

Equipment Leasing and Lending

A Guide for Microfinance

Glenn D. Westley

Inter-American Development Bank

Washington, D. C.

**Sustainable Development Department
Best Practices Series**

**Cataloging-in-Publication provided by
Inter-American Development Bank
Felipe Herrera Library**

Westley, Glenn D.

Equipment leasing and lending : a guide for microfinance / Glenn D. Westley.

p.cm. (Sustainable Development Department Best practices series ; MSM-122)
Includes bibliographical references.

1. Lease and rental services—Latin America. 2. Office equipment leases—Latin America. 3. Small business—Latin America. I. Inter-American Development Bank. Sustainable Development Dept. Micro, Small and Medium Enterprise Division. II. Title. III. Series.

352.538 W433—dc21

Glenn D. Westley is senior adviser for microenterprise in the Micro, Small and Medium Enterprise Division, Sustainable Development Department. The author gratefully acknowledges the outstanding research support of Luther Carter. Many helpful ideas and comments on this research project were received from Fernando Campero, María Victoria Sáenz, Dieter Wittkowski, Tor Jansson, Alvaro Ramírez, Ben Rowland, Miguel Terrazas, Matt Gamser, Graham Bannock, Jeanne Holzgrefe, Kim Staking, Rita Bettiol, Leonor Demori, Gonzalo Afcha, Alberto Barreix, Gina Karp, Dan Davidson, Mauricio Dupleich, Manuel Rabines, Fernando Cantuarias, Heywood Fleisig, Nuria de la Peña, David Grace, Felipe Portocarrero, Ramón Rosales, Juan Buchenau, Diego Guzman, Laurence Carter, and Mark Havers. Much of the empirical backbone of this paper comes from interviewing a great number of people from MFIs, leasing companies, and bank superintendencies in Latin America, and their invaluable contribution is greatly appreciated.

The opinions expressed in this paper are the responsibility of the author and do not necessarily reflect the official position of the Inter-American Development Bank.

June 2003

This publication (Reference No. MSM-122) can be obtained from:

Micro, Small and Medium Enterprise Division
Mail Stop B-0800
Inter-American Development Bank
1300 New York Avenue, N.W.
Washington, D.C. 20577

e-mail: sds/msm@iadb.org
Fax: 202-312-4134
Web site: <http://www.iadb.org/sds/mic>

Foreword

As microfinance has evolved toward greater levels of commercialization, the range of products offered has expanded, starting from the simple beginnings in which short-term working capital loans were the only product available from many microfinance institutions (MFIs). While this is still true today of some MFIs, it is now widely recognized that the acquisition of equipment is often a key channel through which microentrepreneurs expand their businesses, improve their products, and raise their incomes—underscoring the importance of equipment finance.

Equipment finance is already a significant component of microfinance. Based on a survey of 25 MFIs in Latin America, many of them considered leaders in the field, equipment loans and leases account for an average of over 20 percent of the MFIs' overall portfolios. Of these 25 MFIs, 23 offer equipment loan or lease products with at least 2-year terms. While most of this equipment finance consists of loans, there is a small, but growing movement toward leasing among Latin American MFIs, reflecting the superiority of leasing in certain circumstances.

Somewhat surprisingly, little has been written on how to do equipment lending to microenterprises. Though much has been written about equipment leasing for small, medium-scale, and large enterprises, little is available on how to lease to mainstream microentrepreneurs, that is, to those microentrepreneurs needing approximately \$50 to \$2500 to purchase equipment. Many of the practices one would use for equipment finance—leasing and lending—for mainstream microenterprises turn out to be very different from those suggested for leasing to small, medium-scale, and large enterprises. In addition, an assessment of the relative merits of leasing versus lending is quite different for MFIs and their microenterprise clients than for banks and their typically much larger clients. By tackling these issues of how to finance equipment for mainstream microenterprises, the paper attempts to fill a clear need for information in this area, and aims to steer the reader away from inappropriate practices and analyses based on the leasing literature for small, medium-scale, and large enterprises. In doing so, this paper makes a timely contribution on an issue of growing relevance: how MFIs should tackle equipment finance, whether by lending or leasing, and how each of these should best be done.

Alvaro R. Ramírez
Chief
Micro, Small and Medium Enterprise Division

Contents

Executive Summary	i
1. Introduction	1
MFI Provision of Equipment Finance in Latin America	1
2. Leasing Versus Lending: Pros and Cons	7
Financial vs. Operational Leases	7
Damage Risk	10
Residual Value Risk	10
Second-Hand Market Risk	11
Financial Leasing vs. Lending: The Risks	11
Legal Disputes, Difficulties, and Misunderstandings	12
Legal Liability	12
Equipment Seizure and Sale	12
Financial Leasing vs. Lending: Pros and Cons from the MFI Perspective	16
Setup Costs	17
Operating Costs	17
Banking Regulations	17
Tax Considerations	18
Diversion of Funds	18
Financial Leasing vs. Lending: Pros and Cons from the Client Perspective	19
3. Banking Regulations	21
Usury Ceilings	21
Leasing Restrictions	21
Leasing Subsidiaries	23
4. Tax Issues	26
Summary of Conclusions	31
5. MFI Best Practices	33
Asset-Liability Management (ALM)	34
Interest Rate and Liquidity Risks	35
Foreign Currency Risk	37
Equipment Loans and Leases in the Progressive Microlending Scheme	39
Downpayment and Collateral	41
Term	42
Interest Rates	43
Range of Products Financed	43
Second-Hand Equipment	44
Sale and Leaseback	45
Frequency of Collection	47
Flexible Repayment Plans: Allowing Installment Payments of Varying Size	48
Final Leasing Payment (Option-to-Buy Price)	48
Group Lending Considerations	49
Insurance and Property Taxes	49

Dealer Discount Programs	50
Market Valuation Exercises	50
Launching an Equipment Loan or Lease Program	51
6. Policy Recommendations and the Role of Governments and Donors	52
Legal Issues	52
Legal Framework for Financial Leasing	52
Legal Framework for Equipment Seizure and Sale	53
Banking Regulations	53
Tax Issues	54
Role of Governments and Donors	55
References	56
Annex A. Impact of Taxes on Loan/Lease Choice	58
Value Added Tax (VAT)	58
Case 1—VAT Is Levied on Lease Payments; Clients Are Informal	59
Case 2—VAT Is Levied on Lease Payments; Clients Are Formal	62
Cases 3 and 4—Countries with no VAT on Lease or Loan Payments	63
Cases 5-8—Initial Equipment Purchase is Exempt from VAT	66
MFI Use of Surplus VAT Credits	66
Business Profit Tax	67
Other Taxes	71

List of Boxes

Box 1	Financial vs. Operational Leases	8
Box 2	Explanation of Selected Lines in Table 6 (by line number)	29

List of Tables

Table 1	Equipment Versus Overall Portfolios in a Sample of Latin American MFIs	3
Table 2	Terms and Conditions for Individual Working Capital and Equipment Loans and Leases	4
Table 3	Leasing Risk Matrix	9
Table 4	Financial Leasing vs. Lending: Pros and Cons from the MFI Perspective	16
Table 5	Which Financial Institutions Can Lease?	22
Table 6	Tax Treatment of Financial Leases vs. Loans	27
Table 7	VAT Penalty for Leases: Four Common Cases, with Initial Equipment Purchase <i>Subject to VAT</i>	58
Table 8	VAT Penalty for Leases: Four Less Common Cases, with Initial Equipment Purchase <i>Exempt from VAT</i>	59
Table 9	VAT Penalty for Leases in Cases 1 and 2: MFI Loss of Effective Yield (percentage points)	60
Table 10	VAT Penalty for Leases in Cases 1 and 2: MFI Loss in Present Value Terms for a \$1000 Loan and Lease	64
Table 11	Financial Leases vs. Loans: MFI Profit Taxes in Eight Countries	68
Table 12	Financial Leases vs. Loans: Client Profit Taxes in Eight Countries	68
Table 13	25% of (P-D) in Present Value Terms, for a \$1000 Lease or Loan	70

Executive Summary

This paper describes how to do equipment finance—leasing and lending—for mainstream microentrepreneurs, that is, for those microentrepreneurs needing approximately \$50 to \$2500 to purchase equipment. Specifically, this paper examines the pros and cons of the two major financing alternatives, loans and leases. The paper also provides a series of best practice recommendations for microfinance institutions (MFIs) to use in their equipment leasing and lending programs. Although much has been written about equipment leasing for small, medium-scale, and large enterprises, little is available on how to lease to mainstream microentrepreneurs. Similarly, little has been written on how to do equipment lending to the same target group.

The acquisition of equipment often enables microentrepreneurs to expand their businesses, improve their products, and raise their incomes. This paper begins its examination of how to do equipment finance for microentrepreneurs by exploring the advantages and disadvantages of leasing and lending as alternative means to finance equipment purchases by microenterprises (chapter 2). It also examines best practices in both equipment leasing and lending programs (chapter 5). As part of both of these tasks, it discusses the legal, regulatory, and tax environments in which the choice between leasing and lending is made (chapters 2-4, respectively). The discussions in these three chapters lead to several strong policy recommendations for governments and donors in the legal, regulatory, and tax areas (chapter 6). The audience for this paper consists primarily of microfinance institutions (MFIs), donors, governments, consultants, and academics who wish to know more about microenterprise equipment finance and its enabling environment.

Our analysis shows that many of the practices one would use for equipment finance for mainstream microenterprises turn out to be very different from those suggested for small, medium-

scale, and large enterprises. In addition, an assessment of the relative merits of leasing versus lending is quite different for MFIs and their microenterprise clients than for banks and their typically much larger clients. Thus, there is a clear need for information on how to do equipment finance specifically for mainstream microenterprises, a need that this paper attempts to fill. In so doing, the paper tries to steer the reader away from inappropriate practices and analyses based on the leasing literature for small, medium-scale, and large enterprises.

MFI Provision of Equipment Finance in Latin America

Equipment finance is an important component of microfinance. Based on a survey of 25 MFIs in Latin America, many of them considered leaders in the field, equipment loans and leases account for an average of 20.8 percent of the MFIs' overall loan and lease portfolios. Of these 25 MFIs, 23 offer equipment loan or lease products with at least two-year terms. Most of this equipment finance consists of loans. Of the 25 MFIs, only three offer equipment leases: ANED in Bolivia, INDES in Chile, and Finamérica in Colombia. Nonetheless, there is a small, but growing movement toward leasing among Latin American MFIs. Caja Los Andes of Bolivia was ready to launch a leasing program when recent regulatory changes in Bolivia made this program uneconomical. Mibanco, in Peru, is planning to initiate a leasing program in the first half of 2003. Pro Mujer and FADES, two NGOs in Bolivia, are looking seriously at starting up equipment leasing programs.

Financial vs. Operational Leases

In a leasing arrangement, one party uses an asset owned by another party in exchange for specified periodic payments. The *lessee* uses the asset and pays a rental to the *lessor*, who owns it. There are two major types of leases, financial leases and operational leases.

Financial leases are an alternative to loans for equipment acquisition. In a financial lease, the microentrepreneur (or other lessee) specifies to the MFI (or other lessor) the desired equipment and the dealer from whom the equipment should be purchased. The MFI purchases this equipment, which the lessee uses. Rigorously defined, financial leasing, must have three key characteristics:

- Financial leases, sometimes called full payout leases, require the lessee to amortize all or virtually all (typically 95-100 percent) of the lessor's original acquisition costs and also to pay interest.
- Financial leases give the lessee the right to buy the equipment at the end of the lease term for a prespecified sum, called the residual value, which for financial leases is set at a nominal amount, typically the remaining balance or a token price such as \$1.
- Financial leases are non-cancellable; that is, the lease cannot be cancelled without the consent of the MFI or other lessor. If financial leases were cancellable, the full-payout feature could be defeated by clients who simply return the equipment early and stop making payments.

Operational leases lack one or more of these three financial lease characteristics, and are not necessarily a means to acquire equipment. In many operational leases, the lessee contracts for shorter-term use of equipment that the lessor has available and may or may not have the option to buy. Operational lessors typically recover equipment acquisition costs plus interest through multiple serial leases and final sale of the equipment. Leasing a car for a week or for three years are both examples of operational leases.

Because operational leases do not require the lessee to amortize the full cost or nearly full cost of the leased good or because the lessee is not given the option to buy, the MFI bears three major risks that are avoided with financial leasing. These risks are damage, residual value, and second-hand market risks. For example, if a lessee is not required to amortize all or virtually all of the cost of leased equipment, the lessor must be

prepared either to sell the equipment after the initial lease period has ended or to lease the equipment again. This forces the lessor to be concerned with: (1) damage risk, that is whether the equipment will sustain damage during the lease period; (2) residual value risk, that is whether an appropriate residual value has been estimated for purposes of calculating the monthly lease payments and the cost of any final purchase option; and (3) second-hand market risk, that is whether adequate second-hand markets will exist in which to sell used equipment after it is no longer profitable or possible to lease the equipment. MFIs that are doing financial leasing can be much less concerned about these three risks than if they were doing operational leasing. In fact, financial lessors need be no more concerned about these risks than lenders. Only in the case when clients default on their payments and the equipment is seized need the financial lessor or lender be concerned about whether the equipment is damaged, worth less than expected, or completely unsaleable.

Because of the substantial additional risks of operational leasing, we believe that most MFIs will be interested largely in financial leasing. Therefore, this paper focuses on financial leasing and lending as alternative techniques for financing equipment acquisition. The pros and cons of each of these two methods of financing are considered next.

Pros and Cons of Financial Leasing vs. Lending: The MFI's Perspective

Many of the discussions of the pros and cons of financial leasing found in the leasing literature are confusing. This confusion arises because much of this literature fails to rigorously distinguish financial from operational leasing and identify the additional risks inherent in operational leasing, beyond those of financial leasing. As a result, the additional risks of operational leasing are not always excluded when discussing financial leasing and comparing it to lending.

The key advantage that financial leasing has over lending is that financial leasing offers a stronger legal position to the MFI for equipment seizure and sale in the event of client payment

default. The MFI has this advantage in the case of financial leasing because it owns the equipment. A possible additional advantage of financial leasing for the MFI is the exemption of leasing from the usury ceiling by some countries. However, we did not find any advantage from such an exemption in any of eight countries we examined, which are all Latin American countries with major microfinance markets (Chile, Bolivia, Peru, Ecuador, Colombia, Mexico, El Salvador, and Honduras).

Although tax codes may give some advantage to financial leasing over lending, more often the reverse holds. In the same eight countries, we find that the tax codes usually favor lending in the case of informal clients, by which we mean, clients who do not remit value added tax (VAT) or profit tax on the products they sell. The amount of leasing's disadvantage depends on the country and situation, but is commonly equivalent to the loss of approximately 2-4 percentage points in the MFI's effective yield. For example, if a loan yields 30 percent to the MFI, a similar lease would yield approximately 26-28 percent. For formal clients (who do remit these taxes on the products they sell), the situation is mixed. Some countries and situations favor financial leasing and other countries and situations favor lending. Since most MFI clients are informal, tax considerations generally favor lending. These results are very different from the simplistic claims found in some of the leasing literature that leasing is tax advantaged. These claims are made on the basis, for example, that lessors can take a tax deduction for leased equipment depreciation (since lessors own the equipment). Although lessors sometimes can take this deduction, this is far from a complete analysis of the impact of the profit tax on loan/lease choice. A complete analysis often reverses the result. Moreover, the simplistic claims normally also ignore the value added tax, which often favors lending over leasing.

Financial leasing also faces several other disadvantages. First, banking regulations in many countries either prohibit some financial institutions from doing financial leasing at all, or else require that financial leasing be done through a leasing subsidiary. In the case of microfinance,

financial leasing subsidiaries add to costs without returning significant benefits. Therefore, the requirement that leasing subsidiaries be used is a disadvantage for financial leasing. Second, financial leasing has a greater potential for legal disputes and misunderstandings because of the separation of the MFI's ownership of the equipment from the lessee's possession and use of the equipment. Third, financial leasing has greater potential for the MFI to have legal liability problems with third parties because the MFI owns the equipment that the lessee is using. However, in our survey of eight countries, these two legal risks were generally considered fairly minor. Finally, financial leasing has somewhat greater setup and operating costs than lending.

Reducing these pros and cons down to the most essential points, an MFI might find that the choice between financial leasing and lending could often come down to a choice between the following: the stronger legal position for equipment seizure and sale inherent in financial leasing versus the tax and possible regulatory advantages offered by lending. Hence, in the cases where there are no regulatory restrictions on leasing, an MFI would basically have to decide whether leasing's stronger legal position would more than compensate for the tax-induced losses, often of approximately 2-4 percentage points in effective yield. If so, leasing would be the equipment finance modality of choice; if not, lending would be.

Pros and Cons of Financial Leasing vs. Lending: The Client's Perspective

In choosing whether to finance equipment through a lease or loan, the client would first consider the interest rate charged for each, and any difference in taxes the client is required to pay. (To the extent that interest rates reflect an MFI's costs and risks, the difference between the lease and loan interest rates should take account of the entire set of pros and cons to the MFI discussed above.) The other important factors include the following two advantages of leasing.

The benefits to the client of the lessor's stronger legal position for equipment seizure and sale in

the event of payment default are widely discussed in the leasing literature. Because of this stronger legal position, lessors frequently offer financing with lower downpayments, less outside collateral requirements, or longer terms. In the case of larger size operations, leasing may permit faster approval of financing and may also reduce transactions costs for the client and MFI; these advantages arise because with leasing it is not necessary to register a lien on the leased good (since the MFI owns it), whereas this registration process is often undertaken with loan collateral in larger size operations.

Finally, if leasing is exempted from a country's usury ceiling while lending is not, then clients may be able to obtain equipment financing with a lease far more readily than with a loan, albeit at higher interest rates.

MFI Best Practice Recommendations

This paper makes an extensive set of best practice recommendations for MFI equipment loan and lease programs. Among the major points are the following:

- MFIs that offer medium-term loans or leases—with maturities, for example, of 2-5 years—need to be concerned with asset-liability management (ALM), a tool used by financial institutions to control three risks: interest rate risk, liquidity risk, and foreign currency risk. Interest rate and foreign currency risks are the risks that the MFI will suffer losses when interest rates and foreign exchange rates change. Liquidity risk refers to the risk that the MFI will not have enough short-term assets to cover its short-term liabilities at any given moment in time. To control interest rate and liquidity risks, MFIs should match the amount of assets and liabilities maturing in each of a number of designated time intervals. To control foreign currency risk, MFIs should lend or lease in local currency to clients producing non-traded outputs and lend or lease in foreign currency to clients producing traded outputs. The currency of the MFI's liabilities should then be matched to the resulting loan/lease portfolio.

- Many leading MFIs in Latin America are making medium-term equipment loans and leases safely and profitably to completely new clients. Such a practice stands in contrast to the use of the progressive loan scheme, which has a long tradition in micro-finance. Chapter 5 discusses how equipment lending and leasing to completely new clients can prudently be done through the proper application of four key underwriting criteria and the use of the relationship banking paradigm.
- Contrary to some of the leasing literature, MFIs making equipment loans or leases should generally insist that clients put up a significant downpayment toward the purchase of the equipment and/or pledge collateral aside from the equipment.
- The term of an equipment loan or lease should be set by trading off the advantage of greater affordability to clients of longer-term operations versus the advantage to MFIs of the reduced credit risks and diminished ALM problems that are associated with shorter-term operations.
- While virtually all of the 25 MFIs we surveyed set the same interest rates for their working capital and equipment loans, risk and cost considerations suggest that interest rates on equipment loans (and leases) should be set lower. Working capital and equipment loans appear to carry similar risks in many MFIs; however, the significantly longer equipment loan terms allow their costs to be spread over much more time.
- The leasing literature often suggests that lessors limit themselves to financing equipment that has good second-hand market value and that their leasing officers know well. However, these limitations may not be very important for MFIs offering equipment loans or financial leases to mainstream microentrepreneurs. For these clients, many MFIs can finance virtually any equipment

the client demands, including used equipment.

- While leasing is a way to obtain equipment finance, the sale-and-leaseback transaction can be used to provide microentrepreneurs with working capital finance. However, care must be taken with certain tax and valuation issues raised by sale and leaseback. A further limitation of the sale-and-leaseback transaction is that it only gives the MFI an ownership stake in *equipment*; many MFIs prefer instead to collateralize their working capital loans with more readily saleable household goods.
- Nearly all of the 25 MFIs we surveyed employ monthly payments for individual equipment and working capital loans. This is a shift from the weekly and semi-monthly payments some of these MFIs employed in the past. Monthly payments save transactions costs for both the clients and MFIs, which may be especially useful to MFIs in competitive microfinance markets. However, more frequent payments may still be advantageous in certain circumstances, for example, for clients lacking the repayment discipline to make monthly payments and for MFIs that have not yet built a solid reputation for disciplined loan collection.
- Flexible repayment plans—featuring installment payments that vary in size—can be useful for clients with seasonally-varying income. Such plans can increase the ability of these clients to borrow and thus augment their incomes, while simultaneously reducing default risk.
- Most equipment loans and leases are and should be made on an individual basis, not to solidarity groups—both for demand reasons and, in the case of loans, for supply reasons. On the demand side, group members are reluctant to bear the increased risk exposure to the longer terms and/or larger loan or lease sizes that are generally associated with equipment financing. On the supply side, beyond a certain size loan, many

MFIs want more than solidarity group guarantees; for example, they may want physical collateral, whose value must correspond to the size of the individual equipment loan.

- Equipment loans and leases raise issues beyond those raised by working capital loans in the areas of liability insurance, multiperil insurance, and property taxes. These issues should be addressed by equipment finance programs.
- MFIs that make numerous loans or leases for the same type of equipment each year (e.g., sewing machines) may have sufficient bargaining power to negotiate discounted prices, extended warranties, additional service, and other benefits with one or more equipment dealers. Such MFIs may find it worth the setup and operating costs to arrange such dealer discount programs.
- In recent years, some MFIs have broadened their clientele to include upper end microenterprises and small enterprises, and are financing relatively expensive equipment for this clientele. Such MFIs may find it useful to undertake a market valuation exercise prior to approving a loan or lease for such goods, particularly when the MFI is counting on the equipment to serve as its own collateral.

Policy Recommendations

Finally, the paper makes a number of policy recommendations in the regulatory, tax, and legal areas. Among these are the following:

- Superintendencies should adopt the rigorous definition of financial leasing given above and should not restrict any financial institution allowed to do lending from engaging in financial leasing. The removal of financial leasing restrictions—restrictions that either prohibit financial institutions from offering financial leases or else require financial leasing to be done through a subsidiary—would allow many MFIs and other financial institutions to offer equipment finance by means of

a lease. This should broaden access to equipment finance, which is advantageous to both the financial institutions and their clients. The removal of these leasing restrictions is justified because, on balance, financial leasing rarely poses more risk than lending and often poses significantly less risk. The reason that financial leasing is normally less risky is that financial institutions have a stronger legal position for equipment seizure and sale in the event of client payment default. This advantage is normally much more important than leasing's two generally minor additional risks, namely, those related to: a) legal disputes, difficulties, and misunderstandings and b) liability.

- Likewise, tax authorities should adopt the rigorous definition of financial leasing given above and should give identical treatment in the tax code to loans and financial leases. The recommendation that loans and financial leases be treated alike in the tax code is based on the fact that: a) financial leases and loans are close substitutes for one another, and b) large economic losses often occur when tax systems distort choices between two close substitutes.
- Countries need to set out a basic legal framework for financial leasing. This may be done through special leasing laws, through articles in a bank law or its regulations, through tax laws and regulations, or by using some combination of these and other legal and regulatory vehicles. This legal framework needs to define and recognize

the existence of financial leasing and the rights and obligations of each party in the leasing transaction.

- Seizure and sale of leased equipment and of assets pledged as loan or lease collateral is often very time consuming, costly, and uncertain in Latin America. Reforms to facilitate seizure and sale of leased assets and collateral should expand access to equipment and other finance and reduce interest rates. The desired reforms are as follows:

Creation of security interests. Financial institutions and their clients should be permitted to enter into contracts in which a wide variety of assets can be pledged as collateral.

Perfection of security interests. Accurate registries that are accessible to the public and inexpensive to search should be created. Strengthening or privatizing public registries is one possibility, as is introducing competition among public registries or permitting private registries to compete with public ones.

Enforcement of security interests: seizure and sale of leased assets and collateral. Financial institutions and their clients should be permitted to agree to rapid, nonjudicial enforcement of both lease and loan contracts. The rapid and low-cost procedures used to enforce lease contracts in Bolivia and Ecuador may serve as useful models.

1. Introduction

The acquisition of equipment often enables microentrepreneurs to expand their businesses, improve their products, and raise their incomes. This paper explores the advantages and disadvantages of leasing and lending as alternative means to finance equipment purchases by microenterprises (chapter 2). It also examines best practices in both equipment leasing and lending programs (chapter 5). As part of both of these tasks, it discusses the legal, regulatory, and tax environments in which the choice between leasing and lending is made (chapters 2-4, respectively). The discussions in these three chapters lead to several strong policy recommendations for governments and donors in the legal, regulatory, and tax areas (chapter 6). The audience for this paper consists primarily of microfinance institutions (MFIs), donors, governments, consultants, and academics who wish to know more about microenterprise equipment finance and its enabling environment.¹

While much has been written about how and whether to do leasing, most of the literature is concerned with leasing to large corporate enterprises (e.g., Clark 1990, UAEL 1995, and Euromoney Yearbooks various years), to small and medium-scale enterprises (e.g., Carter 1996) or else to micro and small enterprises (e.g., Gallardo 1997, Havers 1999, Mutesasira, Osinde,

and Mule 2001, and Deelen, et al. 2002). Little has been written on how to lease to mainstream microentrepreneurs, that is, to those microentrepreneurs needing approximately \$50 to \$2500 to purchase equipment. Somewhat surprisingly, little has also been written on how to do equipment lending to the same target group. Many of the practices one would use for equipment finance—leasing and lending—for mainstream microenterprises turn out to be very different from those suggested for small and medium-scale enterprises, and even, in a number of areas, from those that have been suggested for micro and small enterprises. In addition to this, an assessment of the relative merits of leasing versus lending is quite different for MFIs and their microenterprise clients than for banks and their typically much larger clients. By tackling these issues for mainstream microenterprises, this paper fills a clear need for information on microenterprise equipment finance, and steers the reader away from inappropriate practices and analyses based on the leasing literature for small, medium-scale, and large enterprises.

This paper does not attempt to provide guidance to MFIs on whether or not to add an equipment financing product to their existing range of products; the reader is referred to Wright, et al. (2001; 2002) for a discussion of whether the MFI is ready to expand its product offerings and should do so. Instead, for those MFIs that have decided to offer equipment finance, this paper examines the pros and cons of the two major financing alternatives, loans and leases. The paper also provides a series of best practice recommendations for MFIs to use in their equipment leasing and lending programs.

MFI Provision of Equipment Finance in Latin America

Equipment finance is an important component of microfinance. Based on a survey of 25 MFIs in Latin America, many of them considered leaders in the field, we find that equipment loans and leases account for an average of 20.8 percent of

¹ This paper uses the term microfinance institution (MFI) a great deal. By MFI, we mean any financial institution, regulated or not, that offers financial services to microenterprises. MFIs include primarily the following types of financial institutions:

- NGOs—unregulated financial institutions constituted as nonprofit organizations
- Upgrades—NGOs that have been transformed into regulated financial institutions
- Downscales—commercial banks and *financieras* that generally have served larger (often corporate) clients, but now offer financial services to microenterprises
- Credit unions—member-owned financial institutions that are organized as cooperatives (seven of these appear in Tables 1 and 2 below)

the MFIs' overall loan and lease portfolios (Table 1). Of these 25 MFIs, 23 offer equipment loan or lease products with at least two-year terms (Table 2). Based on Tables 1 and 2, these equipment loan and lease products have the following additional characteristics, the last three of which are discussed further in chapter 5:

- Most equipment finance consists of loans. Of the 25 MFIs, only three offer equipment leases: ANED in Bolivia, INDES in Chile, and Finamérica in Colombia.
- The average size of the loan and lease operations for equipment finance (\$2100) is double the average size of loan and lease operations overall (\$1057).
- The delinquency rate of loan and lease operations for equipment finance (6.7 percent) is slightly below the delinquency rate for loan and lease operations overall (8.3 percent).
- Nearly all MFIs charge the same interest rates for equipment loans as for working capital loans.
- For two of the MFIs that lease and for a few of the other MFIs, the equipment itself is the only collateral needed to obtain equipment finance. More often, other collateral is required instead of or in addition to the equipment itself.

While equipment lending is widespread, leasing is at an incipient stage among Latin American MFIs. Based on this survey of 25 MFIs and contacts with many other MFIs, only three MFIs with leasing programs were uncovered: ANED, INDES, and Finamérica.

ANED's leasing program began in March 1997 and now consists of 711 leases for a total of \$479,000, representing 6.4 percent of ANED's \$7.5 million total loan and lease portfolio. Nearly all of ANED's leases are for agricultural equipment, especially for electric water pumps to irrigate tiny vegetable plots (0.2-2 hectares),

as well as for plows, tractors, trucks, and other farm machinery. Approximately 5 percent of ANED's leases are for looms and other artisan equipment. With an average lease size of \$675, ANED's leasing program is aimed primarily at lower-income producers.

Finamérica's leasing program began in September 2000 and is even smaller than ANED's, consisting of 35 leases for a total of \$159,000, slightly under 1 percent of Finamérica's \$18.8 million total loan and lease portfolio. With an average lease size of \$4532, Finamérica's leases are directed at upper-level microenterprises and small enterprises. The leasing of ovens to bread bakeries accounts for the majority of Finamérica's leases.

