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# **An Estimate of the Economic Impact of GIPSA's Proposed Rules**

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Prepared for

**National Meat Association**

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## 1. Study Background and Objectives

In the 2008 Farm Bill, language was included that called for USDA's Grain Inspection, Packers and Stockyards Administration (GIPSA) to develop new regulations dealing with several sections of the Packers and Stockyards Act of 1921 (PSA). The requests made by Congress relevant to GIPSA regulations were identified in Sections 11005 and 11006 of the 2008 Farm Bill. In Section 11005, the legislation addresses the need to make amendments to Sections 208, 209 and 210 of the PSA focusing on poultry and swine production contracts. That language lays out specific requirements regarding the right of growers to cancel contracts, disclosure about capital investment requirements, arbitration issues, etc.

Section 11006 of the Farm Bill talks specifically about writing new GIPSA regulations with respect to:

*(1) Whether an undue or unreasonable preference or advantage has occurred in violation of such Act;*

*(2) Whether a live poultry dealer has provided reasonable notice to poultry growers of any suspension of the delivery of birds under a poultry growing arrangement;*

*(3) When a requirement of additional capital investments over the life of a poultry growing arrangement or swine production contract constitutes a violation of such Act; and*

*(4) If a live poultry dealer or swine contractor has provided a reasonable period of time for a poultry grower or a swine production contract grower to remedy a breach of contract that could lead to termination of the poultry growing arrangement or swine production contract.*

GIPSA has responded with a set of proposed rules as required by Congress and our research effort is directed at estimating the economic impact of the proposed rules. The rules (collectively referred to as the "GIPSA rule") are currently open for public comment and may be amended before they

are implemented.<sup>1</sup> This work is based on our interpretation of the rules as they are currently written.

It seems that in writing their regulations, USDA/GIPSA focused heavily on number (1), above. Numbers (2), (3) and (4) are quite specific in their focus on poultry and swine contracts, and these are addressed by the proposed regulations (as in USDA sections 201.215, 201.216 and 201.217 of USDA's proposed regulations). Of course, one could argue that USDA goes way too far even on these issues. (For example, nothing in the Farm Bill section above mentions anything about poultry tournament contracts) Most of the remainder of GIPSA's proposed regulatory language, including banning packer-to-packer sales, disclosure of contract terms, applying base pricing standards to all producers, requiring justifications for differential pricing, seem to be derived from the requirement number (1), above. That provision requires GIPSA to write regulations with respect to determining whether an undue or unreasonable preference or advantage has occurred in violation of the PSA.

It is readily apparent that the intent of Congress was for the regulations not to go beyond some relatively specific poultry and swine contract issues.

With this as a background, a heated debate is now taking place within the livestock and poultry industry regarding the implications and economic impacts of these proposed regulations should they be implemented as written. Informa Economics, Inc. has been retained by stakeholders in the industry to conduct an economic analysis of the proposed rule and this report contains Informa's findings in this regard.

Specific tasks included in this analysis are as follows:

- (1) Conduct an information discovery on how industry participants would react to (or be forced to change business practices) due to implementation of the proposed rules. This involves information collection from the various segments of the major meat protein supply chains (packers, processors, producers/growers, livestock dealers, market agencies, retailers, food service providers and consumers) that would be affected by the rules.

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<sup>1</sup> The Federal Register posting of the proposed rules can be found at <http://archive.gipsa.usda.gov/rulemaking/fr10/06-22-10.pdf>

- (2) Provide an interpretation of how industry business responses would likely manifest in aggregate for beef, pork and poultry in complying with the rules.
- (3) Estimate the financial impact on producers and consumers in each supply chain (beef, pork and poultry) as a result of the industry changes that are likely to occur if the rules are implemented.
- (4) Assess the expected macroeconomic impact of the rules on jobs, GDP, taxes, industry size and meat/poultry industry growth.

As one might expect, the task at hand is extremely complex in nature as each industry stakeholder and particularly the packing sector can be impacted by one or more of the proposed rules and each entity could be affected differently than others in the same segment of the supply chain. Since several of the proposed rules are rather vague in terms of what changes will actually be required of industry participants and how the regulations might actually be implemented, quantification of the ultimate effects becomes somewhat open-ended and hazardous. In some cases, the vagueness of the rule and the lack of any similar precedent forced Informa to utilize the knowledge and expertise of the study team to make “best estimates” of the economic impacts.

## **2. Project Methodology**

In order to meet the objectives of the study outlined above, it was determined that an all-inclusive supply chain evaluation would need to be conducted for each of the major meat protein categories; beef, pork, and poultry. Section 4 contains a set of schematics that provide focal points for each supply chain as it relates to the elements of the proposed rules put forward by GIPSA. In some cases, the functional or operational impact of a particular rule will be restricted to one segment of the supply chain; in other cases it may impact several segments of the chain or the entire chain. We have attempted to be as specific as possible in identifying how the various rules will create the need for “new” or “altered” business practices and, on a best efforts basis, have estimated the costs associated with these changes at various transactional points in the respective supply chains.

## **2.1. Industry Interviews**

Gaining first-hand input from industry stakeholders was considered to be essential for identifying and measuring the financial and business impacts from the proposed GIPSA rules. Consequently, numerous telephone and personal interviews were conducted with stakeholders at all levels of each supply chain. Attempts were made to get specific input and data from companies and individuals representing all segments of each of the supply chains as well as from different sized operations.

A list of contacts was provided to Informa representing entities that had agreed in advance to participate. We supplemented that interview list with additional firms in order to get a broad cross section of primary input. In excess of 40 interviews were conducted by both telephone and in-person and the issues and concerns raised during these interviews were taken into consideration when developing the analytic approach for estimating the impacts and costs of the proposed rules. The information and business intelligence gathered through the interview process was extensive and essential to the results presented in this report. However, it is important to recognize that it was impossible to structure the interview process in a way that provided a pure random sample and thus the information gleaned from the surveys should not be used to make statistical inferences about industry populations in a strict sense.

## **2.2. Industry Cost Survey**

The proposed rules developed by GIPSA are extremely complex and consequently, identifying all of the business process changes or new business activities that would be required to comply with the rules was difficult. Part of that difficulty is that many of the requirements related to the rule do not have a “clear business precedence” so often companies were uncertain as to how they were going to deal with changes and the costs of those changes had limited basis for comparison.

Informa dissected the various elements of the proposed rules and organized these elements into categories. A cost matrix survey was developed and sent to several companies operating in the slaughter segment of each supply chain. The rules are directed at these companies and they will experience the most significant changes in business practices

and hence incur the bulk of the costs originating from this change. Follow-up discussions were held with many of these companies regarding the cost estimates they provided for the study. All industry participants were guaranteed that their cost estimates would be kept in strict confidence and only reported in aggregate if required in the study.

Informa industry experts were also challenged to provide estimates of the cost of implementing and complying with the various elements of the rule and these professional opinions were synthesized with those provided by industry participants. A consensus cost range for each of the various element categories was transformed into a cost-per-unit of production for each supply chain and then aggregated into an industry-wide cost. These per unit costs then became essential input into subsequent analysis such as the effort to quantify the rule's effect on industry size, economic activity, job creation/loss etc.

### **2.3. Desk Research**

Informa conducted a rather thorough literature search seeking other sources of industry data that might provide analytical guidance to the needed estimation process. It quickly became apparent that little effort has been extended to fully documenting costs within each of the supply chains. One can certainly expect that companies themselves have a relatively good feel for how costs break down in their own operations but this data tends to be proprietary and consequently, little is available in the public sector.

Informa does have experience in evaluating supply chain costs and conducted a major economic evaluation of the supply chain cost impacts related to the introduction of Mandatory Country of Origin Labeling (MCOOL). The industry cost estimates developed by Informa (formerly Sparks Companies, Inc.) were highly referenced by the USDA when formalizing and implementing rules related to MCOOL. Informa business and economic professionals that conducted that work are the same consultants conducting this economic impact study. They possess a high degree of knowledge and experience in the organization and structure of each of the supply chains. Several have many years of experience working with companies in each vertical and, as a result of this high intensity engagement with each supply chain, they possess the internal

knowledge and a “business feel” that is useful in validating the cost estimates provided by companies for this project.

## **2.4. Macroeconomic Modeling**

The final step taken in this study entails using the cost and economic loss estimates derived in the previous steps into a market-level supply demand model in order to estimate the lost production that will occur in each supply chain. This information then becomes input into a large scale input-output model of the US economy. This model allows us to make projections as to the effect of the rule on macroeconomic variables such as gross domestic product (GDP), employment and tax revenue.

In this report, Informa will focus on the results of this complex analysis process and strive to present it in a way that can be easily understood and that increases the readability of the document.

## **3. Important Elements of the Proposed Rule**

The proposed rule changes described above will require multiple changes to how US beef, pork and poultry industry stakeholders conduct their business activities. Some of the potential changes in business activities could actually lead to changes in a company's asset structure as well as a broader change in industry structure. An example of such changes would be the need for a business to divest of certain assets or possibly initiate changes within the business that would lead to more vertical integration.

A forensic review of the proposed rules was conducted and an attempt was made to identify all of the provisions that have economic significance and would require business process and supply chain alterations in order for supply chain participants to adhere to the rules as proposed. Informa finds the rules as written to be very open-ended and vague and thus a high degree of uncertainty exists at this point as to intent and interpretation from an implementation and enforcement perspective. Nonetheless, the study team identified the following broad areas described by the rule as those which have economic significance. Brief descriptions of each rule element are given below, but the reader is directed to GIPSA's document announcing the rule for the official interpretation.<sup>1</sup>

### 3.1. Justification of Differential Pricing

An important element of the proposed rules is a requirement for documentation to justify differential pricing. This would put increasingly more scrutiny on packer purchases of cattle and hogs in an attempt to ensure that the prices they are paying for those animals are reasonable and fair. As it stands right now, packers are able to use considerable discretion in paying premiums for livestock that meet certain quality thresholds or discounts for animals that are of a poorer quality. Requiring documentation to justify those price differentials would place a significant cost burden on packers as they would be forced to invest in technology to adequately and accurately maintain written and/or electronic records.<sup>2</sup> A packer who chooses to absorb those costs may find themselves in an uncompetitive situation in the market and they will at least be forced to pass on those additional record-keeping costs to consumers and producers. Some packers may avoid these costs by simply paying one standard price for all animals, regardless of quality. Without the premiums associated with higher-quality cattle or hogs, livestock producers will likely put less effort into raising a higher-quality animal. The result of this would be poorer quality beef and pork products, which would translate into reduced consumer choice.

Packers expressed concerns about the interpretation of this provision. While the quality-related differentials may be relatively straightforward, packers worry about differing prices paid simply because the market has “moved”. For example, a packer may pay more for animals in the afternoon than in the morning simply because he wasn't getting enough animals at the lower price to fill his kill schedule. It is unclear whether or not the packer might be subject to a violation of the Act in such a case. Documenting this type of market differential will be much more onerous for packers than the documenting quality-related differentials.

### 3.2. Prohibition of Livestock Transactions Between Packers

The proposed rules include a stipulation that “packers shall not purchase, acquire, or receive livestock from another packer or another packer's affiliated companies.” This is critical because this is a common practice

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<sup>2</sup> The risk also exists that GIPSA may not deem the packer's justification to be adequate, thus leaving the packer at risk for a violation of the Act.

among beef and pork packers and would significantly change the nature of business transactions in the livestock industry. Take, for example, a pork packer who also owns and manages a live production unit as well. Right now, in situations where that packer-producer is caught running with an excess of hogs in the supply chain compared to their processing capacity, they can sell those hogs directly to another packer at the prevailing market price. With the proposed rule, that kind of transaction would not be allowed and would be forced through a third party or independent livestock dealer. Given that an independent dealer is not going to take on that role without being properly compensated, there will be a transactional cost associated with getting those hogs from the initial packer to their final destination. The increase in costs will eventually be accounted for by higher pork prices at a cost to the consumer and lower live animal prices paid to producers. Similar situations can be found in the cattle and beef industry but are practically non-existent in the poultry industry because of the heavy influence of vertical integration.

Of special interest is the situation where producers may also be the owners of packing plants. There are several examples of this in both the beef and pork supply chains. For example, producers that own shares in US Premium Beef, which itself owns a large proportion of National Beef Packing, might be considered packers. Many of these producer/owners sell large volumes of cattle to other packers because those cattle do not meet the specifications that US Premium Beef requires. If those producers can no longer transact with other packers directly, a middleman would need to be inserted into the transaction. This would almost certainly lower the price that the producer receives.

### **3.3. Limits on Livestock Dealers and Packer Buyers**

Limits are placed on livestock dealers and packer buyers by the proposed rule. It states that dealers who operate as packer buyers must purchase livestock only for the packer that identifies that dealer as its packer buyer. Also, a packer may not enter into an exclusive arrangement with a dealer except those dealers the packer has identified as its packer buyers and reported to the Secretary of Agriculture on approved forms. It is common at many auctions, particularly at smaller ones, to find packer buyers bidding on cattle for multiple packers. This rule's intent appears to target the buying side of the market and encourage more bidders for those

animals, possibly increasing the likelihood that sellers are receiving a “fair market price”. However, if packer buyers were forced to purchase livestock for only one packer, it could be prohibitively expensive for packers to send individual buyers to every auction market. Over time, some business would dry up at the smaller markets because there would actually be fewer buyers attending those auctions. Livestock producers would then be forced to send their cattle to larger auction markets that are farther away. The increased transportation costs would be borne by the producer, thus lowering the effective price they receive for their cattle.

### **3.4. Restrictions on Poultry Tournament Systems**

One of the key ways that live poultry dealers have been able to promote innovation and investment from contract growers is through the use of the so-called tournament system, a method of measuring growers' performance relative to each other based on metrics such as feed conversion efficiency and livability that is commonly used throughout the industry. Compensation to growers begins with what is called a “base pay” which is a set price paid by the live poultry dealer. This is spelled out in a grower's production contract, and payment is usually made on a per live pound basis for the total liveweight amount that is harvested from the grower's farm. All of the growers who have birds harvested during the settlement period, which is typically one week, are scored against each other and are paid according to how well they performed against each other based on the aforementioned performance metrics. Premiums to the base pay are often given to growers with better-performing flocks in a settlement period while a grower may be docked for substandard performance. Premiums are also paid to some growers who have invested in new buildings or have made upgrades to existing facilities, regardless of how they perform relative to their peers during a settlement period. What this often means is that growers who continue using older houses and equipment are consistently compensated at a lower rate than their peers because they are not able to take advantage of specific premiums being paid for updated technology and because their birds often score lower than the growers with newer buildings and equipment that they are scored against as part of the tournament system.

Differing levels of compensation among growers during a settlement period has led to accusations of unfairness or unjust practices on the part

of integrators, or live poultry dealers. This issue was raised during interviews with several broiler growers who are currently on a production contract. A few different remedies have been offered to combat these alleged discrepancies and are included as part of the proposed rule. The first is a stipulation that all growers raising the same type and kind of poultry must receive the same base pay and that live poultry dealers are not allowed to offer a growing arrangement that contains provisions that reduce compensation below the base pay amount. The next is that live poultry dealers must rank growers in settlement groups with other growers with similar or "like" houses.

Informa's interviews with live poultry dealers revealed an incredible amount of concern about these stipulations, especially the first one that if discounts to the base pay were no longer allowed, it would have the effect of lowering the base pay for everyone and severely restrict their ability to give premiums to new growers or innovative ones to help them as they make significant capital investments in newer equipment and technology. Without those additional incentives, investment in new buildings and equipment would slow down considerably, which would slow down the rate of gain in feed conversion efficiency and livability the industry has enjoyed over the past few decades. The requirement for live poultry dealers to rank growers only in settlement groups with similar-type houses could also prove to be an onerous and costly endeavor. While all poultry houses are similar to one degree or another in that they provide shelter and climate control mechanisms as well as feed and water delivery systems, the age, size, and effectiveness of the buildings and equipment being used can vary greatly. The sturdy nature of poultry barns means that some are still in use 25 years or more after they are built. Differences in size can be stark between older and newer poultry houses. Older broiler houses, for example, may have been built at a length of 400 feet while newer ones are often built at a length of 600 feet. Even after accounting for size, the proposed rules seem to indicate that another step of grouping houses according to technology is necessary (i.e, climate control and feed/water delivery systems). Grouping growers in a settlement period based on like houses would be very difficult, and developing a system to do so would be very costly compared to the current system of grouping everyone together. The most extensive interpretation of the proposed rules could potentially break up a settlement group of 15 or 20 growers into 6 or 7 groups with no more than 2 or 3 growers apiece.

Discussions with live poultry dealers and contract growers revealed some interesting thoughts about the proposed changes to the poultry tournament system. Growers want a level playing field but do seem to be cognizant of the fact that integrators need to have a tool to encourage investment in newer buildings and technology to promote efficiency. Integrators are very concerned about this aspect of the proposed rules as it could mean a complete overhaul in the way they administer the tournament system, which would come at a significant cost both in up-front changes to how they restructure the system around growers with like houses and in lost efficiency over the long-term.

### **3.5. Changes to Poultry and Hog Contracts**

Beyond what might necessitate a total restructuring of the way poultry tournament systems are administered, the proposed rule addresses other issues of fairness between live poultry dealers, swine contractors and contract growers. Much of this was initially included in the 2008 Farm Bill, and Informa was given the impression during the interview process that many of the poultry integrators (GIPSA uses the less common term, “live poultry dealers”) had already taken steps to accommodate these requirements. Some of these same requirements will apply in the pork industry, where entities designated as swine contractors enter into production agreements with swine growers in much the same fashion as poultry integrators contract with poultry growers.

