Price Discovery Research Project – Policy Recommendations Summary

Stephen R. Koontz – Stephen.Koontz@ColoState.Edu – 970/491-7032
Department of Agricultural and Resource Economics
Colorado State University

2015-02-01

This policy-recommendations summary is a deliverable on the Price Discovery Research Project for the National Cattlemen's Beef Association. The recommendations address a difficult issue and potential problem observed in national and regional U.S. fed cattle markets – that being the thinning of those markets. A majority of fed cattle are now marketed through alternatives to the cash market and the proportion of cash marketings are shrinking or thinning.

The causes are numerous but with simple bottom-line economics and are discussed briefly in the next section. The impacts on the cattle industry and beef marketing system are not well known and are part of additional portions of the Price Discovery project. However, policy recommendations for the association are presented in the context that cattle industry members are interested in their markets and in doing work to impact change in those markets – as opposed to observing a variety of independent actions determine the outcome related to the wellbeing of cash fed cattle markets.

A variety of recommendations are proposed. All with strengths and weaknesses, and all with varying levels of commitment and resource needs. And all are rather atypical for this association but similar recommendations and market designs have been used by other groups in similar situations: that situation being the provision of a public good and the protection of a marketplace. Cash markets as a public good are discussed after the next section. And then the recommendations are presented.

Causes of Thin Markets

A thinning cash market is the result of market participants not using the cash market and making use of alternative marketing arrangements (AMAs). For the fed cattle industry AMAs are largely formula cattle, forward contracts, and to a lesser extent (100%) packer-own cattle.

Participating in the cash market is not free – free markets are not free – as there are costs associated with doing so. Discussions with cattle feeding industry members reveal that the opportunity costs of participating in the cash market are potentially high. Making use of formulas or forward contracts reduces these costs. In short, fed cattle are marketed in a timelier manner so that animal performance is improved and cattle feeding enterprises are also more efficient in operations. Fed cattle also have a known buyer and may have market price risk well-managed. Cash markets can be relatively disorderly and can be expensive to use.

There are also risks associated with participating in the cash market – and all risks can be thought of and converted into cost measurements. The main risk from participating in cash markets is the risk that the cattle will not be marketed in the most optimal week or in the predicted week. Larger cattle feeding enterprises communicated this and small cattle feeding enterprises communicated this. Large enterprises stated that they could not risk having significant portions of the showlist not delivered the week that the animals needed to be marketed or the week that management planned on the animals being marketed. Small enterprises stated that they could not risk not having effective bids for a given week. Packers communicated similar perceived risks. The predictable flows of AMA cattle and the additional communication in the AMA marketing process allow for improved scheduling of packing plant operations. This improved efficiency translates into reduced costs. Likewise, program cattle – and cattle associated with brand marketing or value-added – tend to be marketed through AMAs. Cattle feeding enterprises and packing enterprises count on the prices for these value-added beef products to be tied to the underlying cattle and beef market and not due entirely to the relative supply and demand balances of the program cattle.

Thin markets are nothing new to agriculture or commodities in general. The size of the cash fed cattle market is substantially larger that than for hogs, dairy products, eggs and poultry products. Markets for beef and pork cuts are also thinning for the same reasons. Thus, there have been and are strong economic incentives to trade agricultural products and commodities in general through means other than cash markets. Firms that reduced their cash market use have benefited. However, the marketplace as a whole has not.

Cash Markets are Public Goods

Cash markets and the information that are provided through those markets can both be thought of as public goods. Public goods are specific and unique economic entities that often require special treatment or at least recognition. Market forces misallocate public goods. Consumption of public goods by one individual does not impact the consumption of that good by other individuals – these goods are termed non-excludable. For example, one cattle feeding enterprise can make use of USDA AMS reported prices for a region of the US and that does not preclude others from using the same information. (Cattle and beef are excludable – once animals and meat are purchased the owner enjoys exclusive use and benefits from.) Information in a competitive and capitalistic economy is a public good. And because of their non-excludability all public goods are overused and underprovided if left up to the marketplace.

This is one reason – information is a public good – governments (state as well as the federal) and industry associations are involved in the collection and provision of information. Information is collected and provided publically and the industry in part pays for those services through fees and taxes. Information is not often collected and provided by private business because it's use if not excludable. There are information providing companies and often those businesses sell copyrighted information through subscriptions but freeriding – using the information without paying for it – is notorious. Freeriding on information prevents the information collection and provision industry from being larger – as well as the public sector's crowding out.

