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**ABSTRACT**

This report describes a General Accounting Office study of farmers' marketing practices. The report specifically discusses farmers' use of the three advanced marketing techniques--cash forward contracting, hedging in the futures market, and trading in agricultural options--as disclosed in nine studies of farmers' marketing practices made from 1976 through 1986; and educational programs in advanced marketing techniques provided by land-grant universities, commodity exchanges, and producer organizations primarily during the 12 months ending April 30, 1987. Some of the conclusions presented by the review are the following: (1) producers can use advanced marketing techniques to ensure a certain price for their commodities at a future date, if the producer can accept risk; (2) advanced marketing techniques may not be appropriate for all producers or for all commodities in all parts of the country; (3) few studies have been made of the degree to which advanced marketing techniques have been used; (4) about 25,000 persons attended advanced marketing education programs in the year ending April 30, 1987; and (5) other training methods in advanced marketing techniques are being offered. (KC)

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March 1988

# AGRICULTURAL MARKETING

## Farmers' Marketing Practices and Programs to Teach Alternative Practices



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**Resources, Community, and  
Economic Development Division**

B-214420.2

March 25, 1988

The Honorable Patrick J. Leahy  
Chairman, Committee on Agriculture,  
Nutrition, and Forestry  
United States Senate

The Honorable E (Kika) de la Garza  
Chairman, Committee on Agriculture  
House of Representatives

This briefing report responds to section 206(a) of the Futures Trading Act of 1986, which directed us to make a study of farmers' marketing practices. On November 10, 1987, we briefed your committees on the results of our study. This report describes our study results in more detail.

The briefing report specifically discusses (1) farmers' use of three advanced marketing techniques--cash forward contracting, hedging in the futures market, and trading in agricultural options--as disclosed in nine studies of farmers' marketing practices made from 1976 through 1986 and (2) educational programs in advanced marketing techniques provided by land-grant universities, commodity exchanges, and producer organizations primarily during the 12 months ended April 30, 1987.

A cash forward contract is an agreement between two parties for the purchase/sale of a commodity at some future time under such conditions as the two agree on. Cash forward contracts are not standardized and are not traded on organized exchanges. Hedging in the futures market involves buying or selling a futures contract on an organized exchange, opposite to the position held in the cash market, to minimize the risk of financial loss from an adverse price change. A futures contract is a standardized agreement to purchase or sell a commodity for delivery in the future at a price that is determined at initiation of the contract. Agricultural options are contracts that give the buyer the right but not the obligation to buy or sell a specified futures contract at a specific price within a specified time period. Options are also traded on organized exchanges.

In summary, our review showed the following:

- Producers can use advanced marketing techniques to ensure a certain price for their commodities at a future date. However, a producer must be able to accept the attendant risks, such as lost opportunities if prices rise; the added expense for option premiums and margin calls on futures contracts, if these techniques are used; and the potential liability for failure to deliver the product quantity as contracted.
- Advanced marketing techniques may not be appropriate for all producers or for all commodities in all parts of the country. Producers participating in government price support programs, where the minimum market value is known, may have minimal interest in such techniques as futures and options. Futures contracts call for standard quantities that may be more than the production capability of some small and medium-sized farms. Cash forward contracting requires a willing buyer, who may not always be available at the opportune moment.
- Few studies have been made of the degree to which advanced marketing techniques have been used (i.e., the amount of production being marketed) or show how effective the producers consider the techniques when they are used. Generally, the nine studies we reviewed covered only one or a few particular commodities or were confined to specific geographic areas. The available studies showed that only small percentages of the producers covered by the studies used advanced marketing techniques. For example, the nine studies showed that, overall, about 5 to 13 percent of the total producers had used futures contracts or options in marketing their products. Cash forward contracting was the most commonly used technique. Of producers who had hedged in the futures market, those with annual gross sales of over \$100,000 had hedged more than smaller producers.
- None of the studies or publications we reviewed specifically identified the number of producers who could effectively use advanced marketing techniques. However, some indicated that techniques related to futures trading may provide less benefit to smaller producers than to larger producers. Also, some studies and our discussions with local officials providing agricultural extension services revealed that even though producers may not use

hedging techniques, it is not necessarily because they are not informed or do not follow the futures markets.

- We obtained information on advanced marketing education programs conducted by Extension Service representatives at seven land-grant universities, by three major commodity exchanges, and by two producer organizations. The programs were intended to provide practical knowledge to producers and encourage producers to implement the knowledge gained. According to those who provided program information, about 25,000 persons attended advanced marketing education programs at these entities from May 1, 1986, through April 30, 1987. Attendance estimates indicated that, overall, 82 percent of those attending the programs were producers.
- In addition to providing formal marketing education through lectures and workshops, some of the entities used alternative educational methods, such as home-study courses, videotapes, marketing clubs, and computer software packages, to help producers learn about advanced marketing techniques. Also, the entities provided marketing information through a variety of sources, such as radio and television programs, newsletters, newspaper articles, and electronic bulletin boards.

We are not making any recommendations regarding advanced marketing techniques. Our review did not disclose any instances where government procedures or practices needed to be changed. However, as directed by the Food Security Act of 1985, the Department of Agriculture has started a special study and is planning a pilot program related to producers' use of futures trading. These efforts are discussed in section 5.

The Department of Agriculture, which was asked to review and comment on a draft of this briefing report, indicated in its February 2, 1988, comments that it would have liked the report to provide a more extensive treatment of farmers' marketing practices and an indication of whether anything needed to be done or changed. The Department said that readers would benefit from more discussion about how much farmers individually and collectively might gain by using advanced marketing techniques and, if such gains were likely, about barriers farmers face in adopting these techniques and suggested steps to overcome such barriers.

We recognize the usefulness of analyzing such topics. Section 2 discusses some of the advantages and benefits to producers of the advanced marketing techniques we focused on, and section 5 discusses some of the reasons why producers are not using advanced marketing techniques. Nevertheless, our review was not intended to be an exhaustive analysis of how much farmers might gain individually and collectively by using advanced marketing techniques. As discussed in section 1, our review was intended to ascertain the extent to which farmers use such techniques and to identify marketing education programs that the Department and others were providing to teach producers how to use advanced marketing techniques. Additional analyses of the type the Department referred to could be done by the Department's research agencies.

The Department also commented on several specific matters in the report and made suggestions to improve the report's technical accuracy. Where appropriate, the comments have been incorporated in the discussions of the specific matters, and the suggested technical changes have been made. A copy of the Department's comments is included as appendix II.

We are sending copies of this briefing report to the Director, Office of Management and Budget; the Secretary of Agriculture; and other interested parties. Copies will be made available to others on request. Major contributors to this briefing report are listed in appendix III.

If you have further questions regarding the information in this report, please call me on (202) 275-5138.

Sincerely yours,



Brian P. Crowley  
Senior Associate Director

## CONTENTS

	<u>Page</u>
LETTER	1
SECTION	
1 INTRODUCTION	8
Origin and Purpose of Review	8
Advanced Marketing Techniques That We Focused On	9
Current Agricultural Issues and Other GAO Reports Related to This Review	10
Scope and Methodology	11
2 ADVANTAGES AND DISADVANTAGES OF ADVANCED MARKETING TECHNIQUES	15
Advanced Marketing Techniques' Advantages and Disadvantages	15
Advanced Marketing Techniques' Benefits to Producers	16
3 STUDIES OF USE OF ADVANCED MARKETING TECHNIQUES	18
Studies We Obtained on Advanced Marketing Techniques	18
Purposes and Results of the Studies	18
Ongoing Research Projects Studying Advanced Marketing Techniques	26
4 INFORMATION ON SELECTED EDUCATIONAL PROGRAMS IN ADVANCED MARKETING TECHNIQUES	28
Purposes of Educational Programs	28
Commodities Covered in Educational Programs	29
Marketing Practices Covered in Educational Programs	30
Teaching Techniques Used in Educational Programs	32
Estimated Attendance at Educational Programs	33
Suggested Additional Efforts for Improving Marketing Education for Producers	34
5 OUR OBSERVATIONS	36
Conditions Affecting Producers' Use of Advanced Marketing Techniques	36
Why More Producers Are Not Using Advanced Marketing Techniques	38
Administrative Obstacles to FmHA Borrowers' Use of Advanced Marketing Techniques	39
Other Efforts in the Advanced Marketing Practices Area That USDA Has Been Asked to Perform	40

	<u>Page</u>
APPENDIX	
I	PRODUCER MARKETING SURVEYS: 1976 TO 1986 42
II	COMMENTS FROM THE U.S. DEPARTMENT OF AGRICULTURE 44
III	MAJOR CONTRIBUTORS TO THIS REPORT 48
TABLE	
1.1	Organizations, Persons, and Other Sources Contacted or Used to Identify Studies of How Producers Market Their Products 11
1.2	Entities Asked to Complete Structured Questionnaire on Marketing Education Programs 13
3.1	Percentage of Producers Who Had Used Advanced Marketing Techniques, in Total and by Commodity, 1986 Study 19
3.2	Percentage of Producers Who Were Satisfied With Their Present Marketing Method, in Total and by Commodity, 1986 Study 20
3.3	Percentage of Producers Who Were Satisfied With Their Present Marketing Method, in Total and by Gross Farm Sales, 1986 Study 20
3.4	Kansas Grain Producers' Use of Marketing Techniques, 1985 Crop 22
3.5	Kansas Grain Producers' Use of Marketing Techniques, 1984 Crop 22
3.6	Percentage of Hogs Sold by Forward Contract and/or Hedged in the Futures Market, 1984 Data 23
3.7	Type and Timing of Soybean Sales and Percentage of Sales Priced Using Forward Contracts, 1982/83 Crops 24
3.8	Use of Forward Contracts and Futures Markets by Farmers With Gross Commodity Sales Over \$10,000, 1977 25

