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APPLIED COMMODITY PRICE ANALYSIS, FORECASTING AND MARKET RISK MANAGEMENT

## **Developing a Producer-Oriented Market Information Delivery System**

by

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DEVELOPING A PRODUCER-ORIENTED MARKET  
INFORMATION DELIVERY SYSTEM

Harlan Hughes,  
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Robert Price\*

Marketing information needs of farmers and ranchers have changed dramatically over the past 10 years. Increasing price variations for agricultural commodities have increased the uncertainty faced by farmers as they develop their marketing plans. There is concern that the market outlook information provided by the extension service and other sources has not kept pace with this greater uncertainty. More and better information is needed by producers in order to evaluate their marketing alternatives and to develop marketing plans consistent with their objectives.

Several developments in recent years have raised the need for better marketing information to be used in making agricultural marketing decisions. These developments include variation in foreign demand for

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U.S. products, shortages of fuel and fertilizer, changes in agricultural government programs, and droughts in some of the major agricultural areas of the United States. The increase in marketing risk is exemplified by the greater price variability observed in grain markets. During the 1960s the difference between the high and low monthly prices for the marketing year was in the range of 10 to 30 cents per bushel for wheat and feed grains. In recent years, these differences have increased dramatically, often amounting to over \$1.00 per bushel.<sup>1</sup> This increase in price variability presents both problems and opportunities for farmers and ranchers. Minimizing the problems and taking advantage of the opportunities, however, requires accurate information presented in a useful format and provided in a timely manner.

#### Marketing Information Needs of Farmers and Ranchers

Brown and Collins, University of Missouri, conducted a national study in 1977 on the information needs of large commercial farms.<sup>2</sup> A random sample of 1,639 farmers, 10 from each of the four U.S. extension regions, were personally interviewed. A mail questionnaire was also sent to 102 extension employees. Agri-business leaders were personally interviewed and extension directors were contacted. A total of 408 farmers and ranchers in the western region were surveyed. Out of these 188 (46%) responded to the survey. A total of 782 farmers and ranchers from all regions responded to the mail questionnaire.

Overall, this was a large project undertaken to identify information needs of large commercial farmers and ranchers.

Surveyed farmers and ranchers perceived "marketing information" as the greatest value to them in operating and planning for the future. Production technology ranked a very close second; however, their perceived sources of marketing and production information showed a distinctively different pattern. While extension and universities were ranked as the number one source of production information (33% from this source), extension and universities were ranked fourth as a source of marketing information (7% from this source). Three sources--marketing firms, farm magazines, and radio and television--were continually ranked over extension and universities as sources of marketing information. Farmers valued neighbors opinions on use of inputs more than they valued their neighbors opinion on marketing. Newsletters and personal contacts were frequently singled out as the desirable way to transmit information. Short, concise, one-subject newsletters were rated high. The general consensus of the farmers was that they would be willing to pay for the needed marketing information provided it was packaged in such a way that it would meet their needs.

The Brown/Collins study clearly indicated that extension and universities are not meeting farmers' perceived market information needs nearly as well as they are meeting their production information needs. From the 40 in-depth farmer surveys, the authors concluded

that few farmers even expect extension and universities to provide comparable assistance in marketing. A surprising number of farmers did not even think of extension as a source of market information!

Agri-business noted that farmers need more education in marketing skills. Agri-businessmen maintained that farmers are very uncomfortable when it comes to selling their products. They said emphasis is needed on educational programs designed to teach hedging, forward contracting, etc. These same agri-business firms expressed a strong desire for extension to bring about a more effective communications of information related to marketing farm commodities. The agricultural media suggested that extension should consider transmitting market and outlook information more rapidly to the agricultural media. They even suggested, "direct electronic communications to provide farmers and ranchers an analysis of what was happening in the marketplace."

The Brown/Collins study can be summarized with six items:

- (1) The large commercial family farmers and ranchers perceive marketing information as their number one need.
- (2) Extension and universities were rated the most important source of production technology, but only of minor importance as a source of marketing information.
- (3) Farmers and ranchers appear willing to pay a larger share of dissemination costs for market information.
- (4) Farmers, agri-business, extension, and agricultural media all expressed the belief that market information is critical now and will continue to be critical in the future. They also agreed that present sources of market information are inadequate.
- (5) There was a strong indication that young farmers considered sources other than extension more important.

