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## Microfinance Institutions and Public Policy

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**Abstract**

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Many governments and nongovernmental organizations have adopted policies to promote the growth of microfinance institutions (MFIs). The appropriate level and form of support for MFIs are discussed in this paper on the basis of a review of key MFI characteristics. Governments are also responsible for the regulation of MFIs; here, some principles concerning the extent and coverage of MFI regulation and supervision are developed.

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## I. INTRODUCTION

The last twenty-five years have witnessed a rapid expansion in the number and size of microfinance institutions (MFIs) in many parts of the world. In some countries, MFIs are already numerous and in aggregate serve a large number of clients, manage a significant loan portfolio, and hold an important share of the financial assets of poorer people. In a recent report, the Consultative Group to Assist the Poorest (CGAP)<sup>2</sup> estimated that by 2000, MFIs worldwide served about 12.5 million individuals.

What distinguishes MFIs is their orientation to fill a gap left by (larger) conventional, commercial or government-sponsored institutions in the provision of financial services to poorer households and smaller enterprises. MFIs seem to promise a means to provide an especially valuable form of assistance directly to disadvantaged sections of society in a relatively cost-effective manner. MFIs may thus play a significant role in financial sector development, and therefore in overall development.<sup>3</sup> Based on this promise, the establishment and growth of MFIs has been supported by domestic nongovernmental organizations (NGOs), foreign NGOs or official donors, multilateral development banks, and national governments. This support augments the efforts undertaken by the private investors and the poor themselves in building up MFIs.

This paper addresses some of the public policy issues connected with the growth of the MFI sector. Further expansion in the numbers of microfinance providers and their financial importance seems likely, and they continue to attract financial and technical support from numerous sources. Meanwhile, the multiplication and growth of MFIs has prompted many countries to reconsider how, if at all, they should be regulated, and the relationship between the MFI sector and the rest of the financial system and, in particular, commercial banking. These developments give rise to several public policy questions, such as whether MFIs merit assistance from either official or nonofficial sources, and, if so, how such assistance can be deployed most efficiently. At the same time, the principles for the prudential and non-prudential regulation and supervision of MFIs are worth reviewing. Section II of this paper defines the main characteristics of MFIs and provides some indicators of their performance in different countries. Section III lays out the arguments for and against providing support to MFIs and discusses how negative side effects of such support can be reduced. Section IV

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<sup>2</sup> CGAP was launched in 1995 by the major bilateral and multilateral donors and MFIs to act as a donor coordinator in microfinance and a disseminator of microfinance best practices to policymakers and practitioners. CGAP currently has 29 member donors, and its secretariat is located at the World Bank premises in Washington. For more information on the activities of the CGAP, look at [www.cgap.org](http://www.cgap.org)

<sup>3</sup> See Holden and Prokopenko (2001) for a wider discussion of the relationship between financial sector development and the incidence of poverty.

considers the issues of why and how MFIs should be regulated and supervised. Section V concludes.

## II. CHARACTERISTICS OF MFIS

The term “microfinance institutions” is generally used to refer to those financial institutions that are characterized by their commitment to assisting typically poor households and small enterprises in gaining access to financial service. This commitment may replace or supplement other private or public objectives, such as the maximization of shareholder value, the direction of investment into priority sectors, or the mobilization of savings to finance government operations. In common usage, MFIs are distinguished from purely commercial, small-scale, possibly informal financial institutions dealing with the poor (for example, village moneylenders, pawnshops, and informal transfer systems) and from large, perhaps government-sponsored schemes that may hold numerous small accounts more or less as a by-product of their main business (for example, national savings schemes or post office savings banks).

The common usage will be followed in this paper. It should be remembered, however, that the same public policy issues—especially those related to regulation—may arise in connection with the other institutions mentioned above. These other institutions may display many of the same characteristics as MFIs, and indeed in many countries they may play a larger role than MFIs in the provision of financial services to disadvantaged groups.<sup>4</sup> Furthermore, the distinction is not always usable, notably when defining categories of institutions or types of services for regulatory purposes. Regulatory definitions should be based on verifiable, objective features, and not on the self-declared purpose of an institution.

Within the category of MFIs, institutions tend to share some common characteristics, but also differ greatly in the nature of their operations, their size, and their financial performance. Public policy toward MFIs in a country will have to take into account the similarities and differences among the institutions that operate or could be established there.

### A. Services and Clientele

MFIs provide a wide range of services. The best-known activity of MFIs is providing credit to poorer households and small enterprises, but many also take deposits. In addition, some MFIs offer other financial services, such as insurance, or advice and training to their clients. This training is often closely linked to the MFI’s main activities; training in business management for example might make a loan more valuable to the borrower and also enhance

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<sup>4</sup> For example, one of the authors estimates, in a recent study on rural financial markets in the Philippines, that about 70 percent of rural credit is supplied by informal village lenders (Holden, 2002).

the chances of repayment. Sometimes MFIs are used as a vehicle to provide other services and education, e.g. in the area of health awareness.

The primary clientele of MFIs consists almost by definition those who face severe barriers to access financial products from conventional financial institutions. These barriers comprise mainly high operational costs, and risk factors. An MFI's clientele may for example be distributed in remote locations, possess few negotiable assets, whether they be physical or financial, and live in an environment where enforcement of formal property rights and other contracts is expensive and uncertain.

MFIs have to be innovative to overcome these barriers. Incentives for loan repayment, for example, can be created through a number of techniques (see Morduch 1999 for a review), such as the group lending model, which was pioneered by Grameen Bank in Bangladesh in the mid-1970s. Under group lending, all group members are held responsible for loan repayments even if the loans are made to individuals. In some countries (for example, Indonesia; see Appendix I), lending took the form of allocation of funds through village-level management commissions led by village heads. In this case, the village heads are held responsible for loan repayment, but they exploit appropriate enforcement mechanisms with regard to individual borrowers.<sup>5</sup> Perhaps most importantly, credit-granting MFIs often use dynamic incentives, where a borrower initially receives a small sum, but as a satisfactory repayment history is established, the borrower may obtain progressively larger loans. The threat to cut off any further lending when loans are not repaid strengthen repayment incentives.

Small business loans may be a prominent part of MFI activities, but lending and deposit taking to smooth consumption by households may be more important for most MFIs and their clients.<sup>6</sup> Providing savings facilities not only enables households to smooth consumption, but also is of value, for example, in making and receiving payments, and establishing a financial record. One of the lessons of the recent development of the MFI sector is that even very poor are eager and able to save.

MFIs are not equally dispersed worldwide. They appear to be especially well developed in certain Asian and Latin American countries, such as Bangladesh, Bolivia, and Indonesia.<sup>7</sup>

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<sup>5</sup> Group guarantees were an especially common feature in the early days of microcredit, but they seem to have been partially supplanted by more advanced techniques of loan evaluation and enforcement.

<sup>6</sup> Appendix II addresses consumption smoothing more formally.

<sup>7</sup> Appendix I contains information on the development of certain MFIs in a selection of countries. Regional surveys are provided in Fidler and Paxton, 1997a, b, c, and d. For a discussion of the origins, forms, and current activities of MFIs in the countries where they are most developed, see for example Ledgerwood (1998) or Morduch (1999).

There is some evidence that a comparatively large number of MFIs in Africa take the form of savings cooperatives, while lending operations are relatively more important elsewhere. Why microfinance is not more evenly spread worldwide remains a subject for a further research.<sup>8</sup> Nevertheless, in many of those countries where the MFI sector is still in an early phase of development, the number and size of MFIs have recently been growing rapidly.<sup>9</sup>

Most MFIs seem to be connected to NGOs and may be legally incorporated as such, perhaps in the form of a nonprofit organization. MFIs may also take the form of credit unions or savings cooperatives, private limited companies, and other forms depending on the legal system of the country where they operate.

So far, only a few commercial banks have successfully entered the microfinance business. Where formal commercial banks have enjoyed a certain success in doing microfinance business, key elements were the ability to identify borrowers who would repay on time, and to monitor the loan portfolio to ensure that delinquencies are kept under control. This required either technology that could allow accurate credit scoring, or substantial local knowledge. The case of the *Banco del Trabajo* in Peru is a typical example of the former, while the *Unit Desa* system in Indonesia is an example of the latter (see Appendix I). In addition, the creation of a separate, dedicated MFI unit within the commercial bank has often proven to be advantageous.

