transformed to first differences of logarithms.

According to the above analyses, year-to-year changes in stocks and income were associated with approximately three-fourths of the year-to-year changes in price for January, February, and March, and more than three-fifths for April and May. The net effect of stocks upon price was weakest during April and May. The smaller percentage effect of a 1-*percent* change in stocks on price as the season progresses reflects the smaller physical volume in storage. It is likely that a 1 million *bushel* change in stocks would have nearly the same effect on price in each month.

Stocks and income appear to be fairly good indicators of price during the winter months. But in the spring, as the marketing season for apples nears the end, these two factors, although still good, become less reliable.

Concluding Observations

This study presents and evaluates factors and methods whereby the average price received by growers for apples during various parts of the marketing season can be estimated with considerable accuracy relatively early in the season and progressively during the season as revised or new data become available.

Much of the usefulness of estimates of apple prices over the marketing season rests upon their determination early in the season. But to make such early determinations requires the use of preliminary basic figures when they are available, or of assumptions on their size early in the season. Although the first Government forecasts on the size of the apple crop tend to differ considerably from the final estimate in December, each month they become progressively closer to the December figure. By late summer or early fall, they are stable enough to give fairly reliable estimates of apple prices in the months ahead.

Information on probable price behavior early in the season is timely and should prove helpful in making decisions on quantities to market during harvest, quantities to store, and rates of sales from storage. As final figures on production and monthly figures on stocks in cold storage become available, new estimates of prices in the months ahead can be made so as to give revised or new bases for judging the market.

It should be recognized that part of the year-to-year change in the price of apples is not accounted for by the basic factors analyzed in this study. Each new season attention needs to be given to any likely additional factors that may be important in that particular season.

Livestock Marketing Practices in Iowa

By Emil H. Jebe and Norman V. Strand

This is the second of two articles on a survey of cattle and hog marketing practices of Iowa livestock farmers conducted in the spring of 1952 by the Statistical Laboratory of Iowa State College in cooperation with the Iowa Crop and Livestock Reporting Service and the Agricultural Estimates Division, Agricultural Marketing Service. Part of the study was intended to evaluate the use of a new mail survey, initiated in Iowa, on farmers' marketing intentions. The earlier paper [1] gave results on the use made by farm operators of the monthly releases. This paper examines the sources of marketing information available to the same livestock farmers, and looks into some aspects of farm operators' habits and practices in marketing selected lots of livestock.

IT WAS NOT THE PRIME OBJECTIVE of the study reported here to examine in detail how livestock farmers get their marketing information, but when pursuing inquiries about the

[1] STRAND, N. V., and JEBE, E. H., A STUDY OF LIVESTOCK MARKETING IN IOWA. Agricultural Economics Research. 6: 1–9. January 1954.

use of the mail survey releases[2] considerable information was obtained on this subject.

The questionnaire included two questions: "Do you find out, from any source at all, about hog and cattle prices that you might expect in the next 2 months?", or "about the numbers of cattle or hogs in Iowa that may come to market in the next 2 months?" If Yes was answered to these questions another question followed: "Where do you find out?" Table 1 gives a general summary of the responses to the two questions. About 20 percent reported that no effort was made to obtain information about future prices or receipts and about 80 percent reported that an effort was made to obtain it.[3]

Six noncooperators and 30 cooperators or an estimated 9.6 percent of the "livestock farms" said that they obtained price information from the monthly mail survey of the Iowa Crop and Livestock Reporting Service (table 2). This must mean that some operators translate such information into expected price effects, because this survey collects and reports only intentions to market in terms of numbers. At least this conclusion follows, if the questions were properly understood and answered as intended. Farm papers and magazines showed the highest percentage for price information with 19.0 percent, but the various public sources led with an estimated 27.4 percent in finding about expected numbers to be marketed. Considering the monthly marketing intentions report (ICLR) separately, 18 percent mentioned these releases as a source of information.[4] This figure is near the overall use of these Iowa Crop and Livestock Service reports by about 20 percent of the "livestock farmers" given in our first report on the Iowa Monthly Marketing survey.

