

Short Question

When lending to agents who have no collateral, explain how group-lending with joint-liability is able to solve the problem of under-investment (Stiglitz and Weiss, 1981) and over-investment (De Mezza and Webb, 1987).

Literature Background: with adverse selection, there is always either a problem of under-investment¹ (Stiglitz and Wiess (1981)) or a problem of over-investment² (De Mezza and Webb (1987)) depending on the assumptions on the project returns.

Joint-Liability Group-Lending: The answer should explain how the peer selection effect in joint liability group lending is able to solve the problem of adverse selection. Ghatak (1999, 2000) and Ghatak and Guinnane (1999) show that in group lending, the peer selection effect leads to positive assortative matching in groups, i.e., the risky types group with risky types and safe types with safe types.

Conceptually, the lender finds it difficult to discriminate between two types with only one instrument. Joint liability payment c is in this case a new instrument. Given the borrowers trade-off the two instruments (c and r) at different rates, the lender is able to make the borrower reveal their type by the contract they choose.

In group lending, borrowers of different types (i.e., risky and safe type) trade off joint liability and interest rate at different rates. Risky borrowers prefer a high(er) interest rate low joint liability as their partners are risky. Conversely, the safe type prefer low(er) interest rate and high joint liability given that their peers are safe.

Thus, the lender can use this to offer two types of contracts, such that the safe type will go for a contract with high joint-liability payment and low-interest rate, where as the risky type would go for a contract with low joint-liability payment and high interest-rate. In this way, group lending is able to solve the problem of under and over investment. It solves the under-investment problem by ensuring the the safe type get back into the credit market. It solves the investment problem because with these new contracts, the risky borrowers participation constraint is only satisfied if their projects are socially viable. Consequently, the risky borrowers with socially non-viable projects would automatically drop out on their own.

Essay

When lending to poor agents who have no wealth, explain how group-lending with joint-liability helps to solve the following problems:

(a) *Adverse Selection*

Literature Background: With adverse selection, there is always either a problem of under-

¹Some safe type agents, who should be getting credit (since their projects are socially viable), do not get the credit due to imperfect information.

²Some risky type, who should not be getting credit (since their project are not socially viable), get the credit due to imperfect information.

investment³ (Stiglitz and Weiss, 1981) or a problem of over-investment⁴ (De Mezza and Webb, 1987) depending on the assumptions on the project returns.

Joint-Liability Group-Lending: The student should explain how the peer selection effect in joint liability group lending is able to solve the problem of adverse selection. Ghatak (1999), Ghatak (2000) and Ghatak and Guinnane (1999) show that in group lending, the peer selection effect leads to positive assortative matching in groups, i.e., the risky types group with risky types and safe types with safe types.

Further, in group lending, borrowers of different types (i.e., risky and safe type) trade off joint liability and interest rate at different rates. Risky borrowers prefer a high(er) interest rate low joint liability as their partners are risky. Conversely, the safe type prefers low(er) interest rate and high joint liability given that their peers are safe. Thus, the lender can use this to offer two types of contracts, such that the safe type will go for a contract with high joint-liability payment and low-interest rate, where as the risky type would go for a contract with low joint-liability payment and high interest-rate. In this way, group lending is able to solve the problem of under and over investment.

(b) *Moral Hazard*

Literature Background: Wealth less agents cannot be punished for the failure of their project. Lending to wealth less agents (i.e., limited liability) entails leaving them positive economic rents. With unobservable effort, the lender has to offer the borrowers outcome-contingent contracts, which can serve to incentivise high effort by borrowers. Wealth less agents cannot either be required to acquire any stake in their project or provide collateral and thus cannot be punished for the failure of their project. In an optimal outcome-contingent contract, the borrower retains a positive payoff if the project is successful and zero payoff if it fails. Thus, overall, the borrowers retains strictly positive economic rents.

Joint-Liability Group-Lending: When lending to wealth less agents, joint liability group contracts are useful because they are able to achieve higher lending efficiency than individual lending (i.e., lower the rents that the borrowers retain).

Joint liability gives the lender a way to punish the borrowers, not for an borrower's own failure but in stead for her peer's failure. This gives the borrowers an explicit incentives to encourage each other to exert high effort and consequently lower the probability of failure (i.e., to lower the probability of punishment due to peer's failure). Encouragement comes in the form of influencing each other's effort through monitoring. ((Armendáriz de Aghion and Morduch, 2005, Chapter 4), (Ghatak and Guinnane, 1999)) Further, lending efficiency is enhanced as compared to individual lending even if monitoring is costly. (Aniket, 2006) shows that lending sequentially within the group enhances the lending efficiency leaving a larger surplus to be distributed between the borrower and the lender.

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(c) *Enforcement*

The lender wants to enforce the contracts with her limited ability to impose penalty or sanction on the delinquent borrower(s). In individual lending, once the output has been realised, given the penalty that the lender can impose, the borrowers deduce the output threshold level below which they choose to default on the repayment of the loan and attract the lender's penalty. This gives rise to strategic defaults, i.e., individual borrowers default even when their output is on one hand sufficiently high to meet the loan repayment obligations but on the other hand below the above mentioned threshold.

Joint-Liability Group-Lending: Joint liability enables the lender to use the local intra-group social sanctions to extract repayment when the group's output is greater than its repayment obligations but one of the group members has the incentive to strategically default. (Besley and Coate, 1995) show that advantage of group lending is that a group member with really high project returns can pay off the loan of a partner whose project does very badly. The disadvantage of group lending is that moderately successful borrower may default on her own repayment because of the burden of having to repay her partner's loan. However, if the social ties are sufficiently strong, net effect is positive because by defaulting wilfully, a borrower incurs sanctions from both the bank and the group members. With sufficiently close social ties amongst the group members, the repayment under group lending is higher than under individual lending.

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