Breadth and depth of french microfinance outreach : an evaluation

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French but also European economies are driven by micro, small and medium enterprises. However, evidence shows that micro-enterprises, representing 99 per cent of all newly created businesses, suffer from a lack of external resources, especially those created by socially excluded persons. Traditional commercial banks are indeed often reluctant to satisfy the demand for credit by poor people who cannot guarantee financial collateral and stable revenues. Microfinance institutions (MFIs), dedicated to persons partially or totally excluded from the banking sector, have therefore developed special lending scheme such as progressive lending or group lending and hence demonstrated that poor people could surprisingly be creditworthy. Although many studies do exist on developing countries' MFIs, few have been done to evaluate the social performance of microfinance programmes in industrialized countries. Considering this, we have developed in this paper an in-depth analysis of French institutions of microfinance and an econometric analysis on the personal and social characteristics of their clients, as a measure of MFIs social performance. We demonstrate that two types of microfinance client may be identified: the first type, mainly unemployed, uses microcredit as additional financing resources to complete a relatively important business plan, whereas the second type, mainly monthly guaranteed benefit income recipients totally excluded from the banking system, more vulnerable, uses microcredit as the only external financial resource available to start up a professional activity.. One of our key results is that being either poor, socially excluded or deprived from banking resources is not a sine qua non condition for accessing microfinance services. We also underline that the probability of default is much higher in the first group of borrowers and is positively correlated with loan size but negatively correlated with the level of the lending interest rate.

Code JEL: G21
Keywords: Microfinance, banking, poverty, self-employment.

I. Introduction

The emergence of microfinance and its very important progression were naturally monitored by major institutional recognitions. 2005 was indeed declared year of microfinance by the United Nations, whilst the 2006 Nobel peace prize was awarded to Mohammad Yunus, founder of the Grameen Bank and pioneer of microfinance.

Microfinance is traditionally defined as a micro-sized finance which primarily includes microcredit, micro-insurance and micro-savings. Microcredits, which is the main activity of Microfinance institutions (MFIs), are commonly defined as productive loans granted to people excluded from the banking sector and whose amount is less than 40% of GNP per capita (Nowak [2005]). Although these services are developed by a wide range of institutions, from commercial banks to non-profit organizations, they are theoretically bound by three fundamental goals: reducing poverty, promoting self-employment and enhancing the empowerment of socially excluded populations, especially women.

Since the entitlement approach[1] developed by Amartya Sen, it has been well known that any lack of capabilities feeds poverty and social exclusion. Hence, a comprehensive survey led by Beck, Demirguc-Kunt and Soledad Martinez Peria [2006] has shown that various barriers to banking sector measured in terms of physical access, affordability and eligibility of deposit, credit and payment services still exist and could potentially exclude a significant share of the population from using banking services. Economic development and growth may consequently be impacted. Considering the French experience, Gloukoviezoff [2004] has particularly emphasized the fact that social income earners are victims of discrimination from the banking sector: 48 per cent do not have a chequebook whilst 96 per cent do not benefit from a credit card. Providing financial services to poor people and/or socially excluded persons with no collateral to offer as a guarantee is usually perceived by as expensive, especially regarding the size of the transactions involved, the monitoring cost and the high default risk such categories of persons entail. Consequently, banks aren't prone to deliver such services. MFIs are.

The success of microfinance is often explained by the specific nature of microcredit or microsaving schemes. Considering the Sen's approach of poverty, microfinance's so-called revolution partly lies in the fact that default risk faced by institutions lending to socially excluded persons should not be any longer considered as too high if appropriate tools such as group lending or progressive lending are developed. Indeed, microfinance benefits should not be apprehended from a sole financial point of view. Non-credit features of microfinance programmes do matter. As stated in Mc Kernan [2002], "the large noncredit effects of the programmes provide evidence that group lending

[1] As stated by Devereux [2001], Sen has defined entitlements as "the set of alternative commodity bundles that a person can command in a society using the totality of rights and opportunities that he or she faces".

programmes do more than just overcome credit market imperfections to increase access to credit for the poor. The group cohesion, joint liability, incentives to share information, and social development programmes that serve to differentiate group-lending programmes from banks or individual-lending institutions are an important part of microcredit programmes' success."

