Chapter 27

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# Needed Research on Capital and Credit

THIS CHAPTER is concerned with possible further studies in capital and credit, and priorities for undertaking them. In addition to making some specific research suggestions, a classificatory scheme is presented to aid in organizing the research ideas expressed in earlier chapters.

The first topic considered is one of criteria for selecting research activities. Definitive operational criteria are not available, but the classificatory scheme presented here attempts to relate studies to ultimate purpose. This provides a framework used in the remainder of the chapter. In the second part of the chapter, some specific suggestions for research are made within the confines of a usual definition of farm capital (material resources used in the farming operation). Thirdly, under a broader definition of capital including human resources, the study of the relation of low-income problems to capital formation and credit is considered.

## A CLASSIFICATORY SCHEME

The column headings in Table 27.1 provide a way of classifying studies. Cases that do not fall into any one classification can be placed under a given heading according to their major emphasis. The first column heading, description, refers to data-gathering and presentation. Using a medical analogy, this step corresponds to recording the patient's temperature. The second heading, research in life processes, concerns understanding the behavior of the phenomenon in question. For example, it includes estimation of the influence of variables on the demand for and supply of credit and other studies on how the credit markets function. Under the next heading, diagnosis, fall many of the contributions in this volume. The diagnosis about the capital markets given by some has been "adequate," while by others it has been "imperfect."

Prognosis draws on the preceding three steps. As an example, it was pointed out by Heady in Chapter 7 that the enlarging bundle of resources farm operators use will lead to growth in the demand for credit over future years. Specific predictions about this demand can help private and public credit institutions prepare for the future. Another

Table 27.1. Classification of Studies in Agricultural Finance

| Item | Description | Research in life processes | Diagnosis | Prognosis | Prescription | |
|---|---|---|---|---|---|---|
| | | | | | Already under debate | Suggested by the research |
| Agricultural credit | 29 (3p) | 14 (2p) | 10 (3p) | 1 | 0 (1p) | 0 (1p) |
| Farm taxation, local government and public finance | 19 (1p) | 9 (2p) | 3 (2p) | 0 | 0 (4p) | 0 (2p) |
| Farm real estate value | 8 | 8 (4p) | 0 | 0 | 0 | 0 |
| Farm financial management | 6 | 4 | 4 | 0 | 0 | 0 (1p) |
| Agricultural risk and insurance | 7 | 5 (1p) | 3 (1p) | 0 | 0 (1p) | 0 |

example is Baughman and Wetmore's analysis of the probable future supply conditions for credit in agriculture if tight money continues (Chapter 12). Prescription is another important follow-up of the diagnosis. Research can throw light on effects of (1) measures already being debated, and it can bring out for consideration (2) new measures suggested by the diagnosis. Examples of the latter occur in the Back-Hurt (Chapter 20) and Coutu-Lindsey (Chapter 21) contributions. These chapters outline possible policy measures that stemmed from the authors' analyses of low-income farming.

So far only the column headings in Table 27.1 have been discussed. The headings provide a framework for the discussion of needs in the remainder of this chapter.

The rows in Table 27.1 help to portray the present state of research. The numbers were compiled from a summary of in-progress research projects in agricultural finance at the land-grant colleges and U. S. Department of Agriculture.[1] Each project was classified under one of the column headings by judgment on the basis of the project description. A project that did not fall exclusively under one heading was classified according to primary emphasis, and a "p" was recorded under any other relevant heading. Thus the p's refer to numbers of projects partly concerned with the heading but with primary emphasis elsewhere.

## FIVE SUGGESTED PROJECTS

Although the weighting in Table 27.1 is already toward description, a first suggestion is for another project under this heading.

[1] USDA, Agr. Fin. Rev., Vol. 21, GPO, Washington, D.C., July, 1959, pp. 96-117.

## Typical Balance Sheets

An advantage of a balance sheet approach is that it reveals the total capital and liability situation instead of concentrating on only one asset or only one credit instrument. A start toward this type of information is provided by the Balance Sheet of Agriculture for the United States.[2] For analytical purposes, disaggregation is needed not to regions alone but to typical situations. This is particularly important for keeping track of the financial condition of farmers, because favorable and unfavorable situations in an aggregate balance sheet can offset one another.

