<td>162</td>
</tr>
<tr>
<td>Percent of optimal casteload</td>
<td>46%</td>
</tr>
<tr>
<td>Percent of available time</td>
<td>95%</td>
</tr>
</tbody>
</table>

**NOTE:** This worksheet is an independent tool not linked to the core of the model. It may be used to experiment with methodology and case load design. This analysis only works for Loan Officers working with a SINGLE loan product.

**Recommendation:** Tweak the pop-up help system to get advice on how to complete this sheet.

**Input Variables**

**Loan term, retention & time allocation per loan**

<table>
<thead>
<tr>
<th>Loan term</th>
<th>Retention rate</th>
<th>Use of time</th>
<th>Avg remaining time (hrs)</th>
</tr>
</thead>
<tbody>
<tr>
<td>First cycle</td>
<td>60%</td>
<td>3.00</td>
<td>50%</td>
</tr>
<tr>
<td>Second cycle</td>
<td>60%</td>
<td>2.00</td>
<td>50%</td>
</tr>
<tr>
<td>Third cycle</td>
<td>80%</td>
<td>1.50</td>
<td>25%</td>
</tr>
<tr>
<td>Fourth cycle</td>
<td>50%</td>
<td>1.50</td>
<td>25%</td>
</tr>
<tr>
<td>Fifth cycle</td>
<td>70%</td>
<td>1.00</td>
<td>25%</td>
</tr>
<tr>
<td>Sixth and subsequent cycles</td>
<td>70%</td>
<td>1.00</td>
<td>10%</td>
</tr>
</tbody>
</table>

**Loan Officer time allocation analysis**

| Hours (calculated at 4.3 weeks per month) | 119 hours |

**Loan officer caseload estimates**

**Year 1** | **Year 2** | **Year 3** | **Year 4** | **Year 5**
---|---|---|---|---
New clients per month | 15 | 15 | 15 | 15 | 15
Theoretical optimal caseload | 300 | This figure is used ONLY for calculating percentage of optimal caseload
<table>
<thead>
<tr>
<th>Output Summary</th>
<th>Year 1</th>
<th>Year 2</th>
<th>Year 3</th>
<th>Year 4</th>
<th>Year 5</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>45%</td>
<td>50%</td>
<td>55%</td>
<td>60%</td>
<td>65%</td>
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<td></td>
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<td>35%</td>
<td>40%</td>
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<td>30%</td>
<td>35%</td>
<td>40%</td>
<td>45%</td>
</tr>
<tr>
<td></td>
<td>20%</td>
<td>25%</td>
<td>30%</td>
<td>35%</td>
<td>40%</td>
</tr>
</tbody>
</table>

**Figure 13.2b**: Cashflow Sheet (2 of 2)
Along the top of the sheet, Microfin displays an annual summary of key caseload outputs, including the loans disbursed each month, caseload projections, the percent of optimal caseload and the percent of available time.

The results of this separate caseload analysis are not integrated into your model’s core projections.

**Procedure to analyze loan officer caseload — CASELOAD sheet:**

If you do not see the CASELOAD tab on the bottom of your Microfin screen, select MISCELLANEOUS TOOLS / SHOW CASELOAD sheet from the OPTIONS drop-down menu.

For each loan cycle, complete steps one through five [using lines 2.04 – 2.10]:

1. Enter the LOAN TERM, by cycle, for the product you are analyzing.
2. Enter the RETENTION RATE for the product you are analyzing.

To use the optional USE OF TIME analysis, complete steps three through five [also using lines 2.04 – 2.10]:

3. Enter the TIME PER LOAN DISBURSED, in hours, that a typical loan officer spends to prepare a loan.
4. Enter the percentage of clients that receive at least one visit per month from a loan officer in % MONITORED MONTHLY.
5. Enter the amount of AVERAGE MONITORING TIME (in hours or fractions of hours) that your loan officer spends each month with those clients that do receive visits. This entry refers to the time spent per person, not per group.

To input the LOAN OFFICER TIME ALLOCATION analysis, complete steps six through ten:
6. Enter the **Typical number of HOURS** your loan officer works each week, excluding lunch. [line 2.14]

7. Enter the **Number Of WORKDAYS** in the typical workweek. [line 2.15]

8. Enter the **Percent of Time** during the total workweek that your loan officers spend in each of the following activities:
   - **Transportation** [line 2.17]
   - **Paperwork / Administration.** [line 2.18] If you included the time spent on paperwork in the **Time Per Loan Disbursed** column above, [lines 2.04 – 2.09] do not duplicate it here.
   - **Staff Meetings / Training** [line 2.19]
   - **Vacations / Holidays / Strikes / Weather** [line 2.20]
   - An optional, user-defined activity [line 2.21]

9. Microfin calculates the percentage of **Time Spent with Clients** by subtracting your entries above from 100%. [line 2.22]

10. Microfin calculates **Total Available Monthly Time for Clients** [line 2.25], in hours, based on the percentage above and using 4.3 weeks per month.

*To complete the **Loan Officer CaseLoad Estimates** analysis, complete steps 11 and 12:*

11. Enter annual estimates of the number of **New Clients Per Month.** [line 2.30] This is a key input for the caseload projections. If necessary, you can vary this estimate each month in line 4.04 below.

12. Enter a **Theoretical Optimal CaseLoad.** [line 2.32]
13. Microfin generates an *annual* OUTPUT SUMMARY section [lines 3.01 – 3.30], with projections for:

- **CASELOAD BY CYCLE** [lines 3.02 – 3.08] displays the distribution of clients by cycle as of the end of each year. As the loan officer's portfolio matures and as retention rates improve, a higher percentage of clients move to the higher cycles.

- **USE OF TIME** [lines 3.10 – 3.14] displays the total time spent per month for the two key client activities—processing new loans and monitoring active loans—drawn from lines 4.31 below. It also displays the **TOTAL TIME** with clients as a percentage of the total time available for clients. If this percentage exceeds 100%, it displays in red to indicate that the caseload or the amount of time for each activity should be reduced.

- **LOAN PROCESSING TIME** [lines 3.16 – 3.22] displays a breakdown of the data from line 3.11, by cycle.