While the estimated costs associated with restructuring poultry contracts to comply with these proposed rules is dwarfed by potential costs associated with loss of efficiency if onerous restrictions are placed on how poultry tournament systems can be administered, they are still significant and would be another added cost passed on to consumers over time.

One of the proposed rules requires that live poultry dealers provide adequate notice to a grower about an impending suspension of delivery of birds, which has become commonly known as the “90-day rule.” Some contract growers have indicated that, in the past, there have been problems with live poultry dealers terminating the delivery of birds without warning, leaving growers in a financial bind after extending considerable effort to prepare for a new flock of birds and counting on that new flock

for the next round of income. Advance warning in the form of a 90-day notice that birds would not be delivered to their farm would allow growers time to try and respond by making other accommodations. In interviews with poultry companies, they maintain that these are very isolated occurrences and necessary decisions when some growers have failed to adequately prepare their facilities for a new flock of birds. The proposed rule does include language that gives integrators the discretion to suspend bird delivery during an “emergency,” but some expressed concern that their judgment may ultimately be considered unfair.

Another grower concern that was expressed in the comment period in putting together the 2008 Farm Bill and was reiterated in interviews was that live poultry dealers have used coercion and threats of retaliation as methods of requiring additional capital investment on the part of growers to invest in or upgrade to newer facilities and equipment. These investments can occasionally be in the hundreds of thousands and sometimes millions of dollars. Furthermore, live poultry dealers have been accused of terminating contracts with growers soon after they have made these expensive investments, leaving them with much of the cost of that additional investment without a source of revenue, possibly leading to bankruptcy on the grower's part. Integrators deny that they have used any coercive tactics to encourage additional investment and insist that they have a vested interest in maintaining a long relationship with a grower who is willing to make those investments. Informa is not in a position to examine the accuracy of the claims from either side. One element of the proposed rule would make it more difficult for live poultry dealers to require additional capital investment so long as a grower's facilities are in “good working order” and if upgrades are necessary, live poultry dealers must be willing to extend a contract long enough for the grower to recoup at least 80% of their investment. It is Informa's perception that live poultry dealers are not strongly opposed to the rule on the surface, but recognize that if it is applied in its strictest sense it could severely limit new investment in facilities and technology. It might also make integrators financially liable for growers who make those investments but fail to back it up with the necessary labor and management skills to raise quality birds, thus reducing efficiency by adding potentially significant costs to the supply chain.

Similar to the last item is a provision in the proposed GIPSA rule to make sure a reasonable time period has been afforded growers to remedy a breach of contract that might lead to contract termination. This is the foundation behind the “90-day” and “80%” rules, and its intent is to address the reasoning behind why a contract may be terminated and ensure that a grower has been given a reasonable opportunity at compliance. The live poultry dealers that were interviewed indicated that they either already had in place or are currently developing and building what are commonly known as poultry improvement plans, which are simply methods of getting underperforming growers up to speed by having service technicians spend extra time and attention on these farms for several months or up to a year or more before making a decision to terminate the contract. A strict interpretation of the rule could possibly make live poultry dealers stick with underperforming growers for longer periods of time to avoid being accused of terminating a contract in an unreasonably short time period. Sticking with these growers would lower the overall efficiency and result in higher costs across the poultry industry.

Similar to poultry, swine contractors will also need to make a number of contract changes. These will parallel those described above for poultry, with the exception of the 90-day rule. Swine production contracts are not as prevalent as poultry contracts, but are still an important tool used in the supply chain. Interviewees had similar concerns about additional costs of compliance with the rule and indicated that production efficiencies could suffer due to the provisions that restrict the contractor's ability to require facility and equipment upgrades.

Some swine contracts have risk-sharing components that allow for ledger accounts where producers can essentially receive a loan from packers when the market price is below a reference or breakeven price and this loan gets paid back when prices are above the reference price. Producers place a high value on this contract feature. Some producers indicated that their business would not have survived the recent two-year stretch of negative margins without this type of contract. Packers benefit from this type of contract as well because it keeps valued producers operating at a less variable rate, thus limiting throughput risks. It is doubtful that packers could afford to finance these contracts for all of the hogs that they process. If they decide that offering such contracts to some, but not all

producers puts them at risk for a violation of the Act as a result of the proposed rules, then these contracts may disappear.

### **3.6. Abolishment of the Need to Prove Competitive Injury**

Perhaps the most contentious provision of the proposed rule is one that would no longer require producers who bring complaints under the Packers and Stockyards Act to show that the actions of the accused packer caused competitive injury. In many past legal proceedings damages have not been allowed because the plaintiffs have been unable to demonstrate that the actions of the defendant caused harm to competition in the market. With these rules, GIPSA is proclaiming that that condition is no longer necessary to find damages under the Act.

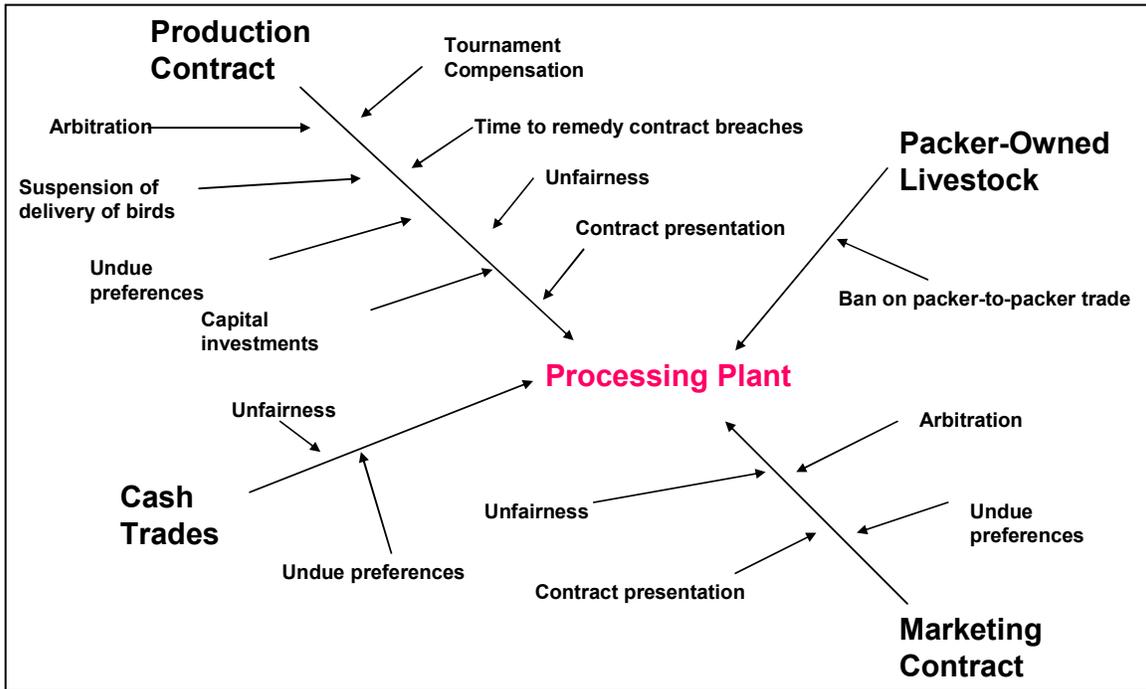
This provision was far and above the one that respondents claimed would cause the most harm. Nearly all interviewees from the packer community referenced the \$1.2 billion verdict that was rendered by an Alabama jury against Tyson Foods in 2004 in a case that alleged a violation of the Act.<sup>3</sup> The judgment was later vacated largely because the element of competitive injury did not exist. Needless to say, this past experience has led packer/processors to fear legal action brought by producers. It was clear that many thought their company's overarching concern would be to limit legal liability first ahead of all other company concerns.

Figure 1 below provides a visual representation of how the many rule elements will impact various business functions such as production contracts, cash transactions/trades, marketing agreements/contracts and packer-owned livestock. The segment of the supply chain that receives most of the focus is the livestock/poultry processing plant as most of the rules are directed toward issues related to the sale of live animals to slaughter/processing facilities.

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<sup>3</sup> <http://caselaw.findlaw.com/us-11th-circuit/1492709.html>

Figure 1: Proposed GIPSA Rule, Areas of Impact



#### 4. How Rule Elements Will Affect Industries

Not all of the elements that create a market or economic impact will occur in each supply chain. Many of the elements of the rules specifically requested in the 2008 Farm Bill will impact the poultry (chicken and turkey) sectors directly; some will have an impact on the hog sector and most will have no impact on the cattle and beef sector. Similarly, the rules that contain high levels of regulative authority related to livestock market transactions including a ban on packer-to-packer trade and restrictions on use of livestock buyers will impact the cattle and hog sectors in a major way but will have limited impact on the poultry industry. The rule dealing with market “fairness”, undue market “preference” and market “discrimination” will impact all meat protein sectors as it exposes businesses in these supply chains to potential litigation issues. A discussion follows of some of the key business practices and supply chain processes that will require change based on a literal interpretation of the proposed rules.

It is useful to recognize that in the poultry supply chain, it is only production contracts that will be affected. There is no cash market, no packer-to-packer issues and no livestock dealer issues. In the pork supply chain, both production and marketing contracts exist and will be affected and the packer-to-packer and cash market issues will apply. In the beef vertical, production contracts are not a factor but all of the remaining areas will be affected: cash trades, packer-to-packer, livestock dealers, marketing contracts.

#### **4.1. Cattle & Beef**

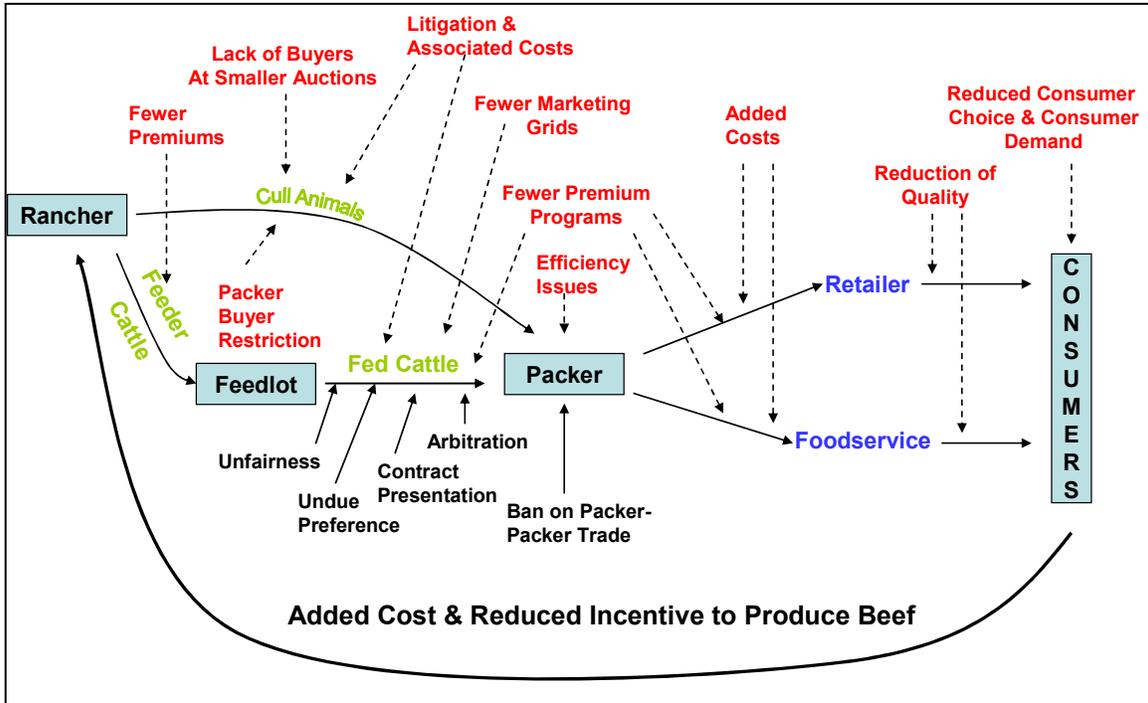
Figure 2 provides a view of the cattle and beef supply chain and focuses on those segments of the chain that will be directly affected by various elements of the proposed rules. Since the proposed rules are directed at business transactions between the sellers of cattle and cattle slaughter/processing operations, the supply chain economic impact will have its primary origins in the center of the supply vertical. Cattle sold by cattle feeding entities (large and small) will be directly affected as will other entities that assemble cattle for sale to packers such as dealers and auction sale operations. Packers that have direct or partial ownership of feedlot and/or backgrounding operations will be affected by the proposed rule that restricts packer-to-packer sales of live cattle as in many instances such cattle are not sold strictly within the packer's own vertically integrated system.

Given the broad nature of the proposed regulations, there will be supply chain impacts (both costs and sales prices) that affect stakeholders in the industry right from the cow calf/ranching sector all the way through the supply chain to consumers. In Figure 2 below, we attempt to reflect where these effects will occur and the nature of the business impact. In the end, implementation of the rules will add cost to the US beef supply chain as well as reduce incentives for industry participants to enhance quality and value added offerings. The methods by which businesses react to regulatory requirements will ultimately determine the magnitude of supply chain value loss that will occur.

Much of the direct impact of the rules as they relate to the beef supply chain will fall on the feedlot and the steer and heifer slaughter sector with likely pushback toward the cow-calf producer. Individual producers and

other entities selling cull cows and bulls to cow/bull slaughter operations will be directly affected by the proposed rules as well. New costs are anticipated as a result of the regulations that address market transactions between buyers and sellers of cull animals.

Figure 2: Proposed Rule Impact Diagram, Beef



In addition to the direct economic impacts on supply chain participants involved in the buying and selling of cattle for slaughter, changes in the rules will also have an indirect effect on supply chain participants who operate on both sides of the packer interface in the beef vertical. Of major interest and concern is whether implementation of the rules, as proposed, would seriously impact current cattle marketing agreements and other formalized quality-based programs that are built upon enhanced live animal and animal production specifications that provide premiums back to the producer. This study attempts to identify and quantify, where possible, both direct and indirect cost and revenue impacts related to the proposed rules.

The cattle and beef supply chain holds the most potential to be affected by the proposed rules as it is much more complex than either the pork or poultry supply chains. There are many breeds and cross breeds of cattle that results in a broad range of animal quality. Genetic variability, which can result in a wide variety of carcass attributes, has given rise to multiple breed-oriented programs. Further, many quality-oriented specification programs have evolved as supply chain participants attempted to differentiate beef products to meet a broad range of consumer tastes and preferences (differentiated demand).

In addition to quality differentiation in live animal and beef products, the beef supply chain has multiple transaction points with many animals that progress through the supply chain being bought and sold three or four times before the animals are slaughtered. Differentiated consumer beef demands result in a broad range of price premiums (and in some cases, discounts) relative to a benchmark cattle price. This mix of pricing differentials seems to be one of the targets of some components of the proposed rules. There is a notion that not all cattle being transacted receive “fair” market value and portions of the proposed rules are focused at regulating what “fair” means and that in itself creates huge issues for the industry to deal with.

The beef industry is also relatively concentrated as very significant economies of scale have driven the industry toward a structure that is dominated by a few large firms. The top four cattle slaughter operations in the US account for roughly 80% of the annual steer and heifer kill. There are other slaughter operations (mostly single plant firms) that compete in this segment of the beef supply chain and yet another group of operations that specialize mostly in the slaughter of cull animals (cows and bulls). Proposed restrictions on packer-to-packer cattle sales will be particularly onerous on several of the industry's slaughter operations.

The US cattle and beef industry has a modest degree of vertical integration with some slaughter operations also whole or part owners of cattle feeding operations. For those firms that are involved at multiple levels of the beef supply chain, the new rules would prohibit them from selling their feedlot cattle to slaughter operations other than their own. In order to avoid violating the rule, additional transportation costs might need to be incurred or there could be added costs for selling these cattle to a third party who

would then sell the animals to a slaughter operation. Companies that are integrated between the feedlot segment and the slaughter segment of the industry may find business reasons to become even more integrated or alternatively, to divest of assets in one of the business segments.

The schematic of the cattle and beef supply chain (Figure 2) and the schematic of the proposed rule elements (Figure 1) provide the broad basis from which Informa developed economic impact measures. The complexity of the rules and how they would impact the cattle and beef industry resulted in segmenting the economic analysis into multiple components. It was determined that there would be a host of one-time costs associated with putting in place processes and measuring mechanisms to deal with some aspects of the rule. There would also be on-going costs associated with these business process changes.

