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An Assessment of the Livestock Mandatory Reporting Act

Practitioner's Abstract: *Federal government funding for public price reporting began in 1914. Since then, most public market reporting for livestock and meat has relied on voluntary participation by market participants. Populist support in 1999 led to passage of the Livestock Mandatory Reporting Act which replaced the decades old voluntary reporting system with a mandatory system for livestock and meat. Questions were raised by policymakers and others in discussions of the Act's renewal as to effectiveness of the mandatory reporting system. This paper draws from available information to assess the Act's effectiveness since its initial implementation. Satisfaction or dissatisfaction with the Act depends on one's expectations for what the Act was to accomplish or problems the Act was argued to address. Mandatory price reporting for many – after a rocky start – has enhanced the transparency and accuracy of reported prices while increasing the amount and timeliness of information in some needed areas.*

Keywords: Cattle, Hogs, Marketing, Market information, Pricing, Price discovery

Background

Two factors led to development of public market reporting: concerns regarding competitiveness, efficiency and fairness in agricultural markets; and need for information and data by the Federal government to investigate and monitor behavior in agricultural markets and to administer price incentives under the Food Production Act during World War I (Henderson, Schrader, and Rhodes). Congress appropriated $50,000 in FY1914 to public market reporting, which led to creation of an office of markets within the U.S. Department of Agriculture (USDA) and commodity market offices at numerous trading locations. The USDA reporting system was promoted as on objective system oriented to dissemination of market price information to farmers.

After World War II, Congress appropriated funds in the Agricultural Marketing Act of 1946, which were matched in various states to develop a more comprehensive system of public market reporting (Henderson, Schrader, and Rhodes). Coverage was extended beyond central markets to country trading and local auction markets. Public market reporting was intended to protect isolated farmers from exploitation by larger, more frequent, and more knowledgeable traders. Economists can argue that public or governmental investment in market reporting is justified because of the public good nature of market information. Perry et al. provide additional historical information regarding public market reporting.

As market structure and marketing/purchasing practices changed, questions were raised about how much public monies should be invested in market reporting. Collecting market data is relatively easy at centralized markets and many local, public markets. Data collection becomes more costly as markets become increasingly decentralized and direct marketing increases. Too, as various types of contract transactions increase, the difficulty of reporting the breadth of formula arrangements increases and questions of privacy and transparency increase. Voluntary reporting opens participants to selectively report market information and may make standardized reporting more difficult.

Market structure changes in the livestock industries are well known. Key trends include (see also Perry et al.; Grunewald, Schroeder, and Ward)

- decreased use of centralized, public markets toward more direct trading, especially for slaughter livestock
- fewer, larger, and more concentrated buyer markets
- increased non-cash-market transactions, i.e., various forms of contracts and agreements, and
- increased reluctance to share comprehensive market information with others and potentially more incentive to selectively report price information.

These trends lead to issues related to market transparency, thin markets, noncompetitive markets, and asymmetry of information for price discovery, among others. These issues have plagued the livestock industries for nearly three decades. Henderson, Schrader, and Rhodes briefly mention "mandatory trader response" under "alternatives and consequences" in their 1983 chapter. However, mandatory price reporting received relatively little attention, either from academics or from livestock industry participants for the next two decades. As will be noted in more detail, key evaluative elements of the voluntary system were not frequent topics of research by agricultural economists either.

Much of the thinking about public price reporting changed markedly in 1999. Unexpectedly strong populist support led to Congressional passage of the Livestock Mandatory Reporting Act. The Act in essence mandated the Agricultural Marketing Service (AMS) or USDA to implement an entirely new, mandatory system of price reporting for most livestock and meat products, which it did in April 2001. In essence, the mandatory system replaced the decades-old voluntary price reporting system for livestock and meat with a mandatory price reporting (MPR) system.

Many arguments were raised in support of the new system prior to passage of the Act. The focus was on increasing transparency of market information and its expected positive effect on price discovery. However, some expectations were unrealistic, and likely unwarranted, e.g., expecting a degree of transparency and detail in all transactions that was infeasible given a reasonable sense of privacy and confidentiality. One built-in feature of the Act was a sunset provision, thus requiring Congress to review and renew the Act after an initial period.