Printed media—papers, magazines, market news letters, miscellaneous bulletins, and reports—were important sources of marketing information. Table 3 lists the number of such items coming to the operators' homes. Cooperators received a slightly larger number of printed reports, but the mean difference is of the order of sampling variation and class differences are also small.

Comparisons of those who do and those who do not get information about future prices or numbers to be marketed were extended by classifying respondents in terms of animal units on the farm.[5] The results of the comparison for the first question on obtaining information "about prices you may expect" are summarized in table 4. In the first four classes, animal units from 0 to 100, the estimated percentages, or the relative percentages of farm operators, are generally greater for the "no" group, those who do not obtain information on future prices. Conversely, the percentages are much greater in the "yes" group when animal units are above 100.

With respect to average number of animal units per farm, the overall average differences are notable. The figure 98.0 for the "yes" group is 48 percent larger than 66.3, the average animal units for the "no" group. The difference between the cooperator and noncooperator groups in animal units is not large, only 8 units. In terms of numbers of operators in the "yes" and "no" groups,

[2] Other studies have investigated certain aspects of the subject much further. For example:

1. *InFARMation, Please* and *InFARMation Please 2*, published by Wallace's Farmer and Iowa Homestead, Des Moines, Iowa, 1948 and 1952.
2. HOW DO IOWA FARMERS OBTAIN AND USE MARKET INFORMATION. Unpublished Manuscript, Iowa Agricultural Experiment Station, 1951.
3. AN EXPLANATION OF FACTORS MOTIVATING HOG FARMERS IN THEIR PRODUCTION AND MARKETING. Mimeo publication SPS–1, USDA, BAE, Washington, D. C., August 1947.

[3] These percentages, 20 and 80, are estimates for the universe of Iowa livestock farmers and not sample percentages. Similar quantities are reported at various places in this article, although the descriptive adjective "estimated" is not always inserted. The preparation of these estimates was explained on p. 5 of our first article. (Op. cit.) A typographical error occurred in the section on estimation in that article. The last sentence in the second paragraph of that section should read, "A reasonably accurate approximate procedure for combining the two samples is $y = \frac{1}{10}(4y_C + 6y_{NC})$." A mean becomes a proportion when the binominal coding 1 or 0, is used. In this article we use "average number" or "weighted percentage" to distinguish whether means or percentages are being estimated by this formula.

[4] It is to be noted that these estimated percentages have meaning only in the sense that the estimates relate to a situation in which all "livestock farmers" had been mailed the Iowa Crop and Livestock Service schedules and reports.

[5] Animal units per farm are the total number of cattle on farm in 1951 plus 0.33 times the total number of hogs on farm in 1951.

TABLE 1.—*Responses of farm operators to questions on securing information about expected prices and marketings of hogs and cattle* [1]

Item	Secured information [2]					
	Yes			No		
	Non-cooperators	Cooperators	Weighted percentage [3]	Non-cooperators	Cooperators	Weighted percentage [3]
	Number	*Number*	*Percent*	*Number*	*Number*	*Percent*
Prices	62	120	61. 2	38	80	38. 8
Marketings	53	133	58. 4	47	67	41. 6
No information obtained about prices or marketings				20	44	[4] 20. 8

[1] Questions: Do you find out from any sources at all, about hog and cattle prices that you might expect in the next 2 months? Or about the numbers of cattle and hogs in Iowa that may come to market in the next 2 months.

[2] The sample comprised 100 noncooperators and 200 cooperators in the monthly mail survey made by the Iowa Crop and Livestock Reporting Service.

[3] For method used in combining cooperators and noncooperators reference is made to first article. See footnotes 1 and 3 of text.

[4] Conversely, this implies that about 80 percent of farm operators had some sources of information about either future prices or future marketings (in short run, that is, the next 2 months).

Agricultural Marketing Service and Iowa State College Livestock Marketing Survey, March 1952.

