The structural and market changes which have been occurring and appear likely to occur in the credit and finance markets serving agriculture have a common thread which runs through most such modifications. This thread consists of at least two major strands. These changes are either made (1) in response to changes in the structure and organization of agriculture which confronts the credit and financial institutions as markets for the service provided by credit and financial institutions or (2) in response to shifts in the relative profitability of providing services to agriculture compared to nonfarm uses of these services. Failures to respond to changes point to the likelihood of shifts in patronage among agencies providing credit or the development of new institutions or strategies in credit acquisition.

Introduction and Current Situation

From the multiplicity of credit-related changes which have been occurring and are projected to occur, we have chosen to comment on several and to try to infer from these developments some of the areas of needed research. Before beginning this task, however, a perspective is needed on the current status and trends in providing credit for agriculture. In looking backward to establish directions of change, we will use 1950 as a convenient benchmark in most cases. Agricultural indebtedness has tripled in size since 1950 (to 1965). The share represented by farm real estate debt has risen modestly—from 45 per cent to about 51 per cent of indebtedness. Debt-asset ratios have climbed in both real estate and nonreal-estate farm debt, with real estate debt up from 7 per cent to 12 per cent of the value of real estate assets and nonreal-estate debt rising from 12 per cent to 24 per cent of the value of nonreal-estate assets.

Agricultural patronage of credit sources has shown remarkable stability among the statistically identified credit sources. Life insurance companies remain the largest separately identified source of mortgage credit with 21.0 per cent of the outstanding loans in

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1950 and 22.7 per cent in 1966. Federal land banks have increased their share of farm mortgage credit from 16.2 per cent to 20.0 per cent in 1966 while operating banks declined from 16.8 to 13.8 per cent. The share of the largest category of farm mortgage lenders, individuals and other nonreporting lenders declined slightly, from 42.5 per cent to 40.5 per cent. Loans by the Farmers Home Administration, with a limited clientele, declined slightly, from 3.5 per cent to 3.0 per cent.

Nonreporting creditors, also the largest category for nonreal-estate credit, declined as a source from 45 per cent to 41.5 per cent in 1966. The largest gains in share were made by the Production Credit Associations, with a gain from 7.5 per cent to 13.6 per cent, while Farmers Home Administration declined as a nonreal-estate source from 6.7 per cent to 3.8 per cent. Operating banks gained slightly in share, from 39.8 per cent to 40.4 per cent. Federal Intermediate Credit Banks serving agriculture through livestock loan companies and the agricultural credit corporations declined from 1.0 per cent to 0.7 per cent of nonreal-estate loans.

There is convincing evidence that change has been occurring in the kind of farm borrower served by credit agencies. Ray Doll has recently made some preliminary estimates of changes in the last decade which show that the average age of farm borrowers from banks is rising. The proportion of farm borrowers 45 years of age and over is up from 49 per cent in 1956 to about 58 per cent in 1966. The average loan per borrower is almost triple the size of a decade ago. Net worth of farm borrowers is rising too. In 1956 less than 20 per cent of the outstanding farm loans of banks were made to borrowers with $100,000 or more in net worth. In 1966 the share was over 36 per cent. Dr. Doll has also noted the shifts in purpose of bank loans made to farm borrowers. There have been significant increases in the share of bank loan funds for purchasing feeder and other livestock, modest declines in loan fund shares for use in farm real estate purchases and purchases of machinery, trucks and other equipment, with more significant relative declines in shares for other debt consolidation or payoff and land and building improvement.

1/ Percentages in this and following paragraph computed from Agricultural Credit and Related Data 1966, Agricultural Committee, American Bankers Association.

2/ From tables presented by Dr. Raymond J. Doll, Vice-President and Senior Economist, Federal Reserve Bank of Kansas City at the meeting of the Agriculture Committee, American Bankers Association, Sarasota, Florida, on February 10, 1967.
One significant shift has occurred relating to the trend of farm assets to realized net income of farms. In 1950 the average value of assets required to generate $1.00 of realized net farm income was about $7.65. By 1966, $13.13 in assets were committed for each dollar of realized net income. Essentially all this increase was in real estate assets and reflects the sharp and steady rise in farm land values. By contrast the $2.42 of nonreal-estate assets needed for generating $1.00 of realized net farm income in 1950 had climbed to only $2.84 by 1966.  