- **LOAN MONITORING TIME** [lines 3.24 – 3.30] displays a breakdown of the data from line 3.12, by cycle.

14. Microfin generates a *monthly* OUTPUT DETAIL section [lines 4.02 – 4.35], with projections for:

- **LOANS DISBURSED.** [lines 4.02 – 4.11] Although Microfin projects the number of **NEW FIRST-CYCLE LOANS-DEFAULT** [line 4.03] based on your *annual* entries from **NEW CLIENTS PER MONTH** [line 2.30, above], you can modify these projections on a monthly basis in **NEW FIRST-CYCLE LOANS-INPUT** [line 4.04]. New loans for subsequent cycles are calculated based on the number of loans that mature each period and the applicable retention rate.

- **LOANS MATURED** [lines 4.13 – 4.20]

- **ACTIVE LOANS** [lines 4.22 – 4.29]

- **TIME ALLOCATION.** [lines 4.31 – 4.35] **LOAN PROCESSING TIME** is calculated based upon the number of **LOANS DISBURSED** in each cycle [line 4.02 – 4.10] multiplied by the time spent preparing each loan. **LOAN MONITORING TIME** is calculated based upon the **ACTIVE LOANS** in each cycle [lines 4.22 – 4.28] multiplied by the time spent with each client and the **% MONITORED MONTHLY** [lines 2.05 – 2.10].
Using the **CLIENT COST** and **REP SCHEDULE** Sheets to Generate Effective Interest Rates and Client Cost Analyses

Microfin includes a tool to calculate effective interest rates and analyze other costs that can influence your clients’ decisions to borrow.

The results of these separate cost analyses are *not* integrated into the model’s core projections.

**Calculating Effective Interest Rates Using the **CLIENT COST** Sheet**

It can be difficult to compare the borrowing costs for loans with different terms and conditions. For example, how do the costs compare when the interest-calculation method for one loan is *declining balance* and *flat* for another? Or how do they compare when one loan has a higher rate of interest than another, but the second has a higher fee?

The effective interest rate provides a common measure for comparing the borrowing costs of loans with different terms and conditions. It is equivalent to the loan’s nominal interest rate if the loan is calculated according to the declining balance method, and does not charge fees or other costs such as compulsory savings in addition to interest.

Microfin provides an optional **CLIENT COST** sheet to calculate the effective interest rate for your loan product and, therefore, allows you to experiment with product design based on the product’s cost to your clients. You can use it, for example, to determine whether your loans become more or less expensive to your clients if you change the repayment frequency from monthly to weekly.
The information on the CLIENT COST sheet is not part of the FEDA case study.
If you do not see the CLIENT COST tab on the bottom of your Microfin screen, select MISCELLANEOUS TOOLS / SHOW CLIENT COST sheet from the OPTIONS drop-down menu.

Because there is more than one way to calculate an effective interest rate, Microfin calculates four variations (referred to here as levels) based on four different sets of cost variables, as follows:

- **LEVEL ONE** is based on interest and fees paid, method of charging interest, and repayment schedule.
- **LEVEL TWO** is based on level-one costs plus the implicit cost of compulsory savings.
- **LEVEL THREE** is based on level-two costs plus nonfinancial transaction costs such as transportation and time away from other work.
- **LEVEL FOUR** is based on level-three costs plus the potential cost of peer risk.

Microfin displays the EFFECTIVE INTEREST RATE calculations for each of these levels, along the top right portion of the sheet. [lines 1.02 – 1.06] It includes separate columns for the following:

- **INCREMENTAL RATE**—for levels two, three and four only, displays the incremental rate stemming from the additional costs added at each level. For example, at level two, the incremental rate is based on the compulsory savings costs added at this level.
- **UNADJUSTED TOTAL**—displays the cumulative rate, **before** it is adjusted for inflation.
- **REAL RATE**—displays the cumulative rate, **after** it is adjusted for inflation.

**Procedure to calculate an effective interest rate (level one) — CLIENT Cost sheet:**

This is Microfin’s most basic effective interest rate calculation.
1. Enter the Loan Amount. [line 2.03]

2. Select a Repayment Frequency. [line 2.04] The options are Weekly, Every Two Weeks or Monthly.

3. Enter the Number of Installment Periods representing the total term of the loan. [line 2.05]

4. Select an Installment Schedule, Principal option to establish when the client repays the loan principal. [line 2.08] The options are Multiple Installments or Single, End-Of-Term Payment.

5. Select an Amortized Loan? option to determine whether the client repays the same amount of principal each period or makes the same total payment, with periodic differences in the amount of principal and interest. [line 2.09]

For example:

<table>
<thead>
<tr>
<th>Month</th>
<th>Principal</th>
<th>Interest</th>
<th>Total Payment</th>
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</thead>
<tbody>
<tr>
<td><strong>Equal Principal</strong></td>
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</tr>
<tr>
<td>1</td>
<td>30</td>
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<td>40.80</td>
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<tr>
<td>3</td>
<td>30</td>
<td>3.60</td>
<td>33.60</td>
</tr>
<tr>
<td><strong>Amortized</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>26.67</td>
<td>10.80</td>
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<td>2</td>
<td>29.87</td>
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<tr>
<td>3</td>
<td>33.46</td>
<td>4.02</td>
<td>36.47</td>
</tr>
</tbody>
</table>

6. Select an Installment Schedule, Interest option to establish when the client pays interest. [line 2.10] The options are Multiple Installments or Single, End-Of-Term Payment.

7. Enter Grace Periods for Capital, Interest Payments and Interest Calculation (i.e., an interest-free loan during the grace period). [lines 2.11 – 2.13]

8. Enter the Quoted Interest Rate and select the period to which it relates. [line 2.16]

9. Select an Interest Rate Method. [line 2.17]. Your options are Flat and Declining Balance.
10. If the loan principal is indexed to an external rate, such as inflation or another currency, enter the annual indexing rate here as a percentage. [line 2.18]

11. To calculate real interest rates, enter an Inflation Rate, Annual. [line 2.19]

12. Enter up to two up-front commissions and one ongoing commission. [lines 2.20 – 2.22] If the commission is a percentage of loan principal, enter a value that is less than 1.0. If the commission is a fixed amount, enter a value that is greater than or equal to 1.0.