The public good issue within the thinning of cash fed cattle markets has to do with the use of cash market information by AMA enterprises. Cash market participants invest resources to trade and discover cash market fed cattle prices. Enterprises that make use of formula arrangements free ride on these efforts of the cash market participants. Likewise, enterprises that use forward contracts often make use of basis information which of course includes discovered cash price information. Further, any business that makes use of cash fed cattle market price information is also a free rider. For example, many upstream enterprises such as stocker, cow-calf, seedstock operations and downstream enterprises such as retailers and purveyors may use cash fed cattle price information. However, these up and downstream enterprises contribute to the information's provision only by paying taxes. There is also strong evidence of the public good nature of cash markets by their absence in other commodity industries. This is the tragedy of the commons.

Providing the economically optimal level of a public good in a competitive economy requires group action and some level of market intervention. These interventions are frequently the purvey of benevolent government but with increasing frequency interventions are simply the actions of associations of individuals that recognize the group and its individuals are better off doing something then not. (For example, in many developing countries the federal government has limited budget and weak governing authority so groups of interested communities of individuals provide public goods.) "The market" does not work for public goods – such goods are too few provided and/or overused. Actions extra to the market are needed to obtain the best level of the public good.

Prescriptions

Proposed actions to address the thinning of cash fed cattle markets address the extra market actions and comprise a spectrum from soft recommendations to meet, discuss, and largely elicit voluntary action by individuals all the way to structured initiatives that mandate behavior and address the issue through constructing economic incentives. Intermediate recommendations focus on new information provision and changing business practices. There are a variety of alternatives to choose between and multiple alternatives may be adopted all at once. The recommendations with the best chance for success must address the costs and mitigate risks associated using cash markets or must provide incentives that to some degree offset these costs and risk. There must be incentives and they must have muscle. The following eight prescriptions respect that need and are listed in the order of perceived least to most effective. This ordering is also largely most to least flexible.

A list of the prescriptions or recommendations is provided first.

1. Industry Communication and Voluntary Leadership
Strengths: Most flexible. Change requires discussion and some level of openness. Weaknesses: Requires industry time, commitment, and transparency. This is least likely to result in industry action.

2. Report "Basis-to-Futures Prices" Cash Trading
Strengths: Being more used and is the predominant method of grain trading. Weaknesses: Does not thicken the cash market.

3. New Market Reporting and Trading Technology

Strengths: Path used by other commodity and financial markets – and is the nature result of progress in an industry. e-Markets are common and accepted. Weaknesses: Difficult to adopt in commodity systems with substantial physical transactions costs.

4. New Trading Institutions
Strengths: Market institutions can remove risks of cash market use. Weaknesses: Institutions can be undercut without formal adoption and arbitration processes.

5. Develop and Maintain Industry Standard Business Practices
Strengths: Formalizes trading institutions which can improve cash market function. Weaknesses: Committee based, slow, expensive to association.

6. Provide New Market Information
Strengths: Removes risks and costs associated with the cash market. Weaknesses: Reveals competitive edges of a variety of market participants.

7. Employ Market-Makers
Strengths: Is used in almost all, all substantial, financial markets. Thus, is proven. Weaknesses: Requires method of compensation for market-makers or an incentive to participate.

8. Develop Permits or Certificates
Strengths: Is a "market" solution to the thin markets problem. It develops a market for cash price information and price discovery. This is "cap and trade" and it works. Weaknesses: Innovative and not tried before in any industry.

9. Legislate Mandates
Strengths: Solves perceived problem by mandating minimum thickness of cash market. Weakness: Expensive and costly to some enterprises and regions within the industry.

Next, the prescriptions and recommendations are discussed. These are ideas with some structure and detail. These concepts have economic foundations which address the problems encountered with public goods and can be employed individually or in groups to deal with the problem of thinning cash fed cattle markets.

Industry Communication and Voluntary Leadership

At a minimum the cattle and beef industry needs to create a regular forum where businesses that make use of AMAs meet, discuss, listen and informally interact regarding the thinness or thickness of the US regional and national cash fed cattle markets. The behavior of industry members at the individual enterprise level has ramifications on the use and wellbeing of regional and national markets. And industry members well-recognize this. The meetings would provide a forum to discuss what various industry members are doing before those cumulative actions are perceived as problems. Perceived problems easily become actual problems and invite legislation and litigation. Discussion of thinning markets and any objective information in that regard is simply a first step in the industry being proactive and addressing the problem, again without inviting policy intervention or potential litigation. This process could be made formal by linking it to association committee work.

