

Household Access to Finance: Poverty Alleviation and Risk Mitigation

OVER THE LONG TERM, ECONOMIC GROWTH HELPS REDUCE POVERTY and can be expected to lift the welfare of most households. This chapter returns to the questions first raised in chapter 1: Well-functioning financial systems contribute to growth, but do poor households benefit proportionately from financial reforms that strengthen the economy generally? To what extent is an emphasis on financial sector development as a driver of growth consistent with a pro-poor approach to development? Or could the deepening of financial systems lead to a widening of income inequalities? Must poor households and microentrepreneurs have direct access to financial services for there to be meaningful poverty reduction? What techniques are most effective in ensuring sustainable provision of credit and other financial services on a small scale?

This chapter reviews the findings of recent research on these questions. Although several theoretical models have highlighted the risk that selectively increased access to credit could worsen inequality, the empirical evidence does not seem to bear out this risk. Instead, available evidence suggests that a more developed financial system tends to reduce inequality in the long run. That is not simply because microfinance could help the poor directly—indeed the evidence from microstudies of favorable impacts from direct access of the poor to credit is not especially strong. The conclusions of studies using calibrated general equilibrium models, specific policy experiments, and econometric analysis of cross-country data tend to be more positive than are those of the microstudies.

These studies alert us to the likely importance of indirect effects in explaining the relationship between financial development and income inequality. These effects are well tracked in the general equilibrium models discussed below, which show that better financial access for

The empirical evidence suggests that financial sector development is consistent with a pro-poor approach to development—

—but some of the most important links may be indirect

nonpoor entrepreneurial households has a strongly favorable, indirect effect on the poor. These findings imply that for financial development to have maximum impact on pro-poor growth, the focus should be broadened from improving finance for the poor to improving finance for all. That is particularly true in many developing countries, where large segments of the middle class are still among the financially excluded, as was discussed in chapter 1.

Access can be provided by a range of institutions

Delivering broader access is the task of a growing array of financial institutions, including specialized microfinance institutions (MFIs), cooperatives, and savings banks. The techniques they use to reach a wider clientele, while controlling both risks and operating costs, are evolving, as is their use of information and communication technology. This chapter reports on recent research that has thrown much light on the relative importance of different obstacles to improved access at the micro level and on the techniques that work well, particularly given the recent trends of globalization and technological advances.

Finance, Inequality, and Poverty

At the outset, it is not immediately obvious that expanding access to financial services will reduce inequality. After all, the successful microentrepreneur who manages to get financing for her ideas will experience an increase in income that her neighbor does not. Indeed, the more successful she becomes, the wider the income gap would be. This increase in income inequality is what is predicted by some of the theories discussed in chapter 1. At the same time, giving people a wider set of growth opportunities through increased access to finance should eliminate inequities caused by barriers to such access. At the end of the day, the net result of greater financial access on measured inequality will be an empirical issue, and it is one on which there is a considerable body of recent research.

Theory suggests that greater financial access could raise income inequality in the short term—

Theoreticians have developed simple, stylized models to analyze these questions. Imagine a world in which individuals, differing in their wealth and entrepreneurial skills, must choose between subsistence farming, wage work, or entrepreneurial endeavor. Without access to external finance, the amount of investment an entrepreneur has to start is limited to her wealth. Start-up costs will often be too large to allow poorer or less-skilled individuals to become entrepreneurs, so they will remain

subsistence farmers or work for a wage if it is high enough. Introducing a banking sector into such a world allows skilled entrepreneurs to borrow to finance setup costs. Although such a stylized world is far from the complex reality of even the very poor in developing countries, it offers a glimpse of the range of possible impacts on growth, inequality, and welfare that can come from increasing access to finance. But the size and even the nature of these impacts depend on the magnitude of, for example, the behavioral responses, the distribution of skills and wealth, and the productivity of labor and capital. Is it possible to derive realistic estimates of the size of these various parameters from what is known about the economic decisions of actual individuals and households? A paper by Giné and Townsend (2004) attempts to do just that. Drawing on data from a collection of surveys of Thai households, stretching from 1976 to 1996, the authors use information about wealth, wage rates, financial transactions, and occupational choices to estimate some of the model's parameters; they calibrate other parameters to help the model fit the evolution of Thai growth and savings rates. The authors then use this model to simulate how increasing the share of households with access to credit affects entrepreneurship, employment, wages, and ultimately growth and income distribution.

Giné and Townsend compare the evolution of growth and inequality in the model with the actual development in the Thai economy and show that financial liberalization and the consequent increase in access to credit services can explain the fast GDP per capita growth in the Thai economy during the period, but they also initially increase income inequality. Underlying these developments are occupational shifts from the subsistence sector into the intermediated sector, that is, the sector with access to credit and accompanying changes in wages. Net welfare benefits of increased access are found to be substantial. Although they are concentrated disproportionately on a small group of talented, low-wealth individuals, who without credit could not become entrepreneurs, a wider class of workers also benefits because eventually wage rates increase as the new entrepreneurs use their newfound access to credit to build their companies. Savers also benefit in the form of higher interest paid on their savings. But there are also losers; these are former entrepreneurs who lose because they have to pay the much higher postliberalization wage rates.¹

When calibrated to fit Thai data on finance, growth, and inequality, the general equilibrium model analyzed by Giné and Townsend implies that the greatest quantitative impact of financial deepening and financial

—which was evident in a study of the Thai economy—

—although the biggest impact was due to higher wages, which led to lower inequality in the longer run

access on income inequality comes through indirect labor market effects. Depending on initial conditions and the choice of parameters, these effects also result in a long-term decrease in income inequality that off-sets short-term increases coming from wealth gains of new entrepreneurs.

Finance and poverty— the micro evidence

Although calibrated theoretical models illuminate important aspects of the financial development process and provide illustrative quantification of these processes, their findings must be interpreted with care, because they do exclude other potentially important influences on growth and inequality.² A more direct approach to assessing the impact of access to finance is to zoom in on specific schemes or experiments in which some, but not all, households are eligible, and try to uncover the consequences both for beneficiaries and for those excluded. Unlike general equilibrium models and the aggregate regression methodology, discussed later, the microanalyses often focus on the direct effect of access to finance on the well-being of households with access, not always taking into account possible spillover and indirect effects that are highlighted in the general equilibrium analyses.

The benefits of microfinance may reflect selection bias—

The success stories of microfinance are well documented. But to be convinced of the overall benefit of microfinance, skeptics require careful differentiation between those changes that can be clearly attributed to financial access and those that might have happened anyway or result from other changes in the environment in which microfinance clients operate. In other words, is measurement of the true effect biased by a selection effect? For example, was it the more talented or otherwise well-endowed households that actually got the loans and might have prospered even in their absence? Or did the MFI target the village because it was particularly deprived and hence may have benefited even if its condition remains behind that of unserved villages? How specific is the impact to the village; can the same MFI scheme have the same effect in other villages? Numerous studies have attempted to find ways of answering these questions on the basis of particular features of the MFI design.

Debate surrounding even the most famous MFI, Bangladesh's Grameen Bank, illustrates how difficult this task has been. In a celebrated and very careful study of Grameen Bank and two other MFIs in Bangladesh, Pitt and Khandker (1998) exploited an exogenous eligibility criterion: to be eligible for credit from these three MFIs, households could not own more than one-half acre of land. All other things being equal, the difference in the fortunes of two households with just under

and just over half an acre could be attributed to the program. The sharp cutoff of the eligibility criterion seemed to allow the researchers to avoid a selection-effect bias. Using appropriate econometric techniques to correct in this way for selection, Pitt and Khandker found small but significant and positive effects of the use of credit on household expenditures, household assets, labor supply, and the likelihood that children attend schools.³ This effect was stronger for female program participants than for male participants. The study also found that labor supply response was surprisingly low compared with the response of assets and expenditures, suggesting that the effect of finance goes through productivity of labor, rather than the amount.

However, even this research has not gone unchallenged. For example, there is doubt that the half-acre rule was systematically and rigorously applied. If it was not, then its use to correct for selection bias is weakened. Khandker (2003), using panel data from a follow-up survey on the same group of borrowers, was able to obtain more precise estimates by controlling for unobserved, but time-invariant borrower characteristics. His results suggest a substantially lower impact of credit than the original Pitt and Khandker study found.

Another opportunity to assess the impact of access to credit while avoiding selection bias was seized by Coleman (1999), who studied microcredit borrowers in northeast Thailand. He exploited the fact that six communities had been identified as future locations for village banks, and that there was a list of self-selected villagers who wanted to apply for loans once the banks were established. By comparing these borrowers-in-waiting with actual borrowers of existing banks in other villages, Coleman could reasonably hope to have corrected for the selection bias that would have resulted from simply surveying a random group in the not-yet-served villages.⁴ He found no significant impact of credit on physical assets, savings, production sales, productive expenses, labor, or expenditures on health care or education. In a similar study, Cotler and Woodruff (2007) compared small-scale retailers receiving loans from a Mexican microfinance lender with a similar group of retailers that had been selected to receive such loans in the future. They found a positive and significant effect of the microlending program on sales and profits only for the smallest retailers, but a negative effect on larger retailers' sales and profits.

A more direct way to avoid selection bias is to construct a genuine experiment in which the subjects and the control group are chosen randomly and thus create the necessary exogenous variation needed to

—and the empirical evidence is mixed

A field experiment using random selection criteria highlights the benefits of microcredit—

—but more research is
needed in this area

identify impact. Recently, Karlan and Zinman (2006a) persuaded a South African consumer lender to relax its risk assessment criteria for a randomly chosen group of barely rejected loan applicants. The random nature of the assignment of credit helps the authors to get around the problem of selection bias.⁵ Comparing the group of randomly chosen borrowers with the control group of marginally rejected applicants, Karlan and Zinman found that six to twelve months after the loan application, borrowers were significantly more likely to retain wage employment, less likely to experience hunger in their household, and less likely to be impoverished.

Further research, ideally using real experiments, is needed to convince the skeptics that access to microcredit really is good for the neighborhoods where it becomes established, as most well-informed observers and practitioners believe.⁶ It has to be said that the current systematic statistical research evidence on the benefits of microcredit is not yet overwhelming. The studies reviewed here were undertaken in very different institutional settings and with different credit products. Individual or household welfare is notoriously difficult to measure, which biases microanalysis against finding a positive effect of access to credit. More research is needed to assert whether there is a robust and positive relationship between the use of credit and household welfare, including moving out of poverty.

Several other studies have used cross-sectional household data to assess the impact of access to finance on households' consumption patterns, income prospects, and the decision to send children to school rather than using them as laborers in the household. Most of these studies, however, use proxy measures of access to finance such as durable assets, which can be used as collateral, rather than the direct measures used by the studies mentioned above. Survey data of this type for Peru suggest that lack of access to credit reduces the likelihood that poor households send their children to school, while studies for Guatemala, India, and Tanzania point to households without financial access as being more likely than households with more assets to reduce their children's school attendance and increase their labor if they suffer transitory income shocks. Survey data for Guatemalan microentrepreneurs show a positive effect of credit use on upward class mobility, allowing them to expand their businesses. Finally, consumption patterns of Indonesian households that live closer to the nearest BRI branch, the largest MFI lender in the country, show smaller or no effects from health shocks compared with households living farther away.⁷ Box 3.1 discusses the links between access to financial services and some of the Millennium Development Goals.

Box 3.1 Access to finance and the Millennium Development Goals

IN 2000, 189 NATIONS ADOPTED THE MILLENNIUM Declaration, specifying eight Millennium Development Goals, including eradicating extreme poverty by 2015. The other goals concern education (universal primary education), gender equality, health (reductions in child and maternal mortality and reversing the spread of AIDS, malaria, and other diseases), environment, and global partnerships. While access to financial services is not explicitly mentioned among these goals, both theory and numerous empirical studies, including many mentioned in this text, suggest that access to financial services is an important direct or indirect contributor to the achievement of most of the goals (Claessens and Feijen 2006; Littlefield, Morduch, and Hashemi 2003).