INDES's leasing program, like Finamérica's, is aimed at upper-level microenterprises and small enterprises. Unlike the leasing programs of Finamérica and ANED, however, equipment leasing is INDES's most important financial product, comprising \$2.4 million of INDES's \$4.6 million overall loan and lease portfolio. INDES's leasing program is also the oldest of the three, having commenced in 1992. Among the major types of equipment leased by INDES are metalworking equipment such as lathes and drills, food preparation equipment such as ovens and mixers, and printing equipment such as off-set printing presses.

Other MFIs have considered or are considering starting up leasing programs, or are about to begin. Caja Los Andes of Bolivia was about to begin a leasing program when Law 2297 was passed on December 20, 2001, requiring that any regulated financial institution doing leasing in Bolivia do it through a subsidiary. Caja Los Andes cancelled its plans to offer leasing because of the significant additional costs of leasing through a subsidiary. (Chapter 3 discusses these costs.) Mibanco, a commercial bank specializing in microfinance in Peru, is planning to initiate a leasing program in the first half of 2003. Pro Mujer and FADES, two NGOs in Bolivia, are looking seriously at starting up equipment leasing programs.

Table 1
Equipment Versus Overall Portfolios in a Sample of Latin American MFIs

MFI ¹	Country	Overall Loan and Lease Portfolio			Equipment Loan and Lease Portfolio ²		
		Total Loans and Leases (\$ million)	Average Loan/Lease Size (\$) ³	Delinquency Rate – 30 Day (%)	Share of Total Loans and Leases (%)	Average Loan/Lease Size (\$) ³	Delinquency Rate – 30 Day (%)
ANED	Bolivia	7.5	289	23.0	6.4	675	18.0
Banco Sol	Bolivia	79.3	1330	15.3	21.9	2564	11.2
Caja Los Andes	Bolivia	52.6	1116	6.7	32.3	2057	
FIE	Bolivia	30.2	1240	7.7	27.5	1240 est.	7.7 est.
Banco de Desarrollo	Chile	37.8	902		20.0		
INDES	Chile	4.6		5.0	52.1		4.0
Caja Social ⁴	Colombia	151.3	2538	3.2	9.3	2858	4.1
Finamérica	Colombia	18.8	942	9.2	0.85	4532	3.9
WWB Cali	Colombia	20.9	465	1.6	12.0	464 est.	
BancoAdemi	Dom. Rep.	61.6	3457	4.0			
Banco Solidario	Ecuador	12.6	653	3.5			
Financiera Calpiá	El Salvador	34.6	851	3.0	34.4	3453	3.3
FINSOL	Honduras	5.8	515	9.7			
ADMIC	Mexico	2.04	286	4.0			
CONFIA	Nicaragua	13.7	573	4.5	1.0		
Interfisa Financiera	Paraguay	2.75	275		20.0		7.0
CMAC Arequipa	Peru	39.8	1120	2.7	66.6	1631	4.1
Mibanco	Peru	74.0	637	2.7	17.3	3567	5.0
CU—San Martín de Porres	Bolivia	24.6	2059		0		
CU—Colanta	Colombia	8.2	1809		20.0	1809 est.	
CU—Oscus	Ecuador	15.0	1000	2.0	15.0		
CU—Progreso	Ecuador	12.2	813	0.8	15.0		
CU—UPA	Guatemala	11.5	1290				
CU—San Hilarión	Peru	1.74	348	11.5	30.0	348 est.	5.5
CU—Santa María Magdalena	Peru	5.8	605		15.0		
AVERAGE (of all numbers in column unless otherwise noted)		30.0	1057 ⁵	8.3 ⁶	20.8	2100 ⁵	6.7 ⁶

Notes: “est.” indicates estimated value. Blank cells indicate missing data.

¹ The last seven MFIs are designated with the letters “CU” to indicate that they are credit unions.

² Data in these three columns refer to equipment leases for ANED, INDES, and Finamérica and to equipment loans for all other MFIs.

³ Following the usual practice, this is measured as the average outstanding balance on all loans and leases.

⁴ Data in this row refer to the microlending window only of Caja Social.

⁵ Average is taken over the 12 MFIs with average loan/lease size data for both the overall and equipment portfolios.

⁶ Average is taken over the 10 MFIs with delinquency rate data for both the overall and equipment portfolios.

Source: Author’s July 2002 survey.

Table 2
Terms and Conditions for Individual Working Capital and Equipment Loans and Leases

MFI ¹	Country	Individual Equipment Loans and Leases ²				Individual Working Capital Loans	
		Permissible Term	Average Term	Interest Rate (%) ³	Security Required ⁴	Term ⁵	Interest Rate (%) ³
ANED	Bolivia	≤ 5 years	2-3 years		The equipment itself		
Banco Sol	Bolivia	≤ 5 years		16-26.4% depending on loan amount and collateral	S, M, R	Same as for equipment loans	Same as for equipment loans
Caja Los Andes	Bolivia	≤ 5 years	18 months	13-30% depending on loan amount and collateral. Average 27%.	M non-registered for loans ≤ \$7500; M or R registered for loans > \$7500	≤ 3 years	Same as for equipment loans
FIE	Bolivia	≤ 5 years	26 months	24-28% for loans ≤ \$5000; 13-24% for loans > \$5000. Average 26%.	The equipment itself. Additional collateral: M for loans > \$3000, R for loans > \$10,000	≤ 3 years. 15-18 months average	Same as for equipment loans
Banco de Desarrollo	Chile	6 months - 4 years (see "Collateral Required" entry at right)		2.39% per month	S collateral: loans of 6-18 months and < \$5400; M or R collateral: loans of 1-4 years and \$5400-23,000	6-12 months and up to \$5400 with S collateral	Same as for equipment loans
INDES	Chile	≤ 5 years	4 years	15%	The equipment itself. Additional M or R collateral for leases above \$34,000	1-year term given for all working capital loans	23.9%
Caja Social	Colombia	3-5 years			The equipment itself		
Finamérica	Colombia	≤ 3 years for leases ≤ 2 years for loans	Leases—28 months; Loans—18 months	2.18% per month (up against usury ceiling)	Leases—the equipment itself Loans—M or R		Same as for equipment loans
WWB Cali	Colombia	≤ 4 years	24-30 months	2.18% per month (up against usury ceiling)	M or R above \$3000 (usually M), usually not registered	≤ 3 years. 18 months average.	Same as for equipment loans
Banco Ademi	Dominican Republic	≤ 7 years—set by borrower's ability to repay, not by loan use	4 years	21%	S or M for loans ≤ \$3000 R for loans > \$3000	Same as for equipment loans (all one product)	Same as for equipment loans

Table 2 (cont.)

MFI ¹	Country	Individual Equipment Loans and Leases ²				Individual Working Capital Loans	
		Permissible Term	Average Term	Interest Rate (%) ³	Security Required ⁴	Term ⁵	Interest Rate (%) ³
Banco Solidario	Ecuador	≤ 6 months	100 days	18% (up against usury ceiling)	S or M for loans ≤ \$4000 R for > \$4000	Same as for equipment loans (all one product)	Same as for equipment loans
Financiera Calpiá	El Salvador	≤ 4 years	12 months	26-32% depending on loan amount. Average 30%.	M non-registered for loans ≤ \$5000; M or R registered for loans > \$5000	≤ 2 years	30-36% depending on loan amount. Average 33%.
FINSOL	Honduras	≤ 2 years		S collateral: 36% flat ⁶ for loans <\$2000; 38-39% for loans of \$2000-3000. R collateral: 35% for loans of \$3000-12,000.	Usually take the equipment itself as collateral in addition to what's shown in "Interest Rate" entry (at left)	≤ 15 months	Same as for equipment loans
ADMIC	Mexico	6-18 months or 6-24 months (see "Interest Rate" entry at right)		S or M collateral: 6% per month for loans < \$2000 with 6-18 month term. R collateral: 4.5% per month for \$2000-3000 loans with 6-24 month term.	S, M, or R—see "Interest Rate" entry	≤ 3 months for 1 st loan ≤ 8 months for 2 nd -4 th loan ≤ 12 months for 5 th loan-on	Monthly interest rates: 5% for 1 st – 4 th loan 4.5% for 5 th loan – on
CONFIA	Nicaragua	≤ 2 years	15 months	Monthly loan rates: 4.9% for < \$3000, 3.5% for \$3000-5000, 2% for > \$5000	S or M	≤ 12 months. 5 months average.	Same as for equipment loans
Interfisa Financiera	Paraguay	1-24 months	12 months	Monthly loan rates: 3% for < \$5000 2.7% for \$5000-15,000	M	10 months average	Same as for equipment loans
CMAC Arequipa	Peru	≤ 3-4 years	2 years	Monthly loan rates depend on currency and loan amount: 2.9-4.4% in soles 1.4-2.5% in US\$	S or M for loans ≤ \$4000 R for loans > \$4000. Rarely use the equipment itself. Collateral must be ≥ 150% loan amount.	≤ 18 months. 12 months average.	Same as for equipment loans
Mibanco	Peru	≤ 3 years for sol loans ≤ 4 years for US\$ loans	16 months	60% for sol loans 36% for US\$ loans	The equipment itself	≤ 2 years	40-90%

Table 2 (cont.)

MFI ¹	Country	Individual Equipment Loans and Leases ²				Individual Working Capital Loans	
		Permissible Term	Average Term	Interest Rate (%) ³	Security Required ⁴	Term ⁵	Interest Rate (%) ³
CU—San Martín de Porres	Bolivia	Doesn't make any equipment loans					
CU—Colanta	Colombia	≤ 3 years	2 years	1.1% per month	The equipment itself	Same as for equipment loans	1.3% per month
CU—Oscus	Ecuador	≤ 4 years	4 years	17.5%	S or R. Don't take the equipment itself because it depreciates.	≤ 3 years	Same as for equipment loans
CU—Progreso	Ecuador	≤ 3 years	2 years	18%	The equipment itself, S, or R	≤ 1 year	Same as for equipment loans
CU—UPA	Guatemala	≤ 10 years	3 years	17% for loans ≤ \$3000 18% for loans > \$3000	S for loans ≤ \$3000 R for loans > \$3000	Same as for equipment loans	Same as for equipment loans
CU—San Hilarión	Peru	≤ 3 years	1.5 years	Monthly loan rates: 3.8% in soles, 1.3% in US\$	The equipment itself or R	Same as for equipment loans	Same as for equipment loans
CU—Santa María Magdalena	Peru	≤ 3 years	1.5 years	Monthly loan rates: 1.9-2.2% in soles, 1.4% in US\$	S or M for loans ≤ \$2300 R for loans > \$2300	Same as for equipment loans	Same as for equipment loans

Note: Blank cells indicate missing data.

¹ The last seven MFIs are designated with the letters “CU” to indicate that they are credit unions.

² Data in these four columns refer to equipment leases for ANED and INDES, to equipment leases and loans for Finamérica, and to equipment loans only for all other MFIs.

³ All interest rates are annual and computed on the remaining balance unless otherwise specified.

⁴ Types of security (collateral) are abbreviated as follows: M—Movable property, R—Real property, S—Signature (of borrower and possibly loan guarantors).

⁵ This column shows the permissible term. Where available, the average term is also shown, followed by the word “average.”

⁶ A 3% per month *flat* interest rate means that interest is computed as 3% of the *original* loan amount during each month that the loan is repaid, even as the remaining loan balance declines.

Source: Author's July 2002 survey.

2. Leasing Versus Lending: Pros and Cons

This chapter begins by defining leasing and distinguishing the two major types of leasing, financial and operational. It shows that with operational leasing, MFIs bear three important risks beyond those they bear with financial leasing. Because of these additional risks, we believe that most MFIs will be interested largely in financial leasing. Therefore, the balance of the paper is devoted almost exclusively to financial leasing and lending. This chapter concludes by examining the pros and cons of financial leasing versus lending—from the MFI's and client's perspectives in turn—analyses that are abstracted in the Executive Summary presented above.

Financial vs. Operational Leases

Leasing is a contractual arrangement in which one party uses an asset owned by another party in exchange for specified periodic payments. The *lessee* uses the asset and pays a rental to the *lessor*, who owns it. In order to discuss the pros and cons of leasing, we must first distinguish the two major types of leases, financial leases and operational leases (Box 1). For reasons that will be made clear below, operational leases carry significant additional risks beyond those of financial leases. Consequently, once this risk comparison has been made, the paper will focus almost exclusively on financial leasing.

Financial leasing of equipment is a very close substitute for an equipment loan. The only substantive difference between the two transactions is that the lessor (e.g., the MFI) owns the equipment in the case of leasing, while the client (e.g., the microentrepreneur) owns the equipment in the case of a loan. This difference arises because in the case of leasing, the MFI buys the equipment specified by the client and permits the client to use it under a lease contract. In a loan, the client buys the equipment with the assistance of an MFI loan. By the end of the lease term, the difference between a financial lease and a loan normally disappears, with the client being the owner of the equipment in both cases.

By contrast, in an operational lease, the client frequently does not take ownership of the equipment at the end of the lease term. An operational lease is simply an arrangement by which a client can temporarily use a piece of equipment, but often does not come to own it.

As noted in Box 1, financial leases, in the strict sense used here, have three key distinguishing characteristics. These are that they must be full payout and non-cancellable and that they offer the client the right to buy the equipment for a nominal amount at the end of the lease. Operational leases lack one or more of these features.

While financial leasing is generally understood in the leasing literature to include these three features, it is not always defined so rigorously. We adopt this rigorous definition both because it captures the spirit of what is meant by financial leasing and because it allows us to clearly show the additional risks that operational leasing has beyond those of financial leasing.

Some readers may question whether the third characteristic of financial leases, the non-cancellation feature, should really be included in the definition, particularly since non-cancellation does not figure as prominently as the other two characteristics in discussions of financial leasing. The non-cancellation feature is essential because without it the lessee could take what appears to be a long-term financial lease and turn it into a short-term operational lease simply by returning the equipment whenever (s)he desired.

Table 3 compares the risks of financial and operational leasing to an MFI by comparing each of these instrument's risks to the risks of a loan. Table 3 shows that both types of leasing share the one advantage over a loan that seizure and sale of the equipment is facilitated in the event of a payment default by the client. This means that the equipment seizure and sale process is faster, cheaper, less risky, or some combination

of these, with the precise advantage depending on certain characteristics of the country's legal system and on other factors discussed below. While this advantage tends to make leasing less

expensive and/or less risky than lending, there are other factors that tend to make leasing more risky and expensive than lending.

Box 1
Financial vs. Operational Leases¹

Financial leases are an alternative to loans for equipment acquisition. In a financial lease, the microentrepreneur (or other lessee) specifies to the MFI (or other lessor) the desired equipment and the dealer from whom the equipment should be purchased. The MFI purchases this equipment, which the lessee uses for a specified period of time, in exchange for periodic (e.g., monthly) installment payments over the life of the lease. Financial leasing, as the term is used here, must have **three key characteristics**:

- Financial leases, sometimes called full payout leases, require the lessee to amortize all or virtually all (typically 95-100 percent) of the lessor's original acquisition costs and also to pay interest.
- Financial leases give the lessee the right to buy the equipment at the end of the lease term for a prespecified sum, called the residual value, which for financial leases is set at a nominal amount, typically the remaining balance or a token price such as \$1.
- Financial leases are non-cancellable; that is, the lease cannot be cancelled without the consent of the MFI or other lessor. Financial leases may, however, be prepayable.

The distinction made in the last bullet is the following. While the non-cancellable feature means that the lessee (client) cannot simply stop the monthly payments and return the equipment in the middle of the lease term, the prepayable feature allows the client to pay off the lease early and take ownership of the equipment. Because financial leasing is a means for acquiring equipment, the lessee bears the risk of equipment obsolescence and depreciation. Typically, lessees also assume the costs of insuring, maintaining, and repairing the equipment.

Operational leases are not necessarily a means to acquire equipment. The precise difference between financial and operational leases, as the terms are used here, is that operational leases lack one or more of the three key characteristics given above for financial leases. In many operational leases, the lessee contracts for shorter-term use of equipment that the lessor has available and may or may not have the option to buy. Often, the payments made over the term of the lease do not amortize all or virtually all of the lessor's original acquisition costs plus interest. Rather, the lessor may have to recover the acquisition costs plus interest through multiple serial leases and final sale of the equipment. Leasing a car for a week or for three years are both examples of operational leases. The lessor bears the risks of equipment obsolescence and depreciation and may also assume the costs of insuring, maintaining, and repairing the equipment.

¹ Hire-purchase is a third type of lease that is sometimes distinguished. In some countries, hire-purchase is simply another name for a financial lease (Clark 1990). In other countries, it refers to a variant of a financial lease in which the leased good is jointly owned by the lessor and lessee. As successive lease payments are made, the lessee's share of ownership correspondingly increases. Because of the shared ownership feature, this arrangement is legally less secure for the lessor than a financial lease.

Operational leasing shares two risk disadvantages with financial leasing, both of which, as we shall discuss, appear to be relatively minor problems, at least in the eight Latin American countries we surveyed. First, however, we wish to focus on the last three disadvantages of operational leasing, which financial leasing does not share.

Each of the three additional risks of operational leasing arises because the operational lessee (client) is not required to amortize the full cost, or nearly the full cost, of the leased good, or else because the lessee is not given the option to buy. Whenever lessees are not required to amortize all or virtually all of the cost of leased equipment—either because the lease contract only obligates them to amortize a lower share of the cost or because the lease is cancellable—the lessor must be prepared to sell the equipment after the initial lease period is up or else lease it again. As a consequence, the lessor must be concerned with whether the equipment will be damaged during the lease period (damage risk), whether an appropriate residual value has been estimated for purposes of calculating the monthly lease payments and the cost of any final purchase option (residual value risk), and whether adequate second-hand markets will exist in which to sell used equipment after it is no longer profitable or

possible to lease the equipment (second-hand market risk). When lessees are required to amortize all or virtually all of the cost of the leased equipment, but are not given the option to buy the equipment at the end of the lease period, they have less incentive to properly use, maintain, and repair the equipment. This may increase the likelihood of the equipment breaking down during the lease period (damage risk), an event that may lead some clients to default on their lease payments. Had the lessees been given the option to buy the equipment at the end of the lease period, some might have cared for the equipment better, and some of the additional defaults might have been averted.

Thus the three distinguishing characteristics of financial leases are all important in avoiding these three additional risks of operational leases. By requiring in the lease contract that the lessee amortize all or virtually all of the cost of the equipment, and by not allowing the lessee to cancel the contract early, lessors do not have to worry about being able to sell the equipment or lease it again after the lease term is up. And by offering a purchase option at the end of the lease period, damage risks are reduced. We now examine each of the three additional risks of operational leasing in turn in order to further elucidate the problems involved.

Table 3
Leasing Risk Matrix

Risks or Potential Risks of Financial Leasing (vis-à-vis those of a loan)	Risks or Potential Risks of Operational Leasing (vis-à-vis those of a loan)
<i>Advantage:</i> Stronger legal position for equipment seizure and sale in the event of client payment default	<i>Advantage:</i> Stronger legal position for equipment seizure and sale in the event of client payment default
<i>Disadvantages:</i>	<i>Disadvantages:</i>
Legal disputes, difficulties, and misunderstandings	Legal disputes, difficulties, and misunderstandings
Liability	Liability
	Damage
	Residual value
	Small or nonexistent second-hand markets

Damage Risk

MFI's that finance equipment with loans, financial leases, or operational leases must be concerned with damage occurring to the equipment that has been financed for at least two reasons. First, a damaged machine may impair the client's capacity, and even willingness, to repay the loan or lease. Second, in the event the client defaults on payment and the MFI must seize the equipment, the MFI cares about the condition and value of the equipment it is seizing.

Operational lessors face an additional risk as well. This risk arises in the case in which the lessee pays off the operational lease and returns the equipment as stipulated in the lease contract, but the equipment is damaged. In some these cases, the damage may not be detectable economically or at all. Damage may occur because the equipment has not been properly maintained, has been repaired improperly or with cheap or substitute parts, has been misused or overused, or has been modified to change its performance either temporarily or permanently. Some of these changes may be undetectable and others may be detectable but at too high a cost to make the required examination worthwhile. Even if the damage is detected, the cost of repairs may exceed any damage deposit that has been collected, and the client may resist paying the balance. Moreover, damage deposits cannot be set too high for fear of losing too many potential clients. The fundamental problem that lies behind all of these damage risk scenarios is that operational lessees have less incentive to care for the equipment than borrowers or financial lessees whenever the operational lessees do not expect to be the owners of the equipment after the lease term is up.

In reaction to this additional damage risk, the operational lessor may undertake a series of actions that, at some cost, will reduce, but hardly eliminate, the added risk. Clients may be screened more carefully to be more sure that they have the technical ability to use the equipment properly and are the type of people to take good care of equipment that is not theirs. Operational lessors may become more involved in finding out whether the equipment dealer can be

trusted to provide good equipment and warranty service, and has an adequate supply of quality spare parts. Some operational lessors may choose to make periodic site visits in order to see whether the equipment is being used and maintained properly. Others may arrange for periodic maintenance and bill the client for these costs. Finally, operational lessors may try to become more like financial lessors, by offering clients the option to buy at a low price. But this can only be done without sacrificing profits if the client has amortized most of the original purchase cost and paid interest, that is, only to the extent the operational lease begins to approximate a financial lease.

Residual Value Risk

Residual value risk arises for operational lessors because of their imperfect ability to estimate the value of the leased good at the end of the lease period (i.e., its residual value) and hence calculate the monthly lease payments and the cost of any final purchase option that would fully repay the lessors their initial costs plus interest. Bass and Henderson (2000, p. 10) quote leasing experts as giving the following pertinent admonition: "If you don't do a good job estimating what the property is going to be worth at the end of the lease, you can look really good on paper for two or three years, but once the property starts coming back and you have to sell it on the market—that's when you start losing money." This warning sums up residual value risk for the operational lessor very well.

To fully understand the perils of residual value risk, it is useful to take the example of an industry that lost huge sums of money because of this risk, the U.S. car leasing industry in 2000-2001. To illustrate the problem as it actually occurred, consider the case of a car dealer offering a three-year lease on an automobile that could be sold directly for \$20,000. Suppose the dealer estimates that after three years the car will be worth \$11,000 in the second-hand market. This means that the lessee must pay the dealer \$9,000 in amortization payments over three years (to cover this price depreciation), plus interest on the \$20,000 the dealer has advanced; that is, the lessee must pay a \$20,000 lease down to \$11,000.

If, at the end of three years, the car is only worth \$8000, instead of \$11,000, few lessees will exercise the option to buy for \$11,000, but instead will turn the car in to the dealer. With the \$9000 the dealer has received in amortization payments plus the \$8000 the used car is worth, the dealer has obtained only \$17,000 of the \$20,000 the car was worth. The \$3000 the dealer has lost is due to residual value risk. Had the dealer forecasted the used car's worth correctly at \$8000, it would have increased the lessee's monthly payments so that \$12,000 in principal payments would have been collected over the three year lease term, instead of only \$9000. The dealer could then have reduced the option-to-buy price to \$8000.

This example illustrates that there is much to be lost by overestimating what the second-hand market price will be at the end of the lease term. This is because the lessee's monthly payments are too low to compensate for the full amount of price depreciation that actually occurs over the lease term, but instead only compensates for the forecasted amount of depreciation.

There are also risks to lessors who make the opposite mistake and underestimate what the second-hand market price will be at the end of the lease term. While such lessors do not lose an easily calculable sum of money on each transaction, such as the \$3000 in the above example, they instead lose competitiveness. Prospective clients prefer not to lease equipment from such lessors because of the high monthly payments that result from setting a low residual value.

Residual value risk would likely be even more of a problem for a Latin American MFI offering operational leases than is suggested by the example of the U.S. car market. This is because there are extensive statistics and forecasts available for the historical and likely future prices of second-hand cars sold in the United States. In contrast, the MFI leasing sewing machines, lathes, ovens, and other equipment in a Latin American country is unlikely to have similar information available.

Second-Hand Market Risk

MFI's can offer financial leases on as wide a range of equipment as they can offer loans on. This is because the only scenario in which the MFI might take possession of the equipment is in the event of a payment default. In contrast, the operational lessor must be prepared to receive back much or all of the equipment it has leased out and perhaps sell a good deal of it in the used market once it can no longer be profitably leased. This has two implications. First, operational lessors will likely have to limit the range of equipment they lease to those items whose value can be recovered (with interest) through one or more leases and final sale in second-hand markets. Second, operational lessors may misjudge, and second-hand markets that they thought would exist may not exist at the time the leases are up. In this case, the equipment may be virtually worthless, an extreme case of residual value risk. In contrast, while financial lessors and lenders cannot completely ignore the saleability of the equipment they finance, they can do so to a greater degree than operational lessors. This is because financial lessors and lenders will only have to worry about such sales in the event of a payment default that leads them to take possession of the equipment they have financed.

Financial Leasing vs. Lending: The Risks

We now return to the Table 3 risk matrix and consider the one advantage and two disadvantages that financial leasing has compared to lending in the area of risk. We begin with the two risk disadvantages, which relate to legal disputes, difficulties, and misunderstandings and to legal liability issues. In interviews with leasing companies in eight countries that have major microfinance markets,² both of these disadvantages were considered to be concerns, but not major problems. Nevertheless, we discuss them here because it is important to be aware of these issues, so that any problems arising from them can be properly managed and contained and be-

² The eight countries include five Andean countries—Chile, Bolivia, Peru, Ecuador, and Colombia—plus Mexico, El Salvador, and Honduras.

cause these issues could be more problematical in other countries. This section concludes with a discussion of what is normally leasing's most important—and in some cases, its only—advantage, namely, leasing's stronger legal position for equipment seizure and sale in the event of client payment default.

Legal Disputes, Difficulties, and Misunderstandings

The potential for legal disputes, difficulties, and misunderstandings is greater for leases than loans because of leasing's separation of equipment ownership, on one hand, from possession and use, on the other hand. As a simple example of a misunderstanding, BISA (2001, p. 75) cites the case of a lessor who mistakenly paid the equipment supplier before the supplier had delivered the equipment to the lessee, endangering the whole transaction. Legal disputes and difficulties can also arise. Consider, for example, a leased machine that requires repairs during the equipment warranty period. If the dealer balks at making the repairs, claiming that the lessee abused the machine, the MFI, as owner, could find itself in the middle of an unwanted, and perhaps unexpected, legal battle. And lessees may find it harder to hold the dealer responsible since they have no purchase contract with the dealer. These legal difficulties and others that stem from leasing's separation of ownership and use can be remedied through appropriate modifications to legal codes and regulations, whether by a separate leasing law or other means. MFIs considering leasing would be well advised to talk to existing leasing companies or legal counsel to see what problems arise in practice in their country and how these problems are usually solved.

Leasing operations may give rise to legal problems not experienced with loans in cases where leasing is new to the country and many courts still do not understand it fully. This may occur even with an adequate leasing law or other legal framework for undertaking leasing operations. As an example, the head of ANED's microleasing operations tells of a legal problem involving a disputed sale-and-leaseback transaction in ru-

ral Bolivia.³ The judge who was hearing the case kept asking ANED whether they were buying the good or leasing the good, unable to understand that they were doing both.

Legal Liability

Suppose an MFI leases a taxicab or truck to a client, who has an accident, causing property damage and possibly injury or death to third parties. Who is responsible for the monetary costs of the accident, the MFI (as the vehicle's owner) or the client (as the vehicle's operator)? The answer varies from country to country and is not always clear-cut, with leasing laws sometimes contradicting transit laws, for example. What is clear, however, at least in the eight Latin American countries surveyed, is that liability insurance is generally available at low cost, to cover the risks to both lessee and lessor. The costs are low because in Latin America liability suits are much less frequent and liability settlements far lower in value than in the United States, for example. Further, the type of equipment for which lessors in Latin America believe that they need liability insurance appears to be quite limited, consisting mainly of vehicles, construction equipment, and the like. Therefore, while MFIs that lease equipment may be exposed to liability risks that lenders are not exposed to, any such risks can be largely eliminated at reasonably low cost.

Equipment Seizure and Sale

This subsection discusses what is normally the most important—and in some cases, the only—advantage that financial leasing of equipment has over collateralized lending. Leasing offers a stronger legal position to the MFI for equipment seizure and sale in the event of client payment default. That is, in leasing, seizure and sale of the equipment is facilitated because the lessor owns the equipment, whereas the lender, at best, has only a security interest in it (i.e., has a lien on the equipment, which has been pledged as

³ In a sale-and-leaseback transaction, the lessor (here, ANED) buys used equipment from a client (such as a microentrepreneur) and then leases it back to the client. See chapter 5 for the rationale for such a transaction and further details.

collateral). Virtually all of the 25 MFIs surveyed in Table 2 require either movable or real property collateral for some or all of their equipment loans, particularly for their larger loans. Therefore, the ability to seize and sell collateral appears to be an important issue in microfinance, perhaps more important than is generally recognized. As we now discuss, the MFI may have a greater probability of seizing and selling a leased asset than one in which it has a security interest, and the seizure and sale process may be faster and less costly with leasing than with lending. Which of these advantages leasing possesses depends on the country's legal system and on certain characteristics of the MFI and its clients, as we now discuss.

To understand these advantages of leasing we must consider the two major procedures employed by MFIs in Latin America to seize and sell loan collateral and leased equipment. The first is the *formal* procedure of going through the judicial system, first for a court order to seize the equipment and then for a court-supervised sale of the equipment. The second is the *informal* procedure in which a delinquent client is confronted by personnel from the MFI (often the client's loan officer and perhaps the branch manager), reminded that their loan or lease contract says that they must turn over any pledged collateral and/or leased equipment after a pre-specified number of missed payments, and then asked to do so in accordance with that contract. If the MFI obtains the goods in question, it then sells them without any court intervention, sometimes by displaying them in the branch office and selling them to other MFI clients. Both methods are widely used by MFIs in Latin America, though any given MFI may rely to a greater extent on one method or the other. Because of its higher costs, the formal procedure tends to be reserved more for higher value goods, though it may sometimes be used for lower value goods in order to generally instill repayment discipline among the MFI's clientele.

