End User Preferences for USDA Market Information

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Abstract: Buyers and sellers of agricultural commodities benefit from public provision of information in decision-making processes. The purpose of this study is to improve understanding of current preferences for public agricultural information. Results indicate preference for farm level reports by Extension agents and leading economic indicators by agribusiness or market analysts.

Key Words: Best-Worst Scaling, Livestock, Public Information, Value of Information

Introduction

Production and marketing information[1] has been provided publicly by the U.S. Department of Agriculture (USDA) for many years to aid in the decision-making process of buyers and sellers of agricultural commodities. The USDA began disseminating data in 1863 on various commodities with forecasts beginning in 1912 (Allen, 1994). Continuity and expansion of the information services provided by USDA can be attributed to four factors discussed in Sumner and Mueller (1989): 1) information is of interest to economic agents, 2) decisions dependent on the information are yet to be made by economic agents, 3) the information is relatively accurate and/or useful for forecasting, and 4) the information is new in that some agents do not possess the information prior to the general public receiving the information. There is little information, however, on the relative value of publicly funded agricultural reports. This lack of information is important to appreciate given the current budget situation faced by USDA and the associated

[1] We use term information broadly here to denote data released by USDA as well as the synthesis of that data into information.

prospects of changes in what type of publicly funded reports persist in the future. An improved understanding of preferences for USDA data and information has the potential to allocate scarce public resources in a manner that enhances quality of existing reporting efforts and inform the general public about current and future supplies of agricultural commodities.

While the value of USDA data and information may have declined over time (Garcia et al., 1997), it is still largely believed to be a welfare enhancing program (Hayami and Peterson, 1972). Private sources of agricultural market data have increased in recent years increasing the available information to market participants. Despite the increase in data from private sources, USDA is still the most reported source of information that agricultural economists in the private industry use (Salin et al. 1998). Moreover, many private sources use public information in a checks-and-balances manner that many agricultural industry stakeholders likely do not fully appreciate.

The purpose of this study is to improve understanding of the current preferences of county Extension agents, and agribusiness professionals or market analysts for USDA market information in the livestock and poultry sector. We focus our efforts specifically on those reports fully financed by the federal government.

Background

The actual amount of agricultural production and marketing information that is mandated by law is small relative to the actual information produced by USDA. Publishing of parity prices by USDA National Agricultural Statistics Service (USDA NASS) is mandated by Title 7 of U.S. Code §1301 and 1375. Mandated commodities include wheat, cotton, rice, peanuts, tobacco, milk, wool and mohair, beef cattle, hogs, lambs, sheep, and various fruits and vegetables.

Additional reporting requirements for the Secretary of Agriculture are contained in P.L. 106-532 and P.L. 107-171 for the collection and dissemination of prices, quantities sold, and inventories of dairy products. Portions of these requirements for dairy products are disseminated by USDA NASS through the monthly *Cold Storage* report (inventory levels for butter and cheese) and the monthly *Agricultural Dairy Products* report (dry whey and nonfat dry milk prices and sales volume). USDA's Agricultural Marketing Service (USDA AMS) publishes additional price and quantity information for dairy products. Additional requirements for USDA AMS are the dissemination of price and quantity information for slaughter livestock commodities through the Mandatory Price Reporting Program.

Consolidation within agriculture and the rise of private entities that provide agricultural information have led to the questioning of USDA's continued role in collection and dissemination of agricultural statistics. The public good aspect of information released by USDA lends itself to the issue of free-riding, as the optimal amount for society will not be produced by the private sector (Lawrence, Shaffer, and Hayenga, 1996). In addition to concerns about free-riding, questions about the ability of the private sector to generate a representative sample of agricultural pursuits in addition to releasing truthful estimates due to the existence of profit motives (Schaefer, Myers, and Koontz, 2004).

A decline in the available amount of publicly financed agricultural information could result in decreased efficiency of futures markets. Much of the previous research on the value of USDA information has consisted of studies focused on the impact upon futures markets (Sumner and Mueller, 1989; Carter and Galopin, 1993; Bailey and Brorsen, 1998; Irwin, Good, and Gomez 2001; Sanders and Manfredo, 2002; McKenzie, 2008). Efficiency of futures markets is due in no small part to the information published by USDA for commodities traded on various

exchanges (i.e. Chicago Mercantile Exchange). Through a variety of methods including event analysis and nonparametric testing, these authors find that USDA reports are still valuable given the response in the futures market.