**Procedure to calculate an effective interest rate (level two) – Client Cost sheet:**

This effective interest rate calculation factors in the cost (to the client) of having to pay into a compulsory savings program.

<table>
<thead>
<tr>
<th>Level 2: Including Savings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Enter Data about Compulsory Savings:</td>
</tr>
<tr>
<td>------------------------------------</td>
</tr>
<tr>
<td>Compulsory savings amount: 0.1% 2%</td>
</tr>
<tr>
<td>Compulsory savings amount: 0.6% 2%</td>
</tr>
<tr>
<td>INTEREST EARNED ON SAVINGS (PERCENT)</td>
</tr>
</tbody>
</table>

Compulsory savings represent an additional cost to the client.105 As a result, a loan with a compulsory savings requirement is more expensive than a similar loan without a savings requirement. Although a portion of this additional client cost may be offset by interest earned on savings, the interest rate on savings is generally far less than the interest rate the client pays for the loan. If your institution does not actually have use of these compulsory savings funds, you increase the cost to your client without any actual financing benefit to you.

1. Complete the entries for a level-one effective interest rate, as described above.

2. Enter the amount of Up-front Compulsory Savings. [line 3.04] If the savings requirement is a percentage of loan principal, enter a value that is less than 1.0. If the savings requirement is a fixed amount, enter a value that is greater than or equal to 1.0. Microfin assumes this amount is due when the loan is disbursed.

3. Enter the amount of Ongoing Compulsory Savings. [line 3.05] If the savings requirement is a percentage of loan principal repayment, enter a value that is less than 1.0. If the savings requirement is a fixed amount, enter a value that is greater than or equal to 1.0.

4. Enter the annual Interest Earned on Savings [line 3.06], as a percentage. Microfin assumes the interest is payable at the end of the loan term.

---

105 For example, a client that borrows 100 with a ten percent compulsory savings requirement only has use of 90 (i.e., the 100 loan less the ten in savings) to fund a business. Yet the client must pay interest on the entire 100.
Procedure to calculate an effective interest rate (level three) —

CLIENT COST sheet:

This effective interest rate calculation factors in transaction costs, such as transportation and time spent in group sessions or at the bank.

1. Complete the effective interest rate entries for the first two levels.

For the period before the loan is disbursed, and for each period after disbursement, complete steps two through nine:

2. Enter the NUMBER OF TRIPS the client must make to the office or bank. [4.06]

3. Enter the COST OF ROUNDTRIP TRANSPORTATION to and from the office. [line 4.07]

4. Microfin calculates the COST OF TRANSPORTATION. [line 4.08]

5. Enter the HOURS SPENT ROUNDTRIP traveling to and from the bank office. [line 4.11]

6. Enter the HOURS spent for each of the following activities:
   - WITH THE LOAN OFFICER visiting the business [line 4.13]
   - IN TRAINING AND ORIENTATION SESSIONS [line 4.14]
   - IN GROUP SESSIONS [line 4.15]
   - AT THE BANK OR OFFICE [line 4.16]
   - in a user-defined activity [line 4.17]

7. Enter the OPPORTUNITY COST, PER HOUR. [line 4.19] This is your client’s approximate hourly opportunity cost for time lost from work. To calculate this cost, you can divide the average daily income for your client by the number of hours the client works during a typical day.
8. Microfin calculates the TOTAL OPPORTUNITY COST [line 4.20] as the TOTAL HOURS multiplied by the cost per hour.

9. Microfin calculates the TOTAL TRANSACTION COSTS [line 4.22] as the sum of the transportation and opportunity costs.

**Procedure to calculate an effective interest rate (level four) — Client Cost sheet:**

In a group lending methodology, this effective interest rate calculation factors in an estimate of the financial risk that your client assumes by guaranteeing the loans of other group members. It assumes that each borrower is at equal risk of default, and that every member in the group shares the burden.

1. Complete the effective interest rate entries for the first three levels.

2. Microfin displays the AVERAGE LOAN SIZE based on your entry from line 2.03 of this sheet.

3. Enter the predicted PERCENTAGE OF CLIENTS THAT STOP PAYING during the loan term. [line 5.09]

4. Microfin displays the PROBABLE AMOUNT that this paying client will need to cover for a defaulting client [line 5.10], calculated as the AVERAGE LOAN SIZE multiplied by the PERCENTAGE OF CLIENTS THAT STOP PAYING. Microfin applies this payment amount to the final payment period when calculating the effective interest rate.

**Generating Loan Repayment and Cash Flow Schedules Using the Rep Sched Sheet**

Microfin automatically generates a detailed payment schedule and cash flow analysis on the REP SCHED sheet, based on the loan terms and conditions that you established on the CLIENT COST sheet.

The REP SCHED sheet also includes an analysis of compulsory savings, transaction costs and default risk, based on the same loan terms and conditions.
Retention rates have a significant impact on your projections, and can be easily misinterpreted. For an in-depth analysis of retention rates, Microfin provides an optional retention rate analysis tool (the RETENTION sheet).

You can use this analysis to do the following:

- Compare potential retention rate alternatives (using the INITIAL ANALYSIS and ALTERNATIVE ANALYSIS sections of the RETENTION sheet).
- Develop the retention rates to be entered on the PROGRAM (BRANCH/REGION) sheet.
- Confirm that the retention rates you have already entered on the PROGRAM (BRANCH/REGION) sheet reflect actual trends.
- Project the long-term implications of those trends.

106 The information on the REP SCHED sheet is not part of the FEDA case study.
The result of this separate retention rate analysis is not integrated into Microfin’s core projections. If you wish to use the resultant rate in your model for any period, you must manually enter the retention rate in the LOAN PROJECTION INPUT section on the PROGRAM (BRANCH/REGION) sheet.

This sheet is hidden until you display it using the MISCELLANEOUS TOOLS / SHOW RETENTION RATE ANALYSIS sheet item from the OPTIONS drop-down list on the Microfin toolbar.

