

The Abdul Latif Jameel Poverty Action Lab (J-PAL) was founded by the MIT in 2003. This laboratory has designed and implemented a randomized evaluation method for poverty reduction programs inspired by clinical trials used in medicine. Through its work J-PAL helps governments, donors and companies improve their actions to support the poorest. In this article, Esther Duflo and William Parienté describe the issues that are specific to the evaluation of microfinance.

# Recent developments in the impact and mechanisms of microfinance

*Microfinance has aroused widespread enthusiasm over the past 20 years. Its specific credit methodology (group solidarity, small loans, etc...) was thought to solve a number of informational problems on the credit market, promote access to credit and consequently help reduce poverty. Recent empirical research has given a better understanding of the mechanisms of microfinance and the impact it actually has on poverty.*

**By Esther Duflo, Co-Director of J-PAL (MIT) and William Parienté, UCL and J-PAL**

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Poverty reduction through credit is not a new idea. Considerable amounts of public credit have consequently been invested in developing countries to support the poorest populations via State banks – generally agricultural banks – which offered farmers subsidized credits aiming to increase their productivity. These policies were conducted between 1950 and 1980 and generally failed (Armendariz de Aghion and Mor-duch, 2005). Microfinance therefore partly came about as a result of the observation that classic financial institutions are unable to make an effective contribution to economic development and poverty reduction in these countries.

The creation of microfinance institutions (MFIs) led to the emergence of a banking system that provides poor populations with access to financial services. The most well-known form of microfinance – embodied by Grameen Bank – is mainly based on a solidarity group, with relatively small amounts of credit, weekly or monthly repayments, and relatively high interest rates. The effectiveness of this methodology gave rise to a great deal of theoretical interpretations, particularly in terms of the role of the solidarity group and peer monitoring in order to overcome informational problems. Yet this innovation alone cannot explain the high repayment rates. MFIs build close relations with their customers and have sound knowledge of local markets; they know how to implement effective selection and incentive mechanisms. The pressure exerted by the institution – added to that of the group members – is a determining factor.

Although these relatively general principles may have been well understood, a number of questions

do still remain unanswered. The effect the structure of products has on informational problems and repayment rates has only just begun to be studied from an empirical perspective; recent studies show that demand for microfinance appears to vary enormously depending on the characteristics of loans; the impact that microfinance actually has on clients' living conditions still remains relatively underevaluated. All these questions have given rise to considerable debate among both practitioners and academics and today there are some signs of answers being formulated.

## Loan characteristics and repayment rates

It would appear that the success of repayment rates in microfinance stems from the structure of microfinance loans and their capacity to solve informational problems. Several recent empirical studies have sought to identify the effects certain characteristics of microfinance products have on the repayment rate. For example, Karlan *et alii* (2006) evaluate the effect the solidarity guarantee has on the repayment rate thanks to an experiment conducted in partnership with a MFI in the Philippines. The experiment consisted in offering a loan with an individual guarantee to part (randomly selected) of a group of former clients that had made a renewal request – the other part of the group received a loan which kept the solidarity guarantee. At the end of the experiment, the differences in repayments between the two groups could consequently be attributed to the type of guarantee offered. After three years, the repayment rates are similar between the two groups; this would tend to demonstrate that the solidarity guarantee did not have the "pure" controlling effect that has often been attributed to it.

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Similarly, a study conducted by Pande and Field (2008) in India shows that the frequency of repayments does not have an effect on the repayment rate either. In this study, some randomly selected clients receive a loan with monthly repayments, while the others obtain a loan with weekly repayments. The clients with monthly maturities repay as well as those that have weekly maturities.

Finally, Karlan and Zinman (2006) attempt to measure, via an experiment conducted in South Africa, flaw factors on the credit market. The authors detected the adverse selection effects<sup>1</sup> by randomly offering contracts with high rates and low rates. They then analyzed the profiles of the borrowers that accepted these contracts. In the end, the presence of adverse selection is not confirmed: the high rates do not particularly seem to attract the riskiest or least effective borrowers. Finally, some of those who received a low rate are offered to keep the advantage of this rate if they repay the loans correctly: here, the incentive has a direct and significant effect on the repayment rate. This proves the existence of moral hazard<sup>2</sup>. In this context, the dynamic incentive policy – present in most microfinance contracts – constitutes an effective mechanism for improving the repayment rate. This initial research consequently suggests that in the specific contexts studied, the solidarity guarantee and the regularity of repayments do not have an effect on repayment, while the dynamic incentives are indeed effective.

