*How high is too high?*
*Soaring Interest Rates and the Elasticity of Demand for Microcredit*

Gabriela Salazar, Calum Turvey, Vicki Bogan, Lourdes Cubero

Gabriela Salazar
gls32@cornell.edu
436 Warren Hall
Cornell University
Ithaca, N.Y., 14850

Calum Turvey
cgt6@cornell.edu
357 Warren Hall
Cornell University
Ithaca, N.Y., 14850

Vicki Bogan
vlb23@cornell.edu
454 Warren Hall
Cornell University
Ithaca, N.Y., 14850

Dra. Lourdes Cubero
lourdes.cubero@esperanza.org
Esperanza International
Cesar Nicolas Penson #26,
Edificio SYRAM 3ra Planta.
Gazcue, Santo Domingo
Dominican Republic

# How High is too High?
## Soaring Interest Rates and the Elasticity of Demand for Microcredit

*The price elasticity of demand for microcredit is exceptionally relevant in designing appropriate financial products and policy. With the aim of describing consumer preferences, this paper extracts the loan demand schedules and elasticities of women borrowing from a microfinance institution in the Dominican Republic. Using client reactions to an increase and decrease in the standard interest rate of 400 basis points at 100 basis point intervals, we derive linear and constant elasticity demand functions. From these functions we draw a best-fit elasticity measure, and find a mean of -0.97. Though there is a deficit of literature modeling elasticity of demand in the field, our findings corroborate one recent estimate among borrowers in Bangladesh. To examine variation among clients, we also regress demand elasticities against demographic characteristics, business profile, personal financial behavior, and borrowing history as recorded within the partnering institution's records. Generalized linear regression results indicate that clients with more savings, those with a regular non-remittance income source, and those with Haitian relatives exhibit significantly more inelastic demand. Clients who were more comfortable taking risks in order to increase profits, who have acquired vocational training, who consider themselves credit rationed, who were able to recall the interest rate on their loan, and who have greater monthly business sales emerged with more elastic demand. These findings suggest that entrepreneurial drive or skill level, financial literacy, and cultural dissimilarities are correlated with the price elasticity of demand for microcredit.*

Microfinance institutions (MFI) respond to a demand for formal credit and savings services among the poor and extreme poor. According to recent measurements by the Financial Access Initiative, 135 million adults in Latin America, or 35 percent of the adult population, remain outside the formal financial sphere (2009). Microcredit demand among these individuals has not been specified, but the estimate suggests significant potential for industry growth.

Whether prioritizing poverty alleviation or profit-maximization, MFI success necessarily depends upon accurate market profiling. There is however, a shortage of literature modeling optimal MFI rates. Studies have traditionally placed price elasticity estimates among microentrepreneurs as inelastic (Kochar, 1997; Bell et al, 1997), or in other words

have suggested that the poor and extreme poor are relatively irresponsive to interest rate changes. Other and more recent analyses have estimated relatively more elastic demand (Dehija et al, 2007) especially in the long run (Karland & Zinman, 2008), but are nevertheless derived from loan contract data, and as a result may generate disproportionately inelastic estimates where credit rationing exists.

Competition in the MFI market has yet to mature and costs of managing micro-loans remain proportionally greater than those of managing larger loans in developed markets. As it stands, MFI annual interest rates vary from 20-120 percent, and appear relatively prohibitive aside market rates offered in more developed economies. Balancing financial constraints with social aims is of key concern.

The aim of this paper is two-fold. Firstly, we derive price elasticity of demand estimates from individual loan demand information, and secondly, we regress these estimates against demographic characteristic, as well as borrowing, and investment behavior. If elasticity can be correlated with client or loan characteristics, it may identify credit rationed populations, or otherwise contribute to the development of more efficient policy and industry products. How does the consumer base shift with changes in loan pricing, and who may be excluded when interest rates soar?

## I. Country and MFI Context

Though the growth of the microfinance industry in Latin America has slowed in tandem with the global economic downturn, it remains positive (CGAP, 2008). An index

compiled by the Economist Intelligence Unit (2009) ranks Latin America as having the most attractive business environment for microfinance globally. Within the Dominican Republic, Honohan (2008) finds that roughly 4.5 million adults, or 71 percent of the adult population in 2005, did not have access to credit (FAI, 2009). This suggests prospects for market development.