## **B. Financial Performance**

### **Balance sheet size**

The nature of MFI business implies that the value of individual transactions and financial stocks involved are relatively small. Typical loan size varies from US\$50 or even less for

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<sup>8</sup> Differences in the degree of development of microfinance even in otherwise countries is illustrated by the case of two neighboring Central African countries: Cameroon and Gabon. These countries have a number of common characteristics (they share a common currency, their financial sectors are supervised by a common supervisor, they are both significant oil exporters, and per capital income is comparable), yet the microfinance industry in Cameroon is more developed than that in Gabon. With over 700 MFIs serving more than 200,000 people and providing the equivalent of more than 4 percent of commercial banks' loans, Cameroon's microfinance sector is relatively advanced. That of Gabon represents a miniscule fraction of financial sector by any measure: only 13 MFIs were operational as of mid-2001, serving less than 3,000 clients, and providing the equivalent of only 0.01 percent of commercial banks' loans.

<sup>9</sup> In industrialized countries, certain institutions that effectively started as MFIs, such as some British building societies, evolved into large financial institutions and eventually into full-fledged banks.

institutions that target the very poor to several thousand dollars for those institutions that target successful small businesses. Deposits might be even less (as low as US\$5). These sums may be large relative to the average income and assets of clients or even GDP per head, but small relative to typical financial transactions involving conventional financial institutions.

The characteristics of the clientele, combined with the localized operations of many MFIs imply that most institutions are usually relatively small in financial terms, with total assets the equivalent of only a few million dollars and capital that rarely exceeds US\$1 million. However, there are MFIs in some countries with so many depositors and borrowers that their balance sheet size is comparable to that of a commercial bank.

Some indication of the magnitudes involved is provided by the statistics in Table 1, which are taken from November 2001 issue of *The MicroBanking Bulletin*. The sample of 148 MFIs is not large, and may be biased toward relatively large and sophisticated MFIs that are capable of providing such data, and toward MFIs specialized in lending.<sup>10</sup> In general, many MFIs seem to keep poor records, a fact that hinders not only the systematic study of the sector, but also the evaluation of the financial performance of individual institutions and the cost-effectiveness of assistance they receive (see Filder and Paxton, 1997a, and Vogel, 2000).

### **Costs, revenues, and profitability**

The costs of carrying out microfinance business are usually high relative to the value of loans and deposits involved. On one hand, financial transactions often bear significant overhead and fixed costs, independent of the size of the transaction. These costs include the *administrative costs of making payments, keeping open offices, cost of loan monitoring, etc.* Typically, the largest single expense is salaries, due to the very labor-intensive nature of micro lending. The data in Table 1 support this thesis: the ratio of administrative expenses relative to assets in the sample is much higher than would be typical for a commercial bank, and declines with portfolio size.

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<sup>10</sup> Although the reported averages are based on observations lying in the second through the ninth deciles, the presence in the sample of a small number of very large Asian MFIs clearly influences some statistics heavily. The sample distributions of the variables also display high standard deviations. Not all data are available for the whole sample, so typically the averages for “all MFIs” are estimated on the basis of about 120 observations. See *The MicroBanking Bulletin* and [www.microbanking-mbb.org](http://www.microbanking-mbb.org) for further details and definitions.

Table 1. Financial Characteristics of Selected MFIs  
(Averages; percent except where noted)

	All MFIs	Financially self-sufficient MFIs
Number in sample	148	57
Years of operation	8	11
Total assets (U.S. dollar millions)	5.5	21.2
Equity/assets	42.8	40.8
Loans/assets	68.0	71.2
Deposits/assets	13.7	53.0
Borrowing at commercial rates/loans	49.5	96.2
Active borrowers (number)	10,710	89,370
Average loan/GDP	46.0	76.3
Revenue from loans/ loans	38.1	41.0
Inflation-adjusted revenue from loans/ loans	28.8	33.0
Return on assets	-3.7	5.1
Operating expenses/assets	31.2	26.2
Administrative expenses/assets	19.8	17.0
Interest margin/assets	18.9	24.0

Source: *The MicroBanking Bulletin*, No. 7, November 2001; and IMF staff estimates.

On the other hand, small scale projects or consumer lending to poor is often highly risky, in part because: (1) the borrowers' income stream can be intrinsically risky and more exposed to exogenous shocks (weather, macroeconomic fluctuations); (2) the borrowers are not well diversified; (3) the borrowers cannot provide collateral; (4) loans are bound up with personal finances of poor (e.g. a business might collapse if large medical bill must be met). This often results in high share of impaired loans, which are sometimes bunched (e.g. after a harvest failure or natural disaster). Certain MFIs are very successful in achieving high loan recovery rates, but the potential risk is almost always present.

These high costs generally force MFIs to charge high interest rates on loans, even in real terms (Table 1 contains statistics on the nominal and real ratio of revenue to loans). Also the spread between deposit and lending rates offered by MFIs is usually high. MFI borrowers are presumably willing to pay these high rates because the alternative is either borrowing at even higher rates, perhaps from an informal money-lender, or no borrowing at all. An MFI may have to operate in an oligopolistic manner in its local market in order to cover its fixed costs, but its presence could still be welfare improving.

Nonetheless, many MFIs lose money; in aggregate the MFIs for which data are reported in Table 1 failed to cover their costs. However, there is also a substantial contingent of

“financially self-sufficient” MFIs that manage to at least break even on a sustained basis. They are generally very much larger than other MFIs, both in terms of their loan portfolio and the number of borrowers. Their loans also tend to be larger relative to GDP per head. Their administrative costs tend to be lower relative to total assets, but their interest margin is higher, presumably because they are much more successful in attracting low-cost deposits. Savers at MFIs may be much more attracted by the security and transaction services connected with having a deposit rather than with the interest yield. Financially self-sufficient MFIs also make more use of commercial borrowing, although the direction of causation is not clear: they may be able to borrow because they are financially self-sufficient, but the borrowing capacity may strengthen their performance. At the same time, even financially self-sufficient MFIs maintain a high ratio of equity to total assets.<sup>11</sup>

Available data suggest that MFIs often improve their profitability as they mature, primarily by lowering their average costs; the “financially self-sufficient” MFIs included in Table 1 had operated on average for 11 years, compared with an average of 8 years for the full sample. This may reflect (1) learning by doing (the institution learns what operational arrangements and loan mechanisms work best in its environment); (2) sample selection bias (only low-cost institutions survive); and (3) decreases in average costs when an institution with significant fixed/overhead expenses expands over time. Almost all MFIs seem to lose money for an initial period, which implies that most MFIs require substantial capital injection or subsidies during their start-up stage.<sup>12</sup>

### III. SUPPORTING THE DEVELOPMENT OF MFIS

Given the tendency to make losses or earn below-market returns on capital, many, and perhaps most MFIs are associated with NGOs, and rely to some degree on support from their donors, at least initially. These donors, which include domestic or foreign NGOs, government, or foreign official donors, provide subsidy in various forms: an initial capital injection or loan at preferential terms, operational subsidies in cash or in kind, the provision of training for the MFIs’ staff, and technical assistance (e.g., in improving the legal or institutional framework).

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<sup>11</sup> The average ratio of equity to assets for the sample in Table 1 is about 40 percent. This ratio for a commercial bank would usually be below 20 percent and could well be below 10 percent.

<sup>12</sup> It is not unusual for start-up businesses to lose money. MFIs’ initial losses, however, may not be fully compensated by expected future profits discounted at a commercial, risk-adjusted rate.

### A. Arguments For and Against the Provision of Support for MFIs

Therefore, the question arises of whether and when the support provided to MFIs is worthwhile. The obvious motivation is a desire to help the poor, an essentially distributional argument. However, it needs to be shown that supporting an MFI is better than an alternative allocation of limited resources, and that support for MFIs does not have large negative side effects. Some arguments for the provision of support for MFIs include the following:

- The provision of financial services empowers clients in a way lump sum transfers do not. Instead of aid-dependence, clients who have access to financial services gain autonomy and, ultimately, access to the formal economy. Thus, MFIs can mitigate the powerlessness that is often an intrinsic feature of poverty, and even improve the functioning of society.<sup>13</sup>
- An MFI has an informational advantage, which allows assistance to be particularly well targeted. This informational advantage extends along two dimensions. First, availability of financial services allows the clients to decide for themselves in important economic matters (e.g., consumption smoothing, see Appendix II). Second, the MFI is in a position to evaluate projects *ex ante* and to monitor their performance, so that resources are allocated more efficiently (Appendix III). In effect, the MFIs enjoy better local knowledge and proximity, which help ensure that funds go to the “deserving poor.” These last two points are “second best” arguments: when asymmetric information (between donor, financial institution, and client) and substantial fixed costs are prevalent, assistance intermediated through MFIs can offset these imperfections to some extent, while direct assistance can not.
- If an MFI is successful, it may be able to return some assistance to donors, who can then devote the resources to new projects. It is now widely believed that the MFIs can and should be designed and managed so as to attain sustainability, that is, to cover operating costs plus achieve a reasonable return on capital. Those MFIs that have achieved sustainability should ultimately be able to finance themselves on a commercial basis and grow without further assistance. Thus, support for an MFI, if successful, might be relatively low-cost over the longer term.
- An MFI may leverage the support provided to disadvantaged groups by mobilizing savings or accessing capital markets, so that the total provision of resources to the poor is increased.

