

FINAL REPORT  
BOLIVIAN RURAL FINANCIAL MARKETS PROJECT

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## Table of Contents

<u>Section</u>	<u>Page</u>
Period of Project	1
Funding of Project	1
Purpose of Project	2
Work Accomplished under Project	3
Research and Publications	3
Professional Meetings and Workshops	4
Training of Students	4
Involvement of Bolivians and Bolivian Institutions	5
Dissemination of Research Results in Bolivia and Possible Effects on Policy	5
Personnel Employed on Project	6
Principal Investigator	6
Research Assistants	7
Secretary	10
Publications Resulting from Project	10
Published or Forthcoming Works	10
Manuscripts under Review for Publication	11
Manuscripts for Articles under Preparation	11
Organization of Research Effort	12
Data Sources	12
Organization of Work	13
Research Results	14
Credit and Savings Mobilization Policy	14
Credit Delivery Systems and Borrower Transactions Costs	15
Structure of Markets	17
Impact of Credit on Farm Households	19

### Period of Project

The project was originally scheduled for four years, October 1, 1977 through September 30, 1981. Later, in order to compensate for significant delays due to political problems in Bolivia as well as accomplish additional work, it was extended through December 31, 1982.

### Funding of Project

The project was funded in the total amount of \$276,182 from two sources, both of which channeled money to Arizona State University under a subcontract with the Ohio State University Research Foundation.

The first source was central funding of the United States Agency for International Development (AID) in Washington under the Ohio State University Cooperative Agreement. The total funding from this source was \$171,182, which was used to finance research expenses incurred at Arizona State University (salaries and fringe benefits of senior researcher, research assistants, secretary and consultants; computer expenses and supplies) as well as domestic travel.

The second source was the AID Mission in Bolivia. The total funding from this source was \$105,000, which was used to finance international travel, per diem and field research expenses in Bolivia.

Expenditure of funds from both sources occurred simultaneously since throughout the project work was being carried on both in Bolivia and at Arizona State University, all funds were expended. A detailed financial report will be prepared and submitted to the Ohio State University Research Foundation when the books are complete.

### Purpose of the Project

The overall objective of the project was to undertake applied research which will improve the ability of the Bolivian government and the AID Mission in Bolivia to design and implement rural financial market projects which will be effective in achieving rural development goals. It was expected that this research would be useful to economists, policy makers and international donors in better understanding the operations of rural financial markets in less-developed countries.

In accordance with the initial project proposal (1977) the initial and more specific objectives of the project were:

- (1) To analyze the credit information obtained from the 1977 Southern Valley's Socio-Economic Survey of small farmers.
- (2) To analyze the impact of credit on Bolivian small-farmer households.
- (3) To study group lending systems.
- (4) To address the policy dimensions of improving credit delivery to small farmers.

When funds were allocated for the last two years of the project (1979) several more objectives were added:

- (5) To analyze the credit information obtained in the 1978 Socio-Economic Survey of small farmers.
- (6) To analyze the structure and operations of the informal rural credit markets, especially money lenders and middlemen.
- (7) To describe and analyze the operations of formal rural financial markets, the role of foreign assistance and the role of government policy, with emphasis on the role of the Bolivian Agricultural Bank.

- (8) To consolidate the totality of the work and to make recommendations for intervention shortages.

### Work Accomplished Under the Project

#### Research and Publications

All of the above research objectives, and more, were met under the project. Research efforts were grouped around four basic themes: (1) Agricultural credit policy, (2) the credit delivery systems of different formal and informal market lenders and borrower transactions costs, (3) the structure and operations of rural financial markets, and (4) the impact of credit on the farm household. Subprojects were developed within each of these themes. One or more research assistants collaborated with the principal investigator on each subproject. In most instances the research assistant was able to use material from the subproject for a M.S. thesis or Ph.D. dissertation.