Esperanza International is a non-profit faith-based MFI targeting the extreme poor and especially women, in rural, semi-rural, and semi-urban communities of the Dominican Republic. As a Grameen Bank partner, Esperanza implements a derivative of the Grameen group solidarity lending model. Group loans account for roughly 96 percent of borrowers and 85 percent of the total loan portfolio. Clients, the majority of whom are women, convene on a biweekly basis with group members and an average of 5-10 other groups to repay loans within or in close proximity to their community of residence.

Eligibility for an Esperanza loan is currently based upon an individual's source of income, income level, housing and living conditions, total assets, and socio-cultural development level. All potential associates must have some source of income, operate a microenterprise, or have evident motivation to begin one. They must not, however, hold a fixed income higher than the national minimum salary for small businesses. On average, clients withdraw loans of $8900 Pesos DR or roughly $243 US for six months. Esperanza models optimal interest rates, offering a mean annual interest rate of 47 percent and a mean annual effective interest rate of 67 percent (Table 1).

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**II. Empirical Strategy**

With a total of 13 interviewers, this study administered surveys to 431 women that held Esperanza group loans in July-August, 2009. Interviewers were Esperanza volunteers or employees, and attended a training session before implementation. Participants were asked for demographic, borrowing, lending, savings and investment information, and were also asked to respond to a series of eight demand questions (Fig. 1). In consideration of mean Esperanza loan characteristics, a 4 percent monthly interest rate and six month term were selected for the base loan model in these questions.

Two treatments presented interest rates that increased or decreased sequentially by 1 percent per month from 0 to 8 percent and 8 to 0 percent respectively, with no included question for the base loan rate of 4%. With each interest rate change, clients were then offered 10-15 loan options, all of which they were asked to acknowledge with Yes/No selections. These loan options correspond with elasticities of 0, -0.1, -0.2, -0.3, -0.4, -0.5, -0.6, -0.7, -0.8, -0.9, -1.0, -1.25, -1.5, -1.75, and -2.0. As a result, loan sizes increase from the base loan amount as the interest rate decreases and decrease from the base loan amount as the interest rate increases.

To address anchoring concerns and capture a probable range of client loans, we administered five variants. These calculated interest rate changes according to base loan amounts of 3000, 6000, 9000, 12,000, or 15,000 Pesos DR, the equivalent of 85, 170, 254, 339, or 424 US Dollars respectively. Interviewers carried multiple variants, and

selected the loan that best matched the clients' actual loan. Clients were asked to envision using the hypothetical loans for the same purpose(s) that they used or were using their current Esperanza loan.

As compensation for their participation in the survey, clients were each offered a bundle valued at roughly $4.00 US that included three to four school notebooks, one tube of toothpaste, one small bag of laundry detergent, and one bar of soap.

Esperanza branches operating in the country's eastern provinces of El Seybo, Hato Mayor, and San Pedro de Macoris, as well as a branch operating in the northern province of Puerto Plata, and the branches serving Los Alcarrizos and Los Guaricanos communities within the capital district were selected for the study. Due to interviewing inconsistencies, surveys from Puerto Plata are not included in this analysis. Of participants from the remaining five branches, 232 provided complete credit demand responses for each interest rate change and can be linked to client information in Esperanza's database.

**III. Demand & Elasticity Measures**

Where a client has chosen a series of loans and makes only one switch from yes to no, we have used the average of the elasticities that correspond to the loan and next unselected loan to calculate a final loan size. In cases where clients have selected "yes" for all loans, the maximum loan amount has been included in the demand analysis. In cases where clients have marked "no" to all loan options, we have incorporated a loan size of zero

into the analysis. Where clients have selected multiple non-sequential loans, we have included only the loan where they have made their first switch.

Credit demand curves have been constructed for each client and as theory predicts, slope downwards (Figure 2). That is, demand for credit generally increases as the interest rates decreases towards zero. With the raw demand data we derive linear and constant elasticity demand functions, from which we extract respective elasticity measurements at the base loan size and interest rate. We evaluate $r^2$ values in each instance, and select a best-fit function for each client. Selections made at the intercept, $i = 0$ percent, are excluded from the calculations. Using these selection criteria, linear demand estimations comprise 96 percent of the best-fit measures. The distribution of constant, linear and best-fit elasticities (Figure 3) indicates that roughly 50 percent of linear demand estimates emerge as elastic, having values less than or equal to -1. On the other hand, 30 percent of power function constant elasticity calculations carry elastic values of less than or equal to -1.

Consistent with linear demand curvature, the majority of elasticity observations become more elastic as the interest rate decreases, and less elastic as the interest rate increases (Fig. 4). Some clients display differing preferences (Fig. 5, Fig. 6). Finally we estimate a mean best-fit elasticity of -0.97 (Table 4).

Bearing in mind the limitations of fitted demand functions, we also consider Arc elasticities. These measure the stepwise elasticities at the midpoint between loan selections in a given clients' demand schedule. The means of these Arc elasticities also

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show that elasticity increases in the upper interest rate range and decreases in the lower range (Table 2). The means of the elasticities selected by clients scale from elastic in the lower interest rate range to inelastic in the upper interest rate range.

Rough calculations indicate that Esperanza would not gain interest revenue within the sample by changing interest rates.

## IV. Regression Results

Estimates are derived from a Generalized Linear Model that utilizes a robust heteroscedasticity-correcting Maximum Likelihood function (Fig. 7).

*a. Demographic*

Among demographic variables, clients who held vocational training emerged with significantly more elastic demand than clients who did not ($p < 0.10$). Clients who reported having Haitian relatives emerge with significantly more inelastic demand ($p < 0.05$). Clients who drew the majority of their income from their own business earnings ($p < 0.05$) or from wage labor ($p < 0.1$) show significantly more inelastic demand than clients who gathered the majority of their income from remittances or who did not have a regular income source. Neither religiosity nor a measurement of community involvement emerge as significant in this model.

*b. Loan Characteristics*

The clients' actual loan size, installment, effective interest rate and amount placed into a voluntary savings account during the course of the loan did not emerge as significant.

*c. Business Characteristics*

Clients who reported monthly sales of zero to 5000 Pesos DR emerged with more inelastic demand than clients that were still in the midst of establishing their business and could not yet claim regular sales ($p < 0.05$). Against this same group, clients who reported sales of more than 20000 Pesos DR emerged with the most elastic demand ($p < 0.10$)

*d. Borrowing Behavior*

Neither the sum of Esperanza loans disbursed prior to the survey, nor the sum of Esperanza loans disbursed in the six months following the survey, emerged as significant variables. The number of loans that participants received from banks or NGO prior to the survey was also insignificant. Clients who reported that they had at least once been late to repay a loan to a family member, friend, moneylender or formal financial institution did not emerge as significantly different in the model.

Clients who considered themselves credit rationed with regards to consumption, correlate with more inelastic demand ($p < 0.1$). Clients who considered themselves credit rationed with regards to their business also exhibit significantly more inelastic demand ($p < 0.5$). Clients who reported that they were more likely to take risks in order to increase profit carried significantly more elastic demand ($p < 0.01$). Clients that were familiar enough

with the concept of an interest rate to give any response regarding the rate on their current loan, emerged with significantly more inelastic demand ($p<0.5$).

When asked how they would respond if the interest rate on their loan increased, clients who would take out a smaller loan emerged with less elastic demand than clients who would nevertheless take out more or who did not know ($p<0.10$). Measured against the same group, clients who responded that they would take out the same sized loan emerged with significantly more inelastic demand ($p<0.05$). When asked how they would respond if the interest rate on their loan decreased, clients who would take out a larger loan emerged with significantly more elastic demand than those that would take out the same loan, a smaller loan, or did not know ($p<0.001$).

*e. Savings*

Clients who reported an accumulated savings of 500 to 1000 Pesos DR emerged with significantly more elastic demand than those with a greater amount of savings ($p<0.05$).

*f. Survey*

Experimental treatments and variation emerged as significant. Clients who were administered a treatment where interest rates were presented from 8 percent to 0 percent emerged with significantly more inelastic demand than those who were administered a treatment which presented interest rates as increasing from 0 percent to 8 percent ($p<0.1$). Clients who were administered the survey immediately following a bank meeting were correlated with significantly more inelastic demand ($p<0.05$).

The difference in size between the clients' actual loans and the variant loans emerged as significant (p<0.5), but with little effect on the variation of elasticity. Clients from the Seybo branch carried significantly more elastic demand than those from Hato Mayor (p<0.05), San Pedro de Macoris (p<0.01), and from the Alcarrizos (p<0.1). An interviewer is significantly correlated with inelastic demand among clients (p<0.5). Clients that responded "no" to all loans for any loan demand question emerged with significantly more elastic demand (p<0.001) than those who did not.

**V. Discussion**

In our sample, client demand approaches unit-elasticity. Our mean elasticity estimate falls within the range defined by Dehejia et al (2007) of -0.73 to -1.04 and contrasts Bell et al.'s (1997) measure of -0.22 among small scale farmers in Punjab, India.

