Abstract. This paper examines the market for loans from banks to micro- and small enterprises in Trinidad and Tobago. It tests for the presence of racial and gender discrimination. It takes the reported refusal to grant loans to groups, when all other indicators of credit-worthiness are taken into account, as evidence of discrimination. The paper distinguishes between Application and Denial Rates. It finds that, once all other indicators of credit-worthiness are taken into account, neither Application nor Denial rates differ significantly by gender. Reported Denial rates are, however, higher for Africans compared with other ethnic groups, implying the possible presence of discrimination.

1. Introduction

This paper examines the market for loans from banks to small and micro enterprises in Trinidad and Tobago. It examines whether there is evidence that certain types of businesses are less likely to receive loans than others—most notably businesses owned by females and by those of African origin. In short, is there discrimination by banks against such groups?

The paper views discrimination as occurring when the distribution of loans is influenced by factors not relevant to the transaction—in this case race and gender. Its key analytic distinction is to recognise that the distribution of loans is influenced by applications received, as well as decisions made by the bank. Confirming the results of Raturi and Swamy (1999), it finds some evidence of racial and gender differences in Application and Denial Rates. Discrimination, however, is only defined to occur when race/gender influence Denial rates independently of other risk indicators. Data limitations, however, preclude an assessment of whether ethnicity or gender influence borrower discouragement.

In contrast with Raturi and Swamy it finds, for Africans, evidence of higher Denial rates, implying the presence of discrimination. It finds no evidence of higher Denial rates for females.

The paper is structured as follows. It begins with the analytical framework for testing for discrimination, distinguishing between Application and Denial Rates, generating five hypotheses to be tested. It then describes the data set to be used in the analysis. The paper provides simple univariate statistics on Loans, Application and Denial Rates, and how these vary according to firm and owner characteristics. The bulk of the analysis is devoted to testing the hypotheses in a multi-variate framework.

2. Literature review and hypotheses derivation

Becker (1957) defined financial discrimination to exist when loans, normally made at interest rate \( r \), are made to the discriminated group at \( r(1 + \delta) \) where \( \delta \) is the interest premium. However Stiglitz and Weiss (1981) show financial institutions favour outright loan refusal to high risk applicants, rather than making loans at higher interest rates. Discrimination may therefore also be reflected in a refusal to grant loans (Denial) rather than an interest premium.

To demonstrate the presence of discrimination requires more than the observation that specific groups (G)—which we shall take as Africans/Females—are consistently less likely to have loans than other groups. Only after all other Non-
ethnic/Gender measures of creditworthiness are held constant, and the G coefficient remains positive and significant, can discrimination be shown to be present. This is formulated in Equation (1).

\[ L = \alpha + \beta X' + \varphi G + \varepsilon \]  (1)

Where \( L \) = Loans; \( X \) are risk indicators; \( G \) = Group for which discrimination is being investigated.

Raturi and Swamy (1999), however, show that even a significantly lower \( \varphi \), need not necessarily reflect discrimination. They distinguish between wanting a loan (W), applying for a loan (A), not applying (NA) and being denied a loan (D).

They argue that rejection (R), is a preferred measure to denial since the latter also includes those discouraged from applying through fear of rejection. Rejection is set out in Equation (2) below.

\[ P(R) = P(W) P(NA|W) + P(A) P(D|A) \]  (2)

or

\[ PCR = P(W) [1 -P(A|W)] [1 -P(D|A)] \]  (3)

Equation (3) shows credit constraints reflect four influences. First, that the individual wants a loan, second that they apply and thirdly that they are rejected. The fourth element are those who want a loan but who do not apply, with these being referred to as discouraged borrowers. Kon and Storey (2003) provide a theoretical treatment of this group, but they are not covered further in this paper.

Raturi and Swamy then analyse enterprises in Zimbabwe, examining the ethnicity of owners. Although it is not a focus of their study, they also incorporate the gender of the owners.

Their key results are shown below in Table I.

Table I shows Blacks are more likely than other racial groups to be “credit constrained” because they are more likely to both want loans and to apply for loans. Raturi and Swamy, however, find denial rates for Blacks are not significantly different from other ethnic groups and so argue that discrimination does not exist.

Their results however suggest there is discrimination against males. They are more likely than females to want loans and to apply, but are more likely to be denied.

Studies of discrimination in financial markets abound in developed economies, particularly the United States. Of studies concerned with the small business marketplace, those by Cavalluzzo and Cavalluzzo (1998), Blanchflower, Levine and Zimmerman (1998) and Cavalluzzo, Cavalluzzo and Wolken (1999) and Bates (1991) are the most relevant. However these studies only quantify Application and Denial rates. Only Cavalluzzo et al. (1999) seek to estimate the proportion who want a loan but do not apply – the so-called “Discouraged Borrowers” – since this requires information on whether businesses wanted loans.

Table II summarises the findings from those studies, making a distinction between Application rates (A) and Denial rates P(D|A). Where possible, Application and Denial rates are shown by gender and ethnicity. Interesting patterns emerge from the U.S. studies. Dealing first with Application rates, whilst Asians have lower Application rates, there are only small differences between the other ethnic groups. Second, for the U.S., for all ethnic groups, application rates are lower for females than males. Although not tabulated, the same result is found for Zimbabwe in a multivariate analysis.

The lower half of Table II shows Denial rates, P(D|A). The U.S. findings are that, for their most recent loan application, Denial rates are high for African Americans, both males and females. Amongst whites, however, denial rates are non-significantly higher for females than males. In Zimbabwe denial rates are also much higher for Blacks than for the other two groups. The multivariate analysis for Zimbabwe shows denial rates are higher for males than females.

The above literature suggests the following hypotheses: