1. TITLE PAGE

CREDIT-REPORTING BUREAUS AND THE DEEPENING OF FINANCIAL SERVICES FOR THE RURAL POOR IN LATIN AMERICA

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2. Abstract

Access to credit for the rural poor in support of their agricultural operations is one of the large remaining frontiers in using financial services to combat poverty. Many rural poor have control over collateral that they could pledge in accessing credit through formal lenders. Because this may place collateral at risk in case of negative shocks in their agricultural operations, most smallholders refrain from leveraging their assets in gaining access to capital. We propose to analyze how the emergence of credit reporting systems can break this deadlock in helping the rural poor obtain formal loans for their agricultural operations. This can occur on the basis of the reputation they established as borrowers from microfinance institutions for their non-agricultural operations. We will focus on the impact of emerging credit bureau systems in Guatemala, El Salvador, and Peru. Three sources of information will be used: an internet census of credit bureaus, administrative data from cooperating MFIs, and an entry survey among formal lenders to agriculture. Rapid development of credit bureaus will provide a living laboratory in the course of the project. Policy implications will be on the design of effective credit reporting systems for the rural poor.

3. Narrative Description of the Project

INTRODUCTION

The last decade has witnessed the exponential growth of microfinance institutions (MFIs) that have made credit available to millions of poor entrepreneurs in developing countries (Morduch, 1999). This "microfinance revolution" has, however, largely bypassed the rural poor and most particularly their agricultural activities as smallholders (Basis, 2002). With the disappearance of subsidized lending to agriculture and the reach of microfinance mainly confined to urban areas or to non-farm activities, lack of rural finance for agriculture remains a major gap in the provision of financial services to the poor.

The existence of MFIs has weaned many of the poor from relationship with a solitary moneylender with whom the individual developed reputation at the cost of high interest rates. However, without the existence of a credit information infrastructure (such as exists in developed economies and has started to emerge in several developing countries) it is likely that the relationship between borrower and MFI may mimic that with the earlier moneylender. Because, under these conditions, the credit relationship remains strictly private, borrowers with strong credit records are unable to publicly signal their creditworthiness to the market as a whole. This lack of transparency inhibits their access to competing sources of MFI credit, and to graduation into more formal financial institutions, leading to a breakdown in competition between credit providers.

The information problem presented by a lack of credit-reporting is particularly acute in rural areas. The reason is that many of the rural poor actually possess the assets needed to secure collateralized loans, but are prevented from doing so by the risk of losing collateral in states of nature beyond their control. With no instrument to make reputation public, the landed rural poor are prevented from using their credit histories established through MFI borrowing to secure insurance on collateralized loans, and thus they cannot afford to take the risk of using their own assets to gain access to capital. In this way, the problems of lending and insurance in rural areas are inextricably linked, and these households are doubly injured by being unable to capitalize on their credit records.

By giving formal lenders the information they need about the degree of a borrower's moral hazard, improved information transfers may allow these households to leverage agricultural investment credit at an acceptable risk to themselves.

Our proposal is to investigate the effects of the development of credit bureaus and information-based institutions on access to credit for smallholders, using several Latin American countries with varying experiences with credit bureaus as a natural field for this research. Powerful, affordable policy tools to improve credit ladders in rural areas are in short supply. Theory directs us to pay careful attention to the precise nature of credit-reporting mechanisms, and how they drive the resultant credit markets. Through this analysis, we wish to guide best practice in the legal and regulatory formulation of these credit-reporting systems, anticipate how their introduction transforms access to credit for different classes of borrowers, and also how they change competitive positions among different providers of rural credit.

MANY OF THE RURAL POOR POSSESS COLLATERAL

A defining feature of rural poverty is that even the very poor may have land which could be leveraged into credit, whereas the urban poor are usually without collateral altogether. Strangely, though, agricultural credit has lagged behind that of urban areas, where the 'microfinance revolution' has represented a mechanism for small-traders and micro-entrepreneurs to access capital based on peer-lending networks. Several factors have caused agricultural credit to lag. Frequent regional defaults due to weather shocks make agricultural lending risky, and particularly weaken the joint-liability mechanism. Farming loans can only be repaid at harvest, and thus do not fit the fast-turnover business model of microfinance institutions. The volatility of output also makes farmer effort more difficult to discern in establishing reputation. On the whole, institutions which successfully allow poor farmers to leverage their land into productive capital have been lacking.

The concept of 'risk rationing' helps us understand this phenomenon (Boucher and Carter, 2001). While the average expected returns on an agricultural investment may allow a farmer to borrow profitably, if there are some not unlikely states of the world in which the collateral is lost, risk-averse agents will not accept a lending contract. Their

rejection of the contract is not based on the *expected returns* of the loan, but on the *risk.* This means that the credit and insurance markets are inextricably linked in situations where agents have collateral but lack the liquidity to protect their collateral in bad states of nature. If risk-tolerant lenders could perfectly observe the state of nature, they would insure the borrower against the bad state by rescheduling loans at some price. When they cannot observe the state of nature, they are forced to offer no insurance and to demand full collateral in order to avoid the moral hazard which would result from insuring the borrower against all bad states. Thus, a contract which would be mutually beneficial under full information fails to materialize, and so we have an analogy to Akerlof's (1970) lemons. When this market fails, the risk-averse poor must use the micro-finance system to leverage loans without collateral. Only those with access to other sources of liquidity (such as a secure job in the family or the possibility of calling on remittances) that they can use to protect collateral from foreclosure in case of shock will be willing to put their land at risk in securing loans from commercial banks. Bankers also know that costs of foreclosure on land can be prohibitively high, and will lend preferably to borrowers with both collateral and ready sources of liquidity that can serve in case of shock. Under these circumstances, land used as collateral serves as a signal, while ascertained sources of liquidity serve as the effective security on loans.