Leasing's stronger legal position for equipment seizure and sale in the event of client payment default offers clear benefits to the MFI in the case of the formal seizure and sale procedure,

and may offer benefits in the case of the informal procedure. With the formal procedure, the MFI has a greater probability of seizing and selling a leased asset than one in which it has a security interest, and the entire legal process is faster and less costly as well. With the informal procedure, the MFI may have a greater probability of seizing a leased asset than one in which it has a security interest, and that is the sole advantage of leasing in the informal case, though it may be an important advantage.

Several benefits accrue to MFIs that employ a seizure and sale procedure that is cheaper, faster, or less risky. A cheaper process has direct cost saving benefits. Faster seizure and sale means that the equipment is less depreciated and more likely to still be functioning, and thus more valuable for these two reasons. Faster seizure and sale also implies that the MFI receives the proceeds of the equipment sale more quickly and that its personnel do not have to follow the case for as long a time period. Less risky seizure and sale means that the MFI is more likely to realize the proceeds of the equipment sale. An additional, less obvious benefit may be added to these. This benefit starts from the fact that seizure and sale has been facilitated in some way—by making it cheaper, faster, or less risky (or a combination of these). As a result, it will be worthwhile for the MFI to use the equipment seizure and sale procedures in a higher percentage of payment delinquency cases. As clients realize that it is more likely that their equipment will be seized if they become delinquent in their payments, more clients will try harder to avoid delinquency. The resulting higher repayment rates translate directly into greater MFI profits, as revenues increase and bad loan collection costs shrink.

A caveat must be added to this discussion of the benefits of leasing. As discussed in chapter 5, some lessors may have good reason to take additional collateral, beyond their ownership interest in the leased equipment. While leasing facilitates seizure and sale of the leased equipment, it does not help the MFI seize and sell any additional collateral it may have taken.

We now examine the advantages of leasing in more detail, in both the formal and informal equipment seizure and sale procedures.

Formal Seizure and Sale

The formal seizure and sale process is faster, cheaper, and less risky with leasing than with lending. In order to understand these advantages, we must first describe what a *lender* must do to be able to seize and sell loan collateral using the formal procedure.

A lender who wishes to seize and sell loan collateral through the court system must follow four steps:

1. create a security interest in the collateral,
2. perfect its security interest in the collateral,
3. seize the collateral, after obtaining a court order, and
4. sell the collateral under court supervision.

The creation of security interests. This refers to the fact that the lender must specify certain goods as collateral in the loan contract. Lenders may encounter difficulties even in this seemingly simple step. The laws of many Latin American countries stipulate that only certain specific goods or certain classes of goods, but not others, may be used as collateral. This is sometimes quite limiting, as the gaps can be substantial and often without any modern rationale.

The perfection of security interests. To be sure that there are no prior superior claims on an asset pledged as collateral, lenders must be able to search for such claims in the legal registry. Many registries in Latin America are not computerized, and must be searched manually. Sometimes the entire registry must be searched because pledges are entered chronologically and cannot be referenced by the name of the borrower or by using a description of the pledged asset. Registries may also be fragmented geographically or by type of asset (with the boundaries between different types of assets sometimes unclear), further complicating the search process. Additional difficulties arise when, as occurs with some prevalence in Latin America, one

needs official permission to search a registry. This permission may be difficult to obtain, perhaps involving bribes, delays, and uncertainty of ultimate access. Budgetary limitations may also take their toll on the timeliness and accuracy of registry searches, as illustrated by a registry in Latin America that had a month's worth of lien filings scattered over the floor waiting to be entered into the system.

The enforcement of security interests: collateral seizure and sale. In most Latin American countries, it normally takes six months to two years to seize and sell collateral. A lengthy legal process involving the courts is required to seize the collateral, rather than a rapid administrative procedure. The length of the legal process depends on how expeditiously the fixing of dates for the different legal steps is handled, whether all parties always appear as scheduled, on how many appeals and other defensive techniques the defendant employs, etc. Once the collateral has been seized, it must be sold under court supervision, in an additional lengthy and expensive process involving lawyers, judges, and appraisers. Typically, during the sale process, the borrower is able to make further legal challenges, so that the lender is still not secure in its ownership position until the collateral is finally sold.

In this four step process, leasing eliminates steps 1, 2, and 4, and may (or may not) reduce the costs, time delays, and risks associated with step 3. These advantages of leasing are now discussed in turn.

Since lessors own the equipment, a lessor does not have to be concerned about creating or perfecting a security interest in the equipment it leases (steps 1 and 2). It can be sure that no one else has a prior legal claim on the equipment. The cost savings here can be substantial. Jansson, Rosales, and Westley (2003, p. 36) cite the case of a Peruvian vehicle registry in which the monetary fees for registering a vehicle lien (including searching for prior claims and valuing the vehicle)—despite having dropped substantially—are still \$30-50 depending on the value of the vehicle. Lenders must pay such costs each time a security interest is registered, whereas the substantially higher costs associated with steps 3

and 4 are incurred only for the small percentage of loan cases that are defaulted on and litigated. In addition to the monetary costs of collateral registration, the lender's staff may have to spend significant amounts of their own time engaged in the registration process, depending on the efficiency of the registry system. This adds both costs and delays to the loan approval process; for example, even in the case of the much modernized vehicle registry in Peru, the registration process still takes three days. Delays of three days and longer can be a disadvantage in a competitive microfinance market, where loan approvals are often granted in 10 days or less. Collateral registration also involves the additional risks to the lender that the search process may miss a prior claim because it was filed in another geographic location, in a different asset registry, or may have been simply overlooked during the search.

Leasing eliminates all the costs, time delays, and risks associated with court supervision of the sale of collateral (step 4). Once the lessor has recovered the leased equipment, it is free to sell this equipment or do whatever else it wishes since it is the owner of the equipment.

With regard to seizure (step 3), leasing has a very large advantage over lending in two of the eight countries surveyed, Ecuador and Bolivia. In these two countries, leased goods are typically recovered in 1-2 months or less, compared to an average of a year or more to recover loan collateral. The costs of the seizure process are also far less for leasing than lending. To seize leased goods in Ecuador, for example, the lessor simply submits a standard package of documents to a judge, including the lease contract, proof that the client is at least three payments overdue, and evidence that the appropriate letters have been sent to the client. The judge then issues an *orden de restitución* (restitution order), with which the lessor can enter the lessee's property and recover the leased goods. There is no court hearing or prior notification of the lessee and no police escort is normally needed to seize the good. The fees imposed total a very modest 1-2 percent of the value of the lease contract, and the process works well.

In the remaining six countries surveyed (Chile, Peru, Colombia, Mexico, El Salvador, and Honduras), the advantages of leasing with regard to seizure (step 3) are much less pronounced than in Ecuador and Bolivia, and appear to be non-existent in some of the countries. In all six countries, a court hearing is required to seize either leased goods or loan collateral. However, in some of the countries such as Colombia, the seizure of leased goods requires fewer steps and allows less time for some of these steps as compared to the seizure of loan collateral. This results in faster overall recovery times, though does not appear to save monetary costs (such as outside attorney fees and court costs). In other countries, such as Peru and Honduras, it seems that, in practice, there are few or no advantages to recovering leased goods compared to loan collateral, either in time, cost, or likelihood of success.

Informal Seizure and Sale

For MFIs employing the informal seizure and sale procedure, leasing has one possible advantage over lending: informal seizure may have a higher probability of success. As discussed below, this advantage is more conjectural than the advantages leasing enjoys in the formal seizure and sale case. Partly, this is due to the fact that few MFIs have tried out leasing in Latin America, and so there is very limited evidence to go on. Despite this caveat, leasing's informal seizure and sale advantage may be an important one.

Why might MFIs have a higher probability of success when they employ informal seizure methods with leased equipment than with loan collateral? To understand why this might be so, one must understand that while loan or lease clients may have contractually obligated themselves to turn over certain goods in the event of payment default, they also have a legal right to keep anyone they wish from trespassing in their home or business property. This means that MFI personnel must win the consent of the client to allow them to enter the client's property and remove the leased equipment or pledged collateral. Some people believe that clients will more readily open their doors and turn over leased equip-

ment—since that equipment *belongs to the MFI*—than their own equipment or other goods that they have used as loan collateral since that equipment or those goods *belong to the client*. This is not to say that all clients in payment default will turn over equipment they have leased, only that a higher percentage will than in the case of loan collateral. For example, the NGO ANED in Bolivia used to give equipment loans, but switched to equipment leasing in 1997 largely because it believed leasing increased the probability of success of informal seizure. ANED continues to believe that it does so. Similarly, Caja Los Andes, another Bolivian MFI, wanted to launch a leasing program, to an important degree for the same reason. It was stopped only by a regulatory change that mandated that all leasing be done through a separate subsidiary, which was considered too expensive to make the leasing program worthwhile. It was only in December 2001, after both of these Bolivian MFIs had decided to go into leasing, to a large extent on the basis of its informal seizure advantage, that the bank law was amended (article 62) to allow for the very expeditious formal seizure of leased equipment in Bolivia that was noted above.

Financial Leasing vs. Lending: Pros and Cons from the MFI Perspective

Many of the discussions of the pros and cons of financial leasing found in the leasing literature are confusing. This confusion arises because much of this literature fails to rigorously distinguish financial from operational leasing and identify the additional risks inherent in operational leasing, beyond those of financial leasing. As a result, the additional risks of operational leasing are not always excluded when discussing financial leasing and comparing it to lending.

This section summarizes, and Table 4 lists, all of the pros and cons of financial leasing vis-à-vis lending from the MFI perspective. The first advantage and the first two disadvantages listed in Table 4 have been discussed already in the previous section. This section discusses the remaining pros and cons. Chapters 3 and 4 discuss the regulatory and tax factors, respectively, in greater depth, and present the regulatory and tax treatment of financial leases and loans in eight Latin American countries that have important microfinance markets (Chile, Bolivia, Peru, Ecuador, Colombia, Mexico, El Salvador, and Honduras).

Table 4
Financial Leasing vs. Lending: Pros and Cons from the MFI Perspective

Advantages of Financial Leasing	Disadvantages of Financial Leasing
Stronger legal position for equipment seizure and sale in the event of client payment default	Greater potential for legal disputes, difficulties, and misunderstandings
	Greater potential for legal liability problems
	Greater setup costs
	Greater operating costs
Banking regulations: possibly escape usury ceiling	Banking regulations: financial leasing may be prohibited or permitted only through a subsidiary
Taxes: <i>may</i> be advantageous to financial leasing in the case of MFI clients who pay profit tax and VAT on the products they sell (formal clients)	Taxes: generally disadvantageous to financial leasing in the case of MFI clients who do not pay profit tax or VAT on the products they sell (most MFI clients—informal)

Setup Costs

While there are many things that must be considered and done when launching either an equipment loan or lease program, leasing programs are likely to demand additional considerations and actions, beyond what is required to launch an equipment loan product. While MFIs are generally familiar with the legal, regulatory, and tax treatment of loan products, they will have to familiarize themselves with those aspects of leasing. (The preceding section discusses some of the legal issues raised by leasing; chapters 3 and 4 discuss regulatory and tax issues.) Staff will have to be trained in the legal, regulatory, and tax aspects of leasing that they need to understand, and simple materials will have to be prepared to explain leasing to clients in a way that can be readily understood. An insurance strategy may have to be developed to cope with any additional legal liability issues raised by leasing. Finally, many (though not all) countries impose value added tax (VAT) on lease, but not on loan, payments. Consequently, the MFI's information system may have to be modified so that the MFI can track and pay VAT on its leasing operations.

Operating Costs

Equipment leasing programs incur fairly modest additional operating costs over and above those incurred by equipment lending programs. Specifically, for each lease transaction, lessors must incur the additional costs of purchasing the equipment specified by the client. Finamérica, an MFI doing leasing in Colombia, estimates that this typically involves an additional 30-40 minute trip for the leasing officer, a relatively modest amount of time compared to the many person-hours the leasing officer, management, and other MFI personnel spend in the preparation, approval, disbursement, and collection of a lease operation.⁴

⁴ Typically, the client does everything else except purchase the equipment: picks out the equipment and supplier; negotiates the price, warranty, and other terms; and arranges for delivery. The lessor merely provides the finance, by the act of purchase. As dis-

Banking Regulations

Usury ceilings are of particular interest to MFIs because of the high interest rates MFIs must charge to cover costs on their small loans and leases. Unless MFIs are allowed to charge cost-covering interest rates, they will not be sustainable and their growth may be curtailed, to the detriment of both the MFIs and their clients. A potential advantage of leasing is that some countries exempt it from their usury ceiling, thus allowing more equipment to be financed, through the leasing channel. Of the eight countries we surveyed, three have a usury ceiling in place (Chile, Ecuador, and Colombia) and five do not (Bolivia, Peru, Mexico, El Salvador, and Honduras). Leasing is exempt from the usury ceiling in Chile and Ecuador, but not in Colombia. While this might seem to be a significant advantage for leasing in these two countries, it actually is not. This is because while both Chile and Ecuador set a fairly low ceiling on the interest rate that can be charged on loans, neither country limits the amount of commissions that can be charged. This means that the usury ceiling has little if any effect and that leases offer no real advantage over loans, at least in the eight countries we have surveyed.

The other important banking regulation that we examine in the same eight countries is the extent to which the main types of financial institutions—banks, *financieras*, credit unions, NGOs, and a variety of special institutional forms such as FFPs and EDPYMEs—are permitted to do leasing. Since MFIs can take on all of these forms, it is interesting to know whether, for each of the countries, each type of financial institution is allowed to lease directly, can lease only if it forms a leasing subsidiary, or cannot lease at

cussed in chapter 5 (see the section entitled, "Range of Products Financed"), some MFIs may want to be more actively involved in the choice of equipment and supplier when offering either a financial lease or loan. While this may entail additional staff time and costs, such involvement should not be greater for financial leasing than for lending programs since in both cases the MFI only takes possession of the equipment in the event of payment default.

all. While the results are found in chapter 3, we note here that there are substantial restrictions on leasing for each type of financial institution in at least some of the countries. Restricted financial institutions either are not able to lease at all or can only do so by creating a leasing subsidiary. As discussed in chapter 3, it is not generally recommended for MFIs to create leasing subsidiaries, particularly to do financial leasing. The requirement that financial leasing subsidiaries be created mainly adds to costs, without returning significant benefits.

Tax Considerations

Chapter 4 presents the major conclusions on the effect of the tax systems in the eight countries on the relative desirability of loans versus financial leases. These conclusions reflect the combined impact of the profit tax, value added tax (VAT), and other taxes on both MFIs and their clients. By combining the tax impacts in this way, we are able to judge the overall tax burden on an MFI and its clients, all taken together. We assume that the financing mechanism (lease or loan) with the least overall tax burden is the one that is most advantageous to the MFI as well as to its clients. The distribution of this overall burden between an MFI and its clients can be readily altered by changing the interest rates charged for loans or leases, thus allowing tax burdens to be shifted onto clients or absorbed by the MFI.

Summarizing the conclusions for the most common situations encountered in the eight countries, we find that in the case when the loan or lease clients are *informal* enterprises—enterprises that pay no VAT or profit taxes on the products they sell,⁵ as is the case for most microenterprises—the tax systems in all eight countries, except El Salvador and Honduras, have at least a modest anti-leasing bias. For El Salvador and Honduras, the tax system may favor leasing or lending, depending on certain fac-

⁵ By “pay no VAT or profit taxes” we mean “remit no VAT or profit taxes” since we make no judgment about who ultimately bears the burden of the VAT and profit taxes. We prefer to use the more common and natural word “pay” instead of “remit,” and do so throughout the text.

tors described in chapter 4. In the case where the loan or lease clients are *formal* enterprises—enterprises that pay VAT and profit taxes on the products they sell—the tax systems favor leasing in Peru and lending in Mexico. For the other six countries, the picture is mixed, with leasing tending to be favored for shorter-term finance (two years or less) and lending tending to be favored for longer-term finance (three years or more). Since most MFI clients are informal, tax considerations generally favor lending. These conclusions are elaborated on and quantified in chapter 4 and Annex A.

Diversion of Funds

While Table 4 gives no other pros and cons of leasing, we note one other factor that is sometimes held to be a benefit of leasing: the prevention of funds diversion. The idea behind this factor is that since the MFI buys the equipment for the microentrepreneur in the case of leasing, it is guaranteed that the money will not be spent on frivolous consumption items or other purchases that might be detrimental to the client’s overall welfare and ability to repay the MFI. We argue that this factor should not be classified as an advantage (or disadvantage) of leasing, for two reasons.

The first reason we don’t classify this factor as an advantage of leasing is that it may not be true: leasing does not always prevent the diversion of funds to other purposes. In the case of households with savings or access to other funds, diversion is not necessarily eliminated, because of fungibility. A microentrepreneur who wants to buy a machine and has sufficient cash and the intention to do so already, may approach an MFI for an equipment lease and then use his/her own funds to expand household consumption or for any other purpose. That is, without the equipment lease the microentrepreneur would have bought and used the equipment on his/her own. With the equipment lease, the microentrepreneur leases the equipment and uses his/her own funds to expand household consumption. Therefore, the net effect of the equipment lease is to expand household consumption.

The second reason why the prevention of funds diversion is not necessarily an advantage is that clients that are given flexibility to use the loan in ways that have not been discussed with or approved by the MFI may use the funds wisely or not, and it is difficult to say *ex ante* which outcome will occur more often. While, on one hand, some clients may be shortsighted and waste funds over which they have been given discretion, on the other hand, the client is the one best positioned to know what are the highest and best uses of any loan funds (s)he may receive. Therefore, leasing may increase client welfare by preventing wasteful purchases or it may reduce client welfare by preventing use of the funds for higher-value purposes. On the latter possibility, Sebstad and Cohen (2000) find that in a significant minority of microbusiness loans at least a portion of the loan is diverted to nonbusiness purposes, often to meet very important needs. For example, diverted funds have often been used to cope with systemic shocks (such as recession, inflation, floods, and other natural disasters), individual emergencies (such as illness, death, fire, theft, and job loss), and life cycle events (such as marriages, funerals, births, and festivals). The authors find that diverting loans to help meet such expected and unexpected needs has often allowed households to continue obtaining medical care, paying educational expenses, eating three meals a day, and generally maintaining and improving their human capital.

What about the effect of loan diversion on the client's ability to repay the MFI? As noted in chapter 5, MFIs differ in whether they count any additional income generated by the equipment to be acquired in determining whether the client has sufficient income to repay a loan. Some MFIs count little or none of the projected income increase, feeling this is too speculative a basis on which to grant a loan. The other MFIs, those that count on the new equipment to provide at least a part of the income to repay the loan, can make sure that the equipment will be purchased with the loan money, at some additional cost, by accompanying the borrower to the equipment dealer and paying the dealer directly. This is an extra trip similar to that which the MFI would make to buy the equipment in the case of a lease, and so would simply cancel out

this relatively minor disadvantage of leasing, which was discussed earlier under the heading of, "Operating Costs."

Financial Leasing vs. Lending: Pros and Cons from the Client Perspective

Though Table 4 refers to the pros and cons of leasing vs. lending from the MFI's perspective, it is also a good departure point for understanding the pros and cons of leasing vs. lending from the client's perspective. Starting at the bottom of the table, taxes are obviously relevant to the choice, both those taxes that are paid by the client directly (such as business profit taxes that the client pays if the client is formal) and those taxes that are paid by the MFI. The client will obviously take account of taxes (s)he pays directly, and will also indirectly take into account the taxes paid by the MFI—as well as all of the other pros and cons of leasing vs. lending for the MFI that are shown in Table 4—through the interest rate that the MFI charges for leases vs. loans. This means, for example, that if MFIs charge higher interest rates on leases than loans (e.g., because of unfavorable tax treatment of leasing or for any other reason), then clients will obviously take account of any such interest rate differential in choosing whether to lease or borrow.

The first two advantages and the first disadvantage of financial leasing shown in Table 4 are also relevant issues for clients to consider in the choice between a lease and a loan. Taking the last of these first, leasing's greater potential for legal disputes, difficulties, and misunderstandings is normally a disadvantage for the client, just as it is for the MFI, since both parties can get caught up in these problems (see discussion above). However, as noted earlier, while this issue is a concern, it is usually not a major problem. Financial leasing also offers two possible advantages to clients, which stem from the first two advantages shown in Table 4.

Taking the second advantage first, by possibly escaping a usury ceiling, leasing may enable MFIs to offer more equipment finance to their clients. This would allow microentrepreneurs to obtain equipment financing to which they would

otherwise not have access, albeit at higher interest rates.

The benefits to the client of the lessor's stronger legal position for equipment seizure and sale in the event of payment default are widely discussed in the leasing literature. Because of this stronger legal position, lessors can offer financing with lower downpayments, less outside collateral requirements, or longer terms (albeit with somewhat greater chances that the clients' equipment will be seized and sold if they default on their lease payments). Lower downpayments may reduce what Gallardo (1997) has noted is often a major barrier to equipment finance: the need to save up the downpayment. Lower collateral requirements help clients who have little collateral to qualify for financing. Longer terms reduce installment payments, increasing affordability. As an example of this last benefit, the NGO Pro Mujer in Bolivia is interested in leasing because it would allow the NGO to more safely offer longer-term equipment financing to many of its indigent clientele, who cannot afford the installment payments associated with shorter-term finance. These three client benefits are all ways for the MFI to give back or share with its clients one of the benefits of leasing, namely, the MFI's strengthened legal position. Each of these three improvements in client loan terms increases the risk of client nonrepayment, but the MFI hopes that leasing's stronger legal position will more than compensate for this ad-

ditional risk, leaving both the MFI and client better off than with a loan. Another way for the MFI to share benefits of cheaper, faster, or less risky seizure and sale of the financed equipment is simply to reduce the interest rate charged on lease operations below what it otherwise would have been. This may give leasing a price advantage over lending, or narrow a price disadvantage, depending on the balance of the other pros and cons of leasing vis-à-vis lending for the MFI.

Two additional advantages of leasing that stem from its stronger legal position, and which arise particularly for larger size operations, are that leasing may give clients faster approvals and that it may also reduce transactions costs for the client and MFI. These advantages arise because with leasing it is not necessary to register a lien on the leased good (since the MFI owns it) and possibly on other collateral (because with the MFI's stronger legal position with respect to the leased good, additional collateral may be unnecessary). In contrast, if a loan is granted, the MFI may want to register a lien and search for prior claims on any loan collateral, which can take time and increase transactions costs for the client and MFI. Again, the part of this cost savings that is realized by the MFI may be passed on to the client in the direct form of lower loan processing fees or in the more general form of an interest rate that is lower than it otherwise would have been.

3. Banking Regulations

This chapter discusses two major banking regulations that can strongly impact whether an MFI can and would want to offer a financial leasing product to meet its clients' equipment financing needs, or would prefer instead to offer a loan product. These banking regulations are the usury ceiling and leasing restrictions. As part of our examination of this second regulation, we also discuss the role of financial leasing subsidiaries. We conclude that, in the case of *financial* leasing, superintendencies should not require subsidiaries of any financial institution since they are not needed to mitigate risk. Also, in the particular case of MFIs, the use of subsidiaries to do financial leasing should be avoided whenever possible because their use can substantially raise costs without returning significant benefits.

Usury Ceilings

Usury ceilings are of particular interest to MFIs because of the high interest rates MFIs must charge to cover costs on their small loans and leases. Unless MFIs are allowed to charge cost-covering interest rates, they will not be sustainable and their growth may be curtailed, to the detriment of both the MFIs and their clients. A potential advantage of leasing is that some countries exempt leasing from their usury ceilings thus allowing more equipment to be financed, through the leasing channel. Of the eight countries we surveyed, three have a usury ceiling in place (Chile, Ecuador, and Colombia) and five do not (Bolivia, Peru, Mexico, El Salvador, and Honduras). Leasing is exempt from the usury ceiling in Chile and Ecuador, but not in Colombia. While this might seem to be a significant advantage for leasing in these two countries, it actually is not. This is because while both Chile and Ecuador set a fairly low ceiling on the interest rate that can be charged on loans, neither country limits the amount of commissions that can be charged. This means that the usury ceiling has little if any effect and that leases offer no real advantage over loans, at least in the eight countries we have surveyed.

Leasing Restrictions

The other important banking regulation that we examine in the same eight countries is the extent to which the main types of financial institutions—banks, *financieras*, credit unions, NGOs, and a variety of special MFI forms such as FFPs and EDPYMEs—are permitted to do leasing. Since MFIs can take on all of these forms, it is interesting to know whether, for each of the countries, each type of financial institution: a) is allowed to lease directly, b) can lease only if it forms a leasing subsidiary, or c) cannot lease at all.

There are substantial restrictions on leasing for each type of financial institution in at least some of the countries (Table 5). Restricted financial institutions either are not able to lease at all or can only do so by creating a leasing subsidiary. As discussed below, it is not recommended for MFIs to create leasing subsidiaries, particularly to do financial leasing. The requirement that financial leasing subsidiaries be created adds to costs without returning significant benefits. This contrasts with Carter's (1996) recommendation for the case of banks that lease to small and medium-scale enterprises, where the creation of leasing subsidiaries is recommended. The reasons for these disparate recommendations are discussed below.

Table 5 employs the following conventions:

- “Yes” means that the financial institution can do leasing in either of two ways, directly or by owning a leasing subsidiary.
- “No” means that the financial institution cannot do leasing at all, either directly or by owning a leasing subsidiary.
- “Subsids. only” means that the financial institution cannot lease directly, but only by owning a leasing subsidiary.
- “Direct only” means that the financial institution can lease directly, but cannot own a leasing subsidiary.

Table 5
Which Financial Institutions Can Lease?

	Peru	Bolivia	Ecuador	Chile	Colombia	El Salvador	Honduras	Mexico
Banks	Yes	Subsids. only	Yes	Yes	CFC Subsids. only ³	Subsids. only	Yes	Yes
<i>Financieras</i>	Yes	Don't exist	Yes	Yes	CFC Subsids. only ³	No longer exist	Yes	No
Credit Unions	Subsids. only	No	No	No	CFC Subsids. only ³	None regulated yet ⁴	Not regulated	Treated as EACPs (see below)
CMACs, CRACs, EDPYMEs (Peru)	Must reach Module II ²							
FFPs (Bolivia)		Subsids. only						
CFCs (Colombia)					Direct only ³			
SACs (El Salvador)						Subsids. only		
OPDFs (Honduras)							Yes	
EACPs (Mexico) ¹								Categories 3 and 4 – Direct only ⁵
<i>Uniones de Crédito</i> (Mexico)								No

¹ The EACPs in Mexico are of two types: cooperative (credit unions) and corporate. The information presented here applies to both types.

² To reach Module II of the superintendency's modular incentive scheme, the MFI must have the same capital as a *financiera* (approximately \$2.15 million), be rated "A" or "B" by the superintendency, and meet other requirements. Upon reaching Module II, the MFI can lease directly or by means of a leasing subsidiary. Since the superintendency has not approved a single petition to move even to the simpler Module I, even by some of the best MFIs, the modular scheme appears to offer little chance for MFIs to expand the range of their operations, including to leasing. Peruvian MFIs wishing to lease may be best advised to try to become a *financiera* or bank.

³ The CFCs in Colombia are the only type of financial institution allowed to do leasing directly. All other financial institutions can engage in leasing only by owning a CFC subsidiary.

⁴ To be regulated, a credit union must take deposits from non-members or have total deposits plus member shares of at least \$68.5 million. At the time this research was conducted (October 2002), only one credit union (ACCOVI) was in the process of becoming regulated, though other credit unions are expected to follow. Regulated credit unions can do leasing only by owning leasing subsidiaries.

⁵ EACPs must have at least \$1.56 million in capital to reach Category 3, and thus be able to lease. Such EACPs can only lease directly; they cannot own leasing subsidiaries.

Sources: Bank laws and regulations; senior superintendency personnel and other interviews, carried out in October 2002

Table 5 covers the major types of regulated financial institutions that are relevant to microfinance in the eight countries. While banks and credit unions are found in all eight countries, and *financieras* are found in six, the remaining types of institutions are special forms that exist in only one country. These special forms all engage in microfinance, and some do other types of lending as well (consumer loans, etc.). In general, these special institutional forms have a lower capital requirement and a more limited range of permitted financial activities than *financieras*, which, in turn, have a lower capital requirement and a more limited range of permitted financial activities than banks.

Substantial restrictions on leasing exist for all types of financial institutions. Even banks, which are afforded the widest range of permitted financial activities, are restricted from leasing directly in Bolivia, Colombia, and El Salvador, and must instead lease through subsidiaries. Where they exist, *financieras* in these three countries fare no better, and in Mexico they are not allowed to lease at all. Credit unions are the most heavily restricted of any institutional form. In the five Andean countries, credit unions are prohibited from leasing in Bolivia, Chile, and Ecuador, and are limited to leasing through subsidiaries in Colombia and Peru. In the two Central American countries (El Salvador and Honduras), credit unions are not regulated and so face no leasing restrictions. In Mexico, only the larger credit unions are allowed to lease. The MFIs that are constituted as special institutional forms (FFPs, EDPYMEs, etc.) are subject to a wide variety of conditions and restrictions on their ability to lease. Finally, since NGOs are not regulated, they are not included in Table 5. While this absence of regulation might be taken to mean that NGOs are free to lease, some superintendencies have asserted their right to regulate all financial activity, including which institutions may do leasing and in what form (directly or through a subsidiary). Of the eight countries, senior superintendency personnel in Bolivia, Ecuador, and Mexico were particularly strong in asserting this right in relation to leasing.