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<sup>13</sup> Sen (1999) praises the role of Grameen Bank and other MFIs in Bangladesh, which have “done a lot not merely to raise the ‘deal’ received by women, but also—through the greater agency of women—to bring about other major changes in the society.” However, there is some debate about the extent to which MFI activities truly empower women (see Rahman, 1999, and Wright, 2000).

- Insofar as MFIs help mobilize additional savings, there is an externality for the country as a whole if it is liquidity constrained, as is the case for some developing countries.

Nonetheless, support for MFIs needs to be weighed against other demands, and under some conditions may even be counterproductive:

- Funds that go to MFIs could be used instead for direct income support (e.g., lump-sum transfers) or undertaking infrastructure projects or providing human capital through education and training. Such alternative forms of assistance to the poor can have significant advantages over assistance that is channeled through a financial institution. For example, income support or training can be directed at the very poorest, who tend not to be helped by MFIs, whether the institution be specialized in lending or saving. Furthermore, training to provide the poor with human capital might offer a less uncertain return, which might be preferred by most of the poor, who may be quite averse to adding risk to their already precarious existence. In particular a lending MFI may lead many of the poor to jeopardize what little assets they have, with a high probability of losing everything and some probability of making a substantial return. Thus, support for MFIs may not be as well suited to reducing dispersion in income distribution as might at first be supposed.
- Outside support is likely to weaken the budget discipline on MFIs. This poor incentive structure can result in operational inefficiency (high overheads, excess staffing, excessive pay levels), poor resource allocation (poor loan application selection, poor loan collection), and, perhaps, lack of innovation. Furthermore, an MFI that is structurally dependent on on-going subsidies will be constrained in its growth, and could collapse if the support is withdrawn. Thus, aid-dependent MFIs may fail to achieve sustainability. Such lapses imply that assistance has not helped the poor as much as it could: resources for the poor are diminished, and they are misallocated.
- Donor-supported MFIs could crowd out commercially oriented providers of financial services. At least some anecdotal evidence suggests that commercial ventures are discouraged from entering markets, which are already well served by MFIs that received support from NGOs or government and therefore have lower costs. The users of financial services in those markets may benefit, at least initially, but donor resources might be better devoted to providing services that commercial institutions neglect. Furthermore, an abundance of aid-dependent MFIs might stifle the longer-term development of a more sophisticated, commercial financial sector.

On balance, these arguments suggest that MFIs can be worth supporting to some degree. However, the form of support needs to be carefully chosen to suit the needs of MFIs at different stages of development, and to minimize possible drawbacks.

## B. Forms of Support for MFIs

Several approaches can be envisaged whereby warranted assistance is provided without creating aid dependence, weakening the incentives to achieve sustainability, or suppressing the scope for competition and commercially-driven development. Some of the dangers of aid dependence can be diminished by providing the assistance in a manner that generates better incentives. One simple means is to provide assistance in the form of a one-time start-up grant or capital injection. Such a grant would be attached to the start-up of particular projects, and its beneficiaries would be not only microfinance institutions *per se* but also commercial banks willing to proceed in the microfinance business.<sup>14</sup> One could also provide a start-up loan with a graduated and fairly long repayment period (this loan might be intermediated by a private institution which, for a fee, would accept the credit risk and have less opposition to extracting repayment). Thus, such support would help cover high initial fixed costs, or could be invested to provide a stream of income that reduces net average costs, but the MFI would still be motivated to keep down costs and innovate (to at least achieve satisficing profitability and to finance expansion).

A policy to provide only start-up support needs to be made credible. Especially if a donor has invested substantial sums in an MFI and if many small businesses and households are at risk if the MFI fails, a bailout may be difficult to resist. The budget constraint may be harder if a number of MFIs operate: they not only compete against one another, but the failure of any one does not leave the poor without services. Furthermore, MFIs can be innovative in their techniques to select borrowers and ensure repayment, and in stimulating savings. The need for (intrinsically risky) innovation implies that it may be productive to encourage several institutions to be established and to undertake a variety of experiments, even if it is recognized in advance that a proportion are likely to fail. Thus, one policy element might be to give start-up funds to several MFIs (over time). The limitation to this approach is that relatively high fixed costs imply that few MFIs can exist in any one market—especially in more remote regions—and that competition may keep all MFIs from minimizing average costs.

If it is found that on-going support for MFIs is needed, mechanisms can be designed to limit aid-dependence and even promote competition between MFIs. One approach is to provide assistance to a central provider of services that can be used by individual MFIs, which are themselves to be self-supporting. In some countries, an “apex” organizations has been established to provide MFIs with, for example, training facilities or assistance with computerization and record keeping, which seems to be an area where many MFIs are very weak. Sometimes the apex organization operates a form of money market between MFIs, intermediating between those that are temporarily liquid or have a structural surplus of savings and those that need to finance additional lending. Such an apex institution has an

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<sup>14</sup> The successful establishment of *Unit Desa* branches in Indonesia was assisted by initial one-time government subsidies. See Appendix I.

incentive to supervise member MFIs: if it expects its loans repaid, it will have to monitor the operations of MFIs through audits and inspections. However, even if some apex institutions have been successful in recovering their loans, only a few of them seem to have been able to contribute to a significant quality improvement in MFIs; the creation of a useful apex organization cannot, it seems, precede the establishment of functioning MFIs (Christen and Rosenberg, 2000). A related approach that could be explored would be for assistance to be channeled to an independent rating or auditing service: checking the accounts of MFIs and monitoring their compliance with prudential and non-prudential regulations is relatively costly (see below), and MFIs may be constrained by investors' lack of reliable information on their financial condition. Hence, supporting external evaluations may serve several purposes.

An interesting example of how public support for a central institution can indirectly facilitate the development of MFIs is provided by the experience in Peru, where a nation-wide credit registry was created. An alternative approach to supporting MFIs while limiting subsidy dependence is represented by the system of periodically auctioning MFI subsidies in Chile, which, however, relies on the capacity of the parent banks to manage their MFI subsidiaries and to bear the risk they have bid for too little subsidy. (Appendix I provides more information on these schemes).

Another important condition of the effectiveness of support for MFIs is the need to coordinate the donors' efforts to avoid contradicting and/or unnecessary duplicating strategies. In fact, most MFIs work with more than one donor, often developing separate products to meet each donor's requirements. Lack of coordination can undermine the efforts of good microfinance providers, as donors may distort the entire microfinance industry by subsidizing interest rates, and consequently making it difficult for more commercially-oriented MFIs to compete.

#### **IV. REGULATION AND SUPERVISION OF MFIS**

##### **A. Costs and Benefits of Regulation**

Financial institutions are generally subject to two forms of regulation: prudential regulation, which seeks to reinforce their financial soundness, and non-prudential regulation, which serves other purposes such as consumer protection and which is similar to regulations applied to other businesses. Any one piece of regulation can serve both purposes, but the distinction is useful in considering the "pros and cons" of various provisions. The appropriate form and degree of regulation and supervision depend on the balance of a number of objectives and the interest of different parties, which are worth making explicit:

- *Protection of depositors.* The depositors of an MFI are unlikely to be able to exercise a high degree of market discipline on the institutions, perhaps because they may be relatively unsophisticated, but also because their individual deposits may be small, it may be difficult for them to coordinate, and the MFI may be in the position of a local monopolist. Furthermore, the depositors are unlikely to have diversified portfolios or reserves, so any loss from the failure of an MFI would affect them gravely and

discourage them from participating in the financial system indefinitely. The large economic uncertainties to which the clients of MFIs are subject, the innovative procedures and mechanisms that MFIs often attempt to implement, and their relatively high operating costs suggest that MFIs will be prone to such failure. Depositors also need some protection from institutions that may purport to be MFIs, but in fact act in fraudulent ways; otherwise a “pyramid scheme” might call itself an MFI in order to undertake a scam. Hence, there are grounds for regulating and supervising MFIs that take deposits from the public.<sup>15</sup>