Some hints at the future directions of need for agricultural credit are found in Rex Daly's base paper. He estimates that agriculture will be using significantly larger amounts of several of the purchased input categories by 1980, although the total input mix will increase only 7 per cent from 1965 levels. Input gains range from a modest 20 per cent in power and machinery to an increase of about 90 per cent in fertilizer and lime. While we may infer at least a modest increase in the price of input, Daly provides no specifics on this point for the longer range outlook.

John Brake of Michigan State has made some rough estimates of future agricultural credit needs. He projects agricultural credit needs of $100 billion in outstanding debt by 1980, compared to $87.5 billions in 1965. His estimates suggest that real estate farm debt will reach $59 billions in 1980 compared to $18.9 billion in 1965. Nonfarm real-estate debt of $41 billion is projected, compared to $18.6 billion in 1965. Average indebtedness per farm, reflecting the combination of larger farms, rising land values and increased ratios of debt to assets, is estimated by Brake at $48,000 for an asset value of about $170,000 per farm. It is apparent that if Brake's estimates were restricted to commercial farms, both debt and capitalization would be much higher. It is also likely that the larger commercial farms will have an even lower net worth per dollar of assets.

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Changes in Agriculture Bearing on Responses of Credit and Finance Markets Serving Agriculture

What are the continuing changes which have been taking place in the technology, structure and organization of agriculture which bear upon the responses which credit and finance markets serving agriculture are called upon to make—and hence, which bear upon the adequacy of present institutions providing agricultural credit? Previous papers have provided a wealth of leads on such changes and the purpose here will be to briefly summarize those which pertain particularly to credit and financial needs of agriculture.

Growth in Size of Firm in Agriculture

The conclusion of continued growth in size of farm firm is reached repeatedly in previous papers. Lester Kellogg states, "The trend in the average size of U.S. farms has been continuously upward. In the years ahead, it will continue its upward course, and where it will stop nobody knows." Daly projects with a continuance of present trends, about 2-1/2 million farms by 1970 and possibly fewer than a million commercial farms by 1980. Allen, while viewing the question of a radical increase in size of Midwest feedlot operations as somewhat conjectural, appears to lean toward the affirmative, citing scale advantages in reducing price risks, more efficient feed use and prospects for effective environment control for cattle-feeding operations.

The implications of growth in size of firm for credit use range from the need for dramatically larger amounts of capital per farm, in an increasing number of cases greater than reasonable lifetime goals of capital accumulation can accommodate, to the kinds of strategies which can be employed to meet these needs. The concept of permanent or perpetual debt or leasing the land resource or devices like the land purchase contract becomes increasingly important as size of farm increases. Incorporation of farming units as a device for dealing with the problem of inheritance may also assume increasing importance in avoiding the cycle of recapitalization. Eventual gains in farm size may bring a broader consideration of the example which Kellogg cites of a corporate farm structure with significant nonfarm investment representation which utilizes farm skills of management in a large and specialized operation.

The Continuing Substitution of Capital for Labor in the Form of Power Equipment and Other Nonland Inputs

The prospective decline in the labor used in agriculture occupies major space in Schuh's base paper, while Kellogg and Allen comment, respectively, on the prospects for increase of specialized power
machinery and processed feed and fertilizer inputs in farming. Statistically, the value of assets per farm worker stand at about $36,000, more than doubling in a decade. Combined with farm size increase, the pressure for rapid adoption of new and specialized capital equipment in farming has several implications for credit needs in agriculture. First, the substitution of capital for labor has, to a predominant extent, meant the substitution of purchased inputs for nonpurchased inputs, since most inputs with increasing shares of use in agriculture in recent years are purchased off farms.