	<u>Page</u>
3.9 Use of Forward Contracts and Futures Markets by Farmers With Gross Commodity Sales Over \$10,000, 1976	26
4.1 Commodities Covered by the Marketing Education Programs at the Universities, Exchanges, and Producer Organizations Visited	30
4.2 Marketing Practices Covered in Educational Programs at the Universities Visited	31
4.3 Marketing Practices Covered in Educational Programs at the Exchanges and Producer Organizations Visited	32
4.4 Estimated Attendance at the Marketing Education Programs at the Universities, Exchanges, and Producer Organizations Visited	34

#### ABBREVIATIONS

CCC	Commodity Credit Corporation
CFTC	Commodity Futures Trading Commission
CRIS	Current Research Information System
ERS	Economic Research Service
FmHA	Farmers Home Administration
GAO	General Accounting Office
RCED	Resources, Community, and Economic Development Division
SRS	Statistical Reporting Service
USDA	U.S. Department of Agriculture

## SECTION 1

### INTRODUCTION

#### ORIGIN AND PURPOSE OF REVIEW

The Futures Trading Act of 1986 (P.L. 99-641) directed the Comptroller General to conduct a study of marketing practices used by applicants for and borrowers of farm loans made, insured, or guaranteed under the Consolidated Farm and Rural Development Act. The U.S. Department of Agriculture's (USDA) Farmers Home Administration (FmHA) administers the Consolidated Act. The Futures Trading Act specified that the Comptroller General's study include an examination of (1) the methods used by the applicants and borrowers in marketing agricultural commodities, livestock, and aquacultural products and (2) the extent to which the applicants and borrowers use advanced marketing techniques for such sales.

The Futures Trading Act of 1986 further required the Comptroller General to report the results of the study to the House Committee on Agriculture and the Senate Committee on Agriculture, Nutrition, and Forestry not later than November 10, 1987.

Staff members of the House and Senate agriculture committees and of the principal sponsor of the legislation agreed that we would deal with agricultural products and specifically we would do the following:

- Direct our review to producers in general rather than limit it to FmHA borrowers. FmHA does not accumulate information on marketing practices of its borrowers nor is disclosure of this type of information a condition of FmHA's loan-making process.
- Use the results of a recent study of how producers market their production rather than conduct our own survey of individual producers. The Texas Agricultural Extension Service at Texas A&M University had just completed gathering data on marketing techniques used by producers in the New England area and in 12 other states.
- Identify surveys conducted by USDA and others to determine how producers market their products.
- Focus our review on producers of wheat, feed grains (corn, barley, oats, and grain sorghum), soybeans, cattle, and hogs.
- Identify marketing education programs conducted by USDA and others to teach producers how to use advanced marketing techniques. Examples of techniques that the staff members

said were of interest to them were futures and options markets.

These agreements were confirmed in letters we sent to the House and Senate agriculture committees on May 13, 1987. To fulfill the act's reporting requirements, we briefed the committees on November 10, 1987, on the results of our study. This report describes our study results in more detail.

#### ADVANCED MARKETING TECHNIQUES THAT WE FOCUSED ON

We defined advanced marketing techniques as any method of marketing other than selling at harvest in a "spot" market. Advanced techniques can reduce price risk and may establish floor prices. However, they may also subject a producer to greater production risks and higher up-front financial costs. Although many different techniques are available, we focused on the following techniques, which were the ones most frequently discussed in the agricultural publications we reviewed and the most commonly identified by the persons we interviewed.

Cash forward contracting: A cash market transaction in which ~~two parties agree to the~~ purchase and sale of a commodity at some future time under such conditions as the two agree on. Essentially, it is any cash market purchase or sale agreement for which delivery is not made "on the spot." Closely related to forward cash contracts are minimum price contracts. A minimum price contract obligates the buyer to pay the seller no less than a specific price, but should future prices rise, then the buyer must pay the seller the higher price.

Hedging in the futures market: Taking a position in a futures market, opposite to the position held in the cash market, to minimize the risk of financial loss from an adverse price change; a purchase or sale of a futures contract as a temporary substitute for a cash transaction that will occur later. A futures contract is a standardized agreement to purchase or sell a commodity for delivery in the future at a price that is determined at initiation of the contract. Futures contracts are traded on boards of trade, or exchanges, by exchange members; are used to assume or shift price risk; and obligate each party to a contract either to fulfill the contract's terms or to offset the contract by entering into an opposite transaction.

Trading in agricultural options: A contract that gives the buyer the right but not the obligation to buy or sell a specified futures contract at a specific price within a specified time period. Trading in agricultural options, which is done on boards of trade, or exchanges, was reinstated in October 1984 after being banned since 1936.

The information we obtained on marketing education programs showed that other techniques also were covered in those programs.

## CURRENT AGRICULTURAL ISSUES AND OTHER GAO REPORTS RELATED TO THIS REVIEW

### Current Agricultural Issues

Current agricultural legislation has moved agricultural programs toward a more market-oriented system. The Food Security Act of 1985 (P.L. 99-198) authorizes the Secretary of Agriculture, under conditions specified in the act, to lower loan rates at his discretion. The Secretary has used this authority in lowering loan rates and thereby made U.S. commodities more price competitive, particularly in export markets.

The Congress has been interested in the feasibility of targeting farm payments, i.e., basing farm payments on such criteria as financial need, farm size, production volume. We published two recent reports on this issue: Farm Payments: Implications of Targeting Farm Income Supports (GAO/RCED-87-99, June 10, 1987) and Farm Programs: Analysis of Options for Targeting Payments and Crop Loans (GAO/RCED-87-144, Sept. 10, 1987).

As agricultural policy shifts to a market orientation and should groups of producers be excluded from program payments due to targeting, more and more producers may be left to the unpredictability of the marketplace. In such cases, advanced marketing techniques may be able to help producers make the transition to and survive in this new environment.

### Other GAO Reports Related to This Review

The Futures Trading Act of 1986 also required us to conduct and complete a comprehensive study of the effect of trading in contracts for the future delivery of live cattle on the cash market price of live cattle. The act required us to submit a preliminary report on January 15, 1987, and a final report on the results of the study to the House and Senate agriculture committees by November 10, 1987. Our preliminary report, Commodity Futures Trading: Preliminary Information on the Viability of the Cattle Futures Markets (GAO/RCED-87-83), was issued on January 16, 1987. Our final report, Commodity Futures Trading: Purpose, Use, Impact, and Regulation of Cattle Futures Markets (GAO/RCED-88-30), was issued on November 10, 1987.

In 1984 we issued a report to the Chairman, House Committee on Small Business, on USDA-funded electronic marketing pilot projects and the benefits and problems associated with electronic marketing in agriculture. The report, entitled Electronic Marketing of

Agricultural Commodities: An Evolutionary Trend (GAO/RCED-94-97),  
was issued on March 8, 1984.

SCOPE AND METHODOLOGY

To identify studies of how agricultural producers market their products, we contacted USDA agencies, other federal entities, the major commodity exchanges, selected producer organizations, and land-grant universities and queried two computer data bases. While our inquiries were extensive, we recognize that we may not have contacted all the possible sources of information on studies of farmers' marketing practices. The organizations or persons we contacted and the data bases we queried are shown in table 1.1.

Table 1.1: Organizations, Persons, and Other Sources Contacted or Used to Identify Studies of How Producers Market Their Products

USDA agencies:

Economic Research Service  
Extension Service  
Farmers Home Administration  
National Agricultural Statistics Service

Other federal entities:

Commodity Futures Trading Commission  
Farm Credit Services, St. Paul District  
Kansas City Federal Reserve Bank

Commodity exchanges:

Chicago Board of Trade  
Chicago Mercantile Exchange  
Kansas City Board of Trade

Producer organizations:

Illinois Farm Bureau  
Kansas Farm Bureau  
National Cattlemen's Association  
National Pork Producers Council

Agricultural economists at:

Iowa State University  
Kansas State University  
University of Georgia  
University of Illinois  
University of Kentucky  
University of Minnesota  
University of Missouri  
University of Nebraska

State statisticians, National Agricultural Statistics Service, in:

Iowa  
Kansas  
Kentucky  
Minnesota  
Nebraska

Western Livestock Marketing Information Project, a regional cooperative effort involving 17 western state Extension Service offices, USDA's Extension Service, and USDA's Economic Research Service.