The stakes of microfinance should however not be misunderstood. Designed to fight banking exclusion, it finds its social justification by offering financial services to people who were initially deprived of it. It should nevertheless be kept in mind that most MFIs strive for a functional, financial but also institutional viability (Nowak [2005]): microcredits are not donations and should be refunded. They also support an interest rate partly representative of the cost of the borrower. As mentioned by Littlefield and Rosenberg [2004], "Most of the early pioneer organizations in the modern microfinance movement operated as non-profit, socially motivated non governmental organizations. They developed new credit techniques: instead of requiring collateral, they reduced risk through group guarantees, appraisal of household cash flow, and small initial loans to test clients. Experience since then has shown that the poor repay uncollateralized loans reliably and are willing to pay the full cost of providing them: access is more important to them than cost."

The overwhelming success of MFIs should not be misleading and must not prevent from carrying out an in-depth analysis to determine if microfinance either is a useful poverty alleviation tool in the case of developing countries or fosters self-employement and financial inclusion in industrialized countries. Addressing this second issue in the French case, this paper is organized as follows: section 1 briefly surveys the literature on microfinance social performance. Section 2 describes the features of microfinance programmes in industrialized countries and present French microfinance environment. In a final section, we develop a statistical and econometric analysis of French microfinance clients based on a unique database of 3,204 microcredit loans granted between 2000 and 2006 in Aquitaine (the 6th largest French region with 3 million inhabitants). This allows us to address four fundamental questions: who are the clients of French microfinance? What are the financial characteristics of microcredits? What are the social and entrepreneurial needs this microfinance effectively fulfill and, conversely, how are microcredits reimbursed, considering each type of clients?

II. Microfinance and social performance measurement

Extensive literature already exists on microfinance in developing countries. Several aspects of microfinance have been evaluated is these countries, mostly dedicated to the evaluation of microfinance performance and outreach. More precisely, two major fields of research could be identified. First of all, much has been done to evaluate and/or to improve MFIs'financial performance and cost efficiency (Baumann [2004], Montgomery and Weiss [2005]). Many ways have been

explored: the incidence of gender in microfinance performance (Cloud and Panjaitan-Drioadisuryo [1999]), the role of asymmetric information in microfinance banking activities or the benefits of specific lending scheme such as group lending or progressive lending as enforcement mechanism (Egly [2004], Godquin [2004], Tedeschi [2006]). The importance of an appropriate regulatory framework to support sustainable microfinance programmes' services have also been evaluated (Arun [2005]).

A second major axis of research on microfinance has been dedicated to the measurement of microfinance impact and outreach either in terms of empowerment (Johnson [2005]) or social performance. The Social Performance Task Force from the Consultative Group to Assist the Poor (CGAP) defines social performance as "the effective translation of an institution's social goals into practice in line with accepted social values; these include sustainably serving increasing numbers of poor and excluded people, improving the quality and relevance of financial services, improving the economic and social conditions of clients, and ensuring social responsibility to clients, employees and the community they serve"[2]. As stated in Copestake [2007], three sets of indicators are traditionnaly used to measure IMF social performance: the breadth of outreach (number of people using microfinance services during a given period), depth of outreach (initial social status of IMF clients) and quality of outreach (net benefit to each client). Thus, evaluating social performance imposes to analyse the entire process of microlending and not only its final impacts on beneficiaries. The key issue remains however to determine whether microfinance programmes effectively reach the poors and positively affect their welfare. Considering the developing countries' experiences of microfinance, Haley and Morduch [2003] have shown that there is a wide diversity in MFIs respective capacity to reach poor people, some being able to target real poors, others "only" financing low income households. Nevertheless a large consensus seems to emerge to highlight that these programmes do not target the poorest of the poors but rather those who are near the poverty line. Gonzalez-Vega and alii [2000], studying this issue from an empirical point view in Bolivia, found that the five MFIs considered in the survey[3] indeed reached poors who stay just above and just below this line. Similarly, Amin, Rai and Topa [2003] have used panel data from two Bangladeshi villages to test if microcredit reaches the poor and vulnerable and have demonstrated that although microfinance is successful at reaching the poor, it could paradoxical exclude those most in need of assistance, the vulnerable poor. Consequently, they underlined the fact that subsidized credits may have limits as an antipoverty strategy. Finally, Coleman [2006] has evaluated the outreach and impact of two microfinance programmes in two villages located in the north-east of Thailand. His results not only

