

CONTROLLING LOAN DEFAULT AND IMPROVING THE LENDING TECHNOLOGY IN CREDIT INSTITUTIONS

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1. Introduction

A tragedy commonly observed in loan markets is the high cost of loan default. It is present in both developed and under developed credit markets, where some lenders may be fortunate to evade its worse effects while others may not be so lucky. The loan crisis of the 1980s and early 1990s affirms that all is not well with lenders in the developed financial markets in North America, Europe or Japan. Likewise, the experiences in South America, Asia and Africa have also confirmed that loan default is pervasive, constraining the financial deepening process (McKinnon, 1973; Shaw, 1973).

Loan default is a tragedy because failing to implement appropriate lending strategies and credible credit policies often result in the demise of credit institutions. Default problems destroy lending capacity as the flow of repayment declines, transforming lenders into welfare agencies, instead of viable financial institutions. It incorrectly penalizes creditworthy borrowers whenever the financial technology is not sophisticated enough to separate high-risk applicants from low-risk borrowers. Loan default may also deny new applicants access to credit, as the bank's cash-flow management problems augment in direct proportion to the increasing default problem. Loan default, especially in subsidized programs, may contribute to increasing income inequality as wealthy borrowers capture the subsidies intended for small borrowers. Finally, persistent default problems, resulting from lax lending criteria, a suspicion of fraud or conflict of interest, may undermine public confidence in formal financial markets, causing savers to withdraw their funds from financial institutions. No other concern in financial markets has such a profound effect on the performance of lenders, yet efforts to examine loan default problems in detail have not been rigorously pursued in many rural credit programs.

Loan default is often examined as moral hazard and adverse selection problems, resulting from the lack of accurate information about borrower repayment behavior. But while this is an acceptable approach it is not complete, because it assumes that the lender's screening and rationing technology is efficient in separating creditworthy from non-creditworthy borrowers¹. Consequently, by relaxing this assumption it may be observed that the technology is flawed, leading to loan and income losses that transforms the lender into a costly welfare agency. This paper explores this issue by seeking to identify criteria used by lenders to ration credit and to investigate at the same time how these

1. Creditworthy borrowers are defined as borrowers who satisfy all the loan contract conditions and repay their loan without ever going into arrears. Non-creditworthy borrowers are those borrowers who breach their loan contracts and have repayment and default problems.

criteria may influence borrower repayment behavior. Specifically, it is posited that some credit rationing criteria may promote access to credit, but they may also contribute to the poor repayment performance of borrowers. This paper therefore seeks to isolate and make more transparent those criteria that may lead to lax lending strategies, separating them from other criteria that may enhance financial viability. The remaining sections of this paper are as follows. Section 2 has a brief review of the literature on loan default, while the presentation of the model is made in section 3. This is followed by a description of the data and estimation procedures in section 4. Results are discussed in section 5 and a summary and conclusions are recorded in section 6.

2. Loan Default Experience

Until recently, the study of loan default has emphasized exogenous factors and ad-hoc models that utilized climatic, economic and social concerns as explanatory variables. In this regard, the notion that default was a result of unexpected floods, pests, poor marketing, land tenure arrangements, transportation and extension problems have been explored by (Donald, 1976), and (Von Pischke, 1976). A political dimension has been recently added by (Harris, 1983; Khalily and Meyer, 1992). They argue that borrower unwillingness to repay is a result of a trade-off between voters and politicians who promise debt forgiveness for a vote cast in their favour. Others have suggested that loan default may result from dishonest borrowers who may be motivated to repay, only if it is financially advantageous to them (Jaffee and Russell, 1976; Christen, 1984; Braverman and Guasch, 1986).

Lack of access to a timely and credible source of financial information has also impacted on the default problem. In particular, (Devaney, 1984) asserts that since there is no mechanism that will a priori induce a true revelation of an applicant's default probability and the maximum interest rate that the borrower is willing to pay, banks must assess default risks based on independently observable borrower characteristics that are different from what the borrower claims. This has resulted in researchers modelling lender and borrower behavior by utilizing non-price information, including wealth variables, such as the value of land, equipment, livestock, collateral, collateral substitutes and bank accounts. In addition, demographic variables have also been utilized. Some of these are age, region, number of children, membership in organizations, gender, education, type of land tenure and religion. A final group of variables explaining default have been economic indicators, namely the type of borrower by economic activity, number of hired labor, technology, savings, risk measured by mean and variance in prices, yields, income, input

and output prices, farm debt and equity.