Several scholarly publications have resulted from the project. There is good material for several more, but time did not permit that they be refined in appropriate form for professional publications. This will be attempted by the principal investigator during the first six months following the project.

In addition the principal investigator plans to consolidate the research results in a book-length manuscript. He has been granted a sabbatical leave by his university for the Fall Semester 1983 to initiate this project.

A more detailed discussion of the research results and a list of publications are included in following sections of this report.

### Professional Meetings and Workshops

In addition to the published literature the principal investigator has been able to share results of the research with professional colleagues at meetings and seminars. Especially important was the Second International Workshop on Rural Financial Market Research (Calgary, 1979) and the Colloquium on Rural Finance (Washington, 1981). Other presentations were made at several professional meetings, The World Bank, and AID/Washington.

The interchange with other scholars and practitioners at these and other meetings, as well as at informal sessions, served to strengthen the quality of the research effort. The research was also enhanced considerably by the seven months that the principal investigator spent as a visiting professor in the Department of Agricultural Economics at the Ohio State University in 1979.

### Training of Students

During the life of the project there were fifteen students employed on the project as research assistants. Of the total, ten were M.S. students, two were Ph.D. students and three were advanced undergraduates. Eight of the M.S. students were from Bolivia, all but one has completed or will complete the M.S. degree. One of the Ph.D. students is well advanced in the dissertation and has completed all of the other requirements for the degree. Of the three undergraduates, two are beginning graduate programs in economics at ASU in the Spring Semester 1983. All of the theses and the dissertation were derived from the project.

Of the students who have graduated all have returned to employment in Bolivia or are currently working on another advanced degree. Hopefully, the training these students have received will contribute significantly to

5

the future stock of human capital in Bolivia. The names of the research assistants and their research work are listed in a following section.

#### Involvement of Bolivians and Bolivian Institutions.

In addition to the eleven Bolivian students who worked on the project as research assistants, the project enjoyed the collaboration of three Bolivian economists who worked on several of the subprojects. Their names are listed in the following section on employment.

The project worked closely with several Bolivian institutions. In particular, it worked closely with the Small Farmer Credit Program (PCPA) of the Bolivian Agricultural Bank, The National Federation of Credit Unions (FENACRE), several individual credit unions and The Integral Foundation for Development (FIDES). It also drew upon the expertise of the Bolivian Institute of Agricultural Research and Extension (IBTA) and the National Community Development Service (SNDC) and the National Office for Integral Cooperatives (ONCICOOP).

The involvement of these institutions was important to the project, not only in creating an awareness on their part in the research and the topics being studied, but also in sharing the results of the research with them.

#### Dissemination of Research Results in Bolivia and Possible Effects on Policy

Four research reports have been translated into Spanish and distributed in Bolivia. Others are scheduled for the future.

The principal investigator in his capacity as researcher has had considerable opportunity to present and discuss the research results and other policy issues with many officials of financial institutions, A.I.D.

7

and other international donors. In February, 1982, AID/Bolivia co-sponsored with FENACRE and PCPA a seminar on Rural Savings Mobilization and Agricultural Credit which featured presentations by Dale Adams, Robert Vogel and Jerry Ladman.

A.I.D/Bolivia has planned another seminar for policy makers and agricultural credit institution officials in February 1982 in order for the principal investigator, Bolivian collaborators and former Bolivian research assistants to present the results of the research in a policy context.

These efforts have played some role in causing the many changes in rural financial markets that are now afoot in Bolivia. Some of the more salient changes are: (1) Many institutions are implementing savings mobilization programs, (2) legislation is being considered to make the Small Farmer Credit Program a separate and independent financial institution, (3) a substantial raising of loan interest rates, (4) attempts to lower borrower transactions costs through simplified credit delivery systems, (5) an appreciation for the structure of rural financial markets and the role of the informal lender, and (6) a more realistic understanding of the role of credit in the whole milieu of agricultural and national policies.

