

Progress Report 70

September 1958

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Farm managers face the problem of deciding what crops to grow and what livestock to produce. As managers, they must decide what actions to take, when to take them, and the vigor with which each action should be pursued.

Farm management has been of interest to "dirt farmers" in the United States since the days when most "free" government land suitable for farming was settled. It has been of interest to research workers in agriculture since the establishment of the Land Grant College System. Farm management has been studied from different viewpoints and with different purposes in mind. Some workers have been interested in "what" a farmer does when he manages, as opposed to what he does when he labors. Others have been interested in "how" a farmer manages a particular farm, or type of farm. Some workers have been stimulated by the desire to describe what managers do and how they do it in order to improve and extend the body of knowledge concerning management; others have been interested in improving the efficiency of farm managers, and thus, it is hoped, the incomes which they produce for themselves and their families from the land, labor and capital which they employ.

Johnson,^{1/} and workers who have been associated with him, have developed the idea that there are five tasks, not necessarily separate and distinct in point of time of performance, which managers do. They are (1) observation, (2) analysis, (3) decision making, (4) taking action, (5) accepting responsibility (economic and other types). There are indications that these may not be the only jobs which farm managers do when they manage, e. g., recognizing a problem or undesired set of circumstances may also be a task of management. This point will not be developed here, but is suggested as a reminder that this is an area in which there are still unanswered questions.

In performing the tasks of observation, analysis and decision, the manager attempts to become acquainted with the various alternative courses of action that will attain his goals. He may gather data that provide him with information about the desirability and likelihood of the success of the alternatives. His analysis will eliminate certain of the alternatives and his final decision will fix upon one course of action for him to follow.

Nature of the Study

This study is concerned with how farmers make a particular type of decision - the decision as to what products to produce and how much of each product

^{1/} G. L. Johnson and C. B. Haver, Decision Making Principles in Farm Management, Ky. Agr. Exp. Sta. Bul. 593 (Lexington: 1953)

to produce, i.e., the proportions in which to produce the products selected. The Interstate Managerial Study^{2/} obtained the data which formed the empirical background for this study in 1954 by interviewing farmers in selected areas of seven states. The states were: (1) Kentucky, (2) Ohio, (3) Indiana, (4) Michigan, (5) North Dakota, (6) Iowa, (7) Kansas. One hundred and seventy-two of these farmers, selected at random, were asked, "COULD YOU PLEASE TELL ME HOW YOU MADE UP YOUR MIND ABOUT WHAT OR HOW MUCH OF EACH PRODUCT TO PRODUCE THIS YEAR?" In analysing the answers to this question, the main concern was the procedure which was followed in arriving at the decision. The specific content of the particular decision, such as to produce so much milk, wheat, tobacco, etc., was ignored. After careful consideration, it appeared that the farmers could be delineated into groups according to some of the factors that they believed to be fixed or constant in their situation. These fixed factors aid the decision maker in eliminating certain alternatives from the decision process.

Thus, on the basis of these common elements in their answers to the above question, the farmers were divided into seven "decision-model groups" (a model is defined here as the boundary or guide for making decisions) for purposes of comparison as to other distinguishing traits.^{3/}

Decision Model Groups

The first group included all those who said that they were guided in their decisions as to what and how much to produce by the prices, or by the expected prices, of the products which they could produce. There were 26 farmers in this group. The second group appeared to have a very similar basis for their decisions on what and how much to produce since they said that their income and/or debt repayment needs guided their decisions on what and how much to produce. There were 13 farmers in this group. The third group of 17 farmers included all those who said that government programs were responsible for their production decisions. This was the only type of reason given by this group. Group four was made up of farmers who said that their land and their cropping patterns (rotation considerations) guided their decisions, and it also included those farmers who listed the effects of government allotments and programs, in addition to their land and cropping patterns. This group included 26 farmers. Thirty farmers who indicated that their livestock programs and the attending feed needs dictated their production decisions were placed in group five. Group six was comprised of 32 farmers who said the limitations and capabilities of their land, in conjunction with their needs for feed to support their livestock programs, determined what products they produced. Group seven included 19

^{2/} For more details of this study see J. W. Hubbard, A Study of the Decision Making of Farm Managers in Relation to Outputs and Specific Inputs, (Unpublished M. S. thesis, Department of Agricultural Economics, University of Kentucky, 1957).