The breakdown used in gathering USDA farm costs and returns data is a starting point for arriving at relatively homogeneous farming situations.[3] For each, a three-way age classification might be sufficient: young, middle-aged, and elderly operators. If age is sufficiently correlated with tenure position and with other characteristics that influence the asset-liability structure, no further breakdowns might be needed.

Costs of acquiring this basic information appear small viewed against the large number of descriptive projects receiving support. This is one area where agriculture does not match other sectors in the mass of information available, due to the published financial data on large corporations. The information would be useful to makers of agricultural policy, to public and private banking institutions, and to those who sell to farmers.

## Projecting Ahead Under Alternative Conditions

Perhaps the most glaring lack in Table 27.1 is under the prognosis heading. Therefore, a next suggestion is to use the foregoing information in "near- and far-term outlook" work.

Rather than concentrating on outright prediction, projectionists might consider alternative contingencies. Assumptions as to changes in type of farming and technology may largely determine the asset side. This aspect of prediction may be easier since it depends on things we are used to in trying to predict. The structure of liabilities will depend in part on (1) the relative importance of different credit institutions, and (2) how general credit conditions affect the supply of credit. Income and savings of farmers between the present and the period of projections will influence the balance sheet. Savings need to be projected and appropriate assumptions made about the extent to which savings will be used in building up assets or in reducing liabilities.

While the suggested projection would be aided by further research under the heading of life processes, its initiation does not have to wait on that kind of research. It could be made a part of the present outlook work. Longer term projections would make possible a less foggy picture

[2] USDA, Balance Sheet of Agriculture 1959, Agr. Info. Bul. No. 214, GPO, Washington, D.C., 1959.

[3] Farm Costs and Returns, Commercial Family-Operated Farms by Type and Location, ARS, USDA, Agr. Info. Bul. No. 176, GPO, Washington, D.C., 1959.

of the future environment of farming that would aid in anticipating financial problems as well as many other policy problems.

## Credit Adequacy

A definition of the word "adequacy," in relation to credit, might be "use of all the credit that can be productively borrowed on terms that reflect the alternative uses of the credit." If accepted, this definition gives a criterion for doing survey research under the diagnosis heading.

Random sampling is one of the most important attributes of the suggested surveys. This step is necessary to find both those farmers who are being served by financial institutions and those who are not. The following four-way frequency table would be filled in for a given farming area:

| NEED CREDIT | | DON'T NEED CREDIT | |
|---|---|---|---|
| WANT | DON'T WANT | WANT | DON'T WANT |
| | | | |

If we knew what proportion of cases falls in each cell and something of the characteristics of farms concentrated in the cells, a more objective appraisal of adequacy would be possible. The indication is that credit is adequate when farmers neither need nor want credit. Significant inadequacies would be indicated by a large number of farmers in the "Need Credit" category. If a farmer in this group wants credit, external capital rationing is suggested. If he does not want it, internal rationing is suggested.

A crucial question is how the state of need is to be estimated. The experience of persons actually in the lending business might be drawn upon in answering this question. Need would be judged by using these persons' lending standards, and the standards would be altered only when it was clear that they did not result in "good judgment" of loan productivity. Alternatively, objective lending criteria might be devised by the researcher — a problem being to achieve standards that are really more reliable than those of experienced lenders. Since ideas about need may depend on the conditions under which credit is available, these conditions should at least be kept explicit and perhaps varied to see how they affect results.

## Asset Formation

The next suggestion falls under the heading of research in life processes. It has to do with the acquisition and transfer of wealth. If research funds were very limited, even a few case studies would be instructive.

Major sources of wealth for an individual are: savings, inheritance, and capital gain (cf. Chapter 2). These sources would be traced through time. For example, in tracing the effects of the federal tobacco program, it has been estimated that this program imparts a sale value to land with tobacco allotments perhaps ten times the value of equivalent land without allotment.[4] For a typical multiple unit operation with 15 acres of tobacco in the coastal plain of North Carolina, the allotment value might be $37,500, an amount more than half the total asset value of the farm business. The recipient of this gain was the person who owned the land during the rise in value. Some of these people are still alive and own the land. Others have died, and the gain has gone to their heirs. Some heirs have scattered throughout the nation. Others are still on the farm, but their financial position may have been affected by the necessity of buying out their co-heirs.