Strengths of this approach are that it has the most flexibility and offers cattle industry members the most personal freedom. It also fits within the model of association functioning, leadership, and service.

Weaknesses of this prescription are that it has no muscle outside of the public pressure that comes from communication. Further, it does not create incentives to maintain the cash market other than through recognition of problems and goodwill. There is no mandate to a measurable outcome and it only relies on the goodwill of members to offset economic incentives. The forum also very likely opens the need for legal oversight. The flexibility in participant discussion and forum workings does not preclude topics that are opposite competition laws. Further, the forum will have to report so that its actions are transparent and not perceived as secret or of problematic intention.

<u>Report "Basis-to-Futures Prices" Cash Trading</u>

The cash grain market is relatively thick and is also almost entirely a basis market – basis being the cash minus futures. Cash prices are occasionally quoted but the bid/ask and the thinking behind the price discovery process is a (cash) transaction relative to futures – or basis. Prior discussions with cattle industry members – those enterprises feeding cattle and to a lesser extent upstream businesses – revealed a strong reluctance to price cash fed and feeder cattle in a basis market. Large numbers of individuals had similar objections to using futures as a base price – largely volatility and sometimes price-level driven. But interviews and discussions have revealed a clear perspective change – there is much less reluctance. The conclusion by some interviewees was that, with thinning cash markets, using the futures market as a base was not ideal or desired but was a better alternative and familiar from feed trading.

In this case, the cattle industry will need to consider committing to this path. And then need to commit to improving the performance of the CME live cattle futures contract – or some futures exchange's fed cattle contract. The fed cattle contract will need to be a representative base price and then regions and grades within regions can be priced at premiums and discounts to that base. The industry and exchange must then address any issues with convergence, delivery, and/or cash settlement. The cattle industry will need focused efforts on delivery issues with the contract as it is currently defined. Cash settlement is and will be a difficult issue with very small cash markets for the underlying commodity. The specification of the contract must be such that large portions of overall, systematic, price risk are covered and then specific operations can tend to their individual, idiosyncratic, basis risk. These risks are straightforward in concept but more difficult to define and choose in practice.

It is also not obvious that this institutional change will address the thinning cash market problem. It may be that after the continuous work on the futures contract, adoption of this pricing method, and changes to price reporting that there remains a too-small portion of underlying supply of fed cattle marketed through cash basis contracts. The institutional change moves the base price and the focal point of buyers and sellers from regional cash markets to the futures market. But it does not much change the incentives make use of the cash market.

Strengths of this approach are that it follows the solid well-known working business model of grain pricing. In fact, many cattle feeding enterprises practice this pricing method in procuring inputs. Pricing

questions then focus on the design and functioning of the underlying futures contract. A well designed futures contract will also work well for fed cattle price risk management.

Weaknesses of this approach are that futures-based pricing have had earned bad experiences. Also, the futures contract is owned by the exchange and not the cattle industry and if it was owned by the industry there are a multitude of diverse interests – that would want as much of their idiosyncratic risk as possible covered by the contract. There will need to be extensive work with USDA AMS to make sure the prices associated with this institutional change are effectively reported – that cash basis contracts, formula basis contracts, and forward contract basis contracts are each recognized and reported as such. Even then it is not clear that the incentives to cash trade will improve. Finally, as one interviewee stated, "Futures based pricing might be the best alternative now but if we do it at some point we will not be happy with it."

New Market Reporting and Trading Technology

The development and implementation of mandatory pricing reporting (MPR) for livestock markets in 2001 was the last substantial and fundamental change in cattle and beef price reporting. Changes such as these are infrequent, quantum, and expensive. Prior to MPR, the last major change was the development of the Blue Sheet by USDA AMS in the early 1980s and its boxed beef composite price reporting that was in response to problems revealed with wholesale beef price reporting in the mid-to-late 1970s. It may be time to do something again for fed cattle. Fed cattle market trading technology is similar to that of the 1980s – only the phones are a lot smaller and there is text messaging. Fed cattle markets have not seen, for example, the technological improvements seen in feeder cattle markets through the use of video and satellite data. Much of the initial bid-ask process involves face-to-face discussions and visual assessments of cattle on the showlist with further bid/ask occurring later over the telephones. There is still much reliance on trust and past dealings. Electronic media and its efficiencies are not an industry standard.