Computer data bases maintained by USDA:

AGRICOLA, a worldwide data base of agricultural publications  
CRIS, a national data base of current agricultural research projects

To determine who provides education in advanced marketing techniques, we contacted USDA agencies (Economic Research Service, Extension Service, and Farmers Home Administration); the Commodity Futures Trading Commission; and agricultural economists at land-grant universities in Georgia, Kansas, and Missouri. We also researched and reviewed the Encyclopedia of Associations; Futures, the magazine of commodities and options; and newspapers.

According to these sources, the entities providing education in the use of advanced marketing techniques include

- the Cooperative Extension Service at various land-grant universities;
- various commodity exchanges;
- Farm Credit Services, St. Paul District;
- various producer organizations; and
- private consultant and advisory services.

To obtain information on educational programs, we contacted and/or visited officials at seven land-grant universities; four producer organizations; three commodity exchanges; a Farm Credit Services office; and selected Extension regional, area, and county offices. These entities provided us with

- coverage of the commodities on which we focused our review,
- representation of most major types of organizations that provide marketing education to producers, and
- representation of nationally recognized marketing education programs.

At each of the entities shown in table 1.2, we asked the marketing education specialist(s) to complete a structured questionnaire about the details of their programs.

Table 1.2: Entities Asked to Complete Structured Questionnaire on Marketing Education Programs

Land-grant universities:

Iowa State University  
Kansas State University  
University of Illinois  
University of Kentucky  
University of Minnesota  
University of Missouri  
University of Nebraska

Commodity exchanges:

Chicago Board of Trade  
Chicago Mercantile Exchange  
Kansas City Board of Trade

Producer organizations:

Illinois Farm Bureau  
Kansas Farm Bureau

In addition, we contacted and visited the Farm Credit Services' St. Paul District Office; the Western Livestock Marketing Information Project; an Iowa Extension area office; two Iowa Extension county offices; a Kansas Extension area office; and two Kansas Extension county offices.

The St. Paul Farm Credit Services office has developed a marketing education video series that Farm Credit Services' banks in the St. Paul district have used to train employees and producers about advanced marketing techniques. Some land-grant universities also use the Farm Credit Services' marketing education video series in their educational programs. A Farm Credit Services official estimated that about 3,000 producers had participated in these programs.

The Western Livestock Marketing Information Project provides economic marketing situation and outlook information to the livestock industry with special emphasis on the western region. According to a project official, the project does not provide educational programs on advanced marketing practices to producers but does give information to organizations that provide marketing education programs.

The Extension area and county offices are Extension's initial point of contact with producers. Much of Extension's marketing education effort starts at these offices.

We also contacted and visited the National Cattlemen's Association and the National Pork Producers Council. Both

organizations advised us that they do not provide formal education programs on advanced marketing practices for producers.

In addition, we talked with commercial bank officials in Texas and Oklahoma about the relationship between their lending practices and borrowers' use of advanced marketing techniques. We also reviewed various articles and publications by agricultural economists about producers' marketing techniques.

We made our review from January through October 1987. We focused our efforts on studies of farmers' marketing practices made from 1976 through 1986 and on educational programs provided primarily during the 12 months ended April 30, 1987. We made the review in accordance with generally accepted government auditing standards.

## SECTION 2

### ADVANTAGES AND DISADVANTAGES OF ADVANCED

#### MARKETING TECHNIQUES

##### ADVANCED MARKETING TECHNIQUES' ADVANTAGES AND DISADVANTAGES

According to the information we obtained during our review, the major advantages, from the producers' standpoint, of the marketing techniques we focused on are as follows:

##### Cash forward contracting:

- Reduces risk of price decline. (Under a minimum price contract, the potential to benefit from higher prices is retained.)
- Ensures a buyer for the commodity before actual delivery needs to be made.
- Allows flexibility in contract terms (e.g., quantity; quality; delivery date; and, in some cases, price).
- Gives the commodity a more secure value for use as collateral.

##### Hedging in the futures market:

- Reduces risk of price decline.
- Allows for continued ownership of the commodity and flexibility in pricing decisions.
- Gives the commodity a more secure value for use as collateral.

##### Trading in agricultural options:

- Reduces risk of price decline while retaining the potential to benefit from higher cash prices.
- Allows for continued ownership of the commodity and flexibility in pricing decisions.
- Limits maximum loss to amount of original premium cost; does not involve margin calls.
- Gives the commodity a more secure value for use as collateral.

The information we obtained also showed that the major disadvantages, from the producers' standpoint, of the marketing techniques we focused on are as follows:

Cash forward contracting:

- Once price is agreed upon, eliminates potential to benefit from higher cash prices. (This does not apply to a minimum price contract.)
- Increases potential for loss if production is less than contracted.
- Presents possibility of default by buyer.

Hedging in the futures market:

- Reduces potential to benefit from higher cash prices.
- Increases potential for loss if production is less than contracted.
- Requires margin deposit and possible margin calls if prices move adversely.
- Fixes contract terms, such as quantity requirements, at levels some producers may not be able to meet.

Trading in agricultural options:

- Requires payment of option premium.
- Presents possibility that option could expire worthless.

ADVANCED MARKETING TECHNIQUES'  
BENEFITS TO PRODUCERS

Advanced marketing techniques are tools producers can use to stabilize their farm income and to minimize their price risk in a volatile market. Price volatility has been particularly prevalent during recent years. The legislative history of section 206(a), which directed us to make this review, indicated that most agricultural production is marketed at the bottom one-third of market prices. According to one study in a major grain-producing state, as many as 95 percent of producers wait until harvest to make their marketing decisions. Harvest prices are traditionally low. Advanced marketing techniques help producers set their market prices at times other than harvest, when prices may be more advantageous.

Advanced marketing techniques can also help producers obtain debt financing. An agricultural economist at the University of

Georgia reported that a hedged commodity possesses a more secure value for collateral. Commercial bank officials in Texas and Oklahoma told us that, at times, they require forward contracting or futures transactions (particularly for cattle) on loans to marginal borrowers.

Despite the beneficial aspects of advanced marketing techniques, many producers cannot take advantage of these tools. For example,

- futures contracts have fixed quantity terms that smaller producers are often unable to meet;
- hedging requires up-front margin deposits and possible margin calls, and options require premium payments, which financially strapped producers may not be able to pay; and
- cash forward contracting requires a buyer who is willing to participate. Contracts may not be available at appropriate prices and times.

### SECTION 3

#### STUDIES OF USE OF ADVANCED MARKETING TECHNIQUES

##### STUDIES WE OBTAINED ON ADVANCED MARKETING TECHNIQUES

The organizations and persons we contacted and the data bases we queried to identify studies of how agricultural producers market their products indicated that few such studies had been made. We obtained copies of, or information about, nine producer marketing studies conducted by various organizations between 1976 and 1986. Seven of these studies covered various combinations of grains, soybeans, livestock, and/or other commodities, and one study each covered hogs and soybeans only. The studies were made in various states or regions of the country; five were multistate studies and four were single-state studies. All the studies included surveys of randomly selected producers. However, all had restricted universes, e.g., subscribers to a farm publication, producers with gross sales over a certain amount, or producers who in previous years reported they grew a certain crop.

Overall, these studies showed that producers used cash forward contracting more than other advanced marketing techniques. Of those producers who used hedging in the futures market, larger producers (those with annual gross sales greater than \$100,000) hedged more than smaller producers.

The studies generally did not establish the degree to which advanced techniques had been used (in terms of percentage of production), and respondents did not report the degree of effectiveness of the techniques they used.

Appendix I contains a schedule summarizing the producer marketing studies, including the percentages of the studies' respondents who reported use of futures, options, and forward contracts. The purposes and results of the studies are discussed in the following section.

##### PURPOSES AND RESULTS OF THE STUDIES

###### National Assessment of Extension Educational Programs in Producer Marketing Alternatives--1986 Study

Study purpose: To gain information from a broad cross section of producers regarding their marketing experiences and concerns.

The Texas Agricultural Extension Service at Texas A&M University gathered information for this study during the period

March through June 1986. The study, made for USDA's Extension Service, included samples of randomly selected producers obtained from an agricultural mailing list company. The study covered 12 states plus the New England states as one region. The 12 states were California, Colorado, Georgia, Illinois, Iowa, Kansas, Kentucky, Minnesota, New York, Tennessee, Texas, and Washington. Commodities covered included grains; livestock; and other commodities, such as dairy products, tobacco, cotton, vegetables, and fruits. Producers involved in the study included farmers and ranchers in the selected areas. Questionnaires were mailed to a sample of 9,100 producers. Usable responses totaled 3,494, or 38 percent. The final report on this survey had not been issued as of February 1988; however, preliminary data provided to us by the principal researcher showed that

- 24.4 percent of the respondents reported they had used cash forward contracts and
- 11.4 percent of the respondents reported they had used futures or options markets.

Table 3.1 shows additional details of the respondents' reported use of advanced marketing techniques.

Table 3.1: Percentage of Producers Who Had Used Advanced Marketing Techniques, in Total and by Commodity, 1986 Study

<u>Commodity</u>	<u>Percentage of producers who had used</u>	
	<u>Cash forward contracts</u>	<u>Futures or options markets</u>
Total <sup>a</sup>	24.4	11.4
Beef	12.2	7.7
Pork	22.9	22.9
Feed grain (corn/sorghum)	47.3	20.9
Wheat	34.5	10.7
Soybeans	40.0	20.4

<sup>a</sup>Includes all commodities covered in study, not just grains and livestock.