The same idea cited in the example of the tobacco program applies to other causes of change in wealth, e.g., rising general land values or ups and downs in farm income. These studies would aid in making the projections recommended earlier. They would make it possible to better anticipate and aid credit adjustments.

The studies should aim at more than a cross-section analysis. The 25-year-old farmer of today cannot reliably be predicted to have a financial position fifteen years from now like that of the 40-year-old farmer of today. Witness the error if the prediction had been made fifteen years ago. This type of prediction would presuppose no change in technology, credit conditions, and factor and product prices. A better clue to the future may be to find out how — through time — farmers have acquired wealth, and then to consider the probable continuance of wealth acquisition relative to future trends in asset requirements for farming.

## Effects of Federal Reserve Board Decisions on Farming

The president of a southern country bank has stated that, in contrast to the late 1950's, applications for farm loans are being turned down automatically in the 1960's if they fall in the bottom third in terms of quality. Here is evidence that tight money has had an effect on borrowing. Have farmers turned primarily to kinds of credit other than bank credit? Or have they foregone real farm investments? This is research in the life process that is needed in evaluating national monetary policies.

[4] F. H. Maier, J. L. Hedrick, and W. L. Gibson, The Sale Value of Flue-Cured Tobacco Allotments, Va. Agr. Exp. Sta. Tech. Bul. No. 148, Blacksburg, 1960.

## BROADER DEFINITION OF CAPITAL

So far, this chapter has dealt with the usual farm business definition of capital. Brinegar's contribution to this volume (Chapter 3) gives a comprehensive list of the additional kinds of capital committed to agriculture. For instance, additional physical capital includes such things as roads and capital used by firms that produce inputs purchased by agriculture.

Enlarging the scope further to encompass human capital enables us to discuss the relation of credit to low-productivity or low-income problems. These problems are related to credit partly, of course, because in the course of their solution credit of the traditional kind may be involved. More importantly, however, their solution will involve changing the quality of human capital.

### Three Kinds of Low Productivity Farming

Consider first the situation often thought of in connection with "hill" people. Farming techniques are old-fashioned and show little tendency to change. Living levels and way of life tend to stay static while the rest of the world progresses. The phenomenon can sometimes persist remarkably close to cities. There is no ignorance of alternatives, as some of the farmers have at one time had high-paying urban employment in many different sections of the country. They have returned to their original locale and way of life out of preference. A majority of these persons have relatives in high-paying urban employment.

Rather than lack of knowledge of alternative job opportunities, impediments to change for these people may center in community-wide attitudes. They are caught in a total situation that includes lack of desire to change, lack of acquired skills, and lack of confidence in their ability to change.

At least one capital problem and two credit problems are related to ameliorating this situation. The capital problem has to do with human capital formation, viz., education, which helps both by increasing people's ability through developing their latent powers and through influencing outlook and attitudes (cf. Chapters 22 and 23). Both skeptics and those who are more idealistic about possibilities for advancement through education can cling to their beliefs because the concrete effects of education are often difficult to trace even though they may be of utmost importance. If education is in fact a major long-run solution for the kind of low-income farming situation discussed herein, the prospects for success are not clear. As often stated, there are impediments to optimal investments in the human agent that are particularly felt in the southern states where low productivity farming is concentrated. The vicious cycle of low per capita income providing a small local tax base and preventing higher education expenditures that would raise per capita income is aggravated by the high out-migration rates from the Southeast

(cf. Chapter 4). High birth rates coupled with out-migration mean that compared to other regions each earner is contributing to the education of a disproportionately large number of children.

Another approach more direct than general education is that of imparting technical assistance to low productivity farmers. A credit problem then arises because credit may be complementary with technical assistance. Most experts seem to agree that credit alone is not sufficient to solve typical low productivity problems. But as farmers acquire more ability, they are likely to become able to control profitably a larger bundle of resources. Credit will be needed to acquire these resources. Generally, these persons have not been in the credit market before, and due to their inexperience they may appear to be high-risk borrowers; therefore, private lending institutions may be understandably reluctant to supply credit to them.