### Demand varies depending on loan characteristics

Microfinance loans are also characterized by high interest rates which can be explained by the high transaction and control costs. Interest rates vary enormously among MFIs; they may be lower than the rates charged by informal credit sources, but they can easily top the 20% a year mark, 50% rates are not uncommon. The specific nature of products and the interest rates charged can have an effect on the decision to take out a loan, even if the information about the interest rates may only be partially understood by the clients. In a situation where the interest rate is fully understandable and where the clients know the return rate on potential investments, the decision to take out a loan is the result of a comparison between costs and benefits. Little information exists on the investment rate of return for micro-enterprises, whereas this

is a core factor for understanding the demand and repayment capacity of the population targeted by microfinance. To answer this question, De Mel *et alii* (2009) attempt to measure the rate of return on equity in micro-enterprises in Sri Lanka. The rate can be relatively high – roughly 5.7% a month –, well above the interest rates offered by the MFIs in the region. However, it is heterogeneous (especially high for men) and rapidly falls over time. This experiment also demonstrates that some micro-enterprises with high returns do not borrow from MFIs – whereas it would be in their interest to do so – probably due to a lack of information about existing credit sources or by risk aversion.

In a second phase, studies sought to assess the impact of interest rates (or the interest rates announced to clients) on the elasticity of credit demand. Karlan and Zinman (2006) show that a reduction in interest rates has little effect on clients in South Africa, whereas a rise to a rate above those normally charged does have a considerable effect on demand. These results suggest that the interest rates usually charged by local MFIs are optimal.

In addition to interest rates, demand may also be affected by the very structure of microfinance products. Standard microfinance has developed rapidly, mainly in urban and periurban areas. It can indeed be difficult to establish in rural areas. Loan amounts and repayment methods may not be adapted to the cycles of agricultural activities. In Morocco, a study in dispersed rural areas (Crépon *et alii*, 2008) shows that in a context where formal credit is practically inexistent, the response of households to an offer of a microfinance loan remains limited – with a borrowing rate of under 20% over a year after it was introduced. Microfinance would consequently seem to be primarily intended for trade, service or livestock raising activities.

### Assessment of impacts on living conditions

Microfinance may meet an obvious need for people who are excluded from the loan market, but its objectives go beyond simply developing economic activity. It also aims to improve the living conditions of its clients. While there is in fact little rigorous empirical evidence – due to the absence of really convincing evaluations –, the very principle of impact assessments has given rise to a great deal of debate among both practitioners and academics.

<sup>1</sup> *Adverse selection or antiselection is a phenomenon by which an offer made on the market leads to results opposite to those desired because of information asymmetries.*

<sup>2</sup> *The notion of moral hazard designates a situation of risk in a relationship between two agents: one agent protected from a risk behaves differently than if it had been completely exposed to the risk.*

<sup>3</sup> *The "Second Best" theory refers to what happens when one or several optimal conditions cannot be satisfied in an economic model. If an optimal condition cannot be satisfied, it is possible that the "next best solution" may lead to changes in the other variables. Here it refers to the need to transfer the analysis to secondary objects since it is impossible to assess the direct impact on living conditions.*

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Indeed, some fundamentally question the interest of a specific assessment: microfinance is a market just like any other and consequently there is no particular justification to assess it. Others question the usefulness of assessments since there is no doubt about the impact of microfinance – given the high number of people that use microfinance loans and remain in the borrowing cycle. Some, finally, consider that it is methodologically too difficult to assess the impact of microfinance and that it is preferable to use “Second Best”<sup>3</sup> approaches by focusing on an analysis of the client base, the social performance of MFIs and an analysis of processes, rather than on the impact itself.

There are limits to these different arguments. Unlike other “markets”, microfinance remains widely financed by public funds, particularly because donors consider that it has strong impacts on living conditions by, for example, fostering food security, autonomy for women, education or health. There are consequently real issues involving the assessment of this impact. Moreover, it would seem naive to make a positive measurement of the impact of microfinance based on the long-term presence of clients in the loan cycles, because the situation of these clients if they had not entered is not taken into account. Microfinance can have perverse effects such as overindebtedness or problems of debt swaps; finally, if a large number of clients remain in the credit process, a large number leave it. There is certainly a reason for this.