In the case of education and health, one important effect of access to financial services is through the income effect: better access to financial services improves incomes and therefore the possibility of obtaining health and education services, and at the same time it reduces the need to rely on children as laborers in the household. Allowing women direct access to financial services might improve their possibilities to become entrepreneurs, thus increasing their individual incomes, their chances

to become more independent, and their participation in family and community decision making. There is also an important insurance effect: better access to credit, savings, or insurance services reduces the need to use child labor as a buffer in the case of seasonal income fluctuations and transitory income shocks and allows consumption smoothing in the case of transitory income reductions resulting from health shocks. It also allows faster attention to health problems. Finally, there is an aggregate infrastructure effect, with more efficient financial institutions and markets allowing more private and public investment in the construction of schools and health facilities.

The links between access to finance and the goals of environmental stability and global partnerships might be less obvious and have not been researched very thoroughly. However, arguments can be made for such relationships, at least at the aggregate level. Ensuring environmental stability will require large investments in new technologies, and financial depth has shown to be conducive for capital reallocation across sectors. Finally, the goal of global cooperation will be hard to achieve without better functioning global financial markets.

To evaluate the effect of increasing financial access for households and microentrepreneurs, one has to look beyond the direct impact on the household or enterprise and assess the impact on the whole economy. That cannot be done through micro studies. In particular, even if the very poor do not themselves gain access to financial services, they may benefit substantially from increased employment and other opportunities resulting from the activities of less-poor microentrepreneurs whose access has improved. With large numbers of the nonpoor still excluded from access to credit, these systemic effects could include trickle-down effects for the poor from improved access for the nonpoor. However, they could also include perverse trickle-down effects: if only a subset of households in a village has access to credit or insurance to smooth consumption,

Finance, inequality and poverty—the aggregate evidence

**Financial development
reduces poverty through its
effect on overall growth—**

**—increases the income share
of the poorest quintile—**

that subset will bid up the price of nontraded goods when a negative shock hits the village, so excluded households will be worse off than if nobody had access to credit or insurance (Morduch 2006).

Chapter 2 has already discussed the evidence for a strong causal link between financial development, as measured by financial depth, and overall national economic growth. That chapter also identified improved access to finance by firms as an important channel through which this effect works. If income growth rates of the poor remain broadly in line with those of the rest of the population, aggregate economic growth will mean a reduction in absolute poverty as more households graduate beyond the poverty threshold (Ravallion 2001). Only a sizable fall in the income share of the poor could prevent aggregate economic growth from lowering absolute poverty.⁸ If growth reduces the absolute poverty count, it is said to be pro-poor in the absolute sense. Growth that reduces poverty by narrowing income differentials is said to be pro-poor in the relative sense. Recent research suggests that financial development generates pro-poor growth in both senses.

For example, Beck, Demirgüç-Kunt, and Levine (2007) look at cross-country data for varying periods during 1960–2005 to assess the relationship between financial depth and changes in both income distribution and absolute poverty. They work with a simple decomposition of the income growth of the poorest income quintile into mean per capita national income growth and the change in the share of the poorest quintile. A large body of literature has established that finance has a positive impact on GDP per capita growth; but what about the relationship between finance and changes in the income share of the lowest income quintile? The authors find a positive relationship between financial depth (as measured by the ratio of private sector credit to GDP) and the change in the share of the lowest quintile in total national personal income. Not only does a deeper financial system accelerate national growth, but it is associated with a faster increase in the income share of the poorest group. Indeed, almost half of the beneficial effect of financial deepening on average income of the poorest quintile comes from this improvement in the (relative) distribution of income.

They also obtain similar results when they look at the changes in the Gini measure of income inequality. The relationship between financial development and the growth rate of the Gini coefficient is negative, suggesting that finance reduces income inequality. Not only are these findings robust to controlling for other country characteristics associated

with economic growth and changes in income inequality, but the authors also make an attempt to control for potential reverse causality, using historic variables such as national origin of the legal system to extract an exogenous component of financial development, as well as panel techniques that control for omitted variable and endogeneity bias.

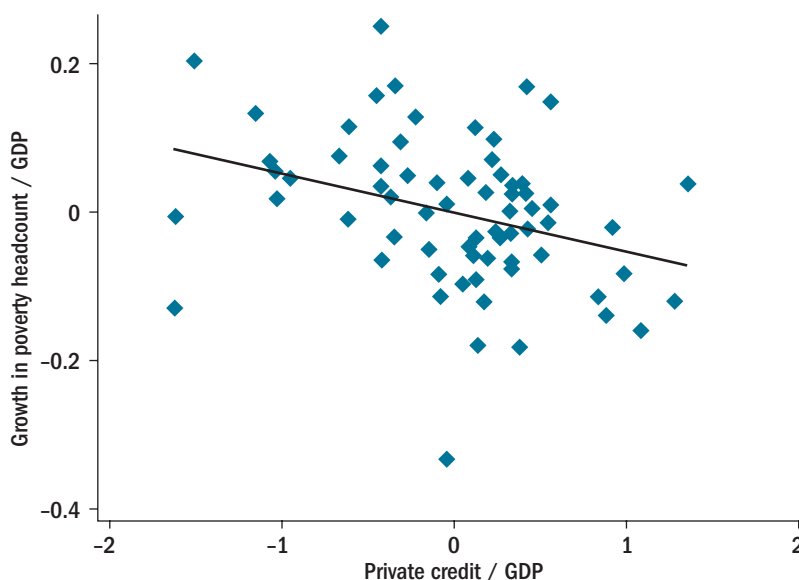
Although cross-country studies are subject to the caveats discussed in box 2.1, these findings are also consistent with the findings of general equilibrium models discussed earlier, in that financial development is associated with reductions in income inequality over the long run. Further evidence is provided by cross-country studies looking at the relationship between financial development and the level of income inequality. Li, Squire, and Zou (1998) and Li, Xu, and Zou (2000) find a negative relationship between finance and the level of income inequality as measured by the Gini coefficient, a finding confirmed by Clarke, Xu, and Zhou (2006), using both cross-sectional and panel regressions and instrumental variable methods.

In some countries, far more than the bottom 20 percent are poor when measured against the international standard poverty lines of \$1 or \$2 a day; in other countries almost nobody is poor by these demanding standards. To look more directly at the impact of financial development on absolute poverty, Beck, Demirgüç-Kunt, and Levine (2007) also estimate the change in the share of each country's population below the international poverty line that results from financial deepening. Again, they find a robust effect of finance on poverty alleviation—countries with higher levels of financial development experienced faster reductions in the share of population living on less than \$1 a day over the 1980s and 1990s (figure 3.1).

The economic impact is strong as well, as discussed in box 3.2. The relative importance of economic growth and the distributional impact of finance vary according to initial conditions: not surprisingly, the distributional impact is strongest for countries with relatively high per capita income and a very unequal income distribution, while the growth impact is strongest in relatively poor countries with a relatively equal income distribution.

This finance-poverty evidence is consistent with the findings of Honohan (2004), who showed that even among societies with the same average income, those with deeper financial systems have lower absolute poverty. These findings all point in the same direction: policies fostering financial sector development are not only pro-growth, but also pro-poor in both relative and absolute senses.⁹

—and lowers poverty

Figure 3.1 Financial depth and poverty alleviation

Source: Beck, Demirgüç-Kunt, and Levine (2007).

Note: This figure is a partial scatter plot of growth of poverty headcount vs. private credit to GDP, controlling for the initial level of poverty headcount, with data averaged over the period 1980–2005.

The cross-country evidence has the merit of broad coverage, but the quality of the data is uneven from country to country. Gini coefficients, quintile shares, and poverty headcounts are all subject to substantial measurement problems.¹⁰ The shortcomings of financial depth as a measure of financial development, let alone financial access, have already been pointed out. That the results obtained with aggregate data are stronger than the results of the micro studies cited earlier may point to the potentially greater importance of spillover effects, which are not captured by micro studies. But the stronger results may also reflect the difficulty of controlling for reverse causality in cross-country regressions. It is therefore important to seek additional types of evidence for systemic effects of improved financial access. Two policy changes that can be thought of as akin to natural experiments point in the same direction.

A natural experiment from Indian regulations shows the impact of improved access—

One experiment involved the Indian government's policy on bank branching, imposed between 1977 and 1990. In those years a commercial bank in India was allowed to open one new branch in a district that already had a bank presence only after it opened four branches in areas without a bank presence. This policy led to the opening of 30,000

Box 3.2 Financial depth and poverty reduction: how big is the effect?

JUDGING FROM THE REGRESSIONS ESTIMATED BY Beck, Demirgüç-Kunt, and Levine (2007), the relation between financial depth and poverty is not only causal and statistically significant but sizable. Even after account is taken of the effect of other control variables, almost 30 percent of the cross-country variation in changing poverty rates can be attributed to cross-country variation in financial development. Consider, for example, the fact that the share of the population in deep poverty (less than \$1 a day) fell by 14 percent a year in Chile between 1987 and 2000, whereas it rose at a similar rate in neighboring Peru. Chile has a much deeper financial sector (private credit is 47 percent of GDP) than Peru (private credit is 17 percent of GDP). The estimated regression implies that had Peru started with the same financial depth as Chile, its poverty headcount

would have grown a full 5 percentage points more slowly, so that by 2002, just 5 percent of Peru's population would have been living on less than \$1 a day instead of the actual share of 10 percent.

Such comparisons have to be interpreted with caution, though, for several reasons. The regression coefficients indicate marginal, not large, discrete changes; the variable measuring financial depth is only a proxy; omission from the equation of other unmeasured causal variables may be exaggerating the measured impact of financial depth. However, even if one is convinced that private credit is associated with faster poverty reduction, that is not an invitation to policy makers to expand credit freely: attempts to force the rate of financial deepening through lax monetary policy, for example, will not generate true financial development and will prove to be unsustainable.

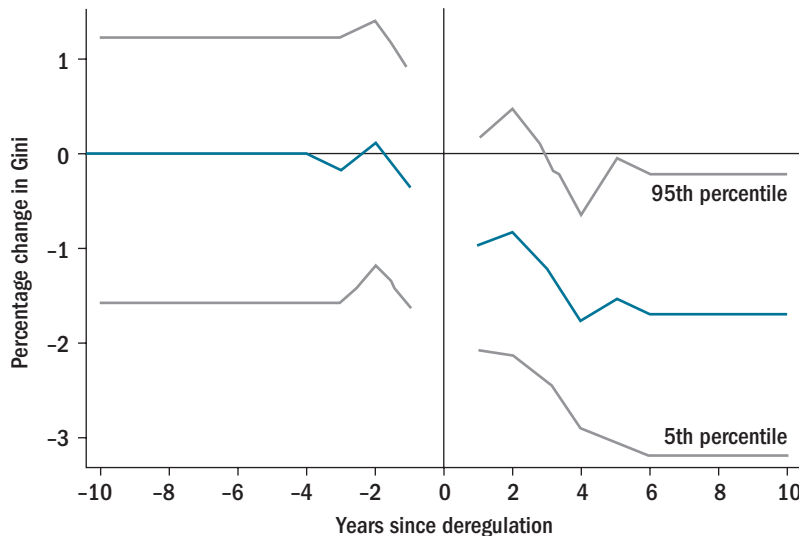
new rural branches over the period, as well as to an increase in deposit and credit volume in states with initially low levels of financial development. Burgess and Pande (2005) find that as a result of this branching regulation, nonagricultural output grew faster, and poverty declined faster, in states that started the period with a lower level of financial development, while the opposite was true before and after this period of regulation. Further, wages of agricultural workers grew faster during this period, while the wages of urban factory workers do not show such a time pattern. This seems to suggest that financial development—triggered by the branching regulation—led to faster reductions in poverty. The cost-benefit calculation of this policy, though, is a different matter (see box 4.3 in chapter 4) and suggests that the macroeconomic costs might have been significant.

