



## **The Debilitating Effects of Concentration In Markets Affecting Agriculture**

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# The Debilitating Effects of Concentration In Markets Affecting Agriculture

## Summary

The U.S. agricultural economy is highly concentrated in the hands of too few processors of major agricultural products. In beef, chicken, pork, seed, and some grains, four or fewer firms so dominate the market that competition is insufficient. Dangerously high levels of buyer market power i.e., monopsony power, prevent America's food producers from receiving an appropriate and necessary fraction of the retail food dollar.

At the same time, retail food costs are increasing and consumers too are being hurt. The reason is simple: the same firms enjoy similar power, directly or after handoffs to concentrated retailers, before finished food products reach consumers.

The United States needs an economically viable food policy and an abundant supply to feeds its people and others in the world. To do so it must protect itself from economic risks of concentration and physical risks to food supplies generated by misplaced dependence on too few mega-processors. The acute need to end adverse impacts on competition from abuse of monopsony power, is explored in this publication.

This OCM Special Competition Committee Report, drafted by experienced antitrust lawyer and economist authors for OCM, debunks the recent General Accounting Office's Report, GAO 09746R, *Concentration in Agriculture*, issued June 30, 2009 and demonstrates the existence, and ills, of concentrated market power in the hands of too few, in major agricultural markets.

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### **Market Concentration**

**Market concentration is domination of a market by a few big firms. A high degree of concentration may be evidence of antitrust problems, if it reflects a lack of competition. Traditionally, economists examine whether there is too much concentration using the Herfindahl-Hirschman Index (HHI), which is determined by adding the squares of the market shares of all firms involved.**

**A low HHI indicates many competitors and thus great difficulty in exercising market power; a high HHI suggests a concentrated market in which price rises are easier to sustain. HHI analysis is, however, not as reliable as once thought.**

**In recent years, antitrust authorities have placed less emphasis on concentration simply because it is hard to define the market in which concentration should be measured. Difficulty at defining the market is not a compelling reason to de-emphasize the dangers of concentration in markets.**

### **Market power**

**Market power exists when one buyer or seller in a market has the ability to exert significant influence over the quantity of goods and services traded or the price at which they are sold. Market power does not exist when effective competition is present, but it does when there is a monopoly, monopsony or oligopoly.**

### **Monopsony**

**"Monopsony power," like "monopoly power," is used by economists as a reference to buyers who face an upwardly sloping supply curve. The term does not apply to only one buyer as its syllables imply; oligopsony or monopsonistic competition are better, but more cumbersome terms.**

**A monopsonist may be a monopolist at the same time. A monopsonist has market power, because it can affect the price of purchased goods by varying the quantity bought. Monopsonists have a logical, natural compulsion to wield their power against powerless vendors of the raw goods sold into the market the monopsonists control.**

### **Rural Impacts**

**To the extent that farmers and ranchers are squeezed by market power abuses, income is siphoned out of rural agricultural areas and moved to corporate financial centers. This has an adverse multiplier effect on the rural economy.**

### **The Squeeze**

**Farmers and ranchers are impacted by supra-competitive (monopoly) prices charged by input suppliers, and by sub-competitive (monopsony) prices paid by purchasers of raw agricultural commodities. A very small percentage effect on prices can turn modest profits into debilitating losses for producers of agricultural products, and add up to trillions of dollars no longer flowing to rural areas.**

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## **Introduction; Structure<sup>1</sup>**

The status of competition in select markets for agricultural goods, and for seed, is grim. Analysis of the markets and their levels of concentrated buyer power leads to a series of conclusions strongly supported by empirical evidence. These conclusions are diametrically opposite the findings reported in the recent General Accounting Office's Report, GAO 09746R, *Concentration in Agriculture*, issued June 30, 2009.<sup>2</sup> The Organization for Competitive Markets appointed the authors to serve as a Special Committee on the Impact of Concentration, and to study buyer power in selected markets for major agricultural products. The Committee's findings are reported to the United States Congress, and the public, are included here. So is an analysis of the legal and economic issues raised by dangerous concentration of market power in the hands of too few firms with a need to acquire raw goods for food production.

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OCM's web site is <http://competitivemarkets.com/>

<sup>2</sup> Throughout this publication, General Accounting Office's Report, GAO 09746R, *Concentration in Agriculture*, issued June 30, 2009, is generally referred to as the GAO Report.

Five distinct concerns are addressed. The first four are the same as those identified by the GAO Report; the fifth challenges the GAO's methods:

- 1 What are the trends in concentration levels within the food marketing chain's major agricultural sectors?

**Our Finding: Concentration Has Achieved Alarming Levels in American Agriculture.**

- 2 What are the trends in retail food expenditures and prices?

**Our Finding: Food Retailing is Also Dangerously Concentrated.**

- 3 What are the trends in prices farmers receive for major agricultural commodities?

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- 4 What are the views of experts on the effects of concentration on agricultural commodity and food prices?

**Our Finding: History, and Experts in the Field, Converge on this Conclusion: Monopsony Power Leads To Abuse of Market Power. Producers and Consumers Are Both Hurt.**

- 5 Does GAO 09-746R fairly use available data concerning the consequences of concentration in agricultural markets on the price of consumer goods, and the producers' share of that price?

**Our Finding: The GAO Report's Methodologies are Flawed. The GAO Report's Conclusions are Not Correct.**

## I. Separate Findings Summarized

Major Markets in American agriculture are highly concentrated, and competition is stultified by concentration and vertical integration. Both producers and consumers are hurt as a result.

Careful examination and survey of critical data, review of recognized publications, interviews of knowledgeable witnesses, review of sworn testimony, and inspection of USDA Economic Research Service data serve as empirical data sources for this publication.<sup>3</sup> Analysis of this data led to conclusions diametrically contrary to those contained in the GAO Report and to identification of serious flaws in the GAO methodologies and conclusions. Relevant, available data establishes these points and does not support GAO's findings.<sup>4</sup>

Concentration in major markets for agricultural products is now dramatic and the number of major food processing firms is restricted and concentrated among the hands of a few in each major agriculture sector. *Monopsony* status is present or threatened, competition<sup>5</sup> and price are debilitated, and food producers face market power wielded against them.<sup>6</sup> Concurrently, a *monopoly* exists in the hands of a single U.S. company which controls an anticompetitive, massive share of the genetic trait characteristics of

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<sup>3</sup> Data sources as well as additional discussion of marketing spreads are available at <http://www.ers.usda.gov/Briefing/FoodMarketingSystem/pricespreads.htm>. All nominal data used in this Report is converted to real (or inflation-adjusted) using the Consumer Price Index (CPI).

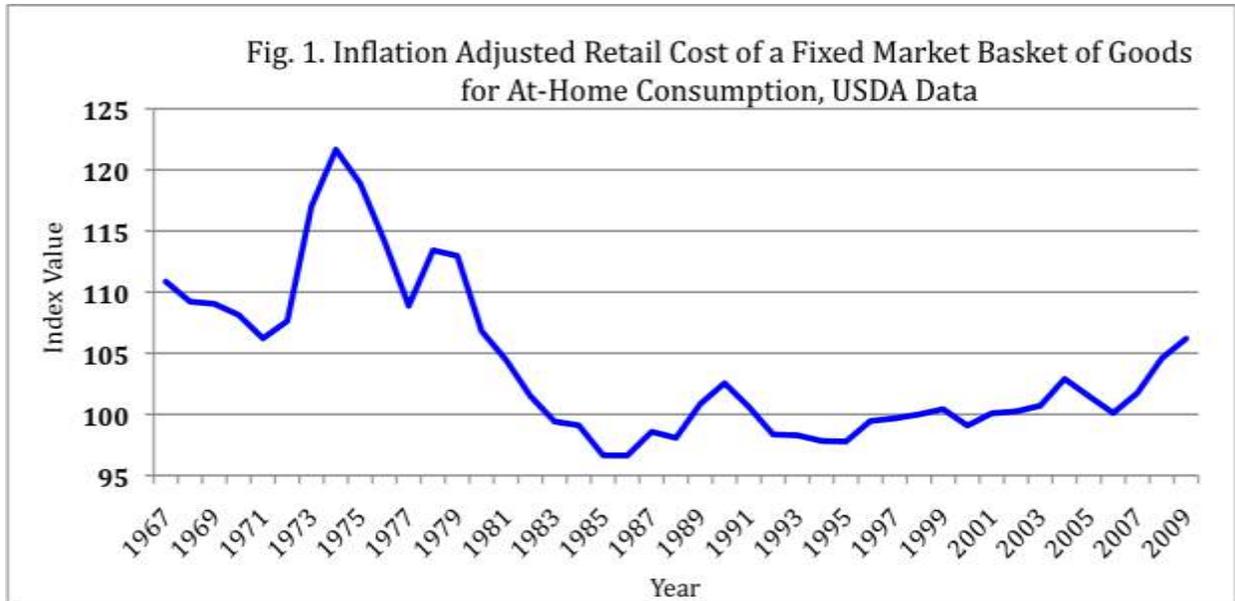
<sup>4</sup> GAO relied on USDA data on prices and margins for beef, poultry, pork, dairy and grains. GAO concluded, "We assessed the reliability of these data and determined that they were sufficiently reliable for the purposes of this review--to illustrate broad trends in concentration and prices over time." We agree with this conclusion and use the same nominal data used by GAO, but adjusted for inflation.

<sup>5</sup> The word "competition" has several meanings to lawyers and economists. Throughout this Report we use the word to represent the outcome of a market in which there is a sufficient number of buyers and sellers so that no single person or firm can influence price and in which buyers and sellers have equal access to timely market information. This is the truly competitive norm. In contrast is a situation with only two sellers, called a duopoly. In some sense the duopolists may be "competing" but this does not mean the outcome will measure up to the truly competitive norm.

<sup>6</sup> See, Blair & Harrison, *Monopsony: Antitrust Laws & Economics* (Princeton Press 1993) for a major scientific work that is readable by economists and lay persons, for a thorough discussion of the concept of monopsony.

corn, soybeans and cottonseed. The number of crops dominated by a single firm increases regularly.

These concentration levels squeeze producers, deny them a reasonable share of the retail food dollar, and boost prices to consumers.<sup>7</sup> Fig. 1 shows the inflation-adjusted retail cost index for a fixed market basket of food purchased for at-home consumption from 1967-2009.



In Fig. 1, the vertical axis is an index of cost; the horizontal one is time. The cost index value for 2009 is 106, meaning that the retail cost for a market basket has increased by 6% *after* adjusting for inflation compared to the base period of 1982-84 (index of 100).

A variety of factors explain the 1970s and 1980s, including spiking prices due to the opening of export markets and cost efficiencies. But since then, retail price has trended upward.

In a competitive market, cost efficiencies would be reflected in a downward trend; no such trend can be found for over two decades. Data in Fig. 1 strongly suggests market

<sup>7</sup> For a general review of farm numbers and farm size, see the USDA data published by the ERS at <http://www.ers.usda.gov/publications/eib24/eib24b.pdf>.

power exertion is taking place, and price increases due to market power exertion have been larger than cost efficiencies. This means food prices are up, not down, and the American food consumer is hurt, not helped, by concentration among processors of raw agricultural products for human consumption.

At the same time, the retail sector has changed and is dangerously concentrated. Empirical economic literature establishes that concentration in the processing of beef, pork, and dairy products, as well as retail sector concentration, adversely affects commodity prices and retail food prices. This produces dichotomous results: producers receive less of the retail dollar, while consumers pay more for food.

The GAO's conclusion that there is no conclusive evidence of adverse price effects on producers from concentration in agricultural markets is simply incorrect.

## **II. The GAO Report's Methodologies are Flawed. Its Use of The HHI Calls the Index Into Question.**

The GAO's Report suffers from deficiencies in its scope of inquiry, inquiry focus, use of research tools, logic, and its analytical methods. The core problems with the Report are so basic that they take the GAO far from sound evidence, actual market experience and good science. In the end, the GAO's Report does not have persuasive or academic value. It is simply wrong.