Limited research effort has focused on what specific aspects of publicly provided agricultural information is most valuable to end users. Salin et al. (1998) find that USDA is the most reported source of information that agricultural economists in the private industry use. The authors find the value of that information is largely contained in the published statistics. The continuity of these statistics is highly valued by analysts in private decision making roles. That value is underscored by the fact that private firms often re-print data for a fee that is originally collected and disseminated by USDA, sometimes without proper attribution to USDA as the original source.

Recent research by Ellison and Lusk (2011) documents that taxpayers would prefer to shift more of USDA's budget to programs such as research and education, which would include USDA NASS and Economic Research Service (USDA ERS). Price and production information has a shorter term impact on agricultural markets than scientific research (as measured through examples of improved yield potential, resistance to disease and drought, and new vaccines for livestock and poultry). Agricultural research is not cheap, but it continually provides a significant return on investment (Chavas and Cox, 1992; Alston et al., 2000; Oehmke and Schimmelpfennig, 2004). However, there are longer term aspects to price and production information disseminated by USDA. These include the ability to measure structural change through the reductions in the number of operations present in a sector or historical crop yields for a state or the U.S. Chavas and Cox (1992) find that benefits from private research are accounted for in a shorter time period than for public research. Their results suggest loss of publicly

provided data and information would be felt immediately and extend further into the future than would loss of privately provided data and information. The findings of Chavas and Cox (1992) further illustrate the ability of private firms to fill voids in the marketplace should opportunities be present that could result in profits. However, this does not mean that the impact stemming from loss of public data and information would be distributed equally across the time period, or that the private sector would invest to the same level as the public sector.

Methods

Best-worst scaling is used to determine the relative importance of USDA livestock and poultry reports. This technique is illustrated in Finn and Louviere (1992) and Lusk and Briggeman (2009). Respondents are provided a list of USDA reports and asked to select which report is most important and least important for USDA to maintain for the U.S. livestock and poultry industry. Twelve reports published regularly by USDA AMS and NASS were selected to be randomly included in the questionnaire distributed to respondents. These reports are shown in Table 1 with a brief description.

A full factorial design profile was created which was reduced to an optimal design using the PROC OPTEX function in SAS 9.3. Main effects and two-factor interaction effects were estimated using a saturated design. Three separate blocks were created which randomly included six or seven reports that respondents rated as either the most important or least important in each choice set. Two of the blocks contained six choice sets while the third block contained five choice sets for respondents. The order of choice sets within a block was also randomized.

The use of best-worst scaling allows respondents to select the alternatives that provide the most and least amount of utility in a given choice set. Best-worst scaling eliminates the

confusion that can occur with an ordinal ranking scale where a 4 can represent different ideas to different respondents who must respond to the question with a choice and not a ranking (Lusk and Briggeman, 2009). In a choice set with J values, there are $J(J-1)$ best-worst combinations a respondent could select. The respondent who picks the most and least important in a choice set is selecting the pair that provides the greatest difference in utility.

The selection of report j by individual i can be represented by λ_j on the utility scale with the latent level of utility determined by $I_{ij} = \lambda_j + \varepsilon_{ij}$ assuming that ε_{ij} is the random error term. A respondent that selects report j as the most important and report k as the least important is determined by the probability that the difference between I_{ij} and I_{ik} exceeds the probability for all other $J(J-1)-1$ possible differences in the choice set. Assuming that the error term is i.i.d. type I extreme value, then the probability takes the form of a multinomial logit. A weakness of the multinomial logit in the use of best-worst scaling is that it assumes all respondents place equal importance on each report. The use of a random parameters logit can overcome this weakness according to $_{ij} = \ _j + \sigma_j\mu_{ij}$, where $\ _j$ and σ_j are the mean and standard deviation of λ_j in the population, and μ_i is a random term normally distributed with mean zero and unit standard deviation. This implies that report j follows a normal distribution with mean $\ _j$ and standard deviation σ_j.

A share of preference is calculated for each report that is the probability that a report is picked as the most important. This is defined as

(1) share of preference for report j = ———

with the sum of all report preferences being equal to one. As noted in Lusk and Briggeman (2009), the share of preference signifies the probability a report is picked as more important than another. Calculating the share of preference also avoids potential confounding of the scale associated with a random parameters logit.