In 2005, Congressional debate ensued regarding whether to renew the Act at all, renew it for a short period subject to making modifications in the system, or renew it for an extended period. Limited agricultural economics research has addressed the new system relative to the voluntary system it displaced. Key input for Congress to the debate over renewal of the Act was a recently-completed Government Accountability Office (GAO) report which had been requested by Congress to review the Act's effectiveness. MPR data are used extensively by agricultural economists in all facets of the Land Grant University mission; research, extension, and teaching. Thus, the renewal period and an assessment of the MPR system are important to agricultural economists.

The objective of this paper is to review available research which directly and indirectly addresses the Act's effectiveness relative to reasons for its passage, and provide an assessment of the MPR system which has evolved from passage of the Livestock Mandatory Reporting Act.

Since this paper presents no empirical research, reliance is placed on available information regarding the Act's effectiveness at accomplishing its intended purpose. Several issues are identified regarding passage of MPR and agricultural economists' limited role in the debate. Noted, especially, are researchable issues never fully addressed by agricultural economists regarding voluntary price reporting. Two critical problems in the early implementation of the Act, which may have significantly affected users' reaction to the new system, are mentioned. Finally, finding from studies bearing directly or indirectly on assessing the effectiveness of the MPR system are discussed.

Economic Information and Public Price Reporting

Agricultural economists rely heavily on public market information for extension education programs related to outlook, market analysis, and marketing decisions, and in market research. Therefore, one would expect economists to be concerned about the efficiency and effectiveness of voluntary price reporting. However, if journal publications reveal our research priorities, then relatively low priority has been placed on price reporting *per se* until the advent of MPR. Agricultural economists, it would seem, have complacently accepted that publicly reported market information was accurate.

There is a substantial body of literature on the economics of information, perhaps credited in large part to an article by Stigler in 1961. Much has been done on the role of information in market efficiency (Fama) as well as on the value of information for decision making and in price discovery. Much of this early literature appeared in the economics journals but later became of considerable interest to agricultural economists. Bonnen in his 1975 American Agricultural Economics Association presidential address dealt with the economics of information, distinguishing data from information and indicating weaknesses of agricultural economics to correctly link theory and data collection. Since then, much of the literature focuses on the value of information, especially public market information reports, for market efficiency in cash and futures markets, and related issues such as thin markets, market structure trends, and competition. But research on market reporting, *per se,* is sparse.

Voluntary vs. Mandatory Price Reporting Issues

Agricultural economists were relatively quiet on several issues related to the debate regarding a public shift from voluntary to mandatory price reporting. Two basic, interrelated questions can be raised at the outset. First is whether or not voluntarily reported prices accurately reflect general supply and demand conditions, both in a temporal context (such as daily or weekly markets) and in a spatial context (such as local or regional markets). Economists contributed marginally to the debate regarding whether or not the given extent of voluntary price reporting (VPR) "adequately" reflected true market conditions. A paper by Koontz raised questions regarding the accuracy of reported prices for fed cattle and Schroeder noted the reduced reporting of market prices due to procurement method trends by beef packers. Wachenheim and

DeVuyst cite a USDA report which indicated that 35-40% of cattle, 75% of hog, and 40% of lamb transactions were not being reported under VPR. But even with reduced number of trades, reported prices could adequately reflect true supply and demand conditions.

A second question relates to *measuring* the degree of price reporting accuracy (or inaccuracy) with VPR. While the Koontz article provided limited information on this issue, no thorough, large-scale studies were conducted. This accuracy question seems critical to determining how much expected gain in accuracy could be expected with MPR vs. VPR in livestock and meat markets. One *a priori* hypothesis regarding the move to MPR was that with VPR, there were fewer transactions reported and fewer market participants reporting prices than there would be with MPR. However, market participants reporting prices voluntarily arguably could be more informed than the larger number of traders (and represented trades) with more complete reporting under MPR. It was widely recognized that market reporters typically performed a useful role in not reporting the extremes of price trade distribution which may arise from unusual circumstances. By doing so, they narrowed the reported price range. One could question whether or not market reporters biased the reports in any way by omitting legitimate trades. One could also question whether or not MPR was worth the added costs to have all transactions reported, perhaps only marginally improving pricing accuracy.

An underlying issue relates to how accurate prices must be for efficient market behavior or price discovery. Tomek's innovative research began what seemed a productive area of work, but few economists extended this useful avenue of research. Accuracy may be dependent on the user of and uses for reported prices. Could agricultural economists not contribute to understanding under what conditions accuracy needs to be very high (within x percent or y cents/cwt.) and when lesser degrees of accuracy may be necessary, given the accuracy-cost tradeoff existing in collecting voluntary vs. mandatory price information? When prices cease to be adequately accurate, users of the information may look beyond public market information to private sources for that information (Lawrence, Schaffer, and Hayenga).