By contrast, all financial institutions are allowed to make medium-term equipment loans without restriction in all eight of these countries because lending is considered to be a less risky activity than leasing. As discussed in chapter 2 and shown in the Table 3 risk matrix, this is almost certainly *not* true of financial leasing, rigorously defined (Box 1). Compared to lending, financial leasing suffers from two generally minor additional risks, namely, those related to: a) legal disputes, difficulties, and misunderstandings and b) liability. However, with financial leasing, financial institutions have the generally much greater advantage of a stronger legal position for equipment seizure and sale in the event of client payment default. On balance, financial leasing rarely poses more risk than lending and often poses significantly less risk. Consequently, financial leasing should not be restricted for any financial institution allowed to lend.

While financial leasing should not be any more restricted than lending, the same cannot be said of operational leasing. This is because operational leasing can have significant damage, residual value, and second-hand market risks not shared by lending (Table 3). Accordingly, superintendencies may wish to restrict operational leasing activities for some or all financial institutions.

The policy recommendations that result from this analysis are that superintendencies should adopt the rigorous definition of financial leasing given in Box 1 and should not restrict any financial institutions allowed to do lending from engaging in financial leasing. This definition of financial leasing would replace a crazy-quilt of definitions presently found in Latin American banking regulations, in which financial leasing is variously defined as: any leasing operation done by a regulated financial institution, any leasing operation that offers a purchase option, any leasing operation with a given maturity (e.g., three years) or more, etc.

Leasing Subsidiaries

It remains to explain how leasing subsidiaries can mitigate risk, and why—despite the fact that leasing subsidiaries might be useful for banks

that lease to small and medium-scale enterprises—they are generally not recommended for MFIs, in particular for MFIs doing *financial* leasing.

Leasing (and other) subsidiaries are of interest to financial institutions and to superintendencies as a way to mitigate risk. For example, since operational leases are generally riskier than loans, one might consider putting these riskier activities into a subsidiary. When an MFI (or other financial institution) puts all its operational leases into a subsidiary, even if the MFI owns 100 percent of the subsidiary, the MFI limits its losses to the capital it has invested in the subsidiary.⁶ By contrast, if the MFI books the operational leases directly on its own balance sheet, its losses may consume all of the capital of the MFI, which may be far larger.

As Carter (1996) and others have argued, putting leasing activities (financial or operational) into a subsidiary may have the additional advantage of yielding more focused and professionalized leasing operations. The context for Carter's recommendation is the case of banks leasing to small and medium-scale enterprises (SMEs). Because banks typically are focused on their large corporate clients, where the great majority of their business and profits are normally generated, they are often disinterested in and neglectful of SME leasing divisions. Carter asserts that bank leasing operations function better when spun off into subsidiaries that do not have to compete with other bank divisions for budgetary resources and talented personnel.

On the other hand, there are significant additional costs to constituting a separate leasing subsidiary, with its own management team, computer systems and information technology specialists, legal department, and other overhead costs. It is cheaper to lease directly out of a bank or other financial institution. This is a major rea-

⁶ To qualify for this loss-limiting feature of subsidiaries, the parent company (the MFI) may have to satisfy certain requirements set out in local bankruptcy laws, such as always maintaining arms-length transactions with the subsidiary and permitting the subsidiary to be independently managed.

son that Chile and Mexico, for example, have dropped their previous requirements that leasing be done through subsidiaries and a major reason that many banks in these countries have absorbed their leasing subsidiaries back into the parent bank. While leasing may be done more cheaply without the subsidiary, Carter may still be correct in pointing out that it may not be done as effectively or profitably. Therefore, the desirability of constituting leasing subsidiaries in order to increase overall bank profits and promote the growth of the leasing activity seems an open question for the case of bank operations with SMEs.

However, it is one thing to observe that leasing often grows faster and returns higher profits when placed in a subsidiary, and quite another for superintendencies to *require* the creation of leasing subsidiaries by all banks and other financial institutions that do leasing. Superintendencies must be primarily concerned with controlling risk, not with trying to discern how financial institutions can maximize their profits or increase their leasing activities. On the basis of risk considerations, the analysis in chapter 2 makes it clear that superintendencies should not require that financial institutions create subsidiaries in order to do *financial* leasing, though they may more reasonably require the creation of subsidiaries to do *operational* leasing.

Whether or not subsidiaries are a useful means for increasing profits and expanding leasing activities in the case of bank leasing to SMEs, their utility for these purposes in the case of microfinance is much clearer: leasing subsidiaries are not advisable, for at least three reasons. First, equipment lending and leasing is a fairly small share of the total loan and lease portfolio of most MFIs; for example, it averages 20.8 percent for the MFIs surveyed in Table 1. This raises the question of whether it would be worth incurring significant additional costs to set up a separate equipment leasing (or equipment leasing and lending) subsidiary just to attend to this somewhat marginal segment of total demand. It also raises the issue of whether there is a sufficient density of demand within any given geographic area to dedicate a loan/lease officer full time just to serving the equipment needs of that area. Sec-

ond, a separate subsidiary is likely to increase operating costs, reduce response times to client needs, and complicate underwriting. Imagine a loan officer visiting a client who has taken out a series of working capital loans and who one day expresses a desire to acquire new equipment. In most of the leading MFIs, this client would be attended to on the spot by the loan officer. But if a separate equipment financing subsidiary had been set up, another visit would have to be arranged so that the equipment loan/lease officer could evaluate the client and the request. This would represent an added cost for the MFI and an added delay for the client. Moreover, since it is the primary loan officer who knows the client well, the equipment financing subsidiary would be at an informational disadvantage in making the equipment loan or lease underwriting decision. Third, unlike the case of SMEs, the equipment required by most microentrepreneurs is generally very rudimentary, and a single loan officer can handle both the working capital and

equipment needs of most clients. Professionalization arguments do not mandate a separate staff well versed in the technical intricacies of different types of equipment.

Since MFI leasing subsidiaries significantly raise costs and complicate operations, and since MFIs are generally well advised to focus on financial leasing (in order to avoid the substantial additional risks of operational leasing), there appears to be no good reason for MFIs to employ a leasing subsidiary, either on risk-mitigation or profit grounds. On the contrary, MFIs should avoid using subsidiaries to do financial leasing whenever possible. If forced by regulation to employ a subsidiary in order to lease, the subsidiary and the parent MFI should integrate their operations as far as possible to avoid the problems discussed in the preceding paragraph, or else rely only on lending to meet their clients' equipment needs.

4. Tax Issues

In eight Latin American countries with major microfinance markets (Chile, Bolivia, Peru, Ecuador, Colombia, Mexico, El Salvador, and Honduras), tax codes usually favor lending over financial leasing in the case of informal clients, by which we mean, clients who do not pay value added tax (VAT) or profit tax on the products they sell.⁷ For formal clients (who do pay these taxes on the products they sell), the situation is mixed, with some countries and situations favoring financial leasing and other countries and situations favoring lending. Since most MFI clients are informal, tax considerations generally favor lending. As discussed in chapter 6, it is unfortunate when loans and financial leases are treated differently in a country's tax code—as occurs in all eight countries—because such distortions can generate substantial economic losses for the country.

Table 6 and the accompanying footnotes present a number of characteristics of the tax systems of the eight countries, including key factors in the choice between loans and financial leases. In this way, the tax systems described in Table 6 are used as an empirically-relevant database to frame the discussion on tax impact. Box 2 explains the meaning of some of the terms used in Table 6. While Table 6, its footnotes, and Box 2 provide a detailed description of relevant tax system characteristics, the reader need not be very familiar with this material in order to understand the conclusions presented below (following the table). Moreover, Annex A, which discusses the impact of the VAT, profit tax, and other taxes on loan/lease choice (and thus forms the basis for the conclusions given in this chap-

⁷ By “do not pay value added tax (VAT) or profit tax” we mean “do not *remit* value added tax (VAT) or profit tax” since we make no judgment about tax incidence, that is, about who ultimately bears the burden of the value added and profit taxes. We prefer to use the more common and natural word “pay” instead of “remit” in this context, and do so throughout the text.

ter), begins with a succinct description of key characteristics of the tax(es) under discussion in the eight countries.

The most important taxes that affect the relative desirability of loans vs. financial leases in the eight countries are the business profit tax and the value added tax. In Table 6, lines 1-4 present key characteristics of the business profit tax in each country, showing, for example, how profits are calculated for leases (line 1) and for loans (line 2). Lines 5-9 present key characteristics of the VAT in each country; for example, line 8 shows that loan interest always escapes VAT in the eight countries and line 6 shows that lease payments (principal plus interest) are subjected to VAT in most countries. The remaining lines (10-14) are devoted to other taxes. In discussing the business profit tax, it is helpful to employ the following symbols, which are used in the Table 6 footnotes, Box 2, and in subsequent discussion:

P = principal – represents the part of the periodic (e.g., monthly) installment payments that goes toward reducing the outstanding balance in either a loan or lease.

I = interest – represents the finance charge portion of the periodic (e.g., monthly) installment payments in either a loan or lease.

D = depreciation – is the amount of depreciation that can be deducted from taxable profits in return for the purchase of the equipment. This depreciation allowance is set by a country's tax laws.

Table 6
Tax Treatment of Financial Leases vs. Loans

	Peru	Bolivia	Ecuador	Chile	Colombia	El Salvador	Honduras	Mexico
1. Profit tax – leases: “usual” treatment?	No – for lessor same as loan ¹	Yes	No – for lessor same as loan ²	No – same as Ecuador	No – for lessor same as loan ³	Yes	Yes	No – same as for a loan ⁴
2. Profit tax – loans: “usual” treatment?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Mostly ⁵
3. Depreciation allowances – same for loan and lease?	Yes, except for the case of 2 banks ⁶	Yes	Yes	Yes	Yes	Yes	No – so normally lessors pay less profit tax than lenders ⁷	Yes
4. Investment tax credits exist and given through profit tax?	Don’t exist	Don’t exist	Don’t exist	Don’t exist	Don’t exist	Don’t exist	Don’t exist	Don’t exist
5. VAT tax rate	18%	13%	12%	18%	16%	13%	12%	15%
6. VAT on leasing installments?	Yes	Yes	Yes	Yes	None	Yes	Yes, with major exemptions ⁸	Part ⁹
7. VAT on leasing final purchase?	Yes	Yes	Yes	Yes	No	Yes	No	Yes
8. VAT on loan installments?	None	None	None	None	None	None	None	None
9. VAT – major classes of equipment exempt or taxed at a reduced rate at time of purchase?	No	No	Agric. equipment exempt	No	No	No	Much equipment exempt, including agric. & used equipment	Agric. equipment exempt
10. Gross sales tax favors loans?	No such tax	Yes, slightly ¹⁰	No such tax	No such tax	Neutral ¹¹	No such tax	No such tax	No such tax
11. Property tax levied on equipment?	Vehicles only – paid by most micros. (mostly neutral)	Vehicles only – paid by most micros. (mostly neutral)	No	No	No	Yes, on all assets, including equip. – but very low rates ¹²	No	Yes, but neutral ¹³
12. Import duties	Neutral	Neutral	Neutral	Neutral	Neutral	Neutral	Neutral	Neutral
13. Excise taxes	Neutral	Neutral	Neutral	Neutral	Neutral	Neutral	Neutral	Neutral
14. Other taxes			Loan tax of 1% favors leasing ¹⁴		Document tax of 1.5% favors lending ¹⁵			

Source: Interviews with leasing companies and other financial institutions, carried out in late 2002.

Footnotes to Table 6

¹ There are departures from the usual treatment for both lessors and their lease clients. Lessors pay tax on I, instead of the usual I+P-D. Lessees deduct I+P+D, instead of the usual I+P.

² There is a departure from the usual treatment for lessors, but not for their lease clients. Lessors pay tax on I, instead of the usual I+P-D. Lessees deduct the usual I+P. Interestingly, no one deducts depreciation with leasing in Ecuador. Since depreciation terms are long in Ecuador (10 years for all equipment except vehicles, which are five years, and computers, which are three years), it is generally advantageous for lessees to be able to deduct principal payments (P) instead of depreciation (D).

³ There are departures from the usual treatment for both lessors and their lease clients. Lessors pay tax on I, instead of the usual I+P-D. Lessees that are micro, small, or medium-scale enterprises (all of which are treated more favorably than large enterprises) can deduct either I+P or I+D, whichever is larger. Since depreciation is typically calculated over five years (for computers and vehicles) or 10 years (for most of the rest of equipment), it is often advantageous for lessees to elect the first option (I+P) since lease terms are often significantly less than five years.

⁴ Financial leases and loans are treated identically (see next footnote for loan treatment in Mexico). This is a departure from the usual treatment for both lessors and their lease clients.

⁵ The usual loan treatment applies except that borrowers cannot deduct all interest payments from their taxable income, only the part above inflation. That is, if the interest rate borrowers are paying is 15 percent and inflation is 5 percent, only an amount of interest associated with a 10 percent interest rate is deductible. Lenders, however, must still pay taxes on all interest income received, not just the part above inflation.

⁶ Through the year 2008, the clients of two banks, Banco Santander and Bank of Boston, can use accelerated depreciation for leased assets. Specifically, leased equipment is depreciated in 2 years, instead of the 6 or 10 years normally used for loans and leases from all other financial institutions. Structures are depreciated in 6 years, instead of 33.

⁷ Depreciation for leased goods is calculated in straightline fashion over the life of the *lease*. Depreciation for directly purchased goods is calculated in

straightline fashion employing the useful life given in the Honduran tax code, typically five years for most equipment and 10 years for more durable equipment. Since most leases are for less than five years, lessors enjoy an accelerated depreciation. How does this affect the tax burdens of lessors vis-à-vis lenders? Recall that lessors pay taxes on I+P-D, while lenders pay taxes on I only. That is, lessors recognize interest plus principal payments as income and deduct depreciation payments as a cost, all over the same time period (the lease term). Since principal payments are “back-loaded” (arrive more at the end of the lease term and less at the beginning) and depreciation is straightline, P-D is negative in present value terms. Hence, while lessors pay the same total amount of tax as lenders, lessors pay more of this total tax obligation later on, a financial advantage since it allows the lessors to earn additional interest income.

⁸ VAT is paid on all leasing installments except those related to equipment used in the principal product line of the business. For example, this means that lease payments on a sewing machine for a garment producer would not be subjected to VAT. However, if the garment producer decides to branch out into other products such as baking bread, any leased equipment used in the bakery or for other secondary products would be subjected to VAT. Since most microenterprises focus on only one product line, this VAT exemption is very helpful to the microenterprise sector.

⁹ VAT is levied on only a part of the leasing installments, namely on all principal plus that part of interest above inflation. To see how the interest component of the tax base is calculated, suppose that the interest rate clients are paying is 15 percent and that inflation is 5 percent. VAT is then levied on the amount of interest associated with a 10 percent interest rate.

¹⁰ A 3 percent gross sales tax is levied on the equipment when first purchased (in conjunction with either a lease or loan) and is also levied on the interest component of both lease and loan payments. Loans are favored only because the tax is also levied on the final sale of the leased good at the residual value price, while it is not levied on any loan amortization payments. This advantage is generally slight in the case of financial leasing because the residual value price is, by definition, only a small percentage of the price of the equipment when it was purchased at the start of the leasing operation.

¹¹ The 0.8 percent gross sales tax is levied on the equipment when purchased (for either lease or loan) and is also levied on the interest component of both lease and loan payments. It is not levied on the final sale of the leased good at the residual value price. Hence, the tax is completely neutral between leases and loans.

¹² This is a municipal tax and each municipality has its own tax rate, but the rates are generally very low, around 0.1 percent of total asset value.

¹³ This tax is neutral in Mexico because with financial leasing the client (lessee) is liable for the tax, the

same as if the client bought the equipment and financed it with a loan.

¹⁴ A 1 percent tax is levied on all loan disbursements. Lease disbursements are exempt from this tax.

¹⁵ The document (or stamp) tax is computed for loans as 1.5 percent of the original loan amount. For leases, it is computed as 1.5 percent of the sum of all the lease payments over the life of the lease, including all interest components of the payments. Since the tax base includes interest for leases but not loans, this tax favors loans over leases.

Box 2
Explanation of Selected Lines in Table 6 (by line number)

1. Profit tax – “usual” treatment of leases: is for the lessor to pay profit taxes on I+P–D. This reflects the idea (more appropriate to operational than financial leases) that the lessor receives monthly “rental” payments of I+P, and, as the owner, is entitled to depreciate the good (D). The lessee deducts the full monthly payments (I+P) as a cost. Departures from this usual treatment are explained in the footnotes to Table 6 and are summarized only for the lessor in line 1 of Table 6.

2. Profit tax – “usual” treatment of loans: is for the lender to pay taxes on I only. The borrower deducts I+D as a cost. Since the borrower owns the good, (s)he takes the depreciation deduction (D) on it. The one departure from this usual treatment (for Mexico) is explained in Table 6, footnote 5.

4. A typical example of an investment tax credit that operates through the profit tax would be a profit tax credit equal to 10 percent of the amount spent on investment goods (plant and equipment) by a firm. Investment tax credits are by their nature non-neutral in many microenterprise leasing situations and favor leasing. This is because microenterprises rarely pay profit tax and thus are unable to take advantage of the tax credit if they purchase equipment or other investment goods directly, perhaps with the aid of a loan. Sometimes, however, MFIs pay profit taxes, in which case they can obtain the tax credit by purchasing and leasing an investment good. Lessees may benefit from the investment tax credit the MFI receives if the MFI passes on some or all of the tax benefits to the lessee in the form of lower interest rates. The MFI may do this because of competitive pressures or for other reasons.

10. Gross sales tax is levied on a firm’s total or gross sales. It differs from the value added tax (VAT) since VAT allows deductions for purchased material inputs whereas the gross sales tax does not.

Most microentrepreneurs in Latin America are informal, paying neither VAT nor business profit tax on the products they sell. Accordingly, a major part of our analysis assumes informal MFI clients. However, since some MFIs are increasingly serving upper-level microenterprises and small enterprises, we also consider the case of formal MFI clients that pay both VAT and business profit tax on the products they sell.⁸

MFIs can also be divided into two groups: those that pay business profit tax and those that don’t. MFIs chartered as a bank or *financiera* are normally organized as corporations and therefore

⁸ Typically, if a business pays one of these taxes on the goods it sells it pays them both. Therefore, we do not analyze the case of a semiformal business that pays only one of these taxes, but not both.

pay this tax. On the other hand, NGOs rarely pay business profit tax since they are usually considered nonprofit organizations in the tax code. Credit unions are sometimes, but not always, exempted from this tax.⁹

While this paper has occasionally discussed operational leases, its main focus has been on financial leases. As a convention in this chapter, whenever we refer to leasing, it is understood that we are referring only to financial leasing.

⁹ Of the 14 Latin American countries in the World Council of Credit Unions’s tax database, credit unions pay no profit taxes in seven countries (Chile, Dominican Republic, El Salvador, Honduras, Nicaragua, Panama, and Paraguay), pay profit taxes at a reduced rate in three countries (Guatemala, Peru, and Uruguay), and pay full profit taxes in four countries (Bolivia, Brazil, Ecuador, and Mexico).

This focus on financial leasing also simplifies the quantitative comparisons we make since we can assume that with either a lease or loan the client amortizes the full cost of the equipment—not just a portion of this cost, as with most operational leases.

Summary of Conclusions

This section presents the major conclusions on the effect of the tax systems in the eight countries on the relative desirability of loans versus financial leases. These conclusions reflect the combined impact of the profit tax, VAT, and other taxes on both MFIs and their clients. By combining the tax impacts in this way, we are able to judge the overall tax burden on an MFI and its clients, taken as a whole. We assume that the financing mechanism (lease or loan) with the least overall tax burden is the one that is most advantageous to the MFI and its clients. The distribution of this overall burden between an MFI and its clients can be readily altered by changing the interest rates charged for loans or leases, thus allowing tax burdens to be shifted onto clients or absorbed by the MFI.

Summarizing the conclusions for the most common situations encountered in the eight countries,¹⁰ we find that in the case when the loan or lease clients are *informal* enterprises—enterprises that pay no VAT or profit taxes on the products they sell, as is the case for most microenterprises—the tax systems in all eight countries except El Salvador and Honduras have at least a modest anti-leasing bias. For El Salvador and Honduras, the tax system may favor leasing or lending, depending on certain factors described in the first two bullets below and in Annex A. In the case when the loan or lease clients are *formal* enterprises—enterprises that pay VAT and profit taxes on the products they sell—the tax systems favor leasing in Peru

¹⁰ In particular, these conclusions do not consider the fairly unusual case in which the initial equipment purchase is exempted from VAT (line 9 in Table 6 gives these cases) and the case in which MFIs with chronic VAT surpluses use these surpluses to reduce, nullify, or reverse leasing's disadvantage for at least a limited amount of leasing transactions.

and lending in Mexico. For the other six countries, the picture is mixed, with leasing tending to be favored for shorter-term finance (two years or less) and lending tending to be favored for longer-term finance (three years or more). These conclusions are now elaborated on somewhat in the three bullets that follow and are further expanded upon and quantified in Annex A.

- For *informal* enterprises in all of the eight countries except Colombia and Honduras, financial leasing is at a tax disadvantage relative to lending because lease payments are subjected to VAT in these six countries, but loan payments are not. For frequently encountered VAT rates and interest rates, this tax disadvantage is equivalent to the loss of approximately 2-4 percentage points in the MFI's effective yield. For example, if a loan yields 30 percent to the MFI, a similar lease would yield approximately 26-28 percent. An exception to this occurs for El Salvador in the case of MFIs that pay profit taxes. Because these MFIs may pay more or less taxes on their leasing operations vis-à-vis their loans, the overall effect of El Salvador's tax system may be pro- or anti-leasing. In Bolivia, the anti-leasing bias of the tax system, which arises from the VAT, is heightened for MFIs that pay profit taxes since profits at the MFI level are, in general, defined more broadly for leases than for loans.
- For *informal* enterprises in the remaining two countries (Colombia and Honduras), the impact of the tax system is modestly anti-leasing in Colombia and mixed in Honduras, sometimes favoring leasing or lending depending on the situation. In Colombia, the impact of the profit tax and VAT is neutral, favoring neither lending nor leasing, but Colombia's 1.5 percent document tax tips the balance modestly in favor of lending. In Honduras, the impact of the VAT is neutral for all equipment used in the principal product line of the client's business.¹¹ Leasing

¹¹ Equipment used in a principal product line might include sewing machines for a garment producer and ovens for a bread baker. Leasing payments on all

payments on all other equipment are subject to VAT, and so, for this other equipment, leasing is at a moderate VAT disadvantage that is equivalent to the loss of approximately 2-4 percentage points in the MFI's effective yield (as in the preceding bullet).¹² For MFIs that pay profit tax in Honduras, there is an additional effect: leasing is favored with accelerated depreciation in such a way that MFIs normally pay less in profit taxes on leases than loans.

- For *formal* enterprises, either financial leasing or lending may have a tax advantage, with leasing tending to have the advantage when lease and loan terms are short (two years or less) and lending tending to have the advantage when lease and loan terms are longer (three years or more). Mexico and Peru are exceptions to this. In Mexico, leasing is always at a tax disadvantage since the profit tax treats financial leases and loans identically but the VAT puts leasing at a disadvantage. In Peru, leasing nearly always has an advantage, and sometimes a very large one, since leasing's large profit tax advantage for the lessee nearly always exceeds and sometimes overwhelms leasing's VAT disadvantage. In Bolivia, leasing may not be advantageous even when lease terms are two years or less if the MFI pays profit taxes since leasing profits are defined more broadly in general than loan profits, increasing the MFI's profit tax payments.

The analysis summarized above is quite different from the assertion found with some regularity in the leasing literature that leasing is tax advantaged, an assertion that is made particularly in the case when the leasing clients are formal enterprises. This claim springs from a partial and misleading analysis of the impact of profit taxes, and completely ignores the VAT, which often favors lending over leasing. The partial profit tax analysis is based on the fact that in some countries lessees can deduct their full lease payments (principal and interest—that is, the full monthly “rental” payment) from their taxable income while borrowers can only deduct the interest portion of their loan payments. Further, lessors (as owners of the leased equipment) can deduct equipment depreciation from their taxable income, while lenders cannot. This analysis is misleading because it leaves out the fact that while borrowers cannot deduct principal payments they can normally deduct equipment depreciation (since they are the equipment owners). Moreover, while lessors can deduct equipment depreciation they normally must add all principal payments received from lessees to their taxable income (that is, they must pay taxes on the full monthly “rent” received—principal plus interest). Therefore, the impact of profit taxes on loan/lease choice is far from immediately obvious, and does not necessarily favor leasing. Annex A presents a more complete analysis of the impact of the VAT, profit tax, and other taxes on loan/lease choice, and is relevant both to informal microenterprise as well as larger, formal enterprise client.

such equipment are exempt from VAT. Since most microenterprises focus on only one product line, this VAT exemption is very helpful to the microenterprise sector.

¹² This statement is true as long as VAT is levied on the equipment when the equipment is purchased, a condition placed on all of the statements made in these three bullets. However, Honduras exempts much equipment from VAT when purchased, and if such equipment is leased to a client who employs it outside his/her principal product line, leasing is at a serious disadvantage, not just a moderate one.

5. MFI Best Practices

Much of what is written about best practices in leasing is aimed at leasing to large corporate firms or to small and medium-scale enterprises. Little has been written on how to do financial leasing specifically for mainstream microentrepreneurs, that is, for those microentrepreneurs needing approximately \$50 to \$2500 to purchase equipment. Somewhat surprisingly, little also has been written about how to do equipment lending to the same target group. Many of the practices one would use for equipment finance—leasing and lending—for mainstream microenterprises turn out to be very different from those suggested for small, medium-scale, and large enterprises. This chapter attempts to fill the need for information in this area, aiming to steer the reader away from inappropriate practices based on the leasing literature for small, medium-scale, and large enterprises.

This chapter makes a series of best practice recommendations for MFI equipment loan and lease programs. Among the major points are the following:

- MFIs that offer medium-term loans or leases—with maturities, for example, of 2-5 years—need to be concerned with asset-liability management (ALM), a tool used by financial institutions to control three risks: interest rate risk, liquidity risk, and foreign currency risk. Interest rate and foreign currency risks are the risks that the MFI will suffer losses when interest rates and foreign exchange rates change. Liquidity risk refers to the risk that the MFI will not have enough short-term assets to cover its short-term liabilities at any given moment in time. To control interest rate and liquidity risks, MFIs should match the amount of assets and liabilities maturing in each of a number of designated time intervals. To control foreign currency risk, MFIs should lend or lease in local currency to clients producing non-
- traded outputs and lend or lease in foreign currency to clients producing traded outputs. The currency of the MFI's liabilities should then be matched to the resulting loan/lease portfolio.
- Many leading MFIs in Latin America are making medium-term equipment loans and leases safely and profitably to completely new clients. Such a practice stands in contrast to the use of the progressive loan scheme, which has a long tradition in micro-finance. This chapter discusses how equipment lending and leasing to completely new clients can prudently be done through the proper application of four key underwriting criteria and the use of the relationship banking paradigm.
- Contrary to some of the leasing literature, MFIs making equipment loans or leases should generally insist that clients put up a significant downpayment toward the purchase of the equipment and/or pledge collateral aside from the equipment.
- The term of an equipment loan or lease should be set by trading off the advantage of greater affordability to clients of longer-term operations versus the advantage to MFIs of the reduced credit risks and diminished ALM problems that are associated with shorter-term operations.
- While virtually all of the 25 MFIs we surveyed set the same interest rates for their working capital and equipment loans, risk and cost considerations suggest that interest rates on equipment loans (and leases) should be set lower. Working capital and equipment loans appear to carry similar risks in many MFIs; however, the significantly longer

equipment loan terms allow their costs to be spread over much more time.

- The leasing literature often suggests that lessors limit themselves to financing equipment that has good second-hand market value and that their leasing officers know well. However, these limitations may not be very important for MFIs offering equipment loans or financial leases to mainstream microentrepreneurs. For these clients, many MFIs can finance virtually any equipment the client demands, including used equipment.
- While leasing is a way to obtain equipment finance, the sale-and-leaseback transaction can be used to provide microentrepreneurs with working capital finance. However, care must be taken with certain tax and valuation issues raised by sale and leaseback. A further limitation of the sale-and-leaseback transaction is that it only gives the MFI an ownership stake in *equipment*; many MFIs prefer instead to collateralize their working capital loans with more readily saleable household goods.
- Nearly all of the 25 MFIs we surveyed employ monthly payments for individual equipment and working capital loans. This is a shift from the weekly and semi-monthly payments some of these MFIs employed in the past. Monthly payments save transactions costs for both the clients and MFIs, which may be especially useful to MFIs in competitive microfinance markets. However, more frequent payments may still be advantageous in certain circumstances, for example, with clients lacking the repayment discipline to make monthly payments and with MFIs that have not yet built a solid reputation for disciplined loan collection.
- Flexible repayment plans—featuring installment payments that vary in size—can be useful for clients with seasonally-varying income. Such plans can increase the ability of these clients to borrow and thus augment

their incomes, while simultaneously reducing default risk.