Data

Two surveys were distributed as part of this research and were hosted on www.surveymonkey.com. Approximately 3,100 email addresses for the general membership of the National Association of County Agricultural Agents (NACAA) were obtained from the organization's leadership to distribute the survey in January 2012. A reminder email was sent two weeks after the initial email. Members of NACAA were randomly assigned to receive one of the three survey blocks. The response rate was 18.3% (562 responses) after accounting for undeliverable email addresses. Summary statistics are provided in Table 2. The majority of respondents who were members of NACAA were male (83%) and located in the Midwestern or southern U.S. (27% and 50%, respectively) based on U.S. Census regions. Over half of respondents were directly involved in a farming operation, but less than ten percent purchased data from private sources.

The second questionnaire was distributed to professionals in agribusiness and/or agricultural market analysts. Approximately 470 email addresses were obtained from a list of recent attendees at a major ongoing national professional agricultural outlook conference conducted for economists and market analysts from agribusiness and public sector institutions[2]. The questionnaire was distributed in October with a reminder email sent a week and a half after

[2] To protect confidentiality of respondents, the specific outlook conference is not noted by name.

the initial email. Respondents randomly received one of the three survey blocks. The response rate was 21.8% after accounting for undeliverable email addresses with summary statistics included in Table 2. Respondents were primarily male (88%) and located in the Midwestern or western U.S. (42% and 30%, respectively). Of the 27% who listed the nature of their current position as "other," these respondents were largely employed in academia/Extension or the Federal government.

Results

The best-worst questions sent to both respondent groups were identical by block. Likelihood ratio tests rejected the hypothesis that results could be pooled across the two respondent groups. This suggests the relative value of evaluated reports may vary across the two different respondent groups. This is further explored by examining results from models estimated separately by respondent group.

NACAA Survey

A likelihood ratio test favored the use of random parameters logit over the multinomial logit model. While heterogeneity was present among the three blocks which prevented a pooled model from being preferred, preferences are consistent across each of the three blocks estimated or the pooled model. Preference shares for reports are shown in table 3 by block and were calculated according to equation 1. The quarterly *Grain Stocks* report was used as the base report. Across each of the three survey blocks, the weekly *Crop Progress* report published by USDA NASS was, on average, the most important report. Furthermore, there were only three instances that a report was not significantly different from the quarterly *Grain Stocks* report: the monthly *Cattle on Feed* report in two of the three survey blocks and the weekly *Crop Progress* in one version.

Although results from each of the three versions could not be statistically pooled, estimated shares of preference are very similar across blocks – a finding consistent with expectations following random allocation of best-worst choice sets. In blocks 1 and 3, the weekly *Crop Progress* report was favored by more than three and four times, respectively, compared to the report with the next largest share (quarterly *Grain Stocks*).

In general, crop- and cattle-focused USDA reports garnered the largest shares. Pork- and poultry-oriented reports garnered noticeably lower shares of preference, possibly due to the degree of coordination and concentration present in those industries that is not as present in the cattle industry. Reports that were more focused on the upstream wholesale and retail sectors, such as the monthly *Cold Storage* and *National Daily Boxed Beef Cutout and Boxed Beef Cuts* (Boxed Beef), were favored by less than two percent of respondents, regardless of treatment.

Information in the preceding paragraph gives results from all agent types, but it is possible Extension agents with primarily livestock responsibilities may believe certain reports are more important for USDA to maintain for the livestock and poultry industry than would agents with other responsibilities. As shown in Table 3, that is not the case. Rankings of results by shares of preference were largely consistent regardless of primary Extension responsibilities, although the magnitude of the share of preference did change.

Agribusiness and Market Analyst Survey

Likelihood ratio tests favored the multinomial logit over the random parameters logit in blocks 1 and 2 with the random parameters logit favored in block 3. Due to the fact that the multinomial logit was slightly preferred and the random parameters and multinomial logit result in qualitatively similar results, the share preferences from the random parameters logit are shown in

table 4. Only one report in block 3 (*Grain Stocks*) exhibited a share differential of greater than 3% between the two different model types suggesting the selection of model type does not change conclusions based on share preferences for the agribusiness professional and market analyst questionnaire[3].

The presence of heterogeneous preferences prevented the pooling of the three survey blocks distributed to agribusiness professionals and market analysts, but a pooled model is shown as preferences are largely consistent with the individual blocks. Preference shares for reports expressed by agribusiness professionals and market analysts are presented in table 4. Similar to the NACAA sample assessment, the quarterly *Grain Stocks* report was used as the base report.