## **4.2. Hogs & Pork**

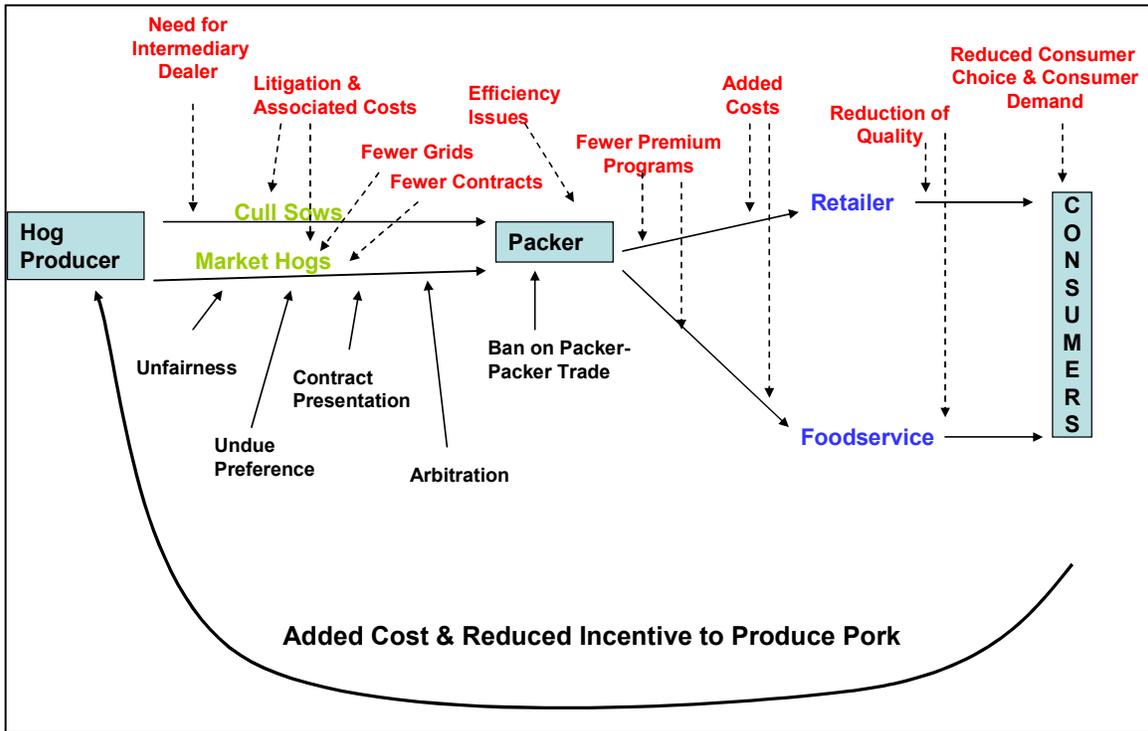
Figure 3 provides a very simplified schematic of the US hog and pork supply chain. The pork supply chain is much simpler than the one for beef, but it is much more concentrated and integrated. This creates the potential for enhanced regulatory impacts should the proposed rule changes be implemented. This is particularly the case as it relates to issues of competition, fairness and litigation issues.

As with the beef supply chain, the pork supply chain will be affected primarily at the interface of financial transactions between producers and slaughter operations. Certain features of the proposed rules will also impact producer-to-producer business arrangements as some independent hog feeding operations do have contractual relationships with growers even though they do not have direct financial linkages to a slaughter facility. Regulations relating to contracting activities and arbitration will have impacts on these business relationships that fall outside of packer transactions.

Vertically integrated hog systems will be impacted less than will independent hog production systems. The contracting of hog production whether by integrators or independents will be affected by those rules that relate to market fairness as well as arbitration. Market hog transactions as

well as the sale of cull sows and boars will be affected by the ban on packer-to-packer trade. Such a ban will require reorganizing businesses to either utilize all internally produced market hogs within the vertical system or, if this is not possible or feasible, sell such animals to independent third party entities. Such a requirement will add costs and inefficiencies to the flow of hogs to market. For cull animals, integrators will be banned from selling these culls (or market hog outliers) to other packers so, in essence, the rules will infuse another cost; another margin and added inefficiencies into that portion of the hog trade that involves sales of animals between slaughter entities not owned by the same firm.

Figure 3: Proposed Rule Impact Diagram, Pork



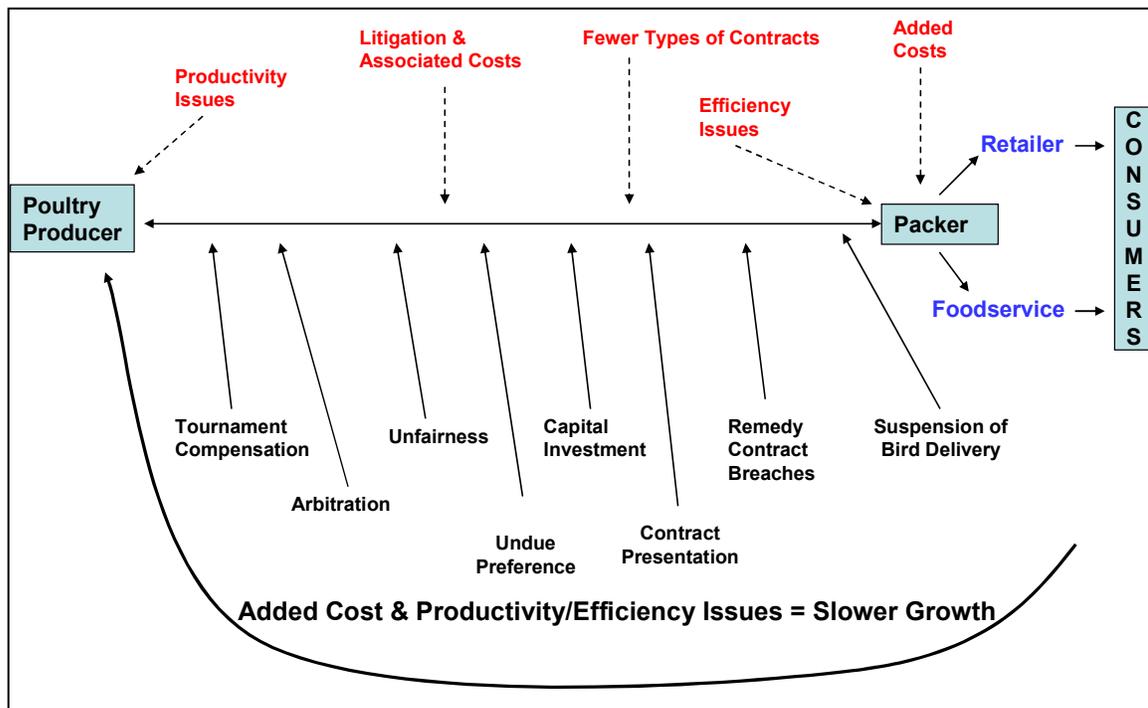
Due to the geographical dispersion of the US hog production sector and a rather complicated network of vertically integrated operations and small/medium/large independent hog production facilities, there will be industry organization challenges should the proposed rules be implemented as written. Packers do sell hogs to other packers but there are generally strong economic and geographical reasons why such trade takes place. Many integrated operations have contractual relationships

with sow slaughter operations to handle the disassembly of their cull sows. All of these business transactions will need to change and such change will lead to higher direct industry costs, lost efficiencies—and in all likelihood—reduced revenue opportunities for the seller of the sows.

### 4.3. Broilers & Turkeys

Figure 4 provides a very simplified schematic of the poultry supply chain and it is representative of both the broiler and turkey industries. In most cases, both the broiler and turkey industries are totally integrated with the poultry producer being a contract grower of birds for the integrated processing firm. Contractual arrangements between the grower and slaughter/processing operation dictate the flow of birds through the supply chain with the grower providing certain physical assets (housing and equipment) and labor/management while the integrator provides the chicks, feed, animal health and other production services. The grower is provided payment from the integrator with performance premiums being paid for exceeding peer-measured performance measures.

Figure 4: Proposed Rule Impact Diagram, Poultry



Many of the specific requests from Congress for additional rules as noted in the 2008 Farm Bill were specific to issues in the poultry industry. Clarification of existing rules and definitions were requested by Congress and several of the rules proposed by GIPSA specifically deal with these Congressional requests.

Most of the rules that are applicable to the poultry industry deal with elements of the contracting process and they seemed to be written with the intent of providing more flexibility for the grower in his dealings with the integrator.

Implementation of contract-oriented rule changes in the poultry industry may occur with limited cost to the contracting parties although they will lengthen out the time element for making contract changes associated with poor performance on the part of the grower. It is our impression that both broiler and turkey contractors desire to have mutually beneficial contractual relationships with their growers as both parties stand to gain if all parties are performing at the highest level of efficiency and productivity.

#### **4.4. Retail and Food Service Sectors**

At this point in time food retailers and food service operators appear to be largely unaware of the proposed rules and the possible ramifications for their operations. The rules have received very little if any coverage in the retail trade press and to date has been seen as an issue between packers and producers only.

This is unfortunate in that the rules could have a significant effect on retail and food service if either premium programs are reduced or if they are maintained but at significantly higher cost due to supply chain inefficiencies.

As of July 14, 2010, the Agriculture Marketing Service of USDA listed 65 Certified Beef Programs but these do not include many producer, packer and retailer brands that are not registered with USDA. The 2010 National Meat Case Study<sup>4</sup> indicated that 51% of beef packages in retail cases

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<sup>4</sup> <http://www.beefretail.org/CMDocs/BeefRetail/research/2010NationalMeatCaseStudy.pdf>

were branded items and it is now estimated that 40% of beef retail sales are accounted for by premium branded programs.

Freshlook data<sup>5</sup> indicates 2009 annual retail beef sales dollars of \$15.9 billion and annual beef sales in tonnage of almost 4.5 billion lbs. At 40% of sales the retail branded beef would account for 1.9 billion lbs as of 2009.

These branded programs at retail and food service have added incremental sales as the wholesale premiums are more than passed through to the consuming public and margins at retail have increased due to these premium prices as a significant number of US consumers show a willingness to pay a premium price for high quality meat products that deliver a great eating experience.

The 40% of beef sold in retail food stores is branded either under a premium brand such as Certified Angus Beef, a packer brand such as Cargill's Sterling Silver or a house or retail brand such as Publix Premium Certified Beef. These branded programs are dependent on the packer/suppliers ability to acquire enough cattle of the specified grade and quality to satisfy the retail demand for the product.

Should the rules reduce the number of cattle available that meet the required specifications some retailers may lose their branded program and therefore lose their competitive differentiation in the marketplace. Any reduction in qualifying cattle can be expected to increase the cost of the product, an added cost many retailers may be unable to pass through to the consumer due to the competitive nature of the retail marketplace. Either a reduction in program availability or increased product costs due to limited supplies of quality cattle or higher prices due to supply chain inefficiencies will have a negative effect on retail sales and on retail profit margins.

The same situation exists in food service where an increasing number of operators have moved to certified/branded programs and market those programs on their menus and in their advertising as a point of differentiation and a sales and margin enhancement strategy. In addition,

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<sup>5</sup> Sourced from FreshLook Data, <http://www.freshlookmarketing.com/>

it is the food service sector that is the current primary user of Prime, natural, grass fed, hormone free and other premium programs being demanded by and introduced to certain consumer groups. The recession of 2008-2009 has already had a devastating effect on white table food service operators and these sales, often dependent on prime and branded programs, are just beginning to recover from losses the past two years.

Pork and poultry are likely less subject to direct impacts of the rules at retail and food service in that typical supermarket and food service product needs have historically been more consistent and standardized than for beef. However the growing interest in natural and/or organic programs; hormone free, free range, and increasing state regulations concerning animal welfare are also creating carcass premiums that are inconsistent in definition, standard or state to state requirement. Until these standards and definitions are applied universally there is great risk that under the proposed rules these programs could be eliminated or watered down in an effort to avoid potential legal liability resulting in similar outcomes to those of beef but on a somewhat smaller scale.

The largest impact of the rules on the retail/food service chicken and pork categories is the potential negative sales and profit impacts of increased product costs due to increased inefficiencies in the various supply chains. As sales fall so these companies will experience declining labor requirements, reduced equipment efficiency, smaller sales per square foot, less fixed cost coverage and ultimately profits decline.

The retailers most at risk to the unintended consequences of the proposed rules are those retailers who have invested the most time, effort and money into providing their customers with high quality meat at competitive prices and are therefore the leading food companies in terms of sales, profitability and customer satisfaction. Those operators that have done the least to provide quality food at fair prices will see much less impact than the industry leaders.

## **5. Direct Costs**

Costs imposed by the proposed GIPSA rules were divided into two categories: direct costs and indirect costs. Direct costs are those that will require an outlay on the part of a company in its effort to comply with the

rules. An example would be new computer software or the hiring of additional staff. Indirect costs refer to those costs that will impact the industry in a broad way and are more likely to develop over time than at the rule’s inception. Examples would include costs associated with losses in efficiency and declining product quality. Direct costs are further divided into two sub-categories: one-time and ongoing. This section provides a brief description of the direct costs considered.

**Table 1. Specific Direct Cost Categories**

	<b>Beef</b>	<b>Pork</b>	<b>Poultry</b>
<b>1. Cost Areas Associated with Differential Pricing</b>			
• Information systems for tracking	✓	✓	
• Contract review for compliance	✓	✓	
• Re-writing and Renegotiating contracts	✓	✓	
• Documentation of quality differentials	✓	✓	
• Documentation of market differentials	✓	✓	
<b>2. Cost Areas Associated with Submitting Sample Contracts to GIPSA</b>			
• Collecting Contracts	✓	✓	✓
• Obliterating identifying information	✓	✓	✓
• Transmission of sample contracts	✓	✓	✓
<b>3. Cost Areas Associated with Limits on Livestock Dealers</b>			
• Retaining dealers to work exclusively with the company	✓	✓	
• Additional internal labor	✓	✓	
<b>4. Cost Areas Associated with Packer-to-Packer Transactions</b>			
• Route transactions through broker or other third party	✓	✓	
• Additional transportation	✓	✓	
• Asset divestiture costs	✓	✓	
<b>5. Cost Areas Associated with Changes to Tournament Systems</b>			
• Restructuring Groups for like houses only			✓
• Rewriting contracts to eliminate discounts			✓
• Compiling and disseminating statistical information to all growers			✓
<b>6. Cost Areas Associated with Changes to Poultry &amp; Hog Contracts</b>			
• Research related to the 80% recoup rule		✓	✓
• Lost chicks due to complying with 90-day rule			✓
• Additional transportation costs associated with 90-day rule			✓
• Labor involved in providing written explanations and remedies		✓	✓
• Re-writing contracts to allow arbitration opt-out		✓	✓
<b>7. Cost Areas Associated with Increased Litigation Potential</b>			
• Additional legal staff	✓	✓	✓
• Court costs, filing fees, research and investigation	✓	✓	✓
• Restructuring to limit legal exposure	✓	✓	✓

**5.1. Cattle and Beef**

Table 1 above provides a listing of the specific business activities that were identified by the study team based on the team’s knowledge of the cattle and beef supply chain as well as from input gathered from extensive

interviews with supply chain participants. The objective of preparing such a list was to provide a structure around which cost estimates would be made measuring one-time supply chain costs as well as cost estimates that would be ongoing. Industry stakeholders were asked to provide specific input relative to these business process changes and, while it was not possible to get data from all firms operating at the primary slaughter level of the beef supply chain, sufficient primary data was collected to provide a consensus estimate of the costs companies would incur to position themselves for complying with the proposed rules. The beef supply chain will incur all of the direct costs except those that relate to changes in the tournament system and those that relate to changes in poultry and hog contracts.

Asset divestitures may be the best option for some packers in response to provisions of the rule and a category was included to capture those costs. A feedyard owned by a packer but located far away from the packer's processing facility might need to be sold should the packer-to-packer sale ban be implemented.

## **5.2. Hogs and Pork**

Not unlike the cattle and beef industry, the hog and pork industry is going to be impacted by the various elements of the proposed GIPSA rules in a multitude of ways. Businesses will need to construct or upgrade information systems that will allow them to track individual market transactions. That might require installing new computer systems with software that will provide an automated way of documenting the payment of market price differentials. With the requirement to justify the payment of price differentials (premiums and/or discounts), comes the need to track these transactions and then harmonize those with quality and performance differentials in order to document that the prices paid are legitimate and consistent with the incremental value of the hog. It is easy to see that just putting in place the tracking mechanisms for justifying differential pricing will be a timely and costly activity.

Table 1 categorizes the major cost areas that will need to be addressed by the pork supply chain to comply with the proposed rules. The areas are identical to those listed for the cattle and beef sector, with the addition of costs associated with contract changes. The integrated nature of a portion

of the hog and pork sector suggests that not all market hogs will be impacted by some of the process requirements and in those cases, adjustments were made to the cost estimates to reflect these structural issues.

There are six major business components or functions that will require business process changes by the hog and pork sector. In addition to setting up processes for dealing with the differential pricing issue, efforts will be required to conform with the new requirement to provide sample production and marketing contracts to GIPSA. There may also be a need to review and/or re-negotiating current contracts that spell out in very specific terms the pricing elements of these contracts. Since many packers utilize packer buyers or dealers to procure some percentage of their ongoing slaughter requirements, costs will be incurred to rearrange this business activity. New personnel and new business arrangements may be required and failure to actually operate as effectively may result in increased costs associated with reduced slaughter plant efficiencies.

Hog slaughter operations will be affected by the ban on packer-to-packer transactions as presently some hog production operations owned in an integrated production system sell some or all of their production to other packers. This is normally due to geographic location of the hog production unit relative to location of the integrator's slaughter facilities. To minimize transportation costs and optimize overall revenues, these hogs are sold to the "competition". We believe GIPSA's concern is that packer-to-packer sales provide packers the opportunity to influence prices and/or have better price intelligence than others in the market. With mandatory price reporting on live hog sales, it is unlikely that such an advantage actually exists.

The packer-to-packer restrictions will also have a major impact on the merchandising and pricing of cull animals (sows and boars). Those involved in slaughter of these cull animals typically procure their sows in a variety of ways and have established procurement systems that allow for optimization of the value of these residual animals. Many integrated hog production systems sell their sows directly to sow slaughter operations or through a company-owned marketing firm. Such activity would be restricted and, while other business structures would surely evolve, costs associated with the cull segment of the industry would be increased.

