

Costs and Benefits of Mandatory Negotiated Cash Participation in Fed Cattle Markets

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What are the costs and benefits of mandating levels of negotiated cash market participation in fed cattle markets? This document offers a perspective from a synthesis of research evidence (see chapters and references in [“The U.S. Beef Supply Chain: Issues and Challenges”](#) published by Texas A&M University Agricultural and Food Policy Center 2021) and from understanding economics within the cattle and beef industry. Mandating increased cash market participation will result in less use of Alternative Marketing Arrangements or AMAs. In fed cattle markets AMAs are predominantly formulas and forward contracts. Formulas, forward contracts, and the cash market are how almost all fed cattle are exchanged between and valued by the cattle feeding and meatpacking enterprises. About 20% of fed cattle transactions occur in the cash market and about 10% occur through forward contracts. Thus, increasing the cash trade will require less use of formula methods which are about 70% of fed cattle trade. Therefore, costs of increased negotiated cash trade will be at least the reduced benefits from formula use.

Why do cattle feeders use formulas? Because formulas create value. When interviewed about the value of formulas to individual operations those cattle feeders stated this marketing method was worth about \$20 per head and that was in 2003-04. When asked again in 2013-14 cattle feeders stated formulas were worth at least \$25 per head. Cattle feeders that used formulas could support that valuation with a discussion of evidence. What are these benefits? Cattle feeding operations that used AMAs were more efficient, had lower costs, and higher returns. Over the 2018-19 period informal discussions with cattle feeders suggest the value of formulas had increased briefly to \$65-\$80 per head. The value of formulas is greater than the average profitability associated with cattle feeding.

Why do meatpackers use formulas? Mainly because cattle feeders insist. The innovation and creativity in this marketing method was primarily discovered by cattle feeding enterprises. However, once implemented then meatpackers also became more efficient, had lower costs, and higher returns. Published research also showed that packers that used formulas operated at higher volumes, had more consistent volumes, lower slaughter and fabrication costs, and sold the resulting beef for more money – this was observed in packer P&L data at the plant level. These results were supported by interviews, and when interviewed about the value of formulas to individual operations those packers stated this marketing method was worth about \$10 per head 2003-04. When asked again in 2013-14 packers could construct valuations closer to \$25 per head.

Mandating cash market participation is mandating potentially less efficiency, higher costs, and lower returns for the cattle feeding and meatpacking industries. How large is the impact? It is reasonably between \$30 and \$50 per head on the share of the industry impacted – the mandate does not impact every animal but those no longer on formulas. If a 30% cash trade mandate is adopted, and 20% is currently traded in the cash market, then the losses are on 10% of the total animals fed – or 10% of the \$30 to \$50 per head -- \$3-\$5 per animal. If a 50% cash trade mandate is adopted the losses are on 30% of the total animals fed – or 30% of the \$30 to \$50 per head -- \$9-\$15 per head. These \$3-\$5 or \$9-\$15 per head impacts are reductions in feeder cattle prices of animals going into feedlots. If packers are less efficient, have higher costs, and lower revenues then they will pay less for fed animals. If cattle feeders

are less efficient, have higher costs, and lower revenues than they will pay less for feeder cattle. And the two impacts are combined in the resulting impact on feeder cattle and calf prices. In today's dollars the total direct impact to the producers supplying animals into the cattle feeding system is reasonably from \$35 per head to \$65 per head. These are per animal losses or costs to upstream producers.

Further, *and this is an important contingency*, these impacts are not distributed evenly across the entire cow-calf or calf backgrounding industries. The mandates under consideration will impact all cattle feeding regions of the country but will impact cattle feeders in the upper Midwest the least while impacting cattle feeders in the southern plains the most. Formulas are most used in the southern plains and mandates would be the most disruptive to cattle feeding enterprises marketing cattle in the Texas-Oklahoma-New Mexico USDA AMS price reporting region and in the Kansas AMS region. Cattle feeding in Colorado would also be strongly impacted. Impacts in the southern plains will be close to the total \$35 to \$65 per head amount.

Why are formulas used more extensively in the southern plains than in the upper Midwest? The throughput of cattle in the southern plains is more easily out of balance between cattle feeders and packers. Packers in the region can easily have their entire animal needs bought for the subsequent three to four weeks. Additional information is needed to coordinate the cattle flow in the southern plains. This is especially the case since the closure of the large packing plant in Plainview, Texas as of February 1, 2013. Cattle numbers were extremely tight in this period and there were insufficient supplies to operate all the plants in the region. Closing that plant prevented severe losses to its owner that would have occurred in 2013 through 2016. But as a result, cattle feeding and packing capacities in the region are more narrowly in balance. And getting out of balance can persist for months.

Returning to the current market environment and today's price levels, and thinking about future marketing environments, the value of AMA use will be larger. It will not be smaller, mandates will have larger negative impacts, and those impacts cannot simply be managed around. Going forward the impacts will be \$50 per head or larger. However, making use of this \$50 per head negative impact, 25 million fed cattle marketed per year, and an impact on 10% of those animals then the total impact is at least a \$125 million cost per year. If the impact is on 30% of the industry, then the total impact is a \$375 million cost per year – in perpetuity or for the life of the policy mandate. And again, the distribution of the impacts is in the southern plains and on cow-calf producers – particularly in the southeast U.S. – and backgrounding operations that supply those regions.