**Figure 13.5 RETENTION Sheet**

**Procedure to complete the RETENTION sheet:**

For each loan cycle, complete steps one through four for the INITIAL ANALYSIS and an optional ALTERNATE ANALYSIS comparison [using lines 1.03 – 1.10]:

1. Enter the loan TERM, in months.
2. Enter the estimated RETENTION % for each loan cycle.
3. Microfin calculates the PERCENTAGE of your initial CLIENTS that you will retain as of the beginning of each new lending cycle, based on your entries.
4. For the retained clients that move to each successive loan cycle, Microfin calculates the total time (in YEARS) that you have retained those clients.

**Using the OTHER PROGS Sheet to Analyze the Financial Implications of Other Programs**

The OTHER PROGS sheet provides a basic means to analyze the financial implications of programs other than lending and savings.

The results of the analyses are not integrated into the model’s core projections and are not reflected in the financial statements or ratios.
### Figure 13.6 Other Progs Sheet

<table>
<thead>
<tr>
<th>Other Programs</th>
<th>FY19</th>
<th>FY18</th>
<th>Year 1</th>
<th>Year 2</th>
<th>Year 3</th>
<th>Year 4</th>
<th>Year 5</th>
<th>5 YEAR</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Revenues</strong></td>
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<td></td>
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<tr>
<td><strong>Total Revenues, Other Programs</strong></td>
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<td>45,176</td>
<td>43,878</td>
<td>46,800</td>
<td>50,398</td>
<td>53,769</td>
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<td>252,224</td>
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<th><strong>Expenses</strong></th>
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| **Total Direct Expenses** | 219,572 |
| **Total Indirect Expenses** | 20,108 |
| **Total Indirect Expenses** | 4,833 |

| **Total Operating Expenses** | 24,32434 |
| **Surplus (Deficit)** | -2,261 |
**Procedure to model the financial implications of other programs — Other Programs sheet:**

For each of the seven years indicated along the top of the sheet (two years of history, and five years of future projections), complete steps one through ten:

1. Enter descriptions and amounts for up to three sources of **Earned Income**. [lines 1.03 – 1.05] Microfin calculates the total of your entries.
2. Enter descriptions and amounts for up to three sources of **Grant Revenue**. [lines 1.09 – 1.11] Microfin calculates the total of your entries.
3. Enter descriptions and amounts for up to three sources of **In-Kind Donations**. [lines 1.14 – 1.16] Microfin calculates the total of your entries.
4. Enter an **Amount Earned from Funds Invested**. [line 1.19] Microfin calculates the total of your entries.
5. Enter descriptions and amounts for up to two sources of **Other Income**. [lines 1.22 – 1.23] Microfin calculates the total of your entries.
6. Microfin calculates the **Total Revenues from Other Programs**. [line 1.26]
7. Enter descriptions and amounts for up to ten **Direct (Program) Expenses**. [lines 2.03 – 2.12] Microfin calculates the total of your entries.
8. Enter descriptions and amounts for up to 11 **Indirect (Administrative) Expenses**. [lines 2.16 – 2.26] Microfin calculates the total of your entries.
9. Microfin calculates the **Total Operating Expenses** from other programs. [line 2.29]
10. Microfin calculates the total **Surplus or Deficit** from other programs, [line 2.33] excluding the value of **In-Kind Donations**. [line 2.31]

**Defining an Additional Language**

You interact with Microfin in a language that you choose from the **Setup Wizard** or from the **Options** menu on the Microfin toolbar.

To supplement Microfin’s English, Spanish and French translations, you can incorporate other languages by defining the translations manually or importing them automatically.

Creating a new translation of Microfin is a major undertaking. There are over 2,800 lines that must be entered, although many key terms are used repeatedly. A skilled translator, familiar with financial terms in English and the second language, will require about a week to complete the translation.
Using the TRANSLATIONS Sheet to Create a User-defined Language

The TRANSLATIONS sheet presents all of Microfin’s labels, error messages and other text in ENGLISH (column D), SPANISH (column E) and FRENCH (column F). These columns are protected and cannot be changed.

Column G (USER-DEFINED) is unprotected; you can enter translations for each line of Microfin text. When you choose to use the user-defined language (from the SETUP WIZARD or the LANGUAGE item on the OPTIONS menu), Microfin uses these translations throughout for its user interface.

Figure 13.7 TRANSLATIONS Sheet (Portion Only)

Procedure to enter your own translations – TRANSLATIONS sheet:

1. Select LANGUAGE from the OPTIONS menu on the Microfin toolbar; then select SHOW TRANSLATIONS SHEET.
3. To use your new translation, choose it from OPTIONS / LANGUAGE on the Microfin toolbar.
**Downloading or Importing a Language**

You can import a selected language translation from the microfin.com website.

1. Download the translation’s Excel file from the website.
2. After you have downloaded the file, choose **LANGUAGE / IMPORT A USER-DEFINED LANGUAGE** from Microfin’s OPTIONS menu. Microfin displays the following window:
   
   ![Microsoft Excel](image)

   Select the name of the language file you wish to import on this screen. Select CANCEL on that screen to terminate this process.

3. Identify the location of the downloaded translation file and Microfin automatically imports the selected translation from the file.
Annexes
Annex 1

Business Planning Framework

As previously noted, business planning consists of two closely related processes: strategic planning and operational planning. During strategic planning, you establish broad institutional goals, assess your institution’s performance in achieving its goals, and select a future strategy that will enhance your ability to expand outreach and achieve (or maintain) profitability. Your operational planning process then creates a detailed action plan to implement your strategy and, generally, includes a comprehensive set of financial projections.

The manner in which your institution carries out its strategic and operational planning processes greatly affects the quality of your business plan. For example, if you incorporate the perspectives of key stakeholders—such as your board, staff and clients—you help to ensure that your business plan addresses the key issues required to achieve broad outreach and profitability. Likewise, if you involve those responsible for implementing the plan, you help to ensure the broad endorsement essential for successful implementation.

The very process of developing your business plan brings into focus those factors that are key in determining your institution’s success. These factors include the design of financial products to both satisfy clients and achieve profitability—e.g., loan size, loan term and effective interest rate.

Your plan provides your managers with an important tool to monitor your institution’s progress as compared with the concrete goals outlined in its plan. In addition to providing your management with this important financial and operational tool, a clear business plan with comprehensive financial projections strengthens your institution’s negotiating position with donors, commercial banks and other funders. It also communicates vital information to shareholders, clients and regulatory authorities.

