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9. ABSTRACT Despite the increasing policy attention given to problems of rural finance, there is relatively little policy oriented research being done on these issues around the world. There is also little exchange across countries of information among individuals managing credit programs, individuals who make rural finance policies, and researchers. In order to focus more attention on research problems in rural finance and to improve communications among interested researchers, the Agricultural Development Council through its Research and Training Network sponsored a conference on Research in Rural Finance. Twenty-five individuals presented papers and seventeen countries were represented. This paper summarizes the main issues raised in the conference. These issues are: recent changes in rural financial markets; liquidity management at the farm-household level; lender-mobilizer level; performance of rural financial markets; and future research priorities. It is suggested that five lines of research are needed: to expand understanding of how farm households manage their liquidity; how rural financial lenders behave; how the rural poor can be better served by financial markets; how informal credit systems in rural areas work; and the overall performance of rural financial markets. Cross country comparisons of techniques and performances may lead to improvements in policies in a number of countries.

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Research on Rural Finance: A Seminar Report

DALE W. ADAMS AND YUZURU KATO

Introduction

Over the past dozen years the Agricultural Development Council has sponsored a number of workshops, conferences, and seminars which treated rural finance problems. A 1965 conference on subsistence agriculture included several sessions which covered agricultural credit and rural savings activities [Wharton].[1] A 1971 seminar on small farmer development strategies also included extensive discussion of credit and savings issues [Adams and Coward]. A/D/C supported workshops in Thailand in 1971 and Washington, D.C. in 1972 focused entirely on agricultural credit problems [Onchan-Ong and Tinnermeier-Dowswell]. Recent publications and conferences on agricultural credit sponsored by the Agency for International Development, the World Bank, and the Food and Agriculture Organization have focused still more attention worldwide on problems of rural finance [AID, World Bank, FAO]. This increased concern with rural finance results from major increases in the amounts of formal agricultural credit in many low-income countries, great difficulties in reaching the rural poor with these financial services, and very serious problems with the performance of rural financial markets.

Despite the increasing policy attention given to problems of rural finance, there is relatively little policy-oriented research being done on these issues around the world. There is also little exchange across countries of information among individuals managing credit programs, individuals who make rural finance policies, and researchers. In order to focus more attention on research problems in rural finance and to improve communications among interested researchers, the Agricultural Development Council through its Research and Training Network sponsored a Conference on Research in Rural Finance in San Diego, California from July 28th to August 1st, 1977. Twenty-five individuals presented papers based on their research in rural finance. An almost equal number of observers with interests in rural finance also attended the Conference. Seventeen countries were represented by participants and observers. A list of the participants and observers is given in Appendix A. The following is a summary of the main issues raised in the Conference.

[1]Names in brackets refer to references listed at end of summary.

RECENT CHANGES IN RURAL FINANCIAL MARKETS

A number of the papers presented in the Conference cited significant changes which are taking place in the rural financial markets (RFMs) in low-income countries (LICs). These changes include large increases in the amounts of formal loans made, and much more attention to providing formal loans to the rural poor. A number of the Conference participants also noted serious problems which have existed or emerged in RFMs. These problems included: (1) recent decreases in the purchasing power of the formal agricultural credit portfolio, (2) serious loan repayment problems in a number of countries, (3) resistance by bankers to lending to farmers in general and small farmers in particular, and (4) the lack of medium and long-term credit in most rural areas. In addition, it was pointed out that RFMs are doing a poor job of (5) mobilizing voluntary rural savings, and (6) providing financial services to the rural poor at reasonable borrower or saver costs. A number of participants felt that current RFM policies were also resulting in (7) further concentrations in asset ownership and income distributions, (8) discouraging capital formation, and (9) resulting in serious resource allocation problems. Overall, the recent performance of RFMs in most LICs was judged to be far from satisfactory. Adams suggested that additional policy-oriented research on RFMs might focus on three different levels.[2] The first would be at the enterprise-household level. The main issues here would be related to how rural enterprises gain control of, or manage their liquidity. Several Conference papers addressed these issues. The second level of analysis might focus on considerations at the lender-mobilizer level. Several Conference papers looked at how these insitutions behave. The third level would focus on how national policies affect the overall performance of rural financial markets.

LIQUIDITY MANAGEMENT AT THE FARM-HOUSEHOLD LEVEL

Savings Behavior

A good deal of the literature on rural finance has focused on credit allocation and use at the farm-household level. Much less attention has been given to savings activities in these households, how households manage their various sources of liquidity including credit, and how farm households alter liquidity management in the face of risk and uncertainty. About one-third of the Conference papers emphasized these issues.