Adding a risk premium to the price of the loan to cover loan losses is another approach utilized to examine loan default problems (Gonzalez-Vega, 1976). This risk premium results from the fact that at the time of the loan request, the lender is unable to clearly identify which borrower would repay and which borrower would default, as actual default losses are not known until scheduled repayments are due. But while this risk premium may have reduced loan default losses, it raised interest rates for all clients. Besides, it may very well have squeezed out the less risky borrowers whose investments may not have been able to carry the higher interest costs, resulting in the adverse selection of high risk applicants (Stiglitz and Weiss, 1981).

Loan default models by (Aguilera, 1990) and (Boyes et al, 1989) present complete approaches to the examination of the default problem. The advantage of the former model is that it takes into consideration the optimization behavior of both borrower and lender who utilizes an information technology with penalty costs to track and penalize defaulters. The advantage of the latter model is that it nested the credit granting decision with the assessment of the default problem. The down side of these two models, however, is that the model by Aguilera is unfortunately complex and intractable (Aguilera, 1990) and the model by Boyes et al did not have a strong theoretical foundation.

Recent empirical evidence from Canada and the United States, using wealth, demographic and economic indicators, show that the lack of liquidity and relatively high financial leverage have been the main reasons why borrowers default on their loans (Turvey and Brown, 1990; Mortensen, Watt and Leistritz, 1988; Miller and La Due, 1989; and (Turvey, 1991). In a developing country setting with fragmented markets, it has been demonstrated that loan default is related to targeting in special credit programs (Aguilera and Gonzalez-Vega, 1990).

Most multilateral agencies, such as The World Bank and the Inter-American Development Bank, seek to cover loan default losses with government guarantees by member countries. This has worked well for these institutions, but it has not advanced the assessment of loan default risks, especially in poor developing countries. Interestingly, in The World Bank Annual Report 1994, the provision for loan losses declined from \$578.0 million in 1993 to zero in 1994. This result perhaps reflect two concerns. First, it may be that some of the middle income countries, once borrowers of the bank, have graduated and can now access world capital markets (Preston, 1994). Or second, it may be that The World Bank has become overly risk-averse. If it is indeed a case of graduation, then this is a significant outcome that has not been fully explained in the literature and should be

pursued for replication and institutional memory. If however the bank has become overly risk-averse, then there is work to be done, as many potential investors in the developing countries may be denied access to credit markets. Consequently, a provision of zero dollars for loan losses would be a tragedy for the bank or any other multilateral lending agency that inadvertently neglected projects from investors who may have economic opportunities but insufficient financial resources. But beyond this concern, a similar tragedy would also exist in going from no default to significant default, whenever the lender utilizes a flawed financial technology. Neither of these two extremes would be acceptable and therefore controlling loan default and improving the lending technology must be a priority of all lenders.

3. The Model ²

The financial viability of any credit institution depends critically on selecting applicants who have a high probability of repayment and rejecting those applicants who have a high probability of default. In this regards, the Board of Directors, the principal, may direct the management and staff, the agent, to use borrower information to:

- (a) reject some applications, because the risk of default is too high;
- (b) limit the size of the loan for approved applicants, in an attempt to reduce the amount of expected losses;
- (c) reveal the level of commitment by borrowers, by requiring equity contributions in the project, or requiring some minimum proportion of the loan to be covered by collateral;
- (d) select borrowers with good repayment histories and reduce its exposure to new applicants;
- (e) identify economic activities that are comparatively more profitable, or select locations/regions where the infrastructure for utilizing modern technology, marketing, and extension are in good working order; and
- (f) negotiate loan contracts using (b) to (e).

Since the principal is not always aware of how the agent interprets the lending rules, and it is difficult to monitor the agent's work efforts on a continuous basis, there is the possibility that the lender may be surprised at the repayment stage. Thus by matching lender and borrower behavior, this comparison will reveal whether or not the financial technology is efficient in separating high risk from low risk borrowers. A specification such a model is given as:

2. The model presented in this paper is fully described in Hunte's dissertation, 1993.

$$\begin{aligned} LRR_i &= X\beta + e_{1i} \\ RPR_i &= X\alpha + e_{2i} \end{aligned} \quad (1)$$

where LRR_i is the loan rationing ratio defined as the loan amount approved by the lender divided by the loan amount requested by the client. The dependent variable RPR_i is the repayment ratio, defined as the loan principal actually paid, divided by the loan principal that is due and payable as specified in the contract; and X is a set of borrower characteristics chosen by the lender. The error terms are e_1 and e_2 .