^{3/} One miscellaneous group, only nine farmers whose answers failed to indicate any elements in common with either of the other seven groups, was eliminated from this part of the analysis.

farmers who seemed to have more complex models for deciding what and how much to produce than most of the other groups. A requirement for inclusion in this group was consideration of government allotments and programs as a major basis for deciding what to produce, but other minor factors such as land capabilities, livestock programs, feed supplies, buildings, fences, and other real estate improvements were included.

In order that the foregoing groups might be readily compared in the following sections, and in order that the reader might know which group was being discussed, each group was given a name which was intended to convey, in abbreviated form, the primary influence(s) on the production decisions of the group. These names were

- 1) Price,
- 2) Income and Debt,
- 3) Government,
- 4) Land and Government,
- 5) Livestock and Feed,
- 6) Land and Feed, and
- 7) Land, Livestock and Government.

The reader should note that these were not the only things considered by the groups of farmers in their decisions on what and how much to produce, but that their answers to the questions indicated that these were primary considerations in each case. The group names will be used in the comparisons which follow.

Method of Analysis

The 163 farmers were divided into the above-named seven decision model groups for the purpose of testing an idea (hypothesis) which was held by the writer regarding the relation between the different methods of arriving at solutions to product combinations and certain other characteristics of the groups. This hypothesis was:

"If farmers are limited by assuming different restrictions in deciding which products to produce, and how much of each product to produce, there will be observable differences among them in relation to certain attributes such as age, education, size and type of farm operated."

If this hypothesis is verified, i. e., if examination of the seven groups reveals that there are distinct or significant differences among them as to certain attributes, the conclusion will be that if other groups of farmers are found who have the same characteristics as one of the seven studied groups, these other groups will employ similar models to decide what and how much to produce. Knowledge of this type can be useful to teachers of farm management as an aid in presenting principles of decision making to students, i. e., different principles may apply to different groups. Research workers may find this to be an extension of their understanding of the choice making of men actively engaged in farming.

The seven groups of farmers were compared as to age, amount of education, size and type of farm, income, and other factors. The chi square statistical test was used in making these comparisons.^{4/} The assumption underlying the use of this statistical test was that if there were no relation between the seven decision model groupings and the other factors by which the groups were compared, the farmers would be distributed randomly (purely by chance) over the range of values of the other variable.^{5/} For example, if there were no relation between the models for decision discussed here and the variable, age, there presumably would be no definite pattern to the age distribution of the 163 farmers.^{6/} Brief discussions of nine of these significant attributes will be presented here.

Age of Decision Makers

Age is a characteristic of people which is of interest to most students of human behavior. While it may be that many other factors are related to the decision model groups, ease of measuring makes age an important variable for predicting the actions of groups. Thus, the seven groups were compared as to whether they were under 40, between 40 and 55, and 55 or older. The proportions of each of the decision groups in each age range are shown in Table 1.

TABLE 1. - DISTRIBUTION OF FARMERS BY DECISION MODEL AND BY AGE^{a/}

Decision Model	Ages			Total Percent
	39.9 or less	40.0-54.9	55.0 or over	
Price	34.6	53.9	11.5	100.0
Income and Debt	15.4	46.2	38.4	100.0
Government	29.4	29.4	41.2	100.0
Land and Government	28.0	40.0	32.0	100.0
Livestock and Feed	26.7	46.6	26.7	100.0
Land and Feed	12.5	31.2	56.3	100.0
Land, Livestock and Government	63.1	31.6	5.3	100.0

^{a/} Chi square significant at less than one percent.

