

Do Social Ties Trump Collateral In Determining Loan Performance? Evidence Using Same Day Loan Repayments

Authors: Sumit Agarwal, Prasanna Tantri and Nitin Vishen

1. Introduction

The aim of this study is to shed light on the loan repayment rates of households who borrow small sums of money to finance their business or livelihood. These households often borrow loans which are in the range of USD 250 (approx.) for the period of a year. The purpose is to finance household needs like education, health emergencies, repairing house or it could be for investing in their small business like buying a carriage vehicle, replenishing inventory, etc.

Such loans are prevalent in rural areas and low income urban areas. In such settings, it is often difficult to identify good borrowers from the bad ones. Microfinance lenders have relied on social ties between the borrowers to solve this problem of information asymmetry between the borrower and the lender. Borrowers are asked to form groups of typically four to five people, who are often neighbours, and if anyone in the group defaults on their loan, the entire group is held liable. Such a loan contract is called Joint Liability Group (JLG) loan.

However, a recent trend in the Microfinance industry shows a departure from the JLG loans towards the more conventional Individual Liability loans. Under these loan contracts, only the individual who borrows is liable to repay. Such a shift in the industry trends have prompted us to examine these two kinds of loan contracts more closely and evaluate their relative performance. To compare loan repayment performance of JLG (or Group) loans with Individual Liability (or simply Individual) loans, we find a sample of roughly fourteen thousand borrowers who have borrowed both kind of loans simultaneously. We observe that the two loans are sometimes borrowed for same purpose and sometimes for different purposes. One more detail to be noticed here is that most of these loans are to be repaid weekly at the branch office of the lender.

Default on an individual loan may have consequences such as liquidation of the collateral, attachment of other individual property by the bank, negative impact on credit score, and reduction in access to bank finance in future. Default on group loans is likely to have all the above negative consequences except the loss of collateral and other personal property. In addition, default on group loans is likely to adversely impact social ties as other group members have to bear the burden of default due to joint liability. Further, a defaulting group member may lose access to different forms of support such as additional loans, job referrals, and other forms of insurance from the group. Therefore, it is reasonable to hypothesize that the relative performance of the two types of loans depends on which of the two is valued higher by borrowers--individual property pledged as collateral or social ties?

2. Economic Setting

Existing studies such as examine the impact of joint liability within group loans. Crucially, in these studies, both the types of loans being compared are not collateralized. Therefore, a comparison between collateralized individual loans and joint liability based group loans, in terms of their loan performance, is an open question. An apt setting to examine this question is the one where the

same individual is required to repay an individual loan and a group loan at the same time. Such a set up will be able to account for all individual level time variant and invariant characteristics, observable and unobservable to the econometrician, that determine default, and hence, address the concern that group and individual loans are usually given to different types of borrowers.

We use such a set up where the same individual is required to repay a group and an individual loan on the same day and compare the default rates between the two types of loans to determine which of the two types of loan contracts lead to better loan repayment behaviour. We examine the question by using a loan-transaction level data that we obtain from a large non banking finance company (NBFC, henceforth) in India. The major difference between a bank and a non-banking finance company is that the latter cannot accept deposits from public whereas the former can. In terms of lending technology, NBFCs are similar to a bank. The NBFC that provided the loan level data operates in three large states of India. The loans that we study are loans made to low income borrowers in rural areas for purposes ranging from agriculture to consumption. The loans are required to be repaid in equated instalments on or before the due date. The lender uses both weekly and monthly repayment frequencies.

Non payment of an instalment in full on or before the due date is defined as default. The lender makes both collateral based individual loans and joint liability based group loans. The bank maintains a separate account for each individual in the group. Therefore, we are able to identify individual default even in group loans. In addition, we have information about time varying borrower level characteristics such as age, income, and expenses and also terms of loan such as loan amount, tenure, and interest rates.

3. Methodology and Results

We start our analysis by examining loan repayment instances where a single borrower has at least one group loan and one individual loan running simultaneously. In other words, every month, the borrower is required to repay instalments on both types of loans. In this sample, we find that the default rate of group loans is lower by 12.57 percentage points.

Next, we tighten the identification further by limiting the sample to loan repayment instances where a borrower is required to repay a group and an individual loan on the same day. Here, group loans out perform individual loans by 10.24 percentage points.

Finally, to address the concern that the loans that always overlap are special, we restrict the sample to cases which satisfy both the below conditions: (i) a single borrower is required to repay a group loan and an individual loan on the same day, and (ii) the group and individual loans have different repayment frequencies so that they do not always overlap. Within these loans, we consider overlapping (same day) loan repayment instances and find that group loans continue to out-perform individual loans by 8.33 percentage points. The out-performance stated above range between 35% to 61% of the average default rate in the sample, and hence, are economically meaningful. We include borrower level and month X year level fixed effects. Thus, we account for borrower level time invariant factors and also the general time trend.