FORMAL FINANCE AND MICRO-FINANCE

So, we have two lending systems. The formal lending sector relies on collateral to solve moral hazard and adverse selection problems. Because commercial banks have limited information on their clients, they cannot offer insurance without increasing moral hazard and adverse selection. Thus, banks expose borrowers to large amounts of risk, and agents unwilling to lose their collateral, i.e., those without alternative sources of liquidity to shelter the loan, will not take loans even if potential returns are very high.

Those who will not or cannot participate in the formal lending sector borrow in a world without collateral, and thus MFI lenders are always exposed to moral hazard. Dynamic incentives are used to solve this problem, and these incentives are most effective when clients are most patient. To discover the subset of profitable clients among this broader population, lenders must experiment, lending very small amounts to

large numbers of people in order to discover those investing for the long-term. These borrowers must always be kept desiring more credit, or the nature of the dynamic contract falls apart. Thus, such loans start small, because the chronic defaulters must be discovered at minimum cost. Loan ceilings typically increase at a steady pace to continue holding the future discounted value of capital above its current use value. Clients who reliably repay loans below the maximum exhibit some option value for the potential future use of larger loans. The impatient will be more subject to moral hazard, since the benefits of current inaction weigh heavier than the future rewards. A borrower who values the future relationship with the lender will exert effort in more states and so be a better client, all other things equal.

Attempts to improve social mobility in this multi-lender world naturally focus our attention on the information about borrower patience which can be observed by those other than the current lender. The early expectations of the micro-finance movement featured the idea of 'graduation', where successful clients would move into the formal sector. Private incentives for micro-finance institutions, however, turned out to be the opposite: these high-type clients actually generate revenues for the lenders, and so they are loath to let them go. This has been true even for lenders with social (rather than profit-driven) motives as high-type clients were a source of revenues that could be used to cross-subsidize less performing (and often poorer) clients. Thus, keeping information about good borrowers *secret* became an important survival strategy for lenders, and created barriers to mobility on a credit ladder for the patient poor.

Most major MFIs have now evolved a system of 'internal graduation', whereby the best clients are offered access to more individualized loans, usually at lower interest rates, within the original institution. *A priori*, there is no reason to think that an MFI would be more efficient at offering individualized loans than a bank, which implies that the MFI is in fact leveraging its informational advantage in order to retain its best clients. Without collateral and without information-sharing, we might expect this upward diversification of lending technologies to continue indefinitely, pushed in particular by increasing competition among MFIs. Without collateral, the sharing of information will in general still be insufficient to allow good clients to move into the formal sector, since they have no security.

The crucial concatenation of factors which presents a key to unlocking rural poverty is consequently the joint presence of information about households' time preferences (derived from their MFI borrowing histories) and of collateral (farm land). This overlap is what allows formal lenders to offer insured loans to good MFI clients, even when they do not have control over alternative sources of liquidity to protect the collateral. These conditions are most likely to obtain in semi-rural areas where smallholder households control farmland and are also engaged in extensive sideline and off-farm activities which made them good clients for MFI loans. As stressed by De Soto (2000), it is essential that property rights on land be clearly established if it is to serve as collateral. However, land titles are necessary but not sufficient to access loans from commercial banks. Farm households need either access to complementary liquidity that they can use to shelter land from negative shocks, or be able to publicly capitalize on their accumulated reputation as high-type borrowers from MFIs, usually in their non-farm activities. Credit bureaus are thus fundamental for this latter trajectory to prevail. When these conditions do hold, we have reason to think that 'graduation' to the formal sector can indeed happen, making MFI lending a step on a successful credit ladder for the rural poor.

EXPLORING INFORMATION LINKAGES

The purpose of this research project is to analyze the strategic informational linkages that exist between the expanding micro-finance markets and the broader, collateralized credit markets. Specifically, farm households which had been prevented from formal borrowing due to risk may face much better prospects if they are able to leverage their reputation from a successful borrowing history with a micro-finance organization. The reason is that the bank, if convinced that the borrower is patient, will be willing to offer a greater degree of insurance against risk through loan rescheduling in case of shock, and thus will potentially insure the farmer to an acceptable extent. While the use of reputation cannot eliminate the risk-constraint problem, it may be able to substantially weaken it to an extent that many more successful agricultural lending contracts are made.