Variables that may relate to entrepreneurial drive and skill-level emerge with a positive correlation to elasticity. Vocational training, monthly business sales, and decreased risk aversion all seem to indicate elastic demand.

Alternatively, variables that could feasibly correlate with financial literacy emerge as inversely correlated with elasticity. These are an ability to name the interest rate on the client's Esperanza loan, the accumulation of savings, income stability, perceived debt level, and perceived degree of credit rationing.

Our findings link greater savings levels with more inelastic demand. This supports

Dehejia et al's (2007) elasticity estimate of -0.86 for a "low-saving" group, and -0.26 for

a "high-saving" group. Savings in this case was measured as the amount of voluntary

savings that the client set aside over the course of their loan. Interestingly, the same

voluntary savings variable did not surface as statistically different from zero or with a

non-zero coefficient in our model.

Income stability may also play into a theory of financial literacy. The model suggests that

clients who depend primarily on business and wage-labor income, in place of

remittances, have more inelastic demand. It may be that such clients are more likely to

anchor at specific loan amounts that correspond with perceived limitations or specific

loan purposes.

Perceived credit rationing serves as an indicator of client demand for credit, and in that

sense ties in with questions of financial fluency. It may be that individuals who perceive

that they are more credit rationed have a higher demand for credit than those who do not

report credit rationing. Finally, this line of reasoning may explain the relative inelasticity

of clients who were administered the survey immediately following a bank meeting.

Having just paid a quota of their loan, these clients may have been more immediately

conscious of their business goals and debt.

We find that Dominican-Haitians exhibit significantly more inelastic demand for credit.

This may be a result of credit rationing. Dominican Haitians comprise what are relatively

the most impoverished communities in the Dominican Republic, commonly living

isolated in relic sugarcane producing communities. All surveyed clients were fluent in Spanish, but Haitian cultural ties may in some way limit investment or financial opportunities.

Questions meant to gauge basic responses to interest rate changes are significant and consistent with expectations. Clients who were administered Treatment A emerged with significantly more inelastic demand than those who were administered Treatment B. Treatment A began by proposing loans with 8 percent monthly interest. It is possible that considering higher rates at the start seasoned the client's responses to the questions that followed. There is no clear explanation for variation between branches.

Clients who selected "no" for all loan options in any one of the eight demand questions, are correlated with more elastic demand. Coding these responses with loan sizes of zero may excessively skew elasticity estimates, and consequently call for the calculation of appropriate non-zero loan sizes.

**VI. Conclusions**

Preliminary results suggest that women microentrepreneurs who have already entered the MFI market have close to unit elastic demand for microcredit. More plainly, the percentage change in a given interest rate is met by nearly the same percentage change in the quantity demanded. Measurements of variation within the sample do not significantly or explicitly correlate finer poverty indicators with elasticity. Furthermore, rough

estimates suggest that interest rate changes would not benefit Esperanza in terms of revenue within this limited sample.

Before competition and efficiency gains in the microfinance industry drive interest rates downwards, a large proportion of borrowers will remain credit rationed. Where does policy move from there? With short-term subsidies targeted at women borrowers for instance, some argue that MFI could lower their interest rates, increase their capital base, grow to a larger scale, and more sustainably serve a larger number of clients. However, credit subsidies in the agricultural and rural realms have not been historically successful (Adams & Von Pischke, 1992). Appropriate policy responses will require more thorough analysis of demand for microcredit.

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1) Suppose that you have received a loan of 6000 Pesos DR for 6 months. Now suppose that the interest rate increased from 4 percent to 8 percent per month, or 96 percent annual. This means that you would pay roughly 120 Pesos MORE per quota. With this interest rate, and using the money for exactly what you indicated earlier, which of the following loans would you want, if you could recieve which ever you desired? Please respond YES or NO in each case A-L.

| | NEW LOAN OPTION | BIWEELY PAYMENT | TOTAL INTEREST PAYMENT | YES | NO |
|---|---|---|---|---|---|
| A | $6,000 | $649 | $1848 | | |
| B | $5,400 | $585 | $1661 | | |
| C | $4,800 | $520 | $1477 | | |
| D | $4,200 | $455 | $1292 | | |
| E | $3,600 | $390 | $1108 | | |
| F | $3,000 | $325 | $924 | | |
| G | $2,400 | $260 | $737 | | |
| H | $1,800 | $195 | $553 | | |
| I | $1,200 | $130 | $368 | | |
| J | $600 | $65 | $184 | | |