[2] See the website : http://microfinancegateway.org

[3] Based on a sample of 588 microfinance clients (from five MFIs : BancoSol, Caja Los Andes, FIE, Sartawi and PRODEM), this study more precisely compares the level of poverty of a treatment group reached by microfinance programs with the poverty of a control group within the population of La Paz

indicate that the wealthier villagers are significantly more likely to participate than the poors, they also highlight the fact that the richest village bank members use their position to borrow significantly more from the village bank. It is also shown that households holding land are more likely to be selected among village bank members.

III. An identification of French MFIs

Microfinance ambitions in industrialized countries slightly differ from the well-known objectives of developing countries' traditional ones. If microfinance tends, in the developing countries, to reduce poverty and to support the empowerment of socially excluded persons, microfinance's stake in industrialized countries is to improve access to external resources for micro-enterprises created by people deprived from banking resources. Micro-enterprises, which employ fewer than 10 people and whose annual turnover and/or balance sheet is 2.5 million dollars or less, account for 99% of newly created businesses but paradoxically suffer from a lack of banking resources. Usually offering no material or financial guarantees, socially excluded persons are those who are the most penalized. As mentioned in the European commission report on microfinance [2003], three obstacles explain more precisely this banking and financial exclusion: (i) high or operational costs for credit institutions, (ii) lack of sufficient collateral from micro-enterprises, (iii) perception of a too risky lending activity. As stated by the French Agency for development (2005), microfinance does not aim to satisfy the poors' needs, but to give them access to a productive credit and, if necessary, to help them to get further access to the banking sector. Supporting self-employment and micro-enterpreneurship fosters social inclusion. Hence, as mentioned by Boyé, Hajdenberg and Poursat [2006], four fundamental objectives sought by microfinance programmes should now be considered for either industrialized or developing countries:

(i) to reduce poverty;
(ii) to encourage small businesses creation and self-employment;
(iii) to support the growth and diversification of newly created microenterprises
(iv) to reinforce the social position of women or underprivileged groups of population.

Three arguments could be brought to the fore to explain the fact that fighting poverty is not the primary goal of industrialized countries' microfinance programmes: (i) poverty appears to be a much more complex phenomenon in these countries and is therefore particularly complicated to alleviate. Banking exclusion should in that respect be seen both as a cause and a consequence of social exclusion. Promoting self-employment as a mean to overcome social exclusion is then a much wiser path to follow and a better guarantee of success for MFIs: micro-enterprises' creation is both simple to measure and much easier to stimulate; (ii) As stated in Shekh [2006], the MFIs' focus has often shifted

from borrowers' wellbeing to the research of their financial sustainability. In terms of communication strategy, supporting small businesses creation and self-employment appears to be also much more compatible with this goal than poverty alleviation. (iii) Self-employment via the creation of micro-entreprises could also be one of the solutions to fight against a persitant structural unemployment, especially in France.

Although a commonly agreed definition of « what microfinance precisely is » exists at an international scale, it should be acknowledged that there is no unique model of microfinance. It also should be noted that this general definition isn't suitable for an in-depth analysis of what microfinance institutions precisely are. Important differences do particularly exist between microfinance in developing countries and microfinance in industrialized countries. There are also substantial differences between microfinance sectors within industrialized countries. Two fundamental reasons explain these divergences. Firstly, the heterogeneity in countries' banking environment maturity and secondly the differences between countries regarding the precise stakes involved in microfinance. The french microfinance regulatory framework illustrates this argument.

French microfinance market is indeed, at first sight, characterized by the predominant position of a non profit-making association (Association pour le Droit à l'Initiative Economique, ADIE) which is a traditional microcredit institution based on the Grameen bank model[4], delivering credit with positive interest rates and operating at a national scale. According to their national statistics, ADIE has contributed to the creation of more than 36 700 enterprises since 1989 and has delivered a total amount of loans of 127 millions dollars. Accordingly, more than 36 900 jobs have been financed. Among ADIE's clients, 56% were social income earners whilst 35% of them were unemployed[5].