There are three levels of information-sharing between institutions, each of which has a different influence on the market (Haider, 2000; Campion and Valenzuela, 2001):

1. **No information sharing:** With multiple equivalent lenders competing for clients, the dynamic incentives which were being used by lenders to ensure repayment dissolve completely, and only social collateral can enforce repayment.
2. **Default sharing:** Here, lenders share information in the case of borrower default, but share nothing else. This means that there is no discernable information on borrowers who do not default, and thus exceptional borrowers cannot be identified. Dynamic incentives function only in preventing default, but not in inducing within-repayer performance.
3. **Full information sharing:** This is the case of a full credit-reporting bureau that provides information on borrowers' repayment histories and current debt exposure. Now, the best borrowers can be separated from the rest, and so collateralized lenders can tell to whom they should first offer contracts with more insurance.

The theory of Optimal Contracts offers some interesting insights into this screening process. Think of the true value of an agent's patience as some underlying parameter which the lending system as a collective 'principal' is attempting to discover. Output in various activities would, thus, offer a variety of signals as to the output of the agent. A signal which conveys more information is preferred to one which conveys less, and thus the lower the stochastic component in the determination of output, the better from the point of view of the lender. Observing output in a sector like small-trading or micro-enterprise which is directly related to borrower effort would thus be preferable to the noisy signal observed through farm yields. This means that subjecting the collateralized rural poor to some period of uncollateralized rationed microfinance lending in sideline or off-farm activities could prove the optimal way to discover their type and to insure them adequately. In this way, moving away from the 'private' informational relationship which exists with no credit reporting may be a vital institutional tool to allowing the rural poor access meaningful productive credit.

TOWARD A SET OF TESTABLE HYPOTHESES

We can conceptualize the different credit ladders that derive from the above as in Figure 1. We distinguish in this figure five trajectories each of which provides us with testable hypotheses.

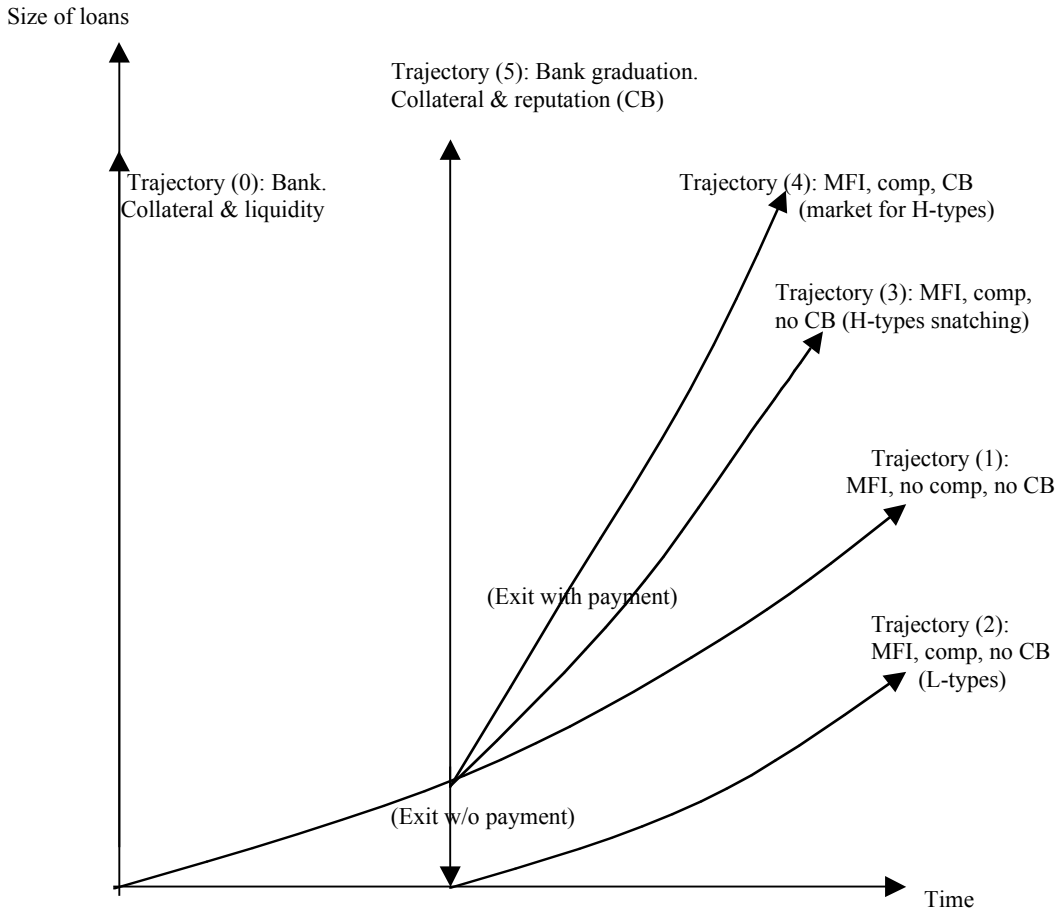

Figure 1. Alternative credit ladders according to competition among MFIs (comp) and existence of credit bureau (CB) by borrower types (H and L)

Trajectory (0): For poor smallholders without reputation, the risk of losing collateral limits taking loans to those with liquidity sources that they can use to shelter collateral from foreclosure in case of shock.