There was a larger proportion of the "Price" farmers in the 40- to 55-year age range than in either of the other ranges. The "Price" group also had a higher proportion of farmers in this age range than any of the other decision groups. Only 11.5 percent of the "Price" farmers were 55 years old or older. The largest

^{4/} The seven decision model groups were compared as to 35 other variable factors: 16 of these comparisons resulting in statistically significant departures from random, or chance, distributions.

^{5/} G. W. Snedecor, Statistical Methods, (Ames, Iowa: Iowa State College Press, 1956), pp. 18-34.

^{6/} If further details of the analysis are desired, see Hubbard, op. cit., Ch. IV.

proportion of the "Income and Debt" farmers, 46.2 percent, were also found in the 40- to 55-age group, but there were also 38.4 percent of this group in the 55 years and older class. The largest proportion of the "Government" decision group, 41.2 percent, were in the 55 or older group, with 29.4 percent being in each of the other two age groups. The "Land and Government" and the "Livestock and Feed" groups were both concentrated heaviest in the 40- to 55-year range, with 40.0 percent and 46.6 percent, respectively. The remaining farmers in both of these decision groups were about equally divided between the under 40 and the over 55 age groups. The "Land and Feed" group was distinguished by having a larger proportion of farmers in the over-55 age group and a smaller proportion in the under-40 group than any of the other decision groups. The "Land, Livestock, and Government" group exhibited a concentration which was the reverse of that of the preceding group. This group had higher and lower proportions of its members in the under-40 and over-55 age groups, respectively, than any of the other decision groups. Thus, it would seem that there were distinct age difference among the seven groups.

The seven groups were also distributed significantly in relation to the length of time which the members of the groups had spent operating farms for themselves. However, since this characteristic is thought to be closely associated with age, it will not be discussed.

Decision Maker's Education

If education is effective, it would appear that it would influence the decision making of individuals. The influence of the level of formal schooling attained by the members of the seven decision groups on their production decisions seemed to be a logical inquiry. The distribution of the seven groups of education was statistically significant, but oddly enough, not as highly significant as the age distribution.

The groups were compared (Table 2) on the basis of having completed (1) the seventh grade or less, (2) the eighth grade, (3) grades nine through eleven, and (4) the twelfth grade or higher.

TABLE 2. - DISTRIBUTION OF FARMERS BY DECISION MODEL AND BY EDUCATION^{a/}

Decision Model	Last Grade of School Completed				Total Percent
	7th or less	8th	9th-11th	12th or higher	
Price	11.5	26.9	23.1	38.5	100.0
Income and Debt	23.1	7.7	30.8	38.4	100.0
Government	18.7	18.7	31.3	31.3	100.0
Land and Government	26.9	38.5	23.1	11.5	100.0
Livestock and Feed	10.0	50.0	6.7	33.3	100.0
Land and Feed	21.9	34.4	12.5	31.2	100.0
Land, Livestock and Government	0.0	15.8	26.3	57.9	100.0

^{a/} Chi square significant at 5 percent.

The "Land and Government" group had a larger proportion of men who had completed the seventh grade or less, and a smaller proportion who had completed the twelfth grade or more, than any of the other groups. The "Livestock and Feed" group had a larger proportion who had completed the eighth grade than any of the other groups. The "Government" group had the highest proportion who had completed nine through eleven, while the "Land, Livestock and Government" group exhibited a reverse tendency, having not only the highest proportion who had completed the twelfth grade, but it also had no farmers who had completed as little as the seventh grade. The "Government" group was distributed more nearly as the statistical model indicated that it would be, if the distribution had been random, than any of the other decision groups.