Several companies demonstrated financial losses that they will endure if they must divest of subsidiary marketing groups that efficiently manage the accumulation and sale of cull animals and market hogs typically defined as outliers.

Many of the contract requirements imposed on poultry integrators will also apply to hog contractors. These entities operate in a manner similar to poultry integrators, offering production contracts to swine growers and then marketing those hogs to packers. In some cases, the contractors are packers. Costs associated with the 80% rule, providing written explanations and allowing arbitration opt-out are all applicable here.

The elements of the proposed rule that deal with competition and the added threat of litigation are high on the list of potential disruptive and costly factors associated with the proposed rules. Those in the business recognize that they might be subjected to litigation whether or not there is due cause and this threat may very well cause companies to change dramatically the way they are conducting business.

Finally, we included a category for the cost of asset divestitures if it is obvious route that a company would need to take upon rule implementation. For example, a pork packer may own a hog production facility in a particular geographic region but no processing plant. Historically that packer has sold the production from the facility to other area packers. With the packer-to-packer ban that could no longer occur and given that transport to the packer's own facilities is infeasible, the packer might determine that divestiture of the production asset is the best course of action.

### **5.3. Poultry**

Direct costs in the poultry area differ somewhat from those identified for beef and pork. Informa created three groups of cost categories that roughly correspond to the major areas of the rule that will affect poultry. The first cost area relates to those costs that companies will incur as a result of making changes to the tournament system. This includes things such as restructuring groups and providing statistical information to all growers. Changes in the pay system, such as having to eliminate discounts from the pay scheme, are included in this category.

Costs associated with contract changes are also grouped together. Survey respondents indicated that they will incur costs as a result of complying with the rule requiring producers have a reasonable opportunity to recoup at least 80% of their investment in growing facilities. Nearly all existing grower contracts would need to be rewritten and those costs are also included in this category.

The final category of direct costs is the costs which companies will incur as a result of the increased legal activity. In some cases staff attorneys will need to be added and in others more out-sourced legal costs will be incurred. Any costs associated with divestiture of assets in order to comply with the rule were included in this category. Table 2 provides a listing of the direct cost areas for poultry.

#### 5.4. One-Time Direct Costs

The analysis conducted by Informa utilized input from industry stakeholders as well as internally generated cost estimates with consensus forecasts being developed. One-time direct costs as shown in Table 2 ranged from an estimated \$26 million for the poultry sector to an estimated \$69 million for the pork industry. The primary factor raising one-time costs for the pork industry relative to the other two species was costs associated with likely asset divestitures. The per-head one-time costs for the pork industry are about half those of cattle but the larger annual hog slaughter volume does raise the overall industry direct costs. For the poultry industry, one time direct costs are estimated at \$26 million with much of this related to litigation related preparations.

**Table 2. Meat Industry One Time Direct Costs**

Supply Chain	Million \$
Beef	\$38.7
Pork	\$68.7
Poultry	\$26.0
Total	\$133.3

## 5.5. On-Going Direct Costs

Table 3 provides estimates by species and in total for ongoing direct costs. These are costs that the industry will be burdened with year after year as business practices change to allow for compliance with the proposed rules. As can be seen, the ongoing direct costs are larger than the one time direct costs for each of the species and in aggregate, roll up to a total meat sector economic impact of \$168.7 million on an annualized basis.

**Table 3. Meat Industry Ongoing Direct Costs**

Supply Chain	Million \$
Beef	\$61.5
Pork	\$73.8
Poultry	\$33.4
Total	\$168.7

## 6. Indirect Costs

### 6.1. Cattle and Beef

Importantly, the proposed rules could have a major impact on the multitude of branded beef programs as well as other beef merchandising programs with quality differentials. Industry participants made it abundantly clear that to limit legal liability, companies in the packing sector would strongly consider reducing the number and types of AMAs that they are involved with. This in turn, would make it more difficult to reward producers for raising cattle that meet the specifications of branded and specialty beef programs. The US cattle and beef industry has spent the past 20 years improving the quality of the beef being brought to market and much of this improvement has been the result of proprietary business programs and supply chain alliances which have allowed added value from the programs to be shared by those creating that value. This typically involves premiums for the cow calf producer, the backgrounder, the feedlot as well as the slaughter operation. At the extreme, many of these programs might be threatened as the potential for litigation because of “fairness” or “preferential treatment” is elevated due to certain elements of the proposed rules that deal with competition.

All of the packer respondents indicated that the number of AMAs offered to producers would decline dramatically with implementation of the proposed rule. Also, potential premiums would be adjusted, likely downward, as the elements of marketing agreements would shift toward "the lowest common denominator" in order to avoid accusations of unfairness and to avoid the possibility of litigation. This would reduce the incentive for producers to go to the extra effort, management and costs of producing higher quality animals. Ultimately, this would jeopardize several of the branded meat programs that have been developed over the years to increase meat quality and improve consumer demand, particularly for beef and pork. But these higher quality animals do not disappear right away. In the short run, packers will "cream the coolers", doing more sorting of carcasses to meet the needs for the various branded programs. Over time, the lack of incentive to produce the higher quality animals will lead to more commodity-style beef and pork being produced, with overall average quality declining. Packers will assess the various branded meat programs to identify those providing them with the best return. To keep from diluting or losing those selected programs, they would tend to feed more of their own animals (increase packer ownership of livestock) to fit the branded program specifications.

### **6.1.1. Branded Beef Programs**

Evidence from the interviews and surveys suggested that branded and specialty beef programs could be endangered if beef packers reduce the number and complexity of AMAs. Therefore, the study team evaluated the branded beef market to more accurately quantify the potential indirect costs that loss of these programs would imply.

In the 2008 Livestock Mandatory Reporting Final Rule, USDA defines "branded" beef as follows:

"The term 'branded' means boxed beef cuts produced and marketed under a corporate trademark (for example, products that are marketed on their quality, yield, or breed characteristics), or boxed beef cuts produced and marketed under one of USDA's Meat Grading and Certification Branch, Certified Beef programs."<sup>6</sup>

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<sup>6</sup> Federal Register /Vol. 73, No. 96 / Friday, May 16, 2008 /Rules and Regulations, page 28635

As of July 14, 2010, the Agricultural Marketing Service of USDA listed 65 Certified Beef Programs. But this is not a complete list of the branded beef programs existing in the US. There are several producer brands, packer brands and retail brands that are not registered with USDA. Schulz *et al* commented on a review of retail data from Freshlook that indicated there are more than 100 beef brands in US retail markets<sup>7</sup>. Plus, the branded product reported by USDA under livestock mandatory reporting is a subset of the total branded beef products sold in the US, being limited to negotiated sales for delivery within 0-21 days and product grading upper two-thirds of the Choice grade. At least 35 of the 65 listed branded beef programs allow beef from cattle grading Select or lower. Still, the data provides the opportunity for a partial analysis of the value of branded beef programs.

The weekly National Comprehensive Boxed Beef Cutout (LM\_XB463) provides cutout values for the various categories of boxed beef. The difference between branded boxed beef and non-branded beef<sup>8</sup> is shown below:

Since the start of mandatory livestock reporting in 2002, the premium at which branded beef has sold over non-branded beef (on a carcass cutout basis) has ranged from \$3/cwt to nearly \$25/cwt (Figure 5). On a per head basis, the calculated premium has varied from \$24 per head to \$190 per head. Over the data series, the premium has averaged just over \$72 per head.

Using average steer and heifer carcass weights, the average annual premium on boxed beef sales reported by USDA over non-branded beef is shown in Figure 6. With the weakening economy of the past couple of years, the premiums on higher quality beef sales have been narrowing. This is not only the case for branded beef, but also for the premium of Prime grade beef over Choice grade beef. Further, the spread between Choice and Select grades of beef, along with the spread between Choice

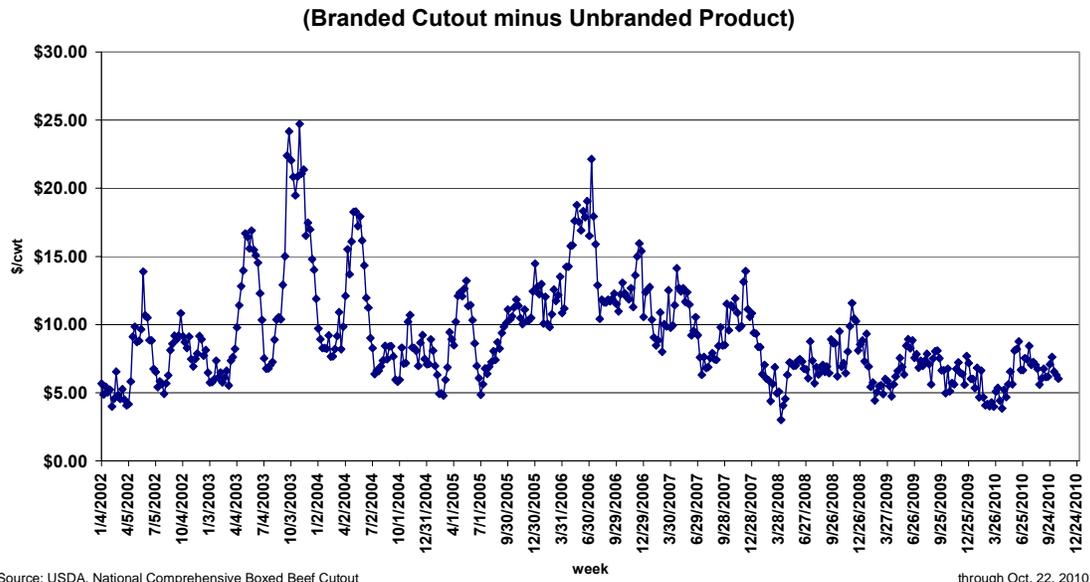
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<sup>7</sup> Schulz, L.L., Schroeder, T.C. and White, K., "Value of Beef Steak Branding: Hedonic Analysis of Retail Scanner Data", Agricultural & Applied Economics Association 2010 AAEA, CAES & WAEA Joint Annual Meeting, July 25-27, 2010.  
[http://ageconsearch.umn.edu/bitstream/61596/2/AAEA%20Selected%20Paper%2010823%20\\_07-15-2010\\_.pdf](http://ageconsearch.umn.edu/bitstream/61596/2/AAEA%20Selected%20Paper%2010823%20_07-15-2010_.pdf)

<sup>8</sup> Includes sales of Prime, Choice, Select and ungraded boxed beef

grade and ungraded beef, have narrowed somewhat since 2007. Still, consumers have shown willingness to pay significant premiums on branded beef products. A 2007 study by Cattle-fax estimates the added value of premium brands at an average of \$500 million per year.<sup>9</sup>

**Figure 5: Premium on Branded Boxed Beef Sales**



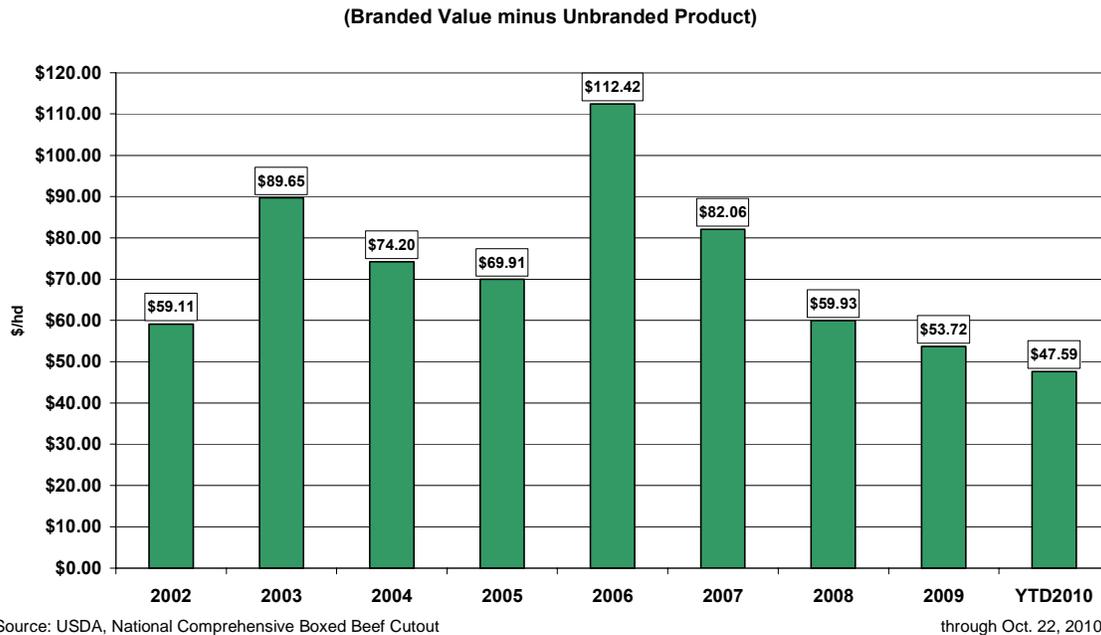
The figures reported by USDA are based on packer sales into the wholesale beef market. For producers involved in supplying cattle to packers for branded beef programs, a portion of the premiums achieved by the packers will be passed back to the producer. The amount will vary by program and by the quality attributes required by the programs. BEEF magazine recently published a listing of 33 producer alliances.<sup>10</sup> Where available, descriptions of desired characteristics, production practices, premium amounts and number of cattle involved in the programs were provided. In many cases, the average premium paid was described as variable by packer and grid being used. Where dollar amounts were reported, they varied considerably, with many running in a range from \$14 per head to \$90 per head. One of the largest programs for which some details are available was for U.S. Premium Beef, LLC. The number of

<sup>9</sup> Value of Quality Analysis, Cattle-Fax Research, July 2007.  
[http://www.cabpartners.com/news/research/cattle-fax\\_valueofquality.pdf](http://www.cabpartners.com/news/research/cattle-fax_valueofquality.pdf)

<sup>10</sup> 2010 Alliance Yellow Pages <http://beefmagazine.com/2010AllianceTable.pdf>

cattle in the alliance for 2009 was reported at 735,000 head with an average premium of \$31.85 per head. The number of cattle involved in the various alliances amounted to more than 4 million head, not including those programs where the numbers were not available or considered confidential. The feedlots involved in these various alliances are not the only ones eligible for premiums. There are at least 10 programs that provide post-harvest premiums back to cow-calf operators.

Figure 6: Annual Premium on Branded Boxed Beef Sales



Some of the largest premiums listed in the 2010 Alliance Yellow Pages involved the production of “natural” cattle, where the premiums could run from \$75 per head to \$130 or more per head. Creekstone Farms was offering premiums of \$35 per head for source and age verified cattle, \$125/hd for natural cattle, and \$135/hd for non-hormone treated cattle. As is the case with the Certified Beef Programs listed with USDA-AMS, the 2010 Alliance Yellow Pages is not an exhaustive list of producer alliance programs in the US beef industry.

The 2010 National Meat Case Study<sup>11</sup> indicated that the percentage of packages in retail stores carrying a brand had increased for beef from 31%

<sup>11</sup> <http://www.beefretail.org/CMDocs/BeefRetail/research/2010NationalMeatCaseStudy.pdf>

in 2007 to 51% in 2010. Store branding of ground beef rose to 37% in 2010, compared to 21% in the 2007 survey. There is also a considerable amount of branded beef sold through foodservice distributors. All of the major packers have branded beef programs, along with several of the mid-sized and smaller firms. While the proportion of fed beef sold as branded beef varies by company, Informa estimates that at least one-third of the beef from steer and heifer slaughter is sold under a branded beef program. The value added from the various branded beef programs, including organic beef and natural beef, is estimated at approximately \$750 million per year.

To reiterate, this is only a partial analysis of the value of branded beef programs to the US cattle industry. The available data does not cover all of the programs, producers and animals that are involved in producer alliances and branded beef programs. The premiums that are attained by cattle producers can be substantial. If packers reduce their reliance on AMA's, this could reduce the number of branded programs and/or the size of premiums paid by packers, resulting in a significant revenue reduction for producers as a whole. For the millions of cattle sold through these programs and the numerous producers who are working on improving the quality of their animals to better fit these programs and maximize their premiums, the losses in revenue would be several tens of dollars per animal and amount to several hundreds of millions of dollars in lost revenue to the industry.

## **6.2. Hogs and Pork**

Optimal use of slaughter facilities is considered to be a major issue for slaughter operations in the hog/pork sector. In many interviews, industry stakeholders stressed the importance of getting first shift slaughter operations off to a seamless start and with the daily volume that many top level hog slaughter operations have, efficiency of throughput is critical for keeping costs down.

Threats to the optimal utilization of hog slaughter and processing operations was a key concern of many of the industry stakeholders interviewed during the course of this study. Slaughter/processing firms were asked to provide their estimates of the impact of the proposed rules on their company's operational efficiency. These estimates covered a

rather broad range on a per head basis. In the end, a consensus forecasts was developed reflecting input from the impacted companies as well as business intelligence from the study team. It was determined that a 3% negative impact on operational efficiency would be a conservative estimate of the economic impact relative to efficient operations of most plants.

A roll up of costs associated with efficiency loss was estimated somewhat in excess of \$175 million.