TABLE 2.—*Number of farm operators obtaining information on prices and marketings of hogs and cattle by specified sources*

Item	Secured information on—					
	Prices			Marketings		
	Nonco-operators	Cooperators	Weighted percentage	Nonco-operators	Cooperators	Weighted percentage
Source of information:	*Number*	*Number*	*Percent*	*Number*	*Number*	*Percent*
Farm papers, magazines, etc.	19	38	19. 0	18	14	13. 6
Radio	17	14	13. 0	11	19	10. 4
Commercial firms and market news letters	7	22	8. 6	5	8	4. 6
Miscellaneous bulletins and reports	4	0	2. 4	0	2	. 4
Local sources [1]	3	5	2. 8	1	3	1. 2
Public:						
ICLR	6	30	9. 6	8	68	18. 4
Other [2]	5	11	5. 2	9	18	9. 0
Total "Yes" responses [3]	61	120	60. 6	52	132	57. 6
No Response	1			1	1	

[1] Buyers and dealers, sales barn, marketing associations, neighbors and other farmers, night schools.

[2] Iowa State College, Extension Service, USDA, Crop and Livestock Reporting Service.

[3] These totals plus "No Response" agree with totals in table 1.

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noncooperators showed no difference for the several classes of animal units, but cooperators did—as measured by the interaction x^2 for a two-way contingency table. Hence, the observations made on table 4 regarding numbers in the classes is largely based on the cooperator group animal unit class difference.

Day-to-Day Prices of Hogs and Cattle

To obtain information on the sources of information used to secure day-to-day prices, those farm operators who sold an eligible lot [6] were asked, "When you were ready to sell these cattle (or hogs) how did you find out what price you could get for them?"

Selection of only one eligible lot for each respondent made the estimation problem more complicated than that presented in the first paper on this study.[7]

References to the question indicate that almost 60 percent did not sell an eligible lot of cattle in the 6-month period covered by the survey (table

[6] An eligible lot was defined as "any sale of cattle, except cows, bulls, those sold by the head and inter-farm sales" and "any sale of hogs except sows, boars, stags, those sold by the head and inter-farm sales." The term "lot," as used in this paper, may not comprise an entire sale, that is, 2 market classes of hogs, say (barrows and gilts) and (sows) going in one truck to the same buyer on the same day would be counted as 2 "lots."

[7] *Op. cit.*, p. 5.

TABLE 3.—*Number of farm operators receiving specified numbers of papers, magazines and other printed sources of livestock market information*

Item	Noncooperator	Cooperator	Weighted percentage
Papers, magazines, etc., received:	*Number*	*Number*	*Percent*
None	0	1	0. 2
1–3	18	23	15. 4
4–6	46	95	46. 6
7–9	28	62	29. 2
10 or more	8	19	8. 6
Total operators	100	200	100
Average number of papers, magazines, etc., received	5. 72	6. 15	

Agricultural Marketing Service and Iowa State College Livestock Marketing Survey, March 1952.

TABLE 4.—*Classification of farm operators by response to question on securing information on expected prices of cattle and hogs and by animal units on the farm* [1]

Item	Secure information: Yes — Weighted percentage of— All farm operators	Yes — Weighted percentage of— All securing information	Yes — Average animal units per farm	Secure information: No — Weighted percentage of— All farm operators	No — Weighted percentage of— All not securing information	No — Average animal units per farm	Average animal units per farm
Animal units per farm:	*Percent*	*Percent*	*Number*	*Percent*	*Percent*	*Number*	*Number*
0	0. 8	1. 3	0	0. 2	0. 5	0	
1–20	4. 8	7. 8	11. 0	4. 4	11. 3	12. 6	
21–50	12. 8	20. 9	38. 8	12. 2	31. 5	36. 5	
51–100	21. 6	35. 3	74. 4	14. 6	37. 6	71. 9	
101–200	15. 6	25. 5	138. 7	7. 0	18. 1	133. 5	
Over 200	5. 6	9. 2	297. 9	0. 4	1. 0	[2] 225. 0	
Total or average [3]	61. 2	100. 0	98. 0	38. 8	100. 0	66. 3	
Cooperators			105. 7			68. 5	90. 8
Noncooperators			92. 9			64. 8	82. 2

[1] Question: Do you find out about hog and cattle prices you may expect in the next 2 months?