Study results also showed that 70 percent of the respondents indicated that they were satisfied with their present marketing method. Tables 3.2 and 3.3 show additional details on respondent satisfaction.

Table 3.2: Percentage of Producers Who Were Satisfied With Their Present Marketing Method, in Total and by Commodity, 1986 Study

<u>Commodity</u>	<u>Percent</u>
Total <sup>a</sup>	70.3
Beef	74.7
Pork	71.4
Feed grain (corn/sorghum)	64.7
Wheat	67.2
Soybeans	71.6

<sup>a</sup>Includes all commodities covered in study, not just grains and livestock.

Table 3.3: Percentage of Producers Who Were Satisfied With Their Present Marketing Method, in Total and by Gross Farm Sales, 1986 Study

<u>Gross farm sales<sup>a</sup></u>	<u>Percent</u>
All levels	70.3
Less than \$39,999	76.2
\$40,000 - \$199,999	61.3
\$200,000 plus	68.4

<sup>a</sup>Includes all commodities covered in study, not just grains and livestock.

A Survey of Iowa Lenders and Producers to Determine Current Services, Attitudes, and Education Concerning Commodity Marketing--1986 Data

Study purpose (Producer portion of survey only): To determine producers' attitude toward the futures and options markets.

The study, made during 1986 by a graduate student at Iowa State University, sampled members of the Iowa Farm Business Association. Of the 400 grain and livestock producers randomly sampled, 173, or 43.3 percent, responded. Of those responding, about

- 35.5 percent reported they were then using futures markets as part of their marketing program and
- 14.4 percent reported they were then using options markets as part of their marketing program.

Most producers, whether they were using futures markets in their marketing program or not, recognized that hedging in the futures market could reduce risk. Over 93 percent of the producers who were using futures reported that hedging reduced risk, while about 73 percent of those not using futures still reported that hedging reduced risk. Producers using and not using options reported similar risk attitudes. All the producers using options reported that options reduce risk, while about 82 percent of those not using options still reported that options reduce risk. The study did not address the use of cash forward contracting.

#### Financial Position of the Grazing Livestock Industry in Kansas--1986 Data

Study purpose: To identify the type of grazing land production practices, financial arrangements, and marketing practices used by Kansas livestock producers.

The Kansas State University Cooperative Extension Service made this study. The study included samples randomly drawn from Kansas livestock producers, including dairy farmers and cattle and hog producers. The Kansas Crop and Livestock Reporting Service provided the mailing list, which, according to the study report, represented livestock producers in Kansas. Although the universe size was not shown in the report, the sample size was 998. The report summarized data reported by 355 producers.

Of the producers returning usable responses, 94 percent reported that they had not used either futures or options. The study did not address the use of cash forward contracting.

#### Kansas Grain Marketing--Data for 1985 Crop

Study purpose: To determine how Kansas grain producers marketed four major crops (wheat, corn, grain sorghum, and soybeans) harvested during 1985 and what strategies, if any, the producers used in marketing their crops.

Kansas Agricultural Statistics, an entity of USDA's National Agricultural Statistics Service, in cooperation with the Kansas State Board of Agriculture, made this survey. The report provided information from a random sample of producers on the marketing of four major crops harvested in Kansas during 1985--wheat, corn, grain sorghum, and soybeans. The universe for the sample included only those producers who in previous surveys had indicated that they produced one of the four crops. The report did not show the sizes of the sample or the universe. The report summarized data reported by a total of 2,167 producers. Among the reported results was the information shown in table 3.4.

Table 3.4: Kansas Grain Producers' Use of Marketing Techniques, 1985 Crop

<u>Commodity</u>	<u>Percentage of respondents reporting use of</u>		
	<u>Forward contracts</u>	<u>Futures markets</u>	<u>Options markets</u>
Wheat	10	1	1
Corn	16	3	(a)
Grain sorghum	6	1	(a)
Soybeans	5	(a)	(a)

<sup>a</sup>0.5 percent or less.

Kansas Grain Marketing and Transportation--Data for 1984 Crop

Study purpose: To determine how Kansas grain producers marketed four major crops (wheat, corn, grain sorghum, and soybeans) harvested during 1984 and what strategies, if any, the producers used in marketing their crops.

The Kansas Crop and Livestock Reporting Service (now Kansas Agricultural Statistics), in cooperation with the Kansas State Board of Agriculture, made this marketing and transportation survey for the 1984 wheat, corn, grain sorghum, and soybean crops. The report provided information from a random sample of Kansas producers on the marketing of the four crops. The universe for the sample included only those producers who in previous surveys had indicated that they produced any of the four major crops. The report did not show the sizes of the sample or the universe. The report summarized data reported by a total of 3,494 producers. Among the reported results was the information shown in table 3.5.

Table 3.5: Kansas Grain Producers' Use of Marketing Techniques, 1984 Crop

<u>Commodity</u>	<u>Percentage of respondents reporting use of</u>		
	<u>Forward contracts</u>	<u>Futures markets</u>	<u>Options markets<sup>a</sup></u>
Wheat	8	2	-
Corn	8	3	-
Grain sorghum	4	(a)	-
Soybeans	6	3	-

<sup>a</sup>Not addressed in study.

Medium-Size and Larger U.S.  
Hog Producers--1984 Data

Study purpose: Periodic survey of the nation's largest hog producers in cooperation with the staff of Hog Farm Management magazine.

The University of Missouri-Columbia Agricultural Experiment Station gathered information for this survey in early 1984 on hog units marketing 3,000 or more head each year. The survey covered 46 states plus Puerto Rico and included a random sample of 4,165 Hog Farm Management magazine subscribers. A total of 1,153 producers, or 27.7 percent, responded. The study did not show overall results but, as summarized in table 3.6, showed the percentage of hogs, by size of operation, that were sold by forward cash contracts and/or were hedged in the futures market. The study did not address the use of agricultural options, which were not authorized to be used for hogs at that time.

Table 3.6: Percentage of Hogs Sold by Forward Contract and/or Hedged in the Futures Markets, 1984 Data

<u>Size of operation</u>	<u>Percentage of hogs</u>	
	<u>Forward contracted</u>	<u>Hedged</u>
3,000 to 4,999 head	3	7
5,000 to 9,999 head	4	13
10,000 and more head	7	8

Pricing Strategies Used by  
Soybean Producers--1986  
Study Based on 1982/83 Crop Data

Study purpose: To determine the methods used in pricing and marketing soybean crops.

USDA's Economic Research Service made this study of soybean marketing in 21 states. The report summarized information developed from data the Service had collected in its 1982 and 1983 cost of production surveys made in cooperation with USDA's Statistical Reporting Service (SRS), which is now the National Agricultural Statistics Service. For the marketing study, SRS drew an independent sample of producers in each selected state from a population of producers known to have planted soybeans the previous spring. Soybean producers in 9 southern states were surveyed in the spring of 1983, and soybean producers in 11 midwestern states and Kentucky were surveyed in the spring of 1984.

The report included information on 1,181 soybean farms surveyed--689 farms in the 11 midwestern states and 492 farms in

the 10 southern states. The study did not address futures. Options markets for soybeans were not authorized at the time.

The report showed the percentage of soybeans sold that were priced using cash forward contracts. The report also showed the information by when the crop was sold, i.e., sold direct from the field, delivered off-farm at harvest and sold at time of delivery, and stored on-farm and sold before spring. (See table 3.7.)

Table 3.7: Type and Timing of Soybean Sales and Percentage of Sales Priced Using Forward Contracts, 1982/83 Crops

	Percentage of crop		
	<u>Sold direct from field</u>	<u>Delivered off-farm</u>	<u>Stored on-farm</u>
Initial disposition of crop	<u>3.4</u>	<u>53.6</u>	<u>43.0</u>
Time of sale:			
Sold at harvest point	100.0	-	-
Sold at delivery	-	61.3	-
Sold before spring	-	-	46.8
Not specified	-	<u>38.7</u>	<u>53.2</u>
Total	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>
Percentage of sold crop priced using forward contracts	22.1	29.2	43.9

Overall, about 19.2 percent of the soybeans sold by the producers sampled in the 21 states were priced using forward contracts.

1977 Report on Farmers' Use of Futures  
Markets and Forward Contracts

Study purpose: Sample survey of U.S. farmers to determine the extent and nature of their trading in futures markets and to determine the extent of their use of forward contracts.

The Commodity Futures Trading Commission (CFTC), in conjunction with SRS, for the second consecutive year surveyed a sample of U.S. farmers to determine the extent and nature of their trading in futures markets and to determine the extent of their use of forward contracts. The survey covered the 48 contiguous states plus the District of Columbia. Commodities covered included grains, livestock, and others. The sample represented farmers with annual gross commodity sales greater than \$10,000. The report did

not show the sizes of the sample or the universe. A total of 3,439 producers responded to most questions on the questionnaire.