In large part the paucity of research on rural savings behavior is due to the widely held assumption that rural people can not or will not save. Two Conference papers challenged this assumption [Ahn, Ruozi-Mattura-Masini]. Ahn reported on an extensive study of rural savings behavior in South Korea over the 1962-1974 period. The study was based on data collected by the Ministry of Agriculture and Forestry in its annual *Farm Household Economy Surveys*. The main objective of the study was to identify the factors which have recently affected rural consumption-savings decisions in South Korea. Ahn reported that the average income of farm households increased by more than 50 percent in real terms from 1962 to 1974. Consumption in the average household increased more slowly than income. This resulted in very substantial savings. In 1962 the average household included in the survey saved 15 percent of household income. By 1974 the average household was saving over one-third of household income. Ahn also reported very substantial marginal propensities to saving even among households with very small farms. He went on to argue that increases in household income have been a major factor causing more savings. He also argued that opportunities to save and incentives to save have also influenced savings behavior. Ahn concluded that substantial amounts of voluntary savings capactities may emerge in rural areas of other low-income countries if proper policies are adopted.

Ruozi reported on household savings in Africa. He was also optimistic about the possibilities of mobilizing voluntary savings in low-income countries. He pointed out, however, that financial institutions in Africa generallv do very little mobilization of household savings. In part this is due to institutions which are not readily accessible, and it is also due to credit policies which inhibit savings mobilization. Despite widely held assumptions to the contrary, indirect evidence suggests that many Africans have relatively high savings propensities. It also appears that many households save for insurance and security purposes.

Ruozi went on to argue that new approaches to mobilization of personal savings are needed in low-income countries. He felt that savings banks and credit unions are more suitable institutions for savings mobilization than many financial institutions which currently operate in Africa. He went on to describe the operation of a new savings bank in the Sudan which has used a number of innovations to stimulate savings deposits. These innovations included mobile units to pick up savings, issuing savings boxes to individual savers, and savings stamps.

Several participants in the Conference felt that policy makers ought to take a more positive attitude toward mobilizing voluntary rural savings. This should include providing easy access to institutions in which savings can be deposited, and also attractive rates of return on financial savings. Deposit guarantee programs were also suggested as a way of providing more incentive to savers.

Credit and Risk

Risk is one of the major reasons why credit access is so important to many rural households. These risks may result from weather, diseases, variations in price, or changes in national policies. Rural households typically use a number of techniques to manage their risks. These include enterprise diversification, multiple occupations, holding highly liquid assets, land tenure arrangements, extended families, and labor share arrangements. Loan use and access to unutilized credit reserves can also be an important part of household risk management.

In his paper, Jodha argued that farmers in dry areas in India have too few mechanisms to protect themselves from the effects of drought. The mechanisms he discussed include decreased consumption, reduction in assets, increases in liabilities, and wage income from government relief work. He reported on results from various studies in India which showed that rural households were forced to liquidate their assets, mainly livestock, when severe droughts occur. In some cases households were forced to sell their land to cover consumption or debt needs. This asset depletion resulted in pauperization in some cases. Households were also disadvantaged because they had to sell assets when all asset prices

[2] Names cited in the text refer to authors of papers listed at the end of this summary.

were depressed, and attempt to reacquire these same assets in periods when asset prices were generally higher.

Jodha went on to argue that formal financial markets in India were relatively ineffective in helping rural households adjust to wide fluctuations in income due to droughts. Typically, formal production credit dries up with droughts, just at the time affected households need additional liquidity to maintain household consumption and asset levels. He went on to argue that informal sources of credit are typically more helpful to households in time of dire needs. In part this is due to the loan flexibility which informal lenders enjoy. They can lend and receive repayment in-kind, they can loan for consumption purposes, they have flexible loan charges which can vary according to the credit-worthiness of the borrower, and informal lenders usually know the borrower personally and need not incur costs to find out about the borrowers creditworthiness. The informal lender may also be willing to receive labor services in repayment of all or part of a debt. From the borrower's standpoint, the informal lender may also provide a line of credit which includes a significant amount of unutilized credit reserve. This reserve may be called upon by the borrower in case of dire emergencies. Seldom do formal lenders provide these credit reserves. As a result, good credit ratings with informal lenders may be more important to a poor borrower than good credit ratings with formal lenders. This may be a major reason why formal lenders often have poorer loan recovery records than do informal lenders. Jodha concluded that formal lenders may be able to adopt features of informal lending to help farmers better adjust to risk.

