

# **Microcredit as a means to alleviate poverty: collaboration between government and nonprofit sectors in Mexico**

David Garcia-Junco Machado and Gabriela Perez Yarahuan

## **Introduction**

Poverty remains a major problem in Mexico despite serious and continuous efforts of the National government to ameliorate it. The incidence, depth and severity of poverty is much greater in rural areas than in urban areas. Extreme poverty continues to be essentially a rural phenomenon, and southern states, where agriculture accounts for the greatest share of economic activity, are also the poorest ones. Some of the main causes of poverty in rural areas are the lack of assets, illiteracy and low levels of education.

Arguably one of the causes of rural poverty is the low productivity of peasants. This low productivity is explained, in part, by the lack of access to financial markets. Due to the high risk, the asymmetries of information involved and the absence of collateral, the government has implemented aid schemes in order to give them access to credit. Despite the efforts and after billions of pesos spent, none of the programs seemed to have worked as expected. Public owned banks such as The national Rural Bank (BANRURAL) incurred in enormous deficits. Corruption and misallocation of resources were some of the main flaws of these organizations, although not the only ones. The loans were hardly repaid, the target population only included some small producers but not the poorest (those who had no collateral). The outcomes of these policies suggested an intractability of the problem with standard schemes of subsidies through state own banks.

Recently, however, Micro-credit institutions aimed at the poor, have proven to be successful in some developing countries, like the Grameen Bank in Bangladesh, Bank Rakyat in Indonesia and Banco Sol in Bolivia. These institutions contribute to income generation, provide resources to those that have no collateral and establish clear and simple systems for project evaluation with the initiative and participation of the community where projects are actually financed.

The idea of community involvement in the generation of credit markets and its much announced success has attracted the attention and motivated government and the non-profit organizations to implement similar schemes in other countries, such as Mexico.

At first glance it seems that the success of micro-credit institutions relies on the solutions given to the persistence of asymmetric information and lack of cooperation in rural credit markets. This paper aims to test some of the hypothesis regarding why rational individuals cooperate in settings where the standard economic theory predicts they will not and the reasons why government fosters the non-profit scheme instead of state owned financial institutions.

The data is taken from the program Cajas Solidarias implemented by the Mexican government at the beginning of the 90's. The paper is divided in three sections. The first outlines some of the claims regarding the benefits of group lending vs. individual lending and outreach vs. sustainability of community funds. The second is an overall view of the main features of the programs Credito a la Palabra (Credit on Word) and Cajas Solidarias (Community Funds). Although, the paper does not rely on data of the former program the rationale to include it is that Credito a la Palabra is the main source of funding to start a community fund. The last part of the paper develops a preliminary econometric model to test some of the hypotheses outlined.

## **I. Current Debate**

The debate about cooperation within the framework of micro-credit institutions for the poor is divided in two streams of inquiry, which we will call the political economy and the cognitive sociological approach. The former relies on game theory and econometric analysis to develop theoretical models of cooperation. One of the core questions in this line of inquiry is under what conditions group lending is more effective than individual lending . In other words, what are the institutional conditions in which rational actors can cooperate in environments of asymmetric information? And, how these actors overcome the free-rider problems in the provision of public goods?

The second stream relies on organizational theory, political science and sociology. Although, its basic hypothesis are driven by case studies the debate questions and conclusions are very similar to the more formal theoretical developments. However, the central concern is the design of mechanisms to aid the poor and break their

isolation from the economic and political development of the country, therefore participatory and democratic issues often arise in the debate. Within the framework of micro-credit institutions for the poor, this stream argues that "the central dynamic in the provision of financial services to the poor is reconciling outreach and sustainability" .

Although current models of group lending vs. individual lending do not accurately describe the institutional arrangements of Cajas Solidarias, the analogies are such that is not hard to analyze the program in the light of these theoretical developments.

Under the first approach, the problem of credit to the poor can be synthesized as follows: A peasant needs one unit of capital ( $K$ ) for a project with a yield of  $x$  continuously distributed on worst best outcome  $[x_0, x_1]$ . He borrows the unit of  $K$  and has to return  $r$  (which is greater or equals  $K$ ). After the yield (and the maturity of the loan) he has to decide to pay  $r$  or not. If he does not repay his payoff is given by  $x$  some penalty ( $p$ ).