In order to evaluate the efficacy of the financial technology, the level of parameter significance and the sign in the estimation of the loan rationing ratio equation should be compared with the level of significance and sign in the estimation of the repayment equation. Significant parameters in the rationing and repayment equations will reveal the correct identification of loan rationing criteria. Significant parameters in the equation for loan rationing, but no parameter significance in the repayment equation will reflect a useless rationing device, as no information on default probabilities will be observed. Alternatively, significant parameters in the repayment equation, compared with no parameter significance in the loan rationing equation will reveal that the lender is ignoring useful information that clearly identifies applicants with low credit risks. Furthermore, a significant positive sign in the loan rationing equation that is matched with a significant positive sign in the repayment equation for the same variable will reveal that the financial technology is accurate in identifying creditworthy borrowers. Alternatively, a significant positive sign in the loan rationing equation that is matched with a significant negative sign for the same variable in the repayment equation will accurately reveal that the financial technology is flawed, attracting default prone-borrowers. A significant negative sign in the loan rationing equation and a significant positive sign in the repayment equation will reveal that the mechanism is incorrectly rationing credit too strictly to creditworthy borrowers. Significant negative signs in both equations will reveal that the lender is accurately identifying default-prone borrowers, and is rationing them more strictly.

Table 1 contains a four-way classification scheme that matches creditworthy and non-creditworthy borrowers, with lender's approval or rejection decisions. Creditworthy borrowers are categorized in Sector I whenever the estimated parameters are significantly positive in both the loan rationing and repayment equations. Sector III has borrowers who have been misclassified with high credit risk, as the estimated parameter in the loan rationing equation is negative, while a positive parameter is estimated for the repayment equation. This result implies that the lender offered smaller loans to a group of creditworthy borrowers who had the capacity to repay larger loans, but they were denied the opportunity

because of a flawed technology. Moreover, this tragic mistake inadvertently made available to default prone borrowers (Sector IV and Section II) a larger pool of credit resources. Thus the lender's decision to grant credit access with minimum credit rationing in Section II, together with the borrower's poor repayment performance, unambiguously reduces the lender's expected profits as loan default rises. Furthermore, loan default in Section II represents the moral hazard problem and may be the main reason why lenders in rural financial markets are transformed into costly welfare agencies.³

Table 1: Diagnostic Matrix for Evaluating the Screening and Rationing Mechanism

| HYPOTHESES (STATES) | LENDER'S CREDIT ACTION: accept H_0 <i>ex ante</i> | <i>ex post</i> | LENDER'S CREDIT ACTION: reject H_0 <i>ex ante</i> | <i>ex post</i> |
|--------------------------|---|----------------|---|----------------|
| | no rationing | repayment | rationing | repayment |
| H_0 : Creditworthy | $+\beta_1$ SECTOR I NO ERROR | $+\alpha^0$ | $-\beta_2$ SECTOR III TYPE I ERROR (α) | $+\alpha^0$ |
| H_1 : Non-Creditworthy | $+\beta_2$ SECTOR II TYPE II ERROR (β) | $-\alpha^0$ | $-\beta_1$ SECTOR IV NO ERROR | $-\alpha^0$ |

β_1 = Screening mechanism (RR): if negative, more rationing; if positive, less rationing. α^0 = repayment rationing (RPR): if negative, less repayment expected; if positive, more repayment expected.

In Sector IV, credit access may be denied or granted, depending on how intensely credit is rationed. For instance, intense credit rationing may lead to loan rejection or to the case of limited access, where the borrower receives a loan that is less than the requested amount, due to the lender's concern of increasing default risk and low repayment performance. Indeed, all the loan applications in Section IV should be rejected, but some may still gain credit access due to the lack of historical credit information and repayment performance. Accordingly, instead of the lender rejecting these default prone applications, they are incorrectly favored with credit access and less rationing. The proportion of

3. Moral hazard is defined as the tendency of one party to a contract to alter his or her behavior in ways which are costly to the other party (Mc Connell and Brue, 1993). In the case of financial markets, a borrower who fails to satisfy the contracted repayment terms after receiving disbursements creates a moral hazard problem.

significant parameters falling in each of these four sectors will indicate whether or not the technology is flawed and will have important implications for the financial viability of credit institutions.