Baker reinforced many of the points on risk made by Jodha. He pointed out that there are two general ways to manage risks. The first is by controlling the hazard which generates the risk. The second is to provide relief from the hazard's damage after the damage has occurred. Most of Baker's discussion focuses on five ways rural households can effectively manage uncontrolled hazards. These include diversification in income generating activities, flexibility in resource organization, marketing strategies which reduce expected price variation, crop insurance, and credit use. Major emphasis was placed on credit as an alternative source of liquidity. Baker went on to argue that many formal lenders in low-income countries are not dependable sources of liquidity for many rural households. Formal credit may be entirely unavailable to some, only some in lumps for production purposes for others, and provide almost no credit reserve features for households in cases of emergencies. Informal lenders, in contrast, often provide emergency credit. This feature may make informal sources of credit more valuable to rural poor than formal sources.

Measuring and Evaluating Credit Needs

Household level studies of liquidity management face a number of data and research-methods problems. Because loans and savings often appear in the form of cash or near-cash, fungibility becomes a very important issue. Additional loans or savings result in an increase in the overall liquidity available to the household. This additional liquidity can be used to expand any of the household's production, consumption, or investment activities. Because the additional liquidity can be converted to many new forms, analysis of the needs and uses of credit require rich and comprehensive farm-household level data. A borrower has no difficulty in diverting loan funds granted for fertilizer purchases, for example, to other uses. Even when loans are given in-kind, the borrower can substitute borrowed fertilizer for his or her normal purchases of fertilizer with owned liquidity. In this case, the in-kind loan simply liberates liquidity which can be used for any household activity. The actual impacts of the loan are the changes in these other activities, not changes in fertilizer use. The borrower can also resell the input given in-kind and gain the same liberty of choice in how liquidity is managed. Because of this fungibility, researchers must have information on most major economic activities of the household to assess liquidity needs and uses. It also is difficult for researchers to develop methods of analysis which are comprehensive enough to simultaneously cover most of the important dimensions of the household's activities.

In his presentation to the Conference, Onchan discussed the problems of assessing credit needs of farmers in Thailand. He pointed out that Thailand has experienced a very rapid increase in the supply of formal agricultural credit in the past 3-4 years. Studies carried out prior to this rapid build up showed that informal sources were the main suppliers of loans in rural areas. A major reason for the recent rapid increase in formal credit supplies has been the assumption that credit needs in rural areas far exceed formal supplies. This assumption has not been seriously tested by careful research. Most credit work to date has been descriptive rather than diagnostic or prescriptive.

Onchan went on to review two techniques for estimating farm level credit needs. The first technique estimates credit needs by calculating total cash requirements at the farm level to purchase production inputs. Some assumptions about the percent of these cash costs which ought to be covered by formal credit are then applied to drive aggregate credit needs. The weaknesses in this approach are that investment credit needs are ignored, informal sources and owned sources of liquidity are not systematically considered, and the percentages of total cash needs which ought to be supplied by formal credit is arbitrarily chosen. Use of smaller or larger percentages can sharply alter the estimates of credit needs. In addition, this approach ignores credit needs for household activities and other rural production activities outside of farming. It also does not shed any light on the creditworthiness of potential borrowers.

Linear programming (LP) was the second technique discussed by Onchan. He pointed out that LP models have been rather widely used to analyze credit needs and financial problems of farmers. He went on to discuss how limited data and computer facilities in low-income countries affect the use of LP techniques. Data from a farm survey in Thailand were used to illustrate the use of LP. Onchan also argued that farm level LP models can be useful in estimating micro demand for liquidity in farm production activities. LP can also be useful in helping policy makers understand how farmers might react to changes in borrowing cost or to changes in production possibilities. Onchan and several other workshop participants felt that researchers must pay much more attention to collecting data and developing analytic techniques which will illuminate liquidity management problems at the farm-household level.

These kinds of data are also very necessary for evaluations of credit projects. As Rice pointed out, in all too many cases credit projects have been evaluated on the basis of their financial performance: credit delivery and loan recovery. Far too little attention has been given to the impact which credit has on productive activities at the farm-household level and on income distribution. He went on to point out that credit project evaluations by the World Bank have been limited by four major problems. The first is the lack of farm-household level data which will allow ex post analysis of changes in borrower activity caused by a loan. The second problem is to sort out the effects of abnormal weather on the results of credit projects. The third is to directly relate increases in loan use with changes in farm activity when a number of other other changes are occuring in and around the borrower's operation. What part of the change can be attributed to changes in loan use? The final problem is one of substitution. It is very difficult, for example, to verify whether a farmer would have purchased fertilizer in the absence of a loan. If the farmer would have purchased the fertilizer without the loan, the credit simply substitutes for owned liquidity, and the ultimate impact of the loan is the use made by the borrower of the released liquidity.

Loan Repayment Problems

Many low-income countries have been bedeviled by loan repayment problems in their agricultural credit programs. While repayment difficulties in small farmer credit activities have received the most attention, the problem often is serious among medium and large-sized borrowers as well. Four papers in the Conference addressed these issues. Three of these covered repayment problems in individuals countries. The fourth paper discussed problems of measuring loan repayment performance.