Size of Farm

The acreage of the farm which a farmer operates is a characteristic which is easy to determine, but is farm size meaningfully related to the way in which he decides what products to produce? The seven groups were classified as to the proportions who operated: (1) farms less than 130 acres, (2) farms 130 to 269 acres, and (3) farms of 270 acres or more. Almost three-fourths of the "Price" group were equally divided between farms of 130 acres or less and farms of 130 to 269 acres. The "Income and Debt" farmers were found largely (69.2 percent) on the 130 to 269 acre farms, with the remaining 30.8 percent equally divided between the smaller and the larger size farms. The largest proportion of the farmers in the "Government" group (58.8 percent) operated farms of 270 acres or more. The "Land and Government" and the "Livestock and Feed" groups did not show extreme concentration in either of the farm size ranges, being about equally divided. The heaviest concentration of the "Land and Feed" farmers (43.8 percent) was found on the 130 to 269 acre farms, while only 25 percent of this group operated farms of 129 acres or less. Twice as many of the "Land, Livestock and Government" farmers operated farms of 270 acres or more as operated farms of 129 acres or less.

Main concentrations (at least 33 percent or over) as well as the ranking within each farm size grouping are shown for the decision groups in Fig. 1.

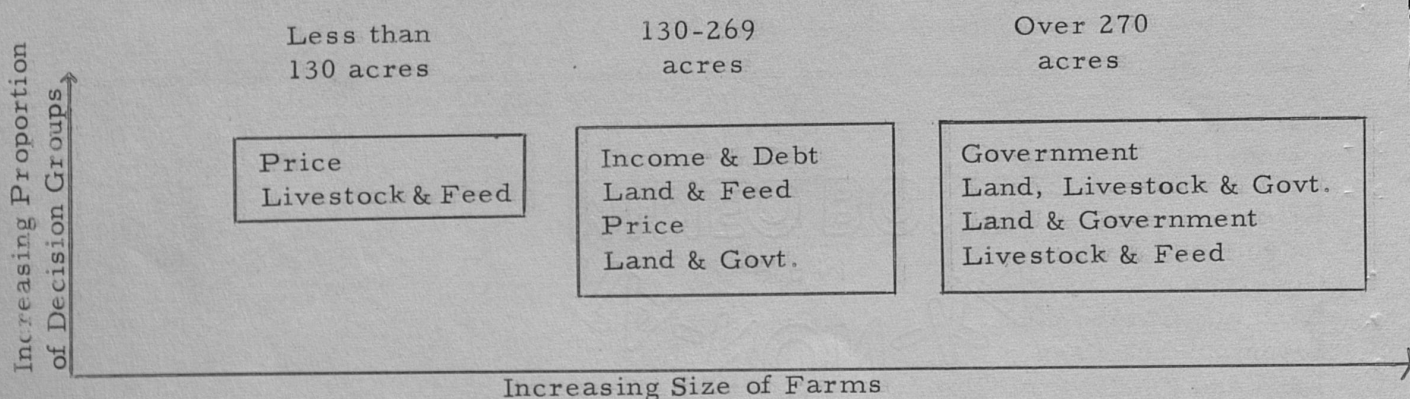


Fig. 1. - Sizes of Farms Which the Decision Model Groups Operated

Decision Makers' Types of Farms

When the information on which this study was based was obtained, the producers of some farm products received price supports, while producers of other products did not. Some products which had price supports were supported at higher levels, relative to the cost of producing them, than others. With this situation in mind, the seven decision groups were compared as to the degree of price support which the products they were actually producing received. The combinations of products which the different farmers produced were grouped into four price support classifications: (1) least support, (2) low intermediate, (3) high intermediate, and (4) most support. The question here was, "Does the degree of price support available for the products which they sell influence the way farmers decide what and how much to produce?" A significant relationship between the degree of price support available for the products of the seven decision groups and the reasons they gave for producing these products provided a kind of reliability test for the decision model groups.

Farmers of four of the decision model groups were found more often in the least price support category than in any other. These groups were (1) Income and Debt, 69.2 percent; (2) Land and Feed, 50.0 percent; (3) Price, 44.0 percent; (4) Livestock and Feed, 41.4 percent. On the other hand, largest proportions of the farmers who used the three other decision models produced combinations of the products which had the highest price supports available. These groups, and the proportions who produced products with most support, were (1) Land, Livestock and Government, 63.2 percent; (2) Government, 56.3 percent; (3) Land and Government, 38.5 percent. The indication that such large proportions of each of the three groups of farmers who included "Government" in their decision models also produced products which had the highest level of price support provided evidence that the seven decision model groupings employed in this study are logical groupings. This assumes that the activities of the government in supporting commodity prices were what these farmers considered when they made their production plans.