- (6) Extension employees in all regions tended to overestimate farmers ranking of extension as a source of market information.

A 1976 Commodity Futures Commission (CFTC) study indicates that only 37% of U.S. grain farmers even watch futures prices. Only 1% indicated that they actively hedge.<sup>3</sup> The study goes on further to state that in the mountain states (Region 8) that only 1.8% of the producers brought or sold futures contracts.<sup>4</sup> Only 16.4% of all farmers and ranchers with annual sales over \$10,000 even kept track of futures prices at some time during 1976.<sup>5</sup> Forty-seven percent of the producers in the mountain states indicated that the reason they did not buy or sell futures was because they were not acquainted with futures and the use of futures was "too risky". "Too risky" also indicates that these producers probably did not understand futures.

In 1979, a survey was sent to state extension services administrators.<sup>6</sup> The response of 44 state administrators that returned the survey can be summarized by:

- (a) Thirty-seven out of 44 states placed extension marketing programs in the range of "important" to "of highest importance".
- (b) Only 20 states indicated changing marketing program priorities due to changing priorities in state problems.
- (c) Program areas identified as needing additional resources which are pertinent to this paper are:
  - (1) Livestock and meat marketing
  - (2) Field crop marketing
  - :
  - :
  - (6) Market information and outlook
  - :
  - :

(8) Producer marketing alternative  
 ⋮

The response of 188 marketing specialists in the 44 states can be summarized by:

(a) Marketing problems needing more work in rank order are:

(1) Market information  
 ⋮

(3) Price discovery

(4) Risk aversion  
 ⋮

(b) Reasons why marketing problems have not been addressed adequately were:

(1) Lack of financial resources

(2) Lack of data base for research

(3) Expertise not available on the staff

The authors summarized the study with:

"It is recommended that state cooperative extension service administration examine the results of the survey, analyze their state's specific needs, determine where a cooperative effort is needed and develop plans for renewing and/or initiating programs to effectively manage the problems identified."

A joint USDA-NASULGC study committee recommended, "that extension increase emphasis on marketing and farm business management while reducing the percentage of effort in husbandry and production.<sup>7</sup> The study goes on to say that "extension should gradually shift towards giving more in-depth training to producers and to wholesaling information through supply firms."

Most extension program appraisal studies make recommendations which



generally include experimentation with the latest electronic and computer innovations. New York dairymen in the 1977 telephone survey, felt that extension could improve its effectiveness by placing more emphasis on the use of the computer as an educational tool.<sup>8</sup>

Western Livestock Marketing Information  
Project (WLMIP)

The Western Livestock Marketing Information Project (WLMPI) is a regional cooperative effort of the 17 western states, Economics and Statistics Service/USDA, and SEA/Extension. The western region includes the six plains states and 11 western states. The purpose of WLMPI is to furnish marketing situation and outlook information to the livestock industry with special emphasis on the western region. Outlook work receives full-time attention of two professional staff economists complemented by capable secretarial and clerical personnel. The staff collects, compiles, analyzes, and disseminates marketing information.

The project publishes a monthly magazine called the Western Livestock Round-Up. The current mailing list is about 15,000 primarily in the western and plain states. There are, however, subscribers from virtually all states and several foreign countries. In a recent evaluation of the Round-Up the readership in the 17 western states responded very favorably about the accuracy and timeliness of the publication.

The project maintains a data bank consisting of a wide array of historical, current and projected information. In addition to the USDA

data series, the Project's data base contains several unique time series not maintained by USDA or any other public office. This information is regularly distributed in a readily usable form to state livestock marketing specialists in the participating region as well as to various industry organizations. The project staff frequently writes articles, speeches, and comments concerning relevant aspects of the market situation and outlook. Many of these are picked up and used by the agricultural press. By closely monitoring, analyzing, and distributing outlook materials, the project efficiently meets much of the information needs of state marketing specialists and ultimately benefits the producers in the participating states.

#### Market Information System on AGNET

In 1979, Wyoming piloted a Market Information System on AGNET.<sup>9</sup> The objective of this Market Information System was to provide current, up-to-date market information to Wyoming ranchers and farmers through Wyoming's county extension offices. The key information supplier was the Wyoming Department of Agriculture. They agreed to contribute 20-30 hours of staff time monthly to updating market files on AGNET.