### **Basic Tools Not Used Providently by GAO**

The basic tools used to assess market concentration are imbued with known flaws. The two most commonly used statistics to assess market concentration and the potential for market power are the Herfindahl-Hirschman Index (HHI) and the four-firm concentration ratio (CR4). GAO relied on the CR4.

The HHI is calculated by adding the sum of the squared market shares of each firm in the market. If there were only one firm in the market, with a 100 percent share,

the HHI would have a value of 10,000. If there are four firms with 40 percent, 30 percent, 20 percent, and 10 percent, the HHI is 3,000. If there are 20 firms with 5 percent each, the HHI is 500.<sup>8</sup>

For merger analysis and related antitrust analysis the Federal Trade Commission (FTC) and the Department of Justice (DOJ) considers markets with an HHI below 1,000 to be non-concentrated, markets with an HHI between 1,000 and 1,800 to be moderately concentrated, and markets with an HHI above 1,800 to be highly concentrated. CR4 is the sum of the sales shares of the leading four suppliers in the market. HHI shows the composition of the entire market and gives a higher weight to a very large, dominant firm, whereas CR4 only shows the top four firms. The HHI is generally preferred over the CR4 ratio, but data necessary to compute it are not always available.

HHI calculations lead to concern that agricultural markets are overly concentrated resulting in prices below (buyer power) or above (seller power) competitive levels. DOJ/FTC guidelines use HHI and CR4 as indicators suggesting market power.

Concentration statistics are often improperly used. GAO is guilty of their misuse, as are authors of some academic studies cited on by GAO.<sup>9</sup> At a given market level, the concentration ratio on the seller side of the market is not generally equal to the concentration ratio on the buyer side of the market. Using a seller's CR4 or HHI to increase buyer power is inappropriate and misleading. For example, GAO reports CR4=57% in broiler production. The HHI=1,200. Broiler processing concentration measures may be appropriate for assessing seller power in the wholesale market for poultry and poultry products, but they are absolutely inappropriate for analyzing buyer power of the poultry companies (known as integrators). The integrators have nearly absolute control of their respective growers.

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<sup>8</sup> If data are not available for small firms, they may be omitted in computing the HHI, since the square of their market share is so small.

<sup>9</sup> In econometric studies, use of a concentration ratio in an output market, for example, to try to examine buyer power is inappropriate and misleading.

In some areas of the U.S., the relevant measure of buyer concentration in the poultry industry is CR1=100% and the HHI=10,000, the maximum value. Poultry processing may not only be moderately concentrated when viewed at the seller level, but it is also a powerful monopsony in the buyers' market.

The GAO reports CR4=79% in steer and heifer slaughter. The HHI is over 2,000. But this is in the broad sellers' market. Fed cattle ready for processing are perishable commodities and cannot be hauled long distances economically. GAO overlooked the fact that perishability means, in captive draw areas, many regions have only one or two buyers, with the HHI on the buyer side of the market exceeding 5,000. Feedyard owners know they are involuntarily tagged as associated with one slaughter company or another, because, in point of fact, essentially only one bidder offers prices for their cattle, and there is no real competition at all for the cattle they feed.<sup>10</sup>

Use of a seller's CR4 or HHI to measure buyer power is demonstrably inappropriate and misleading. GAO is guilty of using it, and using it ineffectively.

It is true the Department of Justice merger analysis guidelines use the HHI, but this reliance has never been more than a fraction of overall merger analysis. And, it is waning.

Preference for the HHI by DOJ/FTC can be traced to a classical economic derivation which that shows,<sup>11</sup>

$$L_d = HHI_d / e_d$$

Where  $L_d$  is the industry Lerner index,  $HHI_d$  is the HHI in the sellers market, and  $e_d$  is the absolute value of demand elasticity. In establishing a competition threshold of 1,800 for the HHI, DOJ/FTC mysteriously dropped the elasticity part of the formula. This is important in the food economy because demand for most food and agricultural

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<sup>10</sup> The authors interviewed dozens of cattle feeders in connection with work on litigation involving the cattle industry.

<sup>11</sup> Keith Cowling, and Michael Waterson, "Price-Cost Margins and Market Structure," *Economics*, New Series, Vol. 43, No. 171 (1976), 267-274.

commodities is inelastic<sup>12</sup> ( $0 < e_d < 1$ ), while demand for many non-agricultural commodities is somewhat elastic ( $e_d > 1$ ). Therefore a lower critical value of the HHI may be appropriate for the food industry. For example, the elasticity of demand for beef is approximately one-half, or  $e_d = 0.5$  (ignoring negative sign). Comparing this to a non-food industry with unitary demand elasticity,  $e_d = 1$ , the formula above indicates the critical value of the HHI in the beef industry should be one-half that of the non-food industry.

The comparable formula for the buyers' side of the market is

$$L_s = \text{HHI}_s / e_s$$

where  $L_s$  is the Lerner index,  $\text{HHI}_s$  is the HHI for the buyers and  $e_s$  is the elasticity of supply. Since many agricultural commodities are perishable with long lags in production, the elasticity of supply can be quite small (even substantially less than one). This means the critical HHI for buyer power should be lower for many agricultural commodities than that established by DOJ/FTC.

Partial vertical integration with marketing agreements tied to the cash market price may increase the critical value of the HHI.<sup>13</sup> Vertical integration can exacerbate the problem of horizontal concentration.

The current horizontal merger guidelines typically apply what is known as the SSNIP test (Small but Significant Non-transitory Increase in Price). The SSNIP test seeks to identify the smallest relevant market within which a hypothetical monopolist or cartel could impose a significant increase in price, typically defined as 5 percent. Applied to buyer power, the SSNIP test would consider a small but significant *decrease* in price.

Many economists maintain that the 5 percent threshold is far too high in agriculture monopsony cases. Iowa State University data show that the net returns (in current dollars) from feeding steers averaged only \$14 per head over the 1995-2008

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<sup>12</sup> We are using the absolute value of demand elasticity (ignoring the negative sign) throughout.

<sup>13</sup> C. Robert Taylor, The Effect of Captive Supplies on the Critical Value of the Herfindahl-Hirschman Index of Market Power, Auburn University Working Paper ES-0207, February, 2007

period. For \$1,000 per head fed steer, the 5 percent threshold test would allow a merger that would decrease price by \$50 per head, which means cattle feeders would *lose* \$36/head compared to the historical average. A price decrease of only 1.4 percent would completely eliminate the modest profits realized by cattle feeders over 1995-2008.

Criteria used by DOJ and FTC to define markets and to define an acceptable level of market power in their merger approval process are inappropriate to agricultural markets such as the U.S. cattle market. OCM does not criticize GAO for using these guidelines, but does point out the inherent analytical flaw present in the decision to do so.

University of Wisconsin Antitrust Law Professor Peter Carstensen has called for new metrics to assess buyer power. He wrote:

Enforcers need to develop a deeper understanding of the unique characteristics of the buying side of the market place. This calls for appropriate metrics. A mindless transposition of seller side criteria for market shares or competitive effects can result in a deeply flawed analysis of the buyer power implications of mergers.<sup>14</sup>

A fundamental review of the metrics to study market concentration, and particularly concentration in agricultural markets, is necessary. Distinguished American economists from Galbraith to Milgrom, with many in between, have observed that agriculture involves market concentration, and power, that is unfair to farmers.<sup>15</sup> The status of major ag markets, involving seed and genetic traits, beef, pork, chicken, and milk, are dealt with succinctly in the pages that follow.

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<sup>14</sup> Peter C. Carstensen, Buyer Power and Merger Analysis—The Need for Different Metrics, Paper presented at the Workshop on Merger Enforcement held by the DOJ Antitrust Division and the FTC, Feb. 17, 2004. Accessible at Carstensen <http://www.ftc.gov/bc/mergerenforce/presentations/index.shtm>

<sup>15</sup> In addition to the concerns expressed above, transportation costs greatly exacerbate the middleman's market power. A recent paper delves thoroughly into this subject. See Suzuki & Sexton, *Transportation Cost and Market Power of Middleman: A Spatial Analysis of Agricultural Commodity Markets in Developing Companies*, Am Ag Economics Association Annual Meeting, selected paper (2005).

## Auction Theory Supplies Useful Logic

Hundreds of articles by economists explore basic auction theory as part of the process of understanding monopsony. Few articles reach definitive conclusions.<sup>16</sup> The range of auctions studied in the economics' literature is broad, and the auction's context varies. This variability creates a smorgasbord for inquiry by graduate students and mathematicians. Many of the publications are readable and thought-provoking.<sup>17</sup>

But, the inquiry yields little proof about behavior and does not supplant the active auctioneer's intuition. Many academicians forget the proof that concentrated markets lead to abuse of market power... even at auctions... so readily furnished by history. Auction pooling to limit bidding is disfavored precisely because it is known to cause price deterioration. Blair & Harrison's volume on *Monopsony*<sup>18</sup> documents the problem:

Antique auction pools seem to enjoy continuing popularity. No doubt, this is due in part to the collusive profits that may be earned and the fact that the practice is very difficult to police if the participants are clever.

A recognized author, Eric Maskin observed<sup>19</sup> that industrial organization theorists and other applied fields are constrained by a major lack of knowledge: the games engaged in by the players they study (e.g. firms or consumers) are unknown to them. Models are, at best, approximations of reality. By contrast, auction theorists typically know the rules that *their* players follow *precisely*. If, for example, a high-bid auction is the object of study, the theorist *knows* that (i) the bidders submit nonnegative real numbers as sealed bids; (ii) the winner is the bidder submitting the highest bid; and (iii) the winner pays his bid (of course, there may still be uncertainty about how the buyers

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<sup>16</sup> Auction theory actually began well before the 1970s when extensive scholarly writing began to appear. Perhaps the seminal contribution before then was William Vickrey (1961). But, until game theory came into its own fifteen years later, Vickrey's work—as well as that of other early pioneers such as James Griesmer, Richard Levitan, and Martin Shubik (1967), Armando Ortega Reichert (1968) and Robert Wilson (1969)—remained largely ignored.

<sup>17</sup> See, e.g., Paul Milgrom, *Putting Auction Theory to Work*, Cambridge: Cambridge University Press, 2004.

<sup>18</sup> Blair & Harrison, *Monopsony: Antitrust Laws & Economics* 4,5 (Princeton Press 1993).

<sup>19</sup> Eric Maskin, *The Unity of Auction Theory: Paul Milgrom's Masterclass*. Mr. Maskin wrote while with the Institute for Advanced Study and Princeton University, financed in part by the NSF (SES-0318103).

*behave* under these rules). This precision helps put the auction theorist's findings on a relatively strong footing; it also simplifies the job of the experimentalist or empiricist.<sup>20</sup>

Of course, auction sales can differ from negotiated ones. "Auctions" include "mechanisms that allow explicit and objective comparison of two or more competing offers" that are on the table simultaneously.<sup>21</sup> Bargaining more commonly involves "mechanisms in which offers are short-lived and evaluated one at a time."<sup>22</sup> Major ag products do not change hands by either pure auction or pure negotiation. Producers who are compelled to accept the offered price from the lone bidder who lays a proposal before them, or who hold their products into the future for an indefinite price with the hope they will get salvage value before going out of business, are not sellers through auction or negotiation; they are sellers for what the buyer will pay after wielding the full force of market power. This is monopsony.