Specialization Versus Diversification

The operations of some farmers are specialized for the production of one product or a very few products, while the operations of other farmers are geared to the production of numerous products. The farmers in this study were compared to see whether any relation could be discovered between the type of decision model employed to determine what to produce, and the operation of specialized or diversified farms.

The following groups of farmers diversified their production: (1) Income and Debt, 84.6 percent; (2) Land and Feed, 81.2 percent; (3) Livestock and Feed, 79.3 percent; (4) Price, 64.0 percent. Specialization was practiced by the largest proportions of the two decision groups: (1) Land, Livestock, and Government, 63.2 percent; and (2) Government, 56.2 percent. The farmers of the "Land and Government" group were equally divided between specialization and diversification.

Comparison of the decision groups as to the proportions in each group who specialized in the production of some product (or products), and as to the proportions who produced products with what appeared to be the highest degree of price support, revealed an interesting relation (Fig. 2). With only one exception, the proportions of the groups who specialized and the proportions who produced products with the highest degree of price support were arranged in the same order of magnitude, i. e., the group with the smallest proportion who specialized was also the group with the smallest proportion who produced products with the highest price support. The only exception to this ordering, referred to above, resulted from the slightly larger proportion of the "Livestock and Feed" than of the "Land and Feed" farmers (20.7 percent and 18.8 percent, respectively) who specialized.

It seems likely that this relationship arose from the desire of the specializing farmers to take advantage of available price supports, or the price supports may have influenced them to specialize. The three groups who featured government in their decision models were found to be the three highest in proportions who specialized and who received the most from price supports. It does not appear that such a relation arose from pure chance. An active resolve to take advantage of the economic opportunities presented by price support programs appears to be a more logical explanation. Thus, the contention that the production decisions of farmers are not random, and that the seven decision groups are a logical arrangement, receives added support.

Decision Maker's Price Expectation

When farmers make plans to produce certain products, they are not certain what the prices of the products will be at market time, except in those cases where sales contracts have been made in advance. Even in this latter case there is uncertainty as to the grade of the future products due to weather and other factors, and thus, some uncertainty as to the prices which will be received for them. In spite of uncertainty, farmers have ideas regarding the prices which they are "most likely" to receive.

Since people are different, it seemed reasonable to conclude that different farmers would use different means of determining the product prices which they regarded as "most likely" to prevail at a specified future date. The farmers indicated that they used four general methods in arriving at their expected product prices. Basically, the factors central to the four ways of estimating prices appeared to be: (1) the supply of the product, (2) the supply of the product in conjunction with the demand for it, (3) the supply of the product in conjunction with miscellaneous other factors, and (4) government action. The supply of the product was used for estimating price most frequently by the five decision groups: (1) Livestock and Feed, 64.3 percent; (2) Income and Debt, 53.8 percent; (3) Land, Livestock and Government, 43.8 percent; (4) Land and Feed, 40.0 percent; and (5) Price, 38.5 percent.

If one were basing his price expectation on the traditional economic factors of supply and demand then a prediction of both factors would be necessary for a