Where  $p < x$ . (note that  $p$  does not need to be any amount of money but the future denial of credit). If the borrower repays the loan then the payoff is given by  $x - r$ . Note that if the borrower has high a discount rate (as poor usually do) the penalty in this circumstances tends to zero. The other thing worth noting is that if the yield of the project is enough to finance future projects  $p$  will also tend to zero.

Therefore we have a situation were the borrower has very low incentives to repay the loan and obviously the lender has less incentives to give the loan, since the probability of default is high and there is no collateral to offset the risk in case of default.

In its simplest form the argument is that group lending increases  $p$  through social sanctions, and when the group is allowed to select its members it partially solve, in the first stage, the asymmetric information problem. Since the individuals know each other better than the lender, they would not allow in the group someone with a high probability of imposing an externality on the rest. On the second stage the peasant who receives the loan has to make the decision whether to pay  $r$  or not. Although, repayment decision is a function of  $x$  given a minimum amount of  $x$ , group monitoring is supposed to preclude strategic default.

For the second stream, cooperation and asymmetries of information inquiry is a by-product of the search for models or incentives schemes able to provide efficiently financial services to the poor. The debate regarding outreach and sustainability is a matter of degree rather than substitution. Outreach is the extent to which financial systems reach the poor directly. The claims for advocating this view are that due to economies of scale the greater the scope of a cooperative the more possibilities of survival. The second claim (which is less theoretically appealing) is that the access to financial markets allows the poor to increase their participation in market process and by this empowerment, in political processes.

Although the discussion of this claim and its implications regarding the political process is beyond the scope of this paper, the implications of the economies of scale are that the greater the fund the more viable. Which implies the opposite direction of the argument of group lending and social norms. Group lending relies on the assumption of social penalties through peer monitoring as the fund increases its size (number of members) the cost of monitoring each other increases and the probability of overcoming the information asymmetries is reduced.

On the other hand, sustainability relies on a more theoretically sound tradition. Sustainable growth is a signal to lenders and borrowers about the strength of an institution. Although this claim might have sound policy implications its explanatory power is limited, however. Saying that the probability of survival of institutions (community funds) increases with time seems obvious.

## **II. Credit on Word and Community Funds**

In Mexico agricultural producers in rural areas still have very limited access to financial markets. The poorest producers are often excluded from these markets or face less favorable borrowing conditions, which impede them from increasing their productivity. In view of these facts, in 1989, the Mexican government --through the Ministry of Social Development-- implemented a program called "Fondos de Solidaridad para la Produccion" (Solidarity Production Funds) which is now called "Credito a la Palabra" (Credit on Word) to offer better credit conditions to rural producers generally involved in low-scale agricultural projects. The resources of this program are offered to producers directly with no financial intermediaries, no collateral, and no interest rate.

Under the original design, and until 1993, the recovered resources (no longer government resources) were invested in projects that the own community councils select. Therefore, Credito a la Palabra was not only a program for financial assistance but also a way of promoting social participation and collective decision making in the community.

By the end of 1992, a group of rural producers from the state of Nayarit proposed to the President, the creation of Community Funds called Cajas Solidarias formed from the recuperated loans of Credito a la Palabra. After the creation of the first Caja Solidaria in the Mexican state of Nayarit, five more were created in the state of Durango, two in Jalisco and three more in Nayarit. During the first year 49 community funds in 19 Mexican states were created.

### *Credito a la Palabra*

The goal of this program is to finance producers of basic crops in rainfed areas; low productivity irrigated areas or areas with high risk of disaster. The target population includes low-scale producers who are unable to get any type of credit and insurance from formal public (or private) credit institutions such as BANRURAL (National Rural Bank). It is important to mention that in 1998 400 pesos was the maximum loan given per hectare, and 3 hectares is the maximum land area supported through this program for each beneficiary.