Potential proxy variables considered to explain loan rationing and repayment behavior are credit experience, gender, joint applications, net-worth (total assets - total liabilities), and equity divided by the size of the investment (E/I). Credit experience is represented by the number of previous loans the applicant had with the lender. As the number of previous loans increases, the intensity of rationing should decline, since the lender has a stock of information about repayment behavior on which to base the loan decision. At the same time, borrowers with previous loans have a reputation to maintain if they are to continue receiving subsidized credit. Therefore, the sign on the estimated parameter should be positive in both equations.

Borrowers who provide increasing levels of equity relative to the size of the investment (E/I) should be less rationed and the estimated parameter should have a positive sign in both equations. This is in keeping with the notion that the borrower may be demonstrating commitment to the investment by providing a deductible. The lender should be more willing to lend to joint applicants, because the cost of lending should be lower and access to collateral security should be more easily available. This is similar to peer monitoring, in which the bank transfers some of the risk to the owner of the security Stiglitz (1990). Thus, it is expected that the estimated parameter in both equations should be positive. Net-worth is expected to have a positive sign in the loan rationing equation and a negative sign in the repayment equation. This result is expected, because wealthy borrowers are assumed to be better rent seekers than less wealthy borrowers. Typically, wealthy borrowers have access to politicians who can influence the decisions made by the Board of Directors, regarding credit access, rationing and repayment performance. A negative sign in the repayment equation also reflects the concern that wealthy borrowers are poor credit repayers when compared with the less wealthy, small borrowers.

Economic activities in rice, sugar cane, fishing, and food crops and livestock may be included to explain credit rationing and repayment performance. The signs on the parameters for sugar cane, fishing, and rice are expected to be positive in both equations, implying less intense credit rationing and high repayments, principally because these activities are profitable. Additionally, these activities earn high incomes from exports, strengthening outward looking strategies over inward looking ones.

The proportion of collateral security to the loan amount and the grace period, as components of the loan contract, are also included as explanatory variables. The

estimated parameters should be positive for the ratio of collateral security to the loan request in both equations. These results represent less credit rationing and high repayment, due to the collateral the borrower is willing to surrender for the loan. In contrast, longer grace periods may result in a moral hazard problem, where borrowers alter their commitment to honor their contracted repayment schedules. Instead of making timely repayments, these borrowers may service other senior claims with higher opportunity costs and more strict enforcement measures.

The length of time taken to process applications (delays) is an additional explanatory variables that is expected to have negative estimated parameters in both equations. This results from the notion that long waiting times reflect a shortage of credible credit information required to make informed credit decisions. This in turn leads to greater risks, more intense credit rationing and low repayments. Parameters estimated for female borrowers should be negative in both equations, largely because credit access may be denied due to social relationships, while repayments by females may be lower than for other groups, simply because of female inexperience in financial and other markets.

Comparisons between the estimated equations will reveal the quality of the financial technology through the sign and level of significance on each parameter. This will make transparent the implicit behavior of lenders and borrowers, and will determine whether or not the technology is flawed. Table 2 contains a summary of the expected signs.

Table 2: Expected Signs in the Model

| Variables | RR | RPR |
|--------------------------|-----|-----|
| Credit Experience | (+) | (+) |
| Equity/Investment | (+) | (+) |
| male | (+) | (+) |
| female | (-) | (-) |
| joint | (+) | (+) |
| rice | (+) | (+) |
| Sugar cane | (+) | (+) |
| Food crops and livestock | (+) | (+) |
| Fishing | (+) | (+) |
| Net worth | (+) | (+) |
| Delay | (-) | (-) |
| Grace period | (-) | (-) |
| Collateral/demand | (+) | (+) |

(+) Implies less rationing in the LRR equation.

(-) Implies more intensive rationing in the LRR equation.

(+) Implies more repayment in the RPR equation.

(-) Implies less repayment in the RPR equation.

4. Data and Procedures

The data for this study is obtained from a survey at the Guyana Cooperative Agriculture and Industrial Development Bank, Hunte (1993). A stratified random sample of 504 observations was drawn, using the loan application register, accounting files and records of clients at the bank. Tracking each application through the application process yielded a total of 436 approved and 68 rejected applications. A further breakdown of the 436 approved loans revealed that at the time of the survey six of the applications were not due for repayment, yielding an active repayment sample of 430 observations. Of the 430 observations, twenty-three were in total default, 226 were repaid without arrears and the remainder were in various stages of arrears repayment.