Three general reasons have been given for repayment problems. The first is that the political process sometimes intrudes into the loan business and convinces borrowers that they need not repay. The second is that the lending institution is badly organized and does not do an effective job of establishing the creditworthiness of the borrower, nor an effective job of recovering the loan. The third reason often given is that defects in the moral character of the borrower, diversion of borrowed money to consumption, bad weather, or low return investment alternatives result in borrowers not repaying loans.

Over the past several decades formal lenders in Sri Lanka have encountered very serious loan repayment problems. Sanderatne reported that from 1947 to 1976 only about two-thirds of the value of formal agricultural loans made were recovered by formal lenders. He identified six possible reasons for these loan defaults: (1) borrowers are unable to repay due to low income, (2) highly variable incomes among borrowers, (3) defects in the credit institutions, (4) poor attitudes about repayment, (5) misuse of funds, and (6) other miscellaneous reasons. Sanderatne went on to present data from a 1971 farm survey in Sri Lanka which tested the relative importance of these reasons. While all six reasons helped explain non-repayment, he felt that small farm sizes, low productivity and generally low incomes were the main reason for poor repayment performance. He also faulted lender supervision of loans and political attitudes toward non-payment of loans in his presentation.

Ghana, like Sri Lanka also has experienced serious loan repayment problems. It has been difficult for the banking system in Ghana to service the financial needs of the rural poor. Opoku-Owusu reported on recent attempts in Ghana to alleviate repayment problems and reach more small farmers by granting formal credit through groups. In 1969 the Agricultural Development Bank in Ghana began to make loans to informal groups with 5 to 50 farmer members. The bank had three main objectives in making these group loans. The first was to improve repayment by making group leaders responsible for repayment, and also denying further loans to members of groups who did not repay previous loans. The second reason was that the Bank hoped to decrease the costs of making and supervising loans to small farmers by making a single loan to a group. The third reason was that the Bank felt it could relax its tangible security requirement, imposed on individual loans, when group loans were made. Since many small farmers in Ghana do not have title to the land they cultivate, relaxing the security requirement makes it possible to extend formal loans to a much larger number of borrowers.

By the end of 1976 almost 75 thousand farmers were receiving loans through about 3,400 informal groups. Many of these group loans were organized around several promotion schemes for crops such as maize, yams and cassava. Opoku-Owusu identified several major problems in this group lending program. These included fixed interest rates which were too low to cover the costs of lending, bank staffs and branch networks which were inadequate to service a large numbers of small farmers, and difficulties in lending medium-term and long-term to groups. Overall, the Agricultural Development Bank has been satisfied with the results of its group lending program, and they feel it has helped to improve loan repayment performance.

For a number of years the Philippine government has attempted to reach additional small farmers and improve repayment performance by developing more financial institutions in rural areas: rural private banks, agricultural credit and marketing cooperatives, and commercial banks. Tanchoco-Subido reported that the Government also has used a number of additional policies in attempt to encourage lending to small farmers and also to improve loan repayment. These have included concessional interest rates on small farmer loans, money from the Central Bank at low rediscount rates, loan guarantees, loan quotas for formal lenders, group lending, and credit tied to crop promotion programs. Despite these efforts, agricultural loan repayment has been quite unsatisfactory the past few years. It also appears that the financial system has retracted rather than expanded loans to small farmers. Tanchoco-Subido felt that repayment problems were the largest problem faced by small farmer credit programs in the Philippines. She felt that poor repayment was largely due to poor attitudes toward loan repayment, weak lender management and lack of supporting services in rural areas.

Repayment problems are often difficult to manage and also to research because of measurement problems. Von Pischke discussed five measures which have been used to gauge repayment performance: collection ratios, percent of portfolio in arrears, aging of arrears, average collection period, and proportion of borrowers meeting repayment obligations. He also suggested a sixth measure which might be useful to both researchers and loan managers. He termed this a repayment index. This index is based on a ratio of interest due on arrears over the amount of interest which would accumulate on balances in arrears in case of total default. He felt this index would be useful to managers of lending institutions as well as researchers.

LENDER-MOBILIZER LEVEL

Informal Institutions

Surprisingly little research has been done on the behavior of formal and informal institutions providing financial services in rural areas. In large part the success or failure of a finance program depends on the willingness of lenders and mobilizers to help achieve the objectives sought by policy makers. All too often, policy makers have assumed that informal financial markets ought to be displaced by formal lending, and that actions of formal lenders could be tightly controlled by regulation. Some Conference participants took exception to both of these assumptions.