Overall survey results showed that 4.6 percent of all farmers with annual gross commodity sales greater than \$10,000 bought or sold futures contracts during 1977. About 70 percent of those who traded reported that they speculated rather than hedged. About 30 percent of those who did not trade said that they watched the futures prices when making production decisions. Over 40 percent of the farmers kept track of their local basis (futures prices relative to local cash prices).

As table 3.8 shows, the study concluded that about 10 percent of U.S. farmers with annual gross commodity sales greater than \$10,000 sold grain crops on forward contracts. The table also shows that 1 percent of the farmers sold livestock on forward contracts and about 1.5 percent of farmers sold other commodities on forward contracts. Of those farmers who used forward contracts, 80 percent indicated that they based the forward contract price, in some way, on futures prices (up from 48.3 percent in the 1976 CFTC survey).

Table 3.8: Use of Forward Contracts and Futures Markets by Farmers With Gross Commodity Sales Over \$10,000, 1977

U.S. total/ commodity	Percentage of respondents reporting use of	
	<u>Forward contracts</u>	<u>Futures markets</u>
U.S. total	(a)	4.6
Grain	9.6	(a)
Livestock	1.0	(a)
Other	1.5	(a)

<sup>a</sup>Not shown in report.

#### Grain Pricing--1976 Study

Study purpose: To determine the extent to which farmers used futures markets and cash forward contracts in marketing their products.

In the fall of 1976, CFTC contracted with SRS to make this survey to determine the extent to which farmers used futures markets and cash forward contracts. The survey, made in early December 1976, covered 25,180 tracts of land throughout the 48 contiguous states. When possible, enumerators contacted, in person, every farmer within a tract area. Of those farm operators residing within the sampled parcels of land, 94.5 percent (approximately 10,000) agreed to answer CFTC/SRS questions. The survey covered grains, livestock, and other commodities. The study report stated that because of the sample approach, it was

statistically possible to expand the survey results to all U.S. farmers with annual gross commodity sales of over \$10,000.

As summarized in table 3.9, overall survey results showed that 5.6 percent of all farmers with annual gross sales over \$10,000 bought or sold futures contracts during 1976. Further, 10.3 percent of all farmers signed or planned to sign forward contracts to sell grain; 1.0 percent signed or planned to sign forward contracts to sell livestock; and 1.7 percent signed or planned to sign contracts to sell other commodities.

Table 3.9: Use of Forward Contracts and Futures Markets by Farmers With Gross Commodity Sales Over \$10,000, 1976

<u>U.S. total/ commodity</u>	<u>Percentage of respondents reporting use of</u>	
	<u>Forward contracts</u>	<u>Futures markets</u>
U.S. total	(a)	5.6
Grain	10.3	(a)
Livestock	1.0	(a)
Other	1.7	(a)

<sup>a</sup>Not shown in report.

ONGOING RESEARCH PROJECTS STUDYING  
ADVANCED MARKETING TECHNIQUES

Through discussions with marketing specialists at the selected land-grant universities, commodity exchanges, and producer organizations, we identified two ongoing research projects relating to the use of advanced marketing techniques.

- Kansas State University specialists were conducting a survey of Kansas bankers to determine, among other things, lenders' attitudes on alternative marketing practices.
- University of Kentucky specialists were conducting a survey of Kentucky producers to obtain producers' views on different issues facing agriculture today. One question asks: "Did you or do you plan to use forward contracts or futures market?"

Neither research project had been completed at the time of our visits.

Using the key words "hedging" or "forward contract," we queried USDA's Current Research Information System (CRIS) to identify ongoing research projects. We identified 35 ongoing projects that appeared to be studies of advanced marketing techniques. These projects are being conducted by USDA's Economic Research Service and by various (21) universities. The general

objectives that are being collectively covered by the ongoing research projects are as follows:

- Evaluate and compare forward selling, crop insurance, options, and other alternative price risk management strategies as a means for spreading risks in farming.
- Determine how distribution of the risk-bearing function among participants in the marketing system influences marketing strategies and prices.
- Evaluate alternative marketing strategies in terms of farm survivability and financial stability.
- Conduct an analysis for temporal basis patterns (the relationship between cash prices and futures prices over time) and provide updated basis information.
- Analyze commodity futures markets to determine if they are typically efficient markets.
- Evaluate alternative marketing strategies for coping with price and yield risks.
- Establish price and supply forecasting models, improve the methodology of forecasting prices, and continually update price forecasts.
- Evaluate economic feasibility of using options or futures contracts for selected commodities and develop hedging and other marketing alternative strategies for selected commodities.
- Develop recommendations for using commodity futures and options markets in managing price risk and determine possible futures commodity instruments that may be used to reduce price risks and improve producers' profitability.
- Improve producers' ability to improve the timing of their marketing decisions.

## SECTION 4

### INFORMATION ON SELECTED EDUCATIONAL PROGRAMS

#### IN ADVANCED MARKETING TECHNIQUES

##### PURPOSES OF EDUCATIONAL PROGRAMS

Providing marketing education to producers has received more emphasis since the early 1980s. The Congress, USDA's Extension Service, and producer organizations have all recognized this need.

In January 1980, the Senate approved a resolution (S.Res. 225) stating that while marketing risks were increasing, USDA, the land-grant universities, and the Extension Service were emphasizing the production of agricultural commodities rather than the marketing of those commodities. The Senate resolved that increased emphasis be devoted to teaching farmers how better to market their agricultural commodities and that a task force be established to develop educational programs for farmers on the availability of futures markets and forward contracting as a means of hedging against future risks.

The task force, established as a result of the Senate resolution, made several long-term and short-term recommendations. Among the recommendations were the need for more business, financial management, and economics in both college degree requirements and training for county Extension Service agents; educational opportunities for lenders concerning producer marketing risk management alternatives; and state Extension Services allocating a greater share of their resources for delivery of producer marketing programs.

A USDA Extension Service official told us that Extension increased its emphasis on marketing education programs when the farm financial crisis intensified in 1980-81. He said this emphasis has continued and is demonstrated by Extension's identification of "competitiveness and profitability of American agriculture" as its top national priority.

Also in the early 1980s, the Kansas and Illinois Farm Bureaus saw a need for more producer education in better marketing techniques. Both organizations implemented marketing education programs within the past 5 years.

In general, the marketing education programs at the seven land-grant universities, three commodity exchanges, and two producer organizations we visited were intended to provide practical knowledge to producers and encourage producers to implement the knowledge gained. The general program objectives for the entities we visited are as follows:

#### Land-grant universities:

- Provide producers with practical knowledge regarding the principles of commodity price risk management and advanced marketing techniques.
- Improve producers' ability to make better marketing decisions.
- Get producers to the point where they will actually use the knowledge gained.

#### Commodity exchanges:

- Increase participants' awareness of the futures industry's impact on agricultural marketing.
- Increase the comprehension of the basics of marketing.
- Overcome constraints, such as ignorance and intimidation.
- Encourage application of marketing practices by the producer.

#### Producer organizations:

- Improve the profitability of grain and livestock farm operations by helping farm families make sound, informed marketing decisions.
- Motivate farm families to use their new skills to implement their own marketing plan.
- Help farm families develop the financial information their lenders require.
- Assist agricultural lenders in understanding and evaluating farm families' marketing plans.

#### COMMODITIES COVERED IN EDUCATIONAL PROGRAMS

The educational programs of the land-grant universities and producer organizations covered all commodities included in our review (wheat, feed grains, soybeans, cattle, and hogs). The commodity exchanges varied in what they covered. The commodities covered by the programs at each entity we visited are shown in table 4.1.

Table 4.1: Commodities Covered by the Marketing Education Programs at the Universities, Exchanges, and Producer Organizations Visited

<u>Organization</u>	<u>Commodities covered in educational programs</u>					
	<u>Wheat</u>	<u>Feed grains</u>	<u>Soybeans</u>	<u>Cattle</u>	<u>Hogs</u>	<u>Other</u>
Land-grant universities:						
Iowa State	X	X	X	X	X	
Kansas State	X	X	X	X	X	X
Illinois	X	X	X	X	X	
Kentucky	X	X	X	X	X	
Minnesota	X	X	X	X	X	
Missouri	X	X	X	X	X	X
Nebraska	X	X	X	X	X	X
Commodity exchanges:						
Chicago Board of Trade	X	X	X	X	X	
Chicago Mercantile Exchange				X	X	X
Kansas City Board of Trade	X					
Producer organizations:						
Illinois Farm Bureau	X	X	X	X	X	
Kansas Farm Bureau	X	X	X	X	X	

MARKETING PRACTICES COVERED IN EDUCATIONAL PROGRAMS

The educational programs of the land-grant universities, commodity exchanges, and producer organizations all covered the three primary advanced marketing techniques (cash forward contracting, hedging in the futures market, and trading in agricultural options). In addition, we gathered information on other selected marketing practices covered. The marketing practices we identified as being covered in the educational programs are shown in tables 4.2 and 4.3.