Along with the increase in mechanized equipment has come greater specialization of equipment and rising obsolescence as increasing risk hazards for purchasers as well as extenders of credit. This development has focused attention on the prospects of leasing rather than purchasing capital equipment, particularly on farms with limited capital and limited or uncertain need for annual use of the equipment.

The trends in development of specialized machine equipment also point to higher cost of individual equipment items and a growing concern for full utilization when purchase is made, leading to custom hire practices to the mutual advantages of owner and nonowner within the limits of seasonal accommodation.

The trend in power and machinery used in substitution for labor has been only modestly upward in recent years, with a gain of 2 per cent as a share (1950-65); while, collectively, feed, seed and livestock, fertilizer and lime, and other nonland inputs have increased as a share by 17 per cent during the same period. Not all the latter group of input categories is purchased, however, and machine power items have been increasing in price more rapidly than such items as feed and fertilizer.

Greater Specialization by Individual Firms in Agriculture

Several of the papers have commented upon the increased trend toward specialization by enterprise. The trend toward single enterprise operations has often been motivated by the access to lower costs per unit of production including the necessity to more efficiently use machine equipment which is more narrowly specialized. Similarly, specialization of nonmachine inputs also has contributed significantly to lower costs. Reynold Dahl points to the marked decline since the 1930's in the per cent of feed grains fed to livestock on the farms where the grain was produced. Kellogg cites an example of an enterprise (in this instance, hatcheries) which have

not only become specialized but in the process have moved from rural to urban areas.

One consequence on increased specialization by enterprise is the increase in price risk in many instances. For large growers, this increase in price risk has led to substantially greater interest in the practice of hedging to reduce price risk.

Aging of Farm Operators

As part of the background for his paper, Schuh has cited the rising average age of farm operators. By 1980 the proportion of farm operators 55 years and older will have risen to over 50 per cent, compared with 39 per cent in 1960. The credit service for older borrowers of necessity must be different as well as the interest of the borrower in farm firm growth and collateral. The immediacy of problems of inheritance for such borrowers and the need to gear credit use to plans for transfer rather than firm growth are evident.

Improvement of the Management Input in Farming

There seems little doubt that the demands of modern farming call for continuing improvement in the level of skills of farm operators. Schuh observes in his base paper that the nature of technical change in agriculture is such that an increase in skills is necessary to farm. Dahl comments that marketing decisions have become more complex for farmers in today's environment. Kellogg emphasizes the need for quality management for successful farm operation. This need is echoed in the expanded role which tomorrow's farm operator must play. His is a larger task in acquiring enough capital for farm operation, and his is a larger task in controlling the capital assets of modern farming. In recognition of the risks and the crucial importance of quality of management in the successful use of credit, most lending agencies today rank management ability--whether it is called earning capacity, financial management ability or farm management ability--as the most important factor in lending decisions, well ahead of such old standbys as net worth, working capital and character.

Continuing Dependence upon Government Programs for a Significant Share of Farm Net Income

The involvement of agriculture with government programs has at least two elements of interest from the standpoint of credit. Dahl comments on one of these in his base paper when he cites the current

shift away from price supports by loan and storage at sought-for levels and toward market-clearing prices with a system of direct payments. He points out that this change has brought greater price uncertainty to grain producers with a wider market price fluctuation which is now possible. Such price risks are also now part of the market experience of cotton and wool among supported commodities. A second element of concern from the viewpoint of agencies lending to agriculture accompanies the present trend in government farm programs. This concern is the extent to which net income to agriculture is dependent upon government payments. Preliminary estimates for 1966 indicate that government payments made up 20 per cent of the realized net farm income. For individual states, this net income dependency ran substantially higher—as high as about 50 per cent.\(^8\) Clearly this degree of dependency gives lenders cause for concern about repayment ability when a large share of repayment ability is government generated and dependent on Congressional appropriations.

