REPAYMENT PERFORMANCE UNDER JOINT LIABILITY BORROWING. DOES SOCIAL CAPITAL MATTER? : EVIDENCE FROM ARMENIA

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ABSTRACT

The aim of this paper is to test empirically the role of both cognitive and structural social capital in explaining the repayment performance of individual members under joint liability borrowing in rural Armenia. Based on unique primary data collected in 2006 in Ararat, Armavir and Vayots Dzor provinces, overall 86 observations, we estimated the Logit model to identify the determinants associated with good or bad repayment behavior of individual members.

The results revealed that the members with higher level of structural and cognitive social capital as well as with higher farm productivity performed better. This indicates the importance of social as well as economic determinants for the decision and the ability of borrower's to repay the credit.

Key words: microcredit, social capital, group liability, repayment

INTRODUCTION

Following theoretical models, joint liability lending schisms have positive impact on the repayment performance of borrowers. The expected success is basically attributed to the non-traditional characteristics of the collateral, specifically social collateral used. In the sense that social collateral of borrowers takes the place of traditionally accepted forms of physical collateral, joint liability lending relies upon social capital[1] of the group (BESLEY AND COATES, 1995). Under such lending conditions, the group takes the liability for the individual loans of members and by that overcomes the problem of lack of traditional forms of collateral. By delegating the function of screening, monitoring, and enforcement of loans to the group members, banks in their turn overcome the problem of asymmetric information and accordingly the problem of prohibitively high transaction costs[2] (GHATAK AND GUINANE, 1998). Pointing on the main hypothesis of such programs, that is the comparative advantages of collective actions in screening, monitoring and in enforcement activities, STIGLIZ (1990) argues that group members have better access to information on reputation, creditworthiness and an intended purpose of peer borrowers. Moreover, people connected with social ties have better possibility to enforce repayment by implementing social sanctions against defaulters (BESLEY AND COATE, 1995). Consequently, the horizontal social relations among actors are critical as the base for the knowledge on the reputation, credibility and enforcement. GHATAK (1999) suggests that by

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[1] The World Bank defined social capital as "the norms and social relations embedded in the social structures of societies that enable people to coordinate action to achieve desired goals" (WORLD BANK 2000, p.1). In respect to its forms, social capital is divided into structural and cognitive. Structural social capital consists "information sharing, collective action and decision making through established roles and social networks, rules and precedents" (UPHOFF 1999, p.218). Structural social capital is easily observable in that it can be easily measured, for example, by the number of associations and their members. Compared to structural social capital, cognitive social capital is more difficult to observe. It consists of "shared norms, values, trust, attitudes and beliefs" (UPHOFF 1999, p.218).
[2] "Transaction costs are costs resulting from information search, market entry and exit costs for borrowers, savers, and financial intermediaries" (HEIDHUES AND SCHRIEDER 1999, p.13).

implementing group lending practices, banks get a chance to distinguish good borrowers from the risky ones. Under group lending schemes the good borrowers will select higher joint liability and lower interest rate contracts. Risky borrowers, on the other hand, will select lower joint liability and higher interest rate contracts. The concept of joint liability can thus be understood as a forced risk sharing arrangement technique which in theory can lead to higher repayment rates (BESLEY 1995). By the end of 1980s increasing number of microfinance institutions already adopted joint liability techniques to reach the poor and disadvantageous groups of communities[3].

Despite the existing theoretical literature there is little empirical evidence to prove the basic assumptions of screening, monitoring, enforcement and the efficiency of such models. Especially the connection between social capital indicators – i.e. trust, associational life, collective action and the repayment rates of such groups is not well documented. This article aims to contribute to the existing empirical literature by analysing the impact of different aspects of social capital on the repayment performance of individual members of joint liability lending projects in Armenia.

The article is orgnised as follows: Section 1 draws on empirical studies concerning the determinants of repayment rates in group lending. Section 2 presents the data and the methodology used in the analysis. The results of the regression model are presented in section 3 and Section 4 concludes the paper.