Tomek's work also began to address the question of how much accuracy is lost as we move to thinner markets and when do markets reach a point of being "too thin." The Wisconsin Cheese Exchange was considered by many the epitome of a thin market. Mueller, Marion, and Sial reported that the Exchange accounted for 0.2% of all cheese sold but that small percentage was the base for formula trading 90-95% of bulk cheese in the U.S. While the Exchange facilitated price discovery, it also was the subject of considerable criticism (Mueller, Marion, and Sial; Mueller and Marion). A pertinent question for livestock and meat markets is when does thinning of a market with VPR present such a concern over efficiency and accuracy to merit a major public investment in a mandatory system?

Accuracy of VPR is related to the question of market transparency, which was one goal of a MPR system. Economists generally believe that market transparency is a necessary condition for efficient markets (Fama; Schroeder; Grunewald, Schroeder, and Ward; Wachenheim and DeVuyst; Perry et al.). What percentage of transactions or percentage of the volume traded need to be reported for adequate market transparency and adequate price discovery? Azzam

developed a framework to determine the impacts of increased market transparency from MPR on meatpacker competition. He concluded the Livestock Mandatory Reporting Act may contribute more to increased competitive conduct in the marketplace than the sheer value of the price information arising from MPR. The question remains whether VPR significantly prevented market transparency. In perhaps the sole study that specifically addressed this question for livestock, Fausti and Diersen concluded that VPR fostered price transparency and had not led to strategic price reporting in South Dakota's fed cattle market.

Strategic price reporting raises another issue. There exists a potential limit to market transparency and an argument that increased transparency leads to strategic competitive behavior (Wachenheim and DeVuyst). Increased certainty of rival's prices and pricing behavior may lead to reduced bidding competitiveness (Wilson et al.). Too much transparency without consideration of privacy and confidentiality may lead to adverse unintended consequences. One example was a case in Denmark where a governmental authority published firm-specific prices for concrete, resulting in ultimate market transparency but also leading to a sharp increase in average prices due to tacit collusion among buyers and a convergence of prices across firms. (Albeadk, Mollgaard, and Overgaard)

Agricultural economists seemed to contribute little to the debate over cost implications associated with mandatory price reporting. What were the expected costs to the Federal government to convert the infrastructure associated with voluntary price reporting to mandatory reporting? In particular, as Wachenheim and DeVuyst question, what were the costs relative to expected benefits from MPR? What were the expected costs for affected firms and what distributional effects were there for larger and smaller firms? Who ultimately bore the costs of a mandatory price reporting system? Taxpayers clearly bore public costs for the infrastructure transformation. Did livestock producers, meat consumers, or processors ultimately bear the private industry costs? What were the costs associated with evaluation and enforcement of the information received by private firms? If little or no enforcement was built into the mandatory system, what incentive did packers have to report completely and accurately?

Initial Reactions to MPR and Problems

Several new or modified reports resulted from MPR. Readers can see available reports at http://www.ams.usda.gov/lsmnpubs/ . While a few of these were modified or added at some time following initially implementing MPR, most were available with advent of the new system.

Two reactions were immediate. First, it was difficult to find "comparable information" as in VPR reports. Some types of information and some data series were discontinued. Sometimes the information format was changed, but the data series remained reasonably comparable to that under VPR. Changes created minor or major disruptions in data and information series economists and market participants may have used regularly. Some information was new, thus was not comparable with anything under VPR.

Second, many reports were not available due to confidentiality conflicts. Non-reportable reports was one of two serious problems created by MPR. Initially, AMS instituted a 3/60 rule

regarding confidentiality. Data were reported only if at least 3 firms supplied the data and no single entity accounted for 60% or more of the data for each respective reporting period. With regional and national four-firm concentration ratios in steer and heifer slaughter over 75%, many fed cattle price reports were unavailable. AMS was forced to revise its 3/60 rule and create a 3/70/20 rule. For the preceding 60 days, at least 3 firms must be reporting transactions 50% of the time. No single firm can have 70% or more of all trades in a reporting period. And no single firm can be the sole reporting firm 20% of the time. This modification greatly reduced non-reporting problems created by the initial confidentiality rule. Grunewald, Schroeder, and Ward noted that 81% of regional and national, daily afternoon fed cattle reports from April 2 to August 17, 2001, were withheld. After the confidentiality rule change, all such reports were reported between August 20, 2001 and April 2, 2002.