**Contractual Arrangements--Vertical Integration**

Two of the base papers have pointed to the possible development or renewed importance of contractual arrangements—Allen in the case of factory—mixed complete feeds on long-term contracts and Pherson in a somewhat cryptic"... more long-term arrangements between livestock producers and packers that will help eliminate supply fluctuations and uncertainty." Daniel Padberg, commenting recently on trends in integrated agriculture, indicates that, except for broilers, there is only minor involvement of nonfarm firms in contractual operations in agriculture.\(^9\)

The credit relevance of contractual or integrated operations in farming is that these represent alternative devices for moving nonfarm capital into agriculture, tending to supplant partially at least the usual sources of agricultural credit.

**Changes in Credit and Financial Markets and Innovations in Meeting the Credit Needs of Agriculture**

What changes have taken place in the credit and financial markets which serve agriculture—and what innovations and/or strategies have been developed to serve the credit needs of a changing agriculture?

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Broadened Alternative Opportunities for Capital Lending by Credit Agencies

Sales finance companies, often product manufacturer subsidiaries, provide a convenient source of financing of producer and consumer durables and yet receive a respectable return on the loan, usually around 18 per cent. This return often exceeds the profit on the item. Often a combined sale and financing offer provides opportunity to acquire an asset cheaper than if each operation were performed separately. A farm supply dealer will usually sell an item of capital equipment cheaper if he can extend the financing. In other situations, dealers have contracts with finance companies to provide financing for their credit-worthy customers.

Commercial banks have discovered a broadened range of opportunities for credit placement outside of agriculture. Financing of consumers has become much more attractive and the institution of bank credit cards has been developing rapidly. Many larger banks have found more attractive credit placements with industry where the size of loan and term length provides more flexibility and makes more efficient use of bank credit by reducing service costs per dollar of credit extended.

Another factor which has reduced the available credit to agriculture in some areas has been the growing tendency of farm operators to utilize investment sources other than banks to absorb idle balances. Low interest rates offered by country banks on time deposits, until recently, have contributed to this tendency along with an increased awareness by farmers of other investment opportunities.

Growing Problems of Liquidity Facing Country Banks

Dr. Charles N. Shephardson of the Board of Governors of the Federal Reserve System in a recent discussion, described the country bank liquidity situation this way, "For many years, farm credit demands have been expanding much faster than have the resources of rural banks. Though this has been a comfortable situation for the banks involved, these banks have nevertheless been able to increase farm loans faster than their own deposit growth by employing a cushion of liquidity built up during the years of the Second World War. In this way, the banking system has held the decline in its share of farm financing to a fairly slow erosion." Shephardson continues, "Now, however, many banks have exhausted the wartime cushion of liquidity. The problem of obtaining funds to meet rising farm credit demands is thus reaching a critical point at more and more rural banks. In some Western States, in fact, a majority of rural banks can probably rank
this among their more urgent farm finance problems. 10

The liquidity problem of country banks has been enhanced by several factors, notable among which is the simple fact of expansion of credit use about three to four times as rapidly as gross and net income to agriculture, since the increases in productivity brought by more intensive use of capital have increased output and depressed farm prices. Also involved is the native conservatism of some country banks. Governor Shephardson points to the fact that in many banks in rural areas loan-deposit ratios in the 30 to 40 per cent range are found in communities which also have other banks with high ratios.

The legal lending limit constitutes a principal restriction faced by the smaller agricultural banks in serving large commercial farmers. Although the limits continue to increase, approximately 27 per cent of all banks in 1966 had limits under $50,000 per individual as compared to 43 per cent in 1962. The most striking changes occurred in the Corn Belt and Plains where in 1962 nearly one half of the banks could not make loans in excess of $50,000. By mid-1966 the number had decreased to 25 per cent and 35 per cent respectively. 11

The Broadened Base for Risk Transfer Through Hedging Operations

For a significant share of the basic crops, the prospect of hedging to protect for price risk has been an available service for a long time. Further, for several of these same communities, the need to hedge to protect a lender or the borrower was small, due to the significant protection offered by price support guarantees. With the shift to market clearing supports and direct payments, as Dahl has pointed out, the element of risk—price risk—is enhanced. Hence the use of futures markets in the staple crops for which the technique of price support has changed is increasing. The more recent advent of futures trade in live cattle and hogs has served to further reduce price risk on production loans to feeders in an area where government price protection has been largely absent. Everette Harris of the Chicago Merchantile Exchange indicates that a significant share of the live cattle futures contract trades are made by cattlemen. 12

10 Charles N. Shephardson, "Banking and Farm Finance: The Present Challenge." Speech delivered at the 22nd Annual Virginia Bankers Farm Credit Conference, Natural Bridge Virginia, March 8, 1967.