Many American food producers sell goods that have rapidly declining marginal values, i.e., they must be sold when they are at optimal weight or ripeness. Concentrated buyers have incentives to reduce demand because they know producers have limited outlets for their goods, so buyers use secretive contracts, and the unequalizing tools of fear, retaliation and threat they will leave the seller out if she or he does not accept the offered price. The "logic of this incentive is familiar to students of economics, because it is almost identical to the textbook logic explaining a monopsonist's withholding of demand."<sup>23</sup>

To confirm suspicions, half a dozen randomly selected auctioneers were interviewed about their views of the crowd size necessary to make an auction effective. This research method might not be commonplace to economic literature, but, as Maskin observed after careful review of professional literature concerning auction theory:

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<sup>20</sup> *Id.*

<sup>21</sup> Milgrom, *Putting Auction Theory to Work*, p. 213 (Cambridge 2004).

<sup>22</sup> *Id.*

<sup>23</sup> *Id.* at p 258.

The upshot is that giving advice on real auction design is, at this stage, far less a science than an art. And the essence of an art is far harder than a science to convey convincingly in writing.<sup>24</sup>

During these interviews, each auctioneer promptly observed that the number of goods offered, their variability, and their general price range all have an impact on the answer. Traditional farm estate sales, offering a range of goods from hand tools to a line of implements, benefit from a large crowd of potential bidders with a variety of interests. An auction at which only mother cows, or only yearling calves, are sold commands a completely different crowd and one that may need fewer buyers because of the homogeneous nature of the goods being offered for sale. The same is true of bidders at an art auction, as contrasted with the bidding crowd sought and needed at an auction where hundreds of pieces of art, ranging from oil paintings to tapestries, are offered.<sup>25</sup>

Auction theory requires a number of active bidders, and no auctioneer reported a belief, or any experience suggesting, that few bidders make a better sale. All auctioneers interviewed reported the opposite; more bidders expressing interest in slightly different ways, but in common goods, produce a better price for the seller.

Twenty-five year old history with United States Treasury auctions supplies strong proof that monopsony power begets abuse of market power and wrongful profiteering. The scandal surrounding Salomon Brothers at Treasury auctions led to prosecutions and convictions.<sup>26</sup>

The American Antitrust Institute's (AAI) symposium in which participants emphasized the need to take a sophisticated systems view of competition, recognizing unique characteristics of each led to this statement:

AAI's interest in systems competition issues recognizes the expanding body of legal, economic, management/marketing, sociological, and engineering experience with rivalry within and between systems. Systems comprise

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<sup>24</sup> Maskin, n. 41, *supra*.

<sup>25</sup> Auctioneer interviews conducted for authors by independent investigator for the authors.

<sup>26</sup> *United States v Kay & Gross, Inc.* 91 CR411 (SD NY 1991); *United States v Schwenke, Inc.*, 91 CR487 (SD NY 1991); *United States v Howe*, 87-00262 (ED Pa 1987). Blair & Harrison, *Monopsony, supra*.

simple complementary market relationships (or sets of interrelated markets), linked by interfaces, in a variety of industries. These include key infrastructure sectors such as airlines, telecommunications and agriculture, media, and high-technology areas where intellectual property is particularly important. The growing ubiquity of systems has important implications for competition since rivalry and its benefits are arguably harder to achieve when any single or few systems account for a significant proportion of consumer products or services produced. At the same time, the complexity of systems results in increased challenges for analyzing systems competition issues applying extant understanding of antitrust and competition policy.<sup>27</sup>

Governmental agencies charged with antitrust enforcement must recognize complex and unique characteristics of each individual market chain, or system. The ways in which market power is manifested in the poultry industry are considerably different than in the beef industry, for example. Therefore, a single metric or “have model will travel” approach to competition analysis is woefully inadequate.

### **Failure to Control Statistical Error**

The GAO Report takes a typical processor-oriented approach to selection of data used as “authority” for conclusions reached. It relies heavily on “peer reviewed” publications. Peer review is important, but cannot be equated with objectivity, nor with weighing *all* evidence pertinent to a competition issue. Often, papers designed for academic, or industrial, advocacy pass peer review. Care must be taken to point out that this is no guarantee of the author’s conclusion’s general acceptance, peer approval, or objectivity. Peer review passes on methods, not conclusions.

Incentives academics face in publishing and reviewing other academic’s research are not structured to weigh all quantitative evidence, as well as testimony by market participants. In fact, the well known truth is that much research in universities is financed

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<sup>27</sup> See [http://www.antitrustinstitute.org/Archives/Systems\\_Competition\\_Audio\\_and\\_Materials.ashx](http://www.antitrustinstitute.org/Archives/Systems_Competition_Audio_and_Materials.ashx)

by private industry; the incentive to reach conclusions favorable to the financier is undeniable.

Academic and legal standards for publication and proof, respectively, are not interchangeable. Academic publication standards have no foundation in legal standards such as preponderance of evidence. In other words, the academic “scales” for peer review generally have no relationship to legal scales or public policy scales relevant to competition policy. Again, if the methods are correct, peer review passage is not a problem, even when outrageous conclusions are drawn.

The specific peer-reviewed articles used by GAO raise two related issues. First, the referenced articles rely exclusively on econometric models estimated with publicly available data. They completely exclude qualitative information such as causality admissions by processor executives and extensive personal observations by independent market participants, including those given under oath, about the use of market power to control price. In fact, the GAO Report is devoid of this high quality, first hand evidence.

Second, the articles chosen by GAO display problems with mathematics. The classical statistical significance level used in studies referenced by GAO considers only what statisticians’ call “Type I errors”, which is the probability of rejecting the null hypothesis (competition) when it is true. This totally ignores the power of the test, which statisticians call “Type II errors”, which are the odds of failing to reject the null hypothesis (competition) when it is false (i.e. the market is not competitive). Statistical tests commonly used in academic studies of market power in the food and ag industry cannot reliably identify market power abuses.

To infer market distortions, the statistician must demonstrate there is a low probability of an incorrect result. If one study “fails to reject” competition while a second study rejects competition, the policymaker should not infer “there is inconclusive evidence of market power?” Basic statistics understanding dictates this conclusion.

A fail-to-reject finding does not confirm the null, while a rejection of a null is a strong conclusion of the alternative hypothesis. GAO’s conclusion is incorrect. Much

data and extensive testimonials disclose that markets have been distorted by market power. Agricultural product processing industries function on high throughput (slaughtering, milling, crushing, etc.). In these settings, small (1-5 percent) price changes associated with market power have the potential to shift considerable money due to the high throughput involved: economists can, and do, work up simulations. Low price distortions, alone, do not prove the absence of price adversity from market concentration and buyer power. Low price distortion between a packer and a feedlot can amount to tremendous shift in profits between the parties.<sup>28</sup>

Publicly-available data is often inadequate for analyzing complex market power issues in agricultural markets. Public agencies responsible for competition investigations must dig deeper than simply referring to academic studies based on publicly-available data. For example, with mandatory price (and captive supply) reporting data, federal agencies could compute the HHI and CR4 for beef packers in captive draw areas. This kind of data would give a far superior indicator of *buyer* power than inappropriate *seller* HHI and CR4 statistics.

The limited quantity of publicly available data for analyzing competition issues led academics to create simulation models and experimental games to try to mimic complex markets. One such experimental analysis is the *Fed Cattle Market Simulator*, dubbed by Oklahoma State University students as the *Packer-Feeder Game*.<sup>29</sup> Carlberg and Ward used this simulator to analyze competition and captive supply issues. They found:

“... beef packing firms were able to achieve various levels of successful tacit collusion in the experimental market ... it was further discovered that the level of collusive behavior in such a framework varies according to supply conditions for fed cattle. Even at its most competitive, however,

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<sup>28</sup> C. Robert Taylor, “Proving Anti-Competitive Conduct in the U.S. Courtroom: Economic Issues with the Courts’ Opinions in *Pickett v. Tyson Fresh Meats, Inc.*” Journal of Agricultural & Food Industrial Organization: Vol. 4: Iss.1, Article 9. Available at: <http://www.bepress.com/jafio/vol4/iss1/art9>.

<sup>29</sup> <http://agecon.okstate.edu/fcms/> See also, Clement E. Ward, Stephen R. Koontz, Derrell S. Peel, and James N. Trapp, Fed Cattle Market Simulation Applications, Oklahoma State University, Oklahoma Cooperative Extension Service publication AGEC-576, 2004.

industry conduct was still substantially more collusive than would be the case under perfect competition. The most competitive behavior discovered followed a Cournot pattern, which lies midway between perfectly competitive and (pure) monopsonistic behavior.<sup>30</sup>

Carlberg and Ward also found:

A second (experimental) model, the first of its kind applied to the beef packing industry, examined the strategic interaction among individual beef packers. For this, packer conduct was modeled at the firm level using a reaction function framework. Results of that model also indicated collusive behavior on the part of packers.

Ward subsequently used the Fed Cattle Market Simulator to analyze the effects of the number of buyers on price. He found,

“... halving the number of buyers from 4 to 2 ... had a significant negative effect on prices paid (for slaughter cattle).”<sup>31</sup>

GAO did not cite or consider Ward and Carlberg. It also failed to cite any other similar experimental research. “Inconvenient truths” should not be indulged, and facts proven empirically, analytically, and logically, should not be ignored, when studying the impact of market structure on our nation’s basic industries.

### **The GAO Report Ignores Actual Market Disparities**

Professionals thinking through the monopsony problem recognize exploiting economies of size engenders a major adverse impact due to market concentration.<sup>32</sup> In ag markets, farmers and ranchers who are suppliers to packers and processors have excess capacity and little ability to control or reduce capacity in the aggregate. A rancher cannot let his ranch go ungrazed and a farmer cannot ignore the need to farm her land.

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<sup>30</sup> Jared G. Carlberg and Clement E. Ward, Applying Game Theory to Meatpacker Behavior in an Experimental Market: Implications for Market Regulation, Research Institute on Livestock Pricing, Agricultural and Applied Economics, Virginia Tech University, Research Bulletin 2-2002, November 2002.

<sup>31</sup> Clement E. Ward, “Feedlot and Packer Pricing Behavior: Implications for Competition Research,” Selected Paper presented at the Western Agricultural Economics Association Annual meeting, July 29-August 1, 2007.

<sup>32</sup> Blair & Harrison, *Monopsony: Antitrust Laws & Economics* p 88 et seq.

Yet, processors can allow plants temporarily to sit, or to run slow, in order to push down the cost of goods. When packers or processors have more capacity to manipulate the flow of product from the field to the table than do producers, they have market power.

Abused market power drives costs down, and prices up, for the processor. This means prices go down for farmers and costs go up for consumers. Blair & Harrison<sup>33</sup> recognized this most predictable business behavior “appears to be abusive.” GAO did not recognize this phenomenon.

### **The GAO Report Relies on Aged and Incomplete Data**

Presumably, the GAO’s charge was to report on the status and impact of concentration in agricultural markets at the current time, and not 20 years ago. But, the publications GAO used are largely aged. So is the Report’s economic logic, to the extent it displays any such logic.

Academic studies cited by GAO were generally based on old data. For example, GAO cites one beef study based on data from 1970 to 1992 and another study based on data from 1988 to 1991 (p. 28). The GAO Report’s newest data is now 17 years old. Much has changed during the intervening period, including a substantial increase in concentration and adoption of business practices exacerbating the concentration problem. The inflation adjusted farm-to-retail spread for beef has increased by about 25 percent since the end of the data period used in the referenced studies.<sup>34</sup> This increase is totally inconsistent with GAO’s conclusion of efficiency gains and absence of market power exertion. Reliance on 17-year-old data to study agricultural markets produces results fully as unreliable as would be attained by studying the U.S. Housing Market today with data sets derived from the early 1990s.

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<sup>33</sup> *Id.*, p 90.

<sup>34</sup> Based on the same data used for GAO’s chart on p.20, but adjusted for inflation. Prices are for a spec animal and spec cuts of meat, so there is no quality changes over the data period.

Equally troubling is the fact the GAO Report does not mention captive supplies in the beef industry.<sup>35</sup> Much evidence tends to prove the claims of independent cattle feeders that packers use cattle committed to them under future delivery arrangements, or captive supplies, to manipulate cash market prices for slaughter cattle. Empirical studies all show a strong, statistically significant negative relationship between captive supply and cash price.