The four specific objectives of the pilot Market Information System were:

- (1) To collect market price information of interest to Wyoming producers.
- (2) To provide county extension offices with the ability to retrieve market information so that they could put together today's, yesterday's, last week's, last month's, or last year's markets of interest to their producers.

- (3) To provide simple, down-to-earth interpretations of what these market prices and the associated outlook means to Wyoming producers.
- (4) To provide price forecasts for agents to use with producers in forward planning (this is still under development).

This project soon became an AGNET regional project where expertise and market data of North Dakota, South Dakota, Nebraska, and Wyoming were all utilized in the market information system.

Since June, 1980, the Western Livestock Market Information Project has been participating in the AGNET Market Information System. Because of the close proximity to and the excellent cooperation with the Colorado Crop and Livestock Reporting Service, the project is able to distribute USDA reports and WLMPI analysis over the AGNET Information System within a short time of their release. Several favorable comments have been received from producers who have received situation and outlook information over AGNET before it was available through more traditional channels.

#### People--The Key to a Good Market Information System

The major component of any good market information system is to have people that will routinely put the information on the computer. This meant that secretaries and technicians would need to put this data on the computer rather than marketing specialists and AGNET coordinators. Special user oriented computer programs were written to collect the market prices. Secretaries and technicians can easily enter the

prices without knowing any special computer commands.

It became evident that in order to get timely information it was going to be necessary to find people that have access to the market information wire service. The Wyoming Department of Agriculture had been given the responsibility of disseminating market information throughout the State of Woming and already was subscribing to the wire service. The department was contacted and they welcomed the opportunity to routinely input current market information onto the AGNET computer. To date the futures market and national cash market are entered daily by the Wyoming Department of Agriculture.

Additional market files are being routinely put on by people such as the Western Livestock Market Information Project, Department of Agricultural Economics at South Dakota, Department of Agricultural Economics at the University of Nebraska, Wyoming AGNET secretary and AGNET coordinator. In addition, the Colorado Department of Agriculture is putting on a file of Colorado cash grain markets. The menu in Table 1 indicates the variety of files presently going onto the AGNET system.

We also are putting on weekly analyses on AGNET so that users can get a snapshot of what happened in the markets this week and what they can expect to happen and should be looking for in the markets this next week. Gene Murra, South Dakota State University, puts on a weekly summary of the cattle and hog markets late each Friday afternoon. Jim Kendrick and associates, University of Nebraska, put on a weekly analysis of the grain markets each Friday afternoon. These markets