The resources are given to each producer in cash or check with zero interest rate. When communities are isolated, the resources are given through the local authorities or through a representative selected by the community. In order to guarantee accountability in the management and allocation of resources each locality creates a Community Committee. The producers who have paid back their loans on time form this Committee.

The selection of the producers benefited through this program is done jointly by the state delegations of the Ministry of Social Development (SEDESOL), the Ministry of Agriculture (SAGAR), and the COPLADES which are state committees for planning and development integrated with federal, state and municipal authorities.

In order to keep eligibility for credit, the producers have to reimburse the loans. These recovered resources can either be concentrated into a Caja Solidaria, a community fund, which offers cheap credit to producers involved in small agricultural projects or other type of economic activity or they can be used for basic infrastructure works for the community.

### *Current Situation of Credito a la Palabra*

Between 1990 and 1997, the total budget for this program was 4.5 billion pesos from which 78.6 percent came from the Federal government and 21.4 percent from the States' governments. In 1997, the total budget for this program was 411.1 million pesos. Between 1990 and 1997, on average, approximately 700 thousand peasants and 1.7 million hectares have been assisted every year. Today, Credito a la Palabra exists in 74.5 percent of the total municipalities in the country. In 1997, this Program benefited more than 612 thousand peasants and more than 1.3 million hectare in 29 states of the country. Chihuahua, Chiapas, Michoacan, Guanajuato and Puebla are the states where the number of peasants and hectares assisted is the highest in the country.

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Source: Sedesol

Credito a la Palabra is not only a program which offers financial assistance to producers of basic crops, it is also through the recovered loans a good source of funds for the creation of basic infrastructure and diverse productive activities, all of them intended to improve the overall welfare of peasants.

In the period 95-97 the social welfare, productive and basic infrastructure projects counted up to 42, 48 and 10 percent of the total projects supported through this program respectively. The most important projects are:

Water and drainage works

Improvements of school's infrastructure

Improvements of housing infrastructure

Acquisition of fertilizers and seeds

Purchase of machinery and equipment for agricultural activities

Low-scale irrigation works

Infrastructure for livestock activities

Technology for better use of water and land

Electrification works

Construction of rural roads

Construction of storehouses for seeds and crops.

Coverage of the Programme Crédito a la Palabra

Year	Benefited Producers	Assisted Land Area
		(Hectares)
1990	648,403	1,986,636
1991	673,278	1,656,440
1992	691,635	1,693,786
1993	893,408	2,188,989
1994	820,740	1,648,012
1995	759,939	1,424,191
1996	688,608	1,440,126
Average	739,430	1,719,740

Source: Presidencia de la Republica, Tercer Informe de Gobierno, 1997.

## *Cajas Solidarias*

Due to the initiative of the producers in the Credito a la Palabra program, a program of community funds (Cajas Solidarias) was designed to provide small loans to low-scale entrepreneurs with no access to credit, due to the small size of their projects and lack of collateral. At the same time, it was designed to function as a savings instrument, offering attractive deposit rates.

The loans can be used to buy raw material, machinery and equipment for agricultural activities and also help a wide variety of small business get started, such as: pottery, handicrafts, flower growing, etc. There is also the possibility of getting small personal loans from the fund.

Each Cajas Solidaria is created by the decision and will of the peasants who repaid their Credito a la Palabra. The peasants themselves manage these funds. Such scheme gives them an opportunity to participate in the decision making process and express their concerns and needs to others. The elected members in charge of the operation of the Funds have to inform the rest about the likely outcome of different lending and deposit schemes and conditions. At the same time they have to ensure that the Organization does not become dominated by borrowers acting in their own selfish interest to the detriment of savers or the organization's future.

According to the constitutive act the community funds are composed of the following directing and managerial boards:

The General Assembly, which is the maximum authority and its resolutions, are compulsory for all the members of the funds.

The Administrative Committee responsible for the management of resources.

The Control Committee responsible of monitoring the performance of the community funds.

A new Caja Solidaria fund may be composed of various local funds from one or more municipalities. A single municipality may have more than one Caja Solidaria. The General Assembly encourages all members to participate in the selection of projects



for which the resources will be lent.