[2] Estimated since the cell for the noncooperators was empty.

[3] For these totals in terms of numbers of farm operators refer to table 1.

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TABLE 5.—*Response of farm operators to question on securing prices of hogs and cattle when ready to sell, for operators selling eligible lots* [1]

Item	Secured information on prices of—							
	Cattle				Hogs			
	Non-cooperators	Cooperators	Weighted percentage of		Non-cooperators	Cooperators	Weighted percentage of	
			All operators [2]	Lots [3]			All operators [2]	Lots [3]
Sold eligible lot:								
Response:	*Number*	*Number*	*Percent*	*Percent*	*Number*	*Number*	*Percent*	*Percent*
Yes [4]	18	53		53.4	70	152		87.9
No [5]	18	41		45.8	16	24		12.1
No response	0	1		.8	0	0		
Total			40.6	100.0			86.8	100.0
Did not sell eligible lot	64	105	59.4		14	24	13.2	
Total	100	200	100.0		100	200	100.0	

[1] Question: When you were ready to sell these cattle (hogs), did you find out what price you could get for them?

[2] Weighted by numbers of eligible lots sold by those answering "yes" or "no."

[3] The details of obtaining these estimated percentages based on weighting by numbers of eligible lots sold by each respondent are given at the end of this paper. See A Note on Estimation, p. 92.

[4] Operator obtained information from sources listed in table 6.

[5] Operator did not obtain such information just before the sale.

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5), but only 13.2 percent did not sell an eligible lot of hogs. For a little more than 50 percent of the eligible sales of cattle, and for almost 90 percent of the eligible sales of hogs, the operators did find out what price they could get. The lower percentage for cattle is explained in part by the fact that definitions of an "eligible lot" of cattle included many miscellaneous types of sales, including veal calves.

Evidences of differences in sources of price information between hog and cattle sales on the eligible lots may be seen in table 6. The "sales-barn" was mentioned more often as a source for cattle price information. This indicates again the influence of miscellaneous sales of calves, feeders, and "warmed up" stock; fed cattle, particularly finished cattle, are seldom sold at a salebarn. Contacts with buyers and commission firms were, relatively, twice as important for hogs as for cattle—52.4 percent vs. 25.9 percent. Combination responses of the type "buyers and radio" were not mentioned at all as a source of information for prices of cattle.

For day-to-day prices of livestock, radio generally appears as a stronger source of information than the printed media; in the area of future prices and receipts newspapers and magazines were mentioned more frequently.

Specific Sources of Marketing Information

A special section of the schedule was set up to collect information on specific sources of market information. Discussion of the data collected may be conveniently divided into these sources: (1) Neighbors, (2) dealers and buyers, (3) radio market news, and (4) printed sources. Emphasis was mainly on where marketing information was or could be obtained, rather than on specifically what was obtained or what action was taken.

NEIGHBORS.—First, respondents were asked, "Do you talk to any of your neighbors about the condition of the market and when it is a good time to sell your cattle and hogs?" From the results it is

TABLE 6.—*Number and percentage of distribution of eligible lots of hogs and cattle sold, by source of price information* [1]

Item	Cattle sold					Hogs sold				
	Noncooperator		Cooperator		Percentage distribution of total lots	Noncooperator		Cooperator		Percentage distribution of total lots
	Lots	Percentage distribution of lots	Lots	Percentage distribution of lots		Lots	Percentage distribution of lots	Lots	Percentage distribution of lots	
	Number	*Percent*	*Number*	*Percent*	*Percent*	*Number*	*Percent*	*Number*	*Percent*	*Percent*
Source of information used:										
Radio and paper	7	11.86	15	10.34	11.2	37	16.52	111	25.00	19.9
Newspaper	3	5.08	7	4.83	5.0	6	2.68	10	2.25	2.5
Salesbarn	7	11.86	13	8.97	10.7	0	0	10	2.25	.9
Contacts with buyers and commission firms	13	22.03	46	31.72	25.9	130	58.04	195	43.92	52.4
Buyers and radio	0	0	0	0	0	19	8.48	55	12.39	10.0
Miscellaneous	0	0	2	1.38	.6	7	3.12	3	.67	2.1
Total	30	50.85	83	57.24	53.4	199	88.84	384	86.49	87.9
Operators who did not secure information	29	49.15	59	40.69	45.8	25	11.16	60	13.51	12.1
No response	0	--------	3	2.07	.8	0	--------	------	--------	--------
Total	59	100	145	100	100	224	100	444	100	100

[1] Question: When you were ready to sell these cattle (hogs), how did you find out what price you could get for them.