The negative impacts of lost use of AMAs will also have *market level ramification* and not simply stop with \$50 per head negative impacts on calf prices for animals going into formula agreements. First, there is strong research evidence that AMAs are risk reducing. This is in part traditional price risk but that is not the only risk. There are a variety of other production, financial, and market risks mitigated through AMAs. Limiting AMA use will increase risk and the costs associated with cattle feeding. Second, there is evidence that AMA use has led to improvements in beef animal carcass quality and feeding performance. Through AMA use the innovators that have made these improvements have been able to recover the higher value of fed animals. This is not possible within a more commodity system. Finally, there is strong belief within the meats industry that AMA use is in part responsible for improved beef demand. The improvements in quality have been rewarded by consumers in increased spending on beef – *the entire cattle industry has benefited from improved quality within some portion of the industry*. All these factors combine to move supply and demand relationships and impact to entire cattle and beef marketing system. Estimating the impacts of mandates within this context reveal valuations of over \$1

billion per year. This magnitude was published in Congressionally funded prior research (i.e., the [USDA-RTI Livestock and Meat Marketing Study](#)).

The economic benefits of AMAs are large and well-documented. What are the costs? One dimension of the costs of AMA use has been well researched. The line of questioning was related to *market access*. Are producers forced to use AMAs or, on the other hand, are producers prohibited from using AMAs? The answers are a resounding “no” to both. Surveys and interviews with producers revealed no firsthand experience whereby producers were forced into formulas. Surveys and interviews with producers also revealed that producers had access to formulas which they negotiated – with the packer with which they were doing business—and between two business entities with trust. There are packers with well-known interests in high quality grade animals, or high yield grade animals, or animals to satisfy demand from a market interested in characteristics not in USDA grading systems – for example, natural, NHTC (nonhormone treated cattle), or cattle for an export market. Producers were able to negotiate participating in these opportunities to the extent that packers were involved in these markets, had the ability to commit, and where entities worked together to common business goals.

The portion of costs of AMA use that has not been well researched is the impact of AMA use on price discovery. Prior research has not much examined specifically the price discovery impacts. But livestock and meat markets are very well studied and understood. *There is no research position that prices in cattle and beef markets do not reflect underlying supply and demand conditions*. There is some evidence of market power being exercised in cattle and beef markets, but the market power distortion is small compared to benefits of economies of size and to benefits from AMA use. In particular, the research-based impact of AMA use on cattle prices is very small.

AMAs do impart a cost on fed cattle markets, but it is not market power related. The cost is related to the provision of information. The marketing of fed cattle through AMAs makes use of the price information discovered by those who negotiate in the cash market. Formulas are almost always based on a USDA AMS price reported in one of the five major regional markets. Likewise, forward contracts make use of basis information – the spread between cash and futures prices – where the underlying cash price is a USDA-reported price. Forward contracts are the other main AMA used in the cattle industry. Finally, almost all cattle feeding operations benchmark transactions against some reported USDA AMS price. Price discovery and the information provided through that process is a *public good*. The marketing methods that do not use the cash market make use of information provided by that process. Price discovery is work. Users of AMAs avoid that work. Users of AMAs make use of cash price information – saving the cost of negotiating as well as the cost associated with the risk of the negotiation failing – and contribute little. This is the tragedy of the commons, and it is a *market failure*. However, market failures in the provision of information are very common and certainly not at all unique to fed cattle markets.

However, and this is critical, AMA use does not create or dissipate leverage in market price negotiation – relative supply and demand does. *AMAs only impact the provision of information, but there is no evidence that the resulting prices are somehow wrong*. Market participants may need to work to improve market function, but efforts to do so must maintain balance between innovation, cost-savings, efficiency, knowledge, and any mandate. Changing the level of AMA use will not improve market prices for cattle producers, nor would it change the supply and demand picture; but it does have the potential to disrupt efficient operations and make market outcomes worse for producers. This is especially the case in the southern plains and southeast.

Public goods are underprovided in a market economy – this is the case with negotiated fed cattle cash price information – and it is made worse by AMAs. But the issue is not that the market failure exists. Under-provision of public goods is more or less a tautology. The examples of portions of our economy and society that benefit from the benevolence of others – without payment – are substantial and numerous. *(For example, AMA use has improved beef demand and the entire industry has benefited from the actions of those using AMAs.)* The issue at hand is whether or not the remaining and resulting cash market transactions are accurate. Are the transactions that take place in the resulting thinned cash market biased or inefficient? Are the resulting transactions systematically incorrect? There is no research-based evidence of this. Such a result cannot be concluded from in the scientific literature. Changes to marketing institutions that could improve market function – and also limit market power – are possible, but such changes would need to be more sophisticated than volume mandates.