Bouman and Barton both argued that informal credit-savings associations in low-income countries provide valuable services to rural households and enterprises. Bouman pointed out that rotating savings and credit associations (ROSCA), an informal indigenous savings and credit society, are common in many low-income countries, and that large numbers of rural people participate. He attributed their popularity to five favorable features: accessibility, simple procedures, flexibility, adaptability, and provision of financial as well as social and economic services. The ROSCA appears to satisfy financial needs which formal lenders are not satisfying. Bouman placed a good deal of emphasis on savings mobilization. He argued that voluntary savings capacities do exist in rural areas and that ROSCAs are popular because they help to mobilize savings. He also felt that ROSCA played a useful role in the provision of credit by providing participants large sums of money needed to meet household or farm needs.

Barton reported on the operations of ROSCA among ethnic Chinese as well as Vietnamese in South Vietnam. He agreed with Bouman that these associations were very widespread, and he also pointed out that the associations have many variations in South Vietnam. He found some ROSCA in which the periodic contribution made by members were distributed on a bid basis. In these bid-ROSCA, individuals who "won" the pot early usually paid high rates of interest for the use of the funds, while those who took their money out later often received a higher rate of interest. Among the Chinese, Barton felt that the ROSCA were major means of mobilizing working capital to carry out rather larger business activities. He also felt that ROSCA were often used as a way of keeping wealth hidden for tax purposes.

The operations of informal financial intermediaries such as ROSCA provide insights for organizing financial services that are needed and familiar to the poor majority. Barton and Bouman both felt that formal institutions might be able to extend more services to rural poor if they copied some favorable features of ROSCA.

Formal Institutions

Several of the Conference participants felt that much of recent poor performance of RFMs in LICs could be explained by looking carefully at the behavior of formal financial institutions. In most cases governments adjust financial market policies in order to do something for or to the ultimate uses of financial services. Generally, little attention is given to how financial institutions react to these policies; it is widely assumed they simply meet the letter and spirit of the law. It is also common for governments to force financial institutions to carry out activities they are not equipped to handle.

Four presentations in the Conference dealt with formal lender behavior. Roberts reported on attempts by the Food and Agriculture Organization (FAO) of the United Nations to improve training for employees of credit institutions. He felt that many formal lenders were performing poorly because their staffs were not adequately trained. This appears to be an especially pressing problem among the junior and intermediate level staff. He also felt that training problems were very similar across countries, and that international training materials could be prepared to address training needs in a number of countries simultaneously.

Two other Conference presentations treated behavior of formal rural lenders in the United States. Boehlje discussed research methods for determining whether two or more rural lenders competed. He focused mainly on changes in interest rates paid on savings deposits as an indication of competitive interaction. He defined rivals to be those financial institutions which responded to each other's interest rate adjustments and non-rivals to be those firms which ignored each others interest rate changes. An interesting extension of Boehlje's work would be to ask the same questions regarding the interactions between formal and informal lenders in LICs. Some Conference participants suggested that RFMs in most LICs are so badly fragmented and segmented that formal lenders give little or no competition to informal lenders.

Barry also reported on behavior of formal rural lenders in the United States. He concentrated on how lenders adjust the make up of their loan portfolios when faced with uncertainty. He used recent U.S. information on interbank relations in financing agriculture, loan participation, to illustrate his discussion. Using profitability analysis, he showed that participation in agricultural loans became unprofitable for rural banks in the U.S. when monetary conditions tightened and interest rates rose. He found that the main source of the unprofitability was the high cost of balances which rural banks were forced to hold with their corresponding bank (loan participant). When monetary conditions change, the costs of these correspondent balances fluctuates widely, while the adjustments in interest rates on farm loans are much more limited.

Barry's discussion highlighted the fact that very little analysis has been done on how formal lenders in LICs manage their loan and asset portfolios. Policy makers in these countries, as a result, have very little information available to help them understand how lender behavior will be altered by various policy adjustments. Gonzalez-Vega pointed out that well intended policies like concessional interest rates on loans to small farmers may, in fact, force lenders to direct loans away from the desired target group. Lenders are forced to direct concessionally priced loans away from the small borrowers because expected revenues and costs from making these types of loans provide little profit incentive to the lender. Even when the banking system is nationalized, it is difficult to force lenders to extend financial services which do not result in economic surpluses to the lender.

PERFORMANCE OF RURAL FINANCIAL MARKETS

Some of the most interesting and challenging research issues on rural finance relate to the overall performance of rural financial markets. In the past, most research has focused on individual borrower or lender behavior or credit projects results. Only recently have researchers become interested in how the entire rural financial market performs in helping to achieve social objectives. Seven Conference papers dealt with this subject. Five papers reported on the recent performance of rural financial markets in individual countries. Another paper treated research methods which might be used to measure performances, and still another paper focused on how interest rate policies affect the performance of RFMs.