Agricultural Marketing Service and Iowa State College Livestock Marketing Survey, March 1952.

estimated that 33.2 percent do not talk to their neighbors about such marketing subjects. Those who responded affirmatively were asked, "Do visits with neighbors help you in deciding when and where to market your cattle and hogs?" Replies yielded these estimates:

Yes, 38.8 percent; no, 25.2 percent; don't know 2.8 percent.

The "yes" respondents were further queried, "In what way do you think they (these visits) help you?"

Response categories were paraphrased from the various originals to indicate the sense of the reply (table 7). The first three categories and numbers 7 and 8 seemed to be the most informative and definitive in explaining how visits with neighbors help in marketing decisions. These comprise about 25 percent in total, or nearly 65 percent relatively of the "yes" responses.

DEALERS AND BUYERS.—Here again the first question asked whether information was obtained from "dealers or buyers on the condition of the market

TABLE 7.—*How visits with neighbors help in making marketing decisions*

Response	Weighted percentage of	
	Total responses	"Yes" responses
	Percent	*Percent*
Neighbors who have visited central markets are usually well informed	2.8	7.2
Experienced neighbors can give valuable advice	5.0	12.9
We compare price quotations, prices received and weights	10.2	26.3
We share our experiences	4.6	11.8
We talk "things" over	2.2	5.7
I discuss, but make my own decisions	5.0	12.9
Neighbors may have information you have not heard about	5.2	13.4
When neighbors' views or opinions agree, I follow them	1.4	3.6
Vague or don't know	2.4	6.2
Total (visits with neighbors are helpful)	38.8	100.0

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TABLE 8.—*Kinds of marketing information received from dealers and buyers*

Response	Weighted percentage of	
	Total responses	"Yes" responses
	Percent	*Percent*
Nonlocal sources:		
Current prices and receipts	17. 6	38. 9
Expected or future prices and/or receipts	4. 2	9. 3
Advice on when to sell	. 4	. 9
Representative comes to farm, looks at stock, gives advice on prices, weights, feeding, when to sell	1. 4	3. 1
Local buyers and dealers:		
Current prices and receipts	5. 8	12. 8
Future prices and/or receipts	6. 0	13. 3
Information helps in planning (how not given)	1. 0	2. 2
Advice on when to sell	3. 2	7. 1
Buyers and dealers look at livestock and give advice on selling, feeding, etc	. 4	. 9
Sales barn markets	1. 2	2. 7
Indefinite responses	3. 4	7. 5
Nonresponse	. 6	1. 3
Total	45. 2	100. 0

Agricultural Marketing Service and Iowa State College Livestock Marketing Survey, March 1952.

and when it is a good time to sell?" An estimated 45.2 percent indicated that some information of this type was received. Then respondents were asked, "What information do you get from dealers and buyers?" The terms "dealers" and "buyers" were not always interpreted as intended. The question was intended to relate to strictly *local* persons—not commission firms, interior markets, or interior packers. We tried to divide responses into the nonlocal and the local sources. On this basis, those who received the information were almost equally divided between local and nonlocal sources (table 8).

After ascertaining the kind of information the respondents received, our enumerators asked, "Do you use this information in any way in deciding when or where to sell your stock?" "Yes" was indicated by an estimated 30.8 percent. This group was then asked, "How do you use it?" and the "No" group was asked, "Could you tell me why you don't use it?" Relatively, none of the estimated percentages was large. To obtain satisfactory information on this subject the sample would have needed to be considerably larger.