Another natural experiment is offered by the branching deregulation implemented by different U.S. states over a 20-year period from the mid-1970s to the mid-1990s. Following Jayaratne and Strahan (1996), a large literature has evaluated the effect that easing restrictions on intra- and interstate branching had on income growth, banking sector structure, and entrepreneurial activity. The variation in timing of the

—as does one from the U.S. experience with liberalization

deregulation over a 20-year period and the fact that the deregulation was not driven by expectations of higher growth or higher entrepreneurial activity allow researchers to perform difference-in-differences estimates, thus holding constant unobserved state-level and year effects. Beck, Levine, and Levkov (2007) exploit the same quasi-natural experiment to assess the effect of branching deregulation on income inequality; they find that states see their Gini coefficient decrease by a small but statistically significant amount in the years after deregulation relative to other states and relative to their own level before the deregulation (figure 3.2). This effect eliminated about one-sixth of the overall increase in income inequality that the United States experienced over this time period. Over three-quarters of the inequality reduction after deregulation comes from changes in the distribution of income among wage and salary earners, with less than a fifth coming from distributional changes among self-employed proprietors, suggesting that the main effect of branch deregulation on income inequality in this case is not enhanced entrepreneurship, but rather the indirect effects of higher labor demand and higher wages.

Figure 3.2 Branch deregulation across U.S. states and income inequality



Source: Beck, Levine, and Levkov (2007).

Note: This graph illustrates a regression of the log of the Gini coefficient across U.S. states and over the years 1977 to 2003 on state and year dummies, other time-variant state characteristics and dummy variables indicating $t + x$ years, where t is the year of branch deregulation and x goes from -10 to +10. Gray lines indicate 95 percent and 5 percent confidence intervals.

Of course care must be taken in extrapolating findings from a system as developed as that of the United States, where most households have at least some access to formal financial services, in contrast to the situation in low- and middle-income countries. Nevertheless, these results are consistent with the results obtained by Giné and Townsend (2004) for the effects of financial liberalization in Thailand.

Despite the theoretical possibility that a selective expansion of access to finance could initially worsen income inequality, and methodological challenges notwithstanding (see box 3.3 for a summary), the balance of evidence from specific quasi-experimental events, estimation of general equilibrium models, and broad cross-country regressions is that financial development and improved access to credit tends not only to accelerate economic growth but to lower household poverty and inequality.

Much remains to be learned about the channels through which financial development affects income inequality and poverty alleviation. Is it through providing access to credit to a larger proportion of the population or through fostering more efficient capital allocation, that is, through fostering more competitive and open markets? Is it through depth or through broader access that finance helps reduce income inequality and poverty? Given the wide differences that exist in financial inclusion across countries, to what extent do these effects depend on the initial level of financial access and economic development?

Since the strongest evidence for a favorable finance-inequality relationship points to important labor market effects of financial deepening and broadening, one must consider whether direct provision of financial services to the very poor is the best way to use finance to help the poor. Indeed, improving access for small firms and for nonpoor entrepreneurial households can be a powerful mechanism for helping reduce poverty. It is easy to see that financing opportunities for the nonpoor in particular regions or among particular ethnic groups could help improve the functioning of labor and product markets and the efficiency of investment, leading to better employment opportunities for the poor in those regions as well.

The discussion so far has focused exclusively on the use of credit services, since that is the financial service the literature has focused on most extensively. However, credit is rarely the first financial service priority for very poor households. Access to savings and insurance services helps cushion income shocks and smooth consumption, while access to formal

In summary, improved access to finance reduces inequality and poverty—

—but the nature of the transmission mechanisms is unclear—

—with evidence suggesting that the indirect effects on poverty may be more important

Poor households need other financial services, not just access to credit

Box 3.3 Methodological challenges in analyzing the impact of financial access

BOTH THE TECHNICAL ADVANCES IN COMPUTING power and the availability of subnational and even household data have helped researchers move beyond cross-country regression analysis to assess the relationship between finance, growth, and inequality and thus overcome problems of endogeneity, heterogeneity of the relationship between dependent and independent variables across countries, and nonlinear effects. Some of these strategies use innovative historical instruments and panel data. However, even employing firm- or household-level data, be it within or across countries, does not by itself solve the identification problem of endogeneity and spurious correlations, as the debate between Pitt and Khandker (1998) and Morduch (1998) has shown. Identifying an exogenous policy change, preferably at different times across subnational units, overcomes selection problems by utilizing a difference-in-differences estimator that holds constant other confounding effects. Two such examples, the social banking experiment in India, and the branching deregulation in the United States, are discussed in the text.

However, such quasi-natural experiments are rare, and researchers have therefore also exploited general equilibrium models and household-level micro data to calibrate them. This technique has the advantage of being thoroughly based in theory and controlling for dynamic effects, unlike regression analysis. At the same time, its application is limited by the variables included in the theoretical models and by the availability of household data. While these structural models are promising in improving the understanding of the micro foundations of growth

and inequality, it is not always clear how much the insights from these stylized models rely on specific details of how the imperfections were modeled and whether the results are robust to these choices.

Another valuable approach is the use of controlled or natural experiments in specific countries or in specific locations, such as the one undertaken by Karlan and Zinman (2006a) in South Africa and others discussed here in the context of evaluating the impact of microfinance. Of course, natural experiments are scarce, and controlled experiments can be costly to implement and their results specific to their context. In addition, they necessarily measure partial equilibrium effects and, unlike aggregate studies, do not pick up spillover and indirect effects. Furthermore, many important policy issues with implications for financial access, such as regulation and supervision of financial institutions, involve country-level variation and do not lend themselves to randomization.

Finally, laboratory experiments work with potential clients or people with similar profiles and mimic different financial contract mechanisms. Experimental games have the advantage of allowing researchers to have even more control of events, but they also have the shortcoming of being a staged setting that might or might not be consistent with real life behavior.

Given that each methodological approach has its advantages and shortcomings, a robust research philosophy would try to identify the most important policy questions and to employ appropriate and feasible methods for addressing them.

payment services is increasingly important in market-based economies. This is an area that requires future research.

Having established the importance of access to finance, the next task is to consider what is the best way of reaching out to low-income households and microentrepreneurs to foster access to and use of credit, savings, and payment services. The following section discusses

institutional and product innovations to reach out to these customers traditionally excluded by the banking system.

Providing Financial Access to Households and Microentrepreneurs: How and by Whom?

The considerable success of the microfinance movement, both technically and in its ability to mobilize financial and political support, has focused attention on direct access to credit for poor people and especially for poor women. In what has been an accelerating revolution over the past few decades (Robinson 2001), specialized microfinance institutions have reached millions of clients, and many of them have achieved impressive repayment rates, especially when compared with the disappointing record of an earlier generation of development banks. Attention has also broadened to other types of financial institutions, such as savings banks, including postal savings banks, and financial cooperatives and credit unions that have also been catering to the financial needs of low-income households and microenterprises.

Now mainstream financial institutions are becoming interested in the market at the “bottom of the pyramid,” to use the term popularized by Prahalad (2004). At the same time, some of the stronger MFIs have secured banking licenses and offer a wider range of services to a broader clientele. Many have graduated beyond the need for sizable subsidies to ensure their financial viability, whereas others still seek subsidies to help keep the costs to the borrower to a minimum. There has been much experimentation in lending technologies as practitioners find the various formulas with which they began unduly constraining. These techniques included the use of various forms of mutual guarantee in small or large borrower groups (joint liability), and programs of progressively larger loan sizes as loans were repaid and new loans given (dynamic incentives). To attract savings, financial institutions of all sorts are using new methodologies, such as mobile branches, deposit collectors, and cell phone technology, and developing new products, such as commitment savings products and micro-insurance policies.

Against this background, a growing number of researchers has been using formal econometric techniques to assess quantitatively some of the key operational issues that face MFIs and other providers of financial services to small-scale users. The findings—several of them striking in

The growth of microcredit has attracted new players—

their precision—have used replicable statistical evidence that has either confirmed or questioned practitioner intuition. This section reviews some of the main findings in five areas of interest: the relative importance of transaction costs and two key information barriers, moral hazard and adverse selection, for outreach to low-income borrowers; the sensitivity of the demand for microcredit to the level of the interest rate charged; the relative effectiveness of group and individual lending; the complementary role of access to noncredit services; and the link between subsidies and outreach to the poor. While most emphasis is placed on credit, the discussion also highlights the importance of depository, insurance, and especially payments services. Throughout, the discussion emphasizes the potential effects of globalization and technological advances on access to financial services. It concludes with some observations on the likely welfare implications of targeting efforts to expand household access to the very poor, noting again that access for nonpoor entrepreneurial households can have a sizable antipoverty impact.

**—despite obstacles to
delivering credit to the poor**

As already discussed, the main problems in delivering credit are linked to risk management and the high transaction costs of processing, monitoring, and enforcing small loans, which increase break-even interest rates for these loans. The risks include those arising out of information asymmetries. These asymmetries can result from adverse selection, that is, the inability of the lender to distinguish between high- and low-risk borrowers, or from moral hazard, that is, the tendency for some borrowers to divert resources to projects that reduce their likelihood of being able to repay the loan and the inability of the lender to detect and prevent such behavior. Depending on the specific information asymmetry and the ability of potential borrowers to pledge collateral, lenders may try to use the interest rate or a combination of the interest rate and collateral as a screening and sorting mechanism (Bester 1985). If collateral is not available, lenders are forced to rely only on the interest rate, but in doing so, they risk excluding, or crowding out, safe borrowers. Indeed, under some circumstances lenders will prefer to keep the lending rate below the market-clearing level for fear of worsening adverse selection; that behavior in effect rations credit by nonprice means (Stiglitz and Weiss 1981). Even more borrowers will be rationed out if the high transaction costs of lending to them lead to break-even interest rates that are too high to make lending safe (Williamson 1987).

How relevant and important are these three factors—adverse selection, moral hazard, and high transaction costs—for credit rationing

of poor households and microentrepreneurs? The existing evidence points to moral hazard as the driving factor, with a less significant role for adverse selection. Although high transaction costs can also result in high repayment burdens, there is evidence of very high rates of return to investment by microentrepreneurs, which explains why some borrowers are prepared to pay very high interest rates.

Are the interest rates on microloans too high? Much of the microfinance revolution has been built on the premise that its clients can afford to pay high interest rates given very high marginal returns on capital. But measuring these returns is challenging. Using field experiments, de Mel, McKenzie, and Woodruff (2006) and McKenzie and Woodruff (2007) estimate capital returns to investment in microenterprises in light manufacturing and commerce in Sri Lanka and Mexico, respectively. The enterprises are given cash or equipment, depending on the outcome of a lottery, and this exogenous shock is used to compute the return to capital. They find returns of 5–7 percent per month in Sri Lanka and 20 percent or more in Mexico! While these returns might seem high—even unrealistically high in the case of Mexico—they are based on grants, not loans; are measured only over the short term; and increased capital by 25 percent on average. Thus, these returns might not be replicable over the long term. Nor does it follow that the microentrepreneurs would have pursued the same strategies if they had had loans instead of cash or equipment. Nevertheless, these estimates suggest that some microentrepreneurs are indeed able to pay the high interest charged by microfinance institutions, at least where these loan resources are being invested.