#### Personnel Employed on the Project

##### Principal Investigator

Jerry R. Ladman, Professor of Economics and Director of the Center for Latin American Studies, approximately one-third of the calendar year during the life of the project.

RESEARCH ASSISTANTS

- Gonzalo Afcha (Bolivian) - was undergraduate student in economics and worked as undergraduate research assistant. He graduated in December, 1982. He did a senior research project on the topic "An Evaluation of Bolivian Agricultural Bank Group Lending in Two Bolivian Regions". He has enrolled in the M.S. program in economics beginning in the Spring Semester, 1983.
- Arturo Beltran (Bolivian) - was M.S. student in agricultural economics. He completed his degree in December 1982. His thesis topic was, "The Impact of Credit on First Time Borrowers of the Bolivian Agricultural Bank's Small Farmer Credit Program". He will either continue for Ph.D. degree in economics at A.S.U. or will return to Bolivia to work with the Jesuits Rural Development Program.
- Anne del Castillo (U.S.A.) - was a student in the Ph.D. program for one semester. She dropped out of the program due to sickness in her family.
- Justo Espejo (Bolivian) - was M.S. student in economics. He completed M.S. degree in May, 1982. His thesis topic was, "Product-share Contracts as a Form of Credit in Less-developed Countries: The Case of Bolivia". He is currently in charge of statistical computation for the Ministry of Finance in Bolivia.
- Ildefonso Guajardo (Mexican) - was a student in M.S. program in economics at A.S.U., but did not finish. He is currently a Ph.D. student in economics at the University of Pennsylvania. Prior to leaving A.S.U. he virtually completed his thesis project and M.S. program. The thesis topic was, "The Impact of Farm Size and Technology on the Profitability of Credit for Bolivian Small Farmers: The Case of the Upper Valley of Cochabamba."

• Edgar Guardia (Bolivian) - Was M.S. student in economics. He completed M.S. degree in May 1982. His thesis topic was, "An Analysis of Savings Mobilization in Three Bolivian Credit Unions". He was employed as agricultural loan officer in the Banco de Santa Cruz in Bolivia, but has left that position to seek other employment.

• Miguel Hoyos (Bolivian) - Was M.S. student in economics. He completed M.S. degree in August 1982. His thesis topic was, "Borrowing Costs and Credit Rationing for Three Credit Unions in Eastern Bolivia". He is currently one of two persons in charge of agricultural lending for the Banco de Cochabamba in Bolivia.

Renan Hoyos (Bolivian) - Is an undergraduate student in economics and worked as undergraduate research assistant. He worked in tabulating data.

Hannes Kvaran (U.S.A.) - Is Ph.D. student in economics. Kvaran should complete dissertation from project in Spring 1983 on the topic of an evaluation of group lending program of the Bolivian Agricultural Bank.

Jeannette Mercado (Bolivian) - Was M.S. student in Economics. She completed M.S. degree in August, 1982. Her thesis topic was, "The Influence of Agricultural Credit in Labor Allocation Between Farm and Off-Farm Employment, Two Case Studies: Sucre, Bolivia". She is currently enrolled in Ph.D. program in economics at the University of Minnesota.

Marcelo Mercado (Bolivian) - Was M.S. student in economics. He completed M.S. degree in August 1982. His thesis topic was, "The Impact of Agricultural Credit on the Farm Household, Two Case Studies: Cochabamba, Bolivia". He is currently enrolled in Ph.D. program in economics at the University of Minnesota.

- Ronald Mercado (Bolivian) - Is currently finishing joint degree of M.S. in economics and M.B.A. He will graduate in May 1983. His thesis topic is "An Analysis of Borrower Transactions Costs in Two Bolivian Integral Cooperatives".
- Calvin Miller (U.S.A.) - Was M.S. student in agricultural economics at Ohio State University. He completed his degree in December, 1979. His thesis topic was, "The Role of Agricultural Credit in Small-Farm Households in Bolivia". He is currently employed by the Mennonite Central Committee in Santa Cruz, Bolivia.
- Walter Quiroga (Bolivian) - Was an undergraduate student in economics and worked briefly as an undergraduate research assistant. He completed his degree in December, 1982. His work on the project consisted of data tabulation. He is enrolled in M.S. program in economics beginning in the Spring Semester 1983.
- Lupe Terrazas (Bolivian) - was a student in the M.S. program. She did not complete program and returned to Bolivia to marry. She helped prepare and administered all questionnaires for Integral Cooperative sample survey.