**Figure 1.** Demand Supplement, English translation of a sample question. Letters A-J correspond with elasticity of zero through -2.
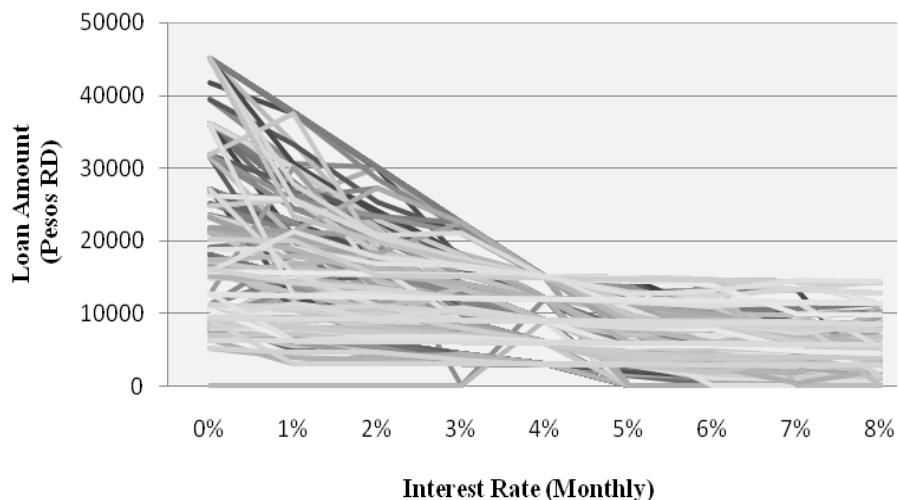


**Figure 2.** Extracted demand curves, N=232. Entries at the 4 percent level are base loans.
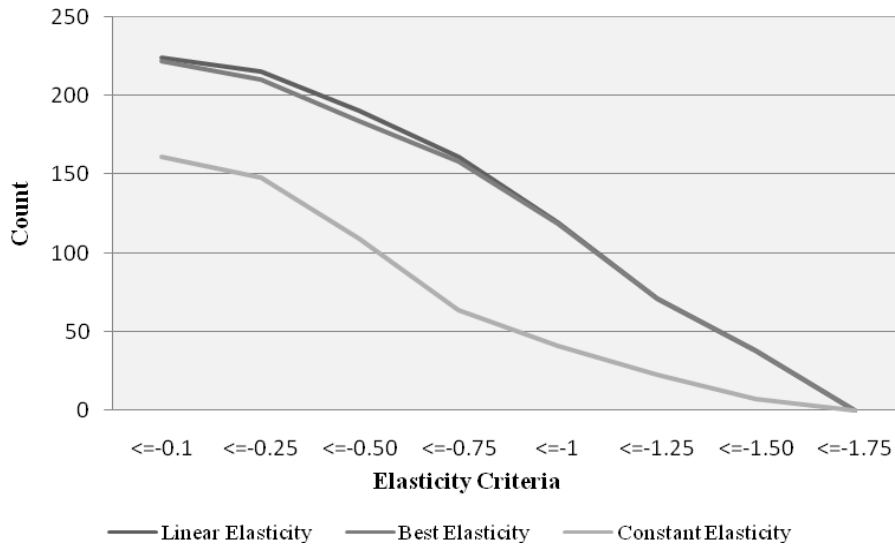
**Figure 3.** Cumulative counts of point elasticity estimates for linear function, constant elasticity power function, and 'best' elasticity based on greatest $r^2$. Notes: The count is lower for the constant elasticity measure, as entries with loan amounts of zero at the intercept could not be incorporated into the power function.