Table 1. Information Available through Agnet's "Markets" Program

FILE NAME	DESCRIPTION	GENERATING AGENCY	TIME OF DAY PUT ON SYSTEM
1. AGPRICES	SELECTED COMMODITY PRICES FROM AROUND THE NATION	WYO. DEPT. AG.	4:30 MST
2. COLOGRAIN	COLORADO WHEAT, CORN & SORGHUM PRICES	COLO DEPT. AG.	5:00 MST
3. MPLSCASH	MINNEAPOLIS CASH GRAIN CLOSINGS	S. DAKOTA AGNET	?
4. MPLSFUT	MINNEAPOLIS CLOSING FUTURES FOR WHEAT AND SUNFLOWERS	"	?
5. GRAINC	GRAIN FUTURES CLOSING - PUT ON BY WYO. DEPT. OF AG.	WYO. DEPT. AG.	1:00 MST
6. LIVEC	LIVESTOCK FUTURES CLOSING - PUT ON BY WYO. DEPT. OF AG.	"	1:30 MST
7. FUTUREC	PRINTS BOTH GRAINC AND LIVEC REPORTS	"	"
8. CASHMARKET	TEN DAY TREND OF THE 12 COMMODITIES IN THE PRICES FILE	WYO. AGNET	5:00 MST
9. PRICES	NATIONAL MKT PRICES FOR 12 COMMODITIES (1 DAY BEHIND)	"	"
10. GRAINO	GRAIN FUTURES OPENING - PUT ON BY WYO. DEPT. OF AG.	WYO. DEPT. AG.	9:00 MST
11. LIVEO	LIVESTOCK FUTURES OPENING - PUT ON BY WYO. DEPT. OF AG.	"	"
12. FUTUREO	PRINTS BOTH GRAINO AND LIVEO REPORTS	"	"
13. PORK	DAILY SLAUGHTER, DRESSED PORK, INT. & TERM HOG REPORTS	WLMPI	5:00 MST
14. FEDCATTLE	DAILY TERMINAL FEEDLOT REVIEWS	"	"
15. BEEF	DAILY SLAUGHTER AND WHOLESALE BEEF VALUES	"	"
	*** WEEKLY ***		
16. NEBHAY	NEBRASKA WEEKLY HAY REVIEW - 9/14	WLMPI	
17. KANHAY	KANSAS WEEKLY HAY REPORT - 9/14	"	
18. HOGFUT	TABLE & COMMENTS ON THIS WEEK'S HOG MARKET	S.D. DEPT. AG. ECON.	FRIDAY 4:30 MST
19. GRAINREVIEW	WEEK IN REVIEW: GRAIN FUTURES MARKETS (WITH COMMENTS)	NEB. DEPT. AG.	"
20. CATFUT	TABLES & COMMENTS ON THIS WEEK'S CATTLE MARKET	S.D. DEPT. AG. ECON.	"
21. CASHBID	REPRESENTATIVE CASH GRAIN BID PRICES IN NEBRASKA	NEG. AG. ECON.	"
22. NEBLIVE	REPRESENTATIVE NEBRASKA LIVESTOCK CASH PRICES	"	"
	*** MONTHLY ***		
23. COF7	SEPTEMBER 1 7-STATE CATTLE ON FEED REPORT	WLMIP	
24. RANCHADV	RANCH ADVISORY REPORT	NEB. AG. ECON.	
	*** AS AVAILABLE ***		
25. INTEREST	EFFECTS OF HIGH INTEREST RATES ON MARKET DECISIONS		

summaries are found to be extremely useful each week. Harlan Hughes makes sure that he has these reviews in his hip pocket whenever he visits Wyoming farmers and ranchers. He argues that one can gain a lot of credibility with clientele by being up-to-date on markets. We are encouraging our Wyoming Agents to also capitalize on this very point. Bob Price, Western Livestock Market Information Project, provides some detailed data on large feedlots and wholesale meat prices for cattle and hogs. The general approach has been to save any market prices collected into data files that can be later retrieved and analyzed as desired by the user.

We are quite satisfied now with the total number of national market files going onto the AGNET system. We are still encouraging, however, that more local market prices be entered into the computer so that the users can retrieve local market information as well as the national market information.

#### Direct Delivery of Market Information-- A Pilot Project

In the Spring of 1981, the Western Livestock Market Information Project, in cooperation with Wyoming and Nebraska, submitted a proposal to the USDA to provide direct delivery of market information to producers through producer owned microcomputers. This project was funded and is in operation today. Due to this special project, several new market files are now being put on AGNET daily and weekly.

Procedures are now in place to put on sixteen daily market files,

several weekly summary files, several monthly files, and several as available files (see Table 1). AGNET users are being provided with a menu of what market information is available on AGNET at any given point in time. County extension agents and agricultural loan officers are being encouraged to put "Marketing Bulletin Board" in their office. The educational objective is to get producers to look to these local offices as an up-to-date source of market information. Agents and loan officers are being trained to integrate this readily available market information into forward planning decision models called Marketing Decision Aids. Agents are to use these tools to teach producers how market information and outlook can be used in forward planning of their operations.

#### Retrieval Programs

Several computer programs have now been written to allow users to retrieve market prices over a multi-day period. Our goal is to allow users to retrieve the market prices in any way, shape, or form desired. In practice, however, we have not been able to write that many programs, but we do have several retrieval programs operational. The retrieval programs presently available are:

1. PRICEPLOT -- This program allows you to retrieve futures prices over any 100-day period you select. A three-day moving average is automatically calculated and printed. In order to keep our files manageable, we now have on line futures prices back to June 1980. Previous data is on tape. The user can retrieve any 100 days he wants and then he can graph the last 12 days from that list. This program is generally used to plot

futures prices for the most recent 12 market days. A simple 12-day average is printed out along with the simple trend line equation. The slope of the trend line is used to indicate the 12-day trend. This retrieval program has proved to be a good way to look at the futures markets in a glance.

