Micro Finance Institutions' behavior: Determinants of portfolio quality in MENA region

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Abstract: this paper aims to explain repayment default phenomenon. In other term, it tries to identify MFIs determinants and estimate their effects basing on panel data about MENA region. For that, we revise related literature in order to define variables impacting repayment default also called portfolio at risk (PAR) and to specify model form that estimates its effects and tests its significance. Empirical work is done on 30 MFIs from MENA region over the period 2000-2013. Main finding show that portfolio quality is determined positively by woman lagged PAR (PAR-1), gross loan portfolio, average loan per borrower.

Keywords: microfinance, repayment default, Portfolio at risk (PAR), determinants of repayment, MENA region, linear model.

1. Introduction:

Poor people are marginalized from conventional banking systems, because they do not justify the conditions¹. In fact, Literature defines microfinance, such as mentioned once by Schreiner (2002), the set of institutions that provide credit to poor and low income people [1]. The same idea was highlighted by Morduch (1999) [2].

For Tunisian research, Mohamed Ali Trabelsi & Jameleddine Chichti (2011) seemed cited this definition in their work in 2011 [3] . In add, services currently extend to cover other products such as micro-insurance, micro savings, etc. However, MFIs program needs to be assessed in order to check the keys of force and barriers that impede success.

In this context, in spite of agreement between researchers, professionals and decision makers on positive microfinance role in ameliorating welfare of poor class, these people constitute a harmful risk to MFIs viability and their social role when they don't pay their credit. It becomes a sufferance when repayment default exceeds such threshold.

When a large number of clients don't repay their debts, the considered MFIs will automatically face problems of recovering which may threat their sustainability and impede their refunding although schedule repayment is an indicator of MFIs performance (Ndiouma Ndour, 2010) [4]. This is could be identified as portfolio at risk.

Then, according to 2011 Middle East and North Africa Regional Snapshot (March 2012) MENA Arab Region maintained a high portfolio quality with the lowest median portfolio at risk over than 30 days which represents 2.09% compared to Africa, Latin America and the Caribbean ,Eastern Europe, East Asia and the pacific, South Asia. Meanwhile, high portfolio quality hides such differences among MENA counties. For a preventive action against the deterioration and the spread of the non repayment rate, it will be useful to identify the main reasons of portfolio at risk (PAR).

PAR is one of the most important tools used to assess a MFI's asset quality. It is a percentage, which represents the «proportion of an MFI's total gross outstanding loan portfolio that is at default risk.

It attempts to measure the default risk in a portfolio by wondering if all delinquent borrowers were to completely default, then how much (money) would the MFI stand to lose? From this perspective, PAR provides a pessimistic estimation of the default risk attached to MFI's portfolio. Generally speaking, sustainable institutions have a PAR less or equal to 2%.

As far as trends for PAR is concerned, Portfolio at Risk is continuously decreasing. However, this trend can be misleading, because it will be possible that sudden and large disbursements of loans could mask the actual default risk, fast expanding in terms of loan disbursements and when the repayment periods for these loans are yet to begin, the problem is magnified. Likewise, re-scheduling, refinancing and loan write-offs can portray a lower PAR ratio, while the (default) risk may still be high.

In this context, we wonder what the determinants of MFIs's PAR are and which are their levels of significance? For that, we will reserve the next part to literature revision; the third will specify the model and variables. The forth will highlight results analysis, at the end some conclusions will be highlighted.

2. Literature review

Repayments are made by installments. Hence a delayed installment is said to be delinquent and a repayment that has not been made is said to be in default. If one group member defaults, the other group members make up for the re-payment amount. This delay may affect the portfolio qualify of MFIs. By definition, a borrower is "good" if he reimburses regularly loans in the conditions of the contract and does never had a late payment. If knew, refereed to Trabelsi and Chichti (2011) at least once, a delay in the repayment of his loan, it will be considered as "bad" borrower [5]. Portfolio at Risk is one of the most important tools used to assess a MFI's asset quality. It is a percentage, which represents the «proportion of an MFI's total gross outstanding loan portfolio that is at default risk."

Researchers have developed numerous theories and empirical framework that seeks to explain the repayment rates, frequently associated with credit to poor and low income people in developing countries. These theories can be roughly divided into 6 categories.

Studies that attempt to explain the repayment performance by Individuals Factors related to the borrower characteristics, whreas some others explain the payment by the institutional determinants: factors related to institutional characteristics of MFI. Other categories of factors can explain PAR such as nature of contract, nature of activity, social ties between group members and cultural factors.

An earlier work to Zeller (1998) focused on the effects of program design, community and group characteristics on the repayment performance of groups, using a data set on groups from six different lending programs in Madagascar [6]. The results show that socially cohesive groups pool risks by diversifying the members' asset portfolio so that their repayment performance is improved even in communities with high-risk exposure.

Onyeagocha & al (2012) have analyzed the loan repayment performance, institutional factors, and factors affecting repayment rate of microfinance institutions (MFIs) in the South-east states of Nigeria for total of 36 MFIs [7]. Results from the study, affirmed that the formal segment was more organized, better equipped with higher quality and well motivated staff than the semi-formal and informal segments. The informal sector presented the best repayment picture of the three segments, followed by the semi- formal institutions. Outstanding among the determinants of loan repayment of microfinance institutions were outreach, shocks, training duration, loan size and credit officer's experience.

Chowdhury & al (2012) Bangladesh Krishi² bank: the survey data were collected from 90 leaders of the bank which was entrusted with the task of disbursement and repayment of loan [8]. Causes of default are mainly inadequate income, crop failure, repayment. high installment of lack of understanding of terms, liquidity problem, excessive Ineffective debt taking, storage/marketing, improper selection of borrowers, political pressure and interference, lack of co-operation from the government, lack of proper Supervision.