Table 4.2: Marketing Practices Covered in Educational Programs at the Universities Visited

<u>Practice</u>	<u>Land-grant universities</u>						
	<u>Iowa State</u>	<u>Kansas State</u>	<u>Illinois</u>	<u>Kentucky</u>	<u>Minnesota</u>	<u>Missouri</u>	<u>Nebraska</u>
Forward contract	X	X	X	X	X	X	X
Futures trading	X	X	X	X	X	X	X
Options	X	X	X	X	X	X	X
Market forecasting	X	X	X	X		X	X
Marketing strategies and plan	X	X	X	X	X	X	X
Charting <sup>a</sup>	X	X		X		X	X
Government programs <sup>b</sup>	X	X	X	X	X	X	X
Electronic marketing <sup>c</sup>	X	X		X			X
Direct marketing <sup>d</sup>		X				X	X

<sup>a</sup>"Charting" refers to tracking the movement of one or more factors, such as price, over time.

<sup>b</sup>"Government programs" refers to such things as loan programs, allotments, storage programs, deficiency payments, and payment-in-kind certificates.

<sup>c</sup>"Electronic marketing" refers to the selling of agricultural commodities via telephones, teletypes, video equipment, and computers.

<sup>d</sup>"Direct marketing" refers to direct producer-consumer sales, such as those at farmers markets or roadside stands.

Table 4.3: Marketing Practices Covered in the Educational Programs at the Exchanges and Producer Organizations Visited

Practice	Commodity exchanges			Producer organizations	
	Chicago Board of Trade	Chicago Mercantile Exchange	Kansas City Board of Trade	Illinois Farm Bureau	Kansas Farm Bureau
Forward contract	X	X	X	X	X
Futures trading	X	X	X	X	X
Options	X	X	X	X	X
Market forecasting	X	X		X	X
Marketing strategies and plan	X	X		X	X
Charting	X	X		X	X
Government programs	X			X	X
Electronic marketing					
Direct marketing					X

TEACHING TECHNIQUES USED IN EDUCATIONAL PROGRAMS

The land-grant universities, commodity exchanges, and producer organizations primarily used lectures and workshops in presenting their educational programs. Instructors were generally from internal sources. In the case of the Illinois Farm Bureau, however, instructors were actual farmers who had experienced favorable results in marketing their products.

The educational programs at the land-grant universities generally ranged from 2.5 to 20 hours of instruction per program. The programs at the commodity exchanges generally ranged from 1 hour to 1.5 days of instruction per program. And the programs at the producer organizations generally ranged from 8 to 21 hours of instruction per program.

In addition to using lectures and workshops, some entities used the following alternative educational programs or techniques:

- Iowa State University had home-study courses in hog and grain marketing. These courses provided some flexibility to those farmers who, for timing or geographic reasons, could not attend regular programs.

- The University of Minnesota used the marketing education videotape series developed by and leased from Farm Credit Services.
- Kansas State University used marketing clubs to give producers hands-on experience with different marketing techniques. These clubs had been implemented statewide and were beginning to be implemented in other states.
- The Chicago Mercantile Exchange offered a computer software, menu-driven, livestock options evaluation package for microcomputers.

Courses were generally complemented with written materials, audiovisual materials, handouts, booklets, and/or other types of publications. Materials were generally produced internally by each entity, but materials from external sources were also used. Most courses did not require any prerequisite. However, some of the advanced courses recommended that the participants have previous knowledge of the subject matter.

In addition to providing formal marketing education programs, the entities provided marketing information through a variety of sources, such as radio and television programs, newsletters, newspaper articles, and electronic bulletin boards. Land-grant universities also provided marketing information in their crop and livestock outlook programs and publications.

#### ESTIMATED ATTENDANCE AT EDUCATIONAL PROGRAMS

The persons completing our questionnaire at each of the entities we visited, except the Chicago Board of Trade, provided estimated attendance data for their educational programs in total and by type of attendee. The Chicago Board of Trade provided an overall estimate of attendance but could not break attendance figures down by type of attendee.

According to the estimates, during the period May 1, 1986, through April 30, 1987, about 25,000 persons received marketing education at the 7 land-grant universities, 3 commodity exchanges, and 2 producer organizations we visited. Most of those attending were producers. Total attendance and a breakdown by type of attendee based on the estimates provided to us are shown in table 4.4. For the Chicago Board of Trade, we broke out the type of attendee in the same ratios as reported to us by the other two exchanges.

Table 4.4: Estimated Attendance at Marketing Education Programs at the Universities, Exchanges, and Producer Organizations Visited

	Estimated attendance, total number and percentages by type of attendee, May 1, 1986, to April 30, 1987		
	<u>Land-grant universities</u>	<u>Commodity exchanges</u>	<u>Producer organizations</u>
Estimated total number	<u>15,990</u>	<u>7,510</u>	<u>1,574</u>
Percentage by type of attendee:			
Producers	88.0	71.7	77.8
Extension Service	2.8	6.4	.6
FmHA	1.1		.3
Other USDA	.7		
Bankers	2.7	9.4	3.6
Brokers	.2	8.5	.1
Financial advisors	.6		
Elevator operators	3.7	2.4	1.1
Other	<u>.3</u>	<u>1.6</u>	<u>16.6<sup>a</sup></u>
Total	<u>100.1<sup>b</sup></u>	<u>100.0</u>	<u>100.1<sup>b</sup></u>

<sup>a</sup>Includes mainly attendees at an organization's annual meetings and high school students.

<sup>b</sup>Figures add to more than 100.0 percent because of rounding.

SUGGESTED ADDITIONAL EFFORTS FOR IMPROVING MARKETING EDUCATION FOR PRODUCERS

We asked the marketing specialists at the land-grant universities, commodity exchanges, and producer organizations what additional efforts they believed were needed to improve marketing education being provided to producers. The specialists offered a number of suggestions for needed research, educational materials, coordination of efforts between the various entities providing education, and education of Extension county agents. Some of the suggestions made for additional efforts are listed below. The suggestions are not in any order of priority.

- Research and information on performance of different futures and options strategies in pricing livestock.
- Information on what determines farmers' marketing practices and what educational techniques are more effective.

- More coordination of existing efforts and more funds specifically earmarked for true cooperative efforts between states to develop educational materials.
- Software that examines the full array of marketing alternatives and offers the user a menu of marketing strategies.
- More research in government programs and practical application of government programs combined with other marketing alternatives.
- More publications in fundamentals of basis, options volatility, cross-hedging strategies, and risk analysis.
- More statistical research on the number and type of producers currently using advanced marketing practices.
- Education of county agents and bankers on advanced marketing practices to enable them to encourage producers' use.
- Basic education for farm families in commodity marketing, financial management, and decision-making and a better understanding of economics.
- More information on financial management in combination with marketing strategies.
- Incorporation of advanced marketing practices with USDA programs.

SECTION 5  
OUR OBSERVATIONS

CONDITIONS AFFECTING PRODUCERS' USE  
OF ADVANCED MARKETING TECHNIQUES

None of the studies or publications we reviewed specifically identified the number of producers who could effectively use advanced marketing techniques. Some of the studies and publications indicated that techniques related to futures trading may provide less benefit to smaller producers than to larger producers. And some studies and discussions with local Extension officials revealed that even though producers may not use hedging, it is not necessarily because they are not informed or do not follow the futures markets.

A 1985 publication by the Economic Research Service, which explains the use of cash forward contracts, futures contracts, and commodity options, also commented as follows on sizes of farm operations needed to effectively participate in some futures contracts.<sup>1</sup>

- Many cattle feeders could use the live cattle futures contract because 40,000 pounds (the contract's trading unit) is equivalent to about 37 head, at average weights for Choice fed steers.
- The hog contract calls for delivery of about 140 head of average-weight butcher hogs. Although many small farmers could not fulfill a single hog contract for one delivery date, a substantial number of hog feeders market enough hogs at one time to fulfill one or more contracts.
- At 30 bushels per acre, 167 acres of soybeans are required to produce the 5,000 bushels represented by one contract. About two-thirds of the soybean production is harvested from acreage smaller than this. Output of a farm may be divided between a landlord and tenant. In addition, because of the unpredictability of weather and other factors than can affect production, a safe share of output to sell forward against a growing crop may be considerably less than the expected average yield. Hence, the direct use of futures contracts may be suitable for farmers who

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<sup>1</sup>A.B. Paul, R.G. Heifner, and J.D. Gordon, Farmers' Use of Cash Forward Contracts, Futures Contracts, and Commodity Options, Economic Research Service, Agricultural Economic Report Number 533 (May 1985).

have at least two or four times the soybean acreage stated above. This means that a relatively modest percentage of soybean farmers would find the futures contract quantities suitable, although the absolute number might be substantial.

- Only one-fifth of the corn production is from acreages that are too small for one contract. The comments made about soybeans, however, also apply to corn. Hence, futures contracts may be suitable for farmers who have at least two or four times the minimum acreage. This means that a relatively modest percentage of corn farmers would find the futures contract quantities suitable, although the absolute number might be substantial.

The publication further commented that smaller producers can use the MidAmerica Commodity Exchange, which specializes in small-lot contracts, or search for an elevator or other cash buyer who would buy forward in suitable lot sizes.