Hypothesis A: Smallholders who take credit have collateral and control over non-covariate sources of liquidity (sideline activities, off-farm employment, remittances) sufficient to cover the loan in case of agricultural shock.

Trajectory (1): Dynamic incentives are key to repayment performance for MFI lending (i.e., without collateral) when there is no competition among MFIs and no credit bureau.

Trajectories (2) and (3): Competition among MFIs accelerates differentiation between H-types and L-types without credit bureaus. Competition destroys the use of dynamic incentives to control moral hazard as it allows exit of L-types and their re-entry in other MFIs.

Hypothesis B: Overall borrower repayment will worsen with increasing MFI competition in environments with no credit-reporting mechanism.

Hypothesis C: Competition accelerates exit of H-types who are snatched by competing MFIs (e.g., by recruiting credit agents with their clienteles from competing MFIs) without loss of dynamic incentives (these clients' private reputations are transferred through the credit agents). Exit of L-types also increases with higher competition among MFIs as moral hazards opportunities increase.

Trajectory (4): Competition and credit bureaus create a market for H-types and thus accelerate exit of H-types and give them access to larger loans. They decrease exit of L-types as they cannot gain admission to other MFIs due to information sharing on their credit records.

Hypothesis D: The presence of a default listing system reduces defaulting but does not change behavior among clients who repaid well before the listing system.

Hypothesis E: Within the MFI sector, credit bureaus with full information-sharing increase exit of good clients to competing MFIs, increase entry of good clients with high initial loans, and decrease defaults due to moral hazard.

Trajectory (5): Graduation due to collateral and reputation gained in MFI borrowing made public through full-reporting credit bureaus. Clients gain access to insurance (rescheduling of loans in case of shock) like all other bank clients, based in this case on reputation instead of liquidity as in Trajectory (0).

Hypothesis F: The presence of full information-sharing increases the number of reliable clients who move from un-collateralized to collateralized lending (graduation).

THE IMPACT OF CREDIT BUREAUS:

We can now isolate the three channels through which Credit Bureaus can be expected to change the mobility of poor smallholders into the formal agricultural lending system:

Liquidity channel: In the event of an unavoidable shock, a farmer who has used land as collateral may try to use the MFI system to generate the liquidity to protect his land. The presence of a credit bureau will change the amount of liquidity that the farmer anticipates being able to generate *ex ante,* and thus will shift demand for loans. This effect may be different for good and bad clients, and we cannot sign it *a priori.* The crucial component of this effect, though, is that it transpires *even without any information transfer to banks*. Thus we will observe this effect whether or not the bank has used the credit bureau to check the credit of a client.

Hypothesis G: Bureaus alter mobility even when banks do not participate in bureaus.

Collateral channel: One of the purposes of collateral in lending is to prevent moral hazard. It is reasonable to expect that a client with an observable, first-rate history of MFI borrowing may be asked to put less collateral on a loan than an agent about whom nothing is known. So, the presence of information transfer between MFIs and banks may decrease the collateral requirement and thus help borrowers graduate, moving them from T(4) to T(5).

Hypothesis H: collateral on observed loans should decrease with prior client information.

Insurance Channel: Finally, the bank may demand the same collateral but, having observed that an agent will repay whenever able, be more willing to reschedule or defer loans in the event of shocks. This channel operates purely through altered risk-sharing between borrower and lender.

Hypothesis I: The presence of full information-sharing increases the degree of loan forbearance within the formal financial network.

Hypothesis J: Clients with an MFI origin will make greater use of insurance, while clients in Trajectory (0) make more use of liquidity to respond to shocks.

RESEARCH STRATEGY AND DATA-COLLECTION

We want to use a natural experiment present in Latin America to analyze the policy implications of systematic efforts at information-sharing, using the fact that different countries are at different stages of development of credit reporting systems. As credit bureaus are rapidly emerging, we can also use the three years life time of the project to observe before and after situations in settings where bureaus are not yet fully in place.

Banks in Guatemala do not provide information on their clients (ALAIC, 2002). Strong MFIs (GENESIS and FUNDAP) have clienteles that do not overlap due to geographical specialization. Hence, there has been little demand to start a credit reporting system. Nicaragua briefly instituted a default-listing system in the late 1990s which then fell apart after two years. El Salvador has both public (SSF) and private (Dicom, Procredito, Abansa) credit bureaus (Lenaghan, 2001). Because unregulated MFIs are legally excluded from accessing credit bureau information, six MFIs created in 1998 with assistance from USAID the *Info-Red* system which is a modern, updated, computerized credit-reporting system, although it does not operate throughout the entire country. Guatemala is expected to introduce a similar system at the end of 2002. Peru with the Central de Riesgos managed by the Banks Superintendency has a nearly universal public credit reporting system, including loans made by regulated MFIs (IDB, 2000). It is complemented by three private credit bureaus (Riesgo Cero, Certicom, and Infocorp a subsidiary of the U.S. credit bureau Equifax) that improve and broaden the information made available on borrowers. Loans made by unregulated MFIs remain outside credit-reporting systems.