- *Protection of borrowers.* An MFI may enjoy considerable local market power, especially if it operates in a remote area and sunk costs are high, and its goals could be perverted into maximizing profits at the expense of (poor) clients. Then there would be grounds to regulate its activities and in particular its pricing policies. However, it may be very difficult to establish when monopoly rents are being earned, especially if they are dissipated in high overhead costs and management remuneration. Given the worldwide evidence that MFIs tend to have high costs, and the willingness of borrowers to accept high real rates, MFI’s monopolistic lending practices may not often be of concern. Indeed, in some countries usury laws have had to be amended or abolished in order to allow MFIs to be viable.
- *Protection of the financial system.* The financial soundness of an MFI can have an effect on the state of the financial system as a whole when that MFI has borrowed significantly from commercial banks or other financial institutions, or when the failure of the MFI is likely to provoke (perhaps ill-founded) doubts about the soundness of the system as a whole. This is the standard rationale for regulating the financial sector more strictly than other sectors. Yet the effects of MFI failures are likely to be of minor concern in most cases, since the institutions involved tend to be small relative to the conventional banking system. However, some MFIs are of significant size, or have the potential to become so. Furthermore, the failure of a fraudulent MFI could affect the public’s trust in all financial institutions.
- *Promotion of the MFI sector.* Under some circumstances, regulation and supervision may promote the development of the MFI sector. An institution known to be well regulated and closely supervised may be able to attract more deposits from the public, and may be able to obtain financing at lower cost. The promise of official sanction in the form of licensing and greater operational freedom may prompt the management of an MFI to accelerate development by offering new products and acquiring the necessary expertise. Furthermore, the development of the MFI sector could be severely hurt by the existence of fraudulent MFIs. However, in practice there is little evidence that these effects are pronounced; experience in South America suggests that MFIs grew and became more

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<sup>15</sup> These arguments are weakened where the deposits are tied to loans, as is sometimes the case, although not for deposits that must be accumulated before a loan is made.

sophisticated autonomously, and only later was this development ratified by the financial supervisors (Christen and Rosenberg, 2000).

- *Protection of public funds.* The protection of public funds may motivate regulation and supervision of MFIs under two circumstances. The first is where public funds have been used to establish an MFI; the authorities have a responsibility similar to that of any major shareholder to monitor the quality of management and business decisions. The second is where the MFI's liabilities are covered by explicit or implicit deposit insurance. Thus, public policy on deposit insurance creates the need for public regulation in order to limit moral hazard and to price the deposit insurance appropriately.<sup>16</sup> The authorities' ability to limit implicit insurance of deposits at the MFIs might be circumscribed where public pressure can be exerted to "bail out" small depositors in a failed MFI. That ability may also be undermined where a bailout is *ex post* optimal, both to protect depositors' wealth and to ensure the continued availability of banking services. This "time inconsistency" problem may be lessened if several competing MFIs are operational, so that the failure of any one is less disruptive.

The possible benefits of MFI regulation and supervision need to be balanced against the costs. These costs can be relatively important given the small size of these institutions. The principal costs are:

- *Costs to supervisors.* Just as MFI's operating costs are often high relative to the size of their portfolio, so the cost of their supervision may be disproportionate to their financial importance or the underlying interests that supervision is meant to serve. MFIs are often small, numerous, located in remote regions, and with poor record keeping. Hence the supervisor may have to devote considerable resources to monitoring what are, for the financial system as a whole, rather insignificant institutions.<sup>17</sup> The supervisors direct costs will have to be borne, either by the MFIs, which may already have high costs, the formal financial sector, which will have pass costs on to their clients, or the taxpayer. Furthermore, in many developing countries, skilled supervisory capacity may be in short supply. Employing these scarce skills in supervising MFIs could endanger the effective supervision of institutions that are more central to the soundness of the financial system.
- *Costs to supervised institutions.* Besides the costs incurred by the supervisor, complying with regulations and satisfying on- and off-site supervision can be administratively

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<sup>16</sup> Failure of an MFI is likely to result in losses for even small depositors because the owners of the MFI are not likely to be able to subscribe additional capital, and many of the loans may be uncollateralized and made on the basis of dynamic incentives for repayment, which will collapse when the institution fails.

<sup>17</sup> This is the reason why microfinance services in many countries are provided without any regulation and supervision (see the case of Zambia in Appendix I).

burdensome and expensive for an MFI. These costs are ultimately passed to the MFI's clients in the form of higher fees and interest rate spreads, and slower growth in the provision of financial services to disadvantaged groups. It is possible that the often poor clients of MFIs could bear significant costs of regulations to protect the other groups in society.

- *Stifling of innovation and competition.* Regulation and supervision may restrict the ability of MFIs to experiment with new forms of loan agreement and systems to attract deposits by discouraging or prohibiting innovations that are not foreseen in the regulatory framework. MFIs often have to be innovative to overcome the barriers to participation in the financial system faced by their clients and to be financially viable, and these innovations may differ from institution to institution and from country to country. Regulations may make it onerous to introduce such innovations, for example, by requiring higher provisioning and capital against loans that are not backed by collateral, even where some other mechanism provides security. Regulatory restrictions and the costs of complying with regulations may also discourage MFIs from competing with each other or new MFIs from being established, thus preserving local monopolies.

### **B. A Strategy for the Prudential Regulation of MFIs**

The variety of factors that must be weighed when determining how best to regulate and supervise MFIs suggests that no standard approach will always be appropriate.<sup>18</sup> The regulatory regime in a country will have to be tailored to the state of development of its MFI sector and the services currently or potentially provided by MFIs. The regulations applied to MFIs may also have to evolve along with the institutions, with more stringent and extensive regulations applied as those MFIs that start operations that could have more important externalities.

Furthermore, regulations will essentially have to apply to types of activity (lending, deposit taking, etc.), rather than to categories of institutions defined some other way, such as legal form (commercial versus non-profit making, publicly incorporated versus cooperative, etc.). To do otherwise would be an invitation to regulatory arbitrage—shifting perhaps dubious activities to the least regulated sector—and create unwarranted market distortions.<sup>19</sup>

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<sup>18</sup> Regulation and supervision of MFIs are discussed further in Chaves and Gonzales-Vega (1994), Christen and Rosenberg (2000), Ledgerwood (1998), Mutenda (2001), Schmidt (2000), van Greuning, Gallardo, and Randhawa (1998), Vogel (1998), and Wright (2000). Gallardo (2001) discusses some country experiences.

<sup>19</sup> For convenience, institutions will still be referred to here as MFIs, but the suggested regulatory structure would apply equally to purely commercial institutions that undertake the respective activities.

At one extreme, where an MFI does nothing but lend out donor funds, there seems to be little good reason to subject it to prudential regulation and supervision, except as necessary to verify that its activities remain circumscribed. Since such an institution is in effect fully capitalized, there are no depositors or other creditors who might be affected if the institution fails, nor would a bailout be called for. Such an MFI would still be subject to non-prudential regulations, depending on its legal status. For example, the MFI might be incorporated as a company, or as a non-profit organization, and national legislation would normally set requirements in such areas as registration, account keeping, relations with clients, labor relations, bankruptcy procedures, and so on, depending on the MFI's legal status.

At the other extreme, if an MFI acts as a full-fledged commercial bank, there is no reason not to subject it to the same prudential regulatory and supervisory regime as other commercial banks. An MFI with substantial liquid liabilities to depositors and other financial institutions, direct access to the clearing, payment and settlement system, possibly even foreign currency dealings, would in fact represent an unlicensed commercial bank. When an MFI is established as a nonprofit organization yet operates as a commercial bank, the persons or organization that ultimately own and control it have less pecuniary incentive for monitoring than if it yielded profits for them. They may also lack the means to augment the MFIs capital if it incurs losses. Therefore, such an MFI may warrant particularly close supervision, especially of its internal controls.

In any case, it is important that the supervisory authority know what activities an MFI engages in, for only with this knowledge can one set appropriate prudential requirements, if any. Therefore, a mechanism to verify that an MFI's activities have remained within the agreed range is needed. At the very least, the supervisory authorities should have some means to determine whether an MFI is small enough not to be of systemic importance. The mechanism need not be so thorough that abuse is not possible; there is always a trade-off between the cost of better enforcement and reduced probability of abuse. It may be sufficient if all but the most informal MFIs have to achieve minimum standards of record keeping and publication.