Another problem surfaced shortly after moving to MPR; this one resulting in a lawsuit which went to trial in April 2006. For a six-week period, a software error at AMS underreported boxed beef prices. While the software error was ultimately corrected, USDA made no known attempt to determine the number and extent of those adversely affected, and conversely those experiencing unforeseen gains, and to provide compensation or transfers associated with the errors. Losses to cattlemen have been estimated at $42.8M (Kay). Some producers alleged that packers knew of the errors and intentionally bid lower than market conditions warranted.

Evaluation and Assessment Evidence

Five pieces of work contribute to assessing various aspects of MPR. First was a survey of cattle feeders located in Iowa, Nebraska, Kansas, and Texas in March 2002 (Grunewald, Schroeder, and Ward). Feeders were asked several questions pertaining to MPR and its reports. Feeder opinions varied widely.

One key question was whether MPR benefited the industry. Among respondents, 49% expressed some level of disagreement on a 9-point Likert scale while another 28% expressed some level of agreement that MPR did benefit the industry. Areas of large commercial cattle feeders (Kansas and Texas) were more apt to disagree compared with an area characterized by smaller farmer feeders (Iowa). Certainly, responses must be evaluated relative to cattle feeders' expectations for the move to MPR. Given other responses in the survey to questions of packer concentration and captive supplies, and much debate over these issues in the beef industry over the past several years, it can be argued farmer feeders and cattle producers in the upper Midwest, Plains, and Mountain states were more concerned about VPR than feeders and producers in the more concentrated cattle feeding areas. Thus, regional differences regarding benefits from MPR could have been anticipated.

Feeders were asked if MPR increased information on fed cattle prices, base prices in grids, and boxed beef prices. Again, there was rather sharp disparity among respondents. Fifty-seven percent disagreed to some degree and 20% agreed. These reactions could have been affected by several factors; reduced reports for some regions, reduced timeliness of certain reports, and confidentiality problems immediately after implementing MPR.

A major reason for supporting MPR was to have increased information for price discovery. Feeders were asked whether MPR enhanced their ability to negotiate cash market prices, base prices for grids, formulas, or premiums/discounts with packers. Nearly 3/4 of responses (71%) disagreed to some extent while only 10% agreed. As before, there was more apt to be disagreement among feeders in Kansas and Texas than in Nebraska or Iowa. Here also, the response is likely influenced by expectations, some of which seemed unrealistic as the proposed legislation was being debated.

Ward (2004a, 2004b) argued that MPR increased information in some areas, though his focus was on discussing captive supplies with the "new" data series and not on assessing MPR. In particular, he used data generated by MPR on prices and volumes of fed cattle purchases by packers using alternative procurement methods. He argued that MPR significantly improved the amount, type, and timeliness of data related to captive supplies compared with information available prior to implementing MPR. Post-MPR, data were available on prices and volumes of fed cattle purchases by negotiated trading, formula trading, forward contracting, and packer owned cattle (volume only). This enabled comparing prices paid by packers across procurement methods, something which had only been possible after special data collection efforts by the Grain Inspection, Packers and Stockyards Administration (GIPSA). Thus, transparency was enhanced considerably in this area. Still, reaction to the increased information was critical by some producer groups; especially those who expected far more transparency than most analysts would have anticipated given privacy and confidentiality concerns. Too, these producers expected large price differences between price paid by procurement methods, reflecting expectations regarding "sweetheart deals" between large packers and feeders, which Ward did not find.

The Economic Research Service undertook an assessment of MPR from several vantage points (Perry et al.). I will comment on only a couple areas where their findings seem especially relevant to this paper. They extended the work by Ward (2004a, 2004b) with another year's data. Findings were generally similar. However, Perry et al. suggested that MPR may have contributed to a reduction in formula trading of fed cattle and an increase in negotiated trading. While they did not prove a causal relationship, circumstantial evidence lends support to their argument. However, other market factors not considered may have had a substantial influence. If MPR did in fact contribute to the reversal of a trend toward increased formula trading, subsequent surveys of cattle feeders should be much more positive about the benefits of MPR and the influence MPR has had on price discovery and transparency.