The overwhelming position of ADIE should nevertheless be qualified at the regional scale: two additional institutions of microfinance can indeed be identified in Aquitaine: (i) specific networks financed by public funds for on-lending to deliver exclusively interest-free loans made with no guarantee of repayments, namely France Initiative Réseau, and (ii) institutions of microfinance using group lending scheme and exclusively dedicated to women or young people willing to set up their own business (Clefe and Clej[6]). Although these institutions aren't representative of french microfinance sector, their role should not be underestimated. Their existence indeed clearly demonstrates that group lending schemes can be successfully implemented in industrialized countries. A third institution (Caisse sociale de développement local, Csdl) inspired by ADIE and operating only on a local urban

[4] French microfinance market is recent and has only started to surge at the beginning of the 90's. Adie, created in 1989 by Maria Nowak, pionnered this sector.

[5] Source: Adie annual activity report [2005].

[6] Respectively Club local d'épargne pour les femmes qui entreprennent et Comité local d'épargne pour les jeunes.

basis must also be mentioned. Micro capital risk institutions, namely the cigales[7], could similarly be considered as microfinance institutions operating in the Aquitaine aera[8].

French microfinance cannot be understood without references to the legal environment that surrounds lending activities for non-financial institutions. Up to July 2003, associations could only lend from their equity; they were not allowed to borrow for on lending. There is since a special window in the bank law for associations that lend to recipients of social income or unemployed persons[9]. ADIE is the only organisation that makes use of this special window.

MFIs support underprivileged persons in two ways: on the one hand by a direct effect related to the grant of external resources and, on the other hand, by an indirect effect that is microcredit seen as a first step to access mainstream finance. Some MFIs objective is to cover a great part of the financing needs whilst some others only cover a small proportion of it. For these MFIs, microcredit is a way to constitute initial financial resources helping the creator to request the banking sector more easily. Despite the availability of internal statistics concerning the type of persons reached by these loans, it raises the obvious question about the reality of microcredit programmes and imposes an empirical analysis of French MFIs clients to determine microfinance sector's effective outreach.

IV. An econometric analysis of French MFIs' clients

We have collected data from microfinance institutions in Aquitaine between 2000 and 2006. A single, cross-section pool of borrowers has been built. The total number of 3866 credit files is included in this database, for a total amount of microcredit of 24 millions dollars. The variables available in that database are age, gender, nationality, marital status, main sources of income (social income[10], unemployment benefit, minimum income, wage, manager income, other), level of education (from a level of 5 for primary school to a level of 1 for superior studies), loan structure (loan type, loan term, loan amount, level of the interest rate), business plan specific characteristics (total amount, professional sector, additional financing) and number of credit repayment problems (Annex 1).

Our data firstly show that, contrary to developing countries where microfinance programmes are often dedicated to women, 65.4% of microcredit borrowers in Aquitaine are men (34.6% of women). These clients are in average 37 years old and 82.1% of them have French nationality. The social impact of microcredit is obvious: 48% of borrowers receive minimum or social income, 31%

[7] Club d'Investisseurs pour une Gestion Alternative et Locale de l'Epargne.

[8] They shall however not be taken into account in the following econometric analysis since they do not grant microcredit.

[9] The loan size should however not exceed of €6,000 and can be delivered only during the first five years after business creation.

[10] More precisely, social integration minimum income (revenu minimum d'insertion).

are unemployed. Only 6.8% of total borrowers are wage-earner and 9.1% are company managers. Other borrowers are students or senior citizens (5%). Default rate is of 3.6%, but 18.2% of loans have repayment problems. The average amount of micro-loan is about 6200 dollars, for a total business plan amount of 37300 dollars[11]. Surprisingly, 41.3% of borrowers have their own financial resources.

Table 1. Entrepreneurs characteristics (total and with microcredits), average.