During the rationing process, some applications were approved ($LRR > 0$), others were rejected ($LRR = 0$) and still others received amounts that were less than what was requested ($0 < LRR < 1$). These outcomes clearly suggest that LRR is limited between zero and one and failing to account for any of these possibilities will exclude vital information from the analysis. In particular, neglecting any information will produce biased and inconsistent estimates as the sample is censored. A similar outcome also holds for the repayment equation, where the dependent variable RPR is limited between zero and one in the censored sample. In this case, there are borrowers who repaid their loans in full, there are others in different stages of repayment and others who are in full default. The RPR equation has 23 observations at zero indicating full default, while the LRR equation has 68 observations at zero, signalling loan rejection. Continuous independent variables included in the model are credit experience, the ratios of equity to investment and collateral security to the loan request, grace period, delays, and wealth. Independent dummy variables are rice, sugar cane, fishing, female and joint applications. The intercept term includes food crops and livestock and male borrowers. Obtaining efficient and unbiased estimates for models which utilize censored samples require the use of the Tobit estimator (Tobin, 1958), with the assumption that the error terms are independently and normally distributed (Maddala, 1984). The estimation is completed using SHAZAM Tobit software.

5. Results

Table 3 has a summary of the estimated parameters. Nine out of the twelve estimated parameters (75 percent) are statistically significant at the ten percent level or better in the LRR equation, indicating that the bank has an identifiable financial technology, designed to select among borrowers with different degrees of relative credit access. More impor-

tantly is the fact that six out of the nine parameters (67 percent) are positive and statistically significant. This result implies that the bank has a strong preference for loan approval or credit access and a light concern for loan rejection. Specifically, the estimated parameters indicate that the lender limits credit access only through lengthy processing times (delays), joint applications, and loan applications for sugar cane. In contrast, credit access and loan approval are increasingly favored by credit experience, loan applications for fishing, the equity-investment ratio, collateral security relative to the loan request, the grace period on loans contracted by the lender and male borrowers in food crops and livestock observed in the intercept term. In this regard, the signs on these statistically significant parameters are positive, implying greater credit access by borrowers with these characteristics. The other parameters do not explain the rationing process.

Table 3: Regression Coefficients and Asymptotic t Ratios

| Explanatory Variables | | | LRR | RPR |
|-------------------------|-------------------|-----|-------------------------|----------------------|
| 1. | Credit Experience | CE | 0.007** (2.06) | 0.008** (2.01) |
| 2. | Equity/Investment | E/I | 0.44** (8.71) | -0.063 (-0.95) |
| 3. | Rice | A17 | 0.003 (0.104) | 0.323** (7.60) |
| 4. | Sugar cane | A18 | -0.227* (-1.54) | 0.288* (1.44) |
| 5. | Fishing | A21 | 0.29** (6.19) | 0.102** (1.65) |
| 7. | Female | A27 | 0.039 (0.63) | -0.045 (-0.57) |
| 8. | Joint | A28 | -0.03* (-1.38) | -0.044* (-1.39) |
| 9. | Net worth | NW | -0.019E-11 (-0.2E-3) | -0.4E-7** (-3.88) |
| 10. | Delays (Days) | Dys | -0.001** (-7.53) | -0.6E-3** (-2.44) |
| 11. | Grace Period | GP | 0.001** (15.03) | -0.001** (-6.54) |
| 12. | Collateral/Loan | SL | 0.0009** (3.29) | 0.17E-3 (0.49) |
| 12. | Constant | C | 0.34** (7.76) | 0.88** (12.30) |
| Log likelihood function | | | -60.96 | -85.61 |

* = 10%, ** = 5% or better. The Constant includes: male, food crops and livestock.

In the repayment equation (RPR), nine out of the twelve estimated parameters (75

percent) are statistically significant, explaining thereby borrower repayment behavior. Five out of these nine parameters, including the intercept term, credit experience, rice, sugar cane, and fishing, have positive signs. Consequently, these results confirm that repayments are likely to be higher whenever these criteria are targeted as repayment characteristics by lenders. Meanwhile, diminished repayments are increasingly observed by extended grace periods, long processing times, wealthy borrowers and females, because the signs on the statistically significant parameters are negative. The other parameters do not explain repayment behavior.

A comparative analysis, using the criteria in Table 1 and the statistically significant parameters estimated in both equations, reveals that the lender can reduce the probability of default by working exclusively with borrowers engaged in fishing, males in food crops and livestock and those with a long credit history with the lender. In this case, the lender's financial technology and the borrower repayment behavior favorably complement each other, with relatively no credit rationing and low default risks. Targeting these borrowers, categorized in Sector I, Table 1, with more loans will enhance the profitability of the bank. However, this approach will skew the portfolio in favor of a few experienced male borrowers engaged in food crops and livestock and fishing. And ultimately, it will reduce credit access, severely limiting new borrowers Bourne and Graham (1984).