#### Collaborators in Bolivia

- Fundacion Integral de Desarrollo (FIDES) - A non-profit organization of Santa Cruz, Bolivia. Was hired to administer credit union field survey questionnaires.
- Enrique Gomez (Bolivian) - Ph.D. in economics (Utah State). Was hired as consultant to help plan and supervise data collection in two field surveys.
- Walter Gomez (Bolivian) - Ph.D. in economics (Vanderbilt). Was hired as consultant to help plan and supervise data collection for a field survey.

- José Isaac Torrico (Bolivian) - M.S. in economics (Utah State). An employee of A.I.D., was an unpaid collaborator in study of informal markets.
- There were four other Bolivians hired to administer questionnaires in three other field surveys.

#### Secretary

- Gloria Gardner

### Publications Resulting From Project

#### Published or Forthcoming works

- Dale W Adams and Jerry R. Ladman, "Lending to Rural Poor Through Informal Groups: A Promising Financial Market Innovation?", Savings and Development, Vol. III, No. 2, 1979, pp. 85-94.
- Jerry R. Ladman, "Credit Rationing, Loan Transactions Costs and Market Structure: The Case of Bolivia", in Dale W Adams, Douglas Graham and J.D. Von Pischke, eds. Why Cheap Credit Miscarries in Rural Development, (Washington, D.C.: The World Bank, forthcoming).
- Jerry R. Ladman, "Reaching More Farmers by Lowering Credit Delivery Costs," Newsletter on Rural Financial Market Research and Policy, No. 21, April-June, 1981.
- Jerry R. Ladman and Arturo Beltran, The Impact of Credit on First-Time Borrowers of the Bolivian Agricultural Bank's Small Farmer Credit Program; Farm Policy Study, Analytical Document Series, (La Paz, Bolivia: Agency for International Development and Ministry of Rural Affairs and Agriculture of Bolivia, forthcoming, 1982).

- Jerry R. Ladman and José Isaac Torrico, "Informal Credit Markets in the Valle Alto de Cochabamba, Bolivia", Proceedings of the Rocky Mountain Council for Latin American Studies, (Lincoln, Nebraska: Bureau of Business and Economic Research, College of Business Administration, University of Nebraska - Lincoln, 1981), pp. 83-89.
- Jerry R. Ladman and Ronald L. Tinnermeier, "The Political Economy of Agricultural Credit in Less-Developed Countries: The Case of Bolivia," American Journal of Agricultural Economics, Vol. 63, No. 1, February, 1981. Reprinted in excerpted form in Development Digest, Vol. XX, No. 1, January, 1982.

#### Manuscripts Under Review for Publication

- Calvin J. Miller and Jerry R. Ladman, "Factors Impeding Credit Use in Small-Farm Households in Bolivia".

#### Manuscripts for Articles Under Perparation (tentative titles)

- Jerry R. Ladman, "Comparative Borrower Transactions Costs and the Structuring of Credit Markets: The Case of Bolivia".
- Jerry R. Ladman and Gonzalo Afcha, "Group Lending: Why it Failed in Bolivia".
- Jerry R. Ladman and Justo Espejo, "Product-Share Contracts as a Form of Credit in Less-Developed Countries: The Case of Bolivia".
- Jerry R. Ladman and Miguel Hoyos, "Rural Credit Unions and Credit Rationing: The Case of Bolivia".
- Jerry R. Ladman and Marcelo Mercado, "The Theory of the Impact of Credit on the Farm Household: Consumption and Production Decisions".
- Jerry R. Ladman and Jeannette Mercado, "Agricultural Credit and Off-Farm Employment: A Theoretical Framework".