We have shown that the intersection of the reputation-based MFI lending system and the collateral-based formal agricultural lending system may provide some unique avenues for advancement of poor rural households. Where we wish to focus our attention, then, is on the areas of the selected countries where rural households engage in both agriculture and non-farm activities, and where both of these kinds of lenders co-exist. The core identification strategy for our empirical analysis rests on changes in credit information-sharing across time and space in these areas of pluriactivity.

If the creation of the credit bureaus is an endogenous process, then we cannot identify a treatment effect by comparing treated and untreated units in a straightforward way. What we rely on to identify treatment is the exogenous component of the rule-setting process. If a specific district, or type of institution, is legislated to begin having access (or required to use) the bureau at some date, we can identify a treatment effect by comparing similar units across these exogenous selection criteria. After discussion with the parties who set the rules for the credit bureaus under study, we will identify several physical regions which contain legislated within-region differences in credit reporting, and in which there is expected to be a *change* in the reporting system over the course of the study. In this way we are able to identify treatment effects in both cross-sectional and dynamic variation. Wherever possible we will use the same lending institutions on either side of the treatment criterion to minimize potential endogenous effects. Matching treated to untreated units on the basis of exogenous characteristics will serve as an additional control on the endogenous selection problem.

There will be three complementary levels of analysis to identify best practice in using credit-reporting systems to deepen access to credit for the rural poor, and the consequences this has on access to credit and competition among lenders.

- **Comparative institutional analysis of credit-reporting mechanisms**

This will be a broad-based census of the credit-reporting mechanisms that exist in developed and developing countries across the globe. These institutions all have internet sites that provide information on the nature of their operations. Hence, a census can be done directly by collecting exhaustively this information on the internet, complemented by direct email contacts for missing information. Of particular importance will be to understand why different countries have different credit reporting systems, and why are some more advanced than others in this institutional development. The role of bankruptcy laws, loan forgiveness, regulation of privacy of information, complementarities and tradeoffs between publicly and privately managed systems, competition among credit bureaus, and coverage of regulated and unregulated MFI lenders will be of particular interest in this analysis. The goal is to develop a typology of

credit reporting mechanisms, and to identify the functions, pitfalls, winners, and losers under various regulatory regimes.

- **Client administrative data from MFIs**

Through extensive institutional contacts in the region, we will get access to administrative data from several lending institutions operating in the regions of interest (we have already done this with Genesis and Fundap in Guatemala, and with Finca in Peru and in other parts of the world). This data will be at the individual level, and will consist in basic information about clients (business plans, borrowing, savings, and dates) along with information on collateral received, repayment, and some rudimentary control data. The institutions will be selected as to be sufficiently long-lived as to predate the major institutional changes in credit reporting, and so this data will form a panel to estimate the impact of these changes. In every region studied in detail, we will have data from at least one MFI and one formal-sector lender.

For Peru, we also will work with an Apex organization, COPEME, to get access to the MFI administrative data. We will choose two or three sites within Peru where microfinance organizations traditionally overlap geographically, and we will work with the Apex organization to gather full data from all the MFIs in those areas. We already have done so with FINCA Peru and are in the process of cleaning that data. Since MFIs began using credit bureau for credit scoring in 1999, we will use data from before 1999 to estimate how much default could have been avoided had information been shared. This data actually will underestimate the impact of credit sharing on reducing default since a client is less likely to default if the client knows that a credit information bureau is in place. However, we can estimate how many loans that went into default would not have been made had the prior credit history been made known by the lenders.

- **Entry surveys from commercial banks**

Many of the hypotheses which we would like to test require that we have information on all borrowers, including those who did not come into the system through a credit reporting bureau. This clearly indicates the need for surveying. Having selected regions according to the exogenous distinctions mentioned above, we will instigate a

New Client Survey, to be issued to all entering borrowers from small-scale, formal-sector agricultural lenders within these regions. The surveys will be conducted on all entering clients throughout the period of study, and questions will include:

- Client history of MFI borrowing; current loans and savings in the MFI sector, repayment record there. Is the client leaving an MFI directly to join this lender?
- Basic exogenous control variables (education, household, assets etc.)
- Collateral put on loan, interest rate, explicit loan rescheduling terms.

We will collect additional information on the lender, on the region, and on the status of credit bureaus at that place and that point in time. Outcome variables generated from these surveys will include:

- Number and percentage of clients entering agricultural lending systems from the MFI sector.
- Number and percentage of clients being offered loan rescheduling, both *ex ante* and *ex post.*
- MFI-sector borrowing and savings of those households that use both systems.
- Collateral demanded on loans, and interest paid.

ANALYSIS

Question 1: Does the presence of credit bureaus improve the transfer of agents from the MFI sector to the formal agricultural lending sector? If so, through which channels? (Hypotheses F, G, H, and I)

We can use the data in the New Client surveys to run two kinds of impact regressions: a difference-in-differences, where changes in outcomes across the treatment status identify impact, or a matching regression where entrants are matched to similar entrants across the treatment status. In either case, we can use interaction terms to decompose how the impact is passed through each of our three channels. Since we separately observe whether a bureau exists and whether or not a lender uses it to check a given client, we can test for the Liquidity channel as follows: run a regression with both a simple treatment dummy and this dummy interacted with a dummy indicating whether the credit bureau was used for this client. Since the Liquidity channel is demand-side and operates independently of information transfer, it will be identified by the impact term

which is *not* interacted with use of the bureau. This will be true regardless of the outcome variable. With the Collateral and Insurance channels, we know the outcome variable which each should effect, and we know that the effect should pass through the *use*, not the *presence,* of information. Thus the impact of these channels will be identified by the above interaction term used in regressions which explain collateral on loans and the degree of loan forbearance, respectively. The full impact of credit bureaus is the sum of the interacted and uninteracted coefficients.