The equity of the Cajas Solidarias is divided in three funds:

1. The General Reserve Fund which is made up the recuperated loans from Credito a la Palabra or/and from other programs from the Fondo Nacional de Apoyo para las Empresas Sociales, FONAES (National Fund for Social Enterprises), and from 35 percent of the annual surplus of the capitalized loans.
2. The Contingency Fund which is made up 10 percent of the General Reserve Fund and 10 percent of the annual surplus of the capitalized loans.
3. The Social Development Promotion Fund which is made up 5 percent of the annual surplus of the capitalized loans.

The lending period can not exceed 10 months. The average lending interest rate in 1997 was 2.4 percent per month. Some Cajas Solidarias charge lower or higher interest than this average interest rate but it is intended that this rate always be lower than formal or informal financial market's rates. The collateral requirements are much less strict than in commercial banks. But the Cajas in general manage to maintain their sustainability. Sustainability requires both, good accounting and internal financial control procedures. Efforts to ensure good controls in the Cajas are easier because their own members have a strong sense of solidarity based on the compatible incentives for all those such as clients, managers and staff who are interested in the schemes' survival. The member of the community themselves supervise that no one client defaults their payments, because it would affect their own possibilities of getting themselves a loan in case they need one.

Even though, legally the Cajas Solidarias are non-government organizations by their legal status, but because it has been a governmental sponsored program, the National Fund for Social Enterprises (FONAES) is the public agency responsible of training and giving technical assistance for the creation and operation of Cajas Solidarias.

*Current situation of Cajas Solidarias*

In January of 1998 there were 164 Cajas Solidarias integrated by more than 2900 local community funds in 23 states of Mexico. The total number of beneficiaries counted to more than 143 thousand producers (approximately a third of those in the Credito a la Palabra program). Since their beginnings the Cajas Solidarias have received deposits for more than 52 million pesos. However, 24 community funds have not received any deposit. The total accumulated equity of the community funds counted up to 271.7 million pesos.

From 1993 to May 1997, the amount of accumulated loans has increased in 67%. The repayment rate increased in the last four years from an average of 37.5% in 1994, 51.9% in 1995, 60.4% in 1996 to as high as 69.3% in 1997.

Source: SEDESOL.

The total amount of savings increased from 600,000 pesos in 1993 to 64 million by the end of 1997. Up to date, community funds have been created in 280 municipalities of the 2,418 municipalities of the country. About 60% of those 280 municipalities have low or very low degree of development.

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### *Legal Status*

Currently, the Cajas Solidarias (or community funds) are legally constituted under the Mexican Civil Law as Civil Societies or Associations. This legal status is at the moment the most convenient for their operation. This does not mean, however, that it is the most appropriate legal status for their activities.

Under the Mexican Civil Law, each community fund has to formalize its existence and be registered in the National Public Registry of its original state and with the Ministry of Finance at the national level, as a non taxable organization. As it stands, the Community Funds operate as non-profit organizations promoted and financed through resources originally given by government to peasants; but increased and strengthen by their own effort.

Partly because there is at present a lack of a clear set of rules for NGO's in the country, the Cajas Solidarias do not have a financial intermediary status. In many cases a Caja may have the minimum number of members and amount of equity needed to become formally a "Lending and Savings Societies" (SAP, by the Spanish acronym). But they, until now, have not formalized their status as formal financial intermediaries.

It has been argued that the transition from their current legal status, of civil societies or associations, to one of formal financial intermediary, puts their development at risk. The reasons for this are that the Community Funds will have to comply with strict and bureaucratic standards for their operation and with detail financial information reports. For communities with low literacy levels these might represent a drawback and a serious obstacle for the creation of a viable savings and credit community mechanism.

However, we can say that it is convenient, especially in the current situation, to enhance the information system for the Cajas Solidarias. The existence of a complete cross-section and time series data base of these instruments would be of great value for public policy and research.