While potential revenue loss in the pork sector due to quality issues will be substantially less than in the beef industry, it is still a major factor for the pork industry. There are many programs within the hog/pork sector where marketing agreements are in place and which pay differential prices for meeting certain quality specifications. Several slaughter/processing operations indicated that they may be required to scale back on premium based programs due to the added costs of documenting these and the uncertainties of the legal exposure that continuing these programs creates. Organic and natural programs operate under a higher cost structure than do other commercially based production systems and cost justification for such entities producing this product is possible but will occur with some added cost to the processor.

An estimate was made of the value creation resulting from various quality requirements and associated premiums and, like beef, the potential lost revenue for such programs was set at the half way mark between zero and the highest calculated cost. For the hog industry, this cost was estimated to be \$82 million.

### **6.3. Poultry**

Examining the potential cost impacts of the proposed rule on the US poultry industry requires a critical understanding of key components that have driven growth and efficiency over time. For this study, only potential costs to the broiler industry were examined in detail, but the turkey industry will face similar issues. Based on market-ready volume, broiler production is nearly seven times that of turkey production in the US. Since the proposed rule targets many aspects of the contractual relationship between integrators and growers, the economic impact on the

broiler industry will be considerably larger relative to the turkey industry because of differentiations in both the size and structure of each.

The broiler industry has grown at a phenomenal rate over the past three decades. Total annual liveweight production increased from slightly more than 15.5 billion pounds in 1980 to more than 47.6 billion pounds in 2009, representing an average annual growth rate of approximately 2.5%. Increasing vertical integration has extended decision-making within the industry across more elements of the supply chain, thereby helping drive down costs and improve product consistency and quality. Integrators have been able to accomplish this by embracing technological advances in both raising live birds and processing them after slaughter. While integrators have direct control over adopting technology at the processing level, their influence on adopting technology at the live production stage is mitigated by the fact that those are almost always grower-owned facilities and not under direct control of the integrator. Consequently, for there to be improvement in the live production process, integrators must provide incentives for contract growers to make the necessary upgrades to their facilities or enter into contractual relationships with new growers to build new facilities that are up to current standards. These improvements generally include, but are not limited to, larger and sturdier houses that take advantage of scale efficiencies and newer climate control technologies to protect birds from extreme temperatures as well as better delivery systems for both feed and water.

Elements of the proposed rule – such as changes to how integrators are able to use a tournament system to score growers' performance and increased scrutiny of new and existing poultry contracts – are very likely to alter the integrator-grower relationship in such a way that slows down the adoption of new technologies that drive efficiency gains and lower costs in the industry. In interviews with integrators throughout the broiler industry, there was a universal sentiment that, as it reads, the proposed rule would significantly increase the threat of litigation. Monetary incentives that are currently used to encourage innovation and investment on the grower's part to adopt new technology would be used with much more caution to try and avoid accusations of unfair or unjust payment practices. This would diminish integrators' ability to promote and encourage the purchase of newer houses or more efficient technology and would leave more of that decision-making to the discretion of contract

growers. Given the massive capital investment this often requires and the possibility of integrators being less willing to pay a premium to innovative growers for fear of litigation, investment in new buildings and upgrades for existing ones is expected to slow down considerably.

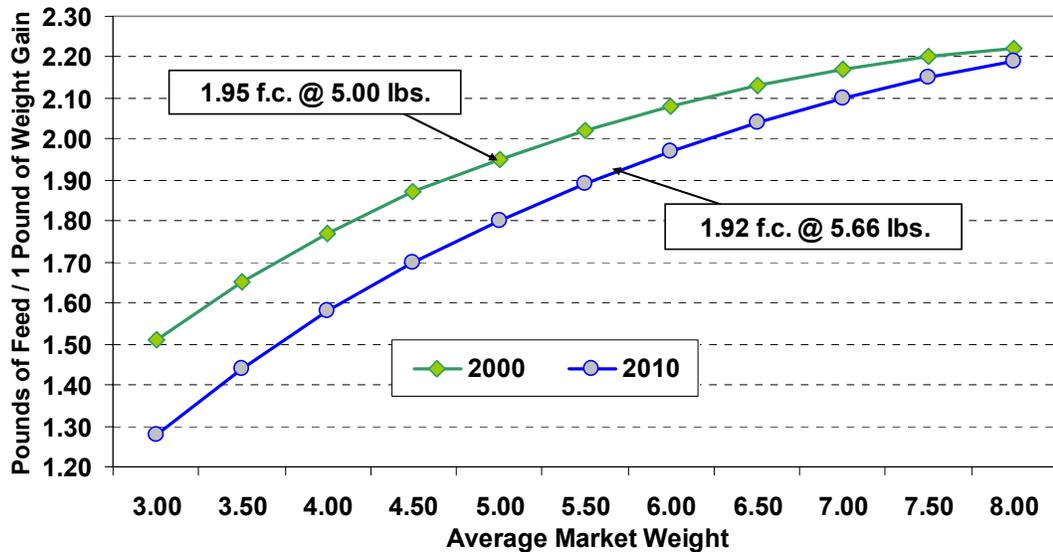
To understand exactly how this slowdown in investment in new buildings and upgrades for existing ones would impact efficiency, it's important to understand key efficiency metrics in the broiler industry and how they have evolved over time. One such metric is the average mortality rate for broilers. Estimates from the National Chicken Council suggest that the rate was relatively constant at around 5.0% from 1980 through 2000; however, estimates over the past decade have fallen to as low 4.0% in some years but have averaged closer to 4.5%. Continuing investment in newer buildings and technology should aid livability, but quantifying the impact of a slowdown in investment on mortality rates with or without the proposed rule would be highly speculative because of the erratic nature of recent estimates making it difficult to project a trend under either scenario.

A much better metric to focus on is feed conversion, which is the amount of feed required to produce one pound of weight gain for a broiler. According to estimates from the National Chicken Council, the average feed conversion ratio has declined from 2.05 in 1980 to an estimate of 1.92 in 2010. There is more to the story, however, as the average market weight for a broiler in 1980 was 3.95 pounds but has increased to an estimated 5.66 pounds this year. The reason this matters is that as a broiler gets heavier it becomes less efficient at converting feed into weight gain, masking an even greater trend towards efficiency than is implied by the 0.13 difference between 1980 and 2010.

Figure 7 below illustrates this by examining feed conversion estimates across a wider range of market weights and how it has changed over the past 10 years. The chart shows a definitive shift to an improving rate of feed conversion, which is directly attributable to ongoing investment in new buildings and equipment and upgrades to existing facilities. The average market weight for a broiler is no longer 5.00 pounds as it was in 2000, but this illustrates what the average feed conversion would be if that were still the case. Based on Informa estimates, broilers raised to exactly 5.00 pounds in 2010 would have an average feed conversion of approximately 1.80 pounds which compares to an average 1.92 feed

conversion for broilers weighing 5.66 pounds, the projected average market weight this year. This approach more accurately highlights improving trends in feed efficiency than simply looking at the difference in average feed conversions between two time periods.

Figure 7: Broiler Feed Conversion Estimates: 2000 vs. 2010

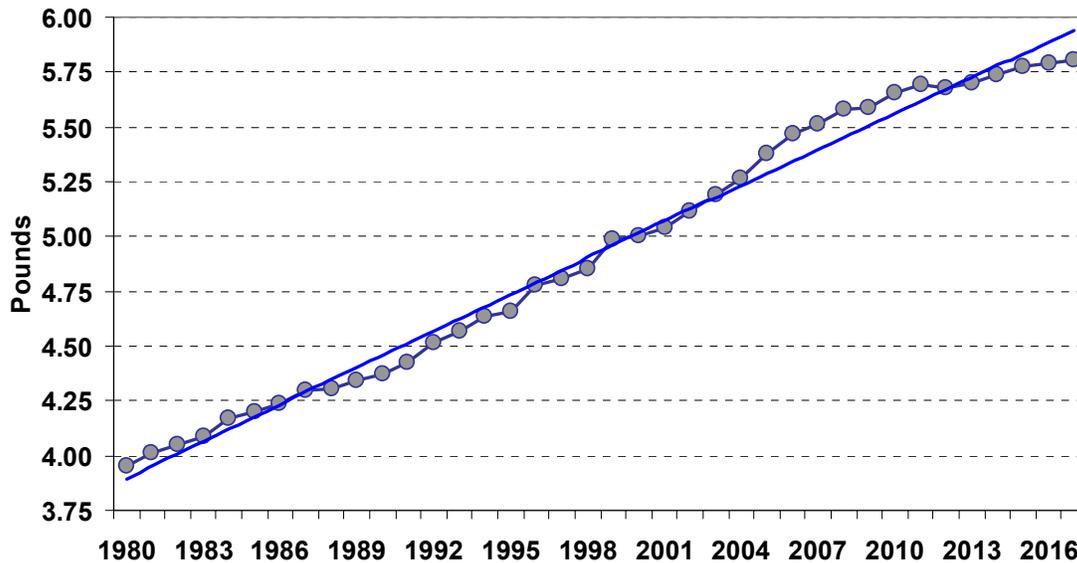


Source: National Chicken Council and Informa Economics estimates

The above exercise is important to consider because average broiler market weights are expected to continue trending higher over the next few years, and that is a necessary consideration when taking into account any change in average feed conversion with or without the proposed rule. Figure 8 below illustrates historical estimates for broiler liveweights supplied by USDA and includes Informa’s baseline projections out to 2017. The outlook is contained to a 7-year period as this is the estimated length of time that efficiency would be impacted by the proposed rule before the necessary adjustments could be made to return the industry to its previous trajectory. As the graph shows, average broiler market weights have been increasing at an accelerated pace over the past few years but that is about to slow down with the current feed cost shock that is hitting the market. Broiler weights should move decidedly higher between now and 2017 but not improve at nearly the same rate as the past 30 years because of lingering strength in feed input costs. The average broiler market is expected to increase from an average of 5.66 pounds in

2010 to 5.81 pounds in 2017. The trend for broiler market weights over the next seven years is assumed to be the same with or without all of the elements of the proposed GIPSA rule. There will be a greater demand for broiler meat in the market, and the projected increase in market weights over the next few years will help supply that demand, even if it comes at a greater cost to integrators and is eventually passed on to consumers.

Figure 8: Average Broiler Market Weight

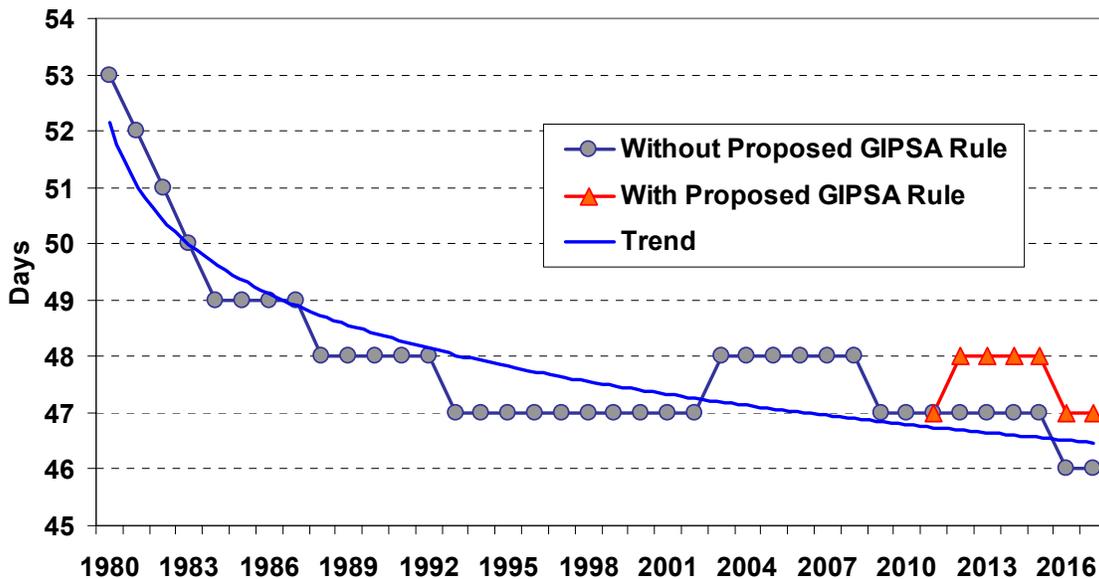


Source: USDA and Informa Economics baseline projections

Against a backdrop of increasing broiler market weights in line with Informa’s baseline projections, reasonable estimates of average feed conversion can be made over the next seven years without the proposed rule. Average feed conversion in the broiler industry is expected to hold at 1.92 in 2011 but decline to 1.90 in 2012 and hold there through 2015. Informa estimates that the average feed conversion in the industry will decline to 1.88 for 2016 and 2017. If the proposed rule goes into effect next year, it will likely have a very small initial impact on feed conversion as existing industry infrastructure should be able to at least hold onto previous gains in efficiency. The slowdown in investment should catch up with the industry by 2012, however, and feed conversion rates should average between 0.02 and 0.03 points higher over the next few years compared to the current trajectory without the proposed rule. We believe the gap should narrow a bit by 2017 as the industry adjusts and finds new ways of promoting innovation and raising efficiency standards over time.

The lag in feed conversion efficiency would be most apparent in that it would extend the average time it takes a broiler to reach its market weight. There might not be a discernable impact next year, but by 2012 and continuing through 2017, the expected feed efficiency loss would translate into one extra day, on average, for broilers to reach their target market weight. Figure 9 below illustrates the expected trends for both scenarios with and without the proposed GIPSA rule in place.

Figure 9: Average Broiler Market Age



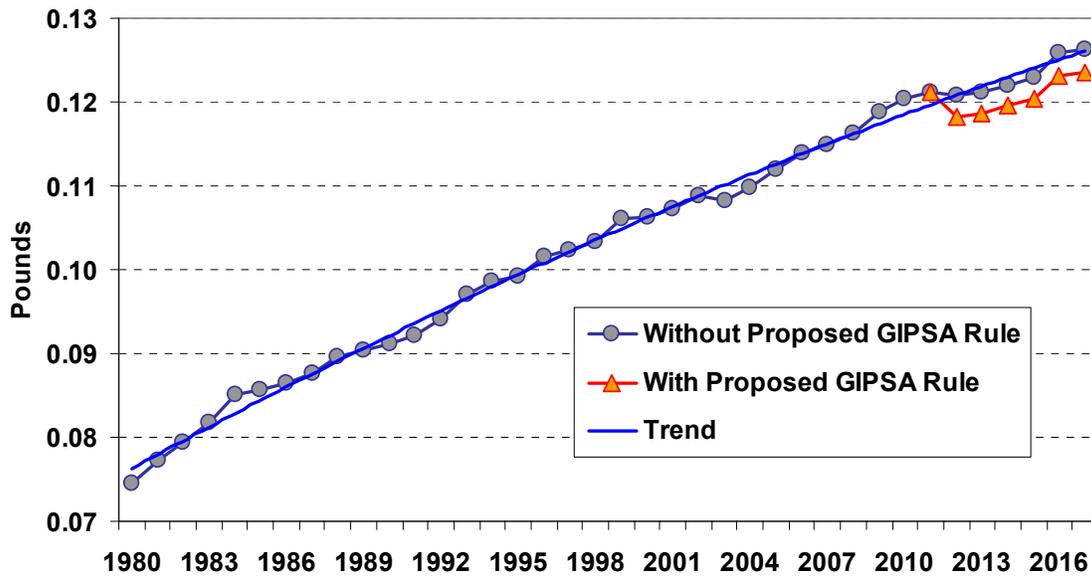
Source: National Chicken Council and Informa Economics estimates

Extending the length of time a broiler is on feed by one day may seem small, but that marginal decline in efficiency can be very expensive for an industry when looked at in aggregate. Estimating the impact on the average age that broilers reach their market weight and keeping in mind the baseline projections for average market weights in Figure 8, it is now possible to isolate a very important metric to measure efficiency in broiler production and that is to examine the average daily weight gain. This is the primary tool used to estimate potential costs to the broiler industry under the proposed rule.

Figure 10 (below) illustrates vividly the historical trend and forecast under alternate scenarios with and without the proposed rule. Up to this point, the trend has been rather consistent with very little deviation. Average

daily weight gain for broilers increased from less than 0.080 pounds in the early 1980s to more than 0.100 pounds by the late 1990s. This year it is expected to top 0.120 pounds for the first time. Without the proposed rule, the average daily weight gain for broilers is expected to average nearly 0.123 pounds between 2011 and 2017. The average is projected at slightly less than 0.121 pounds with the rule in place. Overall this translates into a loss of efficiency of nearly 1.6%.

Figure 10: Average Broiler Daily Weight Gain



Source: National Chicken Council and Informa Economics estimates

The final step is to translate what an expected 1.6% loss of efficiency under the proposed GIPSA rule would mean from a dollar standpoint per year and over the 7-year time period that is being examined. Some assumptions about production and costs have to be made to accurately estimate the total. This first involves total broiler liveweight production, which is expected to approach 48.8 billion pounds in 2010. The total is expected to increase to slightly more than 50.0 billion pounds next year and grow to more than 53.8 billion pounds in 2017. Average annual production is estimated at nearly 51.7 billion pounds for the next seven years. With an efficiency loss of nearly 1.6% under the proposed GIPSA rule, that translates into an added cost of producing a little more than 800 million pounds of broiler meat per year.