**Figure 4.** Elasticity Sample, elastic where $i > 4$percent. Elasticity at 4percent represents "best" elasticity measure.
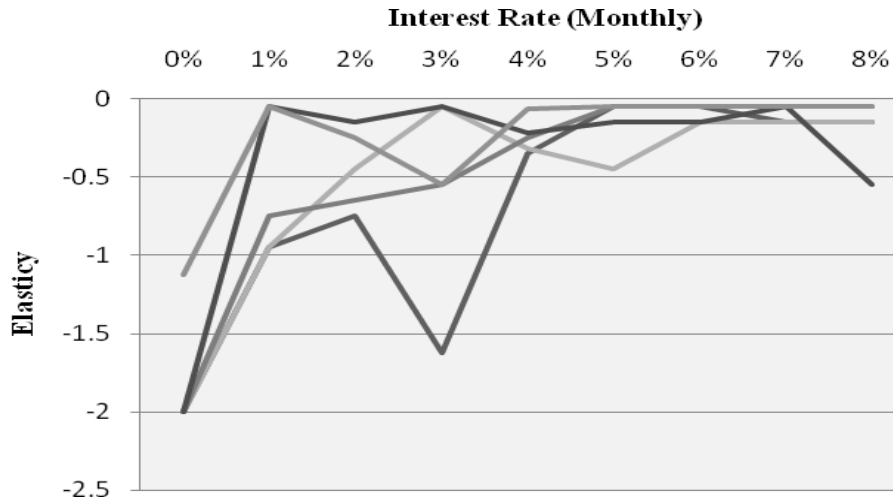
**Figure 5.** Elasticity Sample, elastic where $i < 4$percent. Elasticity at 4percent represents "best" elasticity measure.
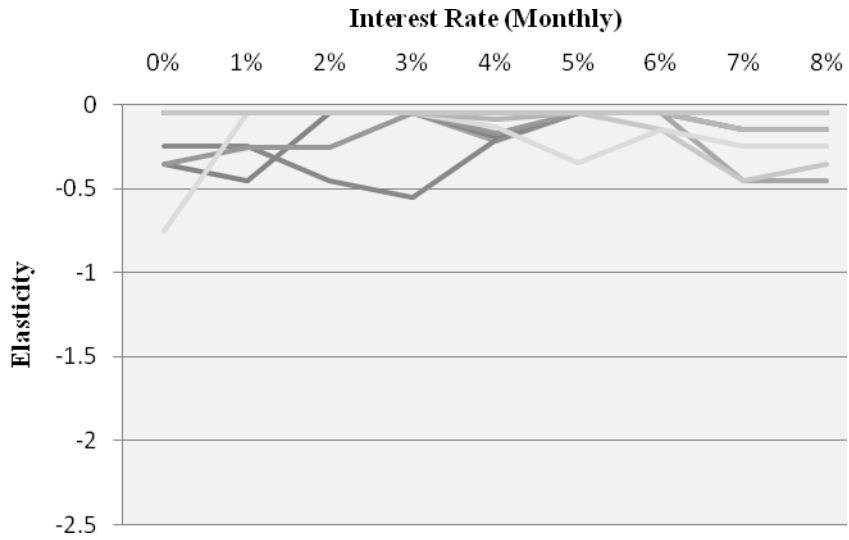


**Figure 6**. Elasticity Sample, inelastic and constant range. Elasticity at 4percent represents "best" elasticity measure.

| Classification | Variable | GLM Coefficient | Wald P |
|---|---|---|---|
| *Dependent:* | Elasticity of Demand for Credit, Absolute Value | | |
| | (Intercept) | .980 | .001 |
| *Demographic* | Age | .001 | .625 |
| | Education | .021 | .420 |
| | Vocational Training * | .116 | .073 |
| | Dependents, Elementary | -.017 | .246 |
| | Water, Access | -.026 | .358 |
| | Haitian Relatives** | -.193 | .031 |
| | Income Source, Own Business | -.154 | .090 |
| | Income Source, Paid Work** | -.291 | .011 |
| | Religious Rating | -.005 | .643 |
| | Community Involvement | .012 | .602 |
| *Loan Characteristics* | Amount Disbursed | .000 | .773 |
| | Installment | .000 | .251 |
| | Effective Interest Rate | .003 | .193 |
| | Voluntary Savings | .000 | .756 |
| | Esperanza Health Services | -.020 | .794 |
| *Business Characteristics* | Industry | -.026 | .814 |
| | Service | .129 | .144 |
| | Agriculture | -.015 | .865 |
| | Loan, Quasi-Fixed Investment | .028 | .611 |
| | Monthly Sales, 0-5000 Pesos DR** | -.181 | .030 |
| | Monthly Sales, 5000-10000 Pesos DR | .122 | .214 |
| | Monthly Sales, 10000-15000 Pesos DR | .050 | .579 |
| | Monthly Sales, 15000-20000 Pesos DR | .052 | .592 |
| | Monthly Sales, 20000 or more Pesos DR* | .209 | .070 |
| *Borrowing Behavior* | Loans Obtained After Survey, Sum Pesos DR | .000 | .252 |
| | Loans Obtained Prior to Survey, Sum Pesos DR | .000 | .828 |
| | Loans Received Prior to Survey, Number | -.005 | .315 |
| | Loan Paid Late | -.036 | .573 |
| | Debt Scale | -.020 | .683 |
| | Rationing, Esperanza | .000 | .985 |
| | Credit Necessary to Purchase Sufficient Food | -.036 | .472 |
| | Rationing, None Perceived wrt. Consumption*** | -.049 | .002 |
| | Rationing, None Perceived wrt. Production ** | -.034 | .034 |
| | Willingness to Take Risks** | .030 | .046 |
| | Interest Rate Aware** | -.121 | .030 |
| | Increase Rate, Borrow the Same * | -.134 | .058 |
| | Increase Rate, Borrow More ** | -.156 | .020 |
| | Decreased Rate, Borrow More *** | .312 | .000 |
| Savings | Annual Savings, 0-5percent | -.043 | .608 |
| | Annual Savings, 5-10percent | -.005 | .895 |
| | Accumulated Savings, 0-500 Pesos DR | -.032 | .629 |
| | Accumulated Savings, 500-1000 Pesos DR* | .121 | .032 |
| *Survey Characteristics* | Treatment A, Interest rate in Descending Order* | -.100 | .051 |
| | Survey, Immediately Following Bank Meeting** | -.181 | .033 |
| | Variant – Actual Loan, Difference* | .000 | .067 |
| | Hato Mayor** | -.263 | .017 |
| | San Pedro de Macoris *** | -.258 | .008 |
| | Los Alcarrizos * | -.232 | .091 |
| | Los Guaricanos | -.042 | .808 |
| | Lourdes | -.086 | .418 |
| | Gabriela* | -.224 | .014 |
| | Yrene | -.226 | .139 |
| | Time between Surveys | .002 | .684 |
| | Responses Include "none"*** | .659 | .000 |
| | (Scale) | .072[b] | |