Credit agencies making livestock loans have expressed an increased interest and a growing number insist upon hedged contracts by borrowers to protect their livestock loans.

**Development of the Line of Credit Concept by Production Credit Associations**

Production Credit Associations by their very nature are primarily responsive to the needs of farmers. Prompt service is needed by most farmers and the PCA's have responded by making loans immediately available. Same-day service is available to members who have an established record. This practice of extending a line of credit has placed the PCA's in a more competitive position, service-wise, with the commercial bank.

**Addition of Specialists in Agriculture to Staffs of Country Banks**

The need for knowledgeable personnel to deal with the agricultural-lending operations of rural banks is being increasingly recognized as agriculture becomes more commercial and more complex. In 1965, an estimated 49 per cent of the agricultural banks had an agricultural specialist. There is also an increasing trend toward devoting the full time of a specialist to agricultural-lending operations in rural banks. This greater attention to agricultural loans has been paralleled by the growth of such separate features as special forms for agricultural lending; and a few rural banks have installed computer customer services oriented to agricultural needs, with others now considering adding such services.

**Modifications in Operating Bank Techniques to Meet the Needs of Agriculture**

The primary changes which have been made in operating banks to meet agriculture's changing needs include at least three developments with varying rates of adoption. These include the use of correspondent banks for overlines, branch banking and the establishing of agricultural credit corporations.

The use of correspondent banks to share overlines arises from necessity for rural banks to service agricultural loans which exceed the loan limits prescribed by the National Banking Act (10 per cent of net unimpaired capital and surplus, with a limit extended to 25 per cent if the loan is secured by livestock) or limits prescribed by state banking statutes. The use by rural banks of larger city banks to take the overline in agricultural loans has been growing significantly. A decade ago there were about 800 banks with $80 million in farm loans on which another 400 banks had participated by taking $43 million in overlines. Last year the number of rural
banks using correspondents had grown to 2,500, with $574 million in agricultural loans on which 1,100 banks were participating to the extent of $300 million. In spite of this impressive rate of growth, the extent of use of correspondent banks for loans is quite small—less than 3 per cent of farm loans extended by banks.

Branch banking which permits the use of the loan limits of the parent institution (a city bank) in rural branches has been advocated and widely used in those areas where branch banking is legal—notably in the western part of the United States. Rapid growth of branch banking in those parts of the country where permitted indicates the potential of this means of accommodating the larger sized agricultural loans.

In a limited number of instances, rural banks, faced with a shortage of loanable funds, have established agricultural credit corporations. Such corporations provide a means for the parent bank to discount its agricultural paper with the Federal Intermediate Credit Corporation in a similar method to that used by the Production Credit Associations. There has been a reluctance by rural banks to use this method extensively and the number of agricultural credit corporations remains small.

Strategies or Devices Adopted by Farm Firms in Meeting Credit Needs of a Changing Agriculture

Several strategies have been developed by farm operators to meet the problems in credit and capital acquisition faced by modern agriculture. Their adoption has not been widespread as yet. As the pressures of rising capital requirements for modern agriculture continue to grow, at least three of these will receive greater attention. These are incorporation, the leasing of capital and the concept of perpetual or permanent debt.

Incorporation of the farming business has not been employed significantly thus far. Some studies suggest that the use of the corporate form of organization for farms has not provided any significant improvements in capital access. Others, such as Hesser and Castle, see the increase of incorporation as a form of farm organization but mainly for the reason of tax and estate management.


As farm size grows, the ease of transfer of the going farm concern from generation to generation—as well as ease of entry—will weigh larger in favor of incorporation. Still other observers see promise in the device of incorporation as a means of solving problems in the growth of farm size. Examples such as Kellogg cites in his paper may be the forerunner of a broadened use of incorporation. Prime barriers still lie in the establishment of the image for corporate farms which has been so successful in attracting investor capital in nonfarm business where risks are at least equally great.