Another and less important credit problem may be associated with the aftermath of doing away with low productivity situations. This is the problem of adjustment of private lending institutions to a new type of farming that will emerge when low-income operations cease. Of course, in some instances there may be no problem because the final agricultural adjustment may involve areas going out of production altogether. In other instances where there is now subsistence cropping, the final adjustment may involve, for example, large dairy farms. As suggested in the first part of this chapter, balance sheets need to be projected ahead for areas in order to anticipate future demands for credit. This is especially true in dynamic situations such as would be encountered by successful solution of low-income problems.

Consider now a second form of low productivity farming not so widespread as the first. The farmers are middle-aged or older, and they reflect a community situation which is in the process of taking care of itself. There may be nearby industrialization that is attracting younger entrants into the labor force so that they do not remain in a low-income farm situation. Or a new type of farming may be adopted that will gradually displace the low-income farmers as they grow old and retire. Though their land may be much in demand, they will cling to their way of life because they are not inclined to start a new life at an advanced age. Since this situation is happily resolving itself with time, it does not appear to have the same order of urgency as the first type of low productivity situation described.

A third type of low-income farming is quite different from the first two. It involves share-croppers and operators of small single units. Unlike the first two situations which involve predominantly subsistence farming, the agriculture in this third type of situation is based on high-value crops such as cotton, tobacco, peanuts, and even cash grains. Incomes of the croppers and many single unit operators are low because these persons contribute little except their labor power to the productive process. In contrast to the first two situations, farming methods are up-to-date. Fertilization levels are as high as scientific recommendations, latest plant varieties are used, and tractors are a prevalent source

of power. These farming advances are due in part to high-level management of the multiple units on which the share-croppers operate. Enough single-unit operators may be progressive in adopting new techniques so that these can be copied on a wide scale by less innovative farmers.

Two paths out of this type of low productivity situation may be distinguished. Both paths could be followed simultaneously.

Keeping the quality of human input constant, incomes might rise through an increase in remuneration to the labor factor in these areas — a process already taking place to some extent. Due to population pressures, the migration valve to northern cities is already open, and it acts to lift southern farm wage rates. Incomes are still low, relatively, but they have risen over the years along with the rising real wage in the nation as a whole. Local industrialization in an area also serves to affect remuneration of labor in agriculture. While it is difficult to generalize about the consequences resulting from rising agricultural labor returns in an area, two major possibilities are (1) that such a rise will force land rents down, supposing land to be the residual claimant whose residuum is now reduced due to higher labor costs, and (2) that it will hasten substitution of machinery and other inputs for labor. In some cases the area may be forced out of agricultural production entirely if revenue available for land rent becomes negative due to high labor costs. This is most likely to happen where competition from outside regions — as with cotton — is already operative.

The other path to higher income for this third situation involves changing the quality of the human input. Investments would be made in the human agent so that low-income people could receive a return on their decision-making abilities as well as on their physical labor input. This path might force the demand for land in an area upward, as the supply of farm operators wishing to farm could be expected to increase. Return to existing management might be decreased. The management return for older operators is of the nature of quasi-rent associated with ability to manage, which was acquired partly through experience. A decrease in returns to management would be expected due to a larger total supply of management for the area.

The above discussion suggests that investment in human agents in these situations might take the form of increased expenditures for general public education, with technical assistance possibly de-emphasized. Technical assistance pointed directly at farm decisions would increase the supply of management characteristics with which these areas are already well endowed.[5]

[5] For other distinctions between low-income types, see C. E. Bishop, "Effects of alternative public policies on the small farm problem," Increasing Understanding of Public Problems and Policies, 1956, pp. 73-79; and W. E. Hendrix, "What to do about low income in agriculture," Jour. Farm Econ., Vol. 38, No. 5, Dec., 1956, pp. 1385-97.

## Research

The three types of low productivity situations discussed call for different research emphases, though they have common elements. The first (hill-people type) suggests research concerned with (1) attitudes, (2) investment in human input via general education, and (3) technical assistance. Attitudes may include aversion to borrowing. However, a hypothesis is that this is only part of a Weltanschauung that needs to be changed more fundamentally than to try to operate on only-symptomatic beliefs. Once an outlook that includes determination to progress to higher levels of living is imparted, the negative attitude toward credit is among the many attitudes that will then change. However, problems reflected in attitude changes will not be considered here (see Chapters 20 and 21). As indicated above, (2) and (3) of the suggested research have a closer relation to capital and credit.

The second (disappearing) type of low-income farming was not found to be of the same order of urgency as the other types. Therefore, the second type is not given special attention here.