The cattle industry could invest in the development of new market reporting technology to summarize fed cattle market activity. The current MPR-based price reporting activities for fed cattle markets are after the fact – the information reported is from meatpacker databases. There is no public information on the bid/ask and there is no information on market depth outside of what is now provided by some state cattlemen's associations. This issue was repeatedly mentioned in industry member interviews.

There are numerous asset markets with detailed electronic price reporting. Markets for futures contracts and stock markets reporting are readily available. The cattle industry could review those systems, develop, and adopt a hybrid that increases the depth of price reporting.

Strengths of this approach are that it allows the significant flexibility and that it focuses on information provision or perhaps transparency. Numerous cattle feeding enterprises may be able to place a relatively small number of cattle in the cash market and elicit high-quality price discovery. Further, an industry based and developed reporting format could allow for changes and innovations whereas MPR modifications often involve legislation and/or need a source of funding.

Weaknesses of this prescription are that the provision of more information does not create all the incentives needed to maintain the cash market. There is no guarantee the new system will be used in place of the current face-to-face and phone system. (This is the old "chicken and egg" and what-came-first problem.) There is no mandate for action and it relies on the actions of members to offset economic incentives. Further, there have been significant pushes in wholesale meat trading markets to develop electronic exchanges or trading systems but none are an industry standard today. (There is no guarantee that "if you build it then they will come.") Electronic markets are more successful when they are cheaper that face-to-face markets. For example, electronic trade is stocks and other financial instruments has reduced the personnel needs of financial enterprises and increased the response time to trading customers. An electronic market for fed cattle cannot change the fact that cattle have significant transactions costs (at a minimum transportation and more likely the established personal relationships and trust) so the only benefit is the speed of information. Because of this the benefits from electronic exchanges do not immediately transfer to commodities.

New Trading Institutions

Institutions are the rules and customs associated with trading for fed cattle. Common institutions are that packers bid first on pens of cattle and cattle feeding enterprises follow-up with offers, packers that arrive first bid first, the high-bid is the packer "on the cattle," for a second packer to bid the cattle away from the packer on the cattle then the high-bid must be advanced by a certain minimum, there is a specific order to follow-up bids, and in some regions there is a "seven-day pickup."

Less common institutions are things like "right of first refusal." Here, a packer with this right only has to match but not advance the high-bid to obtain the cattle. The economics profession has also studied the performance of English auctions, Dutch auctions, seal-bid auctions, and economic phenomena such as "The Winner's Curse." This research forms the basis of economic valuation studies, competitiveness studies, and has been used to auction offshore oil leases and auction radio spectrum.

If cattle industry members met and focused efforts on developing institutions associated with cash trading then that has the potential to improve the functioning of and remove risks unique to cash markets. This can be thought of as an updating of the "seven-day pick-up." Standards of business conduct are commonly discussed and agreed to in the grains industry but less so for cattle markets.

For example, an effective cash market institution would be for cash market cattle to be slaughtered early in the week. Or simply understandings that cash cattle are scheduled for slaughter higher in the queue than AMA cattle. Further, there could to be agreed to institutions that there are no delays to the scheduling, in picking up cash cattle or that any delays will have financial compensation. Institutions such as these alleviate risk associated with marketing cattle in the cash market. AMA cattle are frequently perceived by industry members as receiving preferential treatment. Changes in acceptable business practices could be developed, implemented, and mitigate this perceptions while having an impact on cash market use.

Strengths of this approach are that it allows the significant flexibility and that it focuses on standards of business conduct. This prescription could be implemented and part of the industry communication and

voluntary leadership approach but would need to include representation of cash market participants. It would also need to include meatpackers.

Weaknesses of this prescription are that it is vague – institutions are almost too flexible. It is hard to know what specific actions will improve the functioning of the cash market, and that changing that how business is conducted such that incentives to maintain the cash market are created. There is again also no mandate for action. There may be a lot of talk with little result but the talk would be focused as opposed to broad. Further, market institutions do have competitiveness issues.

Develop and Maintain Industry Standard Business Practices

A policy recommendation is for the cattle and beef industry's national association – the National Cattlemen's Beef Association (NCBA) – to do more work related to identification of standard business practices. This recommendation is similar to the first policy recommendation for meetings of industry individuals and it is an extension of developing new market institutions. However, it involves a formal rulemaking and adoption process – and therefore has more structure.

The function of identifying standard business practices are somewhat common activities in other industry associations – for example and most notably the National Grain and Feed Association (NGFA). The NFGA publishes five sets of trade rules: grain trade rules, feed trade rules, barge trade rules, barge freight trading rules, and secondary rail freight trading rule. See http://www.ngfa.org/trade-rules-arbitration/rules/ for details. And as a follow up to adopting and publishing the rules the NFGA structures an arbitration process. Membership in NFGA implies acceptance of the trade rules and arbitration process.