GAO asserts that changes in consumer preferences, such as demand for quick, easy-to-prepare processed foods, may explain much of the current trends in the declining share of consumer spending. An element of truth exists in this blanket statement, but it is not true of many of the price and margin data used in GAO's charts. USDA/ERS has carefully constructed some of their price margin data (e.g. beef, pork, chicken, fruit and vegetables for at home consumption) to be for a fixed bundle of goods. As such, these series do not reflect quality changes, and it is incorrect to attribute any declining farm share shown by these series to quality changes.

The GAO Report states, "One expert said further increases in concentration would continue to generate efficiency gains and be beneficial." This important observation is not rooted in economic logic or the scientific method; it is a quotation with no supportive "proof". The GAO observation is pure speculation and has no place in an official Report to members of the United States Congress engaged in policy-based inquiry. GAO was selective of literature and the "experts" it cited. It did not rely on primary sources. From a research perspective, the GAO's work is far from complete.

GAO did examine some USDA ERS data concerning markets for beef or pork. But not all of it.<sup>36</sup> It did not examine dairy products and looked only superficially at poultry. But not thoroughly. GAO blindly accepted peer-reviewed articles though they do not explore publicly available data for manifestations of market power exertion that

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<sup>35</sup> See, *Market Structure of the Livestock Industry*, testimony of Dr. Robert Taylor to US House of Representatives Committee on Agriculture, Subcommittee on Livestock, Dairy and Poultry (April 17, 2007).

<sup>36</sup> The author's market-by market analysis of markets for major agricultural products appears *infra*.

are too subtle and complex to be captured by aggregate time-series data of the kind that typify published academic studies. Academic studies tend to generate false negatives because academic and statistical criteria may be inappropriate; yet the studies tend to rely only on quantitative data, and to ignore qualitative evidence of market power exertion and causality factors.

The General Accounting Office was unable to conclude that concentration in agriculture markets adversely affects price. Specifically, GAO reported it could not find clear proof that market concentration reduced the producer's fraction of the retail dollar. Perhaps, GAO asked the wrong question. Why is it important to know if the producer's fraction of the retail dollar is increasing or declining if the producer's level of profitability is unknown? In other words, the focus must be on profit, not on a fraction of gross.

Even responding to the wrong question, the answer given by the GAO's Report is incorrect. GAO's interpretation of available, aged data is incorrect. The producer's costs escalated, particularly in the last few years, while its fraction of the retail dollar undeniably fell during the time period from 1917 through 2007.<sup>37</sup> GAO data did not include current information, and it did not include information from a longer term. GAO relied heavily on data from 1992 through 1997, a dozen and more years ago and a snapshot only of five years duration.

Farmers and ranchers are going out of business and their operations are being consolidated.<sup>38</sup> The consolidated survivors try to achieve economies of size to continue because profits are generally not improving. In row crop production, government payments are increasingly important. As the 2009 Farm Bill proved, crop production subsidies are central to agriculture in the United States. As a result, production of corn, as a staple input for beef and pork production, is extensive. Corn is available to livestock

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<sup>37</sup> Blair & Harrison, *Monopsony, supra*.

<sup>38</sup> Secretary Vilsack routinely cites ag census data showing the loss of farmers and ranchers exceeding 80,000 during the past decade. See Rural American At A Glance- 2008, [ers.usda.gov/publications/EIB40/E1B40](http://ers.usda.gov/publications/EIB40/E1B40).

producers at relatively low costs.<sup>39</sup> Even so, low cost corn is still expensive compared to selling prices beef and pork producers realize for their finished products.

Auction theory, along with substantial empirical proof, explains this difference by demonstrating that the present day sale process as it now occurs is not occurring at arms length, with a willing buyer and a willing seller under relatively equal compulsions to act. This is objective and widely known, now and historically, to participants in the auction process. Victims of monopsonists' abuse of market power include farmers, ranchers, dairymen, but more broadly, as history proves, monopsony also harms art and antique markets, and even the market for U.S. Treasury Bills.<sup>40</sup>

### **GAO Ignored the Impact of Cartels**

The GAO Report ignores cartels, particularly international cartels, in agricultural and food industries. A study by Connor and Helmers of 516 modern private “hard-core” cartels that were subject to government or private legal action over 1990-2008 provides compelling evidence about the extent of collusion.<sup>41</sup> Each cartel had participants with headquarters in two or more nations. Sales affected by international cartels convicted by 2008 rose from less than \$2 trillion in 2000-04 to almost \$14 trillion in 2005-08 as shown in Fig. 2 below.<sup>42</sup>

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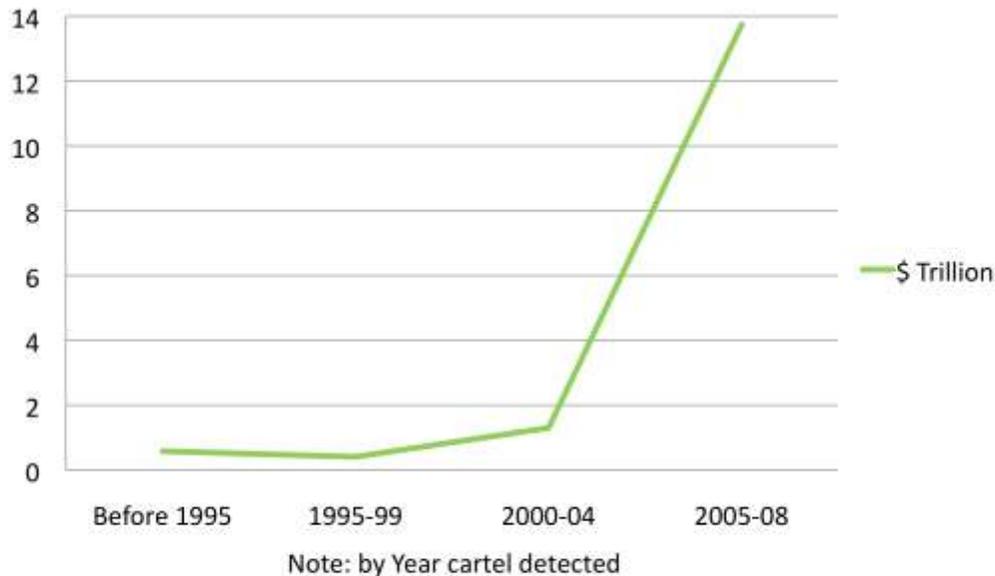
<sup>39</sup> *Id.*

<sup>40</sup> *Supra*, n. 53.

<sup>41</sup> John M. Connor, and C. Gustav Helmers, “Statistics on Modern Private International Cartels, 1990-2005,” American Antitrust Institute Working Paper no. 07-01, January 10, 2007. See also, John M. Connor, “Cartels & Antitrust Portrayed: Private International Cartels from 1990 to 2008,” American Antitrust Institute Working Paper No. 09-06, September 1, 2009.

<sup>42</sup> *Ibid.* Slide 10.

Fig. 2. Huge Increases in Known **Affected Sales** by International Cartels Convicted by 2008



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J M Connor, Purdue U.

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Median cartel overcharges were 24 percent of affected sales. Connor and Helmers identified 14 cartels in the agricultural and forestry raw materials industry and 39 in the food, beverage, and tobacco products industry. Many of the other cartels identified by Connor and Helmers indirectly impact food and agriculture in the United States.

Recent statistics reported by an American Antitrust Institute panel show that cartel discoveries are increasing, with 50 international cartels identified annually.<sup>43</sup> Private cartels have been compared to economic cancer.<sup>44</sup> GAO was asked to study the effects of concentration, but failed to note collusion, much less its extent and alarming trends. Concentration statistics can mask collusive behavior. When firms collude, the industry

<sup>43</sup> American Antitrust Institute Breakout Session Summary, August 8, 2009. Available at [http://www.anti-trustinstitute.org/Archives/breakout\\_session\\_international\\_cartels.aspx](http://www.anti-trustinstitute.org/Archives/breakout_session_international_cartels.aspx)

<sup>44</sup> Connor, John M., "Anti-Cartel Enforcement by the DOJ: An Appraisal," 5 *The Competition Law Review* 89 (2008).

HHI should be 10,000, the maximum value, and not the value based on individual market shares of colluding firms.

Fig. 1 above shows a dramatic increase in cartel activity, while Fig. 3 below shows a substantial decline in DOJ activity.<sup>45</sup> DOJ as well as GAO has not been protecting consumer interests.



Failure to consider the impacts of cartels and their national and international impacts on agricultural markets is a significant omission from a thorough analysis. This failure also compromises the GAO Report.

<sup>45</sup> Some of the decline shown is a refocus away from small price-fixing cases with large numbers of firms involved toward traditional price fixing with fewer firms per cartel.

## **Tradeoffs and Decision Making**

Tradeoffs are central to economic thinking. Economics, narrowly defined as it tends to be in contemporary academic circles, considers only the tradeoff between increased market power and increased efficiency. This narrow view needs to be replaced with a broad view: consolidation and integration of the economic system has progressed to the point where we have silently given up substantial economic freedom and economic opportunity—the American Dream—for meager gains in narrowly defined economic efficiency. Is it worth it?

All in all, the GAO Report discloses methods and research that are not sophisticated and would not be likely to pass a routine peer review of the Report's research methodologies.<sup>46</sup> The Report's conclusions are simply, and plainly, not correct.

## **III. The Status of Agricultural Markets**

When America's farmers and ranchers seek to buy needed inputs like seed and fertilizer,<sup>47</sup> they are confronted with concentrated markets and exploitative sellers. As sellers of harvested goods or market-ready livestock, they have few, or no, choices of prospective buyers. Both ends of the processing function—raw goods procurement and final food products—are concentrated. Both are debilitating to food production feasibility and both drive up consumer prices.

Consumers are poorly served by existing market structures and practices associated with the production and distribution of agricultural products. The spread between the price paid to the farmer and the price paid by the consumer increases as

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<sup>46</sup> The authors of this paper subjected it to peer review by agricultural and academic economists, and recognized antitrust lawyers before its publication. This paper was also reviewed by actual producers. More than 20 persons served reviewing roles.

<sup>47</sup> Seed prices have increased about 5% a year over the last several years. Mark Moore, *Trait Rates (Why Prices are up)*, FARM INDUSTRY NEWS, Sept. 1, 2007, available at <http://farindustrynews.com/seed/traitrates-prices/>. Potash is an important fertilizer and example. Its price increased almost 300% between January 2004 and January 2008. Potash One, Inc., <http://www.potash1.com/s/Prices.asp>.

concentration confirms gains in both food processing and retailing,<sup>48</sup> even after adjusting for increased processing of food. Efficiencies, if any, are not reflected in lower food costs. Increased concentration in the chain of buyers, processors, and retailers has undoubtedly contributed to the increased cost of food even if some processors and retailers claim they are not making significant profits. This suggests increased concentration results in higher prices, but also produces economic inefficiency. Reducing the hidden food “tax” will not *eliminate* all upward pressure on prices. It will reduce *avoidable* pressures on prices and protect consumers from exploitation.

The American Antitrust Institute summarized the effects of concentration in ag markets, but cautions against ill conceived, unstudied regulation:

Free and open markets are generally the best institutional structure for achieving all the important goals of economic policy: efficiency, dynamic growth, equitable allocation of resources and equal opportunity for all participants. Where markets are unconcentrated with many buyers and sellers, there is a strong tendency for efficient, workable, and fair methods to develop as a result of the interaction of many participants all seeking a neutral and open market place.

But no such inherent tendency exists in markets [with] a substantial difference in size between buyers and sellers and one side of the market is also highly concentrated. Moreover, when one side of the market has significant and persistent advantages in information or any other important element related to the transactions, there will be incentives for manipulative market conduct. Thus, there is a grave danger that strategic conduct will shape such markets and frustrate the goal of an efficient, open, fair and accessible marketplace.