That is not to deny that high interest rates are costly for borrowers, especially poor ones. In their eagerness to emphasize the importance for the development of sustainable microfinance by removing constraining interest rate ceilings, some advocates may have overstated the insensitivity of borrowers to high interest rates. In contrast, Dehejia, Montgomery, and Morduch (2005), using data from a credit cooperative in Dhaka, and Karlan and Zinman (2007), using data from a South African consumer lender, both find rather high elasticities of loan demand with respect to interest rates, that is, loan demand decreases as interest rates increase. Emran, Morshed, and Stiglitz (2006) provide a theory to reconcile these empirical findings with practitioners' oft-repeated assertions that borrowers are insensitive to interest rates. They point to imperfections in the labor market, especially for women, and suggest that it is only for as long as these imperfections prevent women from entering the

High returns allow some microentrepreneurs to pay high interest rates—

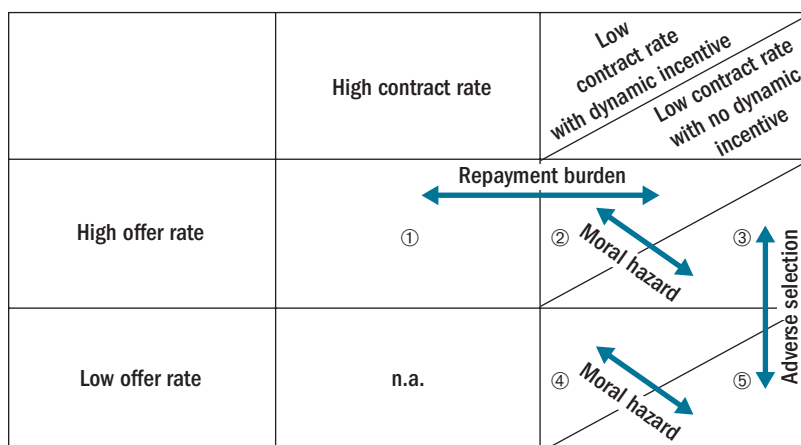
—but the demand for microcredit is interest-elastic

labor market that their demand for credit will be so interest inelastic. Curiously, the Bangladesh data suggest that the elasticity decreased (in absolute value) with the borrower’s income, whereas the South African data suggest the opposite. While MFIs in Bangladesh demanding higher interest rates to compensate for higher costs and risks may face problems reaching out to poorer clients, the South African lender does not seem to face these problems. These contrasting results might reflect differences between consumer and production credit or different institutional settings. Ongoing research is trying to shed more light on the interest rate elasticity of microcredit borrowers.

Moral hazard may be more important for default rates than repayment burden

One recent experiment in which interest rates were varied among a homogenous group of borrowers suggests that the repayment burden is the least of the obstacles the borrowers faced. This experiment points to moral hazard, including the inability of the lender to enforce repayment from willful defaulters, as the driving factor limiting outreach to the poor. Karlan and Zinman (2006b) used a randomized direct mail offer by a South African consumer lender to distinguish between adverse selection, moral hazard, and repayment burden, as illustrated in figure 3.3. Specifically, customers were sent credit offers with either

Figure 3.3 Testing for credit constraints in South Africa



Source: Karlan and Zinman (2006b).

Note: This figure illustrates the setup of the consumer credit experiment that Karlan and Zinman ran in South Africa to distinguish between repayment burden, adverse selection, and moral hazard.

a high or a low interest rate, and the response of customers to this offer helps to identify adverse selection, that is, the difference between ex ante high-risk and low-risk customers (difference between points 3 and 5 in figure 3.3). Some of the customers with the initial high offer rate then received a lower rate when they responded favorably to the offer, and the difference between customers with the same high initial offer rate (and thus the same ex ante risk profile) but different final contract rate helps identify default due to repayment burden of high interest rates (difference between points 1 and 2 in figure 3.3). Finally, some borrowers were offered the prospect of a repeat loan if they repaid their loan in time; the comparison between borrowers with and without this dynamic incentive allows identification of moral hazard, that is, incentives to repay (difference between points 2 and 3 and between points 4 and 5 in figure 3.3). Karlan and Zinman find strong evidence for moral hazard but evidence for adverse selection only for female borrowers and borrowers who had not borrowed from this lender before. The evidence for default due to repayment burden is weak. Quantifying the effect of moral hazard, they find that between 10 and 15 percent of default is due to moral hazard, with the remainder due to observable differences in risk across borrowers.¹¹

The entry of a Guatemalan MFI into a credit bureau offers another innovative experimental setup to distinguish between adverse selection and moral hazard and yields similar results to those in South Africa (de Janvry, McIntosh, and Sadoulet 2006). While this entry was initially not announced to borrowers, the subsequent staggered education of borrowers, who were organized in joint-liability groups, allowed the researchers to distinguish between moral hazard and adverse selection effects. Specifically, the initial effect on repayment of the announcement of the existence of the credit bureau helps isolate and identify moral hazard, that is, repayment incentives, as group composition is constant in the short run. Subsequent changes in group composition and the effect of those changes on repayment, on the other hand, can be attributed to adverse selection, that is, selection of lower-risk group members. The authors find that delinquency attributable to moral hazard declined 18 percent. Reductions in delinquency resulting from changes in adverse selection, that is, replacement of high-risk with low-risk group members, as measured over several loan cycles where groups can adjust their composition, are weaker, but still present. The most significant change in group composition was a large exit of women and corresponding large

Adverse selection problems might be more pronounced among female borrowers

entry of men, suggesting again that adverse selection problems might be more pronounced among female borrowers.

Summarizing, many microentrepreneurs are able to pay high interest rates given high returns on capital. Therefore, the high transaction costs associated with small loans, the resulting high interest rates, and thus the higher repayment burden do not seem to be obstacles to reaching poor households. Rather, outreach to these groups is impeded by the inability of poor borrowers to commit the use of loan resources to projects with a risk acceptable to the lender and by the inability of lenders to enforce repayment. The inability of lenders to distinguish between good and bad credit risks before making the loan is also an obstacle, but less so. The research reviewed so far, however, points to two techniques that can be used to overcome these barriers—joint-liability lending and dynamic incentives through repeat lending.

Joint-Liability Lending and Dynamic Incentives

Overcoming obstacles— joint-liability lending and dynamic incentives

The use of joint-liability groups is a traditional tool to overcome the hurdles of adverse selection, moral hazard, and monitoring and enforcement costs. Joint liability can reduce all three of these barriers to lending, but there are trade-offs (see Ghatak and Guinnane 1999 for an overview). By pooling borrowers that know each other well and making them jointly liable for each others' loan repayment, the lender effectively outsources the screening and monitoring function. Through assortative matching—safe (risky) borrowers will join with other safe (risky) borrowers—the lender can screen borrowers by the company they keep. Joint-liability lending reduces monitoring and enforcement costs and thus allows lower interest rates. These lower rates reduce the repayment burden and result in less credit rationing. Most important, lower monitoring costs and strong enforcement through social sanctions can reduce moral hazard problems in joint-liability credit contracts if borrowers decide cooperatively on project choices. However, joint-liability lending can also induce strategic default; if good borrowers see the prospect of future loans wane because other group members are not repaying their loans, they have fewer incentives to repay (Besley and Coate 1995). Further, joint-liability lending is not suitable where different members of the group have different borrowing needs.

Joint-liability lending was already being applied by German cooperatives in the 19th century. Introduced into the microfinance movement

Box 3.4 Testing impact with randomized control trials

MEASURING THE IMPACT OF NEW MICROFINANCE programs or products requires careful design because standard assessments comparing customers before and after introduction of a new program or product or a comparison between participants and nonparticipants suffer from two serious shortcomings (Goldberg and Karlan 2005). First, selection bias can occur if there is a correlation between the take-up decision of customers and other individual characteristics that explain the outcome variable. Further, dropouts can bias the comparison between program participants and nonparticipants. Second, such assessments suffer from a lack of a proper counterfactual, that is, how the same group of clients would have behaved without the new program or product.

To overcome these methodological challenges, researchers are increasingly using randomized experiments to assess new microfinance programs and products. The characteristics of these experiments can be summarized as follows. First, the evaluation has to be prospective; in other words, it has to start before the new product is introduced so that the changes induced by the product can be properly assessed. Second, to have a proper counterfactual, the evaluation should be based on comparison of a treatment and a control group, where only the first has access to the new program or product. Third, assignment to either group has to be random to

ensure that clients in both groups have the same characteristics; only then can the effects of the new program or product be isolated. Fourth, the researchers have to take into account two potential spillover effects: experiment spillover, where members of treatment and control groups find out about each other; and impact spillover, where the effects of the new program or product spread to people and areas beyond the treatment group.

Although they have limitations, carefully planned and executed impact evaluations are a powerful instrument both for individual financial institutions that want to assess the profitability and impact of new products and programs and for policy makers who want to assess which interventions are the most promising in reducing poverty. A significant shortcoming is the high costs of such evaluations, which prevent many MFIs from using them (Armendáriz de Aghion and Morduch 2005). In addition, the question of external validity—whether the results of the evaluation are applicable in different socioeconomic and institutional contexts—cannot be addressed with such experiments.

A final word of caution concerns the use of these impact evaluations for public policy or public resources. Because no counterfactual or alternative intervention is being evaluated, either in the financial sector or for nonfinancial interventions, one has to keep in mind the partial equilibrium aspect of these assessments.

in the 1980s by the Grameen Bank in Bangladesh, joint-liability lending quickly became popular with pioneer microcredit institutions. Given its limitations, however, many MFIs, including Grameen itself, have moved away from a pure joint-liability lending model and now also offer individual loans. The limitations of relying on just one lending model are also reflected in the results of recent field research, especially some studies that have made very effective use of randomized control trials (box 3.4).

How important are reductions in adverse selection, moral hazard, or monitoring and enforcement costs for the success of joint-liability

lending? Giné and others (2006) find in the setting of laboratory experiments in Peru that both the screening of group members before the loan is made and the monitoring of borrowers afterward have an important role in the success of joint-liability lending.¹² However, they also find that joint liability helps reduce moral hazard only when the group forms voluntarily. Using household data across members of more than 262 Thai joint-liability groups, Ahlin and Townsend (2007) find that informal sanctioning, thus ex post reductions in moral hazard, fits the data best in poor rural areas, while ex ante screening, thus reducing the risk of adverse selection, fits the data best in more affluent areas.

Joint liability can help reduce moral hazard when social connections are strong—

The importance of moral hazard reductions through joint-liability lending is confirmed with evidence from poor rural Peru, where Karlan (2007) exploited a natural quasi-random group-building process, where members were randomly assigned to groups rather than selecting their peer group members themselves. He finds that stronger social connections between group members (as measured by geographic proximity and common ethnicity) lead to better repayment and higher savings than for groups where social connections are weaker. Given the absence of peer selection in this group-building process, Karlan concludes that the better repayment behavior is attributable to reductions in moral hazard; in other words, joint-liability groups that were more socially connected were better able to prevent their members from diverting loan funds to risky projects or other purposes.¹³ He finds direct evidence that members of groups with better social connections have better knowledge of each other and are more likely to punish defaulters by cutting relationships; however, they are also more likely to forgive debt, suggesting that peers in these groups know how to distinguish between culpable or blameworthy default on the one hand, and bad luck on the other.

However, some evidence suggests that social ties can be too strong, leading to collusion and lower repayment. Ahlin and Townsend (2007) find evidence in their Thai data that stronger social ties, measured by more sharing between unrelated members of the groups and clustering of relatives, are associated with lower repayment performance. Similarly, Giné and others (2006) find in their laboratory experiment that communication between group members leads to higher default due to riskier investments.

—but group-based lending may not always be better than lending to individuals

Existing evidence thus clearly shows that group-based joint-liability lending can, but does not necessarily, lead to better repayment performance. Yet recent evidence has also shed doubt on the superiority of group-based lending vis-à-vis individual lending. In an experiment in the Philippines,

some of the borrower groups were randomly converted from group liability to individual liability. Giné and Karlan (2006) found that conversion to individual liability groups does not change the repayment rate for preexisting borrowers but does attract more borrowers. Perhaps surprisingly, the new members have closer links to the other individual liability borrowers, suggesting that fear of peer pressure might have been limiting growth of existing joint-liability groups. It could also be that the joint-liability nature of the program was keeping the good-risk borrowers out of the program. Ongoing research is trying to distinguish between new microcredit clients that are randomly assigned to either individual or joint-liability lending.

