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Scoring for Access: Emerging Evidence on the Impact of Credit Scoring on SME Lending

In developing countries small and medium enterprises (SMEs) are thought to be an important source of innovation and employment because of their flexibility in responding to new market opportunities and their potential for growth. However, entrepreneurs face a number of barriers to expanding their businesses and employing more workers, including constrained access to credit - in 2010 available credit for SMEs in developing countries fell about one trillion dollars short of demand. Why can't financial institutions in developing countries meet the demand for credit from SMEs?

One reason is that these firms represent a particularly difficult market for financiers. The strategies that banks use to loan to large companies - ie: meeting with firm management, gathering and analyzing a packet of financial documents and doing industry research - are too costly to apply to SME applicants. In other words, SME loans are too small to make it profitable for banks to carry out the same level of due diligence that goes into issuing a loan to a large company. At the same time, SMEs require loans that have different risk characteristics and are too large for traditional microfinance lending.

Credit scoring is one of the tools that can help institutions overcome these challenges. In the U.S. and other high-income countries, credit scoring is used widely to assess applications for small business loans. In the late 1950s, the Fair Isaac Corporation developed a set of algorithms that turned consumer data into a score that predicted the repayment behavior of borrowers. In the 90s this credit scoring system was adopted for small business lending. The system is still used by 90 percent of all major U.S. small business lenders, and it has

contributed to making small business lending in the U.S. one of the most competitive markets in the world.

While credit scoring may seem like an easy solution for the financing challenges faced by SMEs in developing countries, it is important to note that the U.S. credit scoring system and accompanying financial infrastructure, like credit bureaus, took years to develop and required considerable investment. This poses a major challenge to developing countries, but many of them are working to establish or modernize credit bureaus and support the development of innovations in collecting and sharing financial information.

In the meantime, some financial institutions are creating their own credit scoring systems based on information that can be gathered directly from applicants, for example, age, education and business experience. A number of other innovations in the credit scoring space are gaining attention. For example, the Entrepreneurial Finance Lab developed a credit scoring model based on psychometric testing of loan applicants, with computer-based questions relating to character, abilities and attitude. Another example is a credit scoring algorithm developed by Lenddo that takes into account the strength of applicants' social media contacts on Facebook, LinkedIn and other networks.

As different credit scoring systems emerge, it is important to understand what impact they have on SME lending. For this reason, the SME Initiative, a program at Innovations for Poverty Action that works to generate and disseminate rigorous evidence on programs and products that promote SME growth, has incorporated credit scoring into its research agenda. In one ongoing study, Gharad Bryan, Pamela Jakiela, Dean Karlan and Dan Keniston are looking at whether a credit scoring system increases lending to SMEs in the Philippines and whether this lending improves business profitability. This research also looks at the impact of lending on the competitors, suppliers and customers of businesses receiving loans.

Daniel Paravisini and Antoinette Schoar recently completed a study in Colombia on the rollout of a credit scoring model developed by a bank called BancaMia. The credit score in this model is based on an algorithm which summarizes, in one number, a subset of information from the applicant's loan application, for example age, gender, business cash flows and assets. Prior to the adoption of the credit scoring model, BancaMia used credit committees to evaluate raw information from the application. The committee could approve the loan, reject it, or refer it to the regional manager for review. BancaMia planned to use the credit score as an additional piece of information for the committee to use during loan application discussions. The bank's management hoped that the credit scoring system would "improve identification of the best and worst clients, decentralize the loan approval process, and reduce the labor costs involved in the loan application evaluation."

The researchers designed a randomized control trial to evaluate the impact of credit scores on the productivity of credit committees and loan performance. With this rigorous design researchers could isolate causal impact of credit scores from other changes going on at the bank that were affecting its operations and potentially impacting productivity. For a set of randomly chosen loan applications, a credit score was revealed to the credit committee at the beginning of each application discussion. For another set of applications, the committee

made an initial decision about the loan before the score was revealed. In this case, the committee knew that a score would become available once they reached a decision, and that they would have the opportunity to revise their decision once they received the score. For a third comparison group, scores were not revealed to the committee at any point.

The researchers found that revealing the credit score at the beginning of the application review process increased both the probability of the committee making a decision and the amount of time put into the review. The credit committee made more decisions, referring fewer cases to management or back to the loan officer to collect additional information. Since the manager's time and collection of additional information in the field is expensive, the credit scoring system could reduce the cost of administering loans for the bank.

The committee also became more productive when it knew that a score would become available after the initial evaluation. Seventy-five percent of the increase in loan decisions occurred before the committee observed the score. This suggests that most of the information needed to make a decision was already available to the committee without the score, but the loan officers were not incentivized to use the information effectively.

Although revealing a credit score did not change loan outcomes, like the average loan amount or default rates, it improved credit allocation. In other words, credit scores reduced uncertainty about borrowers' creditworthiness, allowing banks to extend larger loans to less risky borrowers and smaller loans to riskier ones. This improvement in matching lending to borrowers' risk profiles will be beneficial to the bank.

Overall, improved credit allocation combined with the increased credit committee output supports the role of credit scoring in making SME lending profitable for banks. As the SME Initiative's credit scoring studies release results, we hope that they, along with other research in the field, will allow banks, policy makers and other practitioners to effectively utilize credit scoring as a tool to increase access to better SME financing.

Editor's Note: This post originally appeared on Nextbillion.net.

Information on our other credit scoring projects can be found on IPA's SME project [webpage](#).

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