Ten years ago, broiler production costs per live pound generally averaged around \$0.25, but recent increases in corn and meal prices have pushed that average to nearly \$0.40 at times, and expectations are that higher feed costs are here to stay for the foreseeable future. Being generous and assuming an annual average live production cost of \$0.35 per pound, that would translate into an average total cost to the US broiler industry of nearly \$285 million dollars per year from 2011 to 2017. For the entire 7-year period, that comes to an aggregate cost of nearly \$2 billion. When the cost impact on turkey production is taken into consideration, the proposed rules would translate into a cost of more than \$300 million per year for the US poultry industry and an aggregate total of more than \$2.1 billion over a 7-year period. This takes into account what Informa believes to be the most likely scenario with the proposed rules. Under a best-case scenario, an efficiency loss of slightly more than 0.5% is expected, which would translate into an annual cost of more than \$100 million per year to the US poultry industry and an aggregate cost of more than \$700 million. Considering a worst-case scenario, an efficiency loss of more than 2.8% is estimated, which would translate into an average annual cost of more than \$540 million to the US poultry industry.

In aggregate, the costs to the poultry industry are estimated to be about \$362 million. These costs are less than the expected economic impact on either the pork or beef industries.

#### **6.4. Supply Chain Efficiency Costs**

Based on the discussion provided earlier in this document, there would appear to be a large potential cost across the three major meat protein verticals related to loss of supply chain efficiencies. These costs are estimated to roll up to give a total efficiency-related impact of \$880.9 million as shown in Table 4 below.

**Table 4. Meat Industry Efficiency Impact**

Supply Chain	Million \$
Beef	\$401.9
Pork	\$176.7
Poultry	\$302.2
Total	\$880.9

### **6.5. Quality/Demand Revenue Impacts**

One of the primary concerns raised by industry stakeholders during the active debate on the costs and merits of the proposed GIPSA rules was the impact such rules would have on the broad array of livestock alternative marketing agreements (AMAs) and other quality-oriented programs that provide product differentiation in the marketplace. Informa analyzed the potential economic impact that changes or loss of these programs might have on the meat sector and the aggregate results are presented in Table 5. These impacts do not attempt to quantify the number of AMA's that might be altered or lost; they merely reflect an estimate of the economic impact that could occur depending upon how the rules were implemented and enforced and how supply chain participants might respond to the added burdens of cost justification and the threat of litigation regarding the premium price structures that exist to validate these programs.

The largest economic impact will occur in the beef industry as the beef supply chain has spent many years and significant investment dollars developing a broad range of quality-driven programs that differentiate beef products and which have highly differentiated pricing incentives and supply chain participant rewards. The pork industry also has worked hard to create value differentiation in many programs whether it be for Natural pork, Paylean free pork or for products differentiated for the export market.

Table 5. Meat Industry Quality/Demand Impacts

Supply Chain	Million \$
Beef	\$377.7
Pork	\$82.2
Poultry	\$0.0
Total	\$459.9

The study team was unable to identify an analytic process to reflect potential quality/demand impacts on the poultry industry related to the proposed new GIPSA rules. This does not suggest that some won't exist but the integrated nature and highly standardized production process for the poultry sector suggests that such impacts would be relatively small.

## 6.6. Livestock Auction Markets

Several interviewees suggested that the provision banning order buyers from working for more than one packer could have a significant impact on livestock auction barns throughout the country. Informa found this to be a valid concern and followed up by interviewing auction owners. It is well known that most barns auction a wide variety of animal types and any one individual packer is often only interested in purchasing a small subset of the animals that might be offered on any given day. Further, sales volumes at smaller, geographically isolated barns can be low which also reduces the number of animals in a daily sale that might be of interest to a particular packer. Thus a system has developed where order buyers contract with several packers to procure animals and then visit a barn on sale day to purchase animals according to each packer's needs and specifications.

GIPSA's proposed rule prohibits order buyers from purchasing livestock on behalf of more than one packer. It is immediately obvious that packer costs of animal procurement through livestock auction barns would be increased considerably if they were no longer able to "share" in the cost of putting a buyer in the smaller barns. Packer representatives were questioned about this during the interview process and were nearly unanimous in their conclusion that the increase in cost due to having a buyer work exclusively for them would be prohibitive and that they would very likely reduce the number of order buyers that they utilize. It then

follows that those remaining order buyers would focus on the high volume sales in attempt to minimize the packer's per unit cost of procuring animals in this fashion.

Informa judges this argument to be economically sound and believes that it would likely play out in the following fashion. If the rule were to be implemented as written, smaller auction barns in difficult to reach places would see an immediate decline in the number of buyers attending sales while larger, more centrally located sales would see less of an impact. Over time, prices at the smaller volume locations would decline due to the lack of competition as a result of having fewer buyers present. Eventually, livestock producers in remote locations would become discouraged by the lower prices and seek to transact their livestock at the larger barns where better buyer attendance results in higher prices. To the extent that the higher prices in large barns could offset the increased transportation cost that would be incurred to get them there, the producers would abandon their local sale barn and move animals to a bigger central barn. This sets off a death spiral as now smaller numbers will be available for sale each week and that will cause fewer buyers to incur the expense of attending. Eventually, the smaller sale barns will close their doors.

There is another angle on the proposed rule that could impact livestock auction barns. Some respondents felt like the provision that requires packers to document all price differentials combined with the potential for litigation posed by eliminating the need to prove competitive injury would cause buyers to move away from purchasing animals on a live basis. Packers see risk in purchasing animals live because judging the economic value of animals before they are dressed is an inexact science. They fear that paying less for one animal relative to another simply because the buyer "thought" the economic value would be less could expose them to a legal claim should the animal in question actually grade better than expected once it was in carcass form. Packers have, in other circumstances, moved away from live purchasing when the risk of misjudging an important economic characteristic is too great. An example is carcass pricing that is practiced in northern cattle feeding areas where muddy feedyard conditions can make it difficult to accurately estimate carcass yield. In fact, it would be rational to argue that on average we should expect packers to pay more for the same animal in carcass form than live simply because he faces less uncertainty in the carcass

transaction. Now, with the proposed rule packers have a new (and potentially very large) risk added to the live procurement process. It makes sense that would drive them in the direction of dressed pricing.

Movement to dressed pricing would imply that animals bypass the livestock auction segment of the marketing channel and move directly to the packer from the producer. Auction owners confirmed this as a feared unintended consequence of the proposed rule. This risk would likely affect all livestock auction barns regardless of size.

Both of these potential consequences (the movement away from live pricing and the death spiral at smaller barns) will have a negative impact on the livestock auction barn segment of the economy. We think that the economic impact will be far larger in small communities than in larger ones. In many smaller rural communities, the local sale barn is a hub of economic and social activity. Loss of this asset could be devastating for some small towns.

In an attempt to quantify the economic impact that the proposed rule could have on the livestock auction sector, Informa used data that is routinely collected by GIPSA in conjunction with its oversight responsibilities in this area. All livestock markets are required by law to post a bond with GIPSA and the agency makes this data available to the public. As of August 2010, GIPSA held bond for 1237 livestock market agencies in the United States. Very little public data on the value added by these institutions exists, but we can infer economic size from the amount of bond that GIPSA requires of each entity. Table 6 below provides a view on the size distribution of livestock auctions stratified according to their bond.

**Table 6. Size Distribution of US Livestock Auction Market Agencies and Firms Selling On Commission (Primarily Stockyards).**

Bond Size	Number	Total Bond	Estimated Volume (hd)
Greater Than \$500,000	3	\$2,327,650	735,893
\$400-\$500,000	3	\$1,360,000	429,968
\$300-\$400,000	12	\$4,137,500	1,308,082
\$200-\$300,000	40	\$9,672,500	3,057,987
\$100-\$200,000	297	\$36,920,510	11,672,517
\$50-\$100,000	627	\$44,768,794	14,153,773
\$20-\$50,000	125	\$3,738,000	1,181,779
less than \$20,000	130	\$1,455,000	460,002
Totals:	1237	\$104,379,954	33,000,000

Additional costs will arise from two distinct causes: (1) demise of smaller barns due to the “one packer per buyer” provision and (2) reduction in the number of animals transacted live due to the increased litigation threat. We believe the second of these causes to be dominant and consider the potential costs as follows.

Informa conservatively estimates that as many as 25% of beef cull animals that are currently transacted through stockyards could end up bypassing that segment due to a switch by some packers to grade and yield pricing. Nearly all of this would originate from the cull cow sector. Assuming that the average value added by a livestock auction barn is \$15/head<sup>12</sup> and given that we estimate that 5 million head<sup>13</sup> moved through such barns in 2009, a conservative estimate of the value lost as packers increase grade and yield pricing in response to the rule is \$18.8 million. The removal of that much value from the system along with the problems related to (1) would almost assuredly put many smaller livestock auction barns out of business. Information obtained in the interview process suggested that many smaller barns are heavily dependent upon cull cow sales and the loss of a quarter of that business could put the barn in financial jeopardy. We believe that up to 15% of existing facilities could succumb in such a scenario and this would imply that between 150 and 200 of the smallest livestock auction markets might cease to exist. Should this occur, all of the remaining animals that are normally traded through the closed facilities would have to travel greater distances to reach a larger sale location.

<sup>12</sup> Typical commission posted in the stockyards and filed with GIPSA

<sup>13</sup> Out of 6 million commercial cows slaughtered in 2009

In 2009, 33 million animals were transacted through commission markets or commission firms in the US<sup>14</sup>. The largest proportion of these animals are bovine, cull cows and feeder cattle. A modest number of hogs and horses would be in that mix. Often the same animal may pass through the system more than once. Assuming that 1.25 million cull cows will no longer be marketed within the system (25% of 5 million), that would leave 31.75 million head still marketed in the post-rule sector. If a quarter of those animals had to travel an additional 50 miles due to consolidation of the industry brought about by (1) and (2) above, and assuming an all-in cost of \$10 animal per trip<sup>15</sup>, this would amount to an additional \$79.4 million in costs that would be borne by producers.

As a result, Informa estimates the overall direct cost to the livestock auction sector and producers due to the new requirements of proposed rule to be \$85.8 million. These are only the direct costs. There would be a heavy economic burden in the small rural communities where shuttered facilities are located as business moved from smaller barns to larger ones. Economic activity would increase around the larger facilities and decline around the smaller ones. The sector would become more consolidated.

## **7. Total Industry Cost Estimates**

### **7.1. Cattle and Beef**

In previous sections of this report, information was provided that identified the methodology employed in pulling together estimates of the direct and indirect costs associated with the proposed rules. This section provides the results of the analysis and, as can be seen, there will be a rather significant potential cost burden placed on the cattle and beef supply chain. For purposes of simplicity in presenting the results, supply chain costs have been aggregated into four primary categories. There will be costs incurred by the beef supply chain that are of a one-time nature and basically reflect actual cost outlays. These one-time costs for the beef industry were aggregated up from a rather large matrix of individual costs

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<sup>14</sup> Annual Report, Packers and Stockyards Program, GIPSA, USDA, March 2010, p. 63.

<sup>15</sup> Gadberry, Shane and Troxel, Tom, "Cow-Calf Enterprise Budget", University of Arkansas Cooperative Extension Service, MP413-PD-10-10RV, page 10.

elements based on primary data submissions provided by commercial supply chain participants and supplemented by knowledge and experience based estimates provided by business consultants at Informa.

A similar process was used to develop a consensus estimate and roll-up of ongoing direct costs. These costs reflect estimates developed for sustained business adjustments that would be required to comply with the proposed rules as currently written. While the one time direct costs were estimated at nearly \$39 million, the ongoing direct costs were estimated to total just over \$61 million.

In addition to direct beef industry costs, two other major areas of economic impacts were identified and estimated. The US beef packing sector is a complex and highly differentiated business with optimal efficiency in the slaughter/processing sector very dependent upon the entire live animal procurement, slaughter/processing and beef product merchandising process. Disruptions in this process whether due to the wrong type of cattle arriving at the plant; too few cattle to operate at a high level of capacity or the wrong quality of product to meet various merchandising programs will all have a negative impact on operational efficiencies. This can be a major cost to the industry; estimated in this study to total nearly \$402 million.

In addition to efficiency losses, the beef industry has spent the past 20 years developing a broad range of quality based programs; some breed specific and some branded in nature while others reflect specific product attributes that qualify the product as organic or natural. Most of these value enhanced programs center around marketing agreements that specify how the animals are going to be produced and in most cases, priced. Virtually all of these programs have imbedded in the requirements a higher cost structure and this necessitates higher prices to be paid for the animals. The premiums that are paid cover the added costs and provide an additional margin incentive to the cattle producer to assure that supplies continue to be produced.

An effort was made to calculate the value that various beef production and marketing programs have generated for the industry and a description of this evaluation is provided in Section 6.1. An aggregate measure of the value enhancement to the US beef industry was made and this totaled an estimated \$755 million. While the adjustment to marketing agreements

that will occur is very uncertain given the vague wording of the proposed rules, it is most certainly to be less than the maximum value-added estimate and just as certain to be greater than zero. In our judgment, the midpoint of these two extremes seems like a good choice to represent the losses in revenue from declining product quality. Thus, our estimate of the quality impact (lost revenue opportunity) in the beef sector is \$378 million.

For the cattle and beef supply chain, these four cost components roll up to a total industry cost of roughly \$880 million. In addition to this cost, there will be costs at the sales barn/auction market level of the supply chain and possibly company-specific costs related to asset divestitures, business reorganizations and possibly acquisitions. It was noted in several industry interviews that, should the rules as written be implemented, there may be a strong incentive for further vertical integration as a counter measure to the increased exposure that the rules are certain to create from a litigation perspective

**Table 7. Beef Industry Supply Chain Cost**

	Million \$
One Time Direct Costs	\$38.7
Ongoing Direct Costs	\$61.5
Cost Increase Due to Efficiency Loss	\$401.9
Revenue Lost Due to Quality/Demand Impact	\$377.7
<b>Total Supply Chain Loss</b>	<b>\$879.9</b>

## 7.2. Hogs and Pork

For the hog and pork sector, the same analytic framework was used whereby one-time and ongoing direct costs were estimated as were costs associated with efficiency losses and revenue loss associated with quality programs. The process changes leading to direct cost impacts (both one-time and ongoing) were very similar to those for the cattle and beef sector with costs totaling nearly \$70 million for one-time costs and just above \$70 million for ongoing costs.

For the hog and pork supply chain in aggregate, the potential costs associated with implementation of the proposed rules summed to \$401 million. This is much lower than the estimated cost for the beef industry

but still a significant cost burden for the US industry to bear. The supply chain lacks sufficient margin for such an economic cost to be absorbed so ultimately, such costs will need to be borne by the consumer through higher prices; the producer through lower prices or more likely, a combination of both. Costs of this magnitude ultimately will lead to a downsizing of the production base and, given the enhanced threat for expanded litigation, there would be incentives for industry vertically integrate beyond current levels.

**Table 8. Pork Industry Supply Chain Cost**

	Million \$
One Time Direct Costs	\$68.7
Ongoing Direct Costs	\$73.8
Cost Increase Due to Efficiency Loss	\$176.7
Revenue Lost Due to Quality/Demand Impact	\$82.2
<b>Total Supply Chain Loss</b>	<b>\$401.4</b>

### 7.3. Poultry

The poultry industry is highly integrated with only limited transactional activity at the live bird/slaughter level interface. Consequently, the industry has operated for many years on contractual relationships between integrated processors and contractual growers. Over time, the industry has built contracting relationships that provide incentives to growers that meet or exceed certain productivity and efficiency standards and these systems are not always looked upon favorably by some growers.

Informa believes the proposed rules will change some of the details in contractual arrangements between growers and processors but overall the industry will continue to operate much as it does today. Complying with the proposed rules will not come without some cost and the analysis conducted suggests those costs will roll up to industry aggregates as shown in Table 9.

Since both the chicken and turkey industries are already organized such that contracts drive the production, marketing and pricing of live birds, many of the proposed changes for this industry deal with specific elements of these contracts. It was estimated that changes required in this regard would result in one-time direct costs of \$26 million and ongoing costs of

\$33.4 million. While these are costs that reflect relatively small incremental costs on a per bird or per pound of production basis, they nevertheless add new costs to both the chicken and turkey supply chains and cannot be simply ignored. Much of the ongoing direct costs and to a lesser extent, one-time direct costs relate to likely costs of establishing contingency funds to deal with a higher incidence of litigation. This fear of “open ended” litigation was raised time and again by industry stakeholders interviewed during the course of this investigation.

As can be seen in Table 9, the analysis conducted by Informa and presented in Section 6.4 estimates a large (\$300 million +) cost associated with efficiency losses which are expected should the proposed rules be implemented.

**Table 9. Poultry Industry Supply Chain Cost**

	Million \$
One Time Direct Costs	\$26.0
Ongoing Direct Costs	\$33.4
Cost Increase Due to Efficiency Loss	\$302.2
Revenue Lost Due to Quality/Demand Impact	\$0.0
<b>Total Supply Chain Loss</b>	<b>\$361.6</b>

**7.4. Aggregate Meat/Poultry Industry Costs**

Pulling all of the cost and revenue components together, the aggregate impact of the proposed GIPSA rule for the US meat and poultry industry is estimated to be \$1.64 billion. This reflects a significant burden for this sector of the US economy and the impacts do not stop here. In the following section an analysis of the macroeconomic consequences from such an economic impact are provided.