It also follows that careful oversight at the time of the founding of an MFI is essential. It is at that stage when the founders determine the purposes of an MFI, and when the authorities can determine the requirement that will have to be met. In particular, the founders could be required to (i) provide a credible business plan defining, for example, the main lines of business that the MFI is to provide, the likely demand for these services, the MFI's cost structure, and intentions regarding future expansion, such that the MFI has a realistic chance of becoming self-sustaining; (ii) demonstrate that the controlling interests such as Board members, and senior managers are qualified and otherwise "fit and proper;" (iii) commit themselves to the implementation of an adequate system of record keeping and internal controls; (iv) provide capital commensurate to the risk structure of the MFI's envisage portfolio; and (v) establish a system to keep the authorities informed of major developments at the MFI. Concentrating the regulatory burden at the time of start-up may raise the cost of establishing new MFIs, but the future regulatory costs should be reduced. Furthermore, this

regulatory approach reinforces the argument made above that external support for an MFI should mainly take the form of an initial capital injection rather than an on-going subsidy.

The other regulatory requirement that should apply to any MFI concerns the need to inform clients of the conditions under which they may transact with the MFI. It is incumbent upon an MFI to provide information in understandable and accessible form on such matters as loan terms, deposit interest rates, and access to funds. Without such information the MFI may find it difficult to attract new clients, while the existing clients may legitimately claim to have been misled, which may in turn cause borrowers not to repay loans, prompt court actions, or motivate depositors to demand compensation from government in case the institution fails. Such a requirement may be considered as a condition applicable to all businesses, and not specific to financial institutions, but exactly what information needs to be provided needs to be suited to the financial services provided.

Once an MFI is established, it might initially be restricted to a rather narrow range of activities. The range can be expanded over time, but only as the MFI acquires the necessary skills and structures to handle them, and demonstrates to the supervisory authority that it can carry out the new activities in a sound manner and support the heavier regulatory requirements that are entailed. Some MFIs develop from NGO-sponsored lending organizations. Others might start as savings cooperatives, which are in effect “narrow banks,” which just take deposits and invest them in fairly safe liquid assets. Before such a narrow bank could start investing in a wider range of instruments, it would need to show that it has a management system in place to determine and maintain a portfolio with appropriate liquidity and risk levels. If it then wished to begin lending to individuals or enterprises, it would need to have established a system for loan evaluation and tracking, and for reporting on its lending activities to the supervisory authority. Throughout the process of development, the supervisory authority will need to verify that the MFI has an internal information system adequate for its own management purposes, and is capable of meeting reporting requirements that match its stage of development.

If an MFI is authorized to operate in a relatively free environment, its operations should be subject to some pragmatic limits. These limits (on the overall deposit base, loan portfolio, number of branches, number of staff, etc.) would make MFIs too small to pose a threat to the overall stability of the financial sector. However, once an MFI becomes too large to operate within the prescribed limits, it should be required to re-register with the Central Bank or another regulator.

When an MFI begins borrowing significantly or taking deposits from the public, the most important set of prudential regulations that must be met concern the recognition of impaired loans and the making of provisions. In most financial systems, and especially for an MFI, credit risk is the greatest threat to survival. Prompt and full recognition of actual or potential loan losses is the most effective means to contain them, and even if an MFI is forced to close due to loan losses, losses for depositors and other creditors are likely to be smaller if loan losses have been identified early. Loan classification and provisioning criteria create incentives for careful loan evaluation, and limit moral hazard when an institution is failing. If

the MFI is to reach sustainability and allocate its resources efficiently, its own management will have to pay close attention to loan repayment rates, so the marginal cost of regulation in this area should be small. However, provisioning requirements need to be carefully designed so as not to create artificial barriers or opportunities for regulatory arbitrage.<sup>20</sup>

At least for an MFI that relies mainly on donor funds, loan classification may initially be more important than capitalization *per se*. However, as the MFI's activities expand it will also have to be subject to a capital requirement. Measurement of risk-weighted capital can be relatively complex, so in order to reduce the costs of regulation, the capitalization requirement on small MFIs could be defined in simple terms (such as a percent of total assets) but set at a relatively high level.

An MFI may be in danger of being exploited by its owners, management and staff, which may award themselves large loans on generous terms. This insider or connected lending will reduce profitability and the benefit received by the poor from the MFI's activities. Such lending may also be a means to perpetrate fraud, such as pyramid schemes. Hence, at some stage subjecting an MFI to regulations on connected lending may be warranted. However, so long as the MFI has few liquid liabilities and is not supported by the government, connected lending is more of a concern for owners than for the supervisory authority.

Likewise, loan concentration is unlikely to be a major prudential concern for MFIs until they become quite large. Geographical and sectoral concentration may be unavoidable for many MFIs, especially in their early stages of development, and does make them more vulnerable than a better diversified financial institution, but this is mainly a problem left to owners, provided that the authorities can commit themselves not to bailing the MFI in case of failure, and problem loans are recognized promptly.

MFIs in many countries should probably be prohibited from dealing in foreign currencies until they are on a par with commercial banks in size and sophistication. Dealing in foreign currency (let alone derivatives) requires relatively elaborate systems for internal controls, which are costly and managerially burdensome. Foreign currency operations are also unlikely to be of great service to many poor households. Therefore, a prohibition may be preferred to establishing a system of position limits and reporting. However, in some highly dollarized

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<sup>20</sup> For example, in some developing countries, microcredit and small business credit fall under different regulations, which creates an artificial barrier to enterprise growth and financial deepening. Lending to microenterprises may be classified as consumer credit, against which the lending institution is required to make a relatively small general loss provision (usually 2 to 5 per cent). However, provisioning requirements on loans to formal businesses may be stricter because the process of liquidating business assets in the event of failure is long and costly, so the perceived risks are greater. MFIs are therefore careful to lend only to "natural persons." Once businesses become formal, they enter a no-mans-land where credit that was available to them as individuals dries up, yet where they may have no new source of funding.

economies, an MFI would have to offer foreign currency-denominated deposits to attract any funds, some MFIs may receive donor loans denominated in foreign currency, and an MFI might also serve as an exchange bureau in a remote area. There may then be good reason to regulate the MFI's open foreign currency position, and in particular to ensure that its exposure to foreign exchange losses is minimized.

## V. CONCLUSIONS

This paper examines the design and effectiveness of public policy tools relating to the rapidly developing microfinance institutions. While the purpose of this paper is not to provide a full assessment of the policy issues with regard to MFIs, some important policy lessons related to the microfinance experience in selected countries can be drawn:

- There are good reasons to provide support for MFIs. Largely because of an informational advantage, the MFIs can be more efficient than either other financial institutions (e.g., commercial banks) or direct government transfers in bringing benefits to the poor parts of the society. At the same time, high administrative costs and an intrinsically risky environment suggest that often some degree of support may be indispensable for many MFIs, at least in their start-up period.
- The form of the support for MFIs may significantly affect the performance of these institutions and the value to society of the support. Since on-going support is likely to increase moral hazard and result in poor management, the paper emphasizes the importance of providing only one-time support to cover the start-up costs of MFIs or the initial costs of banks entering in the microfinance business. Where on-going support for MFIs is needed, mechanisms should be designed to limit aid-dependence and promote competition between MFIs, for example, by directing support to a central agency that supplies services to several MFIs.
- Any approach to regulation and supervision of MFIs needs to recognize their heterogeneity, and accommodate the flexibility and scope for development that MFIs need. At one extreme, the MFIs that do not take deposits and only lend out donor funds need not be subject to prudential regulation; they may still be subject to other regulations, for example on record keeping. At the other extreme, MFIs that act as full-fledged commercial banks should be subject to the same prudential regulatory regime as applied to the commercial banks with which they compete. In intermediate cases, any regulatory framework for MFIs would have to address the trade-off between depositors' protection and other benefits of regulation on one hand, and stifling of financial innovation and competition as well as other costs of regulation on the other hand. In many situations, a reasonable compromise between these objectives might be approached by regulations that emphasize that MFIs should be *bona fides*, and should establish adequate internal controls and record keeping (including on loan loss recognition). Regulations also need to be carefully graduated to allow for the development of MFIs from very small, local, and specialized institutions to full-service providers of financial services.

## **Some Country Experiences with the Development of MFIs**

### **Ethiopia**

Until the initiation of financial sector reforms in 1993, state-owned banks were the only authorized providers of financial services in Ethiopia, although a few small informal private financial institutions existed. Responding to unsatisfied gap in financial services for micro- and small-scale enterprises, formal MFIs began emerging in 1995.

At the beginning of 2001, there were 19 MFIs registered with the National Bank of Ethiopia (NBE). Although Ethiopian MFIs operate in the four major regions of the country, they still cover only a small percentage of the population and are in an early stage of development. MFIs served a total of over 600,000 clients at the end of 2000, which represented around 15 percent of poor rural households; deposits with MFIs totaled about US\$20 million, equivalent to less than 1 percent of deposits with commercial banks; and their outstanding credit portfolio was about US\$36 million, or approximately 2 percent of credits provided by commercial banks. However, the sector appears to be growing steadily.