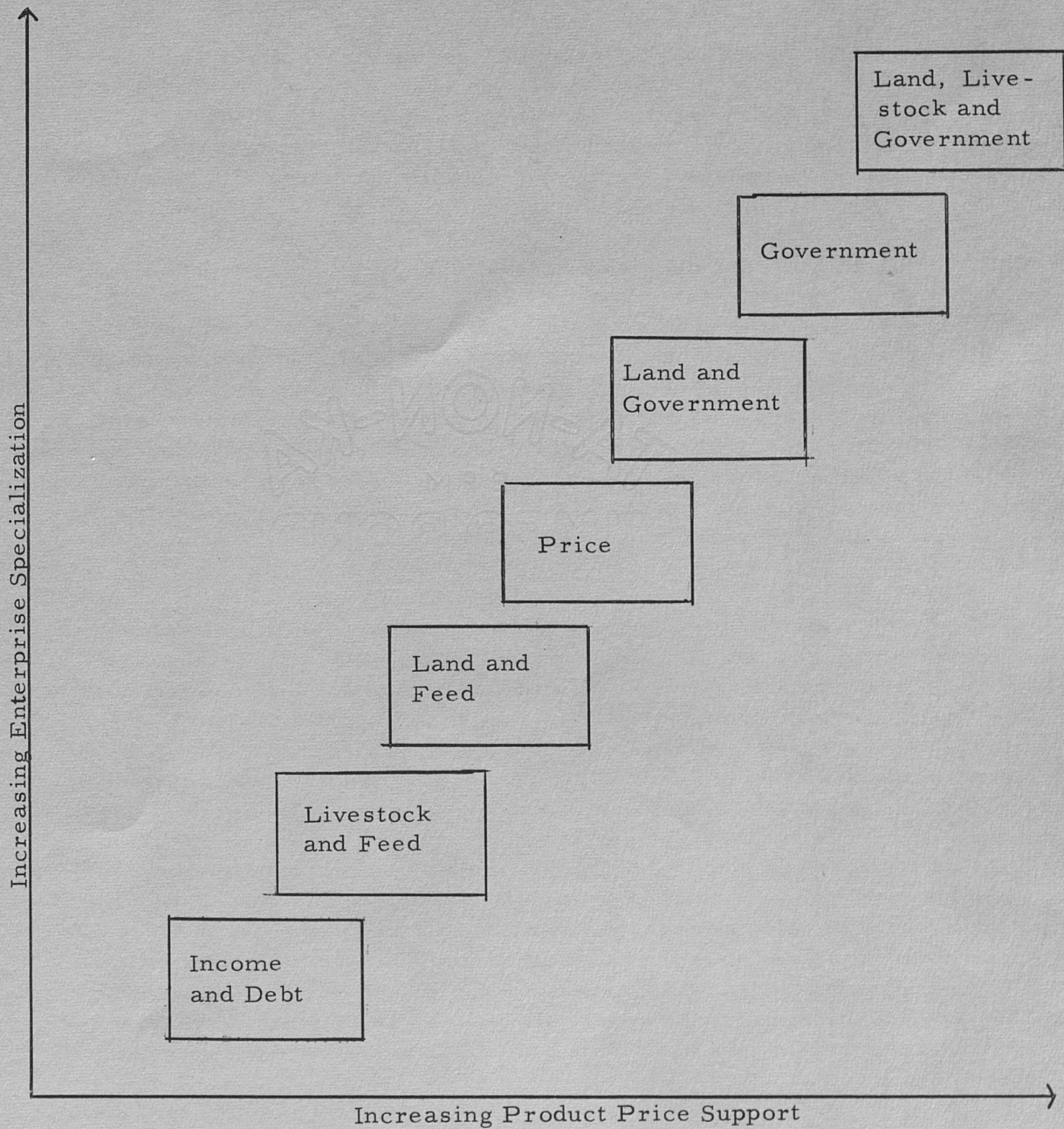


Fig. 2 - Apparent Relation Between Proportions of Decision Groups With Specialized Enterprises, and the Degree of Price Support Available for their Products.

single valued expectation. However, large proportions of the farmers said that they considered supply alone. A single valued price expectation under these conditions would be theoretically improbable. Thus, either (1) the questions concerning price expectations were not fully answered, or (2) the answers to the questions that were asked have been improperly interpreted. It appears that further research would be necessary to clarify this point.

The farmers of the "Land and Government" group apparently attached equal importance to supply, and to supply in conjunction with other factors, one third of them using each of these methods. The "Government" group differed from the other groups since a large proportion of its members indicated that they were evenly divided between the supply-demand and the government action models as bases for forming their expectations of future prices.