**Table 10. Aggregate Economic Impacts Across All Species**

Source	Million \$
One Time Direct Costs	\$133.3
Ongoing Direct Costs	\$168.7
Cost Increase Due to Efficiency Loss	\$880.9
Revenue Lost Due to Quality/Demand Impact	\$459.9
<b>Total Supply Chain Loss</b>	<b>\$1,642.8</b>

## 8. Macro Economic Impacts

### 8.1. Market Analysis

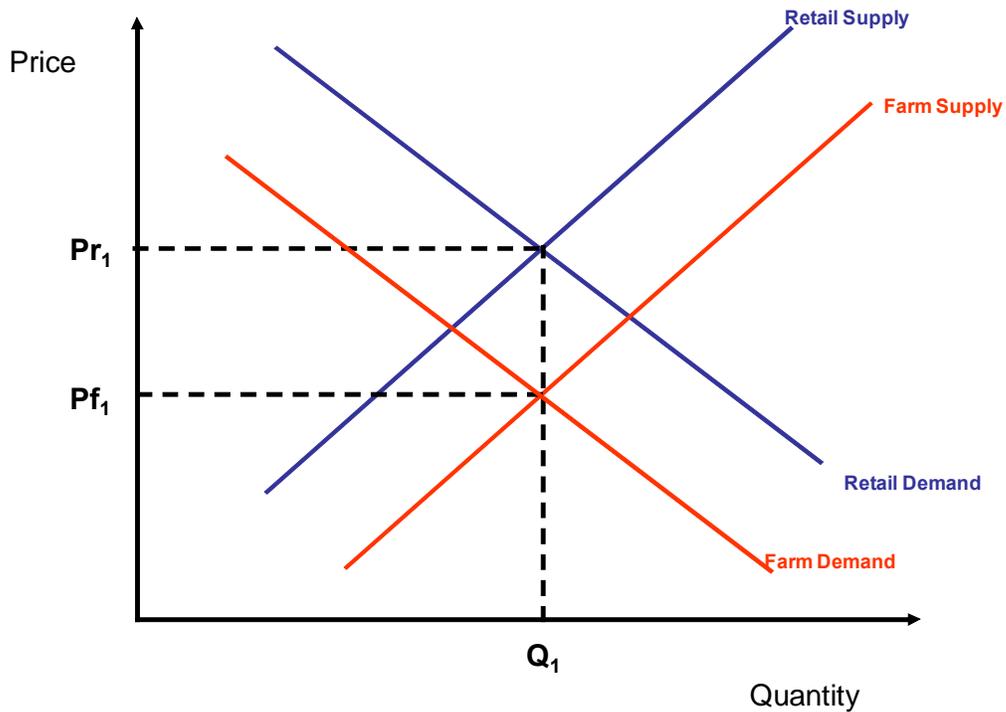
The next step in the analysis was to take the cost estimates developed in the previous section and use those to gauge the impact of the rule to the broader US economy. The primary tool used for this purpose is an input-output model based on data for the entire US economy. In preparation for that step however, the cost and revenue loss information had to be translated into a change in industry output which is the primary information that drives input-output analysis. The next sections describe how that transformation was made.

#### 8.1.1 Adding Costs to the Economic System

Most of the effects of the proposed rule involve added costs borne by the industry. Here we develop a simple model of how added costs affect industry output. It is important to recognize that for supply chain participants such as packers, who are primarily margin players, added costs will not, in the long run, remain at the packer level. Instead, what occurs is that the spread between farm and retail prices increases to reflect the new costs that have been added to the system.

Figure 11 illustrates this concept using linear supply and demand curves. In this figure, we show both retail and farm level supply and demand. In this market, quantity  $Q_1$  is produced and there is a spread between the retail price ( $Pr_1$ ) and the farm price ( $Pf_1$ ). Often economists will refer to this spread as the marketing margin because it encompasses all of the costs that are required to take a raw material from the farm to the retail level where it is purchased and consumed. When new costs are injected into the system, the retail supply curve and the farm level demand curve both shift back to the left, leaving a new equilibrium farm level price,  $Pf_2$ , and a new retail price,  $Pr_2$ . The spread between the retail and farm price increases to accommodate the new cost (see Figure 12).

Figure 11. Retail and Farm Level Supply and Demand

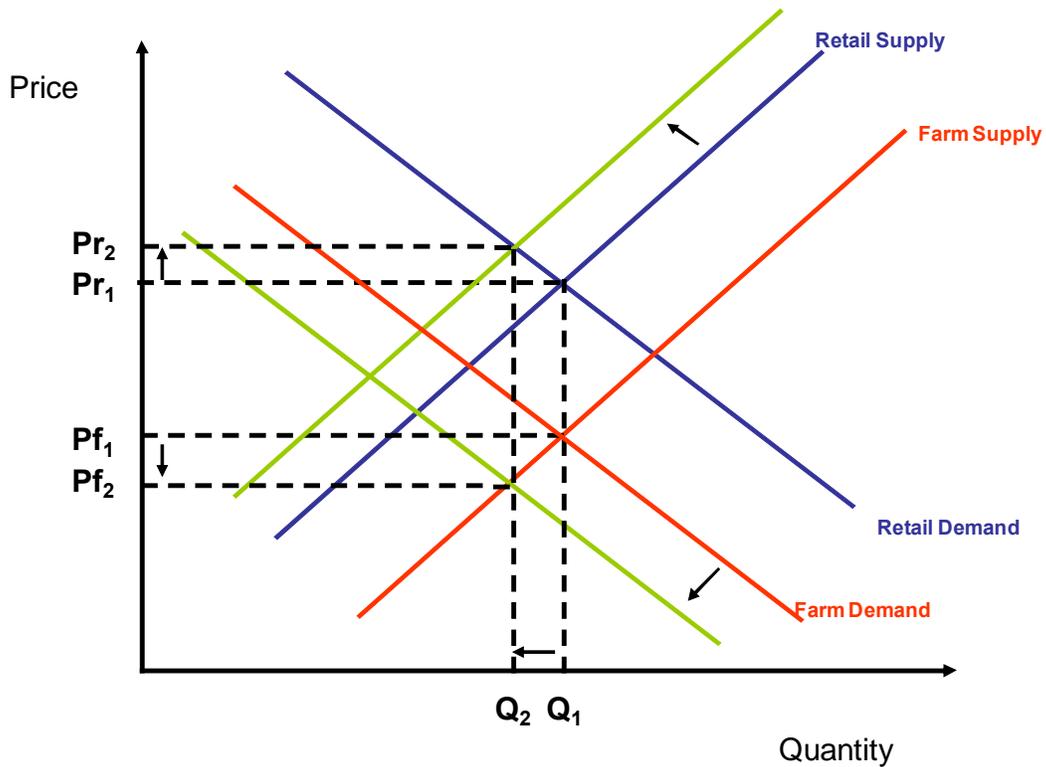


Thus, the long-run result of an increase in costs is that some of the increase is borne by producers in the form of a lower farm price and some is borne by consumers in form of a higher price at retail. Quantity in the market declines (illustrated as the movement from  $Q_1$  to  $Q_2$  in Figure 12) and the spread between retail and farm prices widens. How much of the cost increase is borne by producers and how much is borne by consumers depends upon the slopes of the supply and demand curves. If the demand curve is “steeper” than the supply curve, more of the increase will move to the consumer. If the supply curve is steeper, then more of the cost will be borne by the producer. In this simple model of the market using linear supply and demand curves it is easy to show that the percentage of the cost increase borne by the consumer is:

$$\frac{\epsilon_s}{\epsilon_s - \epsilon_d}$$

where  $\epsilon_d$  is the elasticity of demand and  $\epsilon_s$  is the elasticity of supply.

Figure 12. Effect of Adding Costs at the Processor Level.



Informa used this basic framework to determine how the quantity of output would change given the cost increases that were calculated in the previous sections. Obviously, estimates of the elasticity of supply and demand were required for this exercise. These were based on past research by other authors with some professional judgment used where good external estimates could not be located. Table 11 below gives the elasticities used in this study. Linear supply and demand curves were assumed and the parameters of these were determined using 2010 prices and quantities in the three markets with the broiler market used to represent all poultry. Elasticities are dependent upon the time-horizon considered, particularly supply elasticities. Since the cost estimates and later impact analysis was done on an annual basis, the elasticities were selected with a one-year horizon in mind.

Table 11. Supply and Demand Elasticities

	Beef	Pork	Poultry
Supply Elasticity	.993 <sup>16</sup>	.520 <sup>17</sup>	.850 <sup>18</sup>
Demand Elasticity	-.951 <sup>19</sup>	-.993 <sup>19</sup>	-.644 <sup>20</sup>

Once this basic model framework was established, it was used in conjunction with the cost estimates developed earlier to calculate the decline in industry output that would occur in each of the three markets as a result of injecting higher costs into the system. Only the direct ongoing costs are considered because it is those costs that we can be sure that packers will eventually pass on to consumers and producers. It is possible that packers might absorb some or all of the one-time costs, and so that portion of costs is not included in this portion of the analysis.

### 8.1.2 Modeling Quality Decline

Not all of the damage expected to come from the rule originates from cost increases. In the case of beef and pork, we believe that substantial harm will come to the industry as the availability of high quality and specialty product declines when packers limit the use of alternative marketing agreements out of fear of litigation. We model this effect as a downward shift in the demand curve, which reflects the reality that, as the average product quality declines, consumers can only be induced to keep their consumption intact by lower prices.

Given the loss in value due to quality decline calculated in previous sections and assuming a linear demand function with a demand elasticity as given in Table 11, it is a simple matter to calculate the reduction in output that arises from the assumed decline in product value.

<sup>16</sup> Tvedt, D, et al. *Elasticities in World Meat Markets*. Agricultural Economics Research Report Series No 55, Kentucky Ag Experiment Station, (November, 1991).

<sup>17</sup> Meyer, et al. *FAPRI US Sector Elasticities, Volume II Livestock, Poultry and Dairy*. Technical Report 92-TR 26, (October 1992).

<sup>18</sup> Informa estimate

<sup>19</sup> Chen, K. Z. 1998. *The Symmetric Problem in the Linear Almost Ideal Demand System*. Economics Letters 59: 309-315.

<sup>20</sup> Huang, K. S., and B. Lin. *Estimation of Food Demand and Nutrient Elasticities from Household Survey Data*. Food and Rural Economic Division, Economic Research Service, US Department of Agriculture, Technical Bulletin, Number 1887 (August 2000).

### 8.1.3 Modeling Efficiency Losses

For all three species, we expect that there will be efficiency losses as a result of the proposed rule. In beef and pork these losses stem from less predictable throughput in plants as a result of fewer animals procured under marketing agreements. In poultry, the efficiency losses come from a reduction in feed efficiency that results from decreased incentives to growers to improve once the tournament system changes called for by the rule become reality. In both cases, efficiency losses are modeled as an increase in costs to the packer/integrator. Thus, the methodology described above for modeling cost increases is also used for modeling the degree to which industry output will decline once the rule is in place.

### 8.1.4 Total Losses

The final step in preparing for the input-output analysis is to aggregate the change in the value of industry output from all three sources: direct ongoing cost increases, quality decline and efficiency losses. This total, expressed as a wholesale dollar value of lost output is then used as the starting point for the input-output analysis. Table 12 provides the estimated industry output results of all three consequences of the rule.

**Table 12. Industry Output Effects Estimated for the Direct Ongoing, Quality Decline and Efficiency Losses as a Result of the Proposed Rule**

	Wholesale Value of Lost Industry Production (million \$)	Change in Industry Production (million lbs)	Change in Animal Numbers (thousands)
Beef	\$591	-379	-494
Pork	\$246	-256	-1,253
Chicken	\$236	-313	-55,219
Turkey	\$14	-19	-658

Given the assumed supply and demand elasticities, it is also possible to segregate the damages between producers and consumers. The direct ongoing and efficiency costs will be split between the producer and consumer while losses due to quality degradation will not impact the consumer financially and will all be borne by the producer. In the case of

beef and pork the producer segment is very clear. In the case of poultry, the integrators themselves are the producers and thus it makes it more likely that nearly all of the cost increases will be pushed up to the consumer. The estimates of consumer/producer burden are presented in Table 13.

**Table 13. Relative Cost Burden Between Consumers and Producers**

	----- Costs Borne By -----		Percent that Falls on Producers
	Consumers (million \$)	Producers (million \$)	
Beef	\$106	\$485	82.0%
Pork	\$108	\$138	56.2%
Chicken	\$190	\$45	19.3%
Turkey	\$12	\$3	19.3%
Totals:	\$416	\$672	

## 8.2. Input-Output Analysis

The final task in the economic analysis was to determine how the reduction in output value in each of the respective industries would impact the overall US economy. For this we turned to an input-output model of the US economy. Input-output models are a more restrictive form of computable general equilibrium models. They represent the economy as a series of interrelations between sectors of the economy and final demands which include export markets and government. Household demand is endogenous to the system. Historical data is used to construct these interrelationships and each sector is characterized by a production function that uses other sector's output as its input.

For this study, Informa made use of software and data provided by the Minnesota IMPLAN Group which was optimized for input-output analysis where the United States was treated as the region of interest. Since GIPSA's proposed rule is directed at the packing sector, and most of the costs associated with the rule will initially fall on that sector, that is where the modeling effort began. A set of activities were selected that are believed to adequately represent the production functions of the beef, pork and poultry processing sector. For this effort, chicken and turkey were

combined to create a general poultry category in the same way that the two industries were combined for the cost analysis.

When applied to a particular sector, the input-output modeling process will account for three different effects. First, the direct effect represents the impact that the reduction in output will have on the target industry—in this case the processing sector. The model will also render an estimate of the decline in output that will result in all of the industries that supply the target industry. We refer to this as the supplier effect. Finally, the model provides an estimate of the induced effect which describes how reduced spending from those working in the target sector will reverberate through the economy and affect other industries. Thus for every industry we were able to segregate the direct, supplier and induced effects. Since the model is linear, these can be summed to arrive at the total reduction in output that arises from a change in the target industry's output.

In addition to the output changes, the input-output model can provide an estimate of the change in employment and the change in value added for each affected sector. Employment is expressed as the number of full-time, 12-month jobs while the value added component is expressed in dollars. One further piece of information provided by the model is an estimate of the change in tax revenues that will result from the change in economic activity. This is a rough estimate since the model doesn't estimate taxes in many of the local tax jurisdictions but rather uses an average approach to estimate the nationwide effect. Still, it provides an indication of the magnitude of tax revenues that will be foregone as output in each of the three industries declines.

In addition to modeling the effects on the processing sectors and all of the suppliers to those sectors, Informa also modeled the effects that could be expected further down the supply chain. In particular, all three proteins have a significant presence in both the retail grocery and foodservice sectors and the reduction in beef, pork and poultry output will have a negative effect on those segments of the supply chain. In this manner, we get a much better picture of the total impact to the overall economy than if these sectors were not included in the analysis. Finally, results are presented by specie, with the turkey and chicken grouped together, and are then summed to arrive at the total industry impact of the proposed GIPSA rule across the entire US economy.

### 8.3. Economy-Wide Impact, Beef

We expect the beef supply chain to be the one most affected by the proposed GIPSA rule. The driving reason behind this stems largely from the expected decline in quality and thus beef demand that is expected to result from a reduction in the utilization of AMA's by industry participants. The other costs of the rule are significant, but they are dwarfed by the impact that arises from declining average product quality. By comparison, the poultry industry is not expected to experience a significant quality problem as a result of the rule. This disadvantages beef relative to poultry in the long-run battle for market share with consumers.

**Table 14. Estimated Economy-Wide Effects Associated with Declining Output in the Beef Supply Chain.**

	Direct	Supply Chain	Induced	Total
Employment (# of jobs)	-3,710	-4,486	-3,892	-12,088
GDP (mil \$)	-188	-325	-323	-837
Output from Affected Industries (mil \$)	-598	-817	-608	-2,022

The results from the input-output analysis are presented in Table 14. We find that the impact of the proposed GIPSA rule on the beef sector has the potential to result in the loss of just over 12,000 jobs and reduce GDP by \$837 million dollars. It is important to recognize that while the job loss is not an every year occurrence; the lost contribution to the national GDP does repeat each year. We note that the biggest loss in terms of jobs and GDP comes from the supply chain, i.e., the industries that supply the beef industry. The largest of these related industries is cattle ranching and farming. Table 15 provides the top ten sectors with respect to job losses related to the problems created in the beef supply chain by the proposed rule.

**Table 15. Top Ten Sectors for Job Losses Originating from the Beef Supply Chain.**

Sector	Job Loss
Cattle ranching and farming	-2,889
Animal (except poultry) slaughtering, rendering, and processing	-508
Real estate establishments	-498
Wholesale trade businesses	-470
Food services and drinking places	-466
Retail Stores - Food and beverage	-462
Support activities for agriculture and forestry	-456
Transport by truck	-340
Animal production, except cattle and poultry and eggs	-317
All other crop farming	-295

#### 8.4. Economy-Wide Impact, Pork

The pork sector will also see dramatic effects originating from adoption of the rule. Losses in this sector are not as large as for beef, primarily because the impact on product quality is not expected to be as large. Still, the industry will suffer some quality decline as packers find it more difficult to supply specialty products such as organic and natural pork in an environment that includes far fewer marketing agreements. The pork industry will take its biggest hit from reduced efficiency, primarily in the form of inefficiencies in plant utilization that will result from less predictable supplies in a reduced AMA environment. Direct ongoing costs will also play a role.

Our analysis suggests that the potential for 5400 job losses will result from imposing the conditions of the proposed rule on the pork industry. GDP contribution is expected to decline by \$335 million. Table 16 gives the change in jobs, GDP and output that are expected to arise from the pork sector.