The sector is highly concentrated, with two large MFIs together accounting for 90 percent of the savings, nearly 76 percent of outstanding portfolio, and just over 83 percent of the total clientele. The amounts of outstanding loans of these two institutions are already comparable to those of the smallest commercial banks.

The ownership of Ethiopian MFIs rests with regional governments, local NGOs, and individuals. Foreign ownership is prohibited, as in other parts of the financial system of Ethiopia.

MFIs normally charge high lending rates, but loan recovery is reportedly generally high. However, only four MFIs reached operational profitability in year 2000, partly reflecting the fact that most MFIs are in a start-up phase and are subject to high initial expenses.

There is a regulatory and supervisory framework for MFIs, and the NBE acts as supervisor of MFIs. Given the NBE's resource constraint and the wide range of MFI sizes, regulation and supervision for larger MFIs is more exacting than for smaller MFIs. For example, an MFI that reaches Br 1 million (around US\$120,000) in public deposits is required to re-register at the NBE.

Another important restriction on the MFIs is a ceiling on loan size of Br 5,000 (approximately US\$600). This ceiling is designed to limit the risks that MFIs can take on and keep them distinct from the more heavily regulated commercial banks. However, it also constrains at least the two largest MFIs in continuing to lend to their most successful borrowers, and implies that average loan remains so small at average costs are high. Furthermore, small but successful entrepreneurs can lack financing relatively early in their growing because the minimum loan size applied to the state-owned bank that dominates the

financial system is Br 50,000 (approximately US\$6,000). The latter requirement is also an obstacle to the extension of small and micro credits by the commercial banks.

## **Zambia**

Zambia initially adopted a state-lead development strategy during the early years of its independence. The government also took the lead in providing financial services for small- and medium-size clients, including microfinance. One such approach was the Credit Guarantee Scheme, under which the Bank of Zambia (BoZ) guaranteed a large proportion of private loans to micro-enterprises, but success was limited because commercial banks were discouraged to make such loans by the high transaction costs involved. Another approach was represented by the establishment of an agricultural bank (Lima Bank) in 1987 to provide financial services essentially to small-scale farmers. Corruption and poor credit culture reportedly contributed to its failure. Another bank to serve farmer cooperatives (Cooperative Bank of Zambia) was established in 1991, but it too failed after a few years, for the same reasons.

The financial liberalization of 1992-93 opened new room for the establishment and development of MFIs. The growth in the number of MFIs accelerated in 1997-98, partly because the failure of some commercial banks and the consolidation of the banking industry between 1994 and 2001 affected the willingness of the remaining banks to lend to small clients. Additionally, international donors became more willing to support the microfinance industry. Currently, there is a new wave of MFIs being established in Zambia with a support of international donors. Two of the largest and reportedly most successful MFIs were established with international donor support: one of them received a grant from the UK government and another one was created with the financial assistance from the European Union (Mutenda 2001).

According to the information from the Association of MFIs in Zambia (which was established by the MFIs), there were approximately 95 MFIs at mid-2001, serving around 30,000 clients (the total number of potential clients is estimated to be around 1 million households). Growth in MFIs has been concentrated in Lusaka and in the Copperbelt (copper-producing region near the border with Congo), while the vast rural areas remain under-served. There are no reliable or comprehensive data on MFI's financial performance.

Microfinance services are currently provided without any regulation and supervision, and some forbearance is exercised by the authorities. For example, savings mobilization by MFIs is technically illegal, but in practice "equity contributions," which are forced savings of up to 50 percent of the loan amount, are required by the MFIs. The BoZ tolerates this situation during the transition period to regulation. With assistance from international donors, the BoZ recently started to develop a regulatory and supervisory framework for MFIs, which has yet to be finalized. As a first step in this direction, in September 2001, the BoZ established a special department to regulate MFIs. The MFIs themselves pressing the authorities to clarify the regulatory environment.

### **Unit Desa System in Indonesia**

The Indonesian rural finance program provides an interesting example of successful microfinance activities. In 1984, the state-owned bank for agricultural development, the Bank Rakyat Indonesia, established the Unit Desa (UD) or Village Bank system. Although the UD system forms an integral part of the Bank Rakyat Indonesia, it operates as a separate profit center, and its management has a high degree of autonomy in determining operational policies.

The UD system relies on village agents who have substantial local knowledge and have access to information about borrowers. These agents are used to monitor borrowers' actions and enforce loan contracts. In addition, borrowers are required to provide references from a prominent person in the local community. Most loans are provided without collateral on the assumption that local reputation is sufficiently important to provide a strong incentive against the borrower defaulting. Furthermore, clients are encouraged to make timely loan repayments through various incentive schemes. Interest rate rebates are offered for prompt loan repayments.

In addition to providing effective lending facilities, the UD has also developed a full range of other financial services. Foremost among these are its flexible savings services. These services offer convenient banking hours, a friendly interface, unconstrained withdrawals, and a range of incentives including bonuses and raffles.

The result has been that the UD system has achieved financial self-sufficiency and began generating significant operational surpluses within just a few years of its initiation. Even during the 1997-98 financial crisis, the UD system fared well, registering an increase in the volume of deposits and virtually no increase in delinquency rates on its loans. By 1999, it had 2.5 million active borrowers and some 20 million savings accounts (Seibel 2000). Currently, the UD system represents a nationwide network of around 3,700 small village banks.

Several factors contributed to the phenomenal success of the program:

- The establishment of the UD system aimed at the replacement of directed agricultural credits by broad-based credit for any kind of rural activities. The focus was not on targeting just poor people, but rather on increasing access to financial services more generally. However, the products developed by the UD system have enabled it to work profitably with both low-income and more conventional clients. As a result, there has been a significant increase in the use of its financial services by the poor.
- Deposit mobilization in the UD system has been especially successful, largely due to its flexible savings services. These plentiful and relatively cheap deposits have made the system largely independent of state or other donor funds.

- When branches are established, they are given a one-time capital subsidy to assist with equipment and set up costs. Ongoing operational subsidies were not an option that branch management could rely on.
- The UD system has stressed profitability: staff salaries and the salary structure have been designed to ensure that the loan officers follow-up on borrowers, with penalties for default; the base salary for staff is quite low, with large potential incentive payments; and prospects of promotion are linked to branch profitability.

### ***Banco del Trabajo in Peru***

Reforms in Peru provide an interesting example of how measures designed to increase the availability of information promoted financial market development, and of the “spill-over” of developments in one area to another. Following the reform of the system of VAT payments, particularly in the informal sector, the tax authority (SUNAT) approached the InterAmerican Development Bank for funds to put tax payment information on-line. The information collected proved useful to commercial banks, who identified timely tax payments as a key characteristic of attractive prospective borrowers. Since VAT is paid as a percentage of sales, it also allowed the banks to check the accuracy of sales data given by small borrowers, who rarely have formal accounting information to support their applications. Most banks in Peru now access the SUNAT database on a regular basis.

An active credit information system has evolved. Initially, one company took the SUNAT data and packaged it in a more easily accessible format. The interest in this information persuaded the Superintendency of Banks to compel the commercial banks to make available the credit histories of their customers. On the basis of this information, three credit bureaus have been established (US companies are partners with two of them, while the third is partly owned by a Chilean group). With strong demand for data on prospective borrowers from the banks, all three are expanding rapidly.

The availability of credit information has assisted some commercially-oriented microfinance lenders in Peru. In particular, the *Banco del Trabajo*, which is a commercial bank specialized on microfinance market, has proved so far to be successful.<sup>21</sup> The bank’s lending focuses almost exclusively on small borrowers; its average loan size is approximately US\$400; and its maximum loan size is US\$5,000. It makes about 20,000 loans per month. About half of its portfolio consists of consumer credit, and about half of microenterprise loans. Interest rates charged are between 40 and 50 percent on an annual basis (compared to a discount rate of 14 percent).

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<sup>21</sup> However, seven other commercial lending institutions attempted to enter the microfinance market and either withdrew or failed completely.

The *Banco del Trabajo* has developed computerized credit scoring models for both types of loans, which allow decisions on loan applications to be made within 48 hours of being received, and which appears to predict with a high degree of accuracy the likelihood of the loan being repaid. Default rates are claimed to be below 4 percent. Some of its loans, especially for real estate, are secured by collateral, but a significant proportion of its portfolio is unsecured. All loans include life insurance on the borrowers so that in the event of death, the loans can be repaid.