- Most equipment loans and leases are and should be made on an individual basis, not to solidarity groups—both for demand reasons and, in the case of loans, for supply reasons. On the demand side, group members are reluctant to bear the increased risk exposure to the longer terms and/or larger loan or lease sizes that are generally associated with equipment financing. On the supply side, beyond a certain size loan, many MFIs want more than solidarity group guarantees; for example, they may want physical collateral, whose value must correspond to the size of the individual equipment loan.
- Equipment loans and leases raise issues beyond those raised by working capital loans in the areas of liability insurance, multiperil insurance, and property taxes. These issues should be addressed in equipment finance programs.
- MFIs that make numerous loans or leases for the same type of equipment each year (e.g., sewing machines) may have sufficient bargaining power to negotiate discounted prices, extended warranties, additional service, and other benefits with one or more equipment dealers. Such MFIs may find it worth the setup and operating costs to arrange such dealer discount programs.
- In recent years, some MFIs have broadened their clientele to include upper end microenterprises and small enterprises, and are financing relatively expensive equipment for this clientele. Such MFIs may find it useful to undertake a market valuation exercise prior to approving a loan or lease for such goods, particularly when the MFI is counting on the equipment to serve as its own collateral.

Asset-Liability Management (ALM)

MFIs that offer medium-term loans or leases—with maturities, for example, of 2-5 years—need

to be concerned with asset-liability management, sometimes also called asset-liability matching or ALM. ALM is a tool that financial institutions use to confront three risks: interest rate risk, liquidity risk, and foreign currency risk. Interest rate and foreign currency risks are the risks that the MFI will suffer losses when interest rates and foreign exchange rates change. Liquidity risk refers to the risk that the MFI will not have enough short-term assets to cover its short-term liabilities at any given moment in time. While ALM is a large subject, about which much has been written, we limit discussion here to some of the key points, with a particular focus on MFIs and medium-term equipment finance. Our principal findings are that to control interest rate and liquidity risks, MFIs should match the amount of assets and liabilities maturing in each of a number of designated time intervals. To control foreign currency risk, MFIs should lend or lease in local currency to clients producing nontraded outputs and lend or lease in foreign currency to clients producing traded outputs. The currency of the MFI's liabilities should then be matched to the resulting loan/lease portfolio.

Interest Rate and Liquidity Risks

These risks arise when an MFI's assets and liabilities have different maturities. Suppose, for simplicity, that an MFI makes a substantial amount of 4-year equipment loans (or leases) in a short period of time at an interest rate of 35 percent, and funds all of these loans with a 2-year bank loan at 12 percent. Also, suppose that the MFI requires a margin of 18 percent to cover its operating costs and expected loan losses. Therefore, the MFI looks to make a healthy profit of 5 percent on these loans ($=35\% - 12\% - 18\%$). But what happens if, in two years time, the country has entered into a period of tight money or inflation that has pushed bank loan rates up by 10 percentage points, from 12 percent to 22 percent? When the MFI goes to renew its 2-year bank loan, its 5 percent profit turns into a 5 percent loss. This is an example of interest rate risk, which is the risk that changes in market interest rates will affect the financial institution's profitability. Even worse is the possibility that after two years the bank might not renew its loan to the MFI at all. This liquidity

risk could provoke a serious liquidity crisis for the MFI because its 4-year equipment loans would then be unfunded for their last two years. Such non-renewals can happen in periods of tight money or recession, for example, because during such periods banks often pull back and fund only their larger and more profitable clients. Or after the initial two years, the bank simply might not deem the MFI creditworthy any longer, and so may decline to continue funding it.

Both the interest rate and liquidity risks in the previous example could have been avoided had the MFI matched the maturity of its assets (the equipment loans to clients) with that of its liabilities (the bank loan). That is, had both maturities been four years (or two years), for example, the MFI would not have been exposed to these risks. In general, what the MFI needs to do is first set up a series of time intervals (sometimes called time buckets) such as: <3 months, 3-12 months, 1-2 years, 2-3 years, 3-4 years, 4-5 years, and >5 years. Then, all assets and liabilities are put into one of the time buckets according to its maturity. The aim is to match the amount of assets and liabilities maturing in each time interval. Contrary to Carter (1996, p. 34), it is not sufficient for the weighted average maturity of the liabilities to match (or exceed) the weighted average maturity of the assets. To see why, suppose that an MFI makes a large amount of 5-year equipment loans funded equally by 2-year and 8-year bank loans. In this case, the average maturity of both assets and liabilities is five years, and so there is balance in the average sense. But the MFI still faces serious interest rate and liquidity risks, as can be readily seen by supposing that bank interest rates rise sharply in two years or that the bank refuses to renew its 2-year loan at that time.

Two important caveats should be made to the rule that MFIs should match the amount of assets and liabilities in each time bucket. The first is that interest rate and liquidity risks are also avoided when liabilities have a longer maturity than the assets they fund so long as the liabilities are prepayable without substantial penalty. To see this, suppose that the MFI makes 2-year equipment loans to its clients using money it

borrowers for three years. If interest rates have fallen substantially by the time the equipment loans mature in two years, the MFI may want to prepay its 3-year loan and obtain cheaper funding. As long as it can do this at little or no cost, it has no interest rate risk from employing liabilities that have a longer maturity than the assets they fund. The second caveat is that, in fact, MFIs may often want to use liabilities that have somewhat shorter terms than the assets they fund. This is because liabilities normally become cheaper as their term is shortened, so that the MFI may accept a certain amount of interest rate and liquidity risk in exchange for cost savings, especially if these cost savings are substantial. The aim of the MFI's funding strategy is to make the MFI as profitable as possible while maintaining acceptable levels of interest rate and liquidity risk; it is not necessarily to try to eliminate these risks entirely.

How can an MFI with a portfolio of 2-5 year equipment loans fund this portfolio so that it avoids interest rate and liquidity risks or reduces these risks to an acceptable level? Many MFIs, especially NGOs, can easily eliminate these risks using their capital. Capital consists largely of paid-in shares, retained earnings, and grants, none of which has a fixed maturity. All of these funds may be used to make medium- or even long-term loans without interest rate or liquidity risks. Many MFIs have very substantial capital, as can be seen, for example, in Microrate's June 2002 financial data for 30 Latin American MFIs. The 18 NGOs in this database have capital that averages 41.4 percent of their total assets, which should be enough in most cases to comfortably finance all medium-term and long-term assets, such as equipment loans and leases, housing loans, and fixed assets (premises and equipment). The 12 regulated MFIs, all of which take deposits, have an average capital/total asset ratio of 13.7 percent, with a minimum value of this ratio of 7.1 percent for Fincomún in Mexico and a maximum value of 20.9 percent for Financiera Calpiá in El Salvador. Some of these regulated MFIs may not have enough capital to match all of their medium- and long-term assets.

MFIs without enough capital to match all of their medium- and long-term assets, and thus

avoid interest rate and liquidity risks by using capital alone, need to find additional appropriate funding sources. A number of possibilities exist in the case of funding medium-term equipment lending and leasing programs:

1. Increase capital by issuing stock, obtaining grants, or earning and capitalizing profits
2. Obtain medium-term loans from—or issue medium-term certificates of deposit (CDs) to—local banks, pension funds, or insurance companies
3. Issue bonds, especially in the domestic market
4. Borrow abroad, especially from donors or socially-oriented investors
5. Utilize the stable portion of savings accounts, if any

MFIs that fund their medium-term equipment loans with similar maturity bank loans or CDs (option 2) have, strictly speaking, overcome the interest rate and liquidity risks described above. However, as suggested by the example given above and noted by Carter (1996), banks may not always be the most reliable source of funds on which to build a *permanent* equipment financing program. This is because during times of tight money or recession, banks may pull back from lending to smaller or more marginal clients, possibly including its MFI clients, in which case an MFI may find itself without a way to continue making new equipment loans or leases. Carter (1996) cites a number of cases where this has happened to leasing companies, effectively ending their leasing programs and bankrupting the institutions. A possible solution for MFIs is to borrow from a bank that has a major shareholding interest in the MFI or that is in the same financial group, and that therefore will be less inclined to take actions that would damage the MFI.

Other possible sources of funding for MFI equipment loan and lease programs are to borrow from pension funds and insurance companies or through the bond market. Since pension funds and insurance companies receive money for long periods of time, they are often looking to make medium- and long-term loans. Four MFIs in Latin America have issued bonds—

Banco Sol of Bolivia, Finamérica of Colombia, Mibanco of Peru, and Compartamos of Mexico—for amounts of \$1-10 million per issue (Jansson, 2003). The large fixed costs of bond issue make smaller amounts uneconomical. High standards of transparency and financial soundness are also required of the MFI, limiting the use of bond issues to only the best MFIs.

Borrowing abroad from donors or socially-oriented investors may be an attractive option for many MFIs. However, this may lead to currency mismatch risk if the borrowed funds are in foreign currency (e.g., dollars or euros) and if, as is often the case, the MFI's equipment loans are made in local currency or to clients producing nontraded goods. This risk is discussed below.

The use of the stable portion of savings accounts to fund equipment loan and lease programs can often eliminate liquidity risk, but can only reduce or eliminate interest rate risk if the equipment loans and leases funded by the savings accounts are made with variable interest rates, and then only at the cost of some increased credit risk. Credit unions and other MFIs that mobilize a significant amount of savings from a large number of smaller depositors often find that a sizable proportion (25 percent or more) of these funds is very stable, even though depositors have a right to withdraw their money at any time. Many smaller depositors use an MFI because of its convenient location or low minimum deposit size, and tend not to withdraw all of their savings unless they fear that the MFI will become insolvent, endangering their deposits. In such cases, MFIs can match their medium-term equipment loans and leases against the stable portion of their savings deposits with little if any liquidity risk, provided that the MFI remains financially sound.

What about interest rate risk? If the MFI expects to have a healthy, robust deposit mobilization program, it must ensure that its own deposit rates are changed to match any movements in market deposit rates. For example, if market deposit rates rise, the rates the MFI pays on its own deposits must rise as well, and therefore so must the rates the MFI charges on any medium-term loans and leases funded with these deposits. This

means that MFIs that charge fixed interest rates on their medium-term loans and leases (as they normally do) are exposed to interest rate risk; if deposit rates rise and equipment loan and lease rates are fixed over their entire term, the MFI could suffer serious losses.

To reduce or eliminate this interest rate risk, the MFI could charge a variable interest rate on its equipment loans (and leases), such that the equipment loan rate rises or falls with the deposit rates the MFI is paying all during the equipment loan's repayment period. Such variable loan rates can be quite unpopular with clients because of the additional risks the clients must bear as higher interest rates on their equipment loans are translated, for example, into higher monthly payments or longer loan terms. By setting the initial interest rates charged for variable-rate loans below those charged for fixed-rate loans and by also capping any interest rate increases over the life of the variable-rate loan, MFIs can reduce client risks and overcome some of the client resistance. However, capping loan rate increases returns some of the interest rate risk to the MFI. Moreover, while charging variable interest rates on equipment loans and leases can reduce or eliminate interest rate risk for the MFI, it does so at the cost of inducing additional credit risk since, if loan rates rise, client default rates can be expected to increase under the strain of larger repayment burdens.

Foreign Currency Risk

MFIs that borrow in a foreign currency (e.g., dollars) in order to fund local currency (e.g., peso) equipment loans bear the risk that a devaluation could greatly increase the size of the MFI's debt, expressed in local currency. For example, a \$1 million debt could grow from 10 million pesos to 20 million pesos if the peso:dollar exchange rate changes from 10:1 to 20:1. Such a debt would be much harder to service and repay if the MFI and its clients primarily earn pesos.

Some believe that to avoid foreign currency risk financial institutions such as MFIs need only match the currency of the MFI's assets with that of its liabilities. For example, this would mean

that if an MFI has borrowed \$1 million, all it needs to do is to lend these funds out in dollars in order to avoid foreign currency risk. This is correct if the MFI's clients produce traded goods (meaning goods that are exported or that compete directly with imported goods) and is not correct if the clients produce nontraded goods (meaning goods that are neither exported nor compete directly with imported goods). Many agricultural, mining, and manufacturing products are traded goods, while most commercial sector activities and services are normally nontraded. Since MFI clients are mostly in the commerce and services sector, most produce nontraded outputs. Even those MFI clients who are in the manufacturing and agricultural sectors sometimes produce goods that are rustic or otherwise only consumed locally, and are not close substitutes for goods traded internationally. These clients also produce nontraded outputs. The importance of this distinction is that if there is a devaluation of, say, 2:1, the prices of traded goods typically rise by 2:1 also, in proportion to the devaluation. The prices of nontraded goods typically rise by much less than 2:1. This means that if the MFI gives a dollar loan to a client who produces nontraded outputs, that client could easily be ruined by a sharp devaluation since the price of what the client produces (in the local currency the client earns) will not keep up with the client's loan service payments (also expressed in local currency). For example, with a 2:1 devaluation, the loan service payments will double in local currency terms, while the value of what the client sells will typically rise by much less. During the Asian financial crisis of the late 1990s, many financial institutions learned this lesson the hard way when their clients who had dollar loans and nontraded outputs could not repay and the financial institutions were faced with huge defaults in their credit portfolios. To avoid foreign currency risk, MFIs should lend (or lease) in local currency to clients producing nontraded outputs and lend (or lease) in foreign currency to clients producing traded outputs. The currency of the MFI's liabilities should then be matched to the resulting loan (or lease) portfolio.

Is there anything else that MFIs can do if they cannot follow this currency matching rule? The

Women's World Bank (WWB) affiliates in Colombia have devised one ingenious solution to the problem of having to repay a dollar loan from the proceeds of lending to microentrepreneurs who mostly produce nontraded outputs. The WWB deposits the dollar loan in a bank where it earns interest in dollars. The WWB then takes out a local currency loan using this dollar deposit as collateral. The local currency loan is used to fund loans to microentrepreneurs. To the extent that the interest earned on the dollar deposit is not enough to cover the interest due on the original dollar loan there is some residual foreign currency risk and some cost to the WWB. There is also a significant additional cost to the WWB since the local currency loan may carry a substantially higher interest rate than the original dollar loan. Nonetheless, WWB has succeeded in converting a large foreign currency risk into a small risk at a cost it knows in advance.

An alternative to the WWB scheme for repaying dollar debts with the proceeds of local currency loans or leases is to utilize the local (not international) swap markets, which exist in a number of Latin American countries. For example, the WWB affiliates in Colombia might contact a local commercial bank with which they have established a solid credit history. For a fee, this bank may agree to sell one million U.S. dollars in two years, for example, to the WWB affiliate in exchange for a predetermined amount of pesos. For the bank, this will be just one more future dollar liability and future peso asset in its off balance sheet accounts, which it will balance off together with all of its other future dollar and peso commitments. The bank requires that the MFI be creditworthy in order to limit its counterparty risk, that is, the risk that the MFI will not come forward with the predetermined amount of pesos in two years time. For this purpose, the bank may insist that the MFI have a line of credit available to it. In principle, the swap transaction should provide a cheaper method of finance for the MFI than the WWB method. This is because the latter involves the loss (to both the WWB and the participating bank) of the interest that could have been earned

on the reserve requirement associated with the dollar deposit.¹³

Equipment Loans and Leases in the Progressive Microlending Scheme

Many leading MFIs in Latin America are making medium-term equipment loans and leases safely and profitably to completely new clients. Such a practice stands in contrast to the use of the progressive loan scheme. This section discusses how such lending and leasing can prudently be done through the proper application of four key underwriting criteria and the use of the relationship banking paradigm.

One of the longstanding features of the microenterprise lending technology is the progressive loan scheme (e.g., see Schmidt and Zeitinger 1994 or Baydas, Graham, and Valenzuela 1997). In this scheme, a creditworthy new borrower is offered a small, short-term loan, with subsequent loans available for increasingly larger amounts and longer terms, assuming successful repayment in each previous round. This scheme rewards and encourages repayment, and serves to establish a credit history for borrowers who typically have none to begin with. All of this is meant to help the MFI avoid excessive risk-taking, both in the first and successive loans. In the case of equipment loans, the use of the progressive lending scheme implies that the client must wait for a medium-term equipment loan or lease until (s)he has repaid a series of shorter-term loans, most likely for working capital.

Many of the leading MFIs in Latin America have thrown out the progressive lending scheme in recent years, particularly for individual loans and leases, which are used to finance most equipment purchases. For example, Financiera Calpiá (El Salvador), Caja Los Andes (Bolivia), Mibanco (Peru), and many other leading MFIs in Latin America regularly make medium-term (2-5 year) equipment loans to new clients. No previous shorter-term, smaller loan need be taken out and repaid first. In fact, both new and old clients must meet the same loan underwriting

criteria, which normally include the following four points:

- **Character.** The MFI makes a detailed investigation and assessment of the borrower's character and his/her likely willingness to repay the loan. This evaluation is based on visits to the business site and home and on talks with neighbors and business associates.
- **Cash flow.** The MFI undertakes a thorough (and typically conservative) analysis of monthly household savings, calculated by summing household income from all verifiable sources and subtracting total household consumption. Conservative assumptions are often employed in calculating household income. Typically, monthly loan payments must be less than 70 percent of calculated monthly savings in order to allow for a margin of safety, though other percentages are used by some MFIs. Some MFIs also allow this percentage to vary from client to client, depending on the volatility of each client's income flow, insisting on a larger margin of safety (i.e., a smaller percentage) when income flows are more volatile. Some MFIs count the additional income the MFI is likely to earn as a result of the equipment purchase in the monthly savings computation. Others are more conservative and count little or none of the projected income increase, feeling this is too speculative.
- **Collateral.** Depending on the country's legal system and what has proven effective in the past for the MFI, collateral might often include the equipment itself, other business equipment, household goods (especially appliances and furniture), the signature of other loan guarantors, and even a home mortgage in the case of larger loans.
- **Solidity and stability of the business.** The MFI tries to measure the vulnerability of the microentrepreneur and his/her business to economic downturns and other adverse events such as loss of a major client, loss of a key employee or strategic alliance, or a general increase in competition. As part of

¹³ Thanks to Kim Staking for suggesting the idea of using the local swap market.

this analysis, MFIs often look at how long the business has been operating (6-12 months or more is often a minimum requirement), how well it has established its position in the market, and the size of its fixed-asset base. If the principal business is not quite as established and solid as might be desired, other sources of income (spouse's earnings, etc.) and their stability may be considered for purposes of meeting this criterion. In the case of an equipment loan or lease, the microentrepreneur or his/her employees must have adequate experience with the new equipment or with equipment like it so that the machine is not damaged, the operator is not injured, and the desired levels of productivity are obtained.

These four criteria are typically applied in much the same way for both short-term working capital loans and medium-term equipment loans, with two important exceptions. First, since a medium-term loan must be repaid over a much longer segment of the business cycle, weaker economic conditions may be assumed for at least part of the loan repayment period, leading to a more conservative estimate of total household income and savings (second criterion). Second, a higher degree of business stability is normally demanded by MFIs before granting medium-term loans since repayment must be assured for a much longer time period (fourth criterion).

While it might seem from the above criteria that new clients and old clients are treated equivalently, this is not the case. Because most new clients do not have written records of their sales and purchases, it often takes three or four loan analyses over a period of months or years for the MFI to develop an accurate assessment of the net profits of a microentrepreneur's business. Until then, the MFI may estimate this profit conservatively, accepting claims of higher profit only as it is able to cross-check and verify them. In addition, old clients may have an advantage in convincing the MFI of the stability of their businesses because the MFI has known them over time. Therefore, while both new and old clients can be granted medium-term equipment loans, old clients have inherent advantages in qualifying for these loans.

Why would a client who is new to an MFI and who is granted a three-year equipment loan repay that loan, month after month, over such a long time interval, during which many adverse events might occur? And why would a very high percentage of such clients (95 percent or more, say) do this, as they must for the MFI to be sustainable and competitive? The answer almost certainly does not lie with the use of the progressive lending scheme since equipment loans are generally larger and longer term than most other loans, and so often lie at or near the end of the lending progression. The reasons given by leading MFIs in Latin America return to the four key underwriting criteria described above. Based on these, the first reason is that the clients *can* usually repay, as is shown by the MFI's analyses of the sufficiency of the household's cash flow and the stability of the business (criteria 2 and 4). Second, clients are *willing* to repay the loan, which is grounded in the character analysis (criterion 1). Third, the clients normally *want* to repay the loan, which is based on the desire of the clients not to lose their collateral or be pressured by any loan guarantors (criterion 3).

To these factors motivating clients to repay the equipment loan, leading MFIs often add one other: the clients' desire for a banking relationship. This factor is key for many MFIs and refers to the fact that these MFIs offer a number of high-quality banking services that many clients want to have access to during the time they are repaying the equipment loan or afterwards. While these might include such services as larger or longer-term loans (as in the progressive lending scheme), they more often include other types of loans, such as working capital loans, lines of credit, or credit cards—or possibly other services entirely, such as money transfers or savings services.

Though it might appear that the use of the relationship banking paradigm is primarily for sophisticated MFIs, this is not true. Latin American MFIs generally report that their clients' willingness to repay medium-term equipment loans is due very strongly to the fact that a high percentage of these clients (as many as 90-95 percent for some MFIs) also have a series of con-

current, short-term working capital loans, which they know they would lose if they defaulted on their longer-term equipment loan.

Broadly in Latin America, the progressive lending methodology, while still useful and employed by some MFIs, is giving way to a relationship banking paradigm for many of the leading MFIs in all of their lending activities—including equipment lending, where the progressive lending methodology is often not very helpful. Moreover, as competition increases among MFIs, progressive lending becomes less and less viable. This is because if a microentrepreneur's household income qualifies him/her for a loan of 100 and the MFI (s)he approaches for a first loan offers only 60, (s)he is likely to get the remaining 40, or even the entire 100, from another MFI. Many MFIs that have discarded progressive lending argue that not only does it hurt client retention in this way, but it also hurts loan volume and profitability by forcing them to make smaller loans than the clients are qualified to handle.

In conclusion, for non-competitive markets, the progressive lending scheme is still a viable way for MFIs to limit risk exposure and motivate repayment, though at the cost of reducing loan volume and restricting access to medium-term financing to established clients only. Many leading MFIs in Latin America have abandoned this scheme in both competitive and non-competitive markets in favor of a relationship banking paradigm. This paradigm is especially useful for equipment lending or leasing since MFIs need not make the client wait for a medium-term equipment loan or lease until (s)he has repaid a series of shorter-term loans. Used in conjunction with the four underwriting criteria described above, the relationship banking paradigm has the potential to increase both MFI profitability and development impact.

Downpayment and Collateral

Contrary to some of the leasing literature, MFIs making equipment loans or leases should generally insist that clients put up a significant downpayment toward the purchase of the equipment and/or pledge collateral aside from the equip-

ment. The main reason for doing this is to motivate clients to keep repaying since they have something to lose if they default, namely, their equity in the newly-purchased good and/or the other pledged collateral. An additional reason is that in the event of default, the seizure and sale of the newly-purchased good and/or the other collateral may also cover some of the outstanding loan balance, providing the costs of seizure and sale are not too high.

If much of what might be used as outside collateral cannot be seized and sold, the MFI must require larger downpayments and rely less on outside collateral. For example, in Colombia, Finamérica requires a high downpayment of at least 30 percent for equipment loans, and places relatively less reliance on other collateral. This is because Colombian law forbids seizure of many household goods that are commonly used as collateral, such as refrigerators, stoves, and beds.

Financiera Calpiá and Caja Los Andes employ the opposite strategy, offering loans that cover 100 percent of equipment costs (zero downpayment), and rely instead on outside collateral to help motivate loan repayment. Many MFIs, including these two, prefer taking appliances and other household goods as collateral, rather than business equipment, because household goods are much more easily sold than business equipment, which generally has a more limited market.

If the MFI can more easily seize and sell equipment under a lease arrangement than with a loan, then it may require a lower downpayment and/or less other collateral with the lease than the loan. For example, Finamérica requires no downpayment for the ovens it leases to bread bakeries. However, it does require that the clients pay the costs of equipment installation themselves so that effectively there is a downpayment on the *installed* oven, though it is generally less than the 30 percent or more required for an equipment loan. This lower downpayment reflects the fact that the equipment can be more cheaply and quickly recovered and sold when it is leased than when it is pledged as loan collateral.

Though Carter (1996) and others have suggested that leasing can often be done with little or no downpayment or outside collateral, it would be unwise for most MFIs, at least in Latin America, to follow this course. As discussed in chapter 2, of the eight countries surveyed in the region, only Ecuador and Bolivia have legal mechanisms for seizing leased equipment quickly (in 1-2 months or less). In the remaining six countries (Chile, Peru, Colombia, Mexico, El Salvador, and Honduras), formal seizure of leased equipment is a lengthy and expensive procedure, often taking a year or more, and informal seizure is never certain. Even in Bolivia and Ecuador, lessors may be well advised to require a downpayment in order to motivate repayment and, especially in the case of leasing new equipment, to cover any loss in value when new equipment is placed in service and becomes used equipment. As an example, ANED in Bolivia requires downpayments of 15-25 percent on its leases, most of which are for new equipment.

As noted by Gallardo (1997) and Mutesasira, Osinde, and Mule (2001), saving up the downpayment is often one of the greatest challenges a client faces in qualifying for a lease or loan. One way to help the client overcome this barrier and also allow the MFI to gauge the client's cash flow pattern and potential repayment discipline is for the client to open a contractual savings account in the MFI (or in another collaborating financial institution) in order to save up the downpayment.

Term

The term of an equipment loan or lease should be set by trading off the following advantages of longer- versus shorter-term operations. The advantages of a longer-term loan or lease are that, by spreading amortization payments over more time, the equipment is more affordable for the client, increasing loan/lease demand and the potential development impact of the equipment financing program. The advantages of a shorter term are that it reduces the risk of default, lessens the MFI's losses in case of default, and diminishes the potential asset-liability management (ALM) problem of finding longer-term funding to match the longer-term loans or leases.

The loan or lease term should be set well below the equipment's useful life to avoid the danger that the client will default because the asset has become heavily depreciated or obsolete and thus is of little further value. For example, ANED uses the fairly generous rule-of-thumb that the term of its agricultural equipment leases should not exceed two-thirds of the equipment's useful life and should also be no more than five years. The former limit responds to the depreciation and obsolescence issue, and the latter is imposed for general risk control reasons. ANED employs 5-year leases mainly for heavier, more durable equipment such as trucks and tractors.

If the MFI can more easily seize and sell equipment with a lease than a loan, then it may reasonably offer longer terms for leases than loans. For example, Finamérica offers up to two year terms on its equipment loans and up to three year terms on its equipment leases. Pro Mujer, an MFI in Bolivia, is considering starting a leasing program so that it can offer longer terms to its clients who need to acquire equipment. Longer terms would be of particular help to Pro Mujer's clients, who are generally very poor and whose repayment capacity is therefore quite limited. Faster and cheaper collateral seizure and sale lie behind the longer terms for leases in both cases.

As noted by Mutesasira, Osinde, and Mule (2001), not all microenterprises require 2-5 year loans or leases for equipment finance. Especially for smaller purchases, many clients can complete payments in 12-18 months or even less, significantly reducing the risk exposure of the MFI. MFIs should consider reducing loan and lease terms below the maximum they allow, in order to meet only what the individual client really needs. Thus, if the cash flow analysis shows that the client could comfortably repay in one year, a 1-year loan or lease could be offered so as to not expose the MFI to additional years of repayment risk. Offering loans or leases with varying terms may imply that information systems will have to be reprogrammed to accommodate this flexibility.

Interest Rates

While virtually all MFIs surveyed in Table 2 set the same interest rates for their working capital and equipment loans, risk and cost considerations suggest that interest rates on equipment loans (and leases) should be set lower. Working capital and equipment loans appear to carry similar risks in many MFIs; however, the significantly longer equipment loan terms allow their costs to be spread over much more time, greatly reducing their annual cost burden. A greater use of cost allocation techniques, as suggested for MFIs by Helms (1998) and Gheen (1999), would help MFIs to correct such mispricings and generally put more rational price structures in place for their various loan (and other) products.

Though equipment loans might appear to be riskier than working capital loans because of their generally longer terms, for the great majority of clients in many MFIs equipment loans are not riskier. This is because a large share of clients with equipment loans (90-95 percent of such clients in some MFIs) also have working capital loans, which they know will not be renewed if they default on the equipment loan. This tends to equalize the default risk of the two loan types, at least for those equipment borrowers who also have working capital loans. Moreover, equipment loans should always be at least as well collateralized as working capital loans since the equipment can often serve as its own collateral, in addition to any household goods or other articles that might be taken as collateral for either type of loan. Overall, then, it is not clear from theoretical considerations which type of loan is riskier for an MFI.

Comparing the delinquency rate of equipment loans and leases to that of the overall portfolio for the 10 MFIs in Table 1 that report both statistics, equipment loans and leases appear slightly less risky, with an average delinquency rate of 6.7 percent, versus 8.3 percent for the overall portfolio. Of the 10 MFIs reporting both statistics, the delinquency rate for equipment is lower in five MFIs, higher in four MFIs, and the same in one MFI—a small overall advantage for equipment lending and leasing. Moreover, when

the equipment delinquency rate is lower, it is lower by a greater margin than when the overall portfolio delinquency rate is lower, further explaining why equipment loans and leases have a lower average delinquency rate across the 10 MFIs vis-à-vis the overall loan portfolio.

On cost grounds, equipment loans (and leases) have an important edge over working capital loans. This is because the costs of loan promotion, analysis, application (helping the client fill out the loan request), approval, disbursement, and defaulted loan collection hardly vary with the length of the loan or whether it is for working capital or equipment. These costs make up nearly all of total loan cycle administrative costs, more than 90 percent according to the unit loan cost data reported in Gheen (1999) for 14 Latin American MFIs in Ecuador, El Salvador, and Paraguay. These significant fixed costs can be spread over more time with longer-term equipment loans, which gives equipment loans a substantial edge over shorter-term working capital loans on cost grounds.¹⁴

Range of Products Financed

The leasing literature often suggests that lessors limit themselves to financing equipment that has good second-hand market value and that their leasing officers know well. However, these limitations may not be very important for MFIs offering equipment loans or financial leases to mainstream microentrepreneurs. For these clients, many MFIs can finance virtually any equipment the client demands. Why is this?