Some observers have criticized MFIs for making larger loans to individuals, complaining that the MFIs are drifting from their focus on the poor. Cull, Demirgüç-Kunt, and Morduch (2007) examined data from 124 MFIs in 49 countries and find that both group- and individual-based lending institutions are able to earn profits while serving the poor, but a trade-off between profitability and outreach emerges when serving the very poor.¹⁴ Individual-based lenders have the highest average profit levels but perform less well on measures of outreach.

To summarize, joint-liability lending can help overcome barriers to reaching poor households and microentrepreneurs and has shown its usefulness in many different settings, but it also has its limitations. As members' borrowing needs diverge over time, conversion to individual lending might be necessary. Further, diverging borrowing needs might also destroy screening and monitoring incentives and may create tension among borrowers, as those borrowing little are still liable for the larger amounts of their peers. Finally, joint liability can result in collusion and increased, rather than reduced, risk taking.

Dynamic incentives, such as the promise of repeat lending, have been another mechanism to overcome moral hazard in lending relationships with risky and high transaction cost borrowers, as shown by Karlan and Zinman (2006b) in the context of their work with a South African consumer lender. Similarly, Giné and others (2006) find that giving borrowers the prospect of repeat loans reduces both the riskiness of investment and improves repayment performance. The introduction of progressive lending, that is, increasing loan amounts over time, can further increase the opportunity costs of default for borrowers, thus reducing loan delinquency (Armendáriz de Aghion and Morduch 2005).¹⁵ The interaction of joint liability and repeat lending, however, can also backfire; if borrowers see the prospect of future loans wane

Overcoming moral hazard through the promise of repeat lending—

Box 3.5 Informal finance

INFORMAL FINANCE IS NOT THE SUBJECT OF THIS report, which deals essentially with formal finance. To be sure, informal financial services still do represent a significant part of the financial dealings of poor people, especially but not only in developing countries, although reliable quantification on this point is not readily available. An extensive literature discusses this area (see Rutherford 1998).

The reason for focusing on formal finance is the underlying premise that formal, modern finance can potentially provide most of the financial services needed by poor people with greater efficiency and security than informal finance (see box 2.2). Formal finance has not yet superseded informal finance largely because the current working practices of formal financial intermediaries are not adapted to providing services in small packets at a cost that makes them affordable to the poor. Technology—financial and physical—as well as an improved overall infrastructure, can help bring costs down to realistic levels, but only if the management of formal institutions chooses to focus on the potential for doing profitable business with what C. K. Prahalad has termed the “bottom of the pyramid.” Prahalad’s image conveys the potential volume of small-scale business, which can make it attractive even if the setup costs (required to achieve low unit costs) are high.

At the same time, many features of informal finance convey lessons that can and have been successfully adopted and adapted by formal and semi-formal intermediaries. Scholars have in particular been fascinated by the durability of rotating savings and credit associations (ROSCAs), one of the most striking forms of informal financial intermediary (see, for example, Ghatak and Guinnane 1999). Regular payments by each member and assignment of the collected resources to one member help overcome savings and credit constraints, reduce problems

of cash management and storage, and allow members to realize large investments, be they for consumption or business purposes. The use of social capital and peer pressure that holds ROSCAs together and reduces the threat of default by individual members has important parallels to the use of joint-liability lending by many MFIs. But ROSCAs cannot hope to match the scale of resources of the formal financial system, with its ability to pool risks and intermediate over extended periods and across geographic areas.

Hawala and other ethnically based international money transfer businesses have achieved astonishing efficiencies for payments along certain migration corridors. Corresponding small payments made through the banking system’s procedures have generally been more costly and slower, though of course the banking system’s procedures are scalable and the network of correspondents is essentially universal, as are the networks of the major formal international money transmission companies. Funeral insurance arrangements are a common product of community-based informal insurance associations, especially in AIDS-plagued Africa.

The high cost of credit from informal moneylenders is often cited as a main reason why the microfinance revolution can bring benefits to the poor (Robinson 2001). The possibility of providing alternative formal financial solutions for those who might otherwise fall into the trap of debt bondage is for many a sufficient reason to emphasize the need for improving the reach of the formal financial sector. Yet unregistered (and therefore usually) illegal moneylenders continue to operate in deprived neighborhoods of even the richest economies (as is discussed in chapter 4). The shortcomings of informal finance mean that it will fade in importance as economies and financial systems mature and improve in their outreach.

as other members fail to repay, their incentives to repay decrease. The Ecuadorian microlender Childreach is an example: as rumors of its impending failure spread, the microlender faced a rapid increase in loan delinquency (Bond and Rai 2002).

Other mechanisms linked to the microcredit movement have not been thoroughly assessed yet. Specifically, frequent (weekly, for example) and regular repayments are said to impose discipline on borrowers. On the one hand, repayment schedules that are too frequent might limit the investment opportunities of borrowers and are useful only for borrowers with several diversified income sources. Some observers even claim that frequent repayment schedules are paid out of savings rather than from returns on investment (Rutherford 1998). In those cases, providing credit services is only a second-best solution, and the first-best would be the provision of savings services for the poor. On the other hand, frequent repayment might also be a tool of MFIs to use better informed informal lenders, inasmuch as some borrowers have to rely on these moneylenders to help them make weekly payments (Jain and Mansuri 2003).

Some other microlending techniques include repayment in public, forced savings, notional collateral, and targeting of women. Public repayment is said to increase social pressure and the threat of stigma, while at the same time reducing transaction costs for lenders (Armendáriz de Aghion and Morduch 2005). The requirement to keep a certain fraction of the credit as savings with the microfinance institution has often been cited as a success factor, although the practice has not yet been thoroughly evaluated. The use of assets with “notional” rather than resale or salvage value, such as refrigerators and televisions, has often been quoted as increasing the leverage of the lender over the borrower and augmenting payment discipline. Finally, the targeting of women by microlenders has been indicated as a factor for commercial success as well as enhanced social benefit (box 3.6).

Most of the microcredit movement and literature has focused on production credit for household enterprises or microenterprises. But even if lack of financing is fundamentally the only constraint for poor micro-entrepreneurs, as is asserted by Muhamed Yunus, founder of Grameen Bank and winner of the 2006 Nobel Peace Prize, they do also face numerous practical challenges. Hence some MFIs have decided to offer complementary extension services, such as training or health services.

Are they wise to do so? There could be economies of scope in providing these different services, but there might also be benefits of specialization.

—frequent repayment
schedules—

—and public repayment

Looking beyond microcredit—

Box 3.6 Microfinance and gender

THE MICROCREDIT MOVEMENT HAS FOCUSED on women, with some programs providing services exclusively for women and others having a majority of female borrowers. Why this focus on women?

First, women traditionally face greater access barriers to formal banking services and are thus also credit-constrained to a greater extent than men. In some countries, women are legally barred from opening accounts or applying for credit. In most of the developing world, women would not be deemed creditworthy since they do not hold formal sector jobs or the titles to their houses. Many restrictions faced by the poor in the developing world are thus even more exacerbated for women. As discussed by Emran, Moshed, and Stiglitz (2006), women also have lower opportunity costs if they do not hold formal sector jobs and are thus more likely to pay the high interest rates required for sustainable microfinance.

Second, experience has shown that repayment is higher among female borrowers, mostly due to more conservative investments and lower moral hazard risk. The lower moral hazard risk might stem from lower mobility and higher risk aversion. Given that moral hazard seems to be the constraining factor in outreach to low-income households, women might therefore be the more attractive clients. While

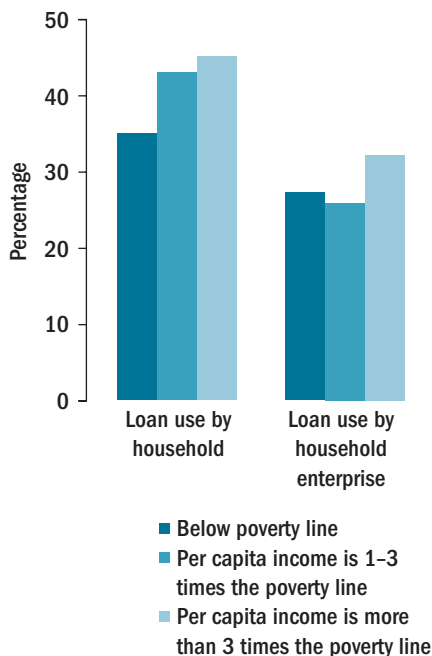
adverse selection might be more problematic among women, the joint-liability technique can control for this risk.

Third, some practitioners stress social objectives as women seem to be more concerned about children's health and education than their husbands. As already discussed, Pitt and Khandker (1998) and Khandker (2003) find a stronger effect of Grameen Bank in Bangladesh on female than on male borrowers. For example, Khandker (2003) shows that the impact of credit on nonfood expenditures is higher among female compared to male borrowers.

Finally, focusing on women might empower them in the intrafamily decision process, as shown by Ashraf, Karlan, and Yin (2006b); use of a commitment savings product increased expenditures on female durable goods. Similarly, access to credit and the subsequent establishment of a microenterprise might give women more say in intrahousehold decisions, as Johnson and Morduch (2007) illustrates with some anecdotes from Bangladesh, Sierra Leone, and Zambia. Providing access to financial services for female savers and borrowers might thus directly contribute to the Millennium Development Goal of gender equality (box 3.1). For a detailed discussion of gender and credit, see Armendáriz de Aghion and Morduch (2005, chapter 7).

Karlan and Valdivia (2006), and Ashraf, Giné and, Karlan (2007) find that MFIs that offer extension services have higher client retention and better repayment performance than MFIs that do not offer such services. Their clients also have better business outcomes.

Even the limited focus on production credit might be mistaken. Recent analysis of survey data from Indonesia suggests MFI clients use credit as much for consumption as for investment purposes (Johnston and Morduch 2007). This finding applies not only to households that do not run microenterprises but even to a quarter of microentrepreneur households (figure 3.4). As discussed earlier, consumer credit is also the

Figure 3.4 Use of microcredit for consumption purposes

Source: Johnston and Morduch (2007).

Note: This figure shows the percentage of surveyed Bank Rakyat Indonesia customers at different income levels in Indonesia that indicated they used the credit for consumption purposes.

only credit type shown to be robustly linked with higher household welfare (Karlan and Zinman 2006b). This is not a negative outcome, but it does suggest a very different vision of microfinance from the original.

In addition to the reluctance of traditional lenders to reach out to low-income households and microentrepreneurs, risk-averse producers might be reluctant to take up loans. While credit-financed microenterprise might increase the level of income, it might also increase its variation. Indeed, in their survey Johnston and Morduch (2007) find a large group of households that do not want credit although they are deemed creditworthy by officials of a microcredit institution.

While research on a randomly chosen sample of entrepreneurs in Sri Lanka finds credit constraints are the main reason for the lack of expanding business, not missing insurance markets (de Mel, McKenzie, and Woodruff 2006), take-up of credit might be increased if coupled with a proper insurance mechanism. This might be especially true for agricultural producers who are subject to high price and yield volatility.

—to microinsurance—

Insurance products with or without credit might thus help these farmers expand without taking on too much additional risk. Traditional insurance to farmers to protect them against climatic and other shocks has proved costly and unmarketable because of high moral hazard risk from misreporting. As an alternative, insurers have developed weather index insurance, which compensates farmers according to objectively verifiable benchmarks likely to be correlated with the actual damage the farmer has suffered.

How successful are such insurance schemes? Giné, Townsend, and Vickery (2007) assess the introduction of a rainfall insurance product, first designed by a large insurance company in southern India in 2004 and marketed by a microfinance institution. In villages where policies were sold, the authors find that less than 5 percent of the targeted population buys the insurance product and less than 3 percent of the purchasers change their production patterns. Why such low uptake of the product? The most common reason given for not buying the insurance, according to Giné, Townsend, and Vickery (2007), is lack of understanding of the product. The cost of insurance combined with credit constraints constitute another powerful factor explaining the lack of take-up. Lack of trust that the insurer would pay claims promptly or at all if the insurable event occurs is likely also a factor—not unwarranted given the experience with many financial innovations in low-income environments in the past. Overall, it seems the insurance product did not reach the most vulnerable households that would benefit most from it.