A 1980 study by a Farmers Home Administration official stated that ". . . hedging can be used most effectively by the larger farm operators who have sufficient farm production and quality of commodities that meet the minimum requirements for a commodity futures contract."<sup>2</sup>

The nine marketing studies we obtained show that, overall, about 5 to 13 percent of the total producers had used futures and/or options in marketing their products. The studies do not show whether this is a significant number of those producers who could effectively use hedging. The 1976 and 1977 CFTC studies and the recent Texas A&M study show that 13, 11, and 46 percent, respectively, of the large producers (those with annual gross sales of over \$100,000) had traded futures and/or options.

The CFTC studies also point out that although most producers may not actively trade futures, many follow futures prices and are aware of the relationship between their local price and the futures price. The 1976 study reported that about 30 percent of the producers with annual gross sales of over \$10,000 kept track of futures prices, while the 1977 study showed this percentage increased to about 40 percent of the producers with annual gross sales of over \$10,000.

Kansas area and county Extension agents told us that upon learning about futures trading, some producers decided that hedging was not for them. These producers were uncomfortable with the

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<sup>2</sup>Chester A. Bailey, A Study to Determine if Farmers Home Administration Should Authorize the Use of Insured and Guaranteed Loan Funds for Hedging Farm Commodities (July 1980).

potential for margin calls. The Extension officials pointed out that although these producers would not use hedging techniques, the decision not to do so was an informed decision.

#### WHY MORE PRODUCERS ARE NOT USING ADVANCED MARKETING TECHNIQUES

Researchers have been interested in this issue for some time, but no one knows with assurance why more producers are not using advanced marketing techniques.

The 1976 CFTC study tried to obtain information on why producers did not use futures contracts. The study reported that about

- 28 percent of the respondents were not acquainted with how the futures markets operate;
- 20 percent believed their farm was too small;
- 13 percent believed futures were too risky;
- 10 percent lacked sufficient capital; and
- 29 percent had other reasons, such as no time, no opportunities, and fear of major price fluctuations.

A recent presentation by a Kansas State University marketing specialist suggested that although producers were concerned about price risk, they did not view price risk management strategies, such as hedging, as attractive.<sup>3</sup> Extension area and county agents we talked with suggested that the attitude of producers was a major hurdle to overcome in getting more producers to use advanced marketing techniques. Among the attitudes cited were

- reluctance to try something new,
- reluctance to try something again after a failure, and
- reluctance to accept level prices over a period of time instead of trying to hit the peaks.

The use of some advanced marketing techniques may also be limited by historical growing conditions. An area Extension agent in Kansas told us that producers in Southeast Kansas are reluctant to use a forward contract for any significant part of their grain crop before harvest because of highly variable yields caused by

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<sup>3</sup>James Mintert, Farmers Current Marketing Practices and Attitudes, paper presented at the American Agricultural Economics Association Extension Workshop (July 31-August 1, 1987).

weather. This condition limits the producers' use of cash forward contracting and futures hedging.

Although cash forward contracting is a technique that small producers can use, the small producer wanting to use it must find a buyer willing to purchase the product in advance. The small producer may not always be able to do this. Information from various studies shows that cash forward contracting is used more for certain crops than for others and more in some parts of the country than in others. Consequently, even though some producers may want to use cash forward contracting to market their products, they may be unable to do so.

Government farm programs may have also discouraged producers from using advanced marketing tools. Government programs have provided producers with a floor price that in some years exceeded the market price at harvest. Many producers may have been reluctant to put forth the effort to learn new marketing skills when the government guaranteed them a price.

In its comments (see app. II), USDA said that agricultural legislation had affected producer use of advanced marketing techniques. According to USDA,

"Since the early 1980's, target prices for feed grains and wheat have been substantially above cash prices. During some periods, loan rates for these commodities and soybeans have exceeded cash prices. This may have perpetuated the incentive for producers to increase per acre yields as a strategy to maximize total returns."

USDA added that high participation levels in farm programs and producers' satisfaction with present marketing methods (particularly for farms with lower gross sales and for beef and pork producers) may explain current levels of use of advanced marketing methods.

ADMINISTRATIVE OBSTACLES TO  
FmHA BORROWERS' USE OF  
ADVANCED MARKETING TECHNIQUES

FmHA has several administrative obstacles that, at least for the foreseeable future, can preclude borrowers from effectively using some advanced marketing techniques. FmHA's Assistant Administrator for Farmer Programs told us that

- administratively, FmHA cannot reserve funds for potential margin calls for borrowers who use the futures market;
- FmHA probably could not process loans quickly enough for borrowers to make margin calls even if funds were available; and

- FmHA field representatives would have to be trained in advanced marketing techniques. Field staff do not have sufficient knowledge now to adequately evaluate many advanced marketing techniques.

OTHER EFFORTS IN THE ADVANCED  
MARKETING PRACTICES AREA THAT  
USDA HAS BEEN ASKED TO PERFORM

Section 206(b) of the Futures Trading Act of 1986 states that the Secretary of Agriculture may establish a program to train farmers and ranchers in advanced techniques for marketing agricultural commodities, livestock, and aquacultural products produced by such farmers and ranchers, including (where appropriate as determined by the Secretary) training in the use of futures and options markets.

We discussed this provision with an official in USDA's Office of the Secretary. The official stated that the Secretary has not taken any action on this issue, and because the provision is discretionary, the Secretary does not plan to take any action.

Sections 1741, 1742, and 1743 of the Food Security Act of 1985, as amended, provide for a special study and pilot projects on futures trading. These provisions, among other things, require the Secretary of Agriculture to do the following:

- Conduct a study utilizing the services of various agencies to determine how agricultural commodities producers can use futures and options markets to provide price stability and income protection, the extent of the price stability and income protection producers might reasonably expect to receive from such participation, and the federal budgetary impact of such participation compared with the cost of the applicable established price support programs for agricultural commodities. The Secretary is to report the results of the study to the House and Senate agriculture committees by December 31, 1989.
- Conduct a pilot program with respect to the crops of wheat, feed grains, soybeans, and cotton in at least 40 counties that actively produce reasonable quantities of such major agricultural commodities traded on the commodity futures and options markets. The Secretary, in cooperation with others, is to conduct an extensive educational program for producers in the counties selected for the pilot program. The program is to, among other things, provide that a reasonable number of producers may, at their election and in accordance with pilot program requirements, participate in the trading of designated agricultural commodities on a futures or options market in a manner designed to protect

and maximize the return on agricultural commodities of their own production marketed by them in accordance with program requirements. Participating producers are to be assured that the net return received for the agricultural commodities that such producers allocate to the program is no less than the price support loan level for such agricultural commodity in the county where it is produced. The Secretary is to utilize the services of an advisory panel selected by the Secretary consisting of producers, processors, exporters, and futures and options traders on organized futures exchanges.

The Economic Research Service is currently studying how producers might use commodity futures and options markets, as directed in the Food Security Act. On August 25, 1987, the Secretary appointed members to the Secretary's national advisory committee on the 40-county pilot program. In January 1988 USDA's Agricultural Stabilization and Conservation Service, which is responsible for the pilot program, announced the 40 counties that were selected to participate in the program. The 40 counties are in 22 states.

## APPENDIX I

## APPENDIX I

PRODUCER MARKETING SURVEYS: 1976 TO 1986

<u>Study no.</u>	<u>Date information gathered</u>	<u>Person/organization conducting study</u>	<u>Study title</u>	<u>Geographic area covered in sample</u>	<u>Commodities covered in study</u>	<u>Survey group</u>
1	March-June 1986	Texas Agricultural Extension Services, Texas A&M University	National Assessment of Extension Educational Programs in Producer Marketing Alternatives	12 states plus the New England states	Grain, livestock, and others	Producers throughout the U.S.
2	1986	Charles R. White, graduate student, Iowa State University	A Survey of Iowa Lenders and Producers To Determine Current Services, Attitudes, and Education Concerning Commodity Marketing	State of Iowa	Grain and livestock	Iowa Farm Business Association members
3	Jan.-Feb. 1986	Kansas State University Cooperative Extension Service	Financial Position of the Grazing Livestock Industry in Kansas	State of Kansas	Livestock, including dairy cattle	Kansas livestock producers
4	1985 crop data	Kansas Agricultural Statistics, USDA Nat'l Agricultural Statistics Service, in association with Kansas State Board of Agriculture	Kansas Grain Marketing, Data for 1985 Crop	State of Kansas	Wheat, corn, grain sorghum, and soybeans	Kansas grain producers
5	1984 crop data	Kansas Crop and Livestock Reporting Service	Kansas Grain Marketing and Transportation, Data for 1984 Crop and Historical Data 1979-83	State of Kansas	Wheat, corn, grain sorghum, and soybeans	Kansas grain producers
6	Early 1984	V. James Rhodes and Glenn Grimes, University of Missouri, Columbia, Agricultural Experiment Station	Medium Size and Larger U.S. Hog Producers	46 states and Puerto Rico	Hogs	Hog producers
7	Spring 1983 and Spring 1984	Dr. Mack W. Leath, Economic Research Service, USDA	Pricing Strategies Used by Soybean Producers	21 states (11 mid-western and 10 southern states)	Soybeans	Soybean producers
8	1977	Statistical Reporting Service, USDA, for the Commodity Futures Trading Commission	1977 Report on Farmers' Use of Futures Markets and Forward Contracts	Contiguous 48 states	Grain, livestock, and others	Farmers with gross commodity sales greater than \$10,000
9	Dec. 1976	Statistical Reporting Service, USDA, for the Commodity Futures Trading Commission	Grain Pricing	Sample was obtained whereby results could be projected to be representative of all U.S. farmers	Grain, livestock, and others	Farmers with gross commodity sales greater than \$10,000