Input Price Expectations

The seven decision groups were also compared as to the models used to estimate the future price of some important item which they bought regularly for use in their farm businesses. These items, which included such things as feed, fertilizer, fuel, and seed, are referred to in this study as inputs, since they are bought and "put into" the farm operation. It was hypothesized that the kind of product a farmer produces influences the way he formulates his input price expectations. These input price expectations are important for determining the quantities and combinations of inputs that will be used in producing the products.

There seemed to be five central factors, or groups of factors, considered by these men in estimating the future prices of these inputs. Their answers indicated that these things were not always the same type of things which they considered when they estimated product prices. The important factors considered in this connection seemed to be (1) supply of the input, (2) supply of the input in conjunction with the demand for it, (3) demand for the input, as a sole consideration, (4) production cost (including such things as the cost of strikes and of monopoly conditions in business) and (5) various "noncommodity" considerations such as the presence of inflation or deflation in the economy or of preparation for war. Since the level of statistical significance attached to the distribution of the seven decision groups was not as high for the input price expectation models as it was for the product price expectation models (the 20 percent level for inputs versus the 5 percent level for products), this distribution will not be discussed in detail. However, there were indications that there were distinct differences in the ways used by the different decision groups to estimate future input prices.

Decision Maker Considered Enterprise Expansion

In an attempt to discover how farmers decide whether it would be profitable to expand an enterprise, the men interviewed in this study were asked how they would figure the profit which they would expect to receive if they expanded a hog

enterprise. They were given information as to the cost of producing the additional litters and the income which might be expected. This cost and income information was presented in two forms and the farmers were asked which of the two they would use in solving the expansion problem. One of the methods involve figures which gave for all litters the average costs and returns which could be expected per litter, while the other gave the costs and returns expected from each additional litter. The purpose of this question was to determine the extent to which farmers think in incremental or "marginal" terms. Since this is a different kind of problem from that constituting the central core of this report, there is no reason to expect the farmers to behave similarly in the two situations.

The answers of the decision groups indicated that substantially larger proportions of every group used some method other than the average and the marginal methods of deciding whether to increase the scale of a hog enterprise. The "Government" group, 17.6 percent; the "Land, Livestock and Government" group, 15.8 percent; and the "Land and Government" group, 11.5 percent had the largest proportions who used the average figures to decide whether to expand such an enterprise. The "Price," the "Livestock and Feed," and the "Land, Livestock and Government" groups, with 19.2, 16.7, and 15.8 percent, respectively, had the largest proportions who indicated that they used the marginal calculations. The "Livestock and Feed" group with 13.3 percent, and the "Land, Livestock, and Government" group with 15.8 percent, had the largest proportions who said that they used both the average and the marginal methods.

A decision maker who uses the marginal or additional approach could be characterized as one who is attempting to "maximize" some quantity, e. g., profit, satisfaction, etc. The decision maker who uses the average approach might be described as one who is not maximizing but is attempting to find an "acceptable" solution to his problem. Even though small proportions of the different decision groups used either of the above approaches, it may be significant that those groups which featured price, income or livestock were the "maximizers". Similarly, there may be significance in the fact that the groups which mentioned government tended to be "averagers".

In light of the fact that a large proportion apparently could not be characterized as "maximizers" or "averagers", it can only be concluded that (1) the question was improperly worded, (2) improperly interpreted by the respondent, or (3) the answers were incompletely understood.^{7/}

Decision Maker Commits Errors

It has been suggested that there are two kinds of errors which managers can make in choosing among alternatives. Errors of the first type are committed when actions which should have been taken are not taken, and errors of the second

^{7/} While the question which forms the basis of this report was open-ended, the "expansion of a hog enterprise" question was structured. Perhaps an open-ended or probing type question should have been used in the expansion problem.

type arise from actions that should not have been taken. Thus, Type 1 errors involve losses of potential profits which are not realized due to failure to invest, or to take some other action. Type 2 errors, on the other hand, involve actual losses of investments which should not have been made. The farmers who cooperated in this study were asked which type of error they regarded as most important. Their answers were used in an effort to determine whether the seven groups differed markedly in their attitudes toward mistakes.