In a similar experiment in Malawi, farmers were randomly offered the choice between a simple credit contract or one that combined credit with insurance (Giné and Yang 2007). The latter is effectively a contingent credit contract, that is, a loan that has to be repaid only in good times. Surprisingly, the take-up of the credit-insurance contract was significantly lower than the take-up of the credit contract, and the difference cannot be explained by the cost of including insurance. Unlike microcredit, microinsurance products are still in their infancy, so it is too early to draw definite conclusions. But this research shows the substantial barriers that providers have to overcome to market the product effectively to the target population.

Rainfall insurance is only one of the microinsurance products that have been developed over the past years. Life and health insurance policies are increasingly offered by both commercial and nongovernmental organization (NGO) insurance institutions. For such policies to be viable

for a commercial insurer, there needs to be a delivery channel with which potential clients are familiar, such as an MFI or an NGO (as in the two cases discussed). While a large practitioners' literature discusses these different products and delivery mechanisms, rigorous research assessing their impact is still to be conducted.¹⁶

To what extent do poor households really need credit? In the absence of credit, the poor might simply accumulate savings over time before investing and thus overcome credit constraints. If they are too poor to accumulate savings, access to credit can improve their incomes, although poor households might run the risk of overindebtedness. Dale Adams and others argue that better savings vehicles, not what they call “microdebt,” are the financial service most needed by most of the poor: rotating savings and credit associations (ROSCAs) and microcredit are thus seen as imperfect tools to address savings constraints (Adams and von Pischke 1992; Rutherford 1998). This school also argues that despite popular beliefs to the contrary, the fact that the poor are capable of weekly repayments shows that the poor are capable of saving, even if it is only in small amounts (Rutherford 1998).

Why are poor households less likely to save in monetary forms, that is, through the banking system, than other households? One constraint is certainly the geographic distance to bank outlets. A large share of the poor population in many developing countries is still concentrated in rural areas, and banking systems in developing countries typically concentrate their branch network in urban areas. That geographic access can matter for monetary savings is shown by the analysis of a pseudo-natural experiment in Mexico. Specifically, Aportela (1999) analyzed the results of the expansion of a government-owned Mexican savings institute in the early 1990s. This expansion happened only in some states, and there seems to be no significant correlation of state characteristics with the expansion programs. Computing savings rates of low-income households from survey responses before and after the expansion started, Aportela shows that the expansion increased the savings rate of low-income households—the ones targeted by the expansion in the first place—but had no effect on high-income households. In addition, the increased financial savings did not seem to crowd out other informal ways of savings: there was a positive net effect on the overall savings of the typical household.

The importance of geographic proximity points to local savings banks and post office networks as important tools for attracting savings

—and microsavings

Geographic distance is an important barrier to savings for many households

Commitment devices may encourage savings

by low-income households. In 19th century Germany, municipalities established local savings banks to do just that. The fact that almost all adults in most countries in continental western Europe have checking or savings accounts is often attributed to the dense networks of savings and cooperative banks. Similarly, postal savings banks have traditionally played an important role in the rural and more remote areas of many developed and developing countries, despite their often weak financial structure and suboptimal service provision.

Lack of geographic access is not the only impediment to saving in monetary form, however. Time inconsistency problems—short-run impatience (high discount factors in the near future) and long-run patience (low discount factors in the far future)—could explain why many individuals often regret how little they have saved. Conflicts within households over savings can also result in undersaving. In developing countries as in developed, a variety of commitment devices are used to help overcome such problems. Indeed, some of the practices of the informal ROSCAs can be rationalized in this way. Microfinance institutions around the world offer a wide variety of savings commitment devices for their clients (Ashraf, Karlan, and Yin 2003). But do these commitment devices work in increasing savings? Do they influence intrahousehold decision processes and consumption-savings patterns? Several recent papers assess these questions.

Ashraf, Karlan, and Yin (2006b, c) assess the effect of a commitment product where savers commit to forgo their access to savings accounts until a specific date or until they have reached a precommitted balance. Specifically, the authors conducted an experiment by randomly giving half of 1,800 existing or former clients of a rural Philippine bank the option to save through a commitment savings account (a locked box) that allowed them access to the funds only after they reached a self-set date or a self-set amount of savings. Only 28 percent of clients decided to take up this product, but Ashraf, Karlan, and Yin find an increase of 81 percent in average savings balances of account holders who participated in the scheme over a 12-month period. This effect was not sustained, however; after 30 months the average balance was only 33 percent higher than the average balance of nonparticipants and the difference was no longer significant; many clients stopped saving with the commitment product after an initial period. At the same time, this commitment device led to a shift in the power of decision making by women, which was seen in higher investment in durable goods associated with women, such as washing and sewing machines and kitchen appliances.

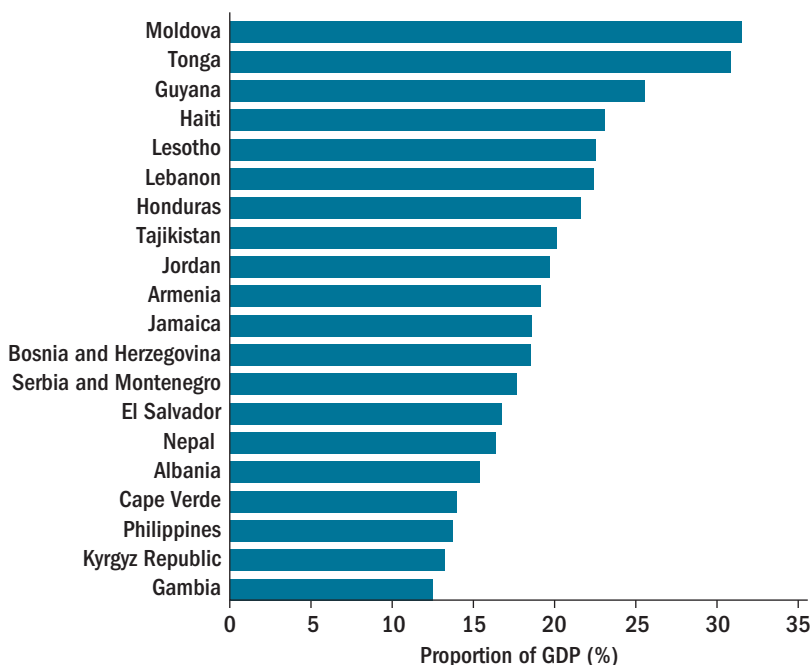
Ashraf, Karlan, and Yin (2006a) assess the effect of another technique to attract savings, designed to overcome both the problem of geographic distance and the lack of commitment, namely, door-to-door collection of savings. Among those who did take up this service, savings increased by 25 percent over a 15-month period, while borrowing went down; it is possible that savings, rather than borrowing, were thus used for consumption smoothing. Households accepting this service lived farther away from the nearest bank branch, thus indicating the importance of travel costs; and they were more likely to be married, again showing the importance of intrahousehold conflicts in the savings decision. The fact that the offer of a convenient savings instrument reduced borrowing is yet more evidence for those who interpret microcredit take-up as a surrogate solution in the absence of savings opportunities.

Geographic impediments and intrahousehold conflicts are only some of the barriers poor people face in accessing savings services offered by financial institutions, as discussed in chapter 1. Continuing research in Indonesia is exploring other dimensions such as barriers related to affordability and financial literacy.

While access to financial services, such as credit or savings services, has received a great deal of attention in recent years, access to payments services has generated even more attention. Increased globalization has heightened demand for these services. International remittances, funds earned by migrants abroad and sent to their families in developing countries, have grown so dramatically in recent years that they have become the second largest source of external finance for developing countries after foreign direct investment (figure 3.5).¹⁷ Moreover, a large share of the population in developing countries receives remittances. Relative to private capital flows, remittance flows tend to be relatively stable and countercyclical, that is, they increase in times of crisis. Technological advances have also become important for remittance flows, as the increasing trend to send remittances through ATMs and cell phones shows.

Remittances sent through formal channels are commonly subject to high costs. These high costs drive many remittance senders to informal remittance agencies. Furthermore, the costs of sending remittances have important implications for the amount of remittances sent. Yang (2007) shows that Philippine migrants sent lower remittances in foreign currency when the Philippine peso depreciated, suggesting that they want their families to receive a fixed amount in pesos. Gibson, McKenzie, and Rohorua (2006) show a negative cost elasticity for Tonga of 0.22;

Demand for payments services has increased

Figure 3.5 Remittance flows across countries

Source: World Bank (2005, *World Development Indicators*).

Note: This figure shows remittance flows through official channels as a proportion of GDP for 20 countries with the largest remittance inflows, based on national balance of payments data.

if the cost of sending the remittances were reduced to levels in more competitive markets around the world, they compute an increase of 28 percent in remittances—an amount that would constitute 4 percent of Tonga's GDP.

The high costs of sending formal remittances—

A lack of bank competition and financial underdevelopment seem to explain the high costs of formal remittances. The typical remittance fee is priced as a two-part tariff, consisting of a fixed fee regardless of the amount sent, and a variable fee arising from the exchange rate commission. As a result, the average fee for sending remittances decreases as the remittance amount increases, so the small amounts that are typically sent are subject to high costs. But remittance costs vary significantly across corridors. The decrease in fees in the U.S.-Mexico corridor, for example, has been attributed to a higher degree of competition in the remittance market (Hernandez-Coss 2005). In the Tonga-New Zealand corridor, where competition is minimal and migrants lack information about available options, the fees are three times as high as in the U.S.-Mexico

corridor (box 3.7). The example of Tonga also illustrates an important factor explaining high remittance costs: lack of bank penetration not only reduces competition but also makes remittances more expensive if the alternative money transfer operators have only indirect access (through banks) to the payment system.

Tonga provides just one example of how expanded access to modern technologies can help. Technology can make business processes more efficient for financial institutions as well as increase access possibilities for customers. Technological advances can reduce the costs of banking, effectively enabling outreach further down the income pyramid to customers with demand for smaller transaction amounts.¹⁸ For example, payment systems based on electronic fund transfers rather than checks can substantially reduce the costs of payment transfers. Cell-phone-based financial transactions (also referred to as m-banking or m-finance, with the *m* standing for mobile phone) have gained prominence in recent years. There are more cell-phone users in Sub-Saharan Africa than holders of bank accounts, and the use of cell phones for financial transactions has increased rapidly in recent years. How far this technology can go in pushing out the access frontier is still subject to debate, however. Porteous (2006) finds that use of m-banking services in South Africa is predominantly concentrated among existing bank customers, with only a few providers targeting those without accounts.

Technology can also affect customers directly. The introduction of ATMs has not only increased accessibility of accounts to 24 hours a day, thus improving convenience, but has also expanded the range of customers. Financial institutions in several Sub-Saharan African countries have introduced transaction accounts that are purely ATM based; customers do not have to enter banking halls, a cultural barrier for many Africans without bank accounts. Providing financial services through ATMs is also cheaper for the financial institution. And by encouraging channeling of payments such as remittances through the formal banking system, technological advances may broaden the deposit base of banks, allowing them to intermediate more funds to the private sector. If the banks can learn over time about their clients and their creditworthiness, including remittance recipients in the formal banking system as depositors, at least some of those customers may become borrowers. Receiving remittances through the formal banking system thus might enable recipients to gain access to other financial services as well. Two recent studies show that remittance flows pull new

—can be overcome with technology

Technology can also expand the customer base

Box 3.7 Why don't migrants use the cheapest methods? Evidence from Tongan migrants in New Zealand

REMITTANCES ARE EXTRAORDINARILY important in Tonga, where they constitute more than 30 percent of GDP and account for 20 percent of monetary household income (Gibson, McKenzie, and Rohorua 2006). Despite their importance, the transaction costs of sending remittances to Tonga by the most widely used methods are high. Typical transactions costs average 15–20 percent of the remittance amount for bank drafts, telegraphic transfers through banks, transactions through Western Union, and transactions through *Melie mei Langi*, a church-based money transfer operation. In contrast, transferring money through an ATM card linked to a New Zealand bank account set up by the sender costs less than 5 percent, but this method is not widely used. The cost spread between the more popular methods and ATMs means a potential loss for Tonga equivalent to 4 percent of GDP.