While good second-hand markets are important if the equipment serves as its own collateral, many MFIs take household goods as the primary or only collateral since these goods are often more readily saleable than business equipment. This strategy works well as long as the equipment isn't too expensive, so that its financing can be fully collateralized by a collection of household goods. Only when the equipment be-

¹⁴ The only cost that really varies with loan term is that associated with loan repayment, which varies with the number of repayment transactions. All other costs are essentially fixed with regard to term.

comes more expensive or the borrower simply can't provide enough readily saleable collateral, does the existence of good second-hand equipment markets become important.

Concerning the issue of loan or lease officers dealing only with equipment they know well, so that they can judge whether it is appropriate for the proposed business application, this is usually not a major issue for much of the equipment required by mainstream microenterprises. Such microenterprises normally require very simple sewing machines, basic wood- or metal-working equipment, straightforward kitchen equipment such as stoves or freezers, etc. Loan/lease officers typically pick up what they need to know about such equipment quite easily, for example, from dealers and more experienced loan/lease officers.

Rather than these two considerations, leading Latin American MFIs place much more emphasis on the cash flow analysis of the business and household. This tells them whether the equipment is too expensive for the business to support, which may lead to the recommendation that the microentrepreneur buy a smaller or used machine or one that is made locally instead of imported. In fact, some MFIs such as Financiera Calpiá are quite explicit in stating that they do not care what the client uses the money for, including for consumption purchases, as long as the analysis demonstrates that the client can repay the loan and meets all other loan screening criteria (character, collateral, and business solidity and stability). Consequently, MFIs such as Calpiá pay little attention to either the nature of the equipment being purchased or the reliability of the dealer from whom it is being purchased. One might question this strategy in the cases where the client needs to use the equipment as collateral or needs to count the income flow generated by the equipment in order to qualify for the loan, for in such cases the equipment and the dealer clearly matter. In these cases, there are two options. One would be for the MFI to rely on its in-depth analysis of the client and not try to second-guess his or her decisions, including the choice of equipment and dealer. Calpiá, for example, follows this route. The other option, for MFIs that believe it worthwhile to

check on their clients' choices, would be for the MFI to assess the equipment and dealer. This generally entails only a modest additional effort by the loan or lease officer, again because of the simplicity of the equipment.

Leading Latin American MFIs as well as Mutesasira, Osinde, and Mule (2001) argue that clients should be allowed to choose which model of equipment they buy and from which dealer they buy it, though the MFI should reserve the right to veto the choice by denying financing. Some lessors that have not followed this strategy in the past have found that if something goes wrong with the equipment the client may blame them and possibly use this as a pretext for withholding payments.

Second-Hand Equipment

Many microentrepreneurs want to buy second-hand equipment despite the greater chances for defects and the general lack of warranties. The price of used equipment is often 25-50 percent of the cost of new goods, or less, which can make such equipment very attractive. Many, though not all, MFIs that do equipment lending or leasing in Latin America finance used equipment, because of the great demand for it. For example, Finamérica estimates that 60-70 percent of the equipment their clients buy is used. Financing used equipment can have the additional benefit for the MFI of allowing it to offer shorter-term loans or leases than would be possible for new equipment, thus exposing it to less credit risk and potential ALM problems. As noted in the preceding section, as long as the used equipment can be adequately collateralized with readily saleable household goods, and the client meets all other screening criteria (character, capacity to repay, and business solidity and stability), it may be reasonable to approve a loan or lease even though the equipment is used.

A number of leading MFIs in Latin America, including some in the Accion International network, require that the client pay for a technical evaluation of the used equipment in order to assess its performance, reliability, remaining life, and market value. Many of these clients have thanked the MFI for saving them from buying a

bad piece of used equipment when such evaluations have turned up hidden defects. In any given market, however, the availability of people qualified to do such evaluations should be assessed, and the cost, quality, and benefits of such evaluations for different types of equipment should be weighed before deciding to what extent evaluations will be required. In addition, wherever property registries exist and can be searched at reasonable cost, clients should be required to present evidence that the second-hand equipment is free of liens. In cases where used equipment serves as its own collateral, these technical evaluations and registry searches should be mandatory.

Sale and Leaseback

While leasing is a way to obtain equipment finance, sale and leaseback is generally used to obtain working capital finance. Suppose a microentrepreneur needs \$1000 in working capital finance. One straightforward way to obtain this is simply to take a loan for \$1000 from an MFI, perhaps putting up a piece of equipment as collateral. An alternative way, and one that gives the MFI a stronger legal position, is for the microentrepreneur to sell the piece of equipment to the MFI for \$1000 and then lease it back. Under this sale-and-leaseback arrangement, the equipment never leaves the microentrepreneur's worksite. Rather, ownership papers are transferred to the MFI, with the microentrepreneur continuing to use the equipment under the leaseback arrangement. The microentrepreneur obtains the same \$1000 in cash (from the sale) and has the same monthly payments as under the loan scheme, assuming the interest rate and term are the same for both the loan and leaseback. The only substantive difference between the loan and the sale and leaseback is that the MFI has a security interest in the first case and outright ownership in the second.

Despite its apparent legal advantages, sale and leaseback has two difficulties: the need for an independent technical evaluation of the equipment, and the tax consequences of the transaction. The second of these difficulties is particularly serious for MFIs using this method of finance with informal clients in many Latin

American countries. In addition to these two difficulties, a limitation of the sale-and-leaseback transaction is that it only gives the MFI ownership of *equipment*; as noted earlier, MFIs often prefer to collateralize their loans with more readily saleable household goods.

The first of the two difficulties is often easier to overcome, but should not be overlooked. Before the MFI buys the microentrepreneur's used equipment, it must have a technical evaluation done in order to assess the equipment's performance, reliability, remaining life, and market value. The MFI must not entrust the microentrepreneur to arrange this evaluation because the microentrepreneur has incentives to obtain an evaluation that overlooks any technical defects, in order to obtain the desired financing. The solution to this is straightforward, at least in principle. The MFI must arrange for an independent evaluation, free from any influence of (or bribery by) the client. In addition, the MFI should check to be sure that the equipment it is purchasing is free of any liens.

The second difficulty arises from the tax consequences of the sale-and-leaseback transaction. This difficulty may be particularly acute when sale and leaseback is used with informal entrepreneurs, that is, with entrepreneurs who pay no value added tax (VAT) or profit tax on the products they sell. To understand the difficulty, recall the chapter 4 discussion of a key asymmetry in the application of the value added tax: VAT is generally levied on lease, but not on loan, payments. Of the eight Latin American countries surveyed in Table 6, none levy VAT on loan payments. Only one country (Colombia) exempts all lease payments from VAT, while one other (Honduras) exempts lease payments made for equipment used in the principal product line of the lessee's business. Mexico levies VAT on all leasing principal payments plus all interest above the inflation rate. The other five countries levy VAT on the full lease payments (principal plus interest). Of these eight countries, doing sale and leasebacks on any great scale with informal clients would be very difficult in all of these countries except Colombia and Honduras, and would still be very difficult in Honduras for

leasebacks of equipment not used in the entrepreneur's principal product line.

To understand this last statement, we must see why the asymmetry in VAT treatment has much more devastating tax consequences for sale-and-leaseback arrangements than for leasing (when each of these two are compared to a straightforward loan). To understand this, consider an MFI which pays \$1000 to buy a machine owned by a microentrepreneur, and then leases it back to the microentrepreneur at an interest rate of 30 percent.¹⁵ To simplify the example, assume that the leaseback is for one year and that repayment is in bullet form: a single payment of \$1300 at the end of the year. (Nothing essential is changed by this simplification.) Assume the typical case, that VAT is levied on the entire payment (principal plus interest), at the rate of 15 percent. Hence, the amount the client must pay at the end of the year is not \$1300, but rather \$1300 plus VAT of \$195 ($=0.15 \times \1300), for a total of \$1495. The overall cost to the client is 49.5 percent (\$495 in interest plus VAT for \$1000 in working capital). In contrast, the interest paid on a loan is not subject to VAT, and so a client who borrows \$1000 at 30 percent interest pays only \$1300 at the end of the year. The difference is clearly so large as to make sale and leaseback a virtually untenable financing mechanism.

As shown in chapter 4, the VAT does not place leasing at nearly such a large disadvantage. This is because in leasing the MFI normally obtains a VAT credit from the equipment dealer when it first buys the equipment to be leased. This credit

¹⁵ We ignore any VAT that might be due on this initial sale since very few microenterprises are in the VAT system, and thus are not prepared to charge VAT on anything they sell. If VAT were levied on this initial sale, however, the sale-and-leaseback arrangement would look even worse than is described now in the text paragraph. (As will become clearer as the example is explained in the rest of the paragraph, this would be because the MFI would have to pay \$150 in VAT at the start of the year and would only be reimbursed at the end of the year when the microentrepreneur pays \$195 in VAT on the lease, at which point the MFI can apply its \$150 credit to reduce its VAT payment to the tax authority.)

can be used to offset much of the VAT levied on the leasing payments.

Despite the preceding demonstration, many MFIs may be able to do a *limited amount* of sale-and-leaseback transactions with informal clients on terms equivalent to those of a working capital loan. This is because many MFIs can offset the VAT debits they earn from sale-and-leaseback transactions (\$195 in the above example), at least on a limited amount of such transactions, by using surplus VAT credits obtained by paying their operating expenses. As discussed in chapter 4, financial institutions in general, including MFIs, typically have chronic surpluses of VAT credits that they earn by paying for such operating expenses as rent, utilities, computer systems, insurance, etc., since VAT is typically levied on most operating costs except labor and interest. Because loan interest is generally exempt from VAT, financial institutions normally incur few VAT debits in their operations. This leaves the surplus credits available for use in leasing operations, including for sale-and-leaseback transactions. These surplus credits can be used to fully offset the VAT due on a limited amount of these transactions.

How would the previous example work in this case of surplus VAT credits? To begin, the MFI doing a sale and leaseback would charge 13.043 percent interest (where $1.30/1.15=1.13043$),¹⁶ yielding it a payment of \$1130.43 in principal and interest at the end of the year. VAT of 15 percent would then be levied on this entire amount, making the total cost to the client \$1300 ($=1.15 \times \1130.43). Since the client must pay the same \$1300 with either the sale and leaseback or loan, (s)he is indifferent between the two types of operations on cost grounds. With the sale and leaseback, the MFI receives a total in interest plus VAT of \$300 and is able to keep the full \$300 because its surplus VAT credits

¹⁶ To get the appropriate sale-and-leaseback interest rate we express in decimal form both the loan rate (0.30) and the VAT rate (0.15). We take the ratio, $(1 + \text{loan rate})/(1 + \text{VAT rate})$, and then subtract one (1) to get the sale-and-leaseback interest rate in decimal form. In this example, $1.30/1.15 - 1 = .13043$, which in percentage form is 13.043%.

obviate the need to pay any of the VAT to the tax authority. Hence, the MFI earns 30 percent on its \$1000 with both the sale and leaseback and the loan and is indifferent between the two operations on rate-of-return grounds. In this way, an MFI with surplus VAT credits can do a limited amount of sale-and-leaseback transactions on the same terms as a straightforward loan. Such an MFI obtains in return the stronger legal position of owning the equipment instead of taking it as collateral.

Frequency of Collection

Nearly all of the MFIs shown in Tables 1 and 2 employ monthly payments for individual equipment and working capital loans, a shift from the weekly and semi-monthly payments some of these MFIs employed in the past.¹⁷ The reasons for this shift are simple: to reduce transactions costs for clients so that they do not have to spend as much time away from their businesses making loan payments, and to reduce the transactions costs for the MFI in accepting these payments. Both of these reasons have become increasingly compelling as competition has increased in recent years in markets served by most of the MFIs shown in Tables 1 and 2. The use of monthly payments, a hallmark of the banking sector, marks yet another movement away from the traditional microlending methodology. This methodology holds that shorter repayment intervals—weekly or semi-monthly—should be used in order to facilitate the monitoring of borrowers, signal the seriousness of the MFI about collection, and instill repayment discipline (see, for example, Baydas, Graham, and Valenzuela 1997).

While monthly payments are the modality that is used overwhelmingly today by the MFIs in Tables 1 and 2, it is interesting to examine some of the exceptions to this rule and the reasons for these exceptions. *Financiera Calpiá* allows more frequent repayments for the (relatively few) clients who request them. Many of these clients

find it difficult to save up money for monthly repayments, particularly if the money is saved at home, either because of demands by family, friends, or neighbors or because they themselves lack the discipline not to spend the money. Banco Sol of Bolivia tailors the repayment interval to the client. For example, they set more frequent repayments (weekly or semi-monthly) for some clients in order to provide needed repayment discipline. For other clients, for example, those whose weekly cash flows and savings are irregular, monthly payments are preferred. Mutesasira, Osinde, and Mule (2001) report an interesting experiment carried out by the United Leasing Company of Tanzania. This lessor changed from monthly to weekly or bi-weekly repayments for lessees with poor repayment records and saw these records improve dramatically.

Many MFIs have not yet built the reputation for disciplined loan collection of some of the leading MFIs we have surveyed, and these other MFIs may find shorter payment intervals to be useful for more closely monitoring loan repayment and for building their image as being serious about loan collection. This strategy is more likely to be feasible if the clients of these MFIs are located fairly near a branch office and if competition is not yet too strong, so that there is more scope to offer loans with frequent payments.

Where conditions permit, MFIs may find it especially useful to offer loans with frequent payments to two groups in particular: new clients and poor clients. Frequent payments may be useful with new clients in order to build repayment discipline and gauge the repayment commitment of this untested group. Poor clients may find more frequent payments easier to handle than having to save up to meet larger monthly payments, particularly since the poor often feel heavy demands on their scarce savings from family members and others, as discussed by Rutherford (2000).

¹⁷ As explained in the “Group Lending Considerations” section below, most equipment lending is done using individual, not group, loans; hence, we focus on individual loans here.

Flexible Repayment Plans: Allowing Installment Payments of Varying Size

Flexible repayment plans—featuring loan or lease installment payments that vary in size—can be useful for clients with seasonally-varying income. This is because such plans can better match payments to cash flow patterns than do traditional level-repayment plans. With flexible repayment plans, higher payments are programmed for the client's peak earning months, for example, during harvest time or high tourism season. These higher payments are offset by lower payments in other months.

The great benefit of flexible repayment plans are that they can increase the ability of certain clients to borrow and thus augment their incomes, while simultaneously reducing default risk. For Financiera Calpiá's agricultural sector lending, the synchronization of loan payments with income flows that is achieved by means of such plans is seen by Calpiá managers as critical to reducing loan default for both equipment and working capital loans, and for making possible increased lending to the sector. United Leasing Company in Tanzania offers flexible repayment plans for clients buying and operating tour vehicles, with larger installments programmed for peak tourist season and very small payments due during low season (Mutesasira, Osinde, and Mule 2001, p. 14).

Very small, off-season payments—such as those collected from tour vehicle operators by United Leasing Company—are referred to as “contact payments” in the leasing literature, and are sometimes said to be beneficial in maintaining client monitoring and repayment discipline. Financiera Calpiá has abandoned such contact payments for many of its agricultural loan clients who have little off-season income because of the high transactions costs they impose on borrowers to bring very small amounts of money (e.g., \$5) all the way to a branch office. Instead, Calpiá's loan officers try to stay in touch occasionally with such clients during the off-season, or at least make their presence felt by asking after the client when they visit the area on other business—all with the aim of reminding the client that Calpiá is still there and expects repay-

ment. Clearly, in designing flexible repayment plans, judgment must be used in deciding whether to require off-season payments in any given case, with a proper balance struck between risk and transactions costs.

In contrast to flexible repayment plans that allow for seasonal variations in payments, MFIs can also consider plans with annual variations. For example, larger loan or lease payments might be made in the early years of a truck, tractor, or taxicab loan or lease when repair costs are minimal, to be offset by lower payments later on when repair bills increase.

While flexible repayment plans can be useful with certain types of clients, two caveats should be observed. First, to be truly helpful (and not harmful), these plans require that the MFI make a good analysis of the cash flow pattern of the borrower's business and household, including any seasonal variations in savings. Second, it must be recognized that these plans impose a cost on the MFI and a burden on its information system: keeping track of loan repayments is now a more complex task. ANED, an MFI doing agricultural equipment leasing in Bolivia, has historically had about one-third of its lease clients on flexible repayment plans, but is trying to reduce this proportion because of the increased difficulties of knowing who should pay how much and when they should pay it.

Final Leasing Payment (Option-to-Buy Price)

As discussed in chapter 2, operational leasing has substantial additional risks beyond those of financial leasing. Because of this, most MFIs that wish to lease are likely to be interested mainly in financial leasing. Therefore, these MFIs should recover all, or virtually all, of the equipment's cost, plus interest, from the client's periodic installment payments. The final leasing payment (also called the residual value or the option-to-buy price) should be set at a nominal value, so that it does not serve as a barrier to the client taking ownership and does not create damage, residual value, and second-hand market risks (chapter 2). Payments as low as \$1, or at most a few percent of the original cost, are appropriate. Alternatively, the lessee may simply

be granted ownership upon completing the regular installment payments.

Group Lending Considerations

Most equipment loans and leases are and should be made on an individual basis, not to solidarity groups—both for demand reasons and, in the case of loans, for supply reasons. On the demand side, group members are reluctant to bear the increased risk of exposure to the longer terms and/or larger loan or lease sizes that are generally associated with equipment financing, and thus prefer that clients needing such loans or leases obtain individual financing. On the supply side, beyond a certain size loan, many MFIs want more than solidarity group guarantees; for example, they may want physical collateral, whose value must correspond to the size of the individual equipment loan. With loan sizing and collateral being managed on an individual basis, the cost economies of group lending are reduced. The IDB/CGAP database of 193 MFIs in 17 Latin American countries reveals that virtually every MFI that offers solidarity group loans also offers individual loans, so that it is generally quite feasible to move clients from group to individual loans (or individual leases) as the need for equipment finance arises.¹⁸ MFIs that lend only through solidarity groups or village banks need to acquire skills in making individual loans (based on cash flow analysis and other considerations) before launching an equipment loan or lease product.

A variant of the group lending model, in which all group members share use of a single piece of equipment, financed with a single loan or lease that all group members agree to repay, creates additional difficulties beyond those of a typical group loan. Such shared-equipment operations are subject to the “tragedy-of-the-commons” problem. Group members may become careless about damage, overuse, misuse, or lack of maintenance of the equipment, given that they bear only a part of the responsibility for the equip-

ment and its repair or replacement cost. In contrast, borrowers with individual ownership and lessees with individual leases bear the full cost and consequences. Grameen Bank, for example, does not allow group leases of this type (Dowla 1998). In cases where an individual desires the help of others in paying for a piece of equipment, it may be better for that person to own or lease the equipment individually and then rent or sublease it to others. The clearer accountability of this arrangement is likely to benefit both MFIs and their clients.

Insurance and Property Taxes

Equipment loans and leases raise issues beyond those raised by working capital loans in the areas of liability insurance, multiperil insurance, and property taxes. The issues should be addressed in equipment finance programs.

Liability insurance. MFIs that finance motor vehicles (trucks, taxicabs, etc.) and any other equipment that may give rise to significant liability claims should examine their own needs for liability insurance as well as the needs of their clients. As discussed in chapter 2, liability insurance is generally available in Latin America and is relatively inexpensive, particularly since in Latin America liability suits are much less frequent and liability settlements far lower in value than in the United States for example. MFIs that *lease* vehicles and other equipment that involve significant risk of liability claims need to check local leasing and other (e.g., transit) laws to see whether they, as owners, are liable when their lessees cause property damage, personal injury, or death of third parties. If an MFI is liable—or if the law is unclear on this point but leaves open a significant possibility that it is liable—the MFI should obtain insurance to cover its own liability. It is also prudent for MFIs making *loans or leases* for any types of equipment that involve significant risk of liability claims to insist that clients obtain liability insurance so that they are not financially ruined by a claim and thus left unable to repay the loan or lease. The MFI should request periodic evidence from the client that the liability insurance is being kept up to date. In the case of motor vehicle liability insurance, the MFI should also

¹⁸ The 17 countries are Argentina, Bolivia, Brazil, Chile, Colombia, Costa Rica, Dominican Republic, Ecuador, El Salvador, Guatemala, Honduras, Mexico, Nicaragua, Paraguay, Peru, Uruguay, and Venezuela.

request periodic proof of the currency of the client's driver's license, vehicle registration, vehicle inspection, and any other papers and procedures required for the liability insurance coverage to remain in force.

Multiperil insurance. It is more of an open question whether the equipment that clients finance with a loan or lease should be insured against damage or loss from natural causes, such as earthquakes and hurricanes, and from other perils such as theft, fire, vandalism, etc. The advisability of such multiperil insurance must be assessed on a case-by-case basis and depends on its cost, the likelihood of the insured events actually occurring, and the capacity of the client to withstand the losses if not insured. It may turn out that insuring equipment worth only \$1000 or \$2000 is relatively expensive (as a percentage of the equipment's value) because of the high, and mostly fixed, costs of selling the insurance and investigating and settling any claims. Mutesasira, Osinde, and Mule (2001) report that microentrepreneurs in Tanzania and Uganda who lease assets worth over \$5000 tend to appreciate the value of multiperil insurance, while clients who finance less costly assets see the insurance premiums as a burden for which they receive little in return.

Property taxes. Property taxes that are levied on equipment raise an issue for MFIs that offer equipment leases. As the owners of the equipment, the MFIs are normally the ones held legally responsible for paying the taxes. This is unlike the case of lending, where the client is the owner and therefore bears this responsibility. MFIs with leasing programs may find it useful to add any such tax costs to their clients' monthly payments, in order to facilitate collection. Liability and other insurance premiums paid by the MFI may be passed on to the client in the same way.

Dealer Discount Programs

MFIs that make numerous loans or leases for the same type of equipment each year (e.g., sewing machines) may have sufficient bargaining power to negotiate discounted prices, extended warranties, additional service, and other benefits with

one or more dealers, as ANED has done with farm equipment in Bolivia. Such MFIs should select reputable equipment dealers with good products, service, and availability of spare parts, and then try to negotiate discounts and other benefits from these dealers. The MFI should then make the dealer discount programs known to their loan and lease clients but should not require that clients choose equipment only from these dealers. As discussed earlier, clients must be allowed to choose their own equipment and dealer.¹⁹ Although such programs involve some setup and operating costs for the MFI, they help steer clients to reputable dealers, which benefits both the MFI and the client in the long run. By reducing equipment purchase and repair costs for some clients, dealer discount programs can give the MFI an advantage that may be important in an increasingly competitive microfinance marketplace.

Market Valuation Exercises

In recent years, some MFIs have broadened their clientele to include upper end microenterprises and small enterprises, and are financing relatively expensive equipment for this clientele. Such MFIs may find it useful to undertake a market valuation exercise prior to approving a loan or lease for such goods, particularly when the MFI is counting on the equipment to serve as its own collateral. In a market valuation exercise, the MFI assesses the equipment's market value, calculated on a forced sale basis, at the end of each year of the loan or lease term, in order to obtain an estimate of the security afforded by the asset itself. As noted by Clark (1990), doing several such exercises can be a useful part of a leasing officer's training.

In doing market valuation exercises, account should be taken of the following points. Specialized equipment is normally less saleable than general-use equipment. High technology equipment, such as computers, often has a relatively short market life. The values assigned to such equipment should reflect these realities. If the equipment itself does not provide enough secu-

¹⁹ See the section entitled, "Range of Products Financed."

rity, the MFI may ask for additional collateral to be pledged or for third-party guarantees, may shorten the loan or lease term, may front load the payments, or may simply deny financing. Alternatively, the MFI may choose to approve the loan or lease based on the strength of the underlying business and borrower even in the absence of sufficient collateral.

Launching an Equipment Loan or Lease Program

This section does not attempt to summarize the literature on how to launch new products, or even enumerate the many steps in each of Wright's (1998) four phases of financial product development: market research, design and pilot testing, monitoring and evaluation of the pilot test, and product revision and scaled-up implementation. Rather, the reader is referred to the excellent papers by Wright (1998) and Wright, et al. (2001; 2002), and to other works referenced therein. Here, we limit the discussion to listing some of the aspects of new product development that are particular to starting up an equipment loan or lease program. All of these points have already been elaborated on earlier in

this paper, so the list is presented without further discussion:

- Examine the legal, regulatory, and tax aspects of leasing vs. term lending in order to understand each product and decide which to use.
- Implement a funding strategy that responds to the potential for interest rate, liquidity, and foreign currency risks (ALM problems).
- Modify the MFI's information system as needed so that it can handle medium-term finance operations and calculate any required VAT and other tax payments.
- Design an insurance strategy for handling MFI and client liability and any other insurance issues.
- Arrange any dealer discount programs.
- Decide on other aspects of product design, such as those discussed in this chapter.

6. Policy Recommendations and the Role of Governments and Donors

This chapter presents major policy recommendations in the legal, regulatory, and tax areas, which are based on discussions of these issues in chapters 2-4, respectively. The chapter ends with a brief note on the role that governments and donors can play in facilitating policy changes in these areas and in strengthening the equipment loan and lease programs of MFIs.

Legal Issues

Two major issues are considered here, establishing appropriate legal frameworks for financial leasing and for equipment seizure and sale. The first issue relates only to financial leasing, while the second relates to both financial leasing and lending.

Legal Framework for Financial Leasing

Countries need to establish a basic legal framework for financial leasing. This may be done through special leasing laws, through articles in a bank law or its regulations, through tax laws and regulations, or by using some combination of these and other legal and regulatory vehicles. This legal framework needs to define and recognize the existence of financial leasing, and the rights and obligations of each party in the leasing transaction. Among the key points to cover are the following:

- Financial leasing should be distinguished from operational leasing. In financial leasing, the lessee amortizes all or virtually all (typically, 95-100 percent) of the lessor's original acquisition costs, and pays interest. The lessee has the option to buy the asset for a prespecified nominal sum at the end of the lease and may not unilaterally cancel the lease contract. By defining financial leasing as having these three characteristics, the major additional risks of operational leasing are avoided (residual value, damage, and sec-

ond-hand market risks—see chapter 2). The distinction between the two types of leasing is particularly important to make with regard to their regulatory and tax treatments.

- In a leasing transaction (financial or operational), lessors have the right of ownership, including the right to repossess the leased asset in the event of payment default. If the lessee goes bankrupt, the leased asset is returned directly to the lessor, ahead of any creditor claims on the lessee's assets.
- Lessees have the right of uninterrupted use of the leased asset as long as they are current in their lease payments. On the other hand, since they are not the owners of the leased asset, they may not pledge the asset as collateral or sell it.
- Liability issues should be addressed. For example, the El Salvador financial leasing law (Decree 884, issued June 27, 2002) assigns all legal liability to the lessee, as the user of the asset. Care must be taken in this area so that any conflicts with other laws (e.g., transit laws) are properly resolved.
- The potential for legal disputes should be minimized. For example, the Bolivian financial leasing law (Supreme Decree 25959, issued October 21, 2000) holds that the lessee and equipment dealer must work out all problems relating to equipment functionality. The lessor is not in any way responsible and is not to be involved.
- Leasing laws might also address bank regulation issues (such as which institutions may do financial leasing) and tax issues not addressed elsewhere by a country's laws and regulations.

The passage of a leasing law can be a critical step in establishing leasing as a viable and even thriving alternative to loans for equipment finance. Euromoney Yearbook (2002) cites, for example, the case of Panama. Prior to the passage of the 1990 leasing law there, yearly lease receivables were estimated at \$11-15 million. Within one year of the passage of this law, the industry grew to \$28 million and by 1994 had reached \$50 million. In 1996, additional, clarifying regulations were put into effect, and leasing grew to nearly \$150 million in 1997. Leasing has continued this upward path, topping \$200 million in 2001. A significant part of this growth is attributed to the establishment of a clear legal framework in which to carry out leasing operations.

Legal Framework for Equipment Seizure and Sale

As discussed in chapter 2, seizure and sale of leased equipment and of assets pledged as loan or lease collateral is often very time consuming, costly, and uncertain in Latin America. Reforms to facilitate seizure and sale of leased assets and collateral should expand access to equipment and other finance and reduce interest rates. The desired reforms include the creation, perfection, and enforcement of security interests:

Creation of security interests. Financial institutions and their clients should be permitted to enter into contracts in which a wide variety of assets can be pledged as collateral.

Perfection of security interests. Accurate registries that are accessible to the public and inexpensive to search should be created. Strengthening or privatizing public registries is one possibility, as is introducing competition among public registries or permitting private registries to compete with public ones.

Enforcement of security interests: seizure and sale of leased assets and collateral. Financial institutions and their clients should be permitted to agree to rapid, nonjudicial enforcement of both lease and loan contracts. The rapid and low-cost procedures used to enforce lease con-

tracts in Bolivia and Ecuador may serve as useful models.

Banking Regulations

It is well known that usury ceilings can impede access to credit—particularly in the case of microenterprise and small consumer lending—because of the high interest rates that MFIs and other financial institutions must charge to cover the costs of these small operations. As a result, countries should avoid usury ceilings. If there is an effective usury ceiling on loans but not on leases, the best option would be to remove the loan rate ceiling. If this is not possible, access to finance should not be further degraded by extending the coverage of the usury law to include leases. Even though this unequal treatment creates an obvious distortion in the choice between two very similar equipment financing methods (loans and financial leases), it is better to give clients at least one means to access equipment finance (financial leases) than to further degrade or cut off all such access, as would likely occur if the usury ceiling were extended to cover both leases and loans.