When markets lack the inherent tendencies to create desirable conditions, the law can play a vital role in defining rules that reduce the capacity of some actors to engage in strategic conduct and restore greater balance among the participants. The statute books contain many such laws, including ones regulating credit, insurance, product safety, job safety, franchising of various kinds (e.g., gas stations, fast food, automobile dealerships), energy markets, and securities markets.

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<sup>48</sup> See USDA Economic Research Service, Data Sets, *Historical monthly price spread data for beef, pork, broilers, turkeys, and eggs* (updated Feb. 20, 2008), available at <http://www.ers.usda.gov/Data/MeatPriceSpreads>.

The markets for agricultural commodities provide a textbook illustration of how law and regulations can either facilitate or frustrate the accomplishment of the goals of an efficient, transparent, and equitable market context. Antitrust law enforcement over the past eight years has failed to deal effectively with either the substantial structural changes or the exploitative and exclusionary conduct manifest in both the input and output markets that farmers face.<sup>49</sup>

The decayed condition of American agriculture's major markets is difficult to grasp. Evidence of the decay is ubiquitous, but not intuitively perceptible. Symptoms of distress are accumulating freely along the highways of America's food producing sector. For example, once among the nation's richest counties, now Nebraska's "cattle country" includes seven of the poorest counties in America.<sup>50</sup>

A generalized fear of reprisal against producers who dare to speak about hostile market conditions, makes evidence hard to gather, and market power of a few easy to wield.<sup>51</sup> Things Americans were taught and still wish to believe about the American economy—loosely called "free markets" and "capitalism"—do not readily fit into the present reality. A manipulated market is not a free market.

Central to the concentration evidence is a simple truth about farming's metaphor for economics. No one would drive a modern harvesting machine with only four moving parts across a field to gather the crop. Yet, in significant sectors of the agricultural economy, four or fewer processing firms are dominant. This is true of seed genetics, beef slaughter, pork slaughter, dairy processing, and poultry slaughter and production. Concentrated banking resources add to the problem. They hobble farmers, making it more complicated for small producers to finance operations and provide multiplicity, and necessary complexity, for a safe food supply system. (Fig. 4) USDA data, breaking out

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<sup>49</sup> The Next Antitrust Agenda: The American Antitrust Institute's Transition Report on Competition Policy to the 44th President of the United States, Ch 8, Agriculture, a year-long effort of 11 AAI Advisory Board committees. [www.antitrustinstitute.org/archives/files/Food%20Chapter%20from%20%20AAI%20Transition%20Report\\_100520082051.pdf](http://www.antitrustinstitute.org/archives/files/Food%20Chapter%20from%20%20AAI%20Transition%20Report_100520082051.pdf)

<sup>50</sup> <http://www.census.gov/hhes/www/saipe/poorcty.html>. See, *Profiles Of Poor Counties: Some Empirical Evidence*, Patrick Cardiff, US Census Bureau/HHES/SAIPE FB3-1065, Wash. DC 20233

<sup>51</sup> OCM Committee members have conducted interviews with potential witnesses harmed by beef and pork slaughterhouses and by poultry integrators. They have personal experience with the fears, phobias and unwillingness of prospective witnesses to "cross" the slaughterhouses that pay them too little for their livestock, but repress all alternative markets against them.

the cost of marketing farm goods, proves the point:<sup>52</sup> Processor profits skyrocket, while consumers pay more and producers earn less.

Fig. 4. Components of the marketing bill for domestically produced farm food

Year	Total consumer expenditures	Labor <sup>1</sup>	Packaging materials	Intercity rail and truck transportation	Fuels and electricity	Corporate profits before taxes	Misc. <sup>2</sup>	Total marketing bill <sup>3</sup>
Billion dollars								
1967	91.6	25.9	7.3	4.3	--	3.4	21.5	62.4
1968	96.8	28.0	7.6	4.5	--	3.6	22.2	65.9
1969	102.6	30.4	7.9	4.6	--	3.6	21.8	68.3
1970	110.6	32.2	8.2	5.2	2.2	3.6	23.7	75.1
1971	114.6	34.5	8.5	6.0	2.4	3.9	23.2	78.5
1972	122.2	36.6	8.9	6.1	2.5	4.0	24.3	82.4
1973	138.8	39.7	9.4	6.4	2.8	5.4	23.4	87.1
1974	154.6	44.3	11.8	7.5	3.7	6.1	24.8	98.2
1975	167.0	48.3	13.3	8.4	4.6	7.1	29.7	111.4
1976	183.3	53.8	14.5	9.1	5.0	7.7	34.9	125.0
1977	190.9	58.3	15.1	9.7	6.0	8.0	35.6	132.7
1978	216.9	66.2	16.6	10.5	7.1	9.9	37.1	147.4
1979	245.2	75.2	18.6	11.8	8.2	10.0	42.3	166.1
1980	264.4	81.5	21.0	13.0	9.0	9.9	48.3	182.7
1981	287.7	91.0	22.6	14.3	10.0	9.7	58.4	206.0
1982	298.9	96.6	23.7	14.7	11.0	9.4	62.1	217.5
1983	315.0	102.4	24.7	15.4	11.7	9.6	65.9	229.7
1984	332.0	109.3	26.2	15.9	12.5	9.6	68.7	242.2
1985	345.4	115.6	26.9	16.5	13.1	10.4	76.5	259.0
1986	359.6	122.9	27.7	16.8	13.2	10.3	79.9	270.8
1987	375.5	130.0	29.9	17.2	13.6	11.1	83.3	285.1
1988	398.8	137.9	32.6	17.8	14.1	12.0	87.5	301.9
1989	419.4	145.1	35.2	18.6	14.8	12.9	89.0	315.6
1990	449.8	154.0	36.5	19.8	15.2	13.2	104.9	343.6
1991	465.1	160.9	38.1	20.4	16.3	15.2	112.6	363.5
1992	474.5	168.4	40.1	20.6	16.7	15.7	107.9	369.4
1993	489.2	178.0	40.9	21.2	17.2	18.1	104.2	379.6
1994	512.2	186.1	43.3	21.8	17.9	20.9	112.6	402.6
1995	529.5	196.6	48.2	22.3	18.6	19.5	110.5	415.7

<sup>52</sup> <http://www.ers.usda.gov/Data/FarmToConsumer/Data/componentstable.htm>

1996	546.7	204.6	47.7	22.9	19.6	20.7	109.0	424.5
1997	566.5	216.9	48.7	23.6	20.2	22.3	112.9	444.6
1998	585.0	229.9	50.4	24.4	20.7	25.5	114.5	465.4
1999	625.3	241.5	50.9	25.2	22.0	29.2	134.3	503.1
2000	661.1	252.9	53.5	26.4	23.1	31.1	150.8	537.8
2001	687.5	263.8	55.0	27.5	24.1	32.0	155.1	557.5
2002	709.4	273.1	56.8	28.4	24.9	33.0	160.7	576.9
2003	744.2	285.9	59.5	29.7	26.1	34.6	168.2	604.0
2004	788.9	303.7	63.1	31.6	27.6	35.5	171.9	633.4
2005	830.7	319.8	66.5	33.2	31.6	37.4	184.4	672.9
2006	880.7	341.0	70.5	35.2	33.5	39.7	197.6	717.5

-- = Not available.

<sup>1</sup>Includes employee wages or salaries and their health and welfare benefits. Also includes estimated earnings of proprietors, partners, and family workers not receiving stated remuneration.

<sup>2</sup>Includes depreciation, rent, advertising and promotion, interest, taxes, licenses, insurance, professional services, local for-hire transportation, food service in schools, colleges, hospitals, and other institutions, and miscellaneous items. Data for 1967-69 also include fuels and electricity.

<sup>3</sup>The marketing bill is the difference between the farm value and consumer expenditures for these foods at both food stores and restaurants. Thus, it covers processing, wholesaling, transportation, retailing costs, and profits. Some historical data were revised.

Source: Calculated by ERS based on data from government and private sources.

To be sustainable, a transcontinental superpower’s economic system requires thousands and thousands of moving parts—in each of its major sectors. None can be so large as to cripple the entire sector if it fails. Thousands of parts, with hundreds advancing quickly, others advancing apace, all while dozens fail, all on a continuous basis, keeps each economic sector crisp, sharp, and competitive. The U.S. Small Business Administration’s Chief Economist supplies support:<sup>53</sup>

Small business drives the American economy,” said Dr. Chad Moutray, Chief Economist for the Office of Advocacy in a press release. Main Street provides the jobs and spurs our economic growth. American entrepreneurs are creative and productive, and these numbers prove it.

Small businesses are job creators. Office of Advocacy funded data and research shows that small businesses represent 99.7 percent of all firms, they create more than half of the private non-farm gross domestic product, and they create 60 to 80 percent of the net new jobs.

<sup>53</sup> <http://usgovinfo.about.com/od/smallbusiness/a/sbadrives.htm>

In 2004, there were an estimated 23,974,500 businesses in the U.S. Of the 5,683,700 firms with employees, 5,666,600 were small firms.

Reducing any significant variable in the process to levels of concentration like those seen in America's major agricultural economic sectors brings down the entire system. Concentrated agriculture, food processing, and food retailing are serious threats to economic well being. Loss or destruction of the nation's largest beef slaughter company and chicken company would leave the nation with a woefully inadequate meat supply, likely resulting in mass panic by the public.

Failure to curb one firm's near monopolist hold upon perhaps 90 percent of genetic traits for seeds for major U.S. crops, threatens to topple all sources of competing seed supply and place a single company in near absolute control. Even research about seed is controlled. In August, 2009, *Scientific American* reported:

Research on genetically modified seeds is still published, of course. But only studies that the seed companies have approved ever see the light of a peer-reviewed journal. In a number of cases, experiments that had the implicit go-ahead from the seed company were later blocked from publication because the results were not flattering. "It is important to understand that it is not always simply a matter of blanket denial of all research requests, which is bad enough," wrote Elson J. Shields, an entomologist at Cornell University, in a letter to an official at the Environmental Protection Agency (the body tasked with regulating the environmental consequences of genetically modified crops), "but selective denials and permissions based on industry perceptions of how 'friendly' or 'hostile' a particular scientist may be toward [seed-enhancement] technology."<sup>54</sup>

Such a narrow genetic base, with control so tightly held that research is viewed by many as censored, creates overt vulnerability for U.S. food production, crop development, and consumer food prices. These same factors also make the U.S. more

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<sup>54</sup> *Do Seed Companies Control GM Crop Research?* *Scientific American* (Aug 13, 2009).

susceptible to bioterrorism. Semen for artificial insemination of cows and swine also suffers from controlled ownership in a highly concentrated market.<sup>55</sup>

Uncovering the patterns underlying the market power realities and consequences of concentration, in addition to unmasking flaws in the GAO Report, are the principal tasks of this publication. Unlike the GAO Report, the distinguishing premise of this work is that the market structure problem now confronting American agriculture originates from pro-business policies that do not deal fully or fairly with producers or consumers.

#### **IV. Concentration Has Achieved Alarming Levels in American Agriculture. Retailing Has Also Grown More Concentrated.**

The United States Department of Agriculture's Economy Research Service (ERS) reported, in 2001, regarding certain definitions about "concentration," when it is a concern, and what constitutes an "efficient" market. The 2001 report<sup>56</sup> described the economic fallout from actions of a concentrated industry that restricts output. ERS used a familiar economic chart, Fig. 5, that is descriptive of a monopsony's presence at the marketplace:

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<sup>55</sup> Starmer, *Corporate Power in Livestock Production: How It's Hurting Farmers, Consumers & Communities*, The Agribusiness Accountability Initiative, [www.nffc.net/Learn/Fact%20Sheets/AAICorporatePowerinLivestock.pdf](http://www.nffc.net/Learn/Fact%20Sheets/AAICorporatePowerinLivestock.pdf)

<sup>56</sup> AIB No. 763, March 2001.