The acceptance of the idea of permanent farm debt appears to become broader as farm size increases and inheritance tends to be the major route to debt-free ownership on a growing number of larger farms. Hesser and Castle regard the problems and interest-rate change risks for the creditor to make the notion of pay-down to say half the value of the farm with interest maintenance after that point for a loan length of 30-40 years unattractive to lenders. They suggest, rather, incorporation with the sale of preferred stock in lieu of a loan with partial pay-down. The effect, they point out, is similar to permanent debt but would allow for change in real interest rates.

The leasing of capital has already begun to find abroad use to meet growing capital shortages in agriculture. During the formative phases of the leasing market for farm capital, there will be a period of experimentation and discovery of equitable rates and discovery of areas and items of major leasing adaptability. The use of leased capital will continue to be a choice, just as it has been in nonfarm capital such as automobiles, and will be responsive to particular kinds of needs and shortages of liquid capital rather than supplanting farm capital ownership.

**Research Implications of Changes in Input Markets for Credit and Finance**

Suggestions for needed research in the area of credit and finance are not in genuine scarcity. In fact, the iterative character of such suggestions in the literature tends only to confirm common diagnoses of problems faced in this area. George Tolley and others discussing the topic at the symposium on "Capital and Credit Problems in a


16/ Hesser and Castle, op. cit., p. 184.
Changing Agriculture" advanced a number of useful ideas for research.¹⁷/

More recently several other writers have advanced research ideas in the area of this paper. A partial list would include Leon Hesser, Edward Schuh, M. E. Wirth, C. B. Baker, J. M. Holcomb, Emery Castle, John Brake and Lester Kellogg. The contributory role of ideas garnered from these writings is gratefully acknowledged.¹⁸/

From the standpoint of efficiency, credit should play a neutral role in the entrepreneur's production decisions. Plans for adjustments should be based upon the expected returns over costs for a particular activity. Returns to the equity capital should be comparable to what is paid for borrowed capital. Ideally, whether or not to borrow the capital should be a matter of indifference. Actually, many decisions hinge on whether or not credit is to be used. Often, farmers are prevented from making and carrying out plans because capital is rationed by the lending agency or by the farmer himself.

Both lenders and borrowers ration the use of capital because of uncertainty. Uncertainty arises from a variety of reasons but all have psychological foundations which we as economists are ill-equipped to handle. The values and attitudes toward credit need a more thorough examination with the view of determining how they are changed and in what direction will the changes likely occur. Estimates of credit needs made on the basis of productivity, considering the element of risk, can vary widely. The crucial question is how the need for credit is to be estimated. Can research develop objective lending criteria which are really more reliable than those commonly used by lenders?


Capital and ways of acquiring its use become immediately the central problem in such questions as the optimum-size farm unit in any given area. Although the economic-sized unit will change over time as technology and other factors change, research should provide us with some idea of what is an optimum-sized unit for various types of farming. An estimate can then be made of the capital needed to reorganize an undersized unit into a more reasonable economic and competitive unit.

Research in agricultural price analysis leaves much to be desired as results are largely historical and not projective. Indeed, our level of confidence in price projections tends to be significantly lower than the assurance with which physical output or utilization is estimated. Prices affect costs of inputs as well as the value of output, and the difference of the two affect the repayment schedule of loans. Do we really know what forces and what effect they (input and product prices) have on farm real estate values over time? Obviously, agricultural productivity is only a minor force in determining land values in many cases. General economic activity can only be an insignificant factor also in many areas. Is land valuation a subjective appraisal which is largely psychological in nature? Can the farm management people tell us more precisely how the use of more machinery and less labor with accompanying substitution and scale effects change the cost of output? To what extent should the repayment schedule on loans formally take into account the varying firm profit expectation over time?