Question 2: What impact do different credit reporting regimes have on different kinds of borrowers? (Hypotheses D, E)

The regression methodology will involve the use of a full panel fixed-effects analysis of the institutional-level data, with fixed-effects at the level of the smallest group larger than the individual. The outcome data and certain controls will come from the institutional datasets. From the survey of credit systems we can derive exact measures of the degree of information-sharing at various points in time, and additional regional controls. Differences in behavior across regions and time as the information sharing systems were developed to different degrees will identify a treatment effect. Interactions between a treatment variable and the characteristics of individual borrowers will be used to examine how information-sharing networks differentially influenced borrowers with different characteristics. The most important outcomes to study in this analysis will be repayment performance, dropout, new client enrollment, and borrowing behavior. The goal will to be identify the optimal policies for individuals of different characteristics. Since the endogenous placement problem is based on regional information, the use of group-level fixed effects allows us to recover estimates of the impact of bureaus on *individuals* that are unbiased.

We cannot observe directly *who* moves from institution to institution with this kind of data. However, we can separately test for impacts on the two kinds of lenders, and can use the *presence* of a given type of competitor combined with high dropout to infer that dropouts are in fact going to that competitor. Also, MFI client losses should be mirrored by banking client gains, and thus allow us a double-check. The other main advantage of this level of analysis is that by using retrospective administrative data we

are able to examine the impact of policy changes long before the study begins. Thus, Nicaragua's failed attempt at a default-listing system in the late '90's becomes a perfect natural experiment wherein the treatment is applied and then unapplied.

Question 3: How does the impact of credit bureaus vary with the characteristics of the local region, or of the lender? (Hypotheses B, C)

This analysis is the same as the one above, except that instead of interacting information-sharing measures with individual characteristics, we interact them with group and regional characteristics. Of most interest, given our hypotheses, will be the effect of competition in modulating how a credit bureau's impact is felt. While no static group characteristics are identified in this fixed-effects approach, *changes* in information-sharing can be interacted with group-level or institution-level variables. Thus, we can answer questions such as: are new entrants helped more by information-sharing than incumbents, and how does competition alter the incentives presented to borrowers by credit bureaus? Here, estimates are unbiased by endogenous placement as long as the divisions *within* our sample comparison groups are legislated, not chosen.

Question 4: What are the determinants of the process which matches borrowers of certain asset positions with specific lenders? (Hypothesis A)

We cannot speak with any clarity of the "credit ladder" which moves the rural poor towards increased profitability without a real understanding of the steps on this ladder. Compilation of data from our various sources, along with data from the credit bureaus, allows us a comprehensive picture of the typical asset class, background, and business characteristics of borrowers from each kind of lender. Our multiple years of data allow us to construct a dynamic picture of the evolution of the credit ladder as agents move from one source of credit to another. In essence, this analysis allows us to be much more specific about our 'trajectories'; what are the switching points, what are the determinants of participation in any one of them, and what are the patterns that lead to a failure of the credit system to provide mobility?

Question 5: What have been the strategic and political barriers to implementing credit bureaus?

To make practical policy recommendations, we must understand the typical barriers encountered on the way to establishing credit regimes, and particularly which players resisted the transition. Theory predicts that the largest, oldest micro-finance institution would be the most loath to fully share information about their clients. There are strong reasons to believe that information-sharing may not emerge spontaneously as an equilibrium contract between MFIs, and so the political process required to engender them needs to be the focus of direct study. This analysis will involve legal and political considerations that may not be amenable to quantitative analysis, and will be directed to producing output that is of maximum use to those in the political and legal spheres of policymaking.

BUDGET AND TIME SCHEDULE

Budget for the internet census on credit bureaus is a one time $5,000 expenditure. This will be done in the Fall 2002 by a graduate student with experience in financial institutions.

Data collection for both administrative and entry surveys will consist in a first year expenditure of $10,000 for each data set and each country. This will be done as early as possible in 2003. Follow up data collection in 2004 and 2005 is budgeted at the cost of $5,000 for each data set and each country. Data collection will thus cost $20,000 per country and per data set, or a total cost of $120,000 for the two data sets in the three countries.

Expenditures will be matched by all three institutions. The University of California will contribute one graduate research assistant per year for the duration of the project ($15,000 per year plus tuition fees, or a total of $25,000/year, i.e., $75,000 over the lifetime of the project). The University of San Francisco will contribute at least one Master fellowship per year ($9,000 per year, or $27,000 over the lifetime of the project). GRADE will assist with $5,000 toward local costs of the proposed conference. All three institutions will also contribute PI time and use of facilities which are not made explicit in the budget.