What accounts for the underuse of ATMs? Gibson and others (2006) use a survey among Tongan immigrants in New Zealand to explore this puzzle. First, the immigrants seem to lack knowledge: only

2 percent of those surveyed knew how to use an ATM to send money, and few knew of the hidden exchange rate premiums that increase the cost of other methods. Second, distance of recipients from an ATM in Tonga outside the capital city of Nuku'alofa limits access to this method. The figure below shows the coverage areas of ATM machines and Western Union outlets on the main island of Tongatapu. Although there are more ATMs than Western Union outlets, the ATMs are concentrated in Nuku'alofa, and cover only 77 percent of the population within a 10 kilometer radius, whereas Western Union reaches 97 percent of that population. Finally, three-quarters of respondents indicated they would not use ATMs as a method of remitting because they did not trust them, fearing unauthorized withdrawals and card skimming among other things.

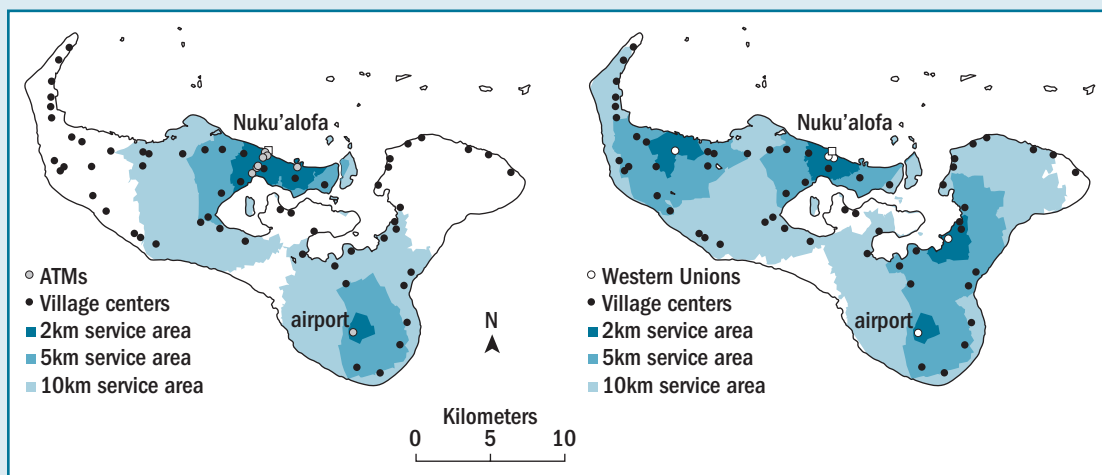
This analysis suggests several ways for financial sector policy to improve both the demand for and supply of newer and cheaper remittance technologies. In particular, more attention needs to be given to improving the financial literacy of migrants and

customers into the formal banking system. Combining municipality-level and household survey data for Mexico, Demirgüç-Kunt and others (2007) find a positive relationship between the share of households in a municipality that receives remittances and total deposits to GDP, deposit accounts per capita, and branches per capita, but no significant relationship with total credit to GDP. Using household survey data for El Salvador, Demirgüç-Kunt and Martinez Peria (2007) find evidence that channeling remittances through the banking system increases banking outreach; the likelihood that the recipient has a bank account is twice as high if the remittances are received through the banking system than if they are received through informal channels, although there is no effect on the credit side.¹⁹

Box 3.7 (continued)

providing them with clear and accurate information about the alternatives available for remitting. Community newspapers and associations could play an important role in disseminating this information.

Second, expansion of access to modern technologies in the remittance-receiving country is needed to match the convenience and service offered by traditional money transfer operators.

Service areas of ATMs and Western Union on Tongatapu, Tonga

Source: Gibson and others (2006).

Reaching Out to the Poor or to the Excluded?

Thirty years after the establishment of Grameen Bank, the microfinance movement has attained a certain maturity. Microfinance increases access to financial services for those participating in the program, and, because of lower staff salaries and lack of posh banking halls, it does so at lower operating costs than commercial banks can. Nonetheless, most microfinance programs still incur high unit costs because of the small size of loans. As a result, a large proportion of the institutions—albeit mostly the smaller ones—are dependent on subsidies (Robinson 2001; Armendáriz de Aghion and Morduch 2005), and there is a continuing discussion about the financial sustainability of microcredit, regarding both its feasibility and desirability. Cull, Demirgüç-Kunt, and Morduch

Many microfinance institutions require subsidies—

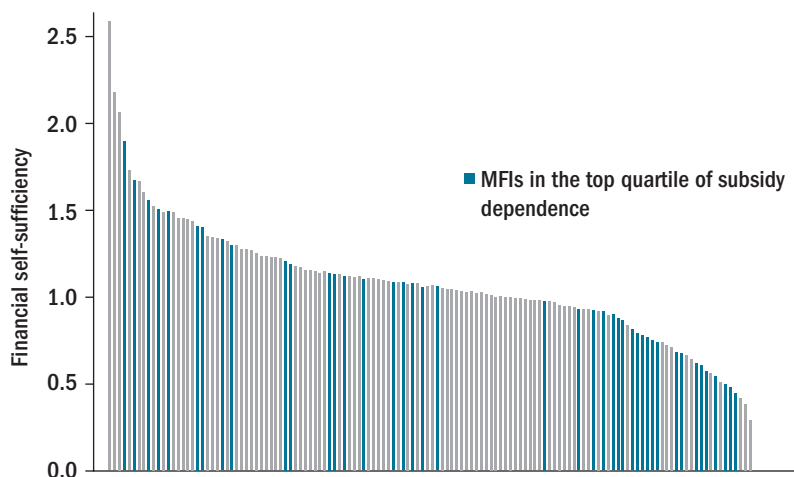
—raising questions
about sustainability

(2007) looked at a sample of 124 MFIs in 49 countries representing around 50 percent of all microfinance clients around the globe, most likely, the more profitable and cost-efficient institutions. The authors find that even in this select group, only half of the institutions were profitable and financially self-sustainable, generating sufficient revenue to cover their costs (figure 3.6).

One of the reasons for this lack of self-sustainability might be the lack of scale; only in eight countries do microfinance borrowers account for more than 2 percent of the population (Honohan 2004, figure 3.7), and most individual MFIs seem to be too small to reap the necessary scale economies to become financially sustainable (figure 3.8). At the same time, as MFIs grow and mature, they seem to focus less on the poor (Cull, Demirgüç-Kunt, and Morduch 2007), which could be interpreted either as a success story for their borrowers or as mission drift.

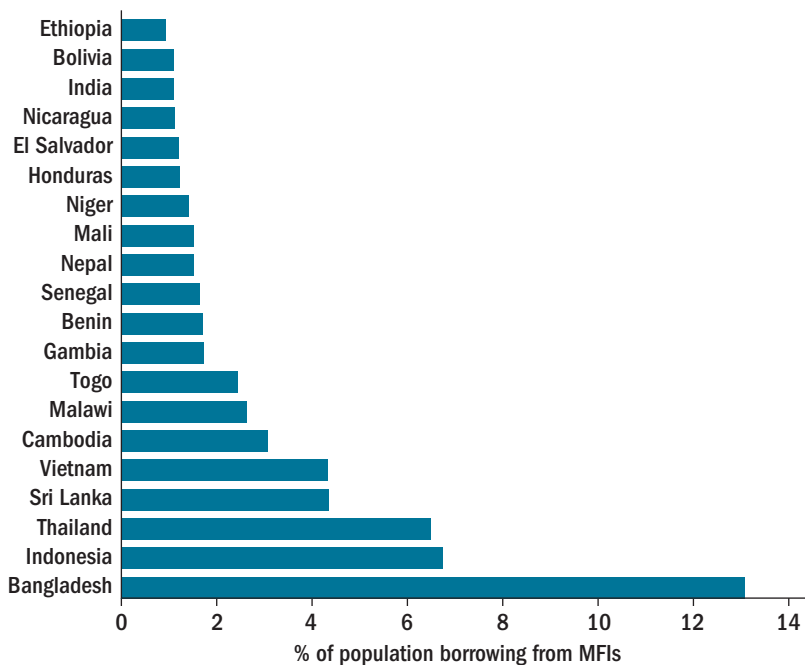
Microfinance also suffers from another important limitation: for many MFIs, scaling up to nonpoor customers will be difficult, as will be the ability of MFIs to accompany their customers as they grow richer. Joint-liability lending relies on groups of borrowers with similar borrowing needs, and the profitability of the approach relies on large numbers of

Figure 3.6 Financial self-sufficiency and subsidy dependence



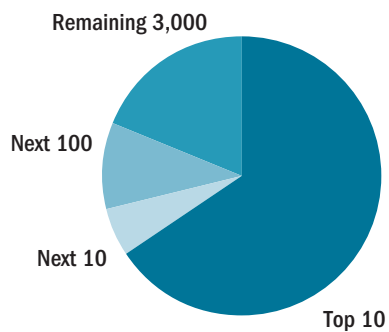
Source: Cull, Demirgüç-Kunt, and Morduch (2007).

Note: This figure shows the financial self-sustainability (ability to generate sufficient revenue to cover costs) of 124 MFIs across 49 countries, with the blue bars indicating MFIs in the top 25th percentiles in subsidy dependence (given by share of subsidies as a proportion of total liabilities plus equity).

Figure 3.7 Microfinance penetration across countries

Source: Honohan (2004).

Note: This figure shows the ratio of borrowing clients to total population for the 20 countries with the highest microfinance penetration.

Figure 3.8 Distribution of MFIs by size of outreach

Source: Updated from Honohan (2004).

Note: This figure shows that the top 10 MFIs reporting to the Microcredit Summit (Daley-Harris, 2006) accounted for 66 percent of the total number of MFI customers in the world. At the other extreme, nearly 3,000 of the 3,133 reporting MFIs had fewer than 15,000 clients each.

borrowers and groups. The higher borrowers are on the income ladder and the larger the size of the enterprise, however, the more divergent are borrower characteristics and borrowing needs. Not surprisingly, loans made by individual-based microlending institutions are larger on average than loans made by MFIs using joint-liability lending. Furthermore, larger average loan sizes also imply lower costs (Cull, Demirgüç-Kunt, and Morduch 2007).

MFIs often are unable to meet the needs of the excluded nonpoor

MFIs in most cases do not have sufficient resources to fulfill the borrowing needs of larger microenterprises. And microenterprises might no longer be willing and able to pay the higher MFI interest rates as they expand. MFIs are constrained by the lack of savings mobilization and their reliance on donor resources. Especially in developing countries, only the formal banking system has sufficient resources to fulfill the borrowing needs of their economies' private sectors. The obvious solution—linking the microcredit sector with the banking sector—has therefore become an increasingly popular solution. In several countries, such as Bolivia and Uganda, MFIs have been given the opportunity to convert into microbanks and collect deposits from the general public. Some of the leading microfinance institutions have received equity funding from institutional investors, and links between banks and MFIs in numerous countries have provided MFIs with the necessary funding from banks, while maintaining their business and credit model to target low-income clients.²⁰

Many MFIs, even with subsidies, have had trouble reaching the very poor. And, as mentioned, some MFIs have been moving upscale with their successful clients. Should policymakers worry about an apparent drift in the emphasis of many MFIs, and of the MFI industry as a whole, away from focusing on credit access for the very poor? Considering the indications that improving access for not-so-poor entrepreneurial households can have powerfully favorable indirect implications for the poor, such worries may be overstated.