	Age (years)	Gender		Nationality	
		Male	Female	French	Other
Entrepreneurs with microcredit	37	65.4%	34.6%	82.1%	17.9%
Entrepreneurs (total)	39	70%	30%	89%	11%

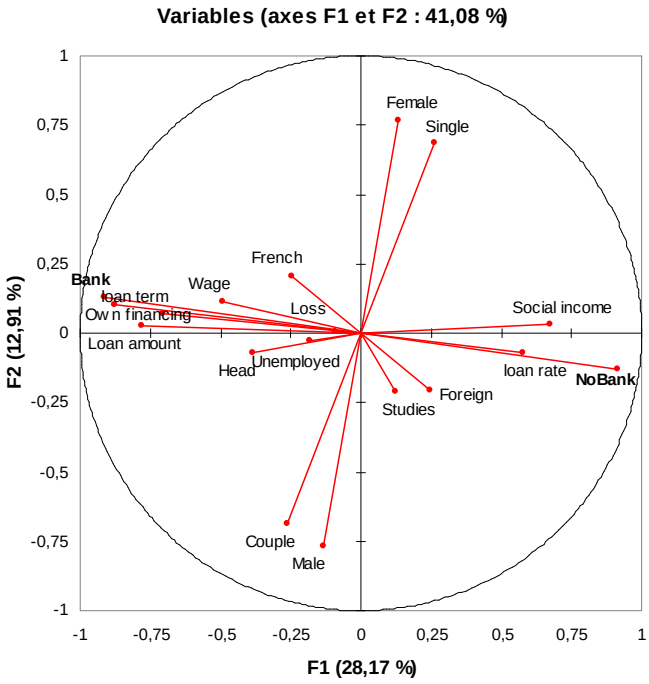
	Social Status				
	Active	Unemployed	Social Income	Other (retired, student)	Banking Loan
Entrepreneurs with microcredit	14%	31%	48%	5%	27%
Entrepreneurs (total)	46%	21%	17%	16%	48%

As seen in Table 1, microcredit finances whose personal characteristics (gender, nationality), social status, and own financial resources restrain their capability to have a full access to the banking system. Thus, only 27% of beneficiaries of microcredit have a bank loan, against 48% for all entrepreneurs. Microfinance institutions in France seem to reach the goal of promoting self-employment of socially excluded populations.

However, the reality is more complex. A Multiple Choice Analysis (MCA) allows us to establish the consistency of the set of qualitative variables and to identify some basic relationships between them. Notably, it identifies the existence of two types of borrowers with different characteristics.

[11] Representing respectively 4800 euros and 28700 euros at early 2006's USD/EUR exchange rates.

Graph 1: Multiple factor Analysis



The first principal component, represented by the horizontal axis of Graph 1, opposes borrowers, excluded by the formal financial sector (variable Nobank), with households using microcredit to strengthen their bank relationships (variable Bank). This analysis also reveals that there is presumably a link between the fact of being excluded from the banking system and the fact of receiving minimum income or social security benefits (variable Social income). The descriptive, statistical analysis in Table 2 indeed confirms the existence of these two distinct groups of microfinance borrowers.

Table 2. Description of two types of microfinance borrowers

Group	Number of individuals	Gender		Nationality		Marital status	
		Male	Female	French	Other	Single	Couple
NoBank	2717 (70.3%)	64%	36%	79.6%	20.4%	51.5%	48.5%
Bank	1149 (29.7%)	69.4%	30.6%	94.5%	5.5%	35%	65%

Group	Social Status						
	Minimum Income	Social income	Unemployed <1 year	Unemployed >1 year	Head	Employee	Other (retired, student)
NoBank	43.1%	16.4%	15.7%	11%	5.8%	1.7%	6.2%
Bank	2.4%	1.9%	39.3%	7%	22.6%	26.4%	0.4%