The complete set of the rules for these five areas are less than 60 pages. The rules are detailed, do not dictate terms of trade, and do not create leverage. For example, payment for grain is based on bushels net of dockage and the seller shall pay freight on gross bushels. Likewise, sampling for quality is defined, inspection is defined, and f.o.b. is defined. "Immediate," "quick," and "prompt" deliveries are defined. Billing instruction practices are defined. Pricing of unpriced contracts is structured and is the buyer's option. The rules simply define standard business practices. Well-defined rules make markets function better. Participants know what to expect and that there is a process to resolve differences. Further, transactions have a known base and individual negotiations may then involve departures from that base.

Work such as this could be a permanent function of the NCBA. It will require professional staff as well as industry volunteers. This work would involve buyers and sellers of fed cattle. Both would communicate what practices make cash markets function better. Rules would be written and then voted on by members of the committee for approval or veto by the association. Membership in the association implies acceptance of the rules.

There is a perceived need for this role and for the outcome of the work. Repeatedly, the individuals from cattle feeding enterprises that were interviewed stated this was an industry need. This response was strong for enterprises that market a predominantly in the cash market. It appears to me that this –

defining standards of business conduct – is currently a role of AMAs and especially formula arrangements. A part of any formula arrangement is to define how two businesses interact.

To date, this type of work has been less structured and has conducted more at the state level. For example, producers in Texas were able to adopt the practice of a "seven-day pick-up." It became an understanding and accepted standard business practice that fed cattle purchased in the southern plains would be shipped for slaughter within seven days. Similarly, in many regions where fed cattle are traded there are well-known "pencil shrink" amounts used to transact cattle. These are the type of standard business conduct should be a national standard and has been done so in grain and feed markets by the NFGA.

Rulemaking can improve the functioning of cash markets. A common statement in interviews was that the timing of slaughter of fed cattle purchased through the cash market was more likely to be modified than formula or forward contract cattle. This is, of course, the issue with the seven-day pickup. Rulemaking – with agreement between both cattle sellers and cattle buyers – could define standard pickup windows and base compensation for variations outside of that window. One reason fed cattle sellers were leaving the cash market was because of risk of needing to feed additional days and bear the feed cost and quality impacts. Rulemaking can target and address risks associated with using the cash market versus using alternative to the cash market.

Another practice addressed through standard business practices could be to determine the base or standard animal. For example, the base animal could be USDA Choice, Yield Grade 3, with a maximum and minimum estimated-carcass or live weight. All negotiations for a cash price would be bid/ask for the base animal – and then bid/ask for or recognition of standard premiums and discounts relative to that base would be necessary. If all cash fed cattle transactions were conducted on a base animal – in addition to the specifics of a given pen transaction – then the reporting of that base animal would be substantially thickened. Establishing a cattle base-price would be as useful as knowing corn is trading at a base of #2 yellow. Much corn is not #2 yellow but the individuals in the grain trade use that metric as a base and individual negotiations – basis – are relative to that base. The base animal would then be the logical choice for defining futures contract specifications. There should not be multiple-base animals – for example, USDA Select, Yield Grade 2, with a weight maximum and minimum. Cash trade should bid/ask the base price and then bid/ask the relevant premiums and discounts important to individual transactions. Price reporting simplifies to reporting the base and premium/discount structure. The base is made thick and premiums/discounts emerge to the extent that those terms are important.

Further, rulemaking can set agreed to standards for the volume of cash trade. It can also set standards with respect to formula arrangements and forward contracting. The NCBA developing a structure whereby marketing issues are addressed and pulled into or precluded from standard business conduction would be useful to, and is recognized specifically by some cash market participants as a need of, the cattle and beef industry.

New Marketing Information

The cattle industry could invest in development of new information that mitigates some of the risk in cash cattle trading. What is needed is information that is more detailed than what is obtained in USDA NASS *Cattle on Feed* reports. There is less participation in cash market markets in part because of the risk of not selling showlist cattle in a given week and the risk of not purchasing a sufficient volume in a given week. Information is a means to mitigate risk and it allows individuals in the marketplace to act.