Low-Income Countries

Ladman and Tinnermeir reported on the performance of RFMs in Bolivia from 1966 to 1975. Because of the lack of information on informal markets their analysis stressed formal RFMs. They noted that the structure and size of RFMs in Bolivia have changed substantially over the past 10 years. It is also apparent that agricultural credit expansion has been associated with significant increases in agricultural output and in substitution for agricultural imports. Despite these successes, the RFMs in Bolivia appear to be faltering in other respects. For example, it appears that RFMs are doing a poor job of mobilizing voluntary rural savings and providing anything but short-term credit. Serious loan delinquency problems, concentration of loans in one region of the country, and lack of loans for the rural poor are other features of this poor performance. Although lacking sufficient data to prove their case, Ladman and Tinnermeier argued that concessional interest rate policies combined with significant inflation to help to explain a major part of the poor performance of RFMs in Bolivia.

In their discussion of the recent Brazilian experience, Araujo and Meyer arrived at very similar conclusions. They noted that credit has been a cornerstone of Brazilian agricultural policies, and that formal credit supplies have sharply increased the past few years. This sharp increase in credit also has been associated with substantial increases in agricultural output, expanded area under cultivation, and additional use of modern inputs in agriculture. It has also been true, unfortunately, that the epxanded credit has been concentrated in the hands of relatively few borrowers in one major region, the southern part of Brazil. There has apparently been very little spread of the substantial increase in formal credit supplies. As in the Bolivian case, the concessional interest rate policies combined with substantial inflation appear to be closely associated with the relatively poor performance of Brazil's RFMs.

High Income Countries

Inflation has had a major effect on rural financial markets in most countries during the past few years. Interest rate policies have been very slow to respond to these changes in overall price levels. In most countries administered interest rates on formal agricultural loans and financial deposits in rural areas have been kept below the annual rates of inflation. These negative real rates of interest cause major distortions in rural financial markets and also have a serious impact on income and asset ownership distributions.

Using farm household data for 1960-1974, Kato showed how inflation combined with relatively flexible interest rate policies have affected farmers in Japan. He pointed out that almost all farm households in Japan held financial savings deposits, but that less than half of the households had formal loans. He also noted that formal deposits in rural financial institutions amounted to far more in value terms than formal loans made to farmers. He concluded that almost all farm households suffered a loss from the erosion caused by inflation in the real value of their savings deposits, while a minority of the farm households who were net debtors benefited from negative real rates of interest. In general, poor households had higher average savings-to-debt ratios than did more wealthy households. Thus, negative real rates of interest penalized the poor more than the wealthy. Overall, the rural sector was heavily penalized by negative real rates of interest because it was such a large net saver in financial forms. Kato also noted, however, that farm land values had increased at a much faster rate than had inflation, and that this made rural landowners better off because of the relative increase in the value of their physical assets. Again, however, landowners benefited from this increase in the relative price of land in proportion to the amounts of land they owned; small farmers benefited much less than large landowners.

As suggested earlier, most countries have found it difficult to provide substantial amounts of medium and long-term credit for agriculture. Lee pointed out that this also has been true in Canada. To overcome this problem, long-term funds have been channelled into Canadian agriculture through a specialized government-owned lending agency. This government agency and a few other government programs provide almost all of the long-term loans for agriculture in Canada at concessional interest rates. Despite these special efforts, the supply of long-term credit is often far less than effective demand at existing interest rates. Lee put forward three suggestions for expanding the supply of long-term loans. The first would be to issue bonds in the open market to provide more long-term money. The second is to develop a secondary market for long-term mortgages. Holders of long-term mortgages could sell them in this market to generate additional long-term loanable funds. The third suggestion was to provide more incentives for private lenders to participate in long-term farm lending. This could include loan guarantee programs and interest rate policies which provided more incentives for private lenders to extend long-term loans.

Many observers have commented favorably on the performance of formal agricultural credit markets in the United States. Melichar pointed out, however, that some major problem areas exist in these markets. He noted that the recent sharp increases in agricultural land values in the United States have been largely funded by a rapid expansion in formal credit supplies. A large part of this expansion in credit has been used by a minority of medium and large sized operators to increase the size of their farm operations. Melichar felt that if land prices decrease, certain segments of the farm credit market could incur serious debt repayment difficulties. Small rural banks which have been heavily involved in farm lending and have low liquidity could be seriously affected. This could involve about 15 percent of the nation's banks. It may be necessary to give this group of banks special attention and assistance should adverse economic conditions persist in rural areas of the United States.