Trabelsi & Chichti (2011) defined for Tunisia a set of beneficiaries of loans granted by Enda until end July 2010 (a random sample of 13000 customers). Then, delay in reimbursement may result from certain characteristics related to the borrower: age, gender, educational level and matrimonial status. Other features are related to the requested loan: the amount requested the number of repayments, the number of loans, and the difference of the loan amount with the previous, the method of individual granting and the type of credit. Finally, the experience of the credit agent plays a key role in detecting doubtful customers.

Abdullah- Al- Mamun & al (2011) Amanah Ikhtiar Malaysia (AIM): data from two groups of clients, where both groups were selected from AIM's client base structural equation model: cross sectional design with stratified random sampling method [9]. More than 50% of the total respondents reported that they used credit in non-income generating activities, which increases the chance of encountering repayment problem, the household income, employment, multiple sources of income, higher savings.

Al Azzam & Mimouni (2012) Jordan: 160 borrowing groups from the Microfund for Women (MFW) survey suggested that social ties that are founded on friendship, neighborhood, and on good communication seem to lower the number of days of late repayment [10]. Therefore, social ties between group members improve group repayment performance.

3. Model and variables

Basing on literature review, we identify many variable that determinate portfolio at risk. These variables are restructured giving to specified model the following form:

$$\begin{split} PAR_{it} &= \alpha_0 + \alpha_1 Scale_{it} + \alpha_2 Age_{it} + \alpha_3 Women_{it} + \alpha_4 lnGLP_{it} + \alpha_5 BPSM_{it} + \alpha_5 lnNAB_{it} + \alpha_7 lnALB_{it} \\ &+ \alpha_8 lnPAR_{it-1} \end{split}$$

With:

PAR: portfolio at risk > 30 days

Age: The age of MFI: dummy variable equals to 0 if old and 1 if young,

Scale: The size of MFI: dummy variable equals to 1 if large and 0 if small and medium,

Women: Percent of Women Borrowers Number of active women borrowers/Adjusted Number of Active Borrowers,

Log(GLP): Gross loan portfolio,

BPSM: Borrower per staff member,

Log(NAB): Number of active borrower,

Log(ALB): Average Loan Balance per Borrower,

PAR(-1): PAR 30 days: Portfolio at Risk > 30 Days: Outstanding balance, loans overdue>30 Days/ Adjusted Gross Loan Portfolio.

Data was taken from mix market data base (www.themix.org).

Estimation of the model was done using Generalized Method of Moments (GMM) which is common used in case of dynamic Panel data. Indeed, the GMM dynamic panel method allows providing solutions to the problems of simultaneity bias, of reverse causality and omitted variables, biases of endogeneity in presence of lags.

4. Result and discussion

The table below shows the results of the regression of the random effects model according to specification used previously. Table 1 presents estimates of the model in equation for 30 MFI over the period of the first quarter of 2001 to 2013. The dependent variable is portfolio in arrears. All but one independent variable has the expected sign and the model is significant as shown by the F-test. The indicator variable for lending methodology, however, is not significant – suggesting that an individual lending portfolio does not have consistently higher risk than one with a group lending methodology. This result changes when we use the alternative measure of risk in the portfolio.

Table 1. Estimation result

Var.	Coef.	t-stat	Prob.	
Age	0.0083	0.573	0.567	
Scale	-0.0048	-0.349	0.727	
Women	0.0608	3.332	0.001	
GLP	-0.0198	-2.404	0.017	
BPSM	-4.30E-05	-0.352	0.725	
ALB	1.83E-05	1.151	0.251	
PAR(-1)	0.713	10.04	0.000	
R-squared	0.276	Mean dep. var	0.0659	
Adj.R-sq.	0.261	S.D. dep. var	0.146798	
S.E. of reg.	0.126	Sum sq.	5.319162	
DW stat	1.667	J-statistic	0.138555	
Instr. rank	9	Prob(J-stat.)	0.709721	
Source: our estimation				

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Women borrowers were hypothesized to have a positive relationship with portfolio at risk. In other words, the higher is the percentage of female borrower the higher is the quality of portfolio. The result confirms conclusion given by Bert D'Espallier & al (2011) on a global data set of 350 MFIs in 70 countries: that women are better credit risks in microfinance than men [10].

Then, results confirm that a higher percentage of female clients in MFIs is associated with lower portfolio risk, fewer write-offs, and fewer provisions. The aim of microfinance is to empower women into three dimensions namely psychological, social and economical (Mudakappa Gundappa; 2014) [11]. The gross loan portfolio has a negative relation with the portfolio at risk. The number of active borrower as an indicator of outreach has an effect on the portfolio quality that is to say when the number of active borrower grows up the quality of portfolio improves.

The variable PAR(-1) at first difference has a significant impact on portfolio at risk, that means the past value of PAR has an effect on the next one. If we consider a good portfolio at risk in t-1 that is has an effect on the PAR value at period t.

5. Conclusion

This study examined the issue of portfolio at risk determinant in MENA region. The motivation for this study stemmed from the environment which is becoming more and more competitive and which may lead to debt crisis.We used data chosen randomly from mixmarket in order to analyse some factors affecting portfolio at risk 30 MFIs.

The present study has achieved the initial goals, but further research is needed in order to determine the benefit of MFI and members to have a long term relationship. Stated otherwise, exploring the goodness of portfolio at risk quality on the social viability of the MFIs is an issue worth addressing.

Notes:

¹ Poor and low income people are usually excluded from banking credit system for several reasons. These include the lack of collateral, the higher costs of transaction and monitoring, their unstable income and the High illiteracy rates.

² Krishi is a Bengali word which means "agriculture".

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