RADIO LISTENING HABITS FOR MARKET NEWS.—All but one of the 300 members of the sample possessed a radio. Nearly all listened to radio market reports, as indicated by responses to the question, "Do you listen to radio markets on cattle and hogs?" Results show that only an estimated 1.4 percent of "livestock farmers" do not use the radio as a source of livestock marketing information.

Following the above question three others were asked, (1) "What are your listening habits just before marketing?" (2) "What are your listening habits throughout the year?" and (3) "Do you change your listening to livestock markets just before you plan to sell hogs or cattle?" If yes, "in what way?"

The third question gave some difficulty in enumeration; from many respondents it tended to elicit the same response as the first. Responses to the three questions were classified under 28 headings. More than half of the classes set up were used for all three questions, as many respondents gave similar responses to two or more of the questions.

An estimated 90 percent indicated regular radio listening for markets before selling.[8] For listening habits throughout the year, 70 percent were estimated as regular listeners. About 4 percent indicated that they listen *only* when they have stock to sell. Even though 70 percent indicated regular listening, 67 percent gave some indication of change in listening habits just before marketing.

Most often this change could be classed as listening "more closely," "pay more attention," "try not to miss markets," "listen oftener (more times a day)," "listen to more stations," "securing the early or morning markets instead of the noon reports (often markets listened to at noon just came with news)," and "listening to a specified station."

Conversely, some 31 percent indicated no change in listening before marketing. This class might be construed to be a group that follows market reports closely most of the time. A few said they now depended on TV market reports, particularly for listening throughout the year.

[8] Estimates are based upon combination of similar responses from the 28 classes used in coding the data.

Use of Information in Marketing Operations

To assess the use made of information in marketing operations, appraisal was made of sales of eligible and selected lots of hogs and cattle. For each operator who sold an eligible lot, one lot of cattle and one lot of hogs from all the eligible lots sold by each operator were selected at random.

The first question about the sale of a selected lot of hogs or cattle was, "Why did you sell this lot of cattle (or hogs) at that time?" Many reasons were assigned for sales. Responses based on the use of marketing information were separated from the rest. An estimated weighted percentage of eligible lots which was computed indicates the percentage of eligible lots sold in the class described as giving a response related to use of marketing information. Table 9 gives a summary of the first question in this way. This and the following tables show the percentage of all respondents that sold eligible lots.

The relative percentages 12.2 and 32.7 are not to be interpreted as maximum usage of marketing information in the selling of livestock by respondents. The figures might better be interpreted as minima. Here, and in the tables that follow in this section, we are merely reporting a classification of the responses to this one of the set of questions.

TABLE 9.—*Distribution of responses indicating use of marketing information in the sale of cattle and hogs* [1]

Classification	Cattle		Hogs	
	Weighted percentage of		Weighted percentage of	
	Eligible lots	All respondents	Eligible lots	All respondents
	Percent	*Percent*	*Percent*	*Percent*
Sold eligible lot	-------	40. 6	-------	86. 8
Reason indicated use of marketing information	12. 2	-------	32. 7	-------
Other reasons	87. 8	-------	67. 3	-------

[1] Question: Why did you sell this lot of cattle (or hogs) at that time?

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TABLE 10.—*Percentage distribution of responses regarding plans for marketing and use of marketing information*

Classification	Cattle		Hogs	
	Weighted percentage of—		Weighted percentage of—	
	Lots	Operators	Lots	Operators
Sold eligible lots	------	40. 6	------	86. 8
No change in plan	80. 9	-------	54. 0	-------
Changed plan:				
Reason based on marketing information	6. 6	-------	29. 0	-------
Other reasons given	12. 5	-------	17. 0	-------
Total changed plan	19. 1	-------	46. 0	-------
Total	100. 0	-------	100. 0	-------

Agricultural Marketing Service and Iowa State College Livestock Marketing Survey, March 1952.

Table 10 brings out again a point already made. Comparing the relative percentages 12.2 and 32.7, marketing information appears to be used much more for hog sales. The definition of an eligible lot for cattle included veal calves and many other miscellaneous types of cattle sales, such as odd calves or yearlings sold at a salesbarn. Operators selling such lots would be likely to give little attention to marketing information.