1. REVIEW OF EMPIRICAL STUDIES

The findings of empirical studies concerning the determinants of repayment rates in group lending in respect to social capital indicators are controversial. WYDICK (1999) in his study in Guatemala recorded that social cohesion and the strong social ties have rather negative than positive impact on repayment rates. In the case of Bangladesh, SHARMA AND ZELLER (1997) found a negative relationship between the presence of relatives in the group and the repayment rates. They also stated that the groups which followed the self-selection criterium perform better. Similarly, VAN BASTELAER AND LEATHERS (2006) identified a negative relationship between the participation in the same church and the repayment rates of joint liability seed groups in Zambia. WENNER (1995) on the other hand in his study in Costa Rica pointed out that the written internal rules about ones expected behavior in the group facilitate credit repayment. The results were supported by ZELLER's (1998) findings in Madagascar where the groups with stronger social ties and with internal rules performed better.

2. DATA AND METHODOLOGY

This contribution is based on field research conducted in 2006 in Ararat, Armavir and Vayotz Dzor provinces of Armenia. By the use of direct observations and semi structured questionnaire the members of six randomly selected joint liability groups[4], which include 86 individual group members, were interviewed. The information on different social as well as the economic indicators of respondents was obtained.

During interviews it became obvious that the enforcement assumption of peer pressure by the use of social sanctions does not work efficiently in the case of Armenia. It was recorded that though

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[3] The best known example is the Grameen Bank's lending program in Bangladesh.
[4] The name of the project and the groups are known to the authors. The aim of the paper is, however, not to evaluate the very project but to understand how joint liability groups are formed and function in Armenia. For this reason the project and the groups have asked to stay anonym.

the members have sufficient information to predict who will and who will not default and are aware of each others income and life situation and the ability to repay or the willingness to repay, they are reluctant to sanction those who default. The cultural factors to keep good and long lasting relationship with the neighbors and relatives (possibly as social safety nets) seem to be more important than the short time benefits accruing from borrowing. This makes it difficult to impose social sanctions, as no case of a social sanction was recorded we hypothese that other specific types of social capital facilitate repayment. By and large following VAN BASTELAER AND LEATHERS (2006), we classify the social capital indicators as those affecting collective action, the proxies of structural social capital and the proxies of cognitive social capital.

In order to examine the relative significance of the different aspects of social capital that are believed to influence the repayment behavior of individual credit group members, an empirical logit model was estimated. SPSS 14 was used for the analysis.

3. THE EMPIRICAL MODEL AND THE RESULTS

The logit model tests the hypothesis that the presence of social capital within a group facilitates loan repayment behaviour of its members. The model is as follows:

$$repayment\_behaviour = f(c\_a, s\_sc, c\_sc, scv)$$

where repayment behaviour of joint liability group members is measured as a binary variable (yes = credits are repaid on time, no = credits are not repaid on time). The parameter c_a stands for the factors affecting collective action in the group; s_sc stands for structural social capital proxied by the associations to which the actors belong. Cognitive social capital, c_sc identified by the level of trust towards each other in the group (most members can be trusted, you can't be too careful) and scv stands for selected control variables, i.e., total value of household items. The definitions of the variables involved in the model are presented in Table 1.

By applying this model, the following hypotheses are tested:

1. Factors affecting collective action in groups, i.e. group homogeneity: A positive relationship exists between the perception of group homogeneity and the repayment behavior, as it allows better efficiency of group dynamics (group homogeneity in terms of risks). Furthermore, family relations facilitate collective action and credit repayment since the information flow among relatives is higher.

2. Proxies of structural social capital: A higher level of involvement in associational activities facilitates one's adherence to norms and accordingly to better credit repayment.

3. Proxies of cognitive social capital: The repayment behavior of individual members depends on the existing trust in the group in the way that the higher the trust is the better is the repayment behavior.

4. Selected control variables: Total value of household items as an indicator of wealth status of the borrowers, off-farm employment as an indicator of increased family budget and risk diversification and higher farm productivity enhance the capacity of an individual to repay the loans on time and will therefore have a positive effect on repayment behavior. Involvement in

non-farm activities will imply income diversification. That means, if for some reason farm income is zero, families still have a source of income and are more probable to repay the loan.