### **III. Cajas Solidarias: a Simple Econometric Model**

In this section we use a simple regression model to test some of the hypotheses discussed earlier with data from Cajas Solidarias. The panel data available covered all the C. S. for 93 through 96.

We wanted to analyze the effect of size (total members in the Caja Solidaria) on the repayment rate.

The basic model is:

$$Y_i = \beta_0 + \beta_1 X_i + e_i \quad i = 1, 2, \dots$$

Where:

Y= repayment rate

X1= size (number of producers on local community funds)

X2, X3, X4, X5 = are dummy variables for the year on which the C.S. were created (93, 94, 95, 96)

X6, X7, X8, X9 = a set of socioeconomic variables including: % of households with electricity and potable water, % of illiteracy and % of indigenous population. These variables were available only at the municipality level.

X10 = proportion of localities, within the municipality the Caja Solidaria is at, that have less than 2,500 inhabitants (rural effect)

X11 = proportion of localities, within the municipality the Caja Solidaria is at, that have more than 2,500 inhabitants (urban effect)

### *Initial findings*

The repayment rate is used as a proxy for cooperation. What we would expect is that controlling for the level of development (which includes education and basic infrastructure in communities) the smaller the local community fund the easier for its members to monitor each other and avoid problems of asymmetric information and cooperation. The coefficient on size is positive, which would imply that the greater the number of members the higher the repayment rate. Even if this contradicts the hypothesis of peer monitoring, there are two important factors to consider: 1) the coefficient is quite small, in relation to other variables and highly significant and 2) the fact that each of the 164 Cajas Solidarias are composed of local community funds and we only have data at the Caja Solidaria level, the averaging may be causing distortions.

In order to have more accurate estimates of how community size affects the repayment rates we would need repayment rates for each local community fund, instead of state averages. However, the preliminary results suggest that as the proportion of small communities increases (rural effect) the repayment rate decreases. Although this might seem to contradict our hypothesis that small communities are more capable of peer monitoring and of imposing social penalties we have another effect which is that the larger the community economies of scale are enhanced, better infrastructure and a higher probability of more productive investments. In this case the

second positive effect might seem to be greater than the first one.

Regarding the illiteracy rate we have an important negative effect on repayment rates (as expected). Illiteracy rate is used as a proxy for education. Therefore, we assume that in order to constitute and manage a fund, a minimum of education is needed. The variables used as proxies of socioeconomic condition have, as education, an aggregated positive effect on repayment rates.

It is worth noting that since we are working with averages at state level year of creation could not be included in this preliminary model, therefore we could not control for the effects (probably positive) of institutional longevity. The assumption that it has a positive effect is due to the fact that the longer the survival period of an institution it "signals" its viability and therefore reduces the risk of investing in it.

## **Conclusion**

The enthusiasm of group lending and akin schemes to allow poor individuals to have access to credit seems exaggerated, at least as a mean to cope with poverty. We have made several assumptions along the way that is worth noting. Repayment rates seem to be a good measure of how we can design institutions able to overcome lack of cooperation and the problems raised by environments with asymmetric information. However, it is much harder to argue that they are good indicators for productivity increases. We have no reliable data on the kind of investments made with the credit and the return rates of the investments. We have assumed that if individuals have the ability to repay a loan is due to the fact they made a productive investment. However, in the case of community funds in Mexico (Cajas Solidarias) the fact that they are highly subsidized (at least at the beginning) and the low interest rates do not guarantee that the money is being allocated efficiently.

On the other hand, Community Funds (as other similar schemes) need a minimum level of education in order to be created and managed. Therefore, those living in conditions of extreme poverty are less likely to create institutions like these. Presumably, then, we have that the very characteristics (community involvement) that allow these institutions to help the poor, discriminate against those who are in the lower bottom (extreme poverty).

Of course this does not mean that micro-credit should be ruled out as a means to alleviate poverty. However, a word of caution needs to be stated not to confuse the kind of poverty that can be coped with these policy devices. Much more needs to be done in order to enhance the social capital of the poorest population (extreme poverty) starting with education and training. Independent non-profit organizations might be a way to overcome this lack of social capital as long as they give the poor training besides the access to credit.

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