On this basis the bank has earned returns on equity and on assets, which are above the average for commercial banks in Peru, and has remained profitable through the most recent economic downturn. The success of the *Banco del Trabajo* shows that, by utilizing lending technology in the microfinance sphere, even small loans can be processed efficiently.

The *Banco del Trabajo* also intermediates between regions and income groups: its deposits emanate primarily from the urban areas, particularly Lima, while its lending is primarily in the rural areas. In addition, many depositors are from the middle and upper income groups, while borrowers are mainly in the lower income groups.

## **Chile**

One of the most innovative attempts to induce commercial banks to provide microfinance was initiated by the Chilean Social Investment Fund (CSIF) in 1993. Aware that this type of commercial lending to very small entrepreneurs involved substantial transactions costs, the CSIF devised a market-based subsidy to induce banks to lend to micro businesses. It established a twice-yearly auction in terms of which the commercial banks bid on a per loan subsidy. The winning banks are those that offer to make the largest number of micro loans for the smallest subsidy.

Initially, only one bank displayed interest and participated in the auction. Currently, four large banks with extensive retail operations have entered the microfinance arena, and make loans to about 100,000 customers with a total portfolio of about US\$100 million. When the auctions began, the subsidy was US\$240 on loans that averaged approximately US\$1,200 in size. By 2000 the value of the subsidy had been bid down to US\$80.<sup>22</sup> Approximately one third of the microenterprises in Chile are customers of these banks. For the banks, the microfinance portfolio represents less than 5 percent of their assets, which effectively pools their risks for this type of asset to very low levels. Christen and Rosenberg (2000) point out that “the Chilean banking superintendent needs to spend very little supervision time on the microloan portfolios, whose oversight is left to the controller’s office in the individual banks” (p. 18).

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<sup>22</sup> It is likely that the subsidy would be further reduced if there were no ceilings on interest rates that banks can charge.

One of the most striking features of the program is that, in contrast to most MFIs, the commercial banks offer a full range of services to their microfinance clients. These include not only standard lending and savings facilities but also credit and debit cards and even life insurance.

There are additional bank supervision issues that are relevant. In Chile, lending to enterprises require a 20 percent provision at the origination of the loan unless there is extensive documentation demonstrating the repayment capacity of the business. This requirement discourages lending to small and informal entities because of the cost of the documentation relative both to the size of the business and the size of the loan. However, to encourage commercial banks to enter the microcredit arena, the Bank Superintendent allows microlending to be classified as consumer lending, which does not require such extensive documentation.

### Asymmetric Information, Transaction Fees, and Support for MFIs

Asymmetric information between savers, borrowers, financial institutions and government, and significant fixed costs, which translate into transaction fees, are both prevalent characteristics of microfinance sector. The combination of the two phenomena can eliminate the optimality of lump-sum transfers as an instrument of welfare policy, and make support for the establishment of a financial institution a more efficient means to improve the wellbeing of less-advantaged groups in society.

Consider a continuum of initially identical individuals who live for two periods,  $t = 1, 2$ . For simplicity and to concentrate on the issue of intertemporal smoothing rather than substitution, it is assumed that the individual has an additively separable, risk averse utility function dependent on consumption  $c_t$  with zero rate of time discount:

$$U = U(c_1) + U(c_2), U' > 0, U'' < 0.$$

In each period an individual receives income  $y_t$ , which comprises a fixed base income  $\bar{y}$  and a random term  $e_t$ , such that  $e_1 = -e_2$ . Thus, the shock, whether positive or negative, is purely temporary and fully offset the next period. For simplicity, it is assumed that the random shock is uniformly distributed. In the absence of time discounting, one can assume that half the positive shocks occur in the first period and half in the second, and without loss of generality one can normalize the problem such that the random shock is distributed over  $[0,1]$ . Then individuals can be ordered by increasing  $e$ , which term can be used as an index, and time subscripts can be dropped.

In the absence of a financial institution, individuals have no means to save or borrow, and therefore consumption equals income. Hence, the utility of individual  $e$  becomes

$$U_e = U(\bar{y} + e) + U(\bar{y} - e).$$

Now introduce a microfinance institution (MFI) that offers to receive savings from those who enjoy a positive shock in the first period, and to lend to those who suffer a negative shock. In the second period, when individuals suffer the reverse shocks, the original savers can use their deposits at the bank to make up for their low income, and the borrowers can repay their loans. Again to concentrate on intertemporal smoothing, it is assumed that the rate of interest is zero, but the MFI charges a fee of  $f$  each period from each of its clients, independent of the size of borrowing or saving, to cover its fixed costs. Some will decide, after observing their individual shock  $e$ , to incur this transaction cost and save  $s$  in one period and dissave (borrow) the same amount in the other. Their utility becomes

$$U = U(\bar{y} + e - s - f) + U(\bar{y} - e + s - f).$$

It is easy to verify that the optimal choice of  $s$  is such as to just offset the shock  $e$ , fully smoothing consumption. Hence, utility for those participating in the financial system is

$$U = 2U(\bar{y} - f).$$

Only those who observe a sufficiently large individual shock will choose to bear the fixed cost. If  $f$  is not too large, there will exist a shock  $e^*$  such that all individuals suffering a greater shock will use the financial system to smooth consumption, and those suffering a smaller shock will not. The border is that point where the utility of variable consumption is equal to that of smooth consumption at a level reduced by the transaction fee, that is,

$$U(\bar{y} + e^*) + U(\bar{y} - e^*) = 2U(\bar{y} - f). \quad (1)$$

Total welfare is then

$$\begin{aligned} W &= \int_0^{e^*} (U(\bar{y} + e) + U(\bar{y} - e))de + \int_{e^*}^1 2U(\bar{y} - f)de \\ &= \int_0^{e^*} (U(\bar{y} + e) + U(\bar{y} - e))de + 2(1 - e^*)U(\bar{y} - f). \end{aligned} \quad (2)$$

The MFI has to cover fixed costs  $F$  in each period through its uniform transaction fee on the  $(1 - e^*)$  of the population who are its clients. Thus,

$$f = \frac{F}{1 - e^*}. \quad (3)$$

Consider first the marginal effect of universal income support in both periods, which raises  $\bar{y}$  for everybody at all times. Such a uniform lump-sum transfer may be the only form feasible: if the government does not know or cannot verify who receives a positive shock in which period, it cannot target its income support to those who are currently most needy.<sup>23</sup> The effect on welfare is

$$\begin{aligned} \frac{dW}{d\bar{y}} &= \int_0^{e^*} (U'(\bar{y} + e) + U'(\bar{y} - e))de + 2(1 - e^*)U'(\bar{y} - f) + \\ &\quad (U(\bar{y} + e^*) + U(\bar{y} - e^*) - 2U(\bar{y} - f)) \frac{\partial e^*}{\partial \bar{y}}, \end{aligned} \quad (4)$$

where by equation (1) the last term in brackets on the right-hand side is zero.

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<sup>23</sup> It will be convenient to say that this support is provided by government, but it might come from an NGO or another donor.

Consider instead the provision of support to the MFI to cover part of its fixed costs, which in turn will lead it to reduce transaction fees. Perhaps the bank receives a capital grant, that is invested and the returns used to cover part of the fixed costs. The effect on welfare can be evaluated by considering the negative of the marginal effect of an increase in fixed costs  $F$ :

$$-\frac{dW}{dF} = 2(1 - e^*)U'(\bar{y} - f)\frac{\partial f}{\partial F} - (U(\bar{y} + e^*) + U(\bar{y} - e^*) - 2U(\bar{y} - f))\frac{\partial e^*}{\partial F}.$$

Since the last term in brackets on the right-hand side is again zero, and using equation (1), the expression reduces to

$$-\frac{dW}{dF} = 2U'(\bar{y} - f)\left(1 + \frac{F}{(1 - e^*)^2} \frac{\partial e^*}{\partial F}\right). \quad (5)$$

The difference between (5) and (4) is

$$\begin{aligned} -\frac{dW}{dF} - \frac{dW}{d\bar{y}} &= 2U'(\bar{y} - f)\left(1 + \frac{F}{(1 - e^*)^2} \frac{\partial e^*}{\partial F}\right) - \int_0^{e^*} (U'(\bar{y} + e) + U'(\bar{y} - e))de - 2(1 - e^*)U'(\bar{y} - f) \\ &= 2e^*U'(\bar{y} - f) - [U(\bar{y} + e) + U(\bar{y} - e)]_0^{e^*} + \frac{2U'(\bar{y} - f)F}{(1 - e^*)^2} \frac{\partial e^*}{\partial F}. \end{aligned} \quad (6)$$

The first and last terms on the right-hand side of (6) are clearly positive. The definite integral on the right-hand side is negative due to the concavity of the utility function, which is implied by the assumption of risk-aversion, and enters with a negative sign. Hence, the difference (6) is always positive, and support for the financial institution to reduce transaction fees is superior to blanket income transfers.