2. CASHPLOT -- This program was designed to plot and analyze selected beef prices listed on the commodity page of the Wall Street Journal. This data base goes back to mid-1977 and allows you to pull out any month's data. Individual month's date can be grouped into longer periods and yearly data can be plotted. Feedlot margins and packer margins can be calculated and plotted with this program.
3. MARKETCHARTS -- This program is a flexible market charting program utilizing the futures price files on AGNET. This program allows you to prepare moving average charts, bar charts, or point and figure charts. It was designed by North Dakota for the formal chartist who wants to let the computer do the work of following futures markets. This is a very powerful program that we fully expect to become very popular on the AGNET system.
4. PRICEDATA -- Used to retrieve both cash prices and the associated futures prices. User specifies the files that are to be retrieved. This program can also be used to calculate the basis from selected national cash markets reported in the Wall Street Journal and specified futures contracts. As more local price files are collected, this program could be used to calculate local basis.
5. BASIS -- Used to calculate the basis from any local corn or wheat markets to Chicago's futures markets. User provides the Thursday local price and the program provides Thursday's Chicago price. Program averages the basis over the user specified time period. This program is very useful for any user to calculate his own elevator's corn or wheat basis.
6. FEEDERPRICES -- Used to retrieve feeder cattle prices for last week on the eastern slopes of Colorado. This program was designed to help in budgeting different weight cattle in the various AGNET Marketing Decision Guides. Program also allows the user to use the futures markets as a way to project forward prices for different weights of feeder cattle.



## Retrievals -- A Feedback Mechanism

One of the more unique aspects of using the computer as a delivery system is that you can get a count of the number of user retrievals made each month. This feedback mechanism allows the information generators to see what users feel is the more interesting items put on AGNET. A summary of the MARKETS retrieval made for the past five months is presented in Table 2. During September, 1981, 2,396 market price retrievals were made. This does not include the file retrievals made by the special purpose retrieval programs. In August, 1981, the special purpose programs were used a total of 421 times. The authors are pleased with the price retrievals that are being made from this new market price delivery system.

One can study the individual file retrievals and get some feedback about the interest that users have in a special topic. Occasionally, this has proven to be quite a sobering experience. The topics that one often expects to be retrieved a large number of times may be retrieved only very few times. Topics that one often thinks will be of little interest may have a high number of retrievals. This implies that it is hard to predict what users desire and furthermore implies that we may not know our users interests as well as we thought. Traditional delivery systems do not let you know what your users (clientele) think of your materials. Blanket mailings to agents is a common specialist's information disseminating technique. Without feedback, one continues to do more of the same. With feedback, you are inclined to change towards what the users want. AGNET provides feedback to guide you.

Table 2. AGNET MARKETS Files by Monthly Retrievals

File	May	Jun	Jul	Aug	Sep
AGPRICES	75	85	92	91	134
APRGRAIN	22				
AUGGRAIN				1	28
BEEF		3	32	45	82
BEEFADVISORY	6	8	3		
CALHAY	6	6			
CASHBID				16	56
CASHLIVE					1
CASHMARKET	92	81	99	99	96
CATFUT	93	78	75	102	161
CATINV			12		
CATTLE	20	2			
COF	3	15	11		
COF7				8	11
COLOGRAIN					24
FEDCATTLE		2	29	47	83
FEEDGRAINS		6			
FEEDSTUFFS	3	1			
FOODGRAINS		4			
FUTUREC	153	105	125	175	213
FUTUREO	48	29	33	20	64
GRAINC	74	82	125	107	166
GRAINO	52	56	59	54	68
GRAINREV	153	127	137	139	232
HOGFUT	56	49	43	74	107
HOGINV					15
INTEREST					35
JULYGRAIN				14	
JUNGRAIN		1	12		
KANHAY	11	15	20	8	24
LAMBS	5				
LIVEC	59	67	74	107	151
LIVEO	45	25	29	42	61
MARKETS	24	12			
MAYGRAIN	8	12			
MEAT	1				
MPLSCASH	70	53	56	76	141
MPLSFUT	79	50	62	71	140
NEBHAY	32	30	42	14	34
NEBLIV					66
OILSEEDS		1			
PORK			11	30	44