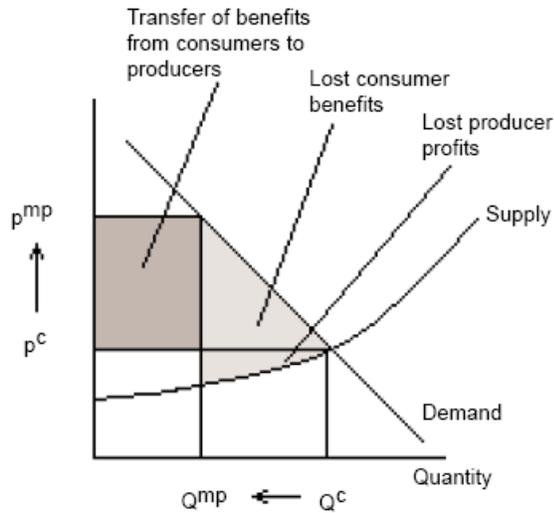


Fig. 5. Classical View of Effects of Market Power on Consumers and Producers

As long ago as eight years ago, the USDA reported “a remarkable trend in the U.S. commercial seed industry in the 1990s involved rapid consolidation as smaller seed company and plant-breeding operations were purchased by large agricultural concerns.”<sup>57</sup> Since then, scores of additional acquisitions have occurred, and today a single company, Monsanto Corp, dominates the seed industry.<sup>58</sup>

USDA monitors trends in concentration in livestock production and meat processing and considers its implications for agriculture and rural America. The Packers and Stockyards Act of 1921 (P&S Act) prohibits anticompetitive behavior and unfair trade practices in the marketing and procurement of livestock and poultry and provides financial protections for livestock sellers. High levels of concentration are not *per se* violations of the P&S Act. But, high concentration indicates a high level of market power in a few firms. High levels of concentration also establish that monitoring for anticompetitive behavior is warranted. USDA’s Grain Inspection, Packers and

<sup>57</sup> *Id.*

<sup>58</sup> Engdahl, *Seeds of Destruction*, Global Research (2007).

Stockyards Administration (GIPSA) administers the P&S Act and the grain inspection service.<sup>59</sup>

Although concentration among the industries that procure slaughter livestock increased in the last 25 years, it remained relatively stable in recent years. Four-firm concentration in steer and heifer procurement rose from 36 percent in 1980 to 81 percent in 1993, but since 1993 has remained fairly constant. Four-firm concentration in hog procurement rose from 34 percent in 1980 to 55 percent in 1996, remaining at about that level until moving to 64 percent in 2003 and 2004.<sup>60</sup> Four-firm concentration in sheep and lamb procurement rose from 56 percent in 1980 to 77 percent in 1988, but decreased to 57 percent in 2004. Fig. 6, summarizes the data:

Fig. 6. Four-Firm Concentration Ratio for Select Years.

Industry	1980 (%)	1995 (%)	2003 (%)	2004 (%)
Steer and heifer slaughter	36	81	80	80
Hog slaughter	34	46	64	64
Sheep and lamb slaughter	56	72	65	57

The concentration statistics in Fig. 6 refer to *seller* side market concentration, which often grossly understates *buyer* concentration in regional markets for slaughter animals.

Concentration may increase because of mergers among independent firms, or because plants become larger. Over the last 25 years, large plants have become vastly more important in slaughter industries, as evidenced by two different measurement bases.

<sup>59</sup> GIPSA authority and responsibility is defined in several distinct laws. They are referenced on GIPSA's website. <http://www.gipsa.usda.gov/GIPSA/webapp?area=home&subject=lr&topic=landing>

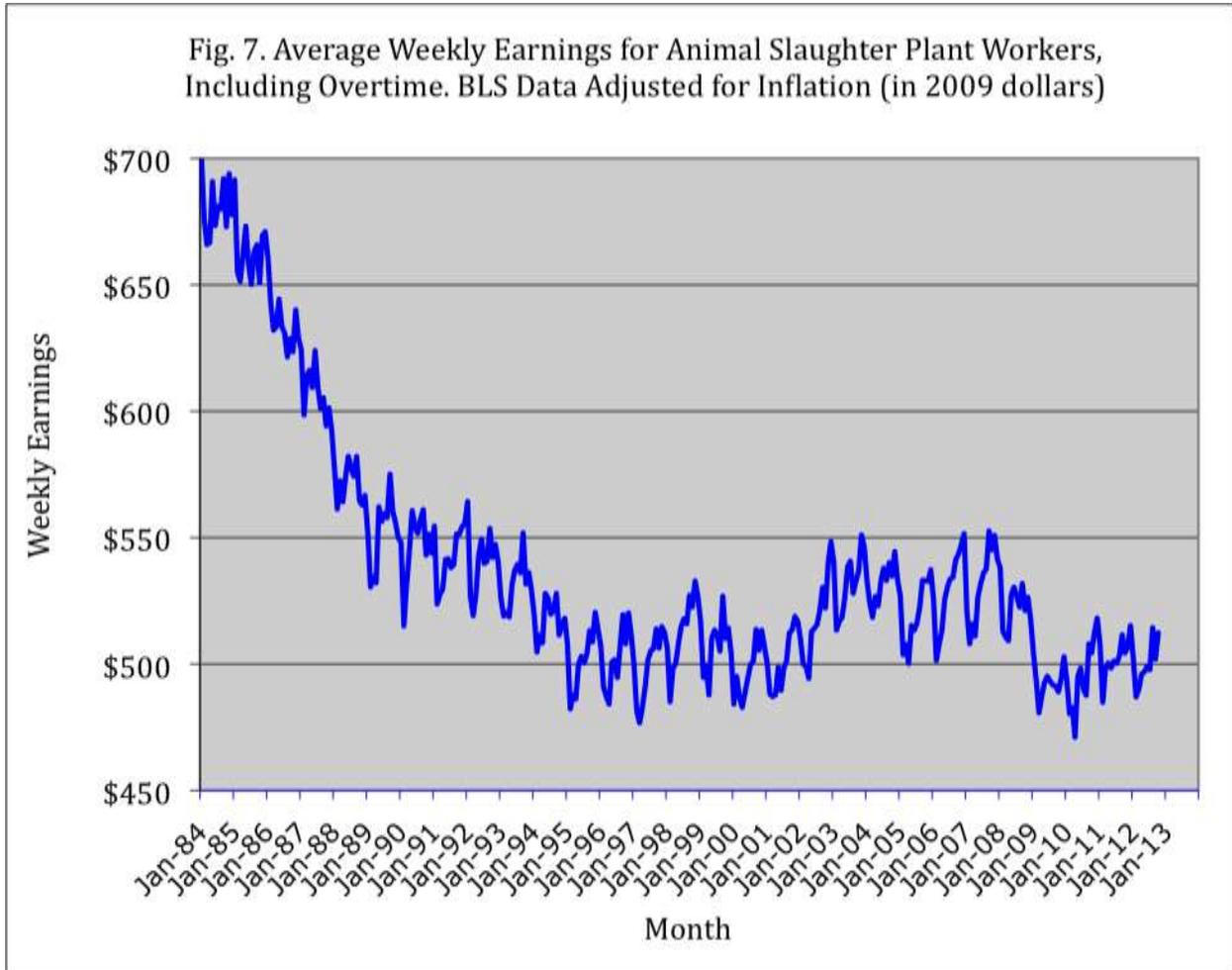
<sup>60</sup> Mary Hendrickson and William Heffernan, Concentration of Agricultural Markets, April 2007, downloadable at <http://nfu.org/issues/economic-policy/resources/heffernan-Report>. See also, Mollie M. Taylor, Market Concentration Statistics, OCM Newsletter, June 2005.

GIPSA data sort cattle slaughter plants by size; the largest plants slaughter more than half a million cattle in a year, while large hog plants slaughter more than a million. The definition of “large” can change over time; the agency did not separately report cattle plants that slaughtered more than a million animals until 1987; by 1997, 14 plants were in that newly established category.

What GAO and its cited academics lump into “economic efficiency gains” merits careful consideration. Part of what is called an efficiency gain—a decrease in unit cost—may not come about because of increased productivity but because of lower inflation-adjusted wages paid by processors and retailers (see Fig. 7). For livestock processing, plant efficiencies (of size) are often used to imply that multi-plant firms are efficient. Certainly, some of the larger beef and pork plants are more efficient if one does not consider adverse impacts on small communities, but this does not mean there are multi-plant efficiencies. Market power arises not only because of plant size, but because a single “head buyer” is responsible for all livestock acquired for all plants owned or controlled by a single packer, even if they are geographically distant from one another.<sup>61</sup>

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<sup>61</sup> The “Head Buyer” coordinates buyer activities, establishes volumes of purchasers and sets price limits. This person often simply sets the price. There is much evidence that in today’s concentrated markets one firm is the price setter (leader) and others merely follow.

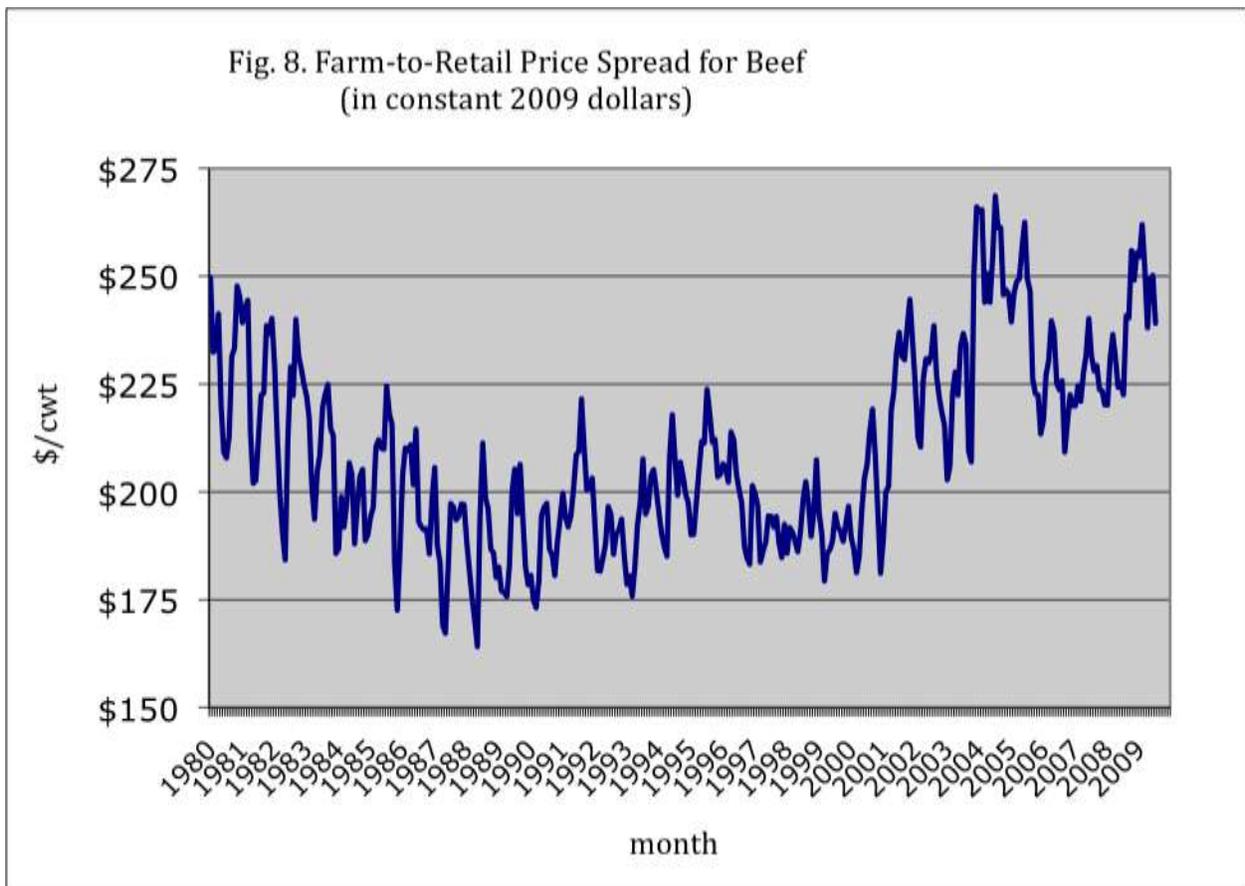


USDA’s data shows dangerous levels of concentration in beef, slaughter, and sheep, and predicted in 2006 more concentration could be expected.<sup>62</sup> Concentration was so great at the time the USDA summarized the 2008 Farm Bill Forum, that it was able to discern widespread concern. Concentration-related concerns included termination of subsidies for factory farms, a need to limit corporate farms and encourage entry into farming by young farmers, restrictions on agribusiness influence, reinstatement of the *Mandatory Price Reporting Act*, a national ban on packer ownership of livestock, an end