**Table 16. Estimated Economy-Wide Effects Associated with Declining Output in the Pork Supply Chain.**

	Direct	Supply Chain	Induced	Total
Employment (# of jobs)	-2,507	-1,451	-1,472	-5,430
GDP (mil \$)	-108	-104	-122	-335
Output from Affected Industries (mil \$)	-238	-256	-230	-724

As with the beef sector, the biggest decline in jobs will come from the production sector as nearly 2000 jobs are projected to be shed in the production sector alone. By comparison, the slaughter and processing sector is expected to lose only 236 jobs. Table 17 provides the top ten sectors for job loss originating from the pork supply chain.

**Table 17. Top Ten Sectors for Job Losses Originating from the Pork Supply Chain.**

Sector	Job Loss
Animal production, except cattle and poultry and eggs	-1,928
Animal (except poultry) slaughtering, rendering, and processing	-236
Retail Stores - Food and beverage	-232
Cattle ranching and farming	-193
Food services and drinking places	-177
Wholesale trade businesses	-176
Real estate establishments	-161
Support activities for agriculture and forestry	-150
Transport by truck	-130
Employment services	-83

### **8.5. Economy-Wide Impact, Poultry**

Overall economic damage was the smallest in the poultry area. Our assumption that the proposed rule would not impact the quality or demand for poultry products is largely responsible for this outcome. The largest impact comes from the efficiency decline that is expected to result from the tighter regulations placed on the tournament system. Ongoing direct costs are significant in the poultry area and those, combined with the efficiency loss point to an output decline in this sector that is projected to cost the economy at total of 4500 jobs and \$341 million dollars in GDP. Table 18 provides the input-output results as they relate to the poultry sector.

**Table 18. Estimated Economy-Wide Effects Associated with Declining Output in the Poultry Supply Chain.**

	Direct	Supply Chain	Induced	Total
Employment (# of jobs)	-2,032	-1,338	-1,143	-4,513
GDP (mil \$)	-133	-113	-95	-341
Output from Affected Industries (mil \$)	-280	-235	-178	-692

An interesting outcome from the poultry model identifies oilseed farming to be the sector at risk to lose the most jobs due to the cost increases in this sector. Poultry farms are big consumers of soybean meal which likely plays a role in this result and the lack of a specific production sector (the processors are the producers) helped to produce a job loss distribution in this sector that differs from what was noted in the pork and beef results. This does not mean a direct loss of soybean farmers per se, but rather just a loss of jobs in that sector. There are many people employed as farm hands, etc. whose jobs would be at risk if demand for soybean meal were to decline because of shrinking animal production. Agricultural support activities rank much higher in the poultry industry's list of sectors losing jobs.

**Table 19. Top Ten Sectors for Job Losses Originating from the Poultry Supply Chain.**

Sector	Job Loss
Oilseed farming	-1,634
Support activities for agriculture and forestry	-430
Real estate establishments	-247
Retail Stores - Food and beverage	-222
Poultry processing	-213
Food services and drinking places	-123
Wholesale trade businesses	-102
Grain farming	-57
Monetary authorities and depository credit intermediation activities	-56
Employment services	-53

## **8.6. Economy-Wide Impact, Livestock Auction Markets**

In Section 6.6 we described the economic risks that would confront the livestock marketing sector if the proposed rule was implemented. We found that it was likely that increasing numbers of cull animals would bypass livestock auction markets and be sold directly to packers on a grade and yield basis. The total direct costs to the economy system in terms of both lost value added and increased transportation costs borne by producers was found to be \$85.8 million dollars.

The IMPLAN software does not contain a sector specific to livestock auction markets so the cattle ranching production sector was used as a proxy. This is particularly applicable since much of the added cost involves a new transportation cost burden that falls on producers, many of which will be in the cow-calf sector of the beef supply chain. Table 20 provides the results of the model constructed to represent the losses that might be expected from the changes in the livestock auction market industry.

**Table 20. Estimated Economy-Wide Effects Associated with Effects on the Livestock Marketing Sector.**

	Direct	Supply Chain	Induced	Total
Employment (# of jobs)	-307	-350	-157	-813
GDP (mil \$)	-7	-25	-13	-45
Output from Affected Industries (mil \$)	-40	-64	-24	-128

### **8.7. Economy-Wide Impact, Total**

Finally, we bring together all of the aforementioned economic impacts in order to gauge the overall impact that the rule is expected to have on the US economy. Table 21 provides these totals. We find the overall loss in GDP resulting from this rule to be \$1.56 billion and the total number of jobs lost to approach 23,000. Output from all of the affected industries is expected to decline by \$3.58 billion, including those in ancillary supply chains that are not part of the targeted industries and those that suffer an induced effect due to reduced spending by participants in the meat and poultry sectors. Clearly, this proposed rule has the potential to cause significant economic loss to the nation.

**Table 21. Estimated Total Economy-Wide Effects Associated with the Proposed Rule.**

	Direct	Supply Chain	Induced	Total
Employment (# of jobs)	-8,555	-7,624	-6,664	-22,843
GDP (mil \$)	-436	-568	-553	-1,557
Output from Affected Industries (mil \$)	-1,155	-1,371	-1,041	-3,567

## 8.8. Tax Revenue Impact

The IO software that was used for this study contains the capability to estimate the changes in tax revenues that will result from the output changes described above. These are only rough estimates as the software uses average tax relationships in the past to project future revenues. Obviously, there is no guarantee that future tax rates will resemble those of the past. Still, we think it is informative to present these estimates as an indicator of how much tax revenue could decline as a result of the proposed rule. Table 22 presents the annual change in tax revenue to state and local governments while Table 23 gives the annual change for the federal government.

**Table 22. Change in State and Local Tax Revenue by Source (Million \$).**

Taxes on Employee Compensation	Taxes on Proprietor Income	Indirect Business Taxes	Taxes Paid By Households	Taxes Paid By Corporations	Total:
-\$1.90	\$0.00	-\$119.91	-\$22.97	-\$21.37	-\$166.14

**Table 23. Change in Federal Tax Revenue By Source (Million \$).**

Taxes on Employee Compensation	Taxes on Proprietor Income	Indirect Business Taxes	Taxes Paid By Households	Taxes Paid By Corporations	Total:
-\$75.46	-\$8.07	-\$16.78	-\$63.50	-\$29.28	-\$193.10

## 9. Timing of the Economic Impact

Many of the economic results discussed above will take time to materialize. Perhaps the only economic impact that can be expected to occur shortly after rule implementation are those cost expenditures associated with the direct one-time costs (discussed in Section 5). The other, more significant impacts such as declining efficiency and quality degradation can be expected to happen more slowly and may not reach the full potential described here until three or four years post implementation.

The IO models used in Section 8 are designed to measure an annual change.<sup>21</sup> Therefore to be consistent, all of our cost estimates in Sections 5 through 7 were made on an annual basis. However, these estimates were made with the idea that the full effect of the rule was being felt. We have little empirical evidence to suggest how the economic impacts will evolve over time. Subjectively, our professional experience and information gleaned from the industry interviews will allow us to provide a subjective assessment of how these effects may play out over time.

In the graphs that follow, one for each supply chain, we show our opinion of the relative impact in each year following implementation of the rule. The following convention is used. We rate each year from 0 to 1 with 1 representing full impact and zero representing no impact. Fractions in between can be interpreted as partial impacts. The full impact years are expected to correspond to the numbers presented in Section 8, while in other years the economy will feel less of an impact.

It is important to recognize that eventually companies will find ways to adapt to the provisions of the rules and thus in more distant years the economic impact of the rules will be lessened. There may always be some residual ongoing costs that remain and some of the quality and efficiency effects may have a very long tail, but it is safe to assume that the overall impact a decade from now will not be as great as it is in the first few years.

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<sup>21</sup> Projected GDP and output declines are on a per year basis. Employment loss does not re-occur each year, but rather the jobs that were lost early years remain lost in later years.

Figure 13. Estimated Economic Impact Over Time, Beef

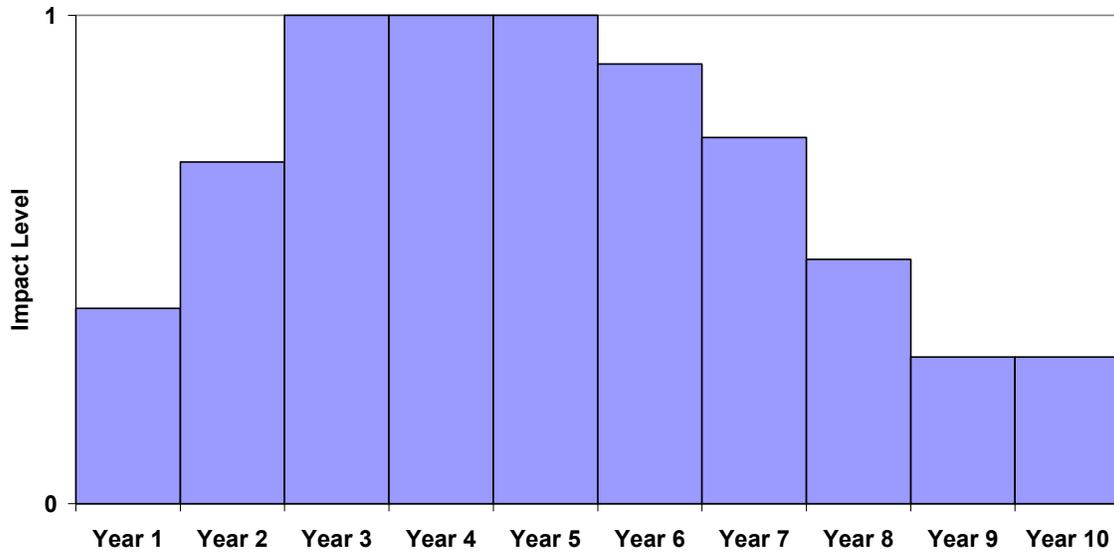


Figure 14. Estimated Economic Impact Over Time, Pork

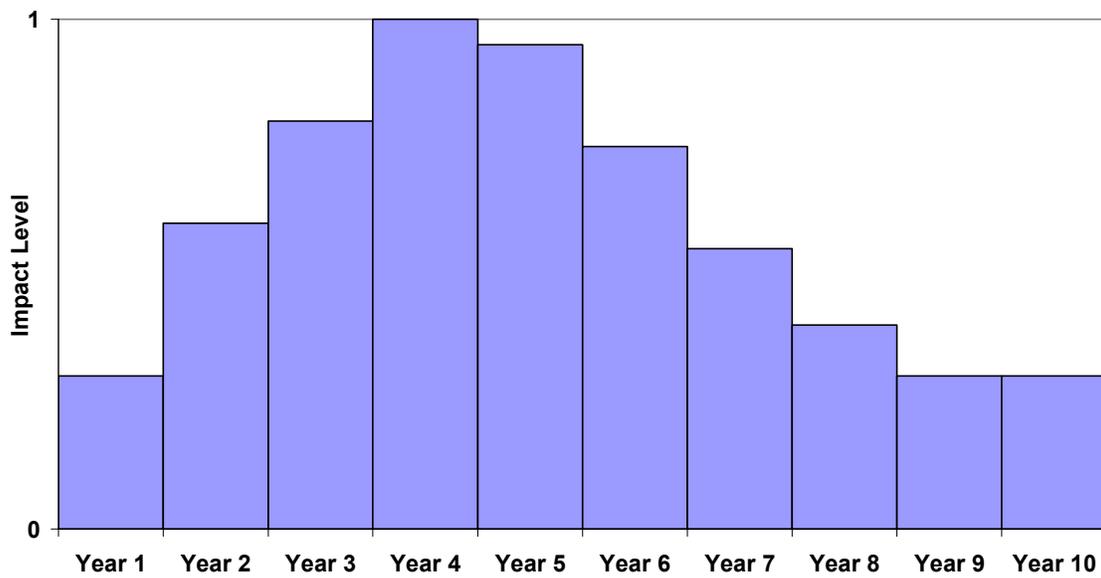
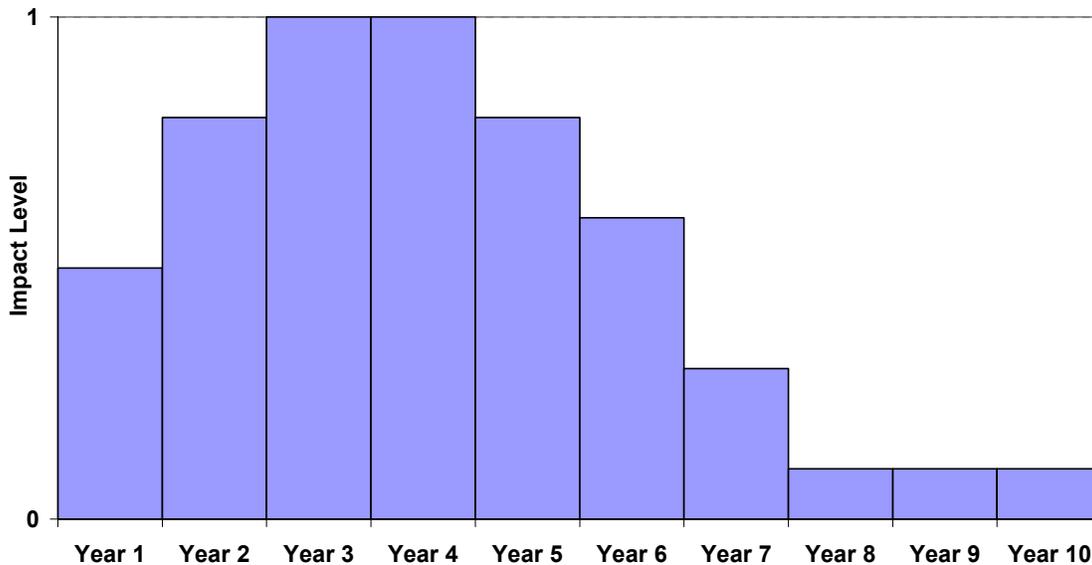


Figure 15. Estimated Economic Impact Over Time, Poultry



## 10. Summary

This study was commissioned because GIPSA has proposed a rule to implement directives in the 2008 Farm Bill without conducting a careful and credible cost analysis. With this work, we begin to fill that gap and provide the industry and indication of the costs that are likely to arise if the rule were to be implemented as written. The rule as it currently stands strikes us as very vague and ill-defined. This has created considerable uncertainty among industry players as to what to expect once the rule is implemented.

Our process began with in-depth interviews of industry participants in all segments of the beef, pork and poultry supply chains. Through these interviews we were able to gain an understanding of how companies were planning to respond to the rule and collect their thoughts on the potential costs they would incur in their response. To help quantify the cost aspect, surveys were sent directly to companies involved in each supply chain asking them to provide cost estimates on a long list of potential actions that might be required to deal with the rule. These included everything from costs associated with additional computer systems and the personnel to support them to projected costs associated with defending their firms from increased litigation as a result of the rule. These survey results were combined with professional expertise at Informa to arrive at a

reasonable cost estimate for several broad categories of costs. This process also involved having the Informa study team prepare estimates of financial losses that could be expected from reduced efficiency and declining demand that was expected to arise as a consequence of the rule.

These cost and revenue loss estimates were aggregated to an industry-wide basis and worked through a simple supply-demand framework to arrive at an estimate of the change in output that was expected for each supply chain. Informa found that the rule is likely to reduce animal numbers in the beef sector by 494,000 head and in the pork sector by 1.25 million head. For broilers the expected decline was 55.2 million birds and for turkeys the rule was expected to reduce output by an amount equivalent to 659,000 birds.

Once an estimate of the change in output was in hand, the analysis progressed to the final stage which was designed to provide an estimate of the impact on the US economy from these changes in the meat and poultry sectors of the economy. An input-output model was used for this purpose. Results of this stage of the study indicated that the rule as written is expected to reduce GDP by just over \$1.5 billion and cost the US economy nearly 23,000 jobs. This work indicates that all three industries will suffer significant economic damage should the proposed rules be implemented. The fact that the estimated economic loss to beef and pork exceeded that of poultry highlights the potential magnitude of the unintended consequences.

Through this analysis, the Informa team came to believe that this rule could also have a substantial impact on livestock auction markets throughout the country. The rule will prohibit order buyers from purchasing cattle for more than one packer and we believe that this will cause a decline in buyers at smaller sale barns that likely set off a "death spiral" that will ultimately lead to many small rural auction barns ceasing business operations thus forcing ranchers in remote rural areas to ship animals further for sale at larger barns. We estimate that as many as 200 of the nations smallest sale barns could be at risk of disappearing. The demise of these barns and the consolidation of the sector is expected to result in a loss of over 800 jobs and a \$45 million dollar loss in value added by this sector.

Finally, we do not expect all of the impacts described by this study to occur immediately. They will take time to evolve. In particular, the decline in beef and pork quality and the subsequent damage to consumer demand will take time to materialize and time for the full impact to be felt. For beef and pork the full

impact might not be felt until three or four years after the rule is implemented. Efficiency losses in poultry would likely happen sooner, but would still be delayed somewhat from the rule's implementation date. The economic damage resulting from the rule would likely stretch for many years into the future.

It is worth noting in closing that during the course of this study, it became clear to us that the provision in the rule that relieves plaintiffs from the burden of proving competitive injury is by far the most damaging. Simply removing that one provision could reduce the economic damage expected from the rule by nearly 75%. All of the expected efficiency losses and demand decline that forms the basis for the largest portion of the costs are tied back directly to the packer/processors' fear of increased litigation and an increased likelihood that a very large financial judgment will be rendered against them. That is the factor that will drive the packers to sharply reduce their use of AMAs, which in turn creates large costs in terms of efficiency and product quality.