Results suggest agribusiness professionals and market analysts favored those reports that could be described as leading economic indicators (including *Grain Stocks*, *Cattle on Feed*, and *Hogs and Pigs*) over the weekly *Crop Progress* report. These reports provide information on the ability of the U.S. to feed its population, levels of supplies in storage, and use in macroeconomic forecasting models. Less emphasis was placed on those reports that contained farm-level pricing information (Superior Video Cattle Auctions and daily 5 Area Fed Cattle Price) than with the questionnaire distributed to the membership of NACAA. Similar to the NACAA results, agribusiness professionals and market analysts did not value information on the poultry industry to the degree of reports focusing on the cattle and hog industries. This could be a reflection of the concentration and coordination in the broiler chicken industry and respondents do not regularly interact with contract broiler growers.

[3] This information is available from the authors upon request.

Conclusions

The purpose of this study is to improve understanding of the current preferences of county Extension agents, agribusiness professionals, and market analysts for USDA market information in the livestock and poultry sector. Little information is available on the relative value of publicly funded agricultural reports that could improve the quality of existing reporting efforts that inform the general public about current and futures supplies of agricultural commodities. The lack of information in this area is important to understand given the current budget situation faced by USDA and the associated prospects of changes in what type of publicly funded reports persist in the future as agriculture continues to evolve in the U.S.

Both members of NACAA and agribusiness professionals/market analysts did not express strong preferences for pricing information published by USDA. This may be reflective of the fact that pricing information generated by the Market News Service is a result of federal/state partnerships. Inclusion of reports generated by such partnerships may have generated different results, but were excluded due to our desire to better understand relative preferences for reports that are fully financed by the Federal government.

The weekly *Crop Progress* report was viewed as the relatively most important USDA report by NACAA members. Preferences were generally for reports that focused on the crop and cattle sectors possibly due to the clientele that Extension agents typically serve. Agribusiness professionals and market analysts expressed preferences for those reports that could be considered leading agricultural economic indicators that provide information on levels of

production, stocks of agricultural commodities, and needed for macroeconomic forecasting models. Both respondent groups did not express strong preferences for information from the poultry industry and members of NACAA did not view information on the hog industry as important compared to the cattle and crop industries. The lack of strong preferences for information on these industries may be a reflection of the concentrated and coordinated nature of both the hog and poultry industries.

While some reports were not preferred by respondents, this does not mean the information contained in those reports is not important. Rather, these reports simply are not as highly valued due to the clientele that Extension agents, agribusiness professionals, or market analysts typically interact with. We did not control for whether respondents were aware of certain reports which could bias our results. Although only posed to the respondents who are agribusiness professionals or market analysts, those individuals largely rated USDA reports included in this research with a low degree of substitutability from private sources currently in the marketplace. This finding may be supported by the fact that less than ten percent of NACAA respondents who farmed purchased private information sources. Approximately eleven percent of respondents of the agribusiness professional and market analyst survey who farm purchase private information sources.

Our research does not account for the cost to develop, collect, and disseminate information on a specific topic by USDA. The Internet and other forms of electronic communication have diminished the cost to collect and disseminate information, but there is still a considerable investment in people and other resources to generate these market-sensitive reports. Some included reports may have a lower collection cost, such as daily federally inspected slaughter, due to collectors acquiring the information as part of their duties in

observing the harvesting processes. Other reports such as the semiannual *Cattle* inventory would have considerable costs due to the number of mail and phone surveys completed to generate a sufficient sample size to generate statistically meaningful reports. Regardless of the cost associated with publication of market reports, this research provides important foundational input and may serve as a starting point for discussions on future efforts aimed at assessing or improving public efforts to collect and disseminate commodity market information.

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Table 1. USDA Livestock and Poultry Reports and Descriptions