Flow of Funds Analysis

Uncertainty about the analytic techniques which are most appropriate to use is a major reason for the lack of research on the overall performance of rural financial markets. Increasingly, researchers are using flow of funds techniques to track the performance of financial systems. This technique concentrates on sources and uses of funds over a specific time period. The analysis can be extended to relate changes in these course and use flows to various policy adjustments. In his presentation, Brake argued that more use should be made of this technique by those interested in rural finance. He indicated that flow of funds can be useful in micro analysis of borrower, saver or lender behavior. It can also be applied at a sector level or to depict the overall financial system. The Bibliography in Brake's paper should be useful to those interested in learning more about studies which have used flow of funds analysis.

Interest Rate Policies

The topic of interest rate policies surfaced a number of times during the Conference. Those interested in savings mobilization felt that changes in interest rate policies were necessary before large amounts of voluntary rural savings could be mobilized. Some participants who focused on farm level credit use issues argued that higher and more flexible interest rates on loans would have little effect on credit demand among the rural poor, but that these higher rates would reduce loan demand by the wealthy. Still other participants pointed out that concessional interest rates seriously affect lender behavior and the types of financial services which will be provided to various target groups. Several participants also argued that policies which resulted in negative real rates of interest in rural financial markets caused major distortions in the performance of these markets. They went on to argue that most of the serious problems currently found in RFMs are closely associated with rigid interest rate policies combined with substantial inflation.

Gonzalez-Vega treated many of these arguments in his presentation. He also critiqued three major arguments often used to justify low interest rates on rural financial instruments: (1) low rates are needed to eliminate informal lenders, (2) low rates are needed to correct any other market imperfections, and (3) low rates are an effective mechanism for income redistribution. He concluded that all three arguments are very weak or incorrect. Gonzalez-Vega went on to point out that interest rate restrictions, especially when combined with inflation, cause RFMs to further concentrate income in the hands of the wealthy. He felt this is largely due to the "iron law of interest rate restrictions." In brief, this law posits that the lower the real rate of interest in RFMs, the more concentrated will be the concessionally priced loans in the hands of a few borrowers. He concluded that because of this law it is virtually impossible to have concessional interest rates and also provide substantial amounts of loans to the rural poor.

FUTURE RESEARCH PRIORITIES

The recent build up in volume of formal agricultural credit in many countries, and the pressing problems which are commonly found in RFMs provide a fertile area for researchers to contribute to program and policy improvement. Appropriate policy-oriented research on rural finance can have very substantial pay off in a number of countries. While there has been a significant increase over the past four years in the amount of this kind of research, much more is needed. Far too many policy makers are forced to make major RFM policy decisions without sufficient information, and too many critical assumptions have not been sufficiently challenged.

At least five lines of research are needed. The first is to expand understanding of how farm-households manage their liquidity. This would include analysis of the role which loans and financial savings can play in this process. Second, much more work is needed on how rural financial lenders behave. The relationship between policies and lender behavior should be further clarified. Third, additional research should be concentrated on how the rural poor can be better served by financial markets. This might include analysis of current small farmer credit delivery systems. Fourth, more research should be carried out on informal credit systems in rural areas. In some cases, it may be possible for formal lenders to adapt techniques used by informal lenders. Fifth, much more work should be done on the overall performance of RFMs. This might include analysis of how various policy techniques affect the overall performance of RFMs. Cross-country comparisons of techniques and performances may lead to improvements in policies in a number of countries.

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Participants

Dale W. Adams, Professor
Dept. of Agricultural Economics
and Rural Sociology
The Ohio State University
Columbus, Ohio 43210

Choong-Yong Ahn, Associate Professor
Dept. of Economics
Chung-Ang University
Seoul, Korea

Paulo Cidade de Araujo, Director
Instituto de Economia Agricola
Ave. Miguel Estefano, 3900
Bairro Agua Funda
04.301 Sao Paulo—SP
Brazil

Chester Baker, Professor
Dept. of Agricultural Economics
University of Illinois
Urbana, Illinois 61801

Clifton Barton, Anthropologist
Technical Assistance Bureau
Agency for International Development
Washington, D.C. 20523

Peter Barry, Associate Professor
Dept. of Agricultural Economics
and Rural Society
Texas A&M University
College Station, Texas 77843

Michael Boehlje, Associate Professor
Dept. of Economics
Iowa State University
Ames, Iowa 50010

F. J. A. Bouman, Professor
Dept. of Agrarian Law of
Non-Western Countries
Hollandseweg 1, De Leehwenborch
Wageningen, Netherlands

John Brake, Professor
Dept. of Agricultural Economics
Michigan State University
E. Lansing, Michigan 48824

Claudio Gonzalez-Vega, Professor
University of Costa Rica
P.O. Box 518
San Jose, Costa Rica