For example, what is needed is an inventory of weekly anticipated marketings and purchase needs – by region of the country. What is needed is information aggregated over cattle feeding enterprises of expected marketings for the next 8-to-12 weeks within a geographic region. Likewise, information is needed of the expected cattle buy for the next 8-to-12 weeks into the future and it needs to be aggregated across meatpacking enterprises and regions. This information will reveal weeks in the future where there are imbalances in supply and demand. This detailed information would identify for cattle sellers and cattle buyers the weeks were there are relatively large inventories and little demand, and likewise identify weeks with tight inventories and substantial beef needs. With enough time both sellers and buyers can make changes to expected marketings and anticipated purchases. Further, at a minimum, animals would not be managed in such a method that requires animal marketing in an inopportune week. Currently, the use AMAs creates the opportunity for this communication between cattle feeders and meatpackers. Formula feeders plan marketings, and communicate inventories and future animal availability to meatpackers. This information is used by packers to plan slaughter schedules and beef sales. Likewise, the use forward contracts require meatpackers to plan future slaughter schedules and provide information for beef sales.

Information would be needed on all cattle supplies and beef needs – AMA versus cash volumes would not need to be separated but could be. The essential information is in total supplies and timing and in total demand and timing. This information would then be made available to and used by both cattle feeding and packing enterprises. The information would help feeders identify weeks when cash cattle are more or less likely to be sold. Likewise, the information would help packers identify weeks where fed cattle are abundant or not.

This information would integrate well into the New Market Reporting Technology prescription but it is more detailed, more revealing, and opens significant follow-up issues – therefore it needs to be a separate prescription.

Strengths of this prescription are that it addresses an incentive to leave the cash market and that it does not mandate behavior. Weaknesses of this prescription are that while the costs associated with the risks of cash marketings are addressed but there will remain strong incentives to market through formulas and forward contracts because of the other efficiencies these tools have. This prescription needs to construct and synthesize a lot of information. And that information is extremely revealing. But it is information that the industry attempts to estimate currently. One purpose of offering this prescription is that it shows the level of detail needed to thoroughly address risk and information issues that cause AMA use. And this is without addressing the other incentives to make use of AMAs.

Finally, providing this information and the use of this information in all likelihood will have substantial competitiveness issues. It may level the playing field or it may enhance market leverage and market power.

Employ Market-Makers

The cattle industry could pay for the services of or its members could provide cattle to a cash market-maker. A market-maker is an individual or business that agrees to always stand in the marketplace and provide liquidity. The main and overall economic incentives are for individual cattle feeding enterprises to leave the cash market – removing cash market depth and information. The industry would need to fund a market-maker or fund a market-maker through providing fed cattle. The market-maker would need to be afforded opportunity more than they can realize through their own business and that opportunity needs to be priced at close to the industry's valuation of the services provided.

Some of the best examples of market-making come from financial markets. The New York Stock Exchange, the American Stock Exchange, and even the virtual exchange which is the NASDAQ all employ marketing making services for the trade of specific company stocks. The market as a whole benefits from the market making services through liquidity and market depth. The individual or market making firm has incentive to provide those services through commissions and being the market center whereby most of the stock trading occurs. Organized stock exchanges have recognized that markets perform better – or may not occur at all – without market makers. It may be time for the cattle industry to recognize that something similar is needed.

Stock market market-makers are contract providers to the exchanges and some are directly compensated. Some exchanges have dedicated market-makers and some exchanges have competing multiple-market-makers. Their compensation is historically through a buy/sell price spread or through clearing commissions. But they are compensated.

A business entity like Consolidated Beef Producers could play this role. Likewise, a business entity like Livestock Producers Exchange could play this role. Marketing organizations have in the past promoted the potential for producers that use their service to obtain better prices. But, it may be that the service that producers obtain is the price discovery and information through employing marketing agents.

A market-maker system could be developed using a CRP (Conservation Reserve Program) model. CRP is itself a program where U.S. citizens, through the Farm Bill, are encouraging the production of conservation of sensitive lands. The program does not tell landowners to conserve certain types of land but rather pays for voluntarily providing that service. Similarly, the association could elicit bids to provide price discovery services and offers to pay for price discovery services. (Bids are proposals to be compensated to sell cattle in the cash market and offers are proposals to provide financial compensation for price information.) Bids would be accepted from lowest to highest. And bids would be accepted up to the point where funds offered are exhausted. Higher priced bids could be accepted in what is perceived as critical geographic regions where price information is wanted and where the cash market has become very small. Once accepted, the market-maker would be expected to provide cash market liquidity, can expect to be compensated, and can expect to be audited for services provided.