A narrow focus on the poor may be counterproductive—

Focusing on finance for the very poor shifts the attention to subsidies and charity, which can hurt the quality of services. There are also good political economy reasons why the focus should not be on the poor or on how microfinance can be made more viable, but instead on how financial services can be made available for all.²¹ The poor lack the political clout to demand better services, and subsidies may spoil the credit culture, that is, the willingness to repay loans since they are perceived as grants. Defining the issue more broadly to include the middle class, who often

also lack access, would make it more likely that policy makers would make financial access a priority. Hence shifting the focus to building inclusive financial systems and improving access for all underserved groups is likely to have greater impact on development outcomes.

As a result, the development community has shifted its attention to building inclusive financial systems focusing not only on specialized microcredit institutions, but on an array of other financial institutions, such as postal savings banks, consumer credit institutions, and, most important, the banking system. This broader approach can lead to overall financial system efficiency and outreach to the whole population.

The recent expansion in banking services across Latin America, for example, has been driven by consumer credit, provided mostly by utility and other nonfinancial companies, such as large department stores. Although no firm data exist, anecdotal evidence suggests that this credit expansion is based on credit scoring and risk diversification through the law of large numbers. Postal networks have come to play an increasingly important role, such as in Brazil, where the postal service linked with a private commercial bank through an agency agreement, thus effectively increasing geographic access to banking services to all municipalities. Private commercial banks have taken the lead in reaching out to low-income households and microenterprises with new techniques and products, often driven by a combination of profit and social objectives.

The broader focus on an inclusive financial system raises again the question of how to ensure that financial institutions will expand outreach. How can governments and donors best help reduce transaction costs and risk that often impede commercially oriented financial institutions from reaching out to the poor and near poor? Should donors subsidize microfinance institutions so they can reach out to the very poor? Should the government subsidize financial institutions so they reach out to rural and remote areas? Several ideas and questions arise in this context.²²

First, subsidies in the financial sector have to be assessed in a rigorous manner to compare costs and benefits with subsidies in other areas, such as education or infrastructure. Any subsidy has the opportunity costs of forgone government intervention in other sectors and areas. Second, a distinction has to be made between credit services, on the one hand, and savings and payments services, on the other hand. More of a case might be made for subsidies in payment services, because such services are considered necessary for participation in a modern market economy. Further, payment services can be seen as a network good whose

—highlighting the need to foster the development of a range of financial institutions—

—and carefully assess whether subsidies could more effectively be used in other areas

benefits increase as a larger proportion of the population has access to and uses them (Claessens and others 2003). Third, subsidies should focus on overcoming the barriers to access rather than distorting prices, such as interest rates. Finally, technological advances have the potential to revolutionize access for the poor, shifting attention from subsidies to establishing an environment conducive to technological innovations that may help overcome many of the restrictions. However, these technological advances, such as m-finance, also pose important regulatory questions. To what extent should electronic and m-finance providers be considered financial institutions and thus be subject to the heavier regulatory and supervisory framework? This issue is discussed further in chapter 4.

The simple point is that access to finance is lacking not only for the poor but for vast portions of the population in many low-income economies. If attempts to ensure that the poor do get credit result in distorting subsidies that damage the incentives for the microfinance industry, and the financial sector more generally, to innovate in providing access for the nonpoor, then their net effect on the poor could be counterproductive.

Conclusions

The direct provision of credit to the poor may not be the most important channel

While still far from conclusive, the bulk of the evidence suggests financial development and improved access to finance is likely not only to accelerate economic growth but also to reduce income inequality and poverty. The channels through which finance works to produce this impact are less clear, but the evidence from cross-country research, natural experiments, and general equilibrium models suggests that direct provision of credit to the poor may not be the most important channel. Hence fostering more efficient capital allocation through competitive and open markets has always been and still remains an important policy goal.

More than just the poor face financial exclusion

In most countries around the world, however, fewer than half the households have even basic financial access; many nonpoor and small and medium enterprises are effectively excluded from the financial system. For the most part, then, improving efficiency without broadening access is likely to be insufficient because it is likely to leave untapped the talents and innovative capacity of large segments of the population. Improving access for all of the excluded, not just the very poor, is therefore also likely to be an important policy goal for most developing countries.

Reaching out to low-income households and microentrepreneurs is quite challenging however, since issues of risk management, monitoring, and transaction costs tend to increase break-even interest rates and often lead to credit rationing. Here, innovative techniques and products developed by MFIs have helped overcome these information barriers. Nevertheless, microfinance services are costly to deliver, and they typically require extensive subsidies. While a focus on improving access to the excluded does not need to involve subsidies, reaching out to the very poor does. Should such access be subsidized? Encouraging and taking advantage of technological advances, which are becoming more widespread and fast-paced due to globalization, may be more promising in broadening access for the poor than providing subsidies, as well as shifting the focus of policy to establishing an environment conducive to the adaptation of the new technologies and to the entry of providers that bring them in. These issues are discussed more fully in the next chapter, which concerns governments' role in broadening access.

**Innovative techniques
and products can improve
financial access**

Notes

1. Introducing fixed transaction costs into a general equilibrium model and thus endogenizing the size of the intermediated sector, Townsend and Ueda (2006) conclude that restrictive financial sector policies in Thailand might have slowed the growth of financial intermediation below the endogenous growth rate that would have resulted from increasing per capita income, as predicted by Greenwood and Jovanovic (1990).

2. General equilibrium models have limited power to mimic the real world, as shown by Jeong and Townsend (2003). They compare the fit of the two models with exogenous and endogenous financial intermediation, the two models later used by Giné and Townsend (2004) and Townsend and Ueda (2006), respectively, and find that while both models fit the data well, they both exaggerate the movement between low- and high-income groups and underestimate the movements within different income groups. While general equilibrium models fit the long-term trends in the data reasonably well, Jeong and Townsend conclude that they cannot account for business cycle effects.

3. Reanalyzing the same data with a different econometric technique, Morduch (1998) failed to find any significant impact of microcredit on borrowers' income, though he did find an effect on consumption smoothing.

4. This technique was later named "pipeline matching" (Goldberg and Karlan 2005)

5. It is worth noting that such a design picks up the effect of credit for the marginal borrower. Assuming heterogeneity across agents, the effect might be lower or zero for those borrowers who easily got credit, since they may have plenty of close substitutes, while the effect could be even bigger for those who were denied credit by a bigger margin.

6. In particular, it is not only the sceptics who find much of the less rigorous literature unconvincing. Coleman (1999) notes: “Most existing impact studies are nonacademic project evaluations that are of a descriptive nature or suffer from the selection bias problem.” In a useful survey of microfinance impact studies confined to those that tried “to select control groups whose observed characteristics were comparable except for their participation in microfinance,” Littlefield, Morduch, and Hashemi (2003, p. 2) conclude that while “the general pattern of results sheds valid light on the question of impact, . . . few studies include fully rigorous controls for selection biases.” Armendáriz de Aghion and Morduch (2005, p. 199–200) write that the differences between anecdotes and statistical evidence “should not be surprising: the anecdotes are culled to show the potential of microfinance, while the statistical analyses are designed to show typical impact across the board.”

7. For evidence on the relation between durable-asset holding, education, and child labor, see Jacoby (1994); Guarcello, Mealli, and Rosati (2003); Jacoby and Skoufias (1997); and Beegle, Dehejia, and Gatti (2007). Several cross-country studies also assess the relationship between financial development, education, and incidence of child labor; see Flug, Spilimbergo, and Wachtenheim (1998) and Beegle, Dehejia, and Gatti (2007). For evidence on access to credit and upward mobility, see Wydick (1999). For evidence on geographic proximity to bank branches and health, see Gertler, Levine, and Moretti (2003).

8. For a detailed discussion, see Ravallion (2004).

9. Cross-country regressions using other poverty-related measures also point to a favorable impact. For example, Claessens and Feijen (2007) find a significant impact of financial sector development on the incidence of undernourishment. One of the channels through which this relationship works seems to be financial development enhancing the level and growth rate of agricultural productivity, which in turn leads to higher output and lower prices, which helps reduce the incidence of undernourishment. However, as is the case with many cross-country studies, identification issues remain.

10. The distribution data are notoriously difficult to compare across countries for several reasons, including the fact that they are based on different welfare measures (consumption versus income), different measures of income (gross versus net), and different units of observation (households versus individuals), and adjustments for these differences are imperfect (Dollar and Kraay 2002; Deaton 2005). While these differences in measurement introduce an error into the regressions run by Beck, Demirgüç-Kunt, and Levine (2007), this error should bias their estimations against finding a significant relationship

between finance and changes in income distribution. Further, the regressions of changes in headcount on finance are less subject to this concern as the headcount measures are based on a set of consistent household surveys (Chen and Ravallion 2004).

11. Using Thai data and testing a structural model with moral hazard and limited liability due to high enforcement costs, Paulson, Townsend, and Karaivanov (2006) confirm that moral hazard is the dominant source of financing constraints. In the case of poorer households, however, they cannot reject the hypothesis that limited liability also plays a role. Giné (2005) distinguishes between transaction costs incurred by borrowers and enforcement costs incurred by lenders and shows that enforcement costs limit outreach more than transaction costs do in the context of rural finance in Thailand.

12. To tease out the trade-off in group-based lending in comparison with individual lending, Giné and others (2006) created an experimental economics laboratory in a large, urban market in Lima, Peru, and conducted difference games with microentrepreneurs and potential microfinance clients.

13. Undertaking experimental games with a group of microfinance clients in Peru, Karlan (2005) finds that cultural similarity and geographic proximity predict trust and trustworthiness.

14. This could also reflect that a disproportionate number of those MFIs that concentrate on the very poor are charitable concerns willing to channel subsidies to the poor rather than aiming at profitability.

15. However, because of imperfections in the labor market, the poor women borrowers in the model of Emran, Morshed, and Stiglitz (2006) will not be interested in expanding their operation beyond a certain scale.

16. See Roth, McCord, and Liber (2007) for an overview of microinsurance products and delivery mechanisms.

17. Official data on remittance flows—mostly from balance-of-payment statistics—underestimate their true extent because a large proportion of remittances is sent through informal channels. In addition, in many cases, remittances sent through money transfer providers that do not settle through banks are not recorded in official data either (de Luna Martinez 2005). A large share of remittances is thus misclassified as net errors and omission in balance-of-payment statistics. Using cost data on sending remittances through formal channels and assuming that use of these channels, but not the amount of remittances, is elastic to the cost of sending the remittances. Freund and Spatafora (2005) estimate that informal remittance flows equal 35–75 percent of formal remittance flows.

18. See Firpo (2005) for a discussion on the role of technology in reducing costs in microfinance.

19. Recent research also shows that remittance flows can affect financial development in the recipient countries, increasing access indirectly. For example, Aggarwal, Demirgüç-Kunt, and Martinez Peria (2006) find that formal remittance flows, as captured by balance-of-payments statistics, have a positive impact on financial intermediary development.

20. Microfinance institutions face another challenge as the industry matures—competition. During the initial stages of microfinance, most institutions compete only against informal moneylenders; their monopoly position allows them to use dynamic incentives such as repeat and progressive lending, as borrowers do not have any alternatives. However, as MFI sectors mature, as in Bangladesh, Bolivia, and Uganda, MFIs start competing directly against each other in certain regions of the country, with negative implications for borrowers, who may become overindebted and receive less favorable loan terms, but also for lenders who encounter worse repayment performance. Effective information sharing among lenders is one way of overcoming these difficulties. For example, in the already-discussed Guatemalan case, Luoto, McIntosh, and Wydick (2007) calculated that the introduction of a credit information system allowed MFIs to improve their loan appraisal to the extent of lowering their break-even interest rate by more than 2.5 percentage points.

21. Rajan (2006b) argues “let’s not kill the microfinance movement with kindness. If we want it to become more than a fad . . . it has to follow the clear and unsentimental path of adding value and making money. On that path lies the possibility of a true and large-scale escape from poverty.”

22. See also the discussion in Armendáriz de Aghion and Morduch (2005, chapter 9), focusing on subsidies for MFIs.