Table 1. Definition of variables involved in the model

Variables	Definitions
Factors affecting collective action:	
INCOMEH	Members' perception of group's homogeneity in respect to income (1 = mostly same income level) and (2 = mixed rich/poor)
FAMREL	Family relations (1 = yes, else = 0)
Proxies for structural social capital:	
MPRODC	Member of production cooperative (1=yes, else = 0)
MPOLP	Member of political party (1=yes, else = 0)
Proxies for cognitive social capital:	
TRUST	Trust in group members (1 = most members in the group can be trusted, else = 0)
Selected control variables:	
OFFFEMP	Off-farm employment (1 = yes, else = 0)
FARMP	Farm productivity (US$) divided by 1000
TVHHI	Total value of household assets (US$) divided by 1000

The results of the regression analysis are presented in Table 2. The significance level of variables shows, members' perception of group homogeneity in respect to income (with the negative sign), trust towards other group members, membership in production cooperative, farm productivity are significant determinants for individual members credit repayment.

Table 2 Results of regression analysis for the repayment model estimated by logit estimation

	Coefficient	S.E.	Wald	Significance
FAMREL	.523	.907	.907	.565
INCOMEH	- 1.915	1.115	2.949	.086*
TRUST	4.335	1.134	14.608	.000***
MPRODC	3.650	1.104	10.922	.001***
MPOLP	.017	1.733	.000	.992
OFFFEMP	.428	.858	.248	.618
FARMP	1.696	.764	4.923	.027**
TVHHI	.137	.328	.174	.676
Constant	- 4.844	1.620	8.937	.003***

Source: Own calculation;

Notes: Negelkerke R^2 = 0. 736, *Significance at the 10% level, **Significance at the 5% level, ***Significance at the 1% level

The significance of the perception of the income homogeneity variable (INCOMEH) shows that the perception of individual members about the same social status, economic power and credit risk of other borrowers have rather negative than positive effect on repayment behavior. This indicates that under specific situation group members may use the benefit of collective action rather to avoid than to enforce repayment. The family relations (FAMREL) variable seems not to be a significant determinant of good performance. Though family relations may facilitate collective action in a group there is no guarantee that the action is positive. The cognitive social capital, proxied here by (TRUST) between group members is significant on 1% level and is positive. This may indicate that the repayment of individual members depends on their subjective belief that other members in the group will repay their loans too. This is important as the repayment of others may determine if the loan will be available in the next round or not. As BASLEY AND COATE (1995) noticed, if the same good individuals observe others defaulting, they may default too, since they will not receive a new loan even if they repay and they do not need to repay the loans of others. The significance of one of the proxies of structural social capital, that is the membership in the local production cooperative (MPRODC), indicates that the membership in associations indeed facilitates one's adherence to norms and better credit repayment. However, it may merely be done to secure good social reputation to ensure future economic benefits. As the variable 'membership in the political party' (MPOLP) is not significant we may conclude that at present economic associations play more important role in relation to rural financial markets in Armenia. The significance of 'farm productivity' (FARMP) shows the importance of economic factors on ones decision and the ability for payback of a loan. It seems that the individuals with good harvest performed better, which indicates that higher farm productivity enhances the capacity and the willingness of an individual to repay the loans on time. The total value of household items (TVHHI) as the indicator of wealth status of the borrowers and off-farm

employment (OFFFEMP) as the indicator of increased family budget and risk diversification failed to explain repayment behavior of members

4. CONCLUSIONS

The theoretical models of joint liability lending argue that through the use of social capital of borrowers, the repayment performance of groups is improved. This is because the peers are better able to screen, monitor and enforce loan repayment of each other. The empirical studies to test the hypothesis of such models are not many and the findings are diverse. This paper shortly reviewed both, theoretical and empirical literature. By estimating a logit model, the significance of different social capital indicators on the loan repayment performance of individual credit group members on the basis of their social capital structure was studied. The econometric results showed that the members with a higher level of structural and cognitive social capital as well as of higher farm productivity performed better. This clearly points to the importance of both, social as well as the economic factors on credit repayment. However, the impact of social factors such as trust and reputation seems to overwhelm the impact of economic indicators. The significance of both cognitive and structural social capital proxies supports the notion that different aspects of social capital are important in such an analysis. Consideration of only one type to the exclusion of the others may produce misleading results and biased estimations.

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