There is therefore very little rigorous empirical evidence concerning the impact of microfinance on living conditions. Some quasi-experimental studies, notably in Bangladesh (Khandker and Pitt, 1998 and 2003), were for a long time seen as being the most accomplished studies, even if their results were widely debated (Morduch, 1998; Morduch and Roodman, 2009). Several experimental studies that have just been completed or are ongoing will provide new elements concerning the impact of microfinance; one of them conducted in India (Banerjee and Duflo, 2009) concerns the expansion of the Indian MFI Spandana into the poor neighborhoods of Hyderabad. After two years, the results show that microfinance has a positive impact on the creation of activity; however, the effect on household consumption is extremely heterogeneous. Those that had an activity prior to the introduction of microfinance consume more durable goods but reduce their non-essential consumption; they see their profits increase. On the other hand, those that begin their activity reduce

their total consumption in order to face the fixed costs required to start up their business. Finally, household consumption increases for borrowers who do not have an activity. The study also shows that there is no impact on non-economic variables such as education, health, or the power of women within the household. These results concern a specific context; they cannot be generalized to microfinance as a whole. However, a number of ongoing studies (in Morocco, the Philippines and Peru) will soon make it possible to complete these initial elements and will help give a better understanding of the effectiveness of microfinance.

A new generation of studies has made it possible to conduct a rigorous assessment of the mechanisms and impacts of microfinance for the first time. Today, we consequently know more about the actual impact its different components have on repayment rates for example. As for the first impact studies, they make it possible to estimate the contribution it makes to developing economic activities, combating poverty and improving living conditions. Together, this research can help make microfinance more effective. ●

## REFERENCES

- Armandariz de Aghion, B., Morduch, J., 2005. *The economics of microfinance*, The MIT Press, London.
- Banerjee, A. E., Duflo, R., Glennerster, R., Kinnan, C., 2009. The Miracle of Microfinance? Evidence from a Randomized Evaluation, J-PAL, Working Paper, May 2009.
- Choudhury, O., Khandker, S., Millimet, D., Pitt, M., 2003. Credit Programs for the Poor and the Health Status of Children in Rural Bangladesh”, *International Economic Review* 44(1), 97-118.
- Crépon, B., Devoto F., Duflo E., Parienté W., 2008. Poverty, access to credit and the determinants of participation to a new micro-credit program in rural areas of Morocco, Ex Post Impact Analyses Series 2, Agence Française de Développement, Paris
- De Mel, S., McKenzie, D., Woodruff, C., 2008. Returns to Capital in Microenterprises : evidence From a Field Experiment, *The Quarterly Journal of Economics* 123(4), 1329-72.
- Field, E., Pande, R., 2008. Repayment Frequency and Default in Micro-Finance: Evidence from India, *Journal of the European Economic Association* 6(2-3), 501-9.
- Gine, X., Harigaya, T., Karlan, D., Nguyen, B., 2006. Evaluating Microfinance Program Innovation with Randomized Control Trials: An Example from Group versus Individual Lending, Asian Development Bank, Technical Note 16.
- Karlan, D., Zinman, J., 2005. Credit Elasticities in Less Developing Countries: Implications for Microfinance, *American Economic Review* 98(3), 1040-68
- Karlan, D., Zinman, J., 2010. Observing Unobservables: Identifying Information Asymmetries with a Consumer Credit Field Experiment, *Econometrica*, forthcoming.
- Khandker, S., Pitt, M., 1998. The Impact of Group-Based Credit Programs on Poor households in Bangladesh: Does the Gender of Participant Matter?, *Journal of Political Economy* 106 (5), 958-98.
- Morduch, J., 1998. Does Microfinance Really Help the Poor? New Evidence on Flagship Programs in Bangladesh, MacArthur Foundation Project on Inequality - Princeton University, Working Paper.
- Morduch, J., Roodman, D., 2009. The Impact of Microcredit on the Poor in Bangladesh: Revisiting the Evidence, Center for Global Development, Working Paper 174.