While this handbook focuses on operational planning activities—specifically, generating financial projections—the starting point for any successful business plan is a good strategic plan. The remainder of this annex describes a framework for strategic planning.
Strategic Planning Framework

While there are many alternative frameworks for strategic planning, Microfin’s approach is designed to keep your clients at the center of the process. It encompasses the following activities:

- articulating your institution’s mission and goals. [page 472]
- defining your markets and clients [page 473]
- conducting an environmental analysis [page 474]
- performing an institutional assessment [page 476]
- based on the results of these analyses, choosing an appropriate strategy, generally one that focuses on maximizing outreach and profitability [page 480]
- defining objectives and general activities [page 482]

Each of these activities is described below.

Articulating the Mission and Goals

Your institution’s mission establishes its guiding principles and overall direction. Your mission statement is an expression of your vision, a *declaration of organizational purpose.*

Your goals, in turn, reflect what you intend to achieve in order to further your mission. While a mission is often abstract, goals are generally stated in objective, often quantifiable, terms.

Taken together, your institution’s mission and goals provide the foundation for all of the activities that you undertake, and a source of inspiration and motivation for your board and staff. The strategy that you develop should reflect your mission and advance your goals.

Generally, a statement of mission and goals addresses several key questions:

- What issues are you attempting to address (for example, the lack of access by the poor to financial services or the need of a credit union’s members for financial services)?
- How do you respond to these issues (by providing financial services to low-income entrepreneurs, or mobilizing deposits from members and then loaning a certain percentage of these funds)?
- Who are your intended clients (urban producers and traders, or the members of a credit union)?
- What are your institution’s core values (enhancing your clients’ self-determination, serving as an ongoing financial resource for members, or achieving significant outreach and financial self-sufficiency)?

---

Defining Markets and Clients

By understanding the needs of your clients, you develop the capabilities—products, personnel and facilities—to better serve those clients in ways that expand your institution’s outreach and enhance your profitability. Clients can provide crucial input into new-product design and valuable feedback regarding your existing products and marketing approaches.

Markets

As your institution grows, your clients are likely to become increasingly diverse. Consequently, you may find it valuable to divide your clients (current and potential) into distinct market segments for analysis.

Market segments are generally categorized by location (for example, a particular urban neighborhood, a semi-rural market town, or the area within a 15-mile radius of a branch office) and then further segmented according to the economic activities within them, such as market vendors, producers, or farmers. The potential clients within each segment generally share many common characteristics. As a result, when you choose specific market segments to serve, you enhance your ability to closely target your products and services to meet client needs.

Before you decide to enter a new market or expand into an existing market, analyze the market carefully, including the following factors:

- size—the number of microentrepreneurs that operate in it
- projected demand for financial services
- the market penetration that you can reasonably achieve—in other words, that portion of all potential clients in the market that you estimate you can reach
- key market trends—such as the growth in demand for the goods produced by the entrepreneurs in the market

A market analysis can be formal or informal, ranging from casual discussions with current and potential clients to a more structured process that involves conducting a detailed market study.\textsuperscript{108}

Once you have evaluated each current or potential market segment, you can decide whether the market represents a good opportunity for expanding your operations. You may find that it warrants more detailed research.

Clients

If a market segment meets your initial selection criteria, you may decide to conduct a more detailed analysis. This analysis can help you to understand the economic and personal characteristics of the entrepreneurs that operate within the segment, as well as the kinds of products and services that most appropriately satisfy their needs.

Key economic traits include:

- nature of the enterprises (e.g., relative proportion of commerce, service, production and agriculture)
- demand for specific financial services (credit or savings, working capital or equipment loans)
- income and assets (of both businesses and households)
- diversity of income sources
- work experience

Important personal traits include:

- gender
- age
- language and literacy
- citizenship
- reputation in the community

By understanding the economic and personal traits of your clients, you can develop the products and services to effectively meet their needs.

Conducting an Environmental Analysis

You assess the context in which your institution operates through an environmental analysis that gauges how foreseeable external challenges will affect your capacity to achieve your goals. External factors can prove to be either opportunities or threats—opportunities if you can position yourself to take advantage of changes in the environment, threats if the changes jeopardize your ability to pursue your goals in the way you have planned. By anticipating the effects of external factors, you can better position yourself to respond to the opportunities and challenges of your environment.

An environmental analysis looks at four factors:

- competition
- collaborators
- regulatory policies
- other external elements
**Competition**

Competition may be increasingly significantly in the markets where you operate. Conversely, an absence of strong competitors might give your institution an opportunity to solidify its market position.

If competition is a significant factor, you might choose to carry out a careful review of your current and potential competitors, including:

- other microfinance institutions
- moneylenders
- informal credit schemes
- clients’ suppliers
- formal financial institutions

**Collaborators**

The kinds of collaboration that your institution seeks will depend on your needs. For example, if you seek broad-based institutional strengthening, an affiliation with an international network that provides technical assistance and training could be an important relationship. If legislation prevents your institution from offering savings products, you might choose to collaborate with a local bank that can provide such services. You might also collaborate with local government officials or local institutions that offer services that complement your own.

**Regulatory Policies**

Regulatory policies can play an important part in shaping your institution’s environment. For example, restrictive interest rate ceilings can impair your ability to charge an effective interest rate sufficient to cover your full costs.

By contrast, central bank policies that allow a range of licensed financial intermediaries, with capital reserve requirements matched to an institution’s scale, can encourage the development of microfinance institutions.

Your clients may also be affected by other policies, such as regulations on land ownership, registration requirements for microenterprises and price controls on agricultural products.

**Other External Elements**

A country’s general economic and political conditions have a significant effect on the informal financial sector and therefore on microfinance institutions and their clients. A high inflation rate, civil unrest and natural disasters can pose serious threats to a microfinance institution’s operations, while a stable economic and political situation provides a positive environment for an institution’s development.

Other significant external elements include foreign exchange rates, currency convertibility, national poverty levels, and transportation and communication infrastructure.
Performing an Institutional Assessment

The institutional capacity of a microfinance institution is the most crucial factor in its ability to achieve its goals. Thus, every institution should undertake a thorough assessment of where its strengths lie, where it has significant weaknesses and where it should focus institutional development efforts. This institutional assessment is best carried out after the market study and the environmental analysis, so that an institution can evaluate its strengths and weaknesses in light of its ability to meet its clients’ needs in the context in which it operates.