The FAO office for Latin America will assist with costs of data collection for the analysis of credit bureaus in Latin America. This will consist in obtaining information on the legal and regulatory context where credit bureaus operate through the FAO offices, in all countries where the FAO operates in Latin America. Finally (see letter in Appendix), the FAO office for Latin America will cover the cost of a workshop at the Santiago headquarters in 2005 to present and discuss results of the study.

Besides data collection, cost includes a 50% postdoc salary at the University of California, a $10,000 salary complement for our GRADE collaborator, costs of travel from the US to the three countries and from Peru to the US, and per diems for field work for PIs and graduate students.

Work in Peru will be done cooperatively with Dean Karlan from the Economics department at Princeton University who has worked with Finca-Peru and with COPEME. In El Salvador, work will be done cooperatively with Alvaro Trigeros in the Economics Department at the University of Central America (Universidad CentroAmericana "José Simeón Cañas"), who has done extensive cooperative research and student exchange with USF. In Guatemala, work will be done cooperatively with Fundap and Genesis with whom we have had sustained relations in prior research projects.

Detailed figures are included in the attached project budget.

CONCLUSION

A massive, subsidized screening of poor borrowers has been carried out over the past decades thanks to the 'microfinance revolution'. Many of the MFIs engaged in this revolution have lost money throughout their operations, and so a huge pool of information about borrower quality has been generated which the private market would not have been able to afford. The formal financial sector, given reliable information about poor borrowers' credit histories, would readily lend to the best among them. This applies to many landed rural poor who have established reputation in borrowing from MFIs for their non-agricultural activities and could use formal loans, acquired on the basis of collateral and reputation, in support of their agricultural operations. The incentives of the MFIs to divulge this information have, however, not always been aligned with the interests of the long-term thinkers among the rural poor. Thus, on a

policy level, those same funders who have generated this information pool may now be required to take some action in order to guarantee its efficient use.

Establishing a good reputation is one of the few assets to which the poor have equal access. The focus of this proposal is to analyze institutional innovations that allow the maximum leverage from a good name, and so to maximize social mobility for the long-term thinkers among the rural poor. Due to the special concerns and problems that are present in rural lending, profitable loans offered by a bank may not be accepted by risk-averse clients. Credit reporting bureaus allow the policy-maker a unique, cost-effective way of increasing transparency and, as advocated by De Soto, enhancing the leverage of the assets of the poor. Best of all, this policy tool is likely to reach its maximum efficacy in rural areas where current credit provision lags the furthest behind.

This research proposal will analyze the impact of credit bureaus on access to credit for rural households, on competition among MFIs, and on graduation of long-term borrowers to the formal financial sector. It will use three types of data sources: an internet census of credit bureaus, administrative data from cooperating MFIs, and an entry survey among formal lenders to agriculture.

The research project is squarely policy oriented, seeking to provide recommendations about the development and operation of credit bureaus in Latin America. It will include training for policy analysts and dialogues with policy makers. It is expected to help resolve one of the major remaining frontiers in using financial services as an instrument for poverty reduction: provide access to loans for the rural poor in their agricultural operations.

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4. Anticipated outputs and dissemination activities

The proposal is policy oriented. It will help establish the conditions under which credit bureaus can operate effectively, the expected implications that the introduction of credit bureaus have for access to credit for different categories of rural poor, and impact on the competitive positions of different categories of lenders.

Outputs will consist not only in academic publications, but also in workshops for policymakers organized at GRADE in Peru and FUNDAP in Guatemala.

Students at USF and Berkeley will be involved in both field work and MS-PhD research.

The FAO Office for Latin America has agreed to assist in the collection of information about the legal and regulatory context for credit bureaus in all countries where they have offices. It has also offered to organize a small workshop at the headquarters office in Santiago, Chile, to present and discuss results of the study (see attached letter in Appendix).

5. Schedule and timeline over the life of the project

October 2002-September 2003: Internet census of credit bureaus and data analysis
October 2002 to end 2004: Administrative data collection in cooperating MFIs.
2003-2004: Entry surveys in formal lenders to agriculture.
2004-2005: Workshops and policy dialogues in Peru and Guatemala, and at the FAO headquarters in Santiago, Chile.

6. Proposed budget for the life of the project 2002-2005

7. Researchers' Qualifications

Alain de Janvry

My work has principally dealt with understanding the determinants of rural poverty and identifying strategies for rural households to escape poverty. This includes work with extensive farm and community surveys in many Latin American countries. Policies and programs analyzed as elements of anti-poverty strategies include land reform and programs of access to land, technological change, rural development programs, educational and health subsidies to rural households, direct subsidies in the context of policy transitions, and assistance to communities in the management of common property resources and the delivery of local public goods. Collaborative work in microfinance has focused on group lending in Guatemala, using data collected from Genesis, and on incentive schemes for credit agents in microfinance institutions.