<sup>62</sup> [usda.gov/documents/agricultural\\_concentration](http://usda.gov/documents/agricultural_concentration).

to vertical integration, particularly in animal agriculture, and more stringent enforcement by GIPSA.<sup>63</sup>

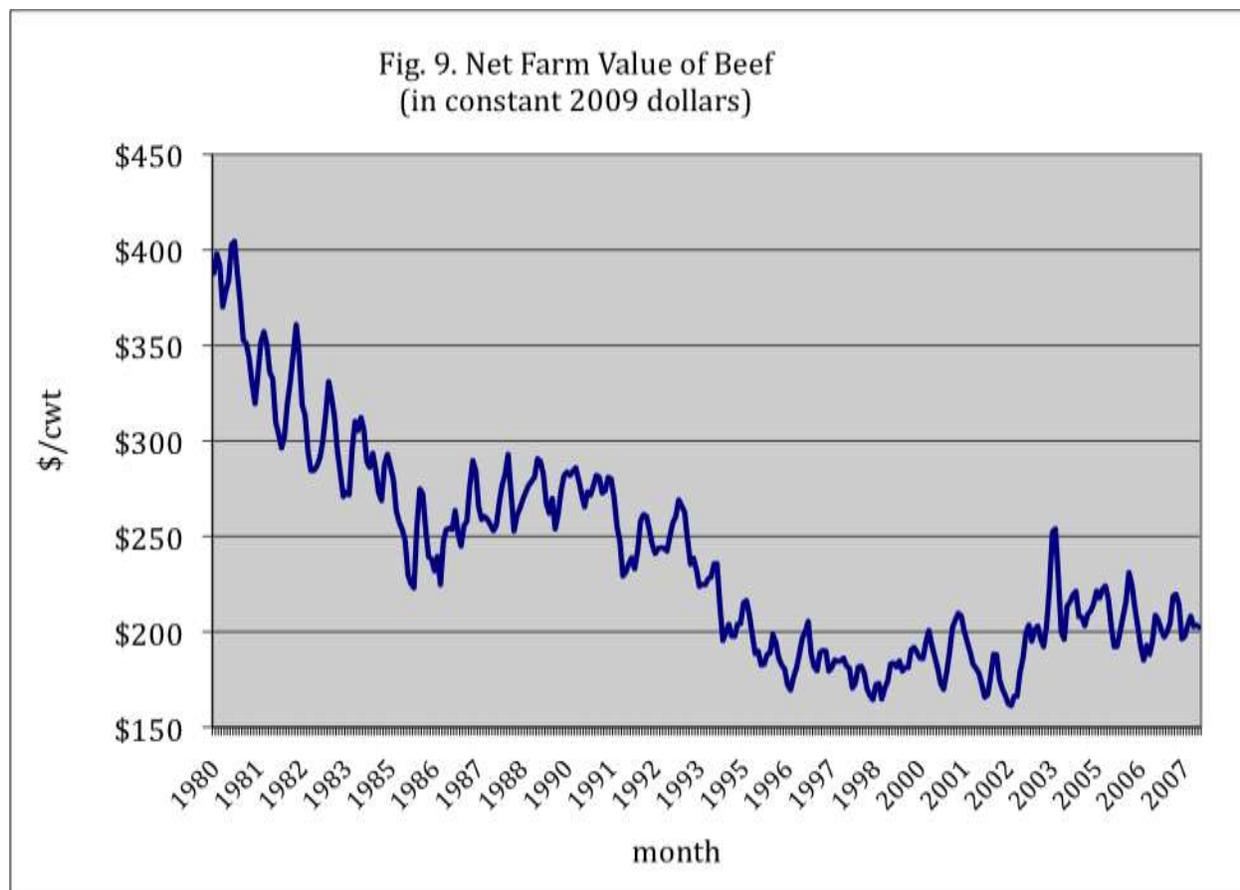
In beef alone, the dangerously shrinking share of the retail dollar to reach the farmer or rancher is readily portrayed graphically in Fig's 8 and 9. Fig. 8 shows the farm-to-retail price spread. This chart plots the difference between what beef consumers pay in at the retail meat counter and what the farmer receives. Values plotted in Fig. 8 show the gross margin extracted by beef processors and meat retailers. Time is depicted on the horizontal axis.<sup>64</sup>



<sup>63</sup> *Id.*

<sup>64</sup> Source: R Taylor, Auburn University, from USDA data.

Fig. 9 shows what cattle feeders receive for slaughter animals, expressed on a dressed (not live) weight basis, adjusted for inflation.



In 2007, University of Missouri Sociologists described the concentration ratio for the top four firms in specific industries, namely beef and pork production, broiler and turkey productions, and dairy production, as follows (Fig.10):<sup>65</sup>

<sup>65</sup> Mary Hendrickson and William Heffernan, Concentration of Agricultural Markets, April 2007, downloadable at: <http://nfu.org/issues/economic-policy/resources/heffernan-Report>

**Fig. 10. Selected Concentration Ratios in Food and Agricultural Markets**

Industry	Concentration	Companies	Comments
Food Retailing	CR5=48%	Wal-Mart, Kroger, Albertson's, Safeway, Ahold	
Beef Packers	CR4=84%	Tyson, Cargill, Swift & Co. (JBS), National Beef Packing Co.	
Beef Feedlots	CR4=30%	Five Rivers (Smithfield and ContiBeef), Cactus Feeders, Inc., Cargill (Caprock Cattle Feeders) Friona Industries.	Most are captive to Beef Packers
Pork Packers	CR4=66%	Smithfield, Tyson, Swift & Co. (JBS), Cargill	
Pork Production	CR4=32%	Smithfield, Triumph, Seaboard Corp., Iowa Select Farms	
Broilers	CR4=59%	Pilgrim's Pride, Tyson, Perdue, Sanderson Farms	
Turkeys	CR4=55%	Butterball LLC, Hormel Foods (Jennie-O Turkeys), Cargill, Sara Lee	
Soybean Crushing	CR4=80%	ADM, Bunge, Cargill, Ag Processing, Inc.	
Fluid Milk	CR4=43%		
Phosphorus Fertilizer (domestic)	CR1=60%	ICM	Cargill owns 67% of ICM
Corn Seed	CR2=58%	Monsanto, DuPont	
Seed Cotton	CR1=96%	Monsanto	

Retailing data is not cited extensively. It is a broad subject appropriate for separate treatment beyond this publication's scope. However, it is noteworthy that recently the USDA's Economic Research Service Reported, "large multinational retailers have expanded into developing countries and the top 15 companies account for more than 30 percent of global supermarket sales."<sup>66</sup>

Market power of food retailers is magnified by mass purchasing. For large chains a single person—called a category captain—may purchase all of a particular item such as meat sold by the chain. This business practice amasses tremendous buying power in the hands of a few. Another retail grocery business practice placing a small supplier at a competitive disadvantage is a "slotting fee" that places the processor's product in a

<sup>66</sup> [www.ers.usda.gov/Briefing/GlobalFoodMarkets/](http://www.ers.usda.gov/Briefing/GlobalFoodMarkets/) (July 23, 2009)

visible location. Small suppliers often do not have the wherewithal to pay large slotting fees demanded by large food retailers.

The GAO Report makes no mention of category captains or slotting fees, yet both are recognized by academics as well as market participants as practices that may be anti-competitive.

## **V. Farmers and Other Producers Do Not Receive a Proportionate Share of the Retail Dollar.**

Farmers receive a shrinking share of the retail food dollar, and the portion they receive will not sustain them. USDA published data indicates rapidly increasing farm retail price spreads along with deteriorating farm value for a fixed market basket of goods for at-home consumption. These indices are shown below in Figs. 11-13.<sup>67</sup>

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<sup>67</sup> [www.ers.usda.gov/Publications/AgOutlook/AOTables/](http://www.ers.usda.gov/Publications/AgOutlook/AOTables/) (July 2009).

Fig. 11. Inflation Adjusted Farm Value, Retail Value, Farm-to-Retail Spread, and Food Marketing Cost Indices

Year	Farm-to-retail spread	Farm Value	Retail Value	Food Marketing Cost Index
1967	104.9	119.9	110.9	86.0
1968	103.5	120.7	109.2	89.1
1969	100.9	125.4	109.0	89.1
1970	103.0	118.4	108.1	89.6
1971	101.3	113.6	106.2	90.9
1972	100.5	119.6	107.6	93.5
1973	101.3	153.1	117.1	93.9
1974	107.5	148.0	121.7	96.9
1975	107.8	141.2	118.9	99.4
1976	107.1	126.5	114.2	101.9
1977	103.9	118.8	108.9	103.3
1978	104.2	127.2	113.4	104.2
1979	106.1	126.8	113.0	104.0
1980	102.0	117.7	106.8	103.9
1981	101.2	110.0	104.5	104.6
1982	101.5	102.6	101.5	103.6
1983	100.4	97.4	99.4	103.1
1984	99.1	100.1	99.1	102.6
1985	100.4	89.2	96.7	99.8
1986	102.1	86.6	96.6	96.9
1987	105.6	85.4	98.6	95.0
1988	105.7	84.5	98.1	94.3
1989	108.1	86.3	100.9	93.3
1990	111.0	86.5	102.6	91.4
1991	113.1	77.8	100.6	89.5
1992	111.9	73.4	98.4	88.4
1993	112.1	72.7	98.3	87.9
1994	114.0	68.1	97.8	85.2
1995	114.8	67.6	97.8	84.8
1996	114.8	70.8	99.5	83.7
1997	117.7	66.0	99.7	83.2
1998	119.6	63.2	100.0	83.2
1999	122.8	59.0	100.4	82.3
2000	122.1	56.3	99.1	82.9
2001	121.7	60.0	100.1	82.3
2002	123.0	58.0	100.2	82.4
2003	122.6	60.0	100.7	82.2
2004	122.9	65.9	102.9	81.8
2005	122.5	62.6	101.5	82.4
2006	122.1	59.3	100.1	82.3
2007	119.7	68.6	101.8	82.7
2008	124.1	68.5	104.6	84.3
2009	132.5	57.5	106.2	83.4

Figs.12 and 13 show inflation-adjusted farm value, retail cost and price spread for selected food groups.