The problem of acquisition or control of resources in sufficient quantity and quality becomes increasingly important as agriculture becomes more highly commercialized. A major problem still exists in our society as to how a farm may be transferred to succeeding generations without going through the cycle of improvement and depletion. Partnerships, corporations, perpetual debt and perhaps others have been suggested to cope partially with this problem, but the real question is have we exhausted the possibilities which might make it easier to obtain and/or transfer the resources as needed in order to compete effectively?

The managerial ability of a farmer constitutes probably the single, most important determinant in acquiring and controlling capital resources. The criteria used by lenders in evaluating the financial ability of a farmer are vague and inadequate. Most lenders will agree that poor financial management is by far the main cause of delinquency in repayment. With less than adequate criteria for determining the ability of a farmer to manage his resources, some lenders continue to look first at equity and collateral to secure the loan although the importance of management ability is recognized.
As yet, there has been no general breakthrough which will help lenders select those farmers who can repay their obligations as planned.

Most of the past research has dealt with the financial practices followed by lenders but very little has been concerned with how lenders may operate more efficiently and in providing new and more innovative services to farmers. The commercial banks have been very aggressive on the consumer level but many farm lending agencies have followed many of the same general procedures for decades. The fact that individuals and miscellaneous lenders hold nearly twice the amount of farm mortgage loans held by the next most important organized lending agency (insurance companies) indicates that the formal agencies for whatever reasons are not fully meeting farm mortgage credit needs. The amount of merchant credit extended also indicates that perhaps the short-term and intermediate credit available from the conventional lenders does not fill agriculture’s requirements completely.

Much can be said about the adequacy and inadequacy of the various theories needed in examining the current and future credit problems. Much of the micro- and macroeconomic theory is useful in approaching credit problems, but considerable advances have been made in our sister disciplines—psychology, philosophy, mathematics and the hybrid, operations analysis—which may contribute toward the improvement and applicability of our concepts. More significant advances in managerial theory would lead to a better understanding of loan applications and improve the ability of the farmer to utilize a larger capital base.

The rapid changes which are taking place in the organization and adoption of technology suggest that we should search for an adequate theory of technological evolution which will help to indicate an optimal organization with appropriate technology which can be expected over the next several decades. This would help in making predictions regarding the financial needs of farmers and in providing for an adequate supply of capital. Closely related to this suggestion is the need for a more applicable theory of institutional and cultural change which would permit the credit market to operate more efficiently within the known constraints.

An improvement in the rate of capital accumulation is a generally accepted goal. How much do we know about how farmers accumulate capital over their life span? What can we say about the savings and investment function of farmers under varying conditions? Further, what do we know about the time preference system of farmers in production and consumption activities under varying degrees of asset control? In spite of a fairly appropriate set of models currently available, how much data and information have our production economists...
given us regarding time production possibilities of farms under varying situations? Not unrelated to this need for knowledge of how capital is accumulated is the need to know more about the value systems of farmers and how their attitudes toward capital and credit are developed. To what extent and by what methods value systems and attitudes should be influenced is a debatable problem, but nevertheless extremely important, in achieving social and economic goals.

As the managerial level of farmers improves, the capital needed will also increase; but can we speak intelligently about the capital requirements and the necessary ability to utilize it efficiently, particularly as the farmer emerges more from the noncommercial to the commercial sector of agriculture? The appropriate role of the public lending agencies could well be one of providing joint technical assistance and credit to emerging commercial farmers who due to lack of experience and knowledge of the commercial farm business appear as high risk borrowers. Some avenue of "escape" should be provided for the individual from the noncommercial sector who has the potential to enter the commercial farming business to prevent him from being "locked in" by the culture and the economy in which he resides.
The conference found time for questions from the audience. Here a participant listens to an answer to one of his questions.

Besides formal discussion periods, participants had a chance to discuss the papers and viewpoints informally.
Presenting a paper on the farm labor market was Bob Jones of Purdue University. On the left is Peter Helmberger, chairman of the session. Awaiting his turn to comment on several of the papers is A. Allan Schmid.

After listening to Bob Jones and Allan Schmid, the audience responded with comments and questions. As chairman, Peter Helmberger directed the question-answer period.