People totally excluded from banking resources represent 70.3% of clients of microfinance institutions, but only 47% of cumulated credit. Their business plan is comparatively lower, with a net borrowing requirement of 12782 dollars (116459 dollars for the second, bank indebted, group), and a microcredit amount of 4204 dollars (11050 dollars for the second group). Consequently the microcredit maturity is shorter (19.5 months against 54.5 months). The interest rate is much higher: 6 per cent against 0.6 percent. One of the reasons that could be advanced to explain this situation is that banking loans often complete interest free loans. It should be noted that the percentage of loss is doubled for bank indebted borrowers (6.2% of loss, against 3% for the second – non bank indebted – group). If we consider the reasons that explain the bank loan's demand, it appears that microcredit and banking loan considered altogether finance for 49.5% new business, 43% repurchase of business and 7.5% business expansion. Microcredit itself finances in priority new business (60.6%) whereas take-over or expansion represent respectively only 22.4% and 16.9% of the draft contract. Finally, the level of education of bank and non bank indebted households are roughly similar, except for the less educated one (4.6% of bank indebted households have no diploma – 10.3% of non bank indebted households) and for postgraduates (15.8% of bank indebted households have university diploma, 5.8% for non bank indebted).

In order to consolidate this initial graphical and statistical evidence, we used probit econometrics. The dependant variable Bank is a dummy variable which takes values of 0 and 1 only. This variable is equal to 0 if individuals are borrowers excluded from the banking sector and 1 if individuals use bank credit to complete microcredit.

Table 3. Probit regression : Bank equation

Number of obs = 3077 LR chi2(9) = 1652.85 Prob > chi2 = 0.0000
Log likelihood = -577.77808 Pseudo R2 = 0.5885

Bank	Coefficient	Std. Err	z	P>|z|	Change in Probability (marginal effects)*	
					dF/dx (*)	x-bar
Age	0.0202564	0.0046733	4.33	0.000	0.0006809	37.0627
French	0.6260457	0.1393263	4.49	0.000	0.0142585	0.820279
Studies	-0.1108073	0.0347419	-3.19	0.001	-0.0037247	4.34433
Minimum Income	-1.478363	0.1486842	-9.94	0.000	-.0455048	0.366916
Social Income	-0.8765947	0.1902907	-4.61	0.000	-0.0164464	0.142996
Unemployed (long time)	-0.9406183	0.2202533	-4.27	0.000	-0.0153613	0.095873
Manager	0.6757038	0.1172532	5.76	0.000	0 .0430105	0.082548
Employee	1.051997	0.1270152	8.28	0.000	0.0969018	0.062073
Private resources	2.321674	0.1540665	15.07	0.000	0.2316681	0.356191
Constant	-3.197328	0.3024178	-10.57	0.000		
% correctly predicted = 90.97%						

(*) dF/dx is for discrete change of dummy variable from 0 to 1
z and P>|z| correspond to the test of the underlying coefficient being 0

Probit does not allow for missing variables, which reduces the total number of observations to 3077. Table 3 shows that social status is very important. The possibility of reaching banking additional financing resources is positively correlated with the status of wage earner or company manager. Conversely, social income or minimum income earners and unemployed people without unemployment benefits are those who are mostly excluded from the banking system. Level of education, French nationality, own resources increase the probability of being bank indebted and increase loan sizes. The level of the monthly borrower income does not appear to be significant.

The dF/dX column reports the marginal effect, that is the change in the predicted probability of being bank indebted for an infinitesimal change in each independent, continuous variable or, for dummy variables, reports the discrete change in the probability (while holding all other independent variables constant at their means). The probability for a client of a microfinance institution to shift from one modality (excluded from the banking system) to the other (not excluded) increases of 4.3% if the borrower is a company manager, of 9.7% if he is an employee and of 23.2% if he has personal capital contribution. On the other side, the probability of not being bank excluded decreases when the borrower receives social income, or when he is a long-term unemployed (without benefits).

Finally, more than half of the amount distributed by the IMF finances people socially integrated, with steady income or short-term unemployed. These micro-loans can complete high level business plans (up to 169000 dollars).

We have also studied the determinants of the amount of the microcredit using simple OLS estimators, with fixed effects in order to take account structural characteristics of the different French IMFs (Table 4).