For the third (cash cropping) type, it was mentioned that whatever the specific nature of solution of low-income problems in these areas, success in raising incomes would entail substantial changes in labor supply for these areas leading to complex farming adjustments. Credit requirements change with any substantial agricultural adjustment. Possibilities for research meeting these needs were discussed in the first part of this chapter. For the third low-income type, education represents the main effort related to capital and credit.

With the similarities and differences between the three types of low-income situations in mind, we may now enumerate several areas of research that appear promising in the areas of (a) capital formation and (b) credit in relation to low-income farming.

Public education. The first of four possibilities for more research on education is to undertake more semi-descriptive studies of school finance in low-income farming areas. In addition to a detailed account of how expenditures and sources of revenue differ among parts of the nation, an attempt could be made to determine how proposed measures for federal aid to education — as well as other possible changes in school finance — would aid low-income farmers. The research would provide a running check on progress in raising educational standards for people in these areas.

A second area of research could center on attempts to measure costs and returns from education. Several measurements at the national level have been attempted, and costs and returns from certain types of professional education have been estimated. The results suggest that it is possible to get some notion of the economic return from educational investment. Costs include expenditures necessary to impart education plus any foregone earnings of students during their time of education. Returns include earnings of students over and above what they would have been in the absence of education. That this approach is practicable

has been shown in previous research. Data should now be used for specifying, on purely economic grounds, the case for additional public education expenditures in states and areas where per pupil expenditures on education are low relative to the rest of the nation (cf. Chapters 4 and 22). Suppose the capacity for education of people in the South, and in New York and other states with high education expenditures, were the same — an expected phenomenon if for no other reason than the large migration to the latter areas. Under such conditions there would be prima facie evidence that either New York is heavily overinvesting in education or the South is heavily underinvesting. This proposition needs to be tested.

A third area relates to the quality and content of the educational investment. The agricultural economist may not be uniquely qualified to study this aspect of education. However, he could, in cooperation with education specialists and others, undertake studies of the extent to which education in low-income rural areas is preparing these persons for the future. Insight might then be gained as to how to improve the educational programs.

A fourth possibility for research on education would be the study of ways to increase private loans for professional and technical education. What is the extent of this practice at the present time? How consistent is it with existing standards of lenders? Does it offer promise of being a significant source of increased educational expenditures?

Credit and technical assistance for farmers emerging from low-income status. Further study could be made of capital requirements and ability to use capital as farmer management levels improve. Several studies have been completed.[6] Linear programming can be conducted, with production coefficients introduced as variables, to determine how capital requirements vary with managerial ability. Conjectures could then be made as to how capital requirements will grow over time as farmers emerge from low-income situations. Experimentation in actually granting credit and technical assistance to selected farmers has been started by the North Carolina Rural Rehabilitation Corporation. Continued experiments of this nature seem desirable.

Credit institutions in relation to economic development. A problem is how to arrange a role for public agencies different from that of private banks and other private lending institutions. There is little point in having public institutions which are simply and solely competitors of private institutions. The discussion in previous parts of this chapter suggests that there may be a unique role for credit institutions that private institutions cannot be expected to fulfill. The public institutions,

[6] C. E. Bishop, "Part-time farming and the low income farm problem," Jour. Farm Econ., Vol. 37, No. 5, Dec., 1955, pp. 1428-35; Quentin W. Lindsey, Transforming Low-Income Farms into Profitable Commercial Farms, A. E. Info. Series No. 76, North Carolina State College, Raleigh, May, 1960; Quentin W. Lindsey, Financing the Development of Commercial Farms, A. E. Info. Series No. 77, North Carolina State College, Raleigh, June, 1960; Lee R. Martin, Arthur J. Coutu, and H. S. Singh, "The effects of different levels of management and capital on the incomes of small farmers in the South," Jour. Farm Econ., Vol. 42, No. 1, Feb., 1960, pp. 90-102.

for instance, might be geared to provide joint technical assistance and credit. The previous discussion also suggests a role for public institutions in providing credit for farmers emerging from a low-income status who, due to lack of experience, appear as high-risk borrowers to private lenders.

Periodic rethinking of alternative institutional arrangements for providing credit should be undertaken. This might be carried out in conjunction with case studies of the experiences in lending of some of the public credit agencies.