Financial leasing, as rigorously defined in Box 1, rarely poses much more risk than lending and often poses significantly less risk (chapter 2). On the other hand, operational leasing can have substantial damage, residual value, and second-hand market risks not shared by either financial leasing or lending (Table 3). The principal policy recommendations that result from this and from the chapters 2-3 analysis are that superintendencies should adopt the rigorous definition of financial leasing given in Box 1 and should not restrict any financial institution allowed to do lending from engaging in financial leasing. This rigorous definition of financial leasing would replace a crazy-quilt of definitions presently found in Latin American bank regulations, in which financial leasing is variously defined as: any leasing operation done by a regulated financial institution, any leasing operation that offers a purchase option, any leasing operation with a given maturity (e.g., three years) or more, etc. The removal of financial leasing restrictions—restrictions that either prohibit financial institutions from offering financial leases or else re-

quire financial leasing to be done through a subsidiary—would allow many MFIs and other financial institutions to offer equipment finance by means of a lease. This should broaden access to equipment finance, which is advantageous to both the financial institutions and their clients.

Operational leasing can be significantly more risky than lending. Accordingly, superintendencies may wish to restrict operational leasing activities in some or all financial institutions, either by prohibiting this activity or by permitting it to be done only through subsidiaries. As financial institutions gain experience with operational leasing, they may put in place better risk management systems, and superintendencies may feel they can eliminate some or all of the restrictions on this activity.

Tax Issues

The principal policy recommendations that result from the analysis of tax issues in chapter 4 are that the tax authorities should adopt the rigorous definition of financial leasing given in Box 1 and should give identical treatment in the tax code to loans and financial leases. This definition of financial leasing would replace a wide variety of definitions presently found in Latin American tax codes, in which financial leasing is variously defined as: any leasing operation done by a regulated financial institution, any leasing operation that offers a purchase option, any leasing operation with a given maturity (e.g., three years) or more, etc.

The recommendation that loans and financial leases be treated alike in the tax code is based on the analysis in chapter 2, which shows that financial leases are simply an alternative financing arrangement to loans for gaining ownership of an asset. As shown there, financial leases and loans are close substitutes for one another.²⁰ The

²⁰ Two goods are substitutes when they serve similar purposes. Usually, substitutes are imperfect, so that they serve somewhat the same purpose, but do so imperfectly. With close substitutes, the degree of imperfection is much less; the two goods compete very closely with one another. Because of this, small changes in the price of either good can induce con-

only substantive difference between the two transactions is that the lessor (e.g., the MFI) owns the equipment in the case of leasing, while the client (e.g., the microentrepreneur) owns the equipment in the case of a loan. The risks of leasing and lending are also very similar, as shown in chapter 2. Moreover, we know that large economic losses often occur when tax systems distort choices between two close substitutes. To see why this is so, suppose that a financial institution can offer financial leases for equipment that are two percentage points cheaper than loans of an equivalent maturity. The financial institution may be able to do this because its bad debt collection costs are lower, which, in turn, may be due to the stronger legal position that it has as owner of the leased equipment. Nonetheless, because leases are taxed more heavily than loans (e.g., because lease, but not loan, payments are subject to value added tax), the financial institution's clients pay a higher post-tax interest rate on leases than loans. As a result, clients overwhelmingly elect to finance equipment using loans, despite the two percentage point cost advantage leases enjoy before taxes. This forces the financial institution, other financial institutions like it, and the overall economy to utilize additional resources in bad debt collection, which otherwise could have been spared had the tax system not distorted the loan/lease choice.

By defining financial leases in a way that makes them as similar as possible to loans, and then treating financial leases and loans alike in the tax code, these potentially large economic losses can be avoided.

While some may think that treating financial leases and loans alike in the tax code would be difficult to implement, it is actually quite simple. One simply treats a financial lessee as though (s)he were the owner of the good, the financial lessor as though it were a lender, and a financial lease as though it were a loan. For example, the Mexican tax code adopts this treatment for both profit and property taxes (though not, unfortunately, for the value added tax).

sumers of close substitutes to switch from one good to the other.

One further issue arises for countries that do not levy value added tax (VAT) on lease payments, but do levy VAT on the initial equipment purchase. This might occur in countries that discontinue levying VAT on lease payments in order to equalize the VAT treatment of loans and leases. In this case, a concern would be whether clients might lease equipment directly from an equipment dealer in order to escape VAT on the initial equipment purchase. Since VAT is not levied on lease payments, these clients would therefore be able to escape the VAT entirely. This would give this method of finance an artificial advantage over the two methods we have analyzed and compared above: leasing from a financial institution (which must initially buy the equipment and pay VAT) and direct purchase of the equipment by the microentrepreneur, who must pay VAT (with the purchase perhaps financed by a loan from a financial institution). One simple way to eliminate this distortion is to charge the client who leases equipment directly from a dealer the same amount of VAT as if (s)he had *purchased* the equipment from the dealer. This is a logical extension of the princi-

ple given in the preceding paragraph: to treat lessees as though they had purchased the equipment and are its owners.²¹

Role of Governments and Donors

All of the policy changes recommended above fall within the purview of governments to implement. Donors can play a constructive role in this process by using a variety of tools at their disposal, including policy dialogue with the countries, technical assistance operations, and adjustment and other lending programs.

Donors and governments can also help to strengthen individual MFI equipment lease and loan programs. They can do this by providing technical assistance support to these programs. Donors and governments can also help to fund such programs with medium- or long-term loans, though this should be avoided in the case of MFIs that can borrow commercially or that generally have adequate access to capital and liabilities to meet their funding needs, in terms of amount of finance, tenor, and currency.

²¹ Thanks to Gonzalo Afcha for pointing out this issue.

References

- Alvarado, Javier and Francisco Galarza. 2003 forthcoming. ANED: Pioneer in the Provision of Rural Microleasing Services. In *Promising Practices in Rural Finance*, eds. Mark Wenner, Javier Alvarado, and Francisco Galarza. Washington, D.C.: Inter-American Development Bank.
- Bass, Jacqueline and Katrena Henderson. 2000. Leasing: A New Option for Microfinance Institutions. Microenterprise Best Practices Paper. Washington, D.C.: United States Agency for International Development. Website: http://www.usaidmicro.org/know_management
- Baydas, Mayada, Douglas Graham, and Liza Valenzuela. 1997. Commercial Banks in Microfinance: New Actors in the Microfinance World. Microenterprise Best Practices Paper. Washington, D.C.: United States Agency for International Development. Website: http://www.usaidmicro.org/know_management
- BISA. 2001. El leasing en entidades microfinancieras. La Paz, Bolivia: BISA Grupo Financiero.
- Carter, Laurence. 1996. Leasing in Emerging Markets. Washington, D.C.: International Finance Corporation.
- Clark, Tom. 1990. *Leasing Finance*. Second edition. London: Euromoney Publications.
- Deelen, Linda, Mauricio Dupleich, Louis Othieno, and Oliver Wakelin. 2002. Leasing for Small and Micro Enterprises. Preliminary draft. Geneva: International Labor Organization.
- Dowla, Asif. 1998. Micro Leasing: The Grameen Bank Experience. St. Mary's City, Maryland: St. Mary's College of Maryland.
- Dupleich, Mauricio. 2000. Programa de Leasing de ANED (also available in English: ANED—The Microleasing Programme). La Paz, Bolivia: Asociación Nacional Ecuémica de Desarrollo (National Ecumenical Development Association).
- _____. 2000a. *El microleasing: Nueva tecnología financiera que amplía la frontera de las microfinanzas*. Licenciado thesis in economics. La Paz, Bolivia: Universidad Católica Boliviana.
- Euromoney Yearbooks. 2002. *World Leasing Yearbook 2002*. Brighton, United Kingdom: Grange Press.
- _____. 1996. *World Leasing Yearbook 1996*. Brighton, United Kingdom: Grange Press.
- Gallardo, Joselito. 1997. Leasing to Support Micro and Small Enterprises. Policy Research Working Paper 1857. Washington, D.C.: World Bank.
- Gheen, William. 1999. Global Microenterprise Credit Program. Published by Office of Oversight and Evaluation, with background papers. Washington, D.C.: Inter-American Development Bank.
- Havers, Mark. 1999. Microenterprise and Small Business Leasing—Lessons from Pakistan. *Small Enterprise Development* 10(3):44-51.

- Helms, Brigit. 1998. Cost Allocation for Multi-Service Micro-finance Institutions. Occasional Paper No. 2. Washington, D.C.: Consultative Group to Assist the Poorest.
- Jansson, Tor. 2003. Financing Microfinance. Micro, Small and Medium Enterprise Division. Washington, D.C.: Inter-American Development Bank.
- Jansson, Tor, Ramón Rosales, and Glenn Westley. 2003. *Principios y prácticas para la regulación y supervisión de las microfinanzas*. (Forthcoming in English as *Principles and Practices for the Regulation and Supervision of Microfinance*.) Washington, D.C.: Inter-American Development Bank.
- Mutesasira, Leonard, Sylvia Osinde, and Nthenya Mule. 2001. Potential for Leasing Products: Asset Financing for Micro- & Small Businesses in Tanzania and Uganda. Nairobi, Kenya: MicroSave-Africa. Website: www.MicroSave-Africa.com.
- Navajas, Sergio and Claudio González-Vega. 2003 forthcoming. Innovative Approaches in Rural Lending: Financiera Calpiá in El Salvador. In *Promising Practices in Rural Finance*, eds. Mark Wener, Javier Alvarado, and Francisco Galarza. Washington, D.C.: Inter-American Development Bank.
- Rutherford, Stuart. 2000. *The Poor and Their Money*. New Dehli: Oxford University Press.
- Schmidt, Reinhard H. and C.-P. Zeitinger. 1994. Critical Issues in Small and Microbusiness Finance. Presented to the International Donor Conference on Financial Sector Development, Vienna, September 27-28. Frankfurt, Germany: IPC (Interdisziplinare Projekt Consult GmbH).
- Sebstad, Jennefer and Monique Cohen. 2000. Microfinance, Risk Management, and Poverty. AIMS Project Working Paper. Washington, D.C.: USAID Office of Microenterprise Development. Website: http://www.usaidmicro.org/know_management
- UAEL (United Association of Equipment Leasing). 1995. *The Leasing Professional's Handbook*. Second edition. Oakland, California: United Association of Equipment Leasing.
- Wright, Graham. 1998. Beyond Basic Credit and Savings: Developing New Financial Products for the Poor. Nairobi, Kenya: MicroSave-Africa. Website: www.MicroSave-Africa.com.
- Wright, Graham, Monica Brand, Zan Northrip, Monique Cohen, Michael McCord, and Brigit Helms. 2001. Key Questions that Should Precede New Product Development. MicroSave-Africa Briefing Note #9. Nairobi, Kenya: MicroSave-Africa. Website: www.MicroSave-Africa.com.
- _____. 2002. Looking Before You Leap: Key Questions that Should Precede Starting New Product Development. *Journal of Microfinance* 4(1):1-15.

Annex A: Impact of Taxes on Loan/Lease Choice

This annex picks up from where chapter 4 leaves off. It describes the impact of the VAT, profit tax, and other taxes on loan/lease choice and thus forms the basis for the conclusions given in chapter 4. This annex consists of three major sections, one for each of these tax areas. Each of the three sections begins with a succinct description of key characteristics of the tax(es) under discussion in the eight countries we have surveyed (drawn from Table 6) and then goes on to analyze the impact of the tax(es) on the relative desirability of loans versus financial leases.

Value Added Tax (VAT)

Many countries levy value added tax on lease payments but not on loan payments. Of the eight countries appearing in Table 6, none levy VAT on loan payments. Only one country, Colombia, exempts all lease payments from VAT, while one other, Honduras, exempts lease payments made for equipment used in the principal product line of the lessee's business (Table 6, footnote 8 explains this last concept further). Mexico levies VAT on all leasing principal payments plus all interest above the inflation rate (Table 6, footnote 9 explains this further). The other five countries (Chile, Bolivia, Peru, Ecuador, and El Salvador) levy VAT on the full lease payments, principal plus interest. VAT rates range from 12 to 18 percent in the eight countries shown in Table 6. Most equipment is subject to VAT when first purchased (by either an MFI or client), though Table 6 (line 9) notes that there are exceptions in three of the countries. Agricultural

equipment is exempt when purchased in Honduras, Ecuador, and Mexico, and much additional equipment is also exempt in the case of Honduras.

Tables 7 and 8 summarize the impact of the VAT in eight cases, depending on whether clients are informal or formal, VAT is levied on lease payments or not, and VAT is levied on the initial purchase of the equipment or not. Table 7 covers the four most common cases, in which the initial purchase of equipment *is* subject to VAT. Table 8 covers the four less common cases, in which the initial purchase of equipment is *not* subject to VAT. In all cases, it is assumed that loan payments are not subject to VAT, as is true of all eight countries covered by Table 6 (see line 8).

In Table 7, the initial equipment purchase is assumed to be subject to VAT. The two entries in the first row of the table (cases 1 and 2) show that when VAT is then levied on lease, but not loan, payments, the losses to the MFI are the relatively moderate values given in Tables 9 and 10, below. In general, these values are equivalent to the loss of approximately 2-4 percentage points in the MFI's effective yield. The two entries in the second row of Table 7 (cases 3 and 4) show what happens in countries that levy no VAT on lease or loan payments. With informal clients, leasing's disadvantage disappears, while for formal clients it becomes quite large, being given in monetary terms by the VAT rate times the equipment price.

Table 7
VAT Penalty for Leases: Four Common Cases,
with Initial Equipment Purchase *Subject to* VAT

	Informal Clients (pay no VAT on the products they sell)	Formal Clients (pay VAT on the products they sell)
VAT is Levied on Lease Payments	CASE 1: Moderate penalty – given by Tables 9 and 10	CASE 2: Moderate penalty – given by Tables 9 and 10
VAT is NOT Levied on Lease Payments	CASE 3: 0 (no penalty)	CASE 4: Large penalty = (VAT rate) x (Equipment price)

In Table 8, the initial equipment purchase is assumed to be exempt from VAT. The two entries in the first row of Table 8 (cases 5 and 6) show that the combination of exempting the initial equipment purchase from VAT, along with levying VAT on lease (but not loan) payments, means that leasing has a large disadvantage in the case informal clients but no disadvantage (or advantage) in the case of formal clients. The two entries in the second row of Table 8 (cases 7 and 8) show that the combination of exempting the initial equipment purchase from VAT, along with exempting the lease and loan payments, means that leasing has no disadvantage or advantage compared to lending.

We now explain these results case by case in four subsections, covering case 1, case 2, cases 3-4, and finally cases 5-8. We end this analysis of the value added tax with a brief discussion of the fact that most MFIs have a surplus of VAT credits from paying their operating expenses, which they can use to fully offset any VAT due on a limited amount of leasing transactions. As shown below, it turns out that this means that leasing will have neither an advantage nor disadvantage for at least this limited amount of leasing transactions in all cases except case 4. In case 4, leasing continues to be at the same large disadvantage shown in Table 7. We now turn to the analysis of cases 1-8, ignoring for the moment any such surplus VAT credits (or debits) that the MFI may have from its non-leasing transactions.

Case 1—VAT Is Levied on Lease Payments; Clients Are Informal

This case, which also assumes that the initial purchase of the equipment is subject to VAT, is

the most important one. This is because many countries levy VAT on lease, but not loan, payments (including most of the countries shown in Table 6), because VAT is typically levied on equipment when purchased, and because most MFI clients are informal.

The practice of levying VAT on lease, but not on loan, payments is disadvantageous to financial leasing, but not as disadvantageous as one might think. This is because the MFI obtains a VAT credit when it first buys the equipment to be leased. This can be used to help offset the VAT that must be paid to the tax authority on all leasing installments. As shown in detail in Table 9 and discussed below, the net result is to lower the effective yield obtained by the MFI on its financial leasing contracts by approximately 2-4 percentage points in most cases. For example, if a loan contract yields 30 percent to the MFI, an equivalent lease contract would yield approximately 26-28 percent. This is a significant loss but not necessarily decisive; it might be that it is worth paying this price in exchange for leasing's stronger legal position in the event of client payment default. The precise loss from the VAT depends on the value added tax rate, the interest rate, and the term of the loan and lease, and is shown for common values of these parameters in Table 9.

To understand the Table 9 results and lay the groundwork for the analysis of additional cases, it is easiest to use a simple example. Assume that the VAT rate is 15 percent, the midpoint of the range of value added tax rates shown in Table 6 (line 5). Consider a microentrepreneur who needs a piece of equipment that costs \$1000. One option is for the microentrepreneur to lease the equipment. The MFI offering the lease

Table 8
VAT Penalty for Leases: Four Less Common Cases,
with Initial Equipment Purchase *Exempt from VAT*

	Informal Clients (pay no VAT on the products they sell)	Formal Clients (pay VAT on the products they sell)
VAT is Levied on Lease Payments	CASE 5: Large penalty – MFI effective yield drops from 30% to 13% in text example below	CASE 6: 0 (no penalty)
VAT is NOT Levied on Lease Payments	CASE 7: 0 (no penalty)	CASE 8: 0 (no penalty)

Table 9
VAT Penalty for Leases in Cases 1 and 2:
MFI Loss of Effective Yield (percentage points)¹

1-Year Loan and Lease

<i>VAT rate</i>	<i>Interest Rate Charged on Loan and Lease</i>				
	<i>20%</i>	<i>30%</i>	<i>40%</i>	<i>50%</i>	<i>60%</i>
<i>12%</i>	1.93	2.75	3.51	4.21	4.86
<i>15%</i>	2.35	3.36	4.29	5.15	5.95
<i>18%</i>	2.76	3.95	5.04	6.05	7.00

2-Year Loan and Lease

<i>VAT rate</i>	<i>Interest Rate Charged on Loan and Lease</i>				
	<i>20%</i>	<i>30%</i>	<i>40%</i>	<i>50%</i>	<i>60%</i>
<i>12%</i>	1.75	2.41	2.98	3.50	3.97
<i>15%</i>	2.13	2.95	3.66	4.29	4.87
<i>18%</i>	2.51	3.47	4.30	5.05	5.74

3-Year Loan and Lease

<i>VAT rate</i>	<i>Interest Rate Charged on Loan and Lease</i>				
	<i>20%</i>	<i>30%</i>	<i>40%</i>	<i>50%</i>	<i>60%</i>
<i>12%</i>	1.60	2.15	2.63	3.05	3.44
<i>15%</i>	1.96	2.64	3.22	3.74	4.23
<i>18%</i>	2.30	3.11	3.80	4.42	4.99

4-Year Loan and Lease

<i>VAT rate</i>	<i>Interest Rate Charged on Loan and Lease</i>				
	<i>20%</i>	<i>30%</i>	<i>40%</i>	<i>50%</i>	<i>60%</i>
<i>12%</i>	1.48	1.96	2.37	2.75	3.11
<i>15%</i>	1.82	2.41	2.91	3.38	3.83
<i>18%</i>	2.14	2.84	3.44	3.99	4.52

5-Year Loan and Lease

<i>VAT rate</i>	<i>Interest Rate Charged on Loan and Lease</i>				
	<i>20%</i>	<i>30%</i>	<i>40%</i>	<i>50%</i>	<i>60%</i>
<i>12%</i>	1.38	1.81	2.19	2.55	2.90
<i>15%</i>	1.70	2.23	2.69	3.13	3.57
<i>18%</i>	2.00	2.63	3.18	3.70	4.21

¹ For example, if the loan yields the MFI 20 percent and the lease yields the MFI 18 percent, then 2.00 is shown in the chart, indicating that the VAT penalty for leases is 2 percentage points (=20% - 18%). Monthly loan and lease payments are always assumed in deriving the losses shown in this table (see text). In cases 1 and 2, VAT is levied on lease, but not loan, payments and is also levied on the initial equipment purchase. Clients may be informal or formal.

would begin by buying the equipment from a dealer for \$1000 and paying 15 percent (\$150) in VAT, thus obtaining a \$150 VAT credit that it can put to good use later on. Assuming that the microentrepreneur's lease payments are subject to VAT, the MFI will be able to use its \$150 credit to offset an amount of VAT due equal to all of the VAT levied on principal payments (15 percent of \$1000), though none of the VAT levied on interest. Now the MFI transfers ownership of the equipment to the microentrepreneur, who signs a \$1000 lease agreement at 30 percent interest, say. To keep the example simple, assume that the lease is for one year and that repayment is in bullet form: a single payment at the end of the year. (Nothing essential is changed by this simplification.) At the end of the year, the microentrepreneur pays \$1300 in leasing charges (\$1000 in principal plus \$300 in interest), and also pays VAT of \$195 ($=0.15 \times \1300). This total of \$1495 is identical to what the microentrepreneur would have paid had (s)he bought the equipment for \$1000 him/herself initially, paid VAT of \$150 on this purchase, and then financed the entire \$1150 with a loan at 30 percent interest, paying \$345 in interest charges to the MFI. Hence, the client is indifferent between the lease and loan contracts; (s)he pays the same \$1495 in either case. The only difference is in the effective yield obtained by the MFI. Under the leasing arrangement, the MFI pays \$150 in VAT at the start of the year, and then uses the VAT credit from this to remit only \$45 of the \$195 it collects in VAT from the microentrepreneur at the end of the year ($\$45 = \$195 - \$150$). Thus, the MFI pays out the same total amount of VAT (\$195) as it receives, but it must pay \$150 of this at the beginning of the year, and is only reimbursed by the microentrepreneur at the end of the year. This depresses the effective yield from leasing since the MFI earns \$300 in interest on an initial outlay of \$1150, for an effective yield of 26.1 percent ($=300/1150$). In the loan case, the effective yield is 30 percent since the MFI earns \$345 on an \$1150 loan.²²

²² In mathematical terms, if r is the interest rate charged on loans or leases (30% in the example above) and t is the VAT rate in decimal form (0.15 in the example above), then the lender truly earns r on

The calculations behind Table 9 are made in much the same way, though monthly payments are always assumed for greater realism, instead of a single bullet repayment at the end of the lease or loan term.²³ Also, Table 9 allows for different terms (1-5 years), VAT rates (12, 15, and 18 percent), and interest rates (20, 30, 40, 50, and 60 percent), with the values selected to span much of the commonly-encountered range for these parameters, at least in Latin American microfinance. In calculating the MFI losses of effective yield shown in Table 9, we assume that the MFI uses the VAT credit it receives from the initial purchase of the equipment (\$150 in the above example) in the optimal way, that is, as soon as possible.²⁴ Finally, we assume that the lease has zero residual value, that is, that the equipment is fully amortized over the life of the lease. Since we are interested in financial leases, which have negligible residual values, this assumption is realistic.²⁵

its loan while the lessor earns $r/(1+t)$. The loss in effective yield by going from a loan to a lease is $rt/(1+t)$. This is reasonably approximated by the simpler expression rt , that is, by multiplying the interest rate by the VAT rate. This simpler expression equals 4.5% in the present example, which reasonably approximates the actual loss of 3.9%.

²³ As discussed in chapter 5, monthly payments are the norm for equipment loans made to individuals by the 25 MFIs surveyed in Tables 1 and 2.

²⁴ This means that when the MFI collects the VAT that is charged on the first month's lease payment, the MFI uses its credit to fully offset this VAT debit and thus avoids having to remit to the tax authority any of the VAT collected. The MFI continues in this fashion until its initial purchase credit is exhausted and it must remit to the tax authority the VAT collected from the client each month. This is the optimal strategy because it is always better to have money earlier rather than later, so that additional interest can be earned.

²⁵ To obtain the values shown in Table 9, the following calculations are made, with the aid of an Excel spreadsheet. (These calculations are illustrated with numbers shown below in parentheses.) First, the annual interest rate (e.g., 30%) is divided by 12 in order to obtain a monthly interest rate (2.5%). Using this monthly interest rate, the number of months in the repayment period (36), and the size of the lease

A rapid and easy-to-apply formula, which gives an approximation to leasing's VAT disadvantage, consists of multiplying the interest rate used in the loan and lease (30 percent in the above example) by the VAT rate in decimal form (0.15 in the above example). In this case, the approximation would be 4.5 percent ($=0.15 \times 30$ percent). This means that while the loan operation yields a true 30 percent (since no VAT is levied on loans), the lease operation yields the MFI approximately 25.5 percent ($=30$ percent minus the penalty of 4.5 percent). Although this approximation to the VAT penalty is useful because it is easy to calculate, the true VAT penalty is almost always less than what is given by this quick formula. How much less depends on the term of the loan and lease (the approximation is worse for longer terms) as well as on the interest rate and VAT rate. To take two extreme examples from Table 9, consider 1-year loan and lease operations, together with a VAT rate of 12 percent and an interest rate of 20 percent. The approximation gives 2.4 percent, fairly close to the exact loss of 1.93 percent shown in Table 9. On the other hand, with a 5-year loan or lease, an 18 percent VAT rate, and a 60 percent interest rate, the approximation gives 10.8 percent,

(\$1000), the monthly lease payment is calculated using the Excel PMT function (\$42.45). With a VAT rate of 15%, for example, the MFI pays \$1150 in month 0 to buy the equipment (\$1000 for the equipment plus \$150 in VAT). The MFI then receives the monthly lease payments of \$42.45 from the client during months 1-36. It also receives \$6.37 per month ($=15\%$ of \$42.45) in monthly VAT payments from the client for months 1-36 since all lease payments are subject to VAT. The MFI keeps these \$6.37 VAT payments as long as its initial \$150 credit from the equipment purchase can be used to offset them. After the \$150 credit is used up, the MFI must remit the \$6.37 VAT payments to the tax authority. The Excel IRR function is then used to find the internal rate of return of the 37 monthly flows, which consist of the \$1150 outlay in month 0 (entered as a negative value: -\$1150), followed by the 36 months of income ($\$42.45 + 6.37 = \48.82 in months 1-23; \$45.99 in month 24, when the last of the \$150 VAT credit is used up; and \$42.45 in months 25-36). This monthly IRR (of 2.28%) is multiplied by 12 in order to obtain an annual rate (27.36%), which is then subtracted from the annual loan rate of 30% in order to obtain the value reported in Table 9 (2.64%).

well above the exact loss of 4.21 percent shown in Table 9.

Case 2—VAT Is Levied on Lease Payments; Clients Are Formal

We now turn to the case of formal clients, who pay VAT on the sale of their own products. We continue to maintain the assumptions that VAT is levied on lease payments and on the initial purchase of the equipment. The results are the same as for case 1. The MFI's loss of effective yield is again given by Table 9, just as it is for informal clients. This means that the MFI that offers a financial lease instead of a loan is at exactly the same disadvantage with a formal client as with an informal one, at least insofar as the VAT is concerned.

To understand the reason for this, it is easiest to return to the preceding example to see what happens when we introduce the assumption of formality, which allows the client to make use of the VAT credit received either when (s)he buys the equipment and takes out a loan (in the loan case) or else makes the lease payments (in the lease case). Let us start with the loan case. If the client buys the machine using a loan, (s)he obtains a VAT credit of \$150 (15 percent of \$1000). This is of almost immediate benefit since the credit can be used almost immediately to offset VAT that is levied on whatever products the client sells. At least this is true under the reasonable assumptions, which hold for most clients and which we make throughout this chapter, that VAT must be paid very often (typically monthly) and that the client owes VAT in the current month or will owe it soon.²⁶ So by pay-

²⁶ This latter assumption follows because it is normally the case that the value of a micro or small entrepreneur's sales exceeds the cost of his/her purchased material inputs (where purchased material inputs exclude wage and interest payments since these are not directly subjected to VAT). Under this condition, the VAT credits from the purchased material inputs are less than the VAT debits from sales, and so the entrepreneur must remit the difference to the tax authority. If sales did not exceed the value of purchased material inputs, the entrepreneur would not be making any profits, and it would be hard for him or her to survive. In fact, the case is even stronger. If

ing the equipment dealer \$150 in VAT, the client is able to reduce its VAT payment to the tax authority by an equivalent \$150 later in the month (or thereabouts).²⁷ Effectively, the client only pays \$1000 for the equipment (not \$1150) and so only requires a \$1000 loan to buy it. At the end of the year, the client then pays the MFI \$1300 (\$1000 in principal plus \$300 in interest, computed at the usual 30 percent). The MFI receives a 30 percent return on its loan. Clients who, instead, opt to lease are given a \$1000 lease contract on which they must pay \$1300 at the end of the year in principal and interest, plus \$195 in VAT ($=0.15 \times \1300). Again, however, the \$195 that the client pays to the MFI in VAT simply replaces \$195 that (s)he would have sent to the tax authority and so costs the client nothing. The client effectively pays \$1300 at the end of the year with either the loan or lease contract and so is indifferent between the two. With the lease, however, the MFI's effective yield is reduced below the 30 percent it obtains in the loan case, just as in the previous example. This is because, as before, the MFI receives \$300 in interest on an initial investment of \$1150.²⁸

sales weren't even enough to cover the cost of purchased material inputs, leaving aside wage and interest payments, profits could be highly negative. It is hard to imagine many micro or small entrepreneurs selling goods for less than the cost of the purchased material inputs, at least for very long.

²⁷ It may take some clients more than one month to use up the \$150 VAT credit, a complication we ignore.

²⁸ Some readers may question whether it really costs the MFI \$1150 to buy the equipment since this consists of \$1000 in equipment cost plus \$150 in VAT. Why can't the MFI use the resulting \$150 credit immediately to offset VAT payments it must make to the tax authority, just as the formal entrepreneur does? As will be discussed in more detail below, the reason is that MFIs (and financial institutions in general) normally have a chronic surplus of VAT credits, rather than a net debit position against which to put the \$150 credit. This occurs because few of their non-leasing products are subject to VAT, mainly just commissions and fees charged on services such as money transfers and remittances, sale of money orders, etc. VAT credits are accrued because VAT is paid on most operating expenses except labor and interest (utilities, rent, computer systems, insurance, etc.).