N. S. Joddha, Economist
ICRISAT
1-11-256, Begumpet
Hyderbad 0 500016
A. P., India

Yuzura Kato, Professor
Dept. of Agricultural Economics
University of Tokyo
Bunkyoku
Tokyo, Japan

Jerry Ladman, Associate Professor
Dept. of Economics
Arizona State University
Tempe, Arizona 85281

Warren Lee, Associate Professor
Dept. of Agricultural Economics
and Rural Sociology
The Ohio State University
Columbus, Ohio 43210

Emanuel Melichar, Senior Economist
Board of Governors
Division of Research and Statistics
Washington, D.C. 20551

Richard Meyer, Associate Professor
Dept. of Agricultural Economics
and Rural Sociology
The Ohio State University
Columbus, Ohio 43210

Tongroj Onchan, Professor
Dept. of Agricultural Economics
Kasetsart University
Bangkok, Thailand

Kwame Opoku-Owusu, Chief Manager
of Operations
Agricultural Development Bank
P.O. Box 2
Legon, Ghana

J. D. Von Pischke, Economist
World Bank
1818 H Street, N.W.
Washington, D.C. 20433

E. B. Rice, Economist
World Bank
1818 H Street, N.W.
Washington, D.C. 20433

Richard Roberts, Agricultural
Credit Officer
Agricultural Services Division
FAO
Via delle Terme di Caracalla
00100—Rome
Italy

Robert Ruozi, Professor
Universita' Commerciale Luigi Bocconi
Instituto Di Economia Aziendale
Via R. Sarfatti
20136 Milano, Italy

Nimal Sanderatne, Senior Economist
Research Branch
Central Bank of Ceylon
Colombo, Sri Lanka

Chita Tanchoco-Subido, Executive Director
Technical Board on Agricultural Credit
Central Bank of the Philippines
A. Mabini
Manila, Philippines

Ronald Tinnermeier, Associate Professor
Colorada State University
Fort Collins, Colorado 80523

A. M. Weisblat, Director
Research and Training Network
Agricultural Development Council
1290 Avenue of the Americas
New York, New York 10019

II. *Observers*

Daniel Badger, Professor
Dept. of Agricultural Economics
Oklahoma State University
Stillwater, Oklahoma 74074

Kathy Boyd
Office of Agriculture
Technical Assistance Bureau
Washington, D.C. 20523

Lewis Clark, Agricultural Economist
Agricultural Division
Bureau for Near East
Agency for International Development
Washington, D.C. 20523

Earl Deveaux, Manager
BARTAD
San Andros P.O.
North Andros, Bahamas

Rollo Ehrich, Agricultural Economist
Bureau for Asia
Agency for International Development
Washington, D.C. 20523

Anne Ferguson, Economist
Technical Assistance Bureau
Agency for International Development
Washington, D.C. 20523

Steve Gabriel
Dept. of Agricultural Economics
University of Illinois
Urbana, Illinois 61801

Ronald J. Herring, Associate Professor
Dept. of Political Science
Northwestern University
Evanston, Illinois 60201

Ahmed Humeida
Dept. of Agricultural Economics
and Rural Sociology
The Ohio State University
Columbus, Ohio 43210

George D. Irwin, Director of Research
Farm Credit Administration
490 L'Enfant Plaza, S.W.
Washington, D.C. 20578

Evangeline Javier, Economist
Technical Board for Agricultural Credit
Central Bank of the Philippines
A. Mabini
Manila, Philippines

N. H. Khan, General Manager
Bangladesh Krishi Bank
Dacca, Bangladesh

Rufus A. Long, Credit Specialist
Asia Bureau
Agency for International Development
Washington, D.C. 20523

Ed Maberly
Dept. of Agricultural Economics
Texas A&M University
College Station, Texas 77843

M. A. Majid Molla
Ag Credit Department
Bangladesh Bank
Dacca, Bangladesh

M. S. Rao
International Development Research
Centre (IDRC)
Box 8500
Ottawa, Canada, K1G 3H9

Erhardt Rupprecht, Economist
Technical Assistance Bureau
Agency for International Development
Washington, D.C. 20523

Louis Saint
Dept. of Agricultural Economics
Texas A&M University
College Station, Texas 77843

A. Q. Siddique
Rural Credit Department
Sonali Bank H.O.
Dacca, Bangladesh

C. S. Dong Sarmago
Dept. of Agricultural Economics
Michigan State University
E. Lansing, Michigan 48824

Judith Tendler, Economist
3062 Buena Vista Way
Berkeley, California 94708

Odell Walker, Professor
Dept. of Agricultural Economics
Oklahoma State University
Stillwater, Oklahoma 74074

Fred Welz, Economist
Bureau for Latin America
Agency for International Development
Washington, D.C. 20523

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