A following question was, "Had you planned to sell these cattle (or hogs) earlier or later than you actually did?" If a change in plans was indicated, the following question was asked, "What was it that changed your plans?" Table 11 reports our estimates for these two questions.

Among lots for which respondents had changed plans, a much greater weighted relative percentage indicated use of marketing information. Comparing tables 9 and 10—12.2 for cattle and 32.7 for hogs with 6.6 for cattle and 29.0 for hogs, relatively—hogs again show a much greater percentage than cattle.

Another pair of questions that provided some information on the use of marketing information read, "As you look back on this sale do you think you could have made more money by selling earlier or later?" and (if yes or no), "Why do (don't) you think so?" Estimates based on the responses

TABLE 11.—*Percentage distribution of responses on selling earlier or later and reasons why operator could or could not have made more money* [1]

Classification	Cattle		Hogs	
	Weighted percentage of—		Weighted percentage of—	
	Eligible lot	All respondents	Eligible lot	All respondents
	Percent	*Percent*	*Percent*	*Percent*
Sold eligible lot	-------	40. 6	-------	86. 8
Could not have made more money by selling earlier or later	55. 8	-------	41. 5	-------
Could have made more money by selling earlier or later	29. 9	-------	49. 2	-------
No response	14. 3	-------	9. 3	-------
Reason given as to why operator could or could not have made more money:				
Based on marketing information	49. 8	-------	74. 3	-------
Other reasons	50. 2	-------	17. 7	-------
Inapplicable and no response	-------	-------	8. 0	-------

[1] Questions: As you look back on this sale do you think you could have made more money by selling earlier or later? and (if yes or no) Why do (don't) you think so?

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to this combination of questions are given in table 11.

Somewhat larger relative percentages of lots were estimated in the category indicating use of market information, 49.8 and 74.3 versus the 6.6 and 29.0, given in table 10. The trend of livestock market prices in the inquiry period, September 1951—March 1952, was such that most of this group indicated that greater returns could have been obtained by selling earlier; a few gave the "later" response. In comparison with other questions, these questions on monetary returns elicited larger percentages in terms of lots for which reasons were given that showed knowledge of marketing information for the inquiry period. Of course, this information could have been obtained by means other than those reported. Yet it appears rather significant that, relatively, 50 percent for cattle and 75 percent for hogs gave reasons for securing greater returns at some other time of marketing that could be related to the use of marketing information received by them.

From the economic viewpoint also these responses are of great interest. Many farmers apparently believed that they did not maximize the returns for the resources used in livestock production in this period. This would seem to indicate a need not only for better dissemination of marketing information but also for dependable and timely estimates of future marketings.

A Note on Estimation

Attention was directed in the text to some further complexities in estimation arising in table 5. The estimation given there is based on the number of eligible lots of cattle or hogs sold by the respondent. The complication arises in this manner:

Using table 5 as an example, suppose one noncooperator who sold one eligible lot of cattle reports, "yes"—he did find out what price he could get—while another noncooperator who sold five eligible lots also answers "yes" to the same question. In the latter case we do not know what he did in selling the other four lots. We have merely made an unbiased selection of one lot. Clearly, this lot should have a weight of five in estimating what proportion of eligible lots were priced before the sale.

But the data for our noncooperator and cooperator groups must be combined to obtain a combined relative percentage. This we illustrate in table 6. Total eligible lots of cattle sold were 59 (column 1, table 6). The noncooperators who reported that they secured their information from the radio and newspapers sold a total of 7 lots. Hence, the relative percentage $=11.86=(7/59)\,100$. Similarly, we obtain $10.34=(15/145)\,100$ for the cooperator group who reported using the radio and newspapers. From our previous work on estimation we found that the weights 6/10 and 4/10, respectively, for the noncooperator and cooperator groups could be used for combining means or percentages. Thus, we secure the total relative percentage shown as $11.2=(0.6)\,(11.86)+(0.4)\,(10.34)$ in column 5, table 6. Similar weighted percentages of lots are shown in table 5 and later tables.