Cases 3 and 4—Countries with no VAT on Lease or Loan Payments

What about countries like Colombia, and to some extent Honduras, that impose no VAT on either lease or loan payments (though do impose it on the initial equipment purchase)? One might think this would mean that the VAT would have no impact on the choice between loans and leases. This is true for the case of greatest interest, that of informal clients (case 3). But for formal clients (case 4), leasing is, paradoxically, at a large disadvantage, equal in monetary terms to the purchase price of the equipment times the VAT rate—or \$150 ($=\1000×0.15) in the example we are using—received at the time of equipment purchase.

How large a disadvantage is this \$150, compared to the leasing penalties in cases 1 and 2? The leasing penalties in cases 1 and 2 were shown in Table 9, where they were expressed as the MFI's loss of effective yield, in percentage points. Table 10 re-expresses these Table 9 losses, showing them in dollar terms (per thousand dollars of loan and lease) at the time of equipment purchase. That is, Table 10 shows the present value of the loan payments retained by the MFI as income minus the present value of the lease payments retained by the MFI as income (excluding any VAT paid to the tax authority). Present values are computed using a discount rate equal to the interest rate charged on the loan and lease.²⁹ Thus, Table 10 expresses

²⁹ The concept of present value begins with the notion that income received in the future, for example, a year from now, is less valuable than income received today. This is so because income received today can be invested and earn interest over the year. For example, at an annual interest rate of 20%, \$1 received today can be invested and grow to \$1.20 in one year. Present value simply works this idea in reverse. At a 20% discount rate (i.e., interest rate), \$1.20 received one year from today has a present value of \$1 today. Using this same idea, the present value of a whole stream of future receipts may be obtained by discounting each receipt back to today and adding them up.

Table 10
VAT Penalty for Leases in Cases 1 and 2:
MFI Loss in Present Value Terms for a \$1000 Loan and Lease ¹

1-Year Loan and Lease

<i>VAT rate</i>	<i>Interest Rate Charged on Loan and Lease</i>				
	<i>20%</i>	<i>30%</i>	<i>40%</i>	<i>50%</i>	<i>60%</i>
<i>12%</i>	\$9.83	\$13.68	\$16.97	\$19.82	\$22.29
<i>15%</i>	\$11.97	\$16.65	\$20.66	\$24.13	\$27.13
<i>18%</i>	\$14.00	\$19.47	\$24.16	\$28.22	\$31.73

2-Year Loan and Lease

<i>VAT rate</i>	<i>Interest Rate Charged on Loan and Lease</i>				
	<i>20%</i>	<i>30%</i>	<i>40%</i>	<i>50%</i>	<i>60%</i>
<i>12%</i>	\$16.42	\$21.60	\$25.57	\$28.63	\$31.07
<i>15%</i>	\$19.99	\$26.29	\$31.12	\$34.85	\$37.83
<i>18%</i>	\$23.38	\$30.75	\$36.40	\$40.76	\$44.24

3-Year Loan and Lease

<i>VAT rate</i>	<i>Interest Rate Charged on Loan and Lease</i>				
	<i>20%</i>	<i>30%</i>	<i>40%</i>	<i>50%</i>	<i>60%</i>
<i>12%</i>	\$21.37	\$26.91	\$30.73	\$33.45	\$35.42
<i>15%</i>	\$26.01	\$32.76	\$37.41	\$40.72	\$43.12
<i>18%</i>	\$30.42	\$38.31	\$43.75	\$47.62	\$50.43

4-Year Loan and Lease

<i>VAT rate</i>	<i>Interest Rate Charged on Loan and Lease</i>				
	<i>20%</i>	<i>30%</i>	<i>40%</i>	<i>50%</i>	<i>60%</i>
<i>12%</i>	\$25.16	\$30.56	\$33.96	\$36.19	\$37.68
<i>15%</i>	\$30.63	\$37.20	\$41.34	\$44.05	\$45.87
<i>18%</i>	\$35.82	\$43.51	\$48.35	\$51.52	\$53.64

5-Year Loan and Lease

<i>VAT rate</i>	<i>Interest Rate Charged on Loan and Lease</i>				
	<i>20%</i>	<i>30%</i>	<i>40%</i>	<i>50%</i>	<i>60%</i>
<i>12%</i>	\$28.09	\$33.12	\$36.03	\$37.79	\$38.90
<i>15%</i>	\$34.20	\$40.33	\$43.87	\$46.00	\$47.35
<i>18%</i>	\$40.00	\$47.16	\$51.30	\$53.80	\$55.38

¹ This table shows the present value of the loan payments retained by the MFI as income minus the present value of the lease payments retained by the MFI as income (excluding any VAT paid to the tax authority). Present values are computed using a discount rate equal to the interest rate charged on the loan and lease. Monthly loan and lease payments are always assumed in deriving the losses shown in this table. In cases 1 and 2, VAT is levied on lease, but not loan, payments and is also levied on the initial equipment purchase. Clients may be informal or formal.

the leasing penalties for cases 1 and 2 in the same monetary terms as the case 4 penalty of \$150. As can be seen in Table 10, the leasing penalties for cases 1 and 2, expressed in present value dollar terms, range from \$9.83 to \$55.38 (per \$1000 of loan and lease), well below the \$150 case 4 penalty.³⁰

What are the reasons behind the results in cases 3 and 4? The reason that the VAT affects the loan/lease choice in the formal client case (case 4), even though neither loan nor lease payments are subject to VAT, is that the initial equipment purchase is still subject to VAT. Hence, if a formal entrepreneur purchases the equipment for \$1000 and pays \$150 in VAT, (s)he can almost immediately offset this \$150 VAT payment by

³⁰ To obtain the values shown in Table 10, the following calculations are made, with the aid of an Excel spreadsheet. (These calculations are illustrated with numbers shown below in parentheses.) First, the annual interest rate (e.g., 30%) is divided by 12 in order to obtain a monthly interest rate (2.5%). Using this monthly interest rate, the number of months in the repayment period (36), and the size of the lease (\$1000), the monthly lease payment is calculated using the Excel PMT function (\$42.45). With a VAT rate of 15%, for example, the MFI pays \$1150 in month 0 to buy the equipment (= \$1000 for the equipment plus \$150 in VAT). The MFI then receives the monthly lease payments of \$42.45 from the client during months 1-36. It also receives \$6.37 per month (=15% of \$42.45) in monthly VAT payments from the client for months 1-36 since all lease payments are subject to VAT. The MFI keeps these \$6.37 VAT payments as long as its initial \$150 credit from the equipment purchase can be used to offset them. After the \$150 credit is used up, the MFI must remit the \$6.37 VAT payments to the tax authority. Hence, in return for an \$1150 outlay, the MFI receives \$48.82 per month in months 1-23 (during which time the MFI can keep all of the \$6.37 VAT payment in addition to the \$42.45 lease payment), \$45.99 in month 24 (when the last of the \$150 VAT credit is used up), and \$42.45 in months 25-36. Since these 36 monthly flows are returns on \$1150, they are all divided by 1.15 in order to re-express them as returns on \$1000. The resulting 36 monthly flows are then subtracted from the \$42.45 the MFI receives each month on a \$1000 loan at 30%. Finally, the Excel NPV function is used to find the net present value of the difference between these 36 monthly flows. The result is reported in Table 10 (\$32.76).

using the resulting \$150 credit to reduce his/her monthly VAT payment to the tax authority by an equal amount. Thus, the equipment effectively only costs the entrepreneur \$1000. On the other hand, in the lease case, it is the MFI that buys the equipment and pays the \$150 in VAT. As noted above, MFIs and other financial institutions are typically in chronic VAT surplus and thus do not have a net debit position toward which they could usefully apply this \$150 credit. Therefore, when the MFI buys the equipment, it effectively pays the full \$1150. This is a very large difference in competitive advantage in favor of lending.³¹

This paradoxical effect in favor of lending does not arise with informal clients (case 3). This is because neither the informal client nor the MFI has a net debit position in the VAT against which to use the \$150 credit that is generated initially by buying the equipment. Therefore, in both cases, the equipment effectively costs \$1150, which can be financed equally well with either a 30 percent loan or lease since there is no further VAT levied on either loan or lease payments. In either case, the client pays \$345 in

³¹ One may ask how lessors with formal clients fare in Honduras and Colombia, since VAT is not imposed on much or all lease payments in these two countries. In Honduras, leasing to formal clients is at no disadvantage vis-à-vis lending as long as the leased equipment is exempt from VAT when first purchased (see discussion of case 8 below), as it often is in Honduras. On the other hand, when the leased equipment is *not* exempt from VAT when first purchased, leasing has the large disadvantage noted for case 4. In Colombia, leasing does not suffer from the disadvantage noted for case 4 because of a peculiarity in the Colombian tax laws. VAT paid on equipment does not generate a credit that can be used to offset other VAT liabilities. Rather, the VAT paid on equipment must be included as part of the cost of the equipment, and the full cost, including VAT, must be recovered by depreciating the equipment (over 5-10 years). The resulting annual depreciation is deducted from profits for purposes of computing the client's profit taxes. Since it is the client who gets the depreciation deduction in Colombia with either a lease or loan, the VAT favors neither leasing nor lending. The depreciation deduction is the same in both cases.

interest and the MFI realizes an effective yield of 30 percent.

Cases 5-8—Initial Equipment Purchase Is Exempt from VAT

Of the eight countries surveyed in Table 6, three exempt agricultural equipment sales from VAT (Ecuador, Honduras, and Mexico). Honduras also exempts all used equipment and much other, though not all, new equipment. Table 8 shows the VAT penalty for leasing assuming that no VAT is levied on the initial purchase of the equipment. The two entries in the second row of Table 8 (cases 7 and 8) show that the combination of exempting the initial equipment purchase from VAT, along with exempting the lease and loan payments, means that leasing has no disadvantage (or advantage) compared to lending. Readers can convince themselves of this result by reviewing the two paragraphs immediately preceding this one and seeing what happens when the initial equipment purchase is exempted from VAT. Basically, since there is no VAT anywhere in the transactions, neither lending nor leasing is favored.

The two entries in the first row of Table 8 show that the combination of exempting the initial equipment purchase from VAT, along with levying VAT on lease, but not loan, payments, means that leasing has a large disadvantage in the case of informal clients (case 5) but has no disadvantage or advantage in the case of formal clients (case 6). The reason that leasing is at a large disadvantage in the case of informal clients is that the MFI no longer receives a VAT credit for buying the equipment, and so can no longer offset much of the VAT levied on client lease payments (in particular, offsetting the part of these payments equivalent to principal, but not interest). Leasing is at no disadvantage in the case of formal clients because although the MFI can no longer offset much of the VAT levied on client lease payments, the clients themselves can offset all of these VAT payments against their own sales.

Since the case of informal clients is of great importance for MFIs, we illustrate the size of leasing's disadvantage using the same simple exam-

ple we have been employing. Starting with the loan case, the client buys the equipment for \$1000, pays no VAT (since none is now levied), and takes out a \$1000 loan at 30 percent interest. The client repays the loan at the end of the year with a \$1300 bullet payment. In the lease case, the MFI buys the equipment for \$1000, also pays no VAT, and offers the client a \$1000 lease for a post-tax interest rate of 30 percent, in order that the lease be competitive with the loan (and the client be indifferent between the two on cost grounds). This means the MFI will have to set a pre-tax interest rate of 13.043 percent (obtained as $1.30/1.15 - 1$), so that the client pays \$130.43 in interest, and a total of \$1130.43 in principal and interest, at the end of the year. VAT of 15 percent is then levied on this entire amount, making the total cost to the client \$1300 ($=1.15 \times \1130.43). The effective yield to the MFI from leasing (13.043 percent) is far below the effective yield to the MFI from lending (30 percent), putting leasing at a large disadvantage.

MFI Use of Surplus VAT Credits

As noted earlier, financial institutions in general, including MFIs, earn VAT credits by paying for such operating expenses as rent, utilities, computer systems, insurance, etc., since VAT is normally levied directly on most operating costs except labor and interest. Financial institutions typically have a chronic surplus of VAT credits because loan interest is generally exempt from VAT. VAT debits on the services the financial institution sells other than leasing arise only from commissions and fees charged on such services as money transfers and remittances, sale of money orders, management of trust accounts, etc. Hence, MFIs typically have some surplus VAT credits which they can use to fully offset the VAT that is due on a limited amount of leasing transactions. We have ignored such surplus VAT credits in the analysis up until now, assuming implicitly that the MFI made no other transactions that generated VAT credits (or debits) except those related to its leasing operations.

The impact of these surplus VAT credits can be described by what they do to the eight entries shown in Tables 7 and 8. First, all zero entries remain zero. Second, all nonzero entries except

for one become zero for a limited amount of leasing transactions. The one entry that remains unaffected is the one corresponding to case 4 (in Table 7). It is left to the interested reader to verify these results, the arguments for which are sketched in the following paragraph.

MFIs can use surplus VAT credits to offset the VAT due on a limited amount of leasing transactions in cases 1, 2, and 5. These cases correspond to the three nonzero entries in the first row of Tables 7 and 8. In each of these three cases, VAT is levied on lease payments. The surplus VAT credits can be used by the MFI in these cases to preclude having to send any of the clients' VAT payments in to the tax authority—at least for a limited amount of leasing transactions (until the surplus VAT credits are exhausted). The remaining entries in Tables 7 and 8 are all zero except the entry corresponding to case 4. This is the case of formal clients in which VAT is levied on the initial equipment purchase but not on subsequent lease payments. Leasing is still at the same large disadvantage in this case even when the MFI has a surplus in its VAT account because what the MFI really needs in this case is a net debit position in its VAT account. Without such a position, the MFI has no way to usefully employ the VAT credit obtained from the equipment purchase since lease payments are not subject to VAT. In contrast, the formal client is assumed to have a chronic VAT debit position and so can make use of the VAT credit obtained from the equipment purchase.

Business Profit Tax

This section describes the profit taxes that are paid by some MFIs and some MFI clients and

how these taxes affect the relative desirability of loans versus financial leases in the eight countries we have surveyed (Chile, Bolivia, Peru, Ecuador, Colombia, Mexico, El Salvador, and Honduras).

For MFIs that pay profit taxes, Table 11 summarizes how loans and financial leases are treated in the eight countries. In the case of loans, MFIs pay profit taxes only on interest received from the loan in all eight countries. The MFIs do not deduct equipment depreciation (which is logical since the client owns the equipment) or pay taxes on principal (which is considered a return of the loaned funds). Five of the eight countries follow this same treatment for financial leases. The three other countries (Bolivia, El Salvador, and Honduras) tax I+P-D, where I=interest, P=principal, and D=depreciation. This profit tax treatment for lessors is often the one implicitly or explicitly assumed in the leasing literature, and though far from universally applied in Latin America at least, its rationale is as follows. First, the full installment payment (I+P) can be thought of as the rental the client pays for use of the equipment, and so the entire amount should count as income. Second, since the lessor (MFI) owns the equipment, the lessor should be entitled to the depreciation deduction (D). Hence, there is a certain logic to taxing I+P-D, though the logic is more clearly appropriate for short-term operational leases, which are like rentals, than for a single financial lease, which is like a purchase loan. In chapter 6 we argue that, as a matter of policy, *financial* leases and loans should be treated identically for all taxes, including the profit tax. As can be seen in Table 11, five of the eight countries surveyed follow this course with regard to profit taxes on the financial institutions.

Table 11
Financial Leases vs. Loans: MFI Profit Taxes in Eight Countries

Lessors count as income in paying their profit taxes:	Lenders count as income in paying their profit taxes:
$I + (P - D)$ in 3 countries ¹	
I in the 5 remaining countries	I in all 8 countries

¹ The countries are Bolivia, El Salvador, and Honduras. In Honduras, lessors enjoy accelerated depreciation, so that typically $I + (P - D) < I$. That is, in Honduras, lessors normally pay less profit taxes than lenders. Table 6, footnote 7 explains the depreciation deduction used in Honduras in more detail. In Bolivia, depreciation periods are lengthy and depreciation not taken during the lease period is lost, so that the opposite is generally true; that is, $I + (P - D) > I$, and lessors normally pay more profit taxes than lenders. In El Salvador, the situation is mixed, with leasing or lending favored depending on the length of the lease contract, whether the equipment is new or used, and whether the equipment is employed in manufacturing or in other sectors (commerce, services, etc.). In particular, all non-manufacturing equipment is subject to 2-year straightline depreciation, new manufacturing equipment is subject to 5-year double-declining-balance depreciation (in which 40 percent of the equipment cost is depreciated in the first year, 40 percent of the remaining cost is depreciated in each of years 2-4, and all of the remaining cost is depreciated in year five), and second-hand manufacturing equipment is subject to 5-year straightline depreciation. With financial leases, depreciation not taken during lease period is generally lost. Depending on the length of the lease contract and whether the equipment qualifies for faster or slower depreciation, either lending or leasing may be favored in El Salvador.

For clients who pay profit taxes (formal clients), Table 12 summarizes how loans and financial leases are treated in the eight countries. In the case of loans, the borrowers are the owners of the equipment and thus are logically allowed to deduct $I+D$ from their profits before computing profit tax. In the case of lessees, a variety of different deductions are allowed, of which the most common is the deduction of $I+P$ (the full leasing

installment payment). In fact, this is the usual assumption made in the leasing literature, the logic of which is that the lessee pays rent of $I+P$ and so should be able to deduct that, but does not own the equipment, and so should not be able to deduct depreciation. Nonetheless, as shown in Table 12, this treatment is not universal.

Table 12
Financial Leases vs. Loans: Client Profit Taxes in Eight Countries

Lessee clients deduct as a cost in paying their profit taxes:	Borrowing clients deduct as a cost in paying their profit taxes:
$I + P$ in 5 countries ¹	
$I + P + D$ in Peru	
$I + P$ or $I + D$, whichever is larger, in Colombia	
$I + D$ in Mexico ²	$I + D$ in all 8 countries ²

¹ The countries are Bolivia, El Salvador, Honduras, Chile, and Ecuador.

² In Mexico, lessees and borrowers can only deduct the portion of the interest payment (I) that is above inflation. That is, if the interest rate they are paying is 15 percent and inflation is 5 percent, only an amount of interest associated with a 10 percent interest rate is deductible. Lenders and lessors, however, must still pay taxes on all interest income received, not just the part above inflation (as shown in Table 11).

So which financing technique is favored by the profit tax: leases or loans? In many cases, the answer to this question comes down to knowing whether the amount of principal payments (P) or the amount of depreciation allowed by the tax authority (D) is larger, that is, whether P-D is positive or negative. At the MFI level (Table 11), this is the key quantity for all countries that do not treat leases and loans identically. For formal clients (Table 12), the difference between a lessee's deductions of I+P and a borrower's deduction of I+D is again P-D (since the interest payments, I, are the same—and thus cancel each other out—for a loan and lease with the same amount financed, interest rate, and maturity). For formal clients, this P-D difference is of interest in six of the eight countries (Bolivia, El Salvador, Honduras, Chile, Ecuador, and Colombia). Of the remaining two countries, leasing and lending are treated identically in Mexico and leasing is obviously favored in Peru. Thus, knowing the sign of P-D is the key to knowing whether leases or loans are favored by the profit tax in all cases in which the answer is not immediately obvious.

Table 13 provides the answer to whether leases or loans are favored in these non-obvious cases, particularly those cases shown in Table 12.³² To understand Table 13, consider the choice between a 3-year loan and a 3-year lease, both granted for \$1000 at the same 30 percent interest rate. Suppose that the client pays profit taxes (i.e., is formal), and is located in one of the five countries in which lessee clients deduct I+P as a cost in paying their profit taxes (Bolivia, El Salvador, Honduras, Chile, and Ecuador). According to Table 12, if the client were instead to finance the equipment purchase with a loan, (s)he would deduct I+D. The difference between these

two deductions is the usual P-D. We wish to know which financing technique minimizes the profit taxes the client must pay, that is, which gives the larger profit-tax deduction. Table 13 answers this question by giving the final result of the following sequence of calculations. First, begin with the lease. Assume monthly payments (since these are the norm in Latin America for equipment finance) and calculate the interest and principal payments for each of the 36 months of the lease term. Then add up the 12 principal payments that fall in each of the three years, in order to compute the amounts of principal paid annually (since profit taxes are generally paid annually). Compute the present value of these three numbers, using the same 30 percent interest rate the MFI receives on the lease. On the depreciation side, tax laws are complex and varied in Latin America. Generally, equipment is depreciated in 3-10 years, with five years being a very commonly-used depreciation period in the eight countries we have surveyed. Straight-line depreciation is the norm in most of the eight countries. Therefore, Table 13 assumes 5-year straightline depreciation, implying annual depreciation deductions of \$200 per year for five years. The present value of these five deductions is also calculated at 30 percent. Finally, the difference between these two present values is computed (P-D, in present value terms) and multiplied by an assumed marginal tax rate of 25 percent.³³ The result is \$21.97, as shown in Table 13. Since this is a positive number, principal payments exceed depreciation in present value terms and the lease results in a larger profit-tax deduction for the client. Therefore, the client would prefer to take the lease, at least insofar as its own profit taxes are concerned.

³² Table 13 does not fairly represent the loan/lease choice for MFIs in two of the three countries in Table 11 that do not treat loans and leases identically, namely, Bolivia and El Salvador. (It gives a fair representation for the third country, Honduras.) This is because in Bolivia and El Salvador, depreciation not taken during the lease period is lost, which is contrary to the assumption made in Table 13 that all depreciation is captured. It is left to the interested reader to derive a modified Table 13 in which this alternative assumption is made.

³³ Business profit tax rates in Latin America cluster in the 15-35% range, and so 25% is selected as a representative tax rate. To obtain values like those in Table 13 for another tax rate, of T%, one simply multiplies all Table 13 values by T/25. For example, with a profit tax rate of 50%, all values in the table are doubled (since 50/25=2). While Table 13 is calculated on the basis of a \$1000 loan and lease, it can be scaled proportionately to any other amount. For example, with a \$10,000 loan and lease, all Table 13 values should be multiplied by 10.

The Table 13 values vary somewhat with the interest rate, but vary much more strongly with the assumed loan and lease term. With shorter terms, of 1-3 years, the present value of the principal payments significantly exceeds the present value of the depreciation allowances, with depreciation calculated on a 5-year straightline basis. This is because, with these shorter loan and lease terms, the principal payments are obtained much sooner than the depreciation allowances, giving them a higher present value. With loan and lease terms of five years, all Table 13 values are negative, meaning that P-D is negative in present value terms. This occurs because principal payments are “backloaded,” with the initial monthly payments being mostly interest (because of the high outstanding loan or lease balance) and the final monthly payments being mostly principal. In contrast, the depreciation allowances are neither frontloaded nor backloaded, but constant over time. The backloading of principal payments is a sufficiently strong effect so that even with some 4-year loan and lease terms, P-D is negative in present value terms (see Table 13 for interest rates of 40, 50, and 60 percent and a 4-year term).

to help understand the impact of the overall tax system on the relative desirability of loans versus financial leases. Let us begin with the simplest and perhaps most important case, that of informal clients. In this case we need not be concerned with Table 12 since the clients pay no profit tax. For MFIs that do pay profit tax, Table 11 tells us that only in the case of three countries (Bolivia, El Salvador, and Honduras) does the profit tax have any influence on loan/lease choice. Honduras favors lessors over lenders, while Bolivia does the opposite. In El Salvador, the situation is mixed, with lessors or lenders favored depending on a number of factors (see footnote to Table 11).

We can combine these MFI profit tax effects for Bolivia, El Salvador, and Honduras with the VAT effects discussed earlier for these countries. Recall that the VAT always has an anti-leasing bias in Bolivia and El Salvador while in Honduras it is sometimes anti-leasing and sometimes neutral. The combined impact of the two taxes, then, is clearly anti-leasing in Bolivia and mixed in Honduras and El Salvador (sometimes favoring leasing, sometimes lending).

We now apply the information in Tables 11-13

Table 13
25% of (P-D) in Present Value Terms, for a \$1000 Lease or Loan¹

Term of Lease or Loan (years)	Interest Rate Charged on Lease or Loan				
	20%	30%	40%	50%	60%
1	\$58.50	\$70.53	\$76.81	\$79.84	\$80.86
2	\$39.73	\$45.08	\$46.35	\$45.39	\$43.23
3	\$21.84	\$21.97	\$19.59	\$16.14	\$12.39
4	\$5.15	\$1.21	-\$3.50	-\$8.02	-\$11.95
5	-\$10.35	-\$17.26	-\$23.08	-\$27.47	-\$30.49

¹ The values shown in this table are calculated as follows. First, we compute the present value of a lease’s or a loan’s annual principal payments (P) and subtract the present value of the annual equipment depreciation allowances (D). Then, we take 25 percent of this difference, where 25 percent is a representative profit tax rate. Leases and loans are assumed to be repaid monthly, with interest computed on the outstanding balance (as usual) and principal comprising the remainder of the monthly payment. Equipment depreciation is assumed to be taken in straightline fashion over five years, that is, \$200 per year for five years. All present values are calculated using the interest rate charged on the lease or loan (20-60 percent, as shown in the table). For clients who pay profit taxes, positive Table 13 values favor leasing since leases give larger profit-tax deductions.

Let us now consider the case of serving formal clients, who themselves pay profit taxes and therefore have the deductions shown in Table 12. In particular, we focus on serving formal clients in the six countries that levy VAT on lease, but not loan, payments (all of the countries we surveyed except Colombia and Honduras), and thus generate the moderate anti-leasing bias quantified in Tables 9 and 10. It is in serving the *formal* clients of these six countries that this moderate anti-leasing bias of the VAT can be overcome, particularly if shorter-term leases of two years or less are used. To understand this and make the analysis simpler, we assume that we can ignore any effects on the loan/lease choice that come from the profit taxes paid by the MFI (Table 11). This could be possible either because the MFI is located in one of the countries shown in Table 11 that treats leasing and loan income identically (taxing only interest in both cases) or because the MFI pays no profit taxes at all, for example, because it is an NGO. In this case, we have only to compare the VAT penalties shown for leasing in Table 10 with the client profit tax penalties for lending shown in Table 13. From this we can see that the Table 13 values are nearly always larger for one and two year terms (favoring leasing), while the Table 10 values are nearly always larger for 3-5 year terms (favoring lending).

Finally, we consider the special cases of Mexico and Peru. Mexico is the one country that treats leasing and lending identically with regard to the profit taxes paid by both MFIs and clients. Since the VAT in Mexico has an anti-leasing bias, however, the overall tax system in Mexico has the same bias for both formal and informal clients.

Peru's tax system has a pro-leasing bias in the case of formal clients, and one that can be quite large for shorter-term financing (1-3 years). This bias arises from the fact that lessees can deduct I+P+D as a cost in their profit taxes, while borrowers can deduct only I+D. The difference is the present value of the lease's principal payments. This can be a very large advantage. For the interest rates and lease terms we have considered, the present value of the principal payments, multiplied by the assumed tax rate of 25

percent, ranges from a low of \$44.90 with a 5-year lease and a 60 percent interest rate, to a high of \$208.33 with a 1-year lease and a 20 percent interest rate. These and all of the values in between almost always exceed the VAT penalties for leasing shown in Table 8, giving the Peruvian tax system a pro-leasing bias in the case of formal clients.

While this section has not explicitly analyzed every combination of value added and profit taxes found in the eight countries, it has covered many of the major ones. On the basis of this discussion and the principles given here, the interested reader can evaluate the tax bias in the remaining countries as well as biases that may arise in other countries and situations.

Other Taxes

Table 6 (lines 10-14) provides information on a number of other taxes, none of which has a major impact on the relative desirability of loans versus financial leases in the eight countries we have surveyed. However, because these taxes may be important in other countries or other situations, we review them briefly.

Gross sales tax is levied on a firm's total or gross sales. It differs from the value added tax (VAT) since VAT allows deductions for purchased material inputs whereas the gross sales tax does not. Of the eight countries, only Colombia and Bolivia levy this tax. The tax is levied on loan and lease transactions in a completely neutral fashion in Colombia and in an almost completely neutral fashion in Bolivia (see footnotes 10 and 11 to Table 6 for the precise treatment in these two countries).

By their nature, property taxes are often non-neutral in microfinance, with a bias against leasing. This is because microfinance clients often evade taxes, and many may not pay the property tax that some countries levy on vehicles and other equipment. On the other hand, when the MFI buys (and owns) the vehicles or other equipment, as occurs with leasing, the MFI typically pays these taxes.

As it turns out, property taxes appear to have only a minor impact on the relative desirability of loans versus financial leases in the eight countries we have surveyed. Four of the eight countries do not levy property tax on equipment, only on structures. Peru and Bolivia levy the tax solely on vehicles, which account for only a part of overall equipment finance. Further, the vehicle property tax is relatively difficult to evade, so that most MFI clients apparently pay this tax. While El Salvador levies a broader property tax on equipment, rates are generally very low (approximately \$1 per \$1000 of equipment value) and so this tax introduces little distortion into the loan/lease choice. Finally, the property tax is neutral in Mexico because with financial leasing the client (lessee) is liable for the tax, the same

as if the client bought the equipment and financed it with a loan.

Both import duties and excise taxes are completely neutral in the eight countries we have examined. This need not always be so if the import duty or excise tax rate varies not just with the product but also according to who buys the product. For example, *Euromoney Yearbooks* (1996, p. 284) cites the case of Panama as having given import duty exemptions to certain beneficiaries in the manufacturing sector when they purchased equipment. However, these exemptions were not available to financial institutions that might have purchased and leased out the equipment, a bias against leasing.