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Selection into and across credit contracts: Theory and field research

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Abstract

Lenders may choose to encourage borrower side contracting using group, or co-signed, loans or discourage it using individual loans, so as to make relative performance comparisons. In this context wealth of the agents relative to outsiders, and wealth inequality among potential joint liability partners, are important factors determining the choice among loan contracts. In a related model of whether to borrow, higher covariance of returns mitigates an adverse selection effect. We test these models using relatively rich data gathered in field research in Thailand. The prevalence of joint liability contracts relative to individual contracts exhibits a U-shaped relationship with the wealth of the borrowing household and increases with the wealth dispersion. The likelihood of joint-liability borrowing increases the lower is the probability of project success, a direct affirmation of adverse selection. Higher correlation across projects makes joint liability borrowing more likely relative to all other alternatives. Strikingly, most of the results disappear if we do not condition the sample according to the dictates of the models, with selection into and across credit contracts.

JEL classification: D82; O16

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1. Introduction

Microcredit is viewed as a major tool to alleviate world poverty, but practitioners are polarized in a debate concerning the virtues of individual versus group, joint liability

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lending. For the most part, only one contract per lender is observed, e.g., group-based loans under the Grameen Bank in Bangladesh and individual loans under BRI in Indonesia. It is thus difficult to make progress in the debate. We do not see what would happen if the alternative contract were available, not to mention all the difficulties inherent in cross country comparisons. Here we take advantage of the menu of contracts offered by a dominant rural lender in a single country and some unusual data gathered in field research to make some headway on the issue. Potential borrowers from the BAAC[1] in Thailand decide whether to borrow at all, and if so, whether to borrow as individuals or in a group. That is, potential borrowers select into and across loan contracts. There is in fact much variation in these choices in the data.

Our use of the data is naturally enough dictated by various well-known models from the contract theory, mechanism design literature that debates the virtues of individual versus group lending. We exposit and test two related models that compare an individualistic, relative performance regime with a group, cooperative regime in the context of moral hazard in effort provision. The defining feature of each regime is whether or not the borrowers are able to side-contract. The basic advantage of the individualistic regime, where there is no side-contracting, is the opportunity for the lender to gage if one borrower has been diligent by looking to see if other individual borrowers are doing well. The group regime, where borrowers can side-contract, does not allow this kind of information extraction since borrowers can collude against the lender, coordinating in the choice of low mutual effort or reallocating internal resources (e.g., tunneling). Its potential advantage, however, is the enhanced ability to monitor and enforce intra-group agreements on actions and transfers (i.e. risk sharing). It is thus not obvious the kind of regime for which moral hazard considerations argue; the optimal regime may vary with the parameters of the model.

Indeed, Holmström and Milgrom (1990) show that one crucial determinant of the optimal regime is the degree of correlation between the random component of borrowers' returns. In the individualistic regime, the principal, or lender, can use the correlation to mitigate its imperfect information. It does so by rewarding or punishing based on borrower performance comparisons, which diminishes the risk cost of high-powered incentives. The higher the correlation, the more effectively the information problem is dealt with in this regime. In the group regime, however, rewards based on performance comparisons can be manipulated, so higher correlation does not carry the same benefits. In fact, this regime turns out to be more effective the lower is the correlation, since low correlation makes the ability of the borrowers to coordinate and share risk among themselves more valuable. As intuition suggests and Holmström and Milgrom (1990) show formally, it would be Pareto optimal for the borrowers to be acting non-cooperatively if technological correlation is high enough, and cooperatively if it is low enough. This is a testable implication.

Prescott and Townsend (2002) address similar questions but focus instead on wealth levels of borrowers relative to the lender and wealth dispersion across borrowers. They offer an extended version of the above-mentioned unobserved effort model, generalized in several directions, but without closed form solutions available. In simulations, they find that for sufficiently asymmetric Pareto weights on the two borrowers, interpretable as high wealth dispersion, the cooperative regime dominates. When the weights are more similar,

[1]BAAC is the Bank for Agriculture and Agricultural Cooperatives.