Table 4: Fixed-effects (within) regression: Micro-loan amount equation

Number of obs = 3127
Group variable (i): IMFs Number of groups = 5
R-sq: within = 0.2473 between = 0.9041 overall = 0.5022
F(8,3114) = 127.89 Prob > F = 0.0000

Loan size	Coefficient	Std. Err	t	P>|t|	[95% Conf. Interval]	
Age	12.6287	4.509918	2.80	0.005	3.78599	21.47142
Women	-539.5847	88.63594	-6.09	0.000	-713.3755	-365.7939
Studies	-120.3384	37.43995	-3.21	0.001	-193.7479	-46.92893
Minimum Income	-359.4068	94.86098	-3.79	0.000	-545.4032	-173.4104
Manager	588.3961	167.4949	3.51	0.000	259.9845	916.8077
Employee	986.4601	199.6558	4.94	0.000	594.9898	1377.93
Bank loan size	.0302862	.0022471	13.48	0.000	.0258803	.034692
Private resources	.0261047	.0042032	6.21	0.000	.0178633	.034346
Constant	4160.592	240.0096	17.34	0.000	3689.999	4631.185

F test that all u_i=0: F(4, 3114) = 218.02 Prob > F = 0.0000

In the same way, we found that the amount of the microcredit increases with the age of the borrower, with his level of formation, if the borrower is a male and if he has additional funding (own or banking funding). These characteristics are the same whatever the borrower is in the first group or in the second one. The determinants of microcredit supply finally are close to traditional bank credit supply.

The social status is also an important determinant of the (micro) indebtedness capacity (see also Table 5). The dummy variable of Wage Earner or of Manager Income is positive and statistically significant, whereas the sign of social income dummy variable is negative.

Table 5. Loan size, percentage of loss and social status (Average level, 2000-2006)

	Employee	Head	Unemployed (short time)	Unemployed (Long time)	Social Income	Minimum Income	Other
Micro-loan size (dollars)	11 830	9 800	7 370	4 587	4 250	3 678	3 966
Business plan size (dollars)	92 664	64 560	44 525	16 344	15 956	12 729	16 534
% of loss	3.6%	11%	2.4%	2%	2.9%	2.1%	3.6%

The stability of the monthly income is an important explanatory variable of the level of the microcredit, as in a traditional banking relationship. Finally, the determinants of IMF's credit supply are relatively conventional. The amount of the microloan will be higher if the borrower is old, graduate or postgraduate,, if he is a man, an employee or an entrepreneur, or if he has additional funds (own resources or bank loans). The loan amount maintains some (social and gender) discrimination, which will have some important consequences. Indeed, the amount of the project is often positively correlated to its profitability and ultimately its sustainability. The poorest undertake small amounts projects that, for the most part, do not provide a sufficient income to live.

Eventually, we have estimated the probability of repayment problem. We use a conditional fixed-effects logistic regression in an attempt to control for heterogeneity in the Microfinance institutions. A time trend captures changes over time in default rate.

The probability of loss is positively correlated with the level of the business plan, but negatively correlated with the availability of banking resources or of own resources. The probability of loss is also negatively correlated with the level of the lending interest rate. As in developing countries, the probability of repayment is higher with women. Finally, the probability of loss increases if the loan aims to finance the expansion of an existing activity, and specially a bar, an hotel or a restaurant (variable Catering). This activity is 2.5 times riskier than other activities. If the borrower is a company manager (often linked to the loan purpose of expansion), the percentage of loss is multiplied by more than three. (Table 5). Financing a new activity or a take-over appears to be less risky. In any case, the monthly level of the household income appears to be significant.

Table 6: Conditional fixed-effects logistic regression: Loss equation

Number of obs = 3078 LR chi2(10) = 149.47 Prob > chi2 = 0.0000

Log likelihood = -272.46242 Mc Fadden's R2 = 0.215

Loss	Coefficient	Std. Err	z	P>|z|	[95% Conf. Interval]	
Expansion loan	1.135752	.3229236	3.52	0.000	.5028335	1.768671
Repurchase loan	-.6786393	.3255852	-2.08	0.037	-1.316774	-.040504
Level of private ressources	-.0000731	.000021	-3.48	0.000	-.0001141	-.000032
Level of bank loan	-.0000236	9.62e-06	-2.45	0.014	-.0000424	-4.72e-06
Level of business plan	.0000351	7.95e-06	4.41	0.000	.0000195	.0000507
Women	-.7117916	.2855755	-2.49	0.013	-1.271509	-.1520739
Catering	.9222166	.3153215	2.92	0.003	.3041978	1.540235
Loan maturity	-.0296066	.0128858	-2.30	0.022	-.0548623	-.0043509
Interest rate	-.2506635	.0464006	-5.40	0.000	-.341607	-.1597201