There are many ways to evaluate an institution’s resources and capabilities. In the method proposed here, your institution assesses its performance in key areas of operations through a series of questions, the answers to which indicate whether you are following the kinds of practices shown to be most effective for microfinance institutions.

The institutional assessment evaluates the following six areas of operations:

- credit and savings program
- board and management issues
- human resource management
- administration
- financing
- financial management

Credit and Savings Program

- Are your products appropriate for the market segments that your institution seeks to reach?
- How good is your portfolio quality, as measured by the default rate and portfolio at risk?
- Is there a clear pattern of significant growth and increasing profitability?
- Is there a high rate of client retention?
- Are clear and appropriate credit policies and procedures in place?
- Do you monitor loan officer productivity (such as the number of active clients per loan officer)?
- Do your credit staff maximize their time with clients relative to the time they spend on administrative work?

Board and Management Issues

- Does the board provide vision and policy leadership?
- Does it ensure that the institution’s financial resources are prudently managed by monitoring investment and operating performance?
- Does it provide ongoing guidance and advice to the executive director?
- Do board members provide expertise in such key areas as banking, law and accounting?
- Are the roles and responsibilities of the board and management clearly defined, so as to prevent inappropriate intrusion by the board into operational details?
- Does the board participate in setting performance targets and monitoring progress toward them?
- If the institution is considering formalization, has the board evaluated the opportunities and risks associated with the different options available? In the hope of attracting significant flows of client savings and domestic and international debt and equity funds, a growing number of microfinance institutions are considering changing their legal status to that of a formally licensed financial intermediary.\textsuperscript{110}

If you are considering such a change in status, you should carefully evaluate the costs that are likely to result in the context of your country’s banking regulatory structure. While an institution with a history of consistent profitability may benefit substantially from formalization, those benefits may not offset the associated costs.

If you choose to pursue a strategy of formalization, you will incur both up-front and ongoing costs, and these costs are likely to be substantial.

- Often, your evaluation will entail costly feasibility studies of the alternatives and extensive consultations with lawyers and accountants.
- Registering as a formal financial institution involves legal and filing fees.
- Once you attain formal status, you will have to abide by the regulations governing licensed financial intermediaries in your country. Some of these regulations may lead to greater professionalization—through conformity to more rigorous standards of provisioning and asset valuation, for example. But regulations may also impose significant constraints, restricting the hours and days of operation, requiring advance approval for opening new branches, and setting requirements relating to the compensation, hiring, and termination of employees.

\textsuperscript{110} In some countries, such as the members of the West African Economic and Monetary Union, all credit institutions are required to become registered and licensed.
A microfinance institution that changes its status will generally face significant additional supervisory requirements, such as an internal audit department and expanded reporting.

Significant capital reserve requirements are often imposed, so that substantial funds must be placed in relatively low-interest, liquid investments.

Perhaps most significantly, a microfinance institution that has been a tax-exempt nongovernmental organization will probably lose that status and have to begin paying taxes on its earnings.

Are the board and the executive director effective at mobilizing funds from domestic/international sources for concessional/commercial debt and grants?

Does the executive director provide leadership in implementing the institution’s mission and goals?

Does the executive director solicit and use inputs from staff at all levels?

Does the executive director have the necessary skills and knowledge (such as a strategic perspective, management skills, knowledge of credit and finance, and fundraising ability)?

Human Resource Management

Do you have an organization chart and job descriptions for all positions?

Are the positions of credit and finance manager filled by qualified staff?

Are staff recruited and trained to ensure the appropriate skills? (For example, do credit staff have good communication skills, a basic knowledge of credit and good business sense?)

Is the level of administrative staffing sufficient but not financially burdensome? In particular, does the institution have a strong finance and accounting team and management information system (MIS) capability?

Is staff turnover minimal?

Are your incentive systems designed to hold staff accountable and to reward them for good performance?¹¹¹

As greater operational scale is reached, is compensation becoming more competitive with market rates?

Is staff training a serious priority for your institution? What percentage of the total budget does staff training represent?

Is there a clear pattern of promotion from within?

Are performance evaluations based on mutually developed and agreed upon objectives?¹¹²

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Administration

- Does the management information system produce accurate, timely and comprehensive reports for accounting and loan tracking?\(^{113}\)
- Are appropriate reports provided to the different levels of users (board, management, staff) within the organization?
- Do portfolio reports provide an immediate assessment of the status of every loan?
- Is the chart of accounts appropriate to the institution’s needs? (For example, does it track income and expenses by branch, and does it separate grant income from earned income?)
- Does the institution regularly assess whether its management information system is sufficient for its needs today and over the medium term?
- Do you periodically review your fixed asset base to ensure that it is not becoming obsolete?
- Is there a formal, comprehensive system of internal controls in place to prevent corruption and the misuse of funds?
- Is a formal audit performed by a reputable accounting firm each fiscal year?\(^{114}\)

Financing

- Are you able to mobilize the amounts and types of funding you need for current and planned operations?
- Is the mix of funding sources appropriate? (For example, is there an increasing reliance on earned income relative to grants?)
- How much priority does management place on moving away from dependence on subsidized funding?

Financial Management

- Is reliable information available for assessing your current financial position, including trends in performance indicators?
- Are budgets and cash flow projections prepared and reviewed regularly?
- Do you conduct periodic analysis comparing projected with actual performance (variance analysis)?
- Do financial statements present an accurate picture of the institution? (For example, are loan loss reserves sufficient to cover projected defaults, assets valued conservatively, and nonperforming loans regularly written off?)

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- Do key staff have good financial management skills?
- Does the institution have a well-thought-out investment management approach?
- Is the institution moving steadily toward full, subsidy-adjusted profitability?

The purpose of the environmental analysis and institutional assessment is to provide your institution with a clear idea of where it needs to focus its attention in order to meet its clients’ needs and enhance its profitability. By systematically assessing past trends and current performance, the analyses lay the groundwork for determining the kind of strategy that will enable your institution to achieve your goals.