Perry et al. also examined price volatility with a time series model before and after implementing MPR. They concluded prices were twice as volatile post-MPR, which was unexpected to the research team. One explanation relates to the filtering role of market reporters under VPR relative to their reduced filtering role with MPR. Prior to MPR, market reporters would seek to report the bulk of trades, thus omitting extreme high and low prices. In effect, this reduced both the range of prices reported and the variance of reported prices. This effect should have been anticipated given AMS' experience a few years ago with hogs. There, AMS instituted reporting weighted average slaughter hog prices, thus including more of the extreme or full range of

observations. The effect was a wider price range and increased variability of the reported prices.

The GAO review focused on USDA's MPR procedures, especially on the role of market reporters and audits of packers reporting prices and volumes (Government Accountability Office). They found that the filtering role of market reporters, while much decreased compared with VPR, continued. Over a three-month sample period in 2005, market reporters omitted nearly 9% of cattle transactions which statistically altered the weighted average price over this period. For many users of the MPR data, this was a greater filtering role than was likely anticipated. USDA's response was to improve their instructions to market reporters regarding excluding transactions.

USDA audits of packers revealed that nearly 2/3 of the time, errors were found in packers' reporting of prices (Government Accountability Office). While these represented a small (but unstated) percentage of trades, GAO argued that USDA had not adequately addressed the misreporting by certain packers. USDA responded that steps have been taken to improve the audit process.

Lastly, the GAO report noted the lack of coordination between GIPSA and AMS regarding reported prices under MPR. The two agencies have long argued their legal authority prevents sharing of information. In particular, with MPR, much very useful price and volume data on livestock procurement are available daily to AMS which would be valuable to GIPSA in monitoring and investigating anticompetitive claims or questionable trades. This lack of coordination goes beyond the MPR legislation *per se*, but the GAO report may have raised this issue sufficiently to attract the attention of key members of Congress.

The MPR legislation directed USDA to develop a broader, more representative measure of retail meat prices. In a forthcoming article (Purcell), retail meat prices reported by the Bureau of Labor Statistics (BLS) were compared with scanner-based prices, which included price featuring by retailers, resulting from the MPR mandate. Purcell found that quantity-weighted, monthly average retail prices for five or six beef items were lower than BLS prices. Quantity-weighted prices also had a higher variance for five of the six retail items. Purcell found that simple averaging of weekly prices to generate monthly average prices overstated prices and increased empirical own-price elasticity estimates. He recommends continuing to use retail scanner data to capture actual retail meat prices and quantities.

Some analysts would question whether or not USDA has satisfied its mandate of improving retail meat price reporting. Use of scanner data appears to be a step toward improvement, but a number of issues remain with its use on a continual basis.

Summary and Conclusions

Interest among agricultural economists in market price reporting was relatively low prior to the time Congress seriously considered passage legislation implementing MPR. Several researchable issues were not addresses by agricultural economists. As a result, key questions related to expected gains in moving from VPR to MPR were left unanswered. Since the advent

of MPR, agricultural economists have become more active in contributing to an assessment of the new system.

Evidence to date suggests the following conclusions to this author.

- USDA was mandated to switch to a MPR with relatively short lead time. As a result, at least two key problems arose shortly after implementation which likely negatively influenced survey reactions to MPR.
- After more experience with MPR, evidence suggests considerably more information is now available *in some areas* than was available with MPR, thus enabling certain kinds of analyses on a regular basis than was possible with VPR. However, the value of reported information depends in part of the uses for the information and the associated importance of accuracy and timeliness.
- MPR has increased transparency and price reporting accuracy based on available data but not necessarily to the point of being so transparent as to invite collusive behavior among buyers.
- USDA is continuing to improve the MPR system both in terms of modifying reports and in developing effective internal procedures to report prices and audit data reported to AMS.
- Retail scanner data should continue to be used to calculate and report retail meat prices and quantities, giving economists better data with which to estimate meat demand models and to use more accurate price elasticity estimates.

The switch from VPR to MPR was a major change. In some regards, we still have inadequate information to measure the gain in transparency or price reporting accuracy from the new system compared with its predecessor. However, two factors suggest potentially greater satisfaction now than initially with MPR compared with VPR:

- Increased familiarity over time with data and information available from MPR
- Enhanced confidence in reported prices after USDA's modification of the initial confidentiality rule and correction of the reported boxed beef price.

It seems clear that various research and information by agricultural economists tend to validate improvements made by moving from MPR relative to VPR.

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