It had been observed that the decision groups which featured government in their production choices had also tended toward specialization and high price supports. More complete understanding of the observed relationships between behavior and decision models may be dependent upon knowledge of certain basic personality traits such as attitude toward making mistakes. In the above case, it was hypothesized that the decision groups who depended on government would attach more importance to Type 2 errors, i.e., taking action when they should not, than they did to Type 1 errors. It also appeared likely that these same groups would stress Type 2 errors to a greater degree than the other decision groups.

The "Land, Livestock and Government" group had a larger proportion who were more concerned about Type 1 errors than about Type 2, or who thought both types equally important. The "Government" and the "Land and Government" groups had larger proportions who were more concerned about Type 2 errors than about Type 1 or who expressed equal concern. Furthermore, the three groups who considered government had higher proportions who stressed Type 2 errors than any of the other groups. The "Income and Debt" group, with 41.7 percent in each category, was evenly divided between more concern about Type 1 errors and equal concern about both types. The "Price," the "Livestock and Feed" and the "Land, Livestock, and Feed" groups all had larger proportions who said that they were equally concerned about both error types than who were more concerned about either Type 1 or Type 2. The findings were thought to agree with the above hypothesis.

Implications of the Findings

It appears that a sufficient number of group differences were observed in the study which has been outlined above to justify a tentative conclusion that the seven decision model groupings were logical arrangements. From such a conclusion, the inference that, if the values of the variable characteristics which were found to be significantly related to these decision groupings are known about other groups of farmers then it will be possible to predict the models these other groups of farmers use to decide what products or combinations of products to produce, seems to be supported.

Two groups who may be interested in the results of this study are (1) teachers of farm management, particularly those who work with active farmers, and (2) research workers in farm management.

Note for Teachers and Research Workers in Farm Management

Recommended actions to farmers, based on the traditional assumptions of production economics, have often not been followed. This study suggested that such advice may not be heeded by some farmers who have adapted a particular live-stock program to their farms which they wish to follow even though other systems of farming might produce greater economic returns. Still other farmers appeared to have restricted their production in line with different government policies and programs to the point that their farm incomes were smaller than they would otherwise have been.

Fewer than one-third of the farmers in any one of the decision groups indicated that they used marginal reasoning in estimating the profitability of expanding a hog enterprise. Approximately two-thirds of the farmers surveyed in this study have less than 12 years of schooling. This leads to two questions: (1) Have farm management teachers been assuming a higher educational level than most farmers possess so that teaching of the maximizing principles has been ineffective, and (2) are all farmers interested in maximizing some quantity?

For example, does it not seem probable that all farmers are not interested in making more money? To support this contention, the farmers who attached greater importance to Type 2 errors (acting where they should not) than to Type 1 errors (not acting when they should) seemed to be more interested in keeping their investments intact and maintaining their existing income levels than in increasing their investments and risking a possible lowering of their incomes.

The findings of this study lend further credence to the idea that predictions of managerial behavior which stem from the assumption that conditions will remain as they are at present will be unreliable. Evidence was found which suggested that some farmers incorporate the effects of government programs, which are known to change, and that other farmers place major emphasis on their live-stock programs, which may also fluctuate in size, as determinants of what to produce. In addition, the farmers in the Livestock and Government group appeared to consider so many elements in deciding what to produce that any model describing their decisions with any degree of accuracy would, of necessity, involve change and complexity.

As the present trend toward farms of larger size goes on apace, the individual farm manager bears responsibility for an increasing share of the nation's agricultural resources and their employment. The impact of his actions thus becomes greater and the nation has an increasing interest in seeing that farm management teachers understand how decisions are made, and that they are able to transmit such information to their students.