Elisabeth Sadoulet

As an applied econometrician, I have worked on a number of aspects of household and community behavior, as well as on impact analysis of development projects. In recent years, projects analyzed included Procampo, Progresa, and Procede in Mexico. I have had support from the California Agricultural Experiment Station for work on microfinance institutions. This has focused on the determinants of group formation in microfinance and on the role of mutual insurance in deriving benefits from group lending. I have done work on group lending in Senegal and on access to credit for rural households in Mexico. I also have a paper in progress on the design of incentives for credit agents in different types of MFIs according to their own objectives. I have been engaged in survey design and data collection in a number of countries, particularly Mexico, the Dominican Republic, Senegal, and Burkina Faso.

Bruce Wydick

Since the formative stages of my dissertation work at the University of California at Berkeley, I have focused my research in the area of credit markets in developing countries, and how the performance of credit markets affects the development process. My dissertation was published in the form of three journal articles in *The Economic Journal*, the *Journal of Development Studies*, and *Economic Development and Cultural Change*. These articles treated topics such as the impact of improved access to credit on class structure mobility and child schooling, and the ways in which borrowing groups mitigate issues of moral hazard and adverse selection in credit market transactions. Subsequent published research in the area has examined gender differences in responses to credit access and dynamic incentives in credit contracts. My most recent, and yet unpublished, work examines the potentially negative effect of competition between microfinance institutions. The implications of this research clearly support the importance of credit bureaus in newly formed credit markets in developing countries and provide recommendations for their informational infrastructure.

Craig McIntosh

Craig McIntosh is finishing his final year as a graduate student at U.C. Berkeley. His work has focused on impact analysis and on the theory of interactions in credit markets. He has worked extensively with FINCA International; as a researcher at their main offices in Washington D.C. in 1999 he helped to design more effective client data collection systems, and during 2000-2001 he worked with their Uganda programs while on a Fulbright IIE grant. During the course of that year he helped them totally redesign their data collection systems to allow them to test the impact of several innovations they introduced in their basic lending program. This research forms the core of his dissertation. More recently, his work has focused on the role of competition in determining outcomes in micro-finance markets. A recent paper written with Bruce Wydick of USF (submitted to JDE 7-02) examines the theoretical impact of competition on lenders of different motivations, and emphasizes the crucial role that credit bureaus play in allowing for mobility among micro-finance clients. Current work includes a panel-data analysis (with Alain de Janvry and Elisabeth Sadoulet) of the differential impacts of competition from various kinds of lenders upon Village Banking clients. This work isolates the specific types of clients who are most likely to switch to

various competing lenders, and represents one of the first empirical tests of the many theoretical predictions in the literature relating to assortative matching, moral hazard, social collateral, and dynamic incentives. Mr. McIntosh is currently teaching the graduate econometrics course at USF and is pursuing research on racial discrimination in credit markets in South Africa and GIS-based methodologies for conducting impact analysis where treatments are non-randomly distributed across space.

Martín Valdivia

Martín Valdivia, Ph.D. in Applied Economics, University of Minnesota, is a senior researcher at the Grupo de Análisis para el Desarrollo (GRADE) in Lima, Peru since 1993. Rural development is one of his areas of research, having done work on the connection between factor market imperfections, financial and labor markets, and rural development. His current research also includes the analysis of the role of micro-savings mobilization in the development of financial markets and in improving the likelihood of urban and rural micro-entrepreneurs to exit poverty. He often serves as consultant in issues of rural development with multilateral organizations such as IADB, World Bank, and FAO among others.

Appendix

Letter from FAO Headquarters Office for Latin America

Date: Fri, 06 Sep 2002 10:01:40 -0400
From: "Schuetz, Guilherme (FAORLC)" <Guilherme.Schuetz@fao.org>
Subject: Rural finance proposal to Basis
To: "Alain de Janvry (alain@are.berkeley.edu)" <alain@are.berkeley.edu>
Cc: "GordilloDeAnda, Gustavo (FAORLC)" <Gustavo.GordilloDeAnda@fao.org>,
"Palti, Ramon (FAORLC)" <Ramon.Palti@fao.org>,
"Lama, Soledad (FAORLC)" <Soledad.Lama@fao.org>,
"RLC-Registry (FAORLC)" <RLC-Registry@fao.org>

Dear Mr. Janvry,

I refer to your email on the rural finance proposal to Basis/USAID sent to Mr. Gordillo recently.

The proposal is based on the belief, which is shared by RLC, that the lack of access of poor microfinance institution (MFI) clients to formal lenders is largely the result of lack of guarantees and insufficient information of past borrowing performances.

As you point out in the proposal, with policy initiatives for incorporating rural poor in peri-urban income strategies as clients of MFIs, rural households can establish credit reputation, along with the development of credit information sharing systems (credit bureaus), and greatly improve good borrowers access to formal loans.

This is especially true as the microfinance market becomes more competitive in Latin America, credit information sharing will increasingly be a necessity for well functioning of these markets and improve linkages with formal credit markets.

Therefore, it is specially useful for his Regional Office not only to participate in this proposal regarding point (ii) "*comparative analysis of legislation on microfinance and credit reporting systems in Latin America*" with the support of FAO country offices, but also implement a small workshop in Santiago, Chile, to present and discuss the results of the case studies undertaken.

In view that our budget is fully committed for this year, we would submit this proposal to be considered within the first semester of next year, pending available funding.

In the expectation of hearing from you soon,

Regards,

Guilherme Schuetz

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