Jerry R. Ladman, Calvin J. Miller and others, "An Evaluation of Rural Credit Unions Lending and Savings Mobilization in Eastern Bolivia".

Jerry R. Ladman and José Isaac Torrico, "The Structure and Importance Rural Money Lending Activity in Bolivia".

### Organization of Research Effort

#### Data Sources

Most of the data used in this project were primary, being collected by the researchers from sample surveys or being furnished to the researchers from sample surveys undertaken by the Bolivian Ministry of Agriculture and Peasant Affairs and/or the A.I.D. Mission in Bolivia. Additional quantitative primary data were obtained from the records of the several financial institutions. Qualitative data were obtained from interviews with officials of credit institutions and government agencies. Secondary data were obtained from financial institution reports and government documents.

The sample surveys planned and undertaken by the researchers were:

- (1) Survey of Bolivian Agricultural Bank PCPA borrowers, including those who participated in group lending programs and those who were individual borrowers, in two regions of Bolivia;
- (2) Survey of informal market lenders and borrowers in the Upper Valley of Cochabamba;
- (3) Survey of borrowing and non-borrowing members of three credit unions in eastern Bolivia as well as non-members living in the same region;
- (4) Survey of borrowers who participated in group lending programs in two Integral Cooperatives.

In addition, sixteen case studies of farm households were undertaken in two regions of Bolivia to determine the impact of credit on the farm household. In this study detailed information was obtained by means of lengthy interviews every two weeks over a period of one year.

The sample survey data furnished to the researchers by the Ministry of Agriculture and AID/Bolivia were: (1) The 1977 Socio-Economic Survey of Small Farmers in the Bolivian Southern Valleys; (2) the 1978 Socio-Economic Survey of Small Farmers; and (3) annual data on a group of PCPA borrowers for the year prior to obtaining credit (1978) and the two years following credit (1979, 1980) and similar data for non-PCPA borrowers.

#### Organization of Work

The first three years of the project were basically spent in designing the sample survey questionnaires and in collecting the data. The remainder of the time was spent in tabulating and analyzing the data. For this reason most of the theses and research papers were finalized in 1982, a factor which has prohibited preparing a number of final manuscripts for publication. Exceptions were the data from the 1977 Socio-Economic Survey and the analysis of the input of farm size and level of technology on credit use which were analyzed in 1979 and 1980.

The data collection took place in Bolivia. Bolivian collaborators were hired to assist in the design and implementation of the sample surveys. The tabulation and analysis of the data was done at Arizona State University. Research assistants worked both in Bolivia and at Arizona State.

As the project unfolded, certain impressions and tentative results were apparent which the researchers shared with AID/Bolivia and in two briefings with staff of AID/Washington in order that they might incorporate them, if appropriate, in their policy programming.

### Methodology

Wherever appropriate a theoretical framework was prepared as a basis to formulate testable hypotheses. Methodology employed to test the hypotheses included linear programming, discriminant analysis, chi-square analysis, tests for differences in group means and measures of central tendencies.

The project suffered serious and lengthy delays in 1978, 1979 and 1980 due to the political instability in Bolivia. These conditions halted the collection of sample survey data which postponed the time they were available for tabulation and analysis.

### Research Results

The following is a synopsis of the consolidated main findings of the research effort as classified under the four major thrusts of the project. For a more complete and detailed analysis the reader is referred to the individual publications, theses and dissertations mentioned above.

#### Credit and Savings Mobilization Policy

An analysis was made of the political economy of agricultural credit as practiced by the Bolivian Agricultural Bank during the period of the Banzer government (1971-1978). A theoretical framework was designed to show how credit can be used as an agent of political patronage when default is permitted and when concessionary interest rates

are employed, because both factors can be used to transfer income from the state to the borrower. Analysis of Bank data showed the extensive use of these income transfer mechanisms, especially to the large and politically influential farmers of Bolivia's eastern region.