The results hold during periods of economic distress indicating co-insurance at work and relatively more for borrowers with scant hard information, indicating better monitoring by the groups. The out-performance exists even when the collateral on individual loans are relatively easily enforceable. Our results show that social ties are more potent than collateral based lending in enforcing loan contracts.

Our thesis is that the borrowers value social ties more than the possible loss of collateral. The literature on collateral has shown that collateral plays a crucial role in mitigating both ex-ante (information asymmetry between borrowers and lenders) and ex-post (moral hazard) credit market

4. Concerns with the Methodology

We address important concerns relating to our identification strategy and interpretation of results. First, readers may contend that group loans out-perform collateral based individual loans because it is very hard to monitor and enforce collateral in emerging economies and not because borrowers value loss of social ties more than the loss of collateral. Further, it may be argued that, the main result shown in this paper will flip in cases where collateral can be taken over relatively easily by the lender. In other words, the concern is that the out performance of group loans may disappear if the collateral can be easily monitored and enforced.

To test the above concern, we classify individual loans into those with strong and weak collateral. In the tightest specification, we consider only gold as strong collateral and all others as weak collateral. This is because the lender has physical possession of the gold pledged as collateral and therefore can easily liquidate it in case of default. We find that, within an individual borrower, group loans outperform individual loans even in cases where enforcement of collateral is relatively easy. Therefore, our results are not due to weak enforcement of collateral.

There could be a second concern that group and individual loans, even within a borrower, are borrowed for systematically different purposes. Suppose individual loans are borrowed for risky purposes and group loans are borrowed for relatively safe ones, then our results are likely to follow due to difference in purpose and not due to difference in loan contracts. We address the above concern by considering only those borrowers who borrow the individual loan and the group loan for the same purpose. Our data base lists 17 purposes ranging from agriculture to consumption. We find that the group loans outperform individual loans by 9 percentage points in the tightest of the three specifications. For completion, we test and find that our results go through with similar magnitudes even when the purposes are different.

Third, since our main data consists of borrowers having at least one group and one individual loans simultaneously, there could be concerns about selection. To correct for the same, we first obtain data relating to all the loans lent by the lender. We verify that the distributions of the bigger data set and our data set of simultaneous loans are similar in terms of observable borrower characteristics such as age, income, expenses, land holdings, household size, and income. We then apply the Heckman two-step correction model, which treats the problem of selection as an omitted variable bias issue. We show that the coefficient of the inverse mills ratio (the correction for omitted variable) turns out to be statistically insignificant, indicating an absence of selection bias.

5. Mechanism

The results can be explained by either better monitoring, state verification, and enforcement of repayment by groups or by within group mutual insurance or by both the forces working in tandem. While we cannot disentangle the two types of mechanisms, we can test whether mutual insurance and better monitoring have a role to play. To this end, we examine and find that the out-performance of group loans is higher during times of economic stress. Given that the exposure of different group members to economic shocks is likely to be different, it is reasonable to conclude from the above result that group members bail each other out during distress. The result clearly shows that mutual insurance due to joint liability has a role to play in explaining our results. We also find that the out-performance of group loans is higher in cases where the lender has significantly

lower level of hard information about the borrowers, indicating a role for better monitoring and enforcement within the group.

6. Conclusion

A lender's inability to monitor the borrowers led to collateral based lending and the difficulties in enforcing collateral and realizing value that arose mostly in emerging economies, led to group lending with joint liability. Although, these two loan contract types are prevalent in many economies, they have not been compared in terms of their ability to enforce loan repayment discipline. Empirically, such a comparison is difficult as group loans with joint liability and collateral based individual loans are made to different type of individuals in different locations.

We overcome the above identification problem by comparing the loan performance of group and individual loans lent to the same individual and repayable at the same time. We obtain loan transaction level data from a NBFC in India. The data contains instances where an individual is required to repay a group loan and an individual collateral based loan on the same day.

Using the above set up, we find that among such pair of loans, group loans out-perform in terms of default rates. We hypothesize that the strength of social ties trumps enforceability of collateral in its impact on loan performance. Further, the results hold even when collateral on individual loans are relatively easily enforceable. We then examine whether the relative out-performance of group loans changes during times when borrower faces economic distress. If group loans are seen as insurance during times of distress, the out performance should increase. We find that group loans out-perform even more during times of economic distress. The results hold irrespective of the purpose for which the loans are borrowed.

Our findings show that social ties have a stronger impact than collateral in enforcing loan repayment discipline even among borrowers who have access to bank finance. Given the above findings, it is reasonable to infer that group loans play a crucial role in expanding access to finance in emerging economies.