Price discovery is about prices adjusting quickly to new market conditions – and that may be higher prices or lower prices. Some of the highest cattle market prices in history have been when the negotiated cash trade was the smallest. This is because of the supply/demand imbalance and not AMA use. Likewise, low cattle prices are due to the supply/demand balance or imbalance and not due the path by which cattle are marketed. For example, mandating levels of negotiated cash trade would not have changed the supply/demand imbalance in the 2020-21 period.

While it should be clear that AMA use does not impact fundamental supply and demand conditions in the fed cattle market, it should also be clear that valuing a week's worth of fed cattle transactions based on a very small number of animals that are actually negotiated is not without potential problems. The market power question and similarly the leverage question that has been the focus of so much recent discussion and debate within the industry are not the same as the question or problem of how thin is too thin in the fed cattle negotiated cash market. Changing the number of animals marketed through the cash market as opposed to through formulas does not change the underlying supply and demand balance and will not reduce market power or change market leverage. The discussion needs to move into determining how thin is too thin? This should be done in the context of objective measures of price discovery. This is a researchable question.

Cash market mandates would not have changed the market conditions seen in 2020-21 or seen since the cattle market price peaks of 2014-15. Cash market mandates will not create market conditions seen prior to 2013 and will not improve cattle and calf prices. More price discovery will not result in better fed cattle and calf prices – and will likewise not result in more market leverage for producers. Cash market mandates have high costs and little to no benefits. AMA use has clear benefits -- \$35 to \$65 per animal within AMA market channels -- \$50 per head is a reasonable and conservative amount. AMA use only imparts costs on the system to price discovery. *But there is no evidence the lost price discovery is worth \$1-\$2 per head, much less worth \$50 per head. Cash market mandates will cost the cattle and beef industry on net at least hundreds of millions of dollars per year and possibly over a billion.*

If minimums are adopted, then it is reasonable to require those minimums should be enforced on both cattle feeders as well as packers. This is not only fair but recognizes the incentive, or lack of economic incentive, to change. The overwhelming interest in developing formulas came from the cattle feeding industry. Packers have created value through formula use, but it is the cattle feeding industry that created the impetus to move to formula use. Interestingly, there are vocal cattle feeders that use formulas that have also pressed for more price discovery. But this simply recognizes that everyone that uses formulas would like more *other* businesses to not use formulas and trade cash cattle. Again, this is

the market failure and is evidence of the underlying economics at work. Formulas are valuable, but need cash market information to work, everyone wants to keep using their formula, and have other businesses cash trade. It is a substantial problem that mandates, as are being considered, do not recognize the primary source of the incentive to use formulas and not trade in the cash market.

Finally, it is worth discussing the potential impact of mandating a minimum volume of cash trade on what is reported for price information and known about cattle valuation. It is also possible that these mandates may lead to some substantial changes in trading of fed cattle – and feeder cattle and calves – or simply reveal the limits to a mandate. The creators of and businesses that make use of formulas view those efforts as negotiations. Both the cattle feeder and packer are involved in determining how the formula works. Cattle feeders and packers have agreed to trade cattle this week using a base last week's reported price. It would be easy to simply continue to do so and agree that transaction is a negotiated grid price. The transaction would be called negotiated in the price reporting system. It is easy and possible to simply transition as much of the formula trade as needed to negotiated grid category and not increase price discovery activity. If cattle feeders and packer agree to trade cattle at last week's price as a base, then is that not negotiation? It is negotiated. Current price reporting relies on the individuals that are doing the trading to determine if the trade is negotiated. In this case the goal of the mandates is defeated. And we will not be able to determine if the volume of cash trade impacts the amount and quality of price discovery. Or will some third-party verification be needed? And for everyone who trades fed cattle? Mandates can require negotiated trade but cannot enforce bid and ask. And then in this situation what is learned by knowing negotiated versus formula prices? Mandates will not work without enforcement that currently does not exist. Or without knowing the hearts and minds of participants. Enforcement does not appear possible without knowing market participant's intent. I do not believe this conduct can be mandated – the reporting of categories can – but behavior such as this by individuals in a marketplace cannot. I am not the only academic with this perspective. Is legislation going to make people, who don't want to trade cattle, trade cattle? The realizing intent of legislated – or even administrative – mandates simply do not appear possible.

For mandates to work then it appears to require that all fed cattle trading be conducted through auction houses. Institutions which do not currently exist. Perhaps this will cause – or require – the development of cattle trading through electronic platforms. That is currently something that does not much exist now and has the potential to lead to a marketing system – for fed cattle, feeder cattle and calves – that is substantially different from what exists today. This is likely the direction the marketplace will go in the future, but it is substantially different from the marketplace that exists today. Some portion of the industry can trade on purely arms-length transactions but other, and substantial, portions appear to require additional communication and coordination. Formulas are alternatives to the cash market that are innovations and improvements that have benefited the entire industry – and not without cost but costs appear minimal. Risks associated rejecting these innovations appear substantial.

In short, the potential costs of mandates are many and high while the benefits are few and negligible. The benefits are also likely not achievable – or enforceable – without tremendous change. An objective assessment of mandates results in a rather one-sided conclusion. This is a conclusion drawn when an assessment of existing research undertaken, when a position is established based on facts and science, and when viewed based on economics of cattle and beef markets.