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Towards a New Measure of Access to Credit

ALIOU DIAGNE

RESEARCH PROGRAM MISSION

The research program titled Rural Financial Policies for Food Security of the Poor seeks to identify policies and institutional arrangements that help the poor integrate themselves into sustainable savings and credit systems in order to increase capacity to invest, bear risk, and preserve livelihoods.

FOCUS COUNTRIES

- Bangladesh
- Cameroon
- China
- Egypt
- Ghana
- Madagascar
- Malawi
- Nepal
- Pakistan

ABOUT THE AUTHOR

Aliou Diagne is formerly a visiting research fellow of the Food Consumption and Nutrition Division at IFPRI.

Two common approaches are used for measuring household access to credit and credit constraints in the literature. The first method infers the presence of credit constraints from violations of the assumptions of the life cycle/permanent income hypothesis. More precisely, the method uses household consumption and income data to look for a significant dependence (or "excess sensitivity") of consumption on transitory income. Empirical evidence of a significant dependence is taken as an indication of borrowing or liquidity constraint. The second method uses direct information on households' participation and experiences in the credit market to classify them as credit constrained or not. This classification is then used in reduced form regression equations to analyze the determinants of the likelihood of a household being credit constrained. While inference based on the first method may not always be correct, the second method does not allow quantification of the level of credit constraint. This brief outlines a methodology based on the *credit limit* concept that allows a more satisfactory analysis of the determinants of a household's access to credit.

Analyzing Access to Credit With the Credit Limit Variable

In general, lenders are constrained by factors outside their control on the maximum amount they can possibly lend to any potential borrower. Consequently, any borrower, however creditworthy he is, faces a limit on the overall amount he can borrow from any given source of credit; regardless of how much of an interest rate he is willing to pay and/or collateral he is willing to put up to back the loan. Furthermore, due to the possibility of default and lack of effective contract enforcement mechanisms, lenders have the incentive to further restrict the supply of credit even if they have more than enough to meet a given demand and the borrower is willing to pay a high enough interest rate. Therefore, from the borrower's view, the relevant limit on supply is not the maximum the lender is *able* to lend, but rather the maximum the lender is *willing* to lend. The latter perceived *maximum limit* or *credit limit* that cannot be exceeded when borrowing, regardless of how much interest one is willing to pay, is the focus of the methodology used in this brief for quantifying the extent of household access to credit.

Conceptual Framework

The conceptual framework follows from a contract-theoretic view of loan transaction. It is essentially based on the fact that the credit limit variable, b_{max} facing a potential borrower and the amount the potential lender wants to be repaid are the variables that lenders can choose. On the other hand, the optimal amount b^* to be borrowed within the range set by the lender remains the sole choice of the borrower, who also chooses ex post (i.e., once the loan is disbursed) whether and when to pay back the loan.

The lender's optimal choice of b_{max}, which is interpreted as the supply for credit, is determined by the maximum he is able to lend, b^a_{max}. It is also a function of the lender's subjective assessment of the likelihood of default and of other borrower characteristics. Similarly, the optimal interest rate r chosen by the lender is a function of b^a_{max}, the demand-for-credit function in the traditional meaning of the term. The fact that b^* is a function of b_{max} in addition to being a function of the interest rate is a mere reflection of the borrowing constraint and the imperfect substitutability of the different sources of loans. However, because of imperfections in the

INTERNATIONAL FOOD POLICY RESEARCH INSTITUTE
2033 K STREET, NW, WASHINGTON, DC 20006-1002 USA
Web: www.ifpri.org • Phone: 1-202-862-5600 • Fax: 1-202-467-4439 • Email: ifpri@cgiar.org

enforcement of the loan contract and the resulting adverse selection, the demand for credit need not be a downward-sloping function of the interest rate.

Access to Credit and Participation in Credit Programs

Access to formal credit is often confused with participation in formal credit programs. Indeed, the two concepts are often used interchangeably in many credit studies. The crucial difference between the two concepts lies in the fact that participation in a credit program is something that households choose to do freely, while access to a credit program is a limiting constraint put upon them (availability and eligibility criteria of credit programs, for example). The *lack of access to credit* from a given source of credit can be defined as when the maximum credit limit b_{max} for that source of credit is zero. That is, one *has access* to a certain type of credit when its maximum credit limit b_{max} for that type is strictly positive; and one *improves* one's access to that type of credit by increasing b_{max} for that type of credit.

"Expectation," Observability of the Credit Limit, and the Demand for Credit

The observations above suggest that the maximum credit limit a borrower faces depends on both the lender's and borrower's characteristics and actions. But also, it depends on random events that affect the fortune of lenders and other potential borrowers (who may compete with the borrower for the same possible credit). For example, one can expect the occurrence of drought in a rural agriculture-based economy to reduce the supply of informal credit, while also increasing the number of people looking for loans. Hence, the maximum credit limit b_{max} facing a potential borrower is determined by events, some of which are under the borrower's control, others under the lender's control, and still others outside the control of both.

The fact that b_{max} depends on random events also implies that its realized value at the time when borrowing actually takes place cannot be known exactly in advance by either the lender or the borrower. The borrower can only form "expectations" about the likely value of b_{max} at the time of actual borrowing. But formal lenders usually provide enough information about their loan policy (eligibility criteria, types of project funded, collateral and down-payment requirements, etc.) to enable potential borrowers to have reasonably accurate "expectations" about their b_{max} from each source of formal credit. In the cases of NGO- and government-supported credit programs, they even usually set and announce fixed credit limits for all potential borrowers.

Furthermore, at the time of borrowing it is only the lender who observes the realized value of b_{max} (which he himself determines), and may or may not have the opportunity to reveal it to the borrower. For example, if the borrower's realized optimal choice of loan size is strictly positive but strictly less than the realized value of b_{max}, then the lender may never have the chance to tell the borrower his actual realized choice of b_{max}. Clearly, if at a particular time a borrower does not ask for a loan from a given source of credit, he will never learn, even in retrospect, about his realized b_{max} from that source of credit at that time (there may be exceptions in the cases of NGO- and government-supported credit programs, which set and announce fixed credit limits for all potential borrowers). However, the potential borrower will always have "expectations" on what would have been the likely value of b_{max} at that time. Furthermore, it is precisely the borrower's prior "expectations" about the likely value of b_{max} and its variability that influence his behavior and make him decide in particular whether or not to seek a loan from that particular source of credit. Many "discouraged borrowers" do not seek any loan because either they *expected* to face zero or very low b_{max}, or they *expected* a relative high cost (including transaction costs) for getting loans. The "discouraged borrowers" may have been wrong in their expectations and could perhaps obtain worthwhile loans at reasonable costs. Even when a borrower seeks a loan from a given source of credit, the realized value of the optimal loan size is largely determined by his "expectations" about his b_{max} (especially if the borrower has reasonably accurate information that allows him to predict well the *location* of b_{max}).

The framework outlined above implies that borrower's "expectations" about b_{max} are much more important in determining the actually demanded amounts of credit than the realized values of b_{max}. In empirical work it is possible to collect information on the borrower's *expected* b_{max} from different sources of credit. An example of two studies—one in Malawi and the other in Bangladesh—is cited below. ■

Selected Reference

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CONTACT
Bonnie McClafferty
Communications Specialist
B.McClafferty@CGIAR.ORG