Trend	-.6278252	.0961385	-6.53	0.000	-.8162533	-.4393972

Surprisingly, the default rate is higher for bank indebtedness households (6.2% against 3% for non indebtedness households). However, multivariate analysis reveals that the availability of banking resources per se is not the proper cause of failure. In this case, indebtedness is larger, with average microcredit balance exceeding 11000 dollars, roughly three times larger than for borrowers of the first group, without bank loan. Thus, microcredit is an additional financing resources aiming to complete a relatively important business plan ($116,500 on average). The total amount of the business plan proved to be the principal trigger to disrupted loan.

V. Conclusion

Our results confirm that microfinance institutions reach two different populations. The first population (group 1) uses microcredit as additional financing resources to complete a relatively important business plan, where microcredit loan resources effectively only account for 17%. Such borrowers are rather more (short time) unemployed workers, businessmen or workers. The second population (group 2), totally excluded from the banking system, is more vulnerable. For this type of population, microcredit appears to be the only external financial resources available to start up a professional activity. Microfinance institutions dedicated to this population provide small loans (about $4,000) without collateral to households excluded from the labour market and deprived of resources from mainstream financial institutions. We emphasize the fact that the chances of finding oneself in the first group increase with age, French nationality and levels of education. Surprisingly, one of the key results of our paper is that the probability of default is much higher in the first group. It is positively correlated with the size of the business plan but is negatively correlated with the level of the lending interest rate. The availability of own capital is also an important factor of success. As in developing countries, the probability of repayment is higher with women. We also found that determinants of micro-credit supply by IMFs are fairly standard. The more the borrower is socially integrated, the higher the loan will be. This “discrimination” increases the likelihood of repayment of the loan, but also determines the type of funded activity, often less profitable, which may have a negative impact on the sustainability of the structure.

VI. Bibliography

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Annex 1. Descriptive Statistics of the Sample

Number of observations = 3866 Period = 2000-2006

Dummy variables

Variable	Mean	Standard Deviation
Bank indebted		
Yes=1 No=0	0.297	0.44
Gender		
Woman=1 Man=0	0.346	0.476
Nationality		
French=1 Other=0	0.821	0.383
Marital Status		
Single=1 Couple=0	0.488	0.499
Social Status		
Minimum Income=1 Otherwise=0	0.346	0.476
Social Income=1 Otherwise=0	0.134	0.340
Unemployed (<one year)=1 Otherwise=0	0.207	0.405
Unemployed (>one year) Otherwise=0	0.104	0.305
Manager=1 Otherwise=0	0.091	0.288
Employee=1 Otherwise=0	0.068	0.252
Other	0.05	0.218
Own resources		
Yes=1 No=0	0.413	0.492
Experience		
Yes=1 No=0	0.615	0.499
Purpose of the Loan		
New business=1 Otherwise=0	0.578	0.494
Repurchase=1 Otherwise=0	0.276	0.447
Expansion=1 Otherwise=0	0.145	0.352
Activity		
Craft industry=1 Otherwise=0	0.057	0.232
Services for firms=1 Otherwise=0	0.073	0.26
Services for Households=1 Otherwise=0	0.308	0.461
Retail trade=1 Otherwise=0	0.321	0.467
Building industry=1 Otherwise=0	0.114	0.317
Farming=1 Otherwise=0	0.05	0.218
Catering=1 Otherwise=0	0.077	0.265
Level of Studies		
University (Master-Doctorate)=1	3.34	1.136
University (undergraduate)=2		
Secondary School=3		
Vocational trading=4		
Primary school=5		

Quantitative variables

Variable	Mean	Range
Age (years)	37	18-70
MFIs Loan Size (euro)	4 801	100-38 000
Bank Loan Size (euro)	12 689	0-785 000
Total Financial Need (euro)	28 719	100-1 516 868
Own resources Size (euro)	7 581	0-1 417 776
Monthly Income (euro)	1 127	35-9 100

Loan Maturity (months)	26.4	1-92
Interest Rate (%)	4.2	0-23