## PRODUCER MARKETING SURVEYS: 1976 TO 1986

Study no.	Number of responses	Results obtained	Purpose of study
1 (cont'd)	3,494	11.4% of respondents indicated they had used futures and options; 24.4% of respondents indicated they had used forward cash contracts.	To gain information from a broad cross section of producers regarding their marketing experience and concerns. To assess producer needs for additional educational assistance in producer marketing practices and alternative ways of meeting these needs through Extension efforts.
2 (cont'd)	173	35.5% of producers responding were using futures markets; 14.4% of producers were using the options market. The use of forward contracts was not addressed in the study.	This study had three purposes: (1) to analyze what commodity marketing services are being offered by banks to producers, (2) to determine the attitudes of producers and lenders toward the futures and options market, and (3) to determine what additional marketing or education is needed by both producers and lenders in Iowa.
3 (cont'd)	355	6% of respondents reported they had used futures or options.	To identify the type of grazing land production practices, financial arrangements, and marketing practices that are currently being utilized.
4 (cont'd)	2,167	5% to 16% reported sales by forward contracting; less than 0.5% to 3% hedged and less than 0.5% to 1% purchased put options to hedge; percentage varied by type of commodity.	To determine how Kansas grain producers market the four major Kansas grains and what strategies, if any, were used in the marketing process.
5 (cont'd)	3,494	4% to 8% of producers forward contracted all or part of crop; 2% to 3% of producers hedged part of their crops; percentage of producers varied by type of commodity.	To determine how Kansas grain producers market the four major Kansas grains and what strategies, if any, are used in the marketing process.
6 (cont'd)	1,153	3% to 7% sold by forward contract and 7% to 13% hedged directly in the futures market; percentage varied by size of operation.	Periodic survey of the nation's largest hog producers in cooperation with the staff of <u>Hog Farm Management</u> magazine.
7 (cont'd)	1,181	19.2% of crop sold was priced by forward contract.	To determine the methods used in pricing and marketing soybean crops in the selected 21 states.
8 (cont'd)	3,439	4.6% of respondents bought or sold futures contracts during 1977; 9.6% of grain producers and 1% of livestock producers entered into forward contracts during 1977.	Second sample survey of U.S. farms conducted for CFTC by SRS to determine the extent and nature of farmers' trading in futures markets and the extent of their use of forward contracts.
9 (cont'd)	about 10,000	5.6% of respondents bought or sold futures contracts during 1976; 10.3% of grain producers and 1% of livestock producers had signed or would sign forward contracts in current year.	To determine the extent to which farmers use futures markets and cash forward contracts in marketing their produce.

COMMENTS FROM THE  
U.S. DEPARTMENT OF AGRICULTURE

Note: GAO comments supplementing those in the report text appear at the end of this appendix.



DEPARTMENT OF AGRICULTURE  
OFFICE OF THE SECRETARY  
WASHINGTON, D.C. 20250

2 FEB 1988

Mr. Brian P. Crowley  
Senior Associate Director  
U.S. General Accounting Office  
Washington, D.C. 20548

Dear Mr. Crowley:

Thank you for providing an opportunity to review and comment on the draft report, Agricultural Marketing: Farmers' Marketing Practices and Programs to Teach Alternative Practices (GAO/RCED-88-788R).

The indicated draft GAO report oversimplifies the treatment of farmers' marketing practices and does not give the reader an indication if anything needs to be done or changed.

The report relies heavily on a set of nine existing studies supplemented with general information obtained through contacts with government agencies, commodity exchanges, producer organizations, and land grant universities. Two general conclusions emerge. First, advanced marketing techniques are not heavily used by farmers, and second, there are expanding efforts to expose farmers to advanced marketing techniques and to make more information available to help them use these techniques. Given this background information, readers would benefit from more discussion of how much farmers individually and collectively might gain by using advanced marketing techniques. Then, if gains were likely, readers would want to know more about barriers farmers face in adopting these techniques and suggested steps to overcome such barriers.

See comment 1.

Advanced marketing techniques were defined, "as any method of marketing other than selling at harvest in a spot market." Given this definition, the report totally overlooks one of the most widely used advanced marketing techniques which is the use of CCC nonrecourse loans. The use of CCC loans should be considered in any appraisal of advanced marketing techniques. CCC loans can provide a price floor that could be above a price floor that could be locked in with a hedge in the futures market, and for the individual farmer, there is no basis risk with a CCC loan. The presence of CCC loans may be a factor in the low use of futures and options markets. Another point in relation to the advanced marketing technique definition is that it has long been a common practice for farmers to store a crop for a period of time after harvest before selling in a spot market. The definition would imply that this practice would be an advanced marketing technique which is probably not intended.

See comment 2.

Mr. Brian P. Crowley

2

See comment 3.

The report understates the possible impact of agricultural legislation in explaining producer use of advanced marketing techniques. Since the early 1980's, target prices for feed grains and wheat have been substantially above cash prices. During some periods, loan rates for these commodities and soybeans have exceeded cash prices. This may have perpetuated the incentive for producers to increase per acre yields as a strategy to maximize total returns. High participation levels in farm programs, and producers' satisfaction with present marketing methods (particularly for farms with lower gross sales and for beef and pork producers, page 25) may explain current levels of use of advanced marketing methods.

Now on p. 20.

See comment 4.

The first several paragraphs of Section 5 appear to support a common misconception that use of forward markets as a source of price information (an indirect use) is not as important as the direct use. The Economic Research Service (ERS) publication that is cited points out that an indirect use may be the most appropriate use for an individual producer.

See comment 5.

The report makes inadequate reference to the extensive research and educational literature developed through land grant universities (experiment stations and extension services), professional agricultural economists and economics journals, and commodity exchanges. The report correctly notes that few previous studies of the extent of utilization of advanced marketing practices exist. (Two relatively recent studies not mentioned were performed by Dr. Donald L. Snyder of Utah State University, Economic Research Institute. Both are dated in 1982. They addressed lender attitudes toward futures contracts and producer usage of marketing alternatives in Utah.) We would recommend a more thorough literature search.

See comment 6.

The report made reference to the Congressional directive requiring the Department to conduct a study of the use of agricultural commodity futures and options markets by December 31, 1988. It should be noted that in the FY 1988 Budget Reconciliation Bill, this date was extended to December 31, 1989.

Enclosed is a list of specific comments. Again, thank you for the opportunity to review and comment on the report. Please advise if we can provide further information.

Sincerely,

  
ORVILLE G. BENTLEY  
Assistant Secretary  
Science and Education

Enclosure

The following are GAO's comments on the U.S. Department of Agriculture's letter dated February 2, 1988.

GAO COMMENTS

1. While we agree that the use of Commodity Credit Corporation (CCC) loans could be considered as an advanced marketing technique, we did not include such loans in the techniques we focused on. According to the legislative history of the section requiring our study and our discussions with congressional staff members, CCC loans were not among the advanced marketing techniques that the sponsors of the legislation were specifically concerned about.
2. USDA said that our definition of advanced marketing techniques would imply inclusion of the common practice of storing a crop for a period of time after harvest before selling in a spot market and that this was probably not intended. Although storing a crop for later sale in a spot market could be considered as an advanced marketing technique, it was not among the techniques on which our review was focused.
3. Material added to p. 39 to recognize USDA's comment.
4. Our review of the publication showed, and one of the publication's coauthors confirmed, that the publication did not point out that an indirect use of forward markets may be the most appropriate use for an individual producer. The publication indicated, however, that producers often use forward markets as a source of price information.
5. The purposes of our review were to ascertain the extent to which farmers use advanced marketing techniques and to identify marketing education programs that the Department of Agriculture and others were providing to teach producers how to use such techniques. We did not seek to collect or measure all of the research and educational literature that had been developed through land-grant universities, professional agricultural economists and economics journals, and commodity exchanges. Nevertheless, as stated in section 1, we reviewed various articles and publications by agricultural economists about producers' marketing techniques, and we asked the entities completing our questionnaires on marketing education programs to list the principal publications used in their programs and asked the land-grant universities to indicate if they would recommend the publications for use by others. Because of space considerations, our report does not include the detailed responses we obtained. However, we refer in a general way in

section 4 to the written materials and other types of publications used in the marketing education programs.

On the matter of the Utah State University studies, our contacts with the numerous entities listed in table 1.1 in section 1, including four agencies in the Department of Agriculture, did not disclose the existence of those studies at the time we made our review. Our subsequent discussion with the studies' author indicated that they provided information on the extent to which cattle producers in Utah were using advanced marketing techniques. As described to us by the author, the studies' results were similar to those of the studies we looked at during our review.

6. The specific comments, which contained suggestions to improve the report's technical accuracy, are not reproduced herein. The suggested changes have been made in the report as appropriate.

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