Strengths of the market-maker are that this prescription directly addresses and solves the thin market problem. There will be a cash market – to the extent the market-maker is compensated. Another specific strength of the market-maker is that different levels of services could be contracted for in different regions.

Weaknesses of the market-maker are the extent of the services needed is unknown and must be determined by the cattle industry prior to contracting market making services. The extent of the services provided will need to be an ongoing discussion and will need to be accompanied by audits of services provided. A serious weakness of the market-maker system is that there will be free-riding. There will be fewer offers to provide funding once the system has enough to provide a minimum. A voluntary system will always underprovide a public good and there is no mechanism within this system to measure if the right amount of price discovery is being provided. Finally, use of market-makers is not without competition questions – it should be expected that GIPSA and DOJ would be interested.

However, this system could be designed and used to seek out funding – for example from federal government sources. US citizens have communicated that they value competitive markets, less industrialization of agriculture, and less conglomeration. They should be asked to, like conservation of environmentally sensitive lands, help conserve open cash markets. There are two interesting experiments here: will any of the public's representatives support this and if they do then how much does market performance improve?

Develop Permits or Certificates

The cattle industry could develop a market-based permit or certificate system to address the thinning cash market. This system would annually require all cattle feeding enterprises over a certain size to trade a specified percent of the cattle that are fed in the cash market. Enterprises that make exclusive use of AMAs would then be able transfer their permits to enterprises that make extensive use of the cash market. Enterprises that use AMAs would compensate cash enterprises in the permit transfer. The value of the permit would need to be priced close to the value of cash market information. In this case, the compensation is not onerous to the AMA enterprise. If permits are relatively high priced then there are too many permits in the system and the permit number could be reduced. If the permits are almost worthless then there are too few and the permit number could be increased. Monitoring the value of the permits along with the volume would provide information about the value of price discovery and the value of the cash market. These values will also communicate when a cash market is no longer needed and this is a unique feature of this prescription among mandates.

For example, suppose there are 20 million head of fed cattle to be marketed annually by these larger firms. Suppose that 90% are marketed through AMAs and 10% through the cash market. If the AMA enterprises are willing to pay $0.50/head to transfer their permits then the cash market participants receive $4.50/ head for making a cash market. If the AMA enterprises are willing to pay $1.00/head to transfer their permits then the cash market participants receive $9.00/ head for making a cash market. The issue is does the value of the cash market – the $0.50 or $1.00 per head – to AMA enterprises provide enough compensation to the cash market participants – the $4.50 to $9.00 per head – to

maintain a cash market with quality price discovery? The other piece of the permit formula that varies is the percent cash trade. If the required volume of cash trade is halved to 5%, and the willingness to pay the AMA enterprises stays the same, then cash market participant compensation doubles.

This prescription recognizes the potential market failure in the cattle and beef industry in that there is not a market for price discovery. There are people that would like to see more cash trading and that would make use of the opportunity while there are people that would like to do more cash trading would continue to do so with compensation for that activity. Individuals can internalize these activities but there is nowhere to buy and sell cash price discovery where users of cash market information can do something to encourage its production by others – and counteract the strong internal economic incentives to move away from cash markets.

Strengths of this prescription are that it solves the problem. It creates a mandate to trade and then it allows those industry members that do not want to invest the resources to trade in the cash market and sacrifice internal efficiencies to sell that obligation to someone that does and there is a level of compensation that accompanies that transfer. For the prescription to be effective then the compensation should cover the perceived risk associated with less than timely marketing and the perceived lost efficiencies of not using AMAs. Likewise, for the prescription to be effective then the compensation should be close to the value of having a cash market and its information. Unlike legislated mandates, this system also communicates when it is no longer needed. If very few permits are issued and the price of those permits is high then that communicates that cash market price discovery has little value to the industry and the permit system should be eliminated. This is a strong unique element of creating a market for price discovery. Likewise, this can be used for different regional markets and their reported prices. If the permit prices in a given region are high enough as to be onerous then that communicates that price discovery in that region is not needed.

The main weakness of the prescription is that it involves a behavior mandate for the industry – for example, "the industry will market 10% of the cattle volumes through cash markets." The transfer from AMA users to cash market participants is a tax. It is also something that has never been done before – it is rather unique and innovative. However, a specific strength of this system, as opposed to other mandates, is that it communicates when it is no longer needed.