USDA Agency	Report Title	Description
USDA NASS	Grain Stocks	Quarterly information on stocks of grain in on- and off-farm storage
USDA NASS	Cattle on Feed	Monthly information on the total number of cattle on feed, placed and marketed in 1,000-plus head feedlots
USDA NASS	Cattle	Semiannual information on the number of U.S. beef and dairy cattle by class
USDA NASS	Cold Storage	Monthly information on stocks of red meat, poultry and other food products in public freezers
USDA AMS	5 Area Daily Weighted Average Direct Slaughter Cattle Price	Daily information on prices and volume of cattle sold in the major U.S. cattle feeding regions
USDA AMS	National Daily Boxed Beef Cutout and Boxed Beef Cuts	Daily information on the number of choice and select beef loads sold and their prices
USDA AMS	Estimated Daily Livestock Slaughter under Federal Inspection	Daily information on the number of cattle, swine, and sheep slaughtered at federally inspected plants
USDA NASS	Hogs and Pigs	Quarterly information on the number of hogs farrowing and weight breakdown of market ready hogs
USDA NASS	Broiler Hatchery	Weekly information on broiler egg sets and chicks placements
USDA AMS	Superior Video Cattle Auction Feeder Cattle Weighted Average Report	Weekly feeder cattle sales from Superior Video Auctions by region
USDA NASS	Chickens and Eggs	Monthly information on table eggs and broiler layers
USDA NASS	Crop Progress	Weekly information on livestock and pasture ratings and field crop conditions

Table 1. Summary Statistics for Selected Variables

Variable	Mean	Standard Deviation	Minimum	Maximum
National Association of County Agricultural Agents				
Female	0.17	0.38	0.00	1.00
Age	47.03	10.82	22.00	73.00
Experience as Extension Agent	16.28	10.28	0.00	48.00
Livestock/Poultry Extension Agent	0.61	0.49	0.00	1.00
Crop Extension Agent	0.26	0.44	0.00	1.00
Other Extension Agent	0.13	0.34	0.00	1.00
Region				
Northeast[1]	0.06	0.24	0.00	1.00
Midwest	0.27	0.44	0.00	1.00
Southern	0.57	0.50	0.00	1.00
Western	0.10	0.30	0.00	1.00
Directly Involved in Farming Operation:				
Livestock	0.44	0.50	0.00	1.00
Crop	0.12	0.33	0.00	1.00
Livestock Producers Purchasing Data[2]	0.06	0.24	0.00	1.00
Crop Producers Purchasing Data[2]	0.01	0.08	0.00	1.00
Agribusiness Professionals and Market Analysts				
Female	0.12	0.33	0.00	1.00
Age	49.01	12.58	25.00	69.00
Years in Current Position	12.22	10.95	0.00	40.00
Years in Agricultural-Related Positions	24.08	13.39	0.00	52.00
Primary Commodity Focus				
Beef Cattle	0.24	0.43	0.00	1.00
Crops	0.19	0.39	0.00	1.00
Dairy Cattle	0.05	0.23	0.00	1.00
Hogs	0.04	0.21	0.00	1.00
Poultry	0.07	0.25	0.00	1.00
Multiple Commodities	0.31	0.46	0.00	1.00
Food	0.02	0.15	0.00	1.00
Region				
Northeast[1]	0.07	0.25	0.00	1.00
Midwest	0.42	0.50	0.00	1.00
Southern	0.20	0.40	0.00	1.00
Western	0.30	0.46	0.00	1.00
International	0.02	0.15	0.00	1.00
Directly Involved in Farming Operation:				
Livestock	0.18	0.38	0.00	1.00
Crop	0.16	0.37	0.00	1.00
Livestock Producers Purchasing Data[2]	0.08	0.27	0.00	1.00
Crop Producers Purchasing Data[2]	0.03	0.18	0.00	1.00

[1] Regions refer to U.S. Census region

[2] Of respondents who farm, percent who purchase non-USDA data.

Table 2. Relative Importance of USDA Reports Estimated by Random Parameters Logit Among NACAA Respondents

	Block 1	Block 2	Block 3	Pooled
Quarterly Grain Stocks (base report)	13.5% (2)	15.0% (3)	13.0% (2)	13.0% (3)
Weekly Crop Progress	42.3%* (1)	24.8% (1)	52.7%* (1)	44.3%* (1)
Cattle on Feed	13.2% (3)	22.1%* (2)	12.4% (3)	15.1% * (2)
Daily FI Slaughter	8.5%* (4)	6.5%* (6)	3.9%* (6)	5.2%* (6)
Daily 5 Area Fed Cattle Price	7.2%* (5)	9.7%* (5)	5.3%* (5)	6.8%* (5)
Semiannual Cattle Inventory	5.8%* (6)	11.1%* (4)	6.7%* (4)	7.6%* (4)
Quarterly Hogs and Pigs	3.3%* (7)	3.8%* (7)	2.1%* (7)	2.8%* (7)
Daily Boxed Beef Cutout	1.9%* (8)	2.6%* (8)	1.2%* (8)	1.7%* (8)
Cold Storage	1.6%* (9)	1.7%* (9)	0.9%* (9)	1.3%* (9)
Monthly Chickens and Eggs	1.1%* (10)	0.9%* (11)	0.6%* (11)	0.9%* (10)
Superior Video Cattle Auctions	1.0%* (11)	0.6%* (12)	0.6%* (12)	0.7%* (12)
Weekly Broiler Hatchery	0.8%* (12)	1.0%* (10)	0.7%* (10)	0.7%* (11)
Log Likelihood	-3264	-3087	-2545	-8950
McFadden's LRI	0.20	0.19	0.23	0.20
Number of Respondents	198	184	180	562