The statistically significant parameters for borrowers engaged in sugar cane are categorized in Sector III, Table 1. This result implies that the lender incorrectly rations credit and limits credit access to sugar cane borrowers, when in fact they are excellent payers with relatively low default risk. One implication of this result is that providing more loans to sugar cane borrowers would certainly increase the lender's expected profits, once portfolio diversification is not jeopardized. Regrettably, this opportunity is missed as too much credit rationing occurs for sugar cane applications. Meanwhile, the lender makes a more tragic mistake whenever loan contracts with extended grace periods are signed, placing them in Sector II, Table 1. While the lender in this case strongly favours credit access using the grace period on loans, the borrower increasingly takes advantage of this weakness by reducing repayments and amplifying default risks. Obviously, this is a fault in loan contracts that amply demonstrates the moral hazard problem in lending institutions. Extended processing time on loans and joint borrowers are identified in Sector IV, Table 1. These results indicate quite clearly that the lender needs to be very careful in scrutinizing loan applications with these criteria as default risk is high for applications with long processing times and joint applications. Finally, the evidence in this study shows that only four out of twelve (33 percent) explanatory variables (fishing, males in food crops and

livestock, credit experience and sugar cane) enhance creditworthiness, while the other nine variables (67 percent), especially grace period, delays, and joint borrowers, contribute significantly to the default problem and a flawed technology that does not successfully separate creditworthy borrowers from non-creditworthy borrowers.

6. Summary and Conclusions

This study examined lender's credit rationing behavior and the repayment performance of borrowers within an environment of high loan default costs and limited access to credit. It was posited that while some credit rationing criteria may promote access to credit, they may also promote poor repayment performance by borrowers. Recognizing also that increasing default problems can transform lenders into welfare agencies instead of a viable financial institutions, this study attempted to isolate and make more transparent those criteria that lead to lax lending strategies. Empirical evidence showed that certain criteria, such as activities in fishing, male borrowers in food crops and livestock, credit experience and sugar cane generate low default risks, minimum or no credit rationing and high repayment performance. Alternatively, other criteria used in the same financial technology, such as extended grace periods in loan contracts and long processing times, led to high default risk and low repayment performance. No evidence was obtained to show that female borrowers were rationed more intensely than male borrowers, nor were female borrowers less likely to repay their loans when compared to male borrowers. But evidence clearly showed that wealthy borrowers exhibited poor repayment performance. Moral hazard problems were identified whenever extended grace periods on loans were contacted with borrowers. Typically, the lender perceived that these borrowers were creditworthy and did not intensely ration them. Unfortunately, these borrowers were lax with their repayment, causing high loan default costs for the lender. Since only four out of the twelve variables (33 percent) in the loan rationing and repayment equations identified creditworthy borrowers, it can be concluded that the lending technology is flawed and must be repaired. Tightening the loan contract in the areas, such as reducing the grace periods for loans, reducing access to credit by joint borrowers and rejecting those loans which are delayed, will enhance financial viability. Furthermore, by seeking to provide more loans using the creditworthiness criteria will promote financial viability, once portfolio diversification requirements are satisfied.

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Abstract

Recognizing that loan default is a serious problem in financial markets, this paper examined the credit rationing behavior of lenders and the repayment performance of borrowers at a rural financial institution. It is posited that some credit rationing criteria may promote access to credit, but they may also contribute to the poor repayment performance of borrowers. This paper therefore sought to isolate and make more transparent those criteria that led to lax lending strategies, separating them from other criteria that enhanced financial viability. Estimating a loan rationing equation and a repayment equation, using a random sample of loan applications and borrower information, it was revealed that only 33 percent of the criteria utilized identified creditworthy borrowers. Thus it was concluded that the technology was flawed and needed to be repaired. Results also indicated that tightening the loan contract terms by reducing the grace period on loans and rejecting applications which had long processing times enhanced the pool of creditworthy borrowers. It was also revealed that female borrowers were not rationed differently than male borrowers, nor were they worse re-payers than male borrowers. But evidence existed that wealthy borrowers were bad credit risks as their repayment performance was poor, while moral hazard problems existed whenever extended grace period on loans were contracted with borrowers.