**Choosing a Strategy**

The strategic planning process culminates in the task of developing and articulating the strategy. The strategy provides the key reference point for operational planning, serving as the link between the two parts of the business planning process. You should review all of your operational decisions in the light of whether they reflect your strategy and move you further toward your objectives.

A microfinance institution chooses its strategy for expansion on the basis of the information and perspectives developed in the first four steps of the strategic planning process. After the institution has articulated its mission and goals, defined the markets and clients to target, forecast favorable and unfavorable external conditions, and gauged its strengths and weaknesses, it is ready to decide on a strategy for providing the right products in the right markets and in a cost-efficient manner.115

The process of identifying a strategy has three parts:

- choosing what products to offer in what markets
- deciding which areas of the institution need to be strengthened to ensure that it can provide the chosen products in the selected markets
- determining clear objectives and activities for implementing the product, market and institutional development goals

**Product and Market Options**

You can pursue expansion by offering existing or new products in current or new markets. The four possible combinations of these elements (figure A1.1) represent four options of increasing complexity. Your strategy must reflect the option that you will pursue first and the sequence according to which you might add others.

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115 Operational efficiency provides the foundation for both expanding outreach and increasing profitability. If a microfinance institution’s current operations are not efficient, its strategy must first address how to improve efficiency. Although expansion can lead to economies of scale (for example, overhead costs generally do not increase in proportion with direct costs), an institution should tackle inefficiency problems before undertaking significant expansion.
- **Market Penetration.** If current products are commensurate with projected client needs and current markets offer the potential for significant expansion, the appropriate strategy would be to expand existing products in existing markets.

- **Product Development.** If current markets offer the potential for significant expansion but existing products cannot meet projected client needs, the strategy should be to enhance current products or develop new products for expansion in existing markets.

- **Market Diversification.** If existing products can meet projected client demand but current markets do not offer sufficient growth potential, the appropriate strategy would be to enter new markets with the current products.

- **Product Development and Market Diversification.** If existing products are insufficient to meet projected client needs and current markets are insufficient to achieve sustained profitability, you must determine which of the first three options to pursue initially and in what order product and market expansion should be pursued.

### Figure A1.1 Product Market Matrix\(^\text{116}\)

<table>
<thead>
<tr>
<th>Current Product</th>
<th>Current Market</th>
<th>New Market</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Market Penetration</td>
<td>Market Diversification</td>
</tr>
<tr>
<td>New Product</td>
<td>Product Development</td>
<td>Product Development and Market Diversification</td>
</tr>
</tbody>
</table>

### Institutional Development

To implement an expansion strategy, you will likely need to strengthen certain areas of operations, as identified by the institutional assessment. In building on your strengths and addressing the areas needing improvement, you should focus on the factors that are essential to effective and profitable performance in the current and projected environment. And you will have to choose which areas you will not address immediately, because taking on too much could prevent you from implementing any of the desired improvements.

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Defining Objectives and General Activities

Once you have selected your strategy for expansion and identified the areas that require strengthening, it is often helpful to develop objectives and activities for implementing the strategy. They become the basis for your operational planning.

Your objectives should address the major elements of your operational plan, as follows:

- products and services
- marketing channels
- institutional resources and capacity
- financing and financial management

For each objective, outline activities based on the findings from your strategic planning process. These activities represent the actions that you intend to undertake in order to implement your strategy.

Operational Planning Framework

The operational planning process—which includes financial modeling—creates an implementation plan to support your strategic plan. As you develop your operational plan and financial model, you assess whether your strategy is realistic and whether your proposed activities are financially achievable within the projected time frame.

Microfin closely follows a best-practice framework as it guides you through this operational planning process, as detailed in the body of this handbook.
Annex 2
Microfin’s Data Requirements

The amount of information that is required to complete a Microfin projections model varies according to the inherent complexity of your institution and the degree of accuracy you seek. For example, if your institution has only a single financial product, your data requirements are lower than those of similar institutions with multiple products. If you choose to separately model the operations of your branch offices, you must enter more data than an institution that chooses to create a consolidated model. Likewise, if you have a broad range of financing sources, your data requirements are greater than similar institutions with fewer sources.

The following lists detail the data required to complete the model, grouped by the sheet on which the information is input. (For clarification of any of the requirements, see the relevant sections of the handbook.)

As the lists indicate, Microfin requires substantial data to generate reliable projections. Much of this information describes current loans. If your institution does not track the kind of detailed information needed to complete the model, staff can analyze a sample survey of client records to estimate the data [box A3.1].

Microfinance institutions that provide nonfinancial services—business development services or such services as health education—will need to separate these activities from their financial activities.

**Model Setup Sheet**

1. Name of the institution
2. Name of the local currency
3. Starting month and year for projections
4. Inflation rate projections
5. Product indexing rate projections (only for institutions with indexed financial products)
6. Balance sheets and income statements for the two fiscal years prior to the first year of the projections. Statements for the earlier of the two years are optional.
7. Portfolio data for the two fiscal years prior to the first year of the projections. If actual data for the most recent year is not yet available, prepare the financial statements based on your best estimates. Information for the earlier year is optional, and used only for trend analysis.
8. Ratio data for up to three fiscal years prior to the first year of the projections; all but the most recent year is optional.
**Products Sheet**

1. Number of distinct loan and savings products to be offered in the coming five years (maximum of four each)

2. For each loan product:
   - average loan amount by cycle and by month
   - indication of whether loan amounts increase by inflation either monthly or annually
   - repayment frequency (daily, weekly, biweekly, monthly, end-of-term)
   - average effective loan term by cycle and by month
   - grace period
   - any up-front or ongoing compulsory savings requirements
   - interest rate method (declining balance or flat)
   - annual interest rate charged, by month
   - any up-front and ongoing commissions charged, by month
   - indication of whether the loan is indexed to an external value

3. For each savings product:
   - annual interest rate paid, by month
   - percentage of savings held in reserve, by month
   - indication of whether savings accounts are indexed to an external value

4. For compulsory savings only, indication of whether the savings appear on your institution’s balance sheet

**Program (Branch/Region) Sheet**

If you are modeling on a consolidated basis, gather the following data for your entire institution. If you are modeling on a branch or regional basis, gather the following data for each branch or region separately.

1. For each loan product:
   - number of active loans for the product at the beginning of the projection period
   - estimated distribution of those active loans by loan cycle
   - initial loan portfolio outstanding for the product
   - projected number of active loans (or new loans) for each month (This is a critical number for generating the portfolio projections; it should be based on the market study you performed during strategic planning.)
   - estimated client retention rates for each cycle, by month
2. For any compulsory savings, the initial balance of savings held.

3. For each voluntary savings product:
   - estimated percentage of borrowers of each loan product saving voluntarily, by month
   - projected number of savers, independent of borrower projections, by month
   - any initial savings balance for the product
   - estimated average balance per depositor, by month

4. For the income projections:
   - penalty income (optional)
   - other earned income

5. For the loan loss projections:
   - projected portfolio at risk rates
   - projected long-term loan default rate (write-off ratio), as a percentage of the average annual portfolio
   - initial balance of the loan loss reserve

6. Number of branches, over time.

7. For the loan officer analysis:
   - loan officer productivity estimates (percentage of optimal caseload for entry- and intermediate-level staff, number of months between promotions)
   - average longevity of loan officers (used to calculate staff turnover)
   - minimum number of new loan officers to be hired as a group
   - length of any loan officer training program or apprenticeship period
   - optimal loan officer caseload for each product, by month

8. For the staffing plan:
   - number of staff for all program-related positions, current and projected
   - monthly salary and benefits for each staff position, current and projected

9. For the operating expenses plan:
   - estimated monthly operational expenses for each category, current and projected

10. For the asset acquisition plan:
    - undepreciated book value of all currently held branch-level fixed assets, by category
    - estimated average remaining life of initial fixed assets
    - planned fixed asset acquisition schedule (purchases and sales), by category
**Inst Cap Sheet**

1. Loan write-off frequency: monthly, quarterly, semiannually, annually
2. Loan loss provisioning brackets, and reserve rates by aging bracket
3. Titles for all program-related staff positions
4. Titles for all administrative staff positions
5. Category names for all program-related operational expenses
6. Category names for all administrative operational expenses
7. Category names for all program-related fixed assets
8. Category names for all administrative fixed assets
9. Buildings, currently owned and planned
10. Category names for other assets, including intangible assets such as software

**Admin (Head Office) Sheet**

1. For the staffing plan:
   - number of staff for all administrative positions, current and projected
   - monthly salary and benefits for each staff position, current and projected
2. For the operating expenses plan:
   - estimated monthly operational expenses for each category, current and projected
3. For the asset acquisition plan:
   - undepreciated value of all currently held administrative fixed assets, by category
   - estimated average remaining life of initial fixed assets
   - planned fixed asset acquisition schedule, by category
   - projected land acquisition, by month (optional)
   - projected building acquisition, by month
   - accumulated depreciation for buildings
   - unamortized value of all currently held other assets, by category
   - estimated average remaining life of other assets
   - planned acquisition schedule for other assets, by category
4. Formulas for the calculation of any taxes to be paid.
5. Estimates of any in-kind contributions, such as technical support or free office space.
**Fin Sources and Fin Flows Sheets**

1. List of current and anticipated unrestricted funding sources (e.g., grants, loans, equity investments) and restricted sources for operations, portfolio and other assets
2. For all current grant sources, balances already received, projected disbursement schedules, estimated total funding available and any applicable funding restrictions
3. For all loan sources, initial balances, total approved amounts, disbursement schedules, repayment schedules, interest rates and any restrictions on use of the loan
4. For all equity sources, initial balances, projected investments and projected dividends
5. Determination as to whether savings deposits are restricted to portfolio financing or can be treated as unrestricted funds
6. Restrictions on the use of any initial cash, bank or investment balances
7. Estimated target liquidity levels for operations and for portfolio financing
8. Market rate cost of funds (interest rate charged by commercial funding sources) and a threshold for classifying commercial loans
9. Average interest rates earned on cash deposits, short- and long-term investments, and savings reserve deposits

**Summary Rep Sheet**

1. Inflation rate for local currency (optional)
2. Name of external currency
3. Annual inflation rate for external currency (optional)

**Other Programs Sheet (Optional)**

For programs other than financial services:

1. Earned income revenue
2. Grant revenues
3. Revenues from in-kind donations
4. Revenues earned from invested funds
5. Direct expenses
6. Indirect expenses
**Client Cost Sheet (Optional)**

1. Loan amount and term
2. Repayment options and installment schedule, including principal, interest and grace periods
3. Loan cost data, such as commissions, fees, interest rate and inflation
4. Compulsory savings requirements and interest rate paid on savings
5. Estimated transaction costs, including transportation and time spent in travel, training and meetings
6. Percentage of clients who default on loans

**Retention Sheet (Optional)**

For up to two separate retention rate analyses:

1. Average loan term for each cycle
2. Average percentage of clients who proceed to the next cycle after completing a loan

**Caseload Sheet (Optional)**

For each product to be analyzed:

1. Term, retention rate and loan officer time allocation per loan
2. Loan officer time allocation (hours per week; number of days in work week; time spent in transportation, paperwork and administration, staff meetings and training, vacations and holidays, other)
3. Loan officer caseload estimates (new clients per month and theoretical optimal caseload)
Data Requirements and Methodology for Estimating Client Loan Data

If you need to estimate any of the client loan data required by the model, you can do so by analyzing two samples:

- new loans issued in the past 12 months
- clients

Sampling of New Loans

For each loan product:

1. Select a random sampling of loans issued in the past 12 months.
2. Group the data by the client’s loan cycle—for example, group the record for a client’s third loan with the records for the third-cycle loans of other clients.
3. Calculate the average, initial loan amount and average contractual loan term for each loan cycle.
4. For loans that have been repaid, calculate the effective loan term based on the actual time it took to pay back the loan.

This information is used in defining loan products.

Sampling of Clients

Select a random sampling of clients, sorted by loan product. Calculate the retention rates for each product:

1. Determine whether the client received another loan after each loan was fully repaid.
2. Tabulate the results by loan cycle.
3. To calculate the retention rate for each cycle, divide the number of clients who receive a loan in one cycle by the number of clients who fully paid off a loan in the previous cycle.
Annex 3
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