* Denotes the relative importance of a report is significantly different from the reference report of quarterly *Grain Stocks* at the 5 percent level in each survey version.
Rankings in parentheses.

Table 3. Relative Importance of USDA Reports Estimated by Random Parameters Logit by Primary Extension Responsibility

	Crop Agents	Livestock Agents	All Other Agents
Quarterly Grain Stocks (base report)	19.2%	10.2%	14.7%
	(2)	(3)	(2)
Weekly Crop Progress	56.7%	35.6%	52.6%
	(1)	(1)	(1)
Cattle on Feed	8.7%	21.0%	7.2%
	(3)	(2)	(3)
Daily Area Fed Cattle Price	3.9%	8.4%	4.5%
	(4)	(5)	(5)
Semiannual Cattle Inventory	3.9%	10.2%	4.3%
	(5)	(4)	(6)
Daily FI Slaughter	2.8%	6.1%	5.7%
	(6)	(6)	(4)
Quarterly Hogs and Pigs	2.0%	2.8%	3.8%
	(7)	(7)	(7)
Daily Boxed Beef Cutout	0.9%	2.1%	1.5%
	(8)	(8)	(10)
Cold Storage	0.7%	1.3%	2.1%
	(9)	(9)	(8)
Superior Video Cattle Auctions	0.5%	0.8%	1.5%
	(10)	(10)	(9)
Weekly Broiler Hatchery	0.5%	0.7%	1.3%
	(11)	(12)	(11)
Monthly Chickens and Eggs	0.3%	0.8%	0.7%
	(12)	(11)	(12)
Log Likelihood	-2184	-5401	-1211
McFadden's LRI	0.24	0.21	0.18
Number of Respondents	145	341	74

Note: Rankings by agent type are presented in parentheses. The presented values are results from pooling survey responses across the three survey versions shown in Table 2.

Table 4. Relative Importance of USDA Reports Estimated by Random Parameters Logit Among Agribusiness Professionals and Market Analysts

	Block 1	Block 2	Block 3	Pooled
Quarterly Grain Stocks (base report)	10.2% (3)	15.8% (2)	25.9% (1)	15.4% (2)
Weekly Crop Progress	6.8% (7)	9.5% (5)	21.4% (2)	10.8% (4)
Cattle on Feed	20.1%* (1)	22.7% (1)	15.8% (3)	19.0% (1)
Daily FI Slaughter	8.5% (4)	6.5%* (8)	4.7%* (6)	6.9%* (7)
Daily 5 Area Fed Cattle Price	5.2% (8)	6.8%* (7)	1.8%* (11)	4.9%* (8)
Semiannual Cattle Inventory	7.6% (6)	10.6% (3)	6.4%* (5)	9.1%* (5)
Quarterly Hogs and Pigs	19.3%* (2)	10.0% (4)	10.6%* (4)	14.2% (3)
Daily Boxed Beef Cutout	7.8% (5)	9.1% (6)	4.0%* (7)	7.4%* (6)
Cold Storage	3.9%* (11)	4.3%* (9)	2.1%* (10)	3.8%* (10)
Monthly Chickens and Eggs	4.9%* (10)	3.3%* (10)	3.3%* (9)	4.4%* (9)
Superior Video Cattle Auctions	0.4%* (12)	0.3%* (12)	0.2%* (12)	0.4%* (12)
Weekly Broiler Hatchery	5.2%* (9)	1.1%* (11)	3.9%* (8)	3.6%* (11)
Log Likelihood	-767.5	-463.8	-494.4	-1657
McFadden's LRI	0.15	0.23	0.18	0.16
Number of Respondents	37	29	33	99

* Denotes the relative importance of a report is significantly different from the reference report of quarterly *Grain Stocks* at the 5 percent level in each survey version.
Rankings in parentheses.