**Figure 7.** Generalized Linear Model (GLM), the GLM procedure is based on a Robust – Heteroskedasticity Correcting Maximum Likelihood function. Excluded Dummy Variables: Income Source Remittances or Not Regular, Commerce, Monthly Sales NA, Annual Savings >10%, Accumulated Savings >1000 Pesos RD, Treatment B, Seybo, Miguelina, Reina, Mirna, Astia, Maximo,

**Table 1.** Characteristics of Esperanza Loans

| Variable | Mean | Standard Deviation |
|---|---|---|
| Interest Rate, Annual | 46.85 | 4.156 |
| Effective Interest Rate, Annual | 66.586 | 6.6868 |
| Installment, Days | 185.63 | 107.841 |
| Amount disbursed, Pesos DR | 8876.60 | 16623.468 |

*Notes*: Includes 72,674 disbursed since October of 2006.

**Table 2.** Elasiticity Responses

| Interest Rate | 0% | 1% | 2% | 3% | 4% | 5% | 6% | 7% | 8% |
|---|---|---|---|---|---|---|---|---|---|
| **Mean** | | | | | | | | | |
| Selected Elasticity | -1.31 | -1.23 | -1.10 | -0.80 | NA | -0.72 | -0.70 | -0.58 | -0.51 |

| Interest Rate Range | 0-1% | 1-2% | 2-3% | 3-4% | 4-5% | 5-6% | 6-7% | 7-8% |
|---|---|---|---|---|---|---|---|---|
| **Mean** | | | | | | | | |
| Arc-Elasticity | -0.09 | -0.30 | -0.60 | -0.59 | -0.98 | -1.35 | -1.32 | -1.59 |

*Notes*: Selected elasticities refer to those that correspond directly with loan selections in the Demand Supplement. Estimates exclude responses that incorporate "none."