Table 2 (Continued)

File	May	Jun	Jul	Aug	Sep
PRICES	44	41	54	66	58
RANCHADVISORY	10	8	4		10
RANGE	8				
SWINEADVISORY	18	11	9	22	17
UPDATE	262	232	40	34	58
USWHT	19				
WCROP	20				
WHITEWHEAT					16
WYBEEF			4	5	
TOTAL	1571	1297	1292	1467	2396

Direct Delivery of Market Information --  
A Preliminary Report

A special project proposal was funded by USDA to test the feasibility of direct delivery of market prices and outlook information through producer owned microcomputers. Doug Jose (University of Nebraska), Robert Price (WLMIP), and Harlan Hughes (University of Wyoming) agreed to find 25 producers and 12 county extension agents that would access the market information directly. Producers were to use their own microcomputers to frequently access the market and outlook information. Agents were to set up marketing bulletin boards in their county extension offices and also make special mailings of the market materials to selected producers. All cooperators were asked to pay all variable costs associated with the delivery of the market information. The project funds were used only to enhance the data

generation phase and not to assist with delivery cost. Previous studies had concluded that producers were willing to pay for delivery of market information and this concept is being tested in this project. This project started in August 1981, and will run until December 30, 1981. A preliminary report of the first 60 days is available from the authors of this paper.<sup>10</sup>

One of the several unique concepts being tested in this special Direct Delivery of Market Information Project is the user of "ELECTRONIC CONFERENCING." AGNET's electronic conferencing is being used to continuously guide the cooperators through the everchanging marketing information. All user training and subject matter guidance so far has been done through electronic conferencing. We sent out only two letters to each cooperator. The first introduced him to the project and invited him to become a cooperator. If he accepted the invitation, the second told him his AGNET number, provided a copy of the contract that he was to sign, and told him how to sign up to the electronic conferences for marketing cattle and grains. From this point on, any guidance was provided through the electronic conference.

To date, electronic conferencing has proven to be very successful. If you have not used the electronic conference, have someone show it to you. You will be amazed how useful it can be -- especially when your conferences are located in several states. This concept has helped us guide our cooperators through the large amount of market information.

## What's Next

We have now developed a long-range plan for computerized delivery of market information. Colorado, Oregon, Wyoming, and WLMPI have developed a large project proposal entitled "Education and Computerization of Marketing/Management" (EDCOMM). We are actually seeking funding for this project.

Producers perceive marketing information as one of the most needed sources of information; however, it is also apparent that most producers did not perceive extension as a viable source of market information. One project proposal is designed to put extension in the market information business and to change producer perception to one of expecting and receiving marketing information from the Cooperative Extension Service.

Our small pilot project funded by USDA is demonstrating that computers can be an effective delivery system of timely market and outlook information. We plan to pursue the long-range EDCOMM project to the fullest of our abilities.

## Footnotes

- <sup>1</sup>U.S.D.A., Agricultural Prices, Various Issues.
- <sup>2</sup>Thomas G. Brown and Arthur Collins, "Large Commercial Family Farms Informational Needs and Sources," A Report of the National Extension Study Committee, September 1, 1978.
- <sup>3</sup>John Helmuth, "Grain Pricing," Economic Bulletin No. 1, Commodities Futures Trading Commission, September, 1977.
- <sup>4</sup>Ibid., p. 23.
- <sup>5</sup>Ibid., p. 30.
- <sup>6</sup>Ed Watkins and Sharon Hoobler, Report of ECOP Subcommittee on Agriculture, Forestry, and Related Industries Extension Marketing Program and Priorities Survey, SEA-Extension, April, 1980.
- <sup>7</sup>"A Peóple and A Spirit," A report of the Joint USDA-NASULGC Study Committee on Cooperative Extension, Colorado State University, Fort Collins, Colorado, 1968.
- <sup>8</sup>Ainslie, et al. "An Evaluation of Cooperative Extension Dairy Programs," Specialist Report, Cornell University, October, 1977.
- <sup>9</sup>Irvin Skelton, "Wyoming Agricultural Extension Service Accomplishment Report for FY-1980," pp. 33-34.
- <sup>10</sup>Price, Jose and Hughes, "Computerized Direct Delivery of Market Information--A Pilot Project," October 1, 1981.