The final strength is that there are no competitiveness issues with a permit or certificate system. With this system there is no opportunity to impact rules of trade or impact the use of market power to the benefit of sellers or buyers of fed cattle. The system and prescription is solely focused on obtaining price discovery in the cash fed cattle market. This prescription has a heavy mandate but it is focused on providing price discovery – and when that service is not needed then the system communicates such.

Legislate Mandates

Alternatives to the cash market or AMAs – which have also been and in some circles continue to be cattle "Captive Supplies" – are a contentious issue. It is relatively easy to get groups of livestock producers, industry associations, and legislators to supporting limiting – and in some cases – prohibiting AMA use. These proposed legislative actions frequently have "fairness" or "anti-competitive" in the

title. The most well-known was the Johnson Amendment to the 2001 Farm Bill and the most recent was GIPSA Proposed Rules for the 2008 Farm Bill. However, the wealth of research that has emerged clearly shows that AMAs have strong economic justification. AMAs are cost reducing, efficiency improving, and demand enhancing. But AMAs result in a smaller cash market. A viable approach is to simply legislate – support or at least do not oppose – the protection of the public good that is cash fed cattle markets.

The strength of this approach is the simplicity and it will save much of the efforts of the association and volunteer members work within any efforts with the other prescriptions. Likewise, there will be a result. There will be no discussion over the next three-to-five years about what to do as the cash trade in Kansas thins to levels seen in Colorado or Texas-Oklahoma-New Mexico. The "what to do" will be decided. The weaknesses of this approach mainly two-fold: first, it is hard to undo legislation and, second what about the details? The answer to the question of, "What level of cash trade is best?" is not transparent. Neither is the answer to, "How is the legislated amount translated into federal rule-writing for enforcement?" Is 1%, 5%, or 10% chosen, is it for each USDA AMS reporting region, and is it enforced each week, month, or quarter? Objective research provides little answer here and the details will depend bargaining and involvement in the policy and rule-writing process. The unwinding of legislation is available through sunset provisions, but after what time period?

Finally, there will be a cost to the industry and its members. No matter the legislative choice there will be some industry-wide cost. So, there is a strong tradeoff that the association and membership needs to consider. And that is obtaining a solution to the issue versus the value of the membership's – and the association staff's – time. The easiest paths are efficient which the innovative and creative require commitment and effort.

Continued Research-Information Needs

The eight prescriptions above are paths for the cattle and beef industry to consider in addressing the thinning of cash fed cattle markets. All require association action and all require financial resources.

What the prescriptions do not do is address four important issues that are the topic of continuing project research.

The first involves collection and synthesis of what the cattle feeding industry is currently doing. Initial discussions suggest a broad range in behavior. A number of enterprises are internalizing the problem – valuing fed cattle based on downstream beef prices or through forward contracts. And then there is a broad perception of whether the thinning cash fed cattle market is a problem – several enterprises clearly communicated affirmative, several communicated uncertainty, and a few others communicated that the markets were not too thin yet. Summaries of perceptions and actions are important for knowing what the industry as a whole will do next. Solve the problem, create a larger problem, or segregate into different sectors that rely on markets to a different degree.

The second is measuring the value of cash fed cattle market price discovery. What is the cash market worth to the cattle feeding industry? If its value is low then there is little need to invest resources in protecting it. If its value is high then that is evidence of the need for action and the extent of those

actions. Summary information on this value or values is essential into providing objective scientific information as to how thin is too thin? Initial discussions with industries members resulted in the need to expand the sample and representation in the data collection. A survey is being designed and near completion. The information on the value of the cash fed cattle market could and hopefully will be used to frame policy discussions as the association and legislative levels. This is new information and uniquely collected for the cattle industry. No other commodity industry has similar information.

Third, at what level of cash market participation is there evidence of deteriorating quality in cash fed cattle market price discovery? Along with the value fed cattle markets, the survey will elicit information needed to assess the quality of price discovery. With the information it can be determined at what level of cash trading are there price discovery problems?

Fourth, communication will be take place with personnel in USDA Agricultural Marketing Service that are responsible for fed cattle and beef price reporting. The purpose will be to examine, what may be confidential data, and examine how to thicken current price reporting.

Concluding Point

Addressing the issue of thinning cash fed cattle markets require action by the industry. The problem – as in all public good problems – will not solve itself. It may, however, go away with a reduction in cash market trade to a relatively small cash market – from which there may be no recovery. Or it may be taken out of the industry’s hands by policy edicts – for example, legislation mandating a certain level of cash trade. These recommendations have economic foundation but require action by the cattle industry in determining which it will commit resources to, adopt, work on and address future industry changes.