The question of an appropriate interest rate structure was examined indirectly by measuring the actual rate of interest paid by farmers who were borrowers in the formal and informal markets. Borrowers from all institutions, other than the Bolivian Agricultural Bank, were found to willingly pay rates that were considerably higher than those of the Bank. Linear programming models showed farmers to have a relatively inelastic demand for credit for loans up to a medium size. These factors were persuasive arguments for raising the Banks' rates.

Survey data showed that farmers tended to save by hoarding cash in the home and investing in real goods such as livestock. This showed the potential for mobilizing rural savings in financial institutions were the proper incentives in place, i.e. attractive real interest rates and low saver transactions costs.

#### Credit Delivery Systems and Borrower Transactions Costs

Credit delivery systems for all classes of lenders were studied, especially from the perspective of the transactions costs they imposed on the borrower. The Bolivian Agricultural Bank was shown to have by far the most complex and costly system and the money lender the most simple and inexpensive. The Bank's system was hidebound by many rules, regulations and laws which required the borrower to submit many forms and documents that involved considerable cost in terms of outlay and time. In contrast, the money lender required nothing more than a simple I.O.U.

In between, but much closer to the money lender than the Bank, were those of the Integral Cooperatives and the credit unions. This raises the question as to whether or not the Bank's costly and cumbersome delivery system is necessary.

There was evidence that the Bank used its costly credit delivery system as a mechanism to ration credit away from small loans to larger loans, given that they face an excess demand for low-priced credit due to their concessionary effective interest rate. Indeed, the analysis of the socio-economic surveys showed that one of the most important factors inhibiting the use of Agricultural Bank credit was the large amount of paperwork involved in obtaining a loan. Were the interest rates raised to competitive levels, it is likely that the Bank would tend to simplify its credit delivery system.

The credit unions and the integral cooperatives used other methods to ration credit. They, too, had concessionary contractual rates of interest, but the effective rate of interest was much higher due to the low loan required-deposit ratios. These ratios not only raised the effective rate of interest, but also placed upper limits on loan size. Both factors could serve to limit borrowing.

Group loans for both the Bolivian Agricultural Bank and the Integral Cooperatives were examined. In the case of the former they were compared to loans to individuals. Compared to loans to individuals, group loan members experienced higher average borrower transactions costs, higher delinquency rates, and received less technical assistance. It was concluded that the group lending program of the Agricultural Bank was a failure on these accounts, but did serve as an effective

18

mechanism to disburse large sums of money when initiating its small farmer credit program. In the case of the Integral Cooperatives the group lending method appears to have reduced borrower transactions costs for these borrowers. One reason may be that these groups were formed from previously existing cooperatives or at least from neighbors. This was not typically the case of the Agricultural Bank groups. This suggests the importance of group cohesiveness in making group lending successful.

Structure of Markets

When Bolivia emerged from its massive land reform of 1953 the rural financial markets for small farmers were dominated by informal lenders, especially middlemen and traders. With the development of commercial and semi-commercial agricultural systems, new marketing systems and formal financial market institutions developed and have significantly reduced the dependence of farmers on credit that was linked to the marketing system. As a consequence the middleman/trader as a source of credit is only important in the remote areas of the country.

The 1977 and 1978 socio-economic surveys show that relatively few small farmers use credit. The percentages were 6.7 and 2.5 in the two years respectively. In both years about half of those with credit received it from formal market sources, principally the Agricultural Bank. For those with credit from the informal market, the most common source was friends and relatives.

More than 80 percent of the farmers surveyed indicated they wanted

credit from a bank, thus suggesting that there were factors impeding them from getting a loan. From the farmer's perspective, high transactions costs and the riskiness of borrowing were very important factors.