**Table 3.** Categorical Variables, Demographic, Investment, and Borrowing Behavior

| | Response | N | Percentage | | Response | N | Percentage |
|---|---|---|---|---|---|---|---|
| Education | University or Technical Degree | 9 | 4.6 | Loan Purpose | Production Input(s) | 23 | 11.7 |
| | High School | 44 | 22.3 | | Merchandise | 174 | 88.3 |
| | Middle School | 63 | 32.0 | Late Loan Repayment | Yes | 46 | 23.4 |
| | Elementary | 71 | 36.0 | | No | 151 | 76.6 |
| | Illiterate | 10 | 5.1 | Other Debt when surveyed | Yes | 66 | 33.5 |
| Vocational Training | Yes | 140 | 71.1 | | No | 131 | 66.5 |
| | No | 57 | 28.9 | Business Sector | Industry | 8 | 4.1 |
| Haitian Origen or Relatives | Yes | 28 | 14.2 | | Service | 15 | 7.6 |
| | No | 169 | 85.8 | | Agriculture | 16 | 8.1 |
| Dependents in School | Yes | 157 | 79.7 | | Commerce | 158 | 80.2 |
| | No | 40 | 20.3 | Branch | San Pedro de Macoris | 53 | 26.9 |
| Esperanza Health Services | Yes | 161 | 81.7 | | Seybo | 80 | 40.6 |
| | No | 36 | 18.3 | | Hato Mayor | 46 | 23.4 |
| Annual Savings, percent of Household Income | > 10percent | 28 | 14.2 | | Alcarrizos | 11 | 5.6 |
| | 5-10percent | 74 | 37.6 | | Guaricanos | 7 | 3.6 |
| | < 5percent | 88 | 44.7 | Interviewer | Lourdes | 16 | 8.1 |
| | Nothing | 6 | 3.0 | | Gabriela | 8 | 4.1 |
| Credit is Necessary for Food Consumption | Yes | 69 | 35.0 | | Yrene | 9 | 4.6 |
| | No | 128 | 65.0 | | Other | 164 | 83.2 |
| Interest Rate Decrease, Client Reaction | Do Not Know | 1 | .5 | Survey Location | Meeting | 15 | 7.6 |
| | Same Loan | 28 | 14.2 | | Home | 182 | 92.4 |
| | Smaller Loan | 7 | 3.6 | Treatment | A | 124 | 62.9 |
| | Larger Loan | 159 | 80.7 | | B | 73 | 37.1 |
| Interest Rate Increase, Client Reaction | Do Not Know | 13 | 6.6 | | | | |
| | Same Loan | 80 | 40.6 | | | | |
| | Smaller Loan | 88 | 44.7 | | | | |
| | Larger Loan | 14 | 7.1 | | | | |

*Notes*: N=197.

**Table 4.** Continuous Variables

| | Mean | Standard Deviation |
|---|---|---|
| **Loan Profile** | | |
| Best Elasticity Estimate | -0.97 | -0.48 |
| Loan Variant and Actual Loan, Difference | 2809.64 | 5999.62 |
| Loan Amount , Pesos DR | 11746.19 | 7004.12 |
| Installment, Days | 188.25 | 59.20 |
| Voluntary Savings, Pesos DR | 41.39 | 25.47 |
| Effective Interest Rate, Annual | 64.65 | 9.74 |
| Sum of Prior Esperanza Loans, Pesos DR | 30285.09 | 26574.37 |
| Number of Loans Received from a Bank or NGO | 5.81 | 4.03 |
| **Client Profile** | | |
| Age when surveyed, Years | 40 | 13 |
| Dependents in Elementary School | 1.57 | 1.50 |
| Religiousity, Scale of 1-8 | 5.62 | 2.28 |
| Debt Scale, Scale of 1-3 | 1.67 | 0.54 |
| Water Access, Scale of 1-3 | 2.15 | 0.90 |
| Willingness to Accept Risk, Scale 1-5 | 4.02 | 1.66 |
| Credit Rationing wrt. Consumption, Scale 1(rationed)–5(not rationed) | 1.67 | 1.33 |
| Credit Rationing wrt. Production, Scale 1(rationed)–5(not rationed) | 4.30 | 1.39 |
| Education, Scale 1(illiterate)-5(Technical Institute) | 2.85 | 0.98 |
| **Survey Characteristics** | | |
| Time between Cornell and Esperanza Surveys, Months | 1.2 | 6.1 |

*Notes*: N=197.

**Table 5.** Change in Interest Revenue according to Loan Selections

| | | Interest, Monthly | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | 0percent | 1percent | 2percent | 3percent | 5percent | 6percent | 7percent | 8percent |
| **Revenue, Pesos DR** | | | | | | | | | |
| *Monthly* | Mean | ($2,425) | ($1,368) | ($641) | ($243) | ($450) | ($351) | ($363) | ($247) |
| | Total | ($562,503) | ($317,269) | ($148,772) | ($56,423) | ($104,461) | ($81,399) | ($84,315) | ($57,275) |
| *Loan Term* | Mean | ($14,547) | ($8,205) | ($3,848) | ($1,459) | ($2,702) | ($2,105) | ($2,181) | ($1,481) |
| | Total | ($3,375,018) | ($1,903,617) | ($892,629) | ($338,539) | ($626,768) | ($488,391) | ($505,892) | ($343,652) |

*Notes*:  Estimates compound interest on a biweekly basis and are measured according to variant base loan. N=243, all values are negative.