Interest Rates, Loan Maturity and Demand for Microfinance Loans in South Africa

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Sector(s): Finance

Fieldwork: Innovations for Poverty Action (IPA)

Location: South Africa

Sample: 3,887 approved loan clients

Target group: Urban population

Outcome of interest: Take-up of program/social service/healthy behavior

Intervention type: Credit Pricing and fees

AEA RCT registration number: AEARCTR-0001298

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Partner organization(s): National Science Foundation (NSF), United States Agency for International Development (USAID)

Policymakers often prescribe that microfinance institutions increase interest rates to eliminate their reliance on subsidies. This strategy makes sense if the poor are rate insensitive: then microlenders increase profitability (or achieve sustainability) without reducing the poor's access to credit. Researchers tested the assumption of price inelastic demand using a randomized evaluation in South Africa. The results suggest that the demand curves were downward sloping, and steeper for price increases relative to the lender's standard rates. Researchers also found that loan size was far more responsive to changes in loan maturity than to changes in interest rates.

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Microcredit is thought to help alleviate poverty by enabling the poor to access necessary capital to invest in higher education, smooth consumption or start a business. But providing small loans to clients in poor settings who often lack adequate collateral or a verifiable credit history may yield small profits for lenders, and many microfinance institutions (MFIs) rely on subsidies to stay afloat. Policymakers often call on MFIs to increase interest rates in order to increase profits and eliminate their reliance on subsidies. This strategy makes sense if the poor are not sensitive to higher interest rates; microlenders could increase profitability and achieve sustainability without reducing the poor's access to credit. Yet existing research offers little evidence on interest rate sensitivities in target markets, and little guidance on how MFIs can derive optimal rates.

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Cash loan borrowers are prevalent in South Africa. Estimates of the proportion of working-age population currently borrowing in the cash loan market range from below 5 percent to around 10 percent and borrowed funds account for about 11 percent of aggregate annual income. The for-profit South African lender who collaborated for this study is one bank who provides cash loans in this high-risk consumer loan market. Clients typically use loans for a range of consumption smoothing and investment purposes, including food, clothing, transport, education, housing, and paying off other debt. Cash loan sizes tend to be small relative to the fixed costs of underwriting and monitoring them, but substantial relative to a typical borrower's income. For example, the lender's median loan size of approximately US$150 is 32 percent of its median borrower's gross monthly income. This lender typically offers "medium-maturity," four-month loans, with a 7.75 to 11.75 percent interest rate per month, depending on borrower risk level. Repeat borrowers have default rates of about 15 percent, and first-time borrowers default twice as often.



Skilled workers in South Africa.

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Working with a South African lender in the cash-loan industry, researchers tested borrowers' sensitivity to higher interest rates by randomizing the interest rate offered to past clients on a direct mail solicitation, and the maturity of an example loan shown on the offer letter.

First, the lender randomized the interest rate offered in "pre-qualified," limited-time offers that were mailed to approximately 58,000 former clients with good repayment histories. The offer rate randomization was stratified by the client's pre-approved risk category (high-risk; medium-risk; low-risk), with the final rates varying from 3.25 percent per month to 14.75 percent per month. At the lender's request, 96 percent of the offers were at lower-than-standard rates, with an average discount of 3.1 percentage

points on the monthly rate (the average rate on loans prior to the experiment was 11 percent). Clients who wished to borrow at the offer rate then went to a branch to apply, through the standard bank procedure.

A subset of low- and medium-risk borrowers, who were eligible for maturities longer than four months, also received mailers containing a randomly selected maturity suggestion. The suggestion took the form of a nonbinding "example" loan showing one of the lender's most common maturities (four, six, or twelve months), where the length of the maturity was randomly assigned.

Clients were from 86 predominantly urban branches and had borrowed from the lender within the past 24 months, were in good standing, and did not currently have a loan from the lender as of thirty days prior to the mailer. Each mailer contained a deadline, ranging from two to six weeks, by which the client had to respond in order to be eligible for the offer rate. At that time, loan applications were taken and assessed as per the lender's standard underwriting. A total of 4,540 clients applied for a loan; of these, 3,887 were approved.

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Price Elasticities: Results reveal demand curves with respect to price that were gently downward sloping throughout a wide range of rates below the lender's standard ones. But demand sensitivity roses sharply at prices above the lender's standard rates. Among the sample receiving interest rate offers at or below the standard interest rate for their risk category, a price decrease from the maximum (11.75 percent) to the minimum (3.25 percent) rate only increased take-up by 2.6 percentage points (31 percent). This means, for every 100-basis-point increase in the monthly interest rate, take-up fell by only 0.3 percentage points. For clients randomly assigned a higher-than-standard offer rate, however, take-up appeared to be more sensitive to price: here take-up fell 1.7 percentage points for each 100-basis-point increase in the interest rate, on an average take-up rate of 6.6 percent, showing that price sensitivity of take-up was six times greater at higher-than-standard rates.

Pricing for Profit Maximation: High rates reduced the number of applicants significantly. Individuals receiving interest rate offers above the lender's standard rates were 3 percentage points (36 percent) less likely to apply than their lower-rate counterparts. Higher rates also reduced repayment rates. Thus, an interest rate increase would be unprofitable for this lender. It would produce both a reduction in demand and increased default rates, which would not be compensated by the increase in interest revenue from higher rates.

Maturity Elasticities: The example maturity date on the loan letter powerfully predicted the actual maturity date chosen by the borrower. For each additional month of maturity suggested, the actual maturity date chosen was pushed out by 0.12 months. Researchers also found that each month of additional time to maturity increased loan demand by 15.7 percent. Most notably, the maturity effect was large relative to price sensitivity. Loan size did not respond to price in the maturity-suggestion sample, but was very responsive to loan maturity. On average, a one-month maturity increase had approximately the same effect as a 436-basis-point interest rate decrease.

Taken together, this evidence suggests a practical implication that some MFIs should consider using varied maturity dates rather than price to balance profitability and targeting goals.

Karlan, Dean, and Jonathan Zinman. 2008. "Credit Elasticities in Less-Developed Economies: Implications for Microfinance." American Economic Review 93(8):1040-68. Karlan, Dean, and Jonathan Zinman. 2009. "Observing Unobservables: Identifying Information Asymmetries with a Consumer Credit Field Experiment." Econometrica, 77(6):1993-2008.