An analysis of the structure of rural financial markets showed why different lenders, with widely varying interest rates can simultaneously exist in any region. The key elements are total borrowing costs, e.g. interest costs and transactions costs. Although money lenders charge relatively high interest rates they are handy and impose low transactions costs on the borrower. Thus, for short-term and smaller loans, a potential borrower will prefer this lender because the total borrowing costs are less than for other lenders. In contrast, the Agricultural Bank, although charging low interest rates, has high transactions costs which imply high total borrowing costs except for relatively large (and usually longer-term) loans. Thus, borrowers tend to use this lender only for these purposes. Those who are members of credit unions or integral cooperatives tend to use these institutions as sources of credit because total borrowing costs are low except for the smallest loans when they tend to revert to informal market lenders.

It is clear that different types of lenders serve different needs in Bolivian rural financial markets. It is logical that they simultaneously exist and flourish in the same region. The structure of the markets has changed and will continue to change as general economic conditions as well as the relative interest rates and transactions costs associated with the various lenders change.

20

There is a notable lack of rural savings mobilization facilities and effort in Bolivia. Although the survey data show farmers save in the form of real objects they do not have sufficient incentives to save in financial institutions. Even in the credit unions the evidence is that farmers only save to have access to borrow. As argued previously, if the financial institutions would open savings windows and offer attractive interest rates and low saver transactions costs, it would appear that they could mobilize considerable rural savings.

#### Impact of Credit on Farm Households

Analysis of representative farm firms showed that farmers need to have liquidity in order to make full use of their family and farm resources during the growing season. If they do not have savings or other sources of liquidity they would need to rely on credit, otherwise the resources would be underemployed. The analysis also showed that the farmers would expect to increase their incomes significantly by using the available advanced technology in comparison to traditional technology. This, however, does not take account of risk.

The study of before and after credit patterns of production and resource use for Agricultural Bank borrowers showed that farmers do tend to increase their incomes after obtaining credit. However, the farmers did not tend to use Bank credit for crop production but rather to increase holdings of livestock. This occurred in spite of part of the loan being designated for increasing crop production. Apparently the farmers found livestock activity more profitable when taking account of the risks associated with crop production. It also illustrates the fungibility of credit. Indeed, some 42 percent of the Bank borrowers did not use the

credit for the stated purpose, which further demonstrates that they practice fungibility.

The fact that the Bank borrowers did not choose to use the credit for crop production may also be due to the fact that the government imposed upper limits on the prices of many farm products (in an effort to protect the urban consumer) serve as disincentive to production. Another factor may have been the sharp rise in fertilizer prices. This underscores the importance of other factors, such as market conditions, on the success of credit programs. It also shows how credit programs may not obtain the results envisioned by planners, if these factors are not accounted for.

Credit also has an impact on consumption. Levels of home consumption of farm-produced goods were observed to fall after the Bank borrowers received credit, presumably they were substituting purchased goods for those grown on the farm. The case studies also showed that purchases of consumer goods rose shortly after credit was disbursed.

Credit also had an impact on off-farm employment. Bank borrowers were observed to decrease off-farm work after receiving credit. The case studies showed, however, that those who did, earned less money than they would have had they kept the off-farm jobs.

In the second year after credit Bank borrowers were shown to increase both consumption of home-produced goods and off-farm employment. This suggests that they were short of liquidity in this year. In order to repay their loans farmers were observed to sell livestock to gain the necessary liquidity.

Bank borrowers were observed to have relatively low levels of delinquency, but to have higher delinquency levels as more time elapsed

22

in their loan. Most Bank loans are three to five years. This suggests that as time passes they encounter greater difficulties in finding the necessary liquidity to repay the loan.

Borrowers were compared to non-borrowers. In general, borrowers were shown to have higher levels of productive resources available to them, to live closer to the market, and to be more integrated into the market economy. These same factors tend to distinguish formal market borrowers from informal borrowers.

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