This result depends equally on the assumptions of asymmetric information and important transaction fees. If the government knew who was suffering a bad shocks in each period, it could provide income smoothing itself, even for those experience a minor disturbance. The government could do even better if it could know the magnitude of these shocks. Supporting the MFI makes no such informational demands, because individuals are making choices for themselves on how much to save or borrow, or not to go to the MFI at all, based on their specific circumstances. Likewise, direct transfers would be more advantageous if the MFI did not charge a flat transaction fee, but rather made fees proportional to transaction volume. With pro rated fees that are not too high, everyone would make use of MFI services, and any direct transfers received could be used to equalize marginal utility optimally across periods. Fixed transaction fees ensure that a portion of individuals do not use MFI services, and therefore they have relatively low marginal utility that varies from period to period. Support for the MFI ensures that those with the highest marginal utility get the benefit, and helps more individuals to afford to use the MFI.

It has been assumed that individuals suffering a negative shock in the first period can borrow for acknowledged consumption purposes, which may be too much to expect of an MFI dealing with very poor segment of society. However, it can be shown that under some conditions, support for the financial institution can be superior to lump sum transfers to all even if borrowing is not possible. The advantage of supporting the financial institution may increase in a multi-period model where eventually everyone has a chance to save; borrowing constraints should be less important if most people have some reserves.

### Collateral, Moral Hazard, and Support for MFIs

The model presented above concentrated on the role of MFIs in facilitating consumption smoothing even where fixed costs and the associated transaction fees are high. The MFI did not face any risk in lending or accepting deposits. Yet, other prevalent features of the environment faced by microfinance institutions are the uncertain payoff of investments, the difficulty of monitoring how borrowers are using funds, and the lack of collateral available to potential borrowers. These features can combine to create credit rationing, under which some worthwhile projects are left unfunded. There may then be scope for public policy to improve the equilibrium.

We consider a simplified version of the model of Holmstrom and Tirole (1997). The world consists of individuals or enterprises that seek to finance investment projects, an MFI that might provide financing, and alternative investments that define the MFI's opportunity cost of lending. The central issue of the model is that the individuals who are potential entrepreneurs have to provide collateral so as to reassure the MFI that they will not misuse borrowed funds.

Each investment project, the cost of which is normalized to unity, yields a return  $R > 1$ . However, projects are risky and yield nothing if they fail. Some, relatively safe projects have a high probability  $p_H$  of success, while other, riskier projects have a low probability  $p_L$ . However, a riskier project provides a private, inalienable benefit  $b$  to the individual undertaking it. Perhaps the individual spends some of the project capital on consumption, or invests in another project the proceeds of which are inalienable, or slacks and enjoys leisure.<sup>24</sup> The alternative investment available to society yields a return  $\gamma$ . It is assumed that

$$p_H R - \gamma > 0,$$

so the less risky projects are certainly worth undertaking.

The investment projects can be undertaken by individuals who are each endowed with assets  $A$ ,  $A \in [\underline{A}, \bar{A}]$ . To make the problem interesting,  $\bar{A} < 1$ , so that all projects need financing. An individual with assets  $A$  will need a loan of  $L_A = 1 - A$  to undertake the project. In addition, it will be convenient to assume that  $\underline{A} > 0$  and that individuals are uniformly distributed over the range.

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<sup>24</sup> One client of Grameen Bank in Bangladesh reported borrowed money to buy a cow, but in fact gave some of the money to her husband and used the rest to improve her house. She would show Grameen staff a neighbor's cow to convince them that the loan had been used for the intended purpose. (*Wall Street Journal*, November 27, 2001, page A8).

The MFI that lends to finance projects will demand a return  $R_M$ . This return is set so as to ensure that individual borrowers prefer to undertake the safer project, which condition requires that

$$p_H(R - R_M) \geq p_L(R - R_M) + b, \quad (7)$$

so a high probability of net return  $(R - R_M)$  is better than a low probability of obtaining that return plus the private benefit of the riskier project. At the same time, the MFI must achieve an adequate return on the loan. If the MFI requires an expected return of  $\beta$ , a loan to finance the project of someone with assets of  $A$  will be made if and only if

$$p_H R_M \geq \beta(1 - A). \quad (8)$$

Equations (7) and (8) together imply that the MFI will lend only to individuals with assets of at least  $A^*$ , where  $A^*$  is given by

$$A^* = 1 - \frac{p_H R}{\beta} + \frac{p_H b}{\beta(p_H - p_L)}, \quad (9)$$

which is assumed to lie in the range  $(0,1)$ . It is easy to establish that the aggregate net benefit to society of the projects undertaken is

$$Y = (\bar{A} - A^*)(p_H R - \gamma), \quad (10)$$

and that the total volume of lending is

$$L = \bar{A} - \frac{\bar{A}^2}{2} - A^* + \frac{A^{*2}}{2}. \quad (11)$$

The bank's balance sheet consists of lending  $L$  on the asset side and capital  $K$  plus borrowed funds  $F$  on the liability side. If the borrowed funds cost  $\gamma$ , and the bank makes zero profits, the expected return  $\beta$  on the loan portfolio must be such that  $\beta L = \gamma F$ . Then, by the balance sheet constraint,

$$\beta = \gamma \frac{L - K}{L}. \quad (12)$$

Consider first the marginal effect of universal transfer  $\tau$  to all individuals from government or another donor. Such a uniform lump-sum transfer may again be the only form feasible if the government does not know or cannot verify who has a project. For simplicity, attention will focus on the case where the bank has zero capital, so  $\beta = \gamma$ . From equation (10), the effect on welfare is

$$\left. \frac{dY}{d\tau} \right|_{K=0} = p_H R - \gamma, \quad (13)$$

since  $A^*$  is unaffected.

Consider now the effect of a capital injection into the bank. Again using (10) and starting from zero capital, welfare increases by

$$\left. \frac{dY}{dK} \right|_{K=0} = -(p_H R - \gamma) \left. \frac{\partial A^*}{\partial K} \right|_{K=0}. \quad (14)$$

differentiating equation (9) and using (11) and (12) yields

$$\frac{\partial A^*}{\partial K} = -\frac{p_H}{\gamma(L-K)^2} \left( R - \frac{b}{(p_H - p_L)} \right) \left[ L - K \frac{\partial L}{\partial K} \right],$$

so

$$\left. \frac{\partial A^*}{\partial K} \right|_{K=0} = -\frac{p_H}{\gamma L} \left( R - \frac{b}{(p_H - p_L)} \right). \quad (15)$$

Equations (9) and (12) imply that

$$A^*_{K=0} = 1 - \frac{p_H}{\gamma} \left( R - \frac{b}{(p_H - p_L)} \right),$$

so that, and using (15), equation (14) can be written

$$\left. \frac{dY}{dK} \right|_{K=0} = (p_H R - \gamma) \frac{1 - A^*_{K=0}}{L_{K=0}}. \quad (16)$$

Since  $\bar{A} < 1$ , equation (11) implies that

$$L < 1 - \frac{\bar{A}^2}{2} - A^* + \frac{A^{*2}}{2} < 1 - A^*.$$

It follows that  $1 - A^*_{K=0} > L_{K=0}$ , and comparing (13) and (16)

$$\left. \frac{dY}{dK} \right|_{K=0} > \left. \frac{dY}{d\tau} \right|_{K=0},$$

so the capital support for the MFI is unambiguously superior to a general income transfer to potential entrepreneurs. A lump-sum transfer allows some additional individuals to post the necessary collateral to get loans and finance projects, but much of the transfer goes to individuals who have no hope of undertaking a project. A capital injection into the MFI ensures that only those with bankable projects benefit, and so more additional projects are undertaken. Crucial to this result is the combination of moral hazard, which creates the need for collateral and implies that not all worthwhile projects are financed, and asymmetric information such that the government or other donor cannot target transfers to those with marginally financeable projects.

This model illustrates two other features that are frequently encountered in the activities of microfinance institutions. First, an MFI will typically be unwilling to lend to the poorest, and support for the MFI does not usually benefit the very poor. Support for a lending MFI may at best help those who already have some assets but not quite enough to qualify for a loan under existing conditions. Second, lending to the poor may be risky, and even if projects have a positive expected payoff, many will fail and eliminate the few assets accumulated by the individuals concerned. Both features lead to the implication that support for an MFI may increase income dispersion among the poor.

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