**Fig. 12. Inflation-Adjusted Farm Value, Retail Cost and Farm-to-Retail spread for Selected Food Groups.**

Year	Processed fruits and vegetables			Fats and oils			Cereals and bakery products		
	Retail cost	Farm value	Farm-to-retail spread	Retail cost	Farm value	Farm-to-retail spread	Retail cost	Farm value	Farm-to-retail spread
1967	107.9	98.9	110.9	110.9	113.9	110.9	101.9	161.8	95.9
1968	109.2	109.2	109.2	103.5	100.6	103.5	100.6	149.5	94.9
1969	106.3	106.3	103.6	98.1	95.4	98.1	98.1	141.8	92.7
1970	100.4	95.3	103.0	97.8	110.7	95.3	97.8	144.2	92.7
1971	101.3	93.9	103.7	103.7	121.0	96.3	98.8	140.8	93.9
1972	100.5	95.7	100.5	102.9	100.5	102.9	95.7	143.5	88.5
1973	99.0	96.8	99.0	105.8	148.6	90.0	99.0	202.6	85.5
1974	109.5	121.7	107.5	144.0	251.4	105.4	115.6	263.6	97.3
1975	113.3	122.6	111.5	143.1	180.2	128.2	117.0	196.9	105.9
1976	108.9	110.7	108.9	114.2	138.8	105.4	108.9	151.1	103.6
1977	107.2	97.3	108.9	117.1	156.7	102.3	103.9	118.8	100.6
1978	108.8	134.9	102.7	119.6	150.2	107.3	104.2	127.2	101.2
1979	106.1	125.4	102.0	115.7	146.0	103.3	103.3	130.9	100.6
1980	100.7	117.7	95.9	108.0	116.5	105.6	102.0	134.7	98.3
1981	101.2	116.6	97.9	108.9	110.0	107.8	101.2	121.0	99.0
1982	100.5	103.6	100.5	99.4	82.9	105.7	100.5	99.4	100.5
1983	98.4	93.4	100.4	97.4	96.4	98.4	100.4	101.4	99.4
1984	100.1	103.0	99.1	103.0	119.3	96.2	100.1	99.1	100.1
1985	99.4	109.7	96.7	101.3	96.7	103.2	100.4	87.4	102.2
1986	95.7	93.0	96.6	96.6	69.3	107.6	101.2	69.3	105.8
1987	95.9	97.7	95.1	95.1	65.1	105.6	101.2	62.5	106.5
1988	99.8	115.8	94.7	95.5	87.1	98.9	103.1	78.6	106.5
1989	100.9	106.5	99.2	97.6	77.5	105.7	106.5	82.3	110.5
1990	101.8	110.2	98.7	96.4	81.9	101.8	107.1	69.6	112.5
1991	95.5	89.6	97.7	96.9	72.0	105.8	107.2	62.4	113.1
1992	95.5	91.9	96.2	92.7	66.3	101.9	108.3	67.0	114.0
1993	91.4	74.1	96.2	90.0	74.8	95.5	108.7	63.7	114.9
1994	91.1	76.2	95.1	90.4	85.0	92.4	110.6	69.5	115.4
1995	90.6	79.4	93.8	89.9	79.4	93.8	110.2	72.2	115.5
1996	91.8	77.8	96.9	89.9	71.4	96.3	110.9	80.3	115.4
1997	92.2	72.3	98.4	88.5	67.9	95.9	110.9	67.3	116.5
1998	92.6	70.5	99.4	90.2	73.0	96.3	111.0	57.7	118.4
1999	92.9	68.1	100.7	89.0	53.4	102.1	111.1	49.5	119.6
2000	89.2	61.8	97.7	85.6	47.0	99.8	109.4	43.7	118.5
2001	90.0	60.9	99.0	87.9	43.4	104.3	109.5	44.5	118.6
2002	92.4	61.4	102.1	86.4	51.0	99.5	110.1	48.0	118.8
2003	93.4	58.9	104.2	85.5	61.6	94.3	110.2	50.8	118.5
2004	96.9	66.4	106.5	88.8	68.0	96.5	109.0	54.9	116.6
2005	98.5	70.7	107.2	85.9	55.4	97.1	107.0	49.4	115.0
2006	99.8	69.5	109.3	83.2	50.5	95.3	105.7	55.1	112.7
2007	100.7	72.8	109.3	83.4	72.8	87.3	107.1	72.1	112.0
2008	106.2	76.6	115.4	91.4	96.3	89.6	113.8	88.8	117.2
2009	114.7	75.4	127.0	96.2	58.3	110.0	119.1	69.5	126.1

**Fig. 13. Inflation-Adjusted Farm Value, Retail Cost and Farm-to-Retail spread for Selected Food Groups.**

Year	Fresh Vegetables	Fresh Fruit	Dairy products		
	Farm-to-retail spread	Farm-to-retail spread	Retail cost	Farm value	Farm-to-retail spread
1967	92.9	83.9	119.9	113.9	125.8
1968	94.9	92.0	117.8	115.0	120.7
1969	95.4	87.2	114.5	114.5	117.2
1970	97.8	85.0	115.9	113.3	115.9
1971	93.9	86.5	113.6	108.7	116.1
1972	98.1	88.5	112.4	110.0	114.8
1973	108.0	90.0	114.8	117.1	112.5
1974	109.5	93.3	121.7	123.7	121.7
1975	94.8	87.3	115.2	117.0	113.3
1976	96.6	84.3	117.7	124.7	112.4
1977	102.3	90.7	113.8	118.8	112.2
1978	105.8	101.2	113.4	119.6	108.8
1979	100.6	106.1	114.4	121.2	107.5
1980	98.3	102.0	110.5	116.5	104.4
1981	99.0	97.9	106.7	112.2	102.3
1982	97.4	100.5	102.6	103.6	100.5
1983	98.4	100.4	100.4	100.4	100.4
1984	103.9	99.1	97.2	95.3	99.1
1985	101.3	113.4	95.7	88.3	102.2
1986	106.7	116.7	93.9	84.8	103.0
1987	112.7	128.5	93.3	81.9	103.9
1988	119.2	134.4	91.3	76.9	105.7
1989	123.4	142.0	93.6	79.9	105.7
1990	126.3	150.0	97.2	78.1	114.8
1991	130.0	156.4	91.8	66.1	115.3
1992	126.2	157.5	91.9	68.4	113.3
1993	131.5	155.0	89.3	64.4	112.8
1994	134.9	168.7	89.1	63.4	112.0
1995	148.3	176.5	87.3	60.4	111.6
1996	145.4	181.7	90.5	68.2	110.9
1997	145.8	183.8	91.0	61.0	117.7
1998	161.3	191.4	92.6	69.3	114.1
1999	153.8	215.7	95.8	64.8	124.4
2000	156.7	203.4	93.3	57.4	126.4
2001	159.5	202.8	94.4	66.9	119.6
2002	164.9	202.5	93.5	54.3	129.6
2003	164.2	204.5	91.3	53.9	125.7
2004	169.5	197.4	95.4	66.6	121.9
2005	172.4	206.5	93.4	60.8	123.5
2006	172.6	209.4	89.9	50.5	126.3
2007	172.4	216.1	93.9	73.7	112.5
2008	177.2	218.3	97.8	67.6	125.6
2009	177.5	214.6	93.8	45.0	138.7

## **What Do These Numbers Mean? How Do They Take Their Toll?**

Some scale for the problem might be helpful. A 1% change in the distribution of cash from live cattle sales represents a distribution of the money for enough cattle to feed about 3.1 million people. This is roughly 250,000 head of cattle, or 5% of the cattle furnished annually out of either Texas, or Kansas, or Nebraska, for slaughter. The 1% change occurs with the concentrated processors who control 81% of the market. In hogs, this means roughly 1 million animals, enough to meet the needs of roughly 3 million people, are impacted. These are small, incremental fractions, but huge volumes, and they have a massive impact on markets where active bidding has already come to a virtual standstill.

Simply, concentration is occurring at a precipitous rate while the segment of the retail dollar passed back to U.S. food producers shrinks. This occurrence is undeniable. The GAO Report's tone tries to minimize the rate and level of concentration.

While this comparison is telling, and discloses a prominent weakness in the economy's structure, it proves more. Among the experiences of producers, the rest of the story is known. Concentration begets concentration. As the bottlenecks in the supply chain process become narrower and narrower, with monopsony power concentrated in the hands of fewer and fewer processors, more and more pressure exists in the production and retail sectors to consolidate. This means family farms get bigger, ranches consolidate, and on the other side of the processor bottleneck, retailers also become more concentrated.

When an industry first starts to consolidate, economic efficiencies (economies of size) are often the driving force. But as the industry reaches a certain level of consolidation, further consolidation is often driven by market power gains, not by efficiency gains. Few family-sized businesses can coexist where market conditions forcefully challenge the production level of commodity suppliers to funnel their raw goods through the remarkably concentrated controls of the companies identified above in

each major agricultural product sector. The decline in numbers of farms and the limited countervailing growth in hobby farm numbers, yields these undisputed facts:

Changes in the counts of farms by constant-dollar sales class—from 1982 onward—are consistent with the trends in the counts by acreage class that were discussed earlier. Only one sales class grew consistently over the 16-year period. Large farms increased their numbers by 53,000, growing from 104,000 in 1982 to 157,000 by 1997. The share of all farms in this group also grew, from 5 percent to 8 percent over the same period. Most farms in the large farm group had sales between \$250,000 and \$499,999, but the number of farms with sales of at least \$500,000 grew more rapidly.

The number of farms in the other sales classes declined in each inter-census period, with the exception of farms with sales less than \$10,000.... There, the number of farms declined from 1982 to 1987 and from 1987 to 1992, but increased from 1992 to 1997. As shown in tables 3-1, most of the increase from 1992 to 1997 occurred among "point farms," or farms with sales less than \$1,000 that might normally have sales that high and satisfy the criteria necessary to be considered a farm. (See the box, Defining Point Farms.) Because of this growth, farms with sales less than \$10,000 now account for half of all U.S. farms.<sup>68</sup>

As an economic paradigm, ultimately this means huge farms, operated by an overseer in close contractual contact with a processor are more and more likely to employ workers for wages priced at a level sufficient to maintain the family minimally, but not allow it to accumulate wealth. Wealth accumulation occurs only in ownership hands. A new farmer needs to make friends with a packing plant executive to get a contract, or have no market for his or her goods.

This economic phenomenon is orchestrated by commitment to efficiency, even at the expense of security for American's food sector. The efficiency-first philosophy leads to a system of limited redundancies and significant size in which firms function in order to supply basic food needs. It encourages circumstances in which a major firm failure risks catastrophic destruction. Recent experience in American banking proves this. In

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<sup>68</sup> USDA Agricultural Factbook 2001-02 (most recent data)

food processing, as in banking, the parts of the economic machine are so big a failure damages the entire machine to the point of limited utility and discernable instability.<sup>69</sup> This is not the American historical model. There is much evidence the nation’s founders expected many small farms, ranches, and firms to compete, assuring that one’s failure would give rise to another’s birth, and the transformative power for the nation’s growth would be change begotten by competition, not modification birthed by newly discovered efficiencies.<sup>70</sup> Recalling their goals is useful.

Many “basic freedoms” are consistent with the small and even mid-sized business economic model of free enterprise, but entirely inconsistent with the big business model.<sup>71</sup> The GAO Report fails to recognize any tension at all between the basic freedoms model that defines American political idealism, and the size and concentration paradigm that typifies American economics. Recent evidence suggests whole scale efforts by concentrated business to eradicate these freedoms because they introduce inefficiency. Consider the growth of arbitration and the ubiquity of contractual provisions waiving the right to trial by jury and providing for arbitration, choosing governing law, or selecting a venue—even a distant venue disconnected with the transaction—as the place to arbitrate.<sup>72</sup>

Consider too the reawakening of the “dormant commerce clause” to prevent local governmental rule as an alternative to federal control. Indeed, with one remarkable fell swoop of congressional lobbying success, the *American Arbitration Act*, coupled with the

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<sup>69</sup> This problem is extensively researched at Engdahl, *Seeds of Destruction*, Global Research, (2007) ISBN 978-0-937147-2-2, focusing on the seed industry and single firm dominance over seed for crops. The “Big Food” problem is multi-faceted; it poses health risks, too and the public is aware this is so. See, <http://www.baltimoresun.com/news/opinion/oped/bal-op.viewpoint24jul24,0,4628144.story>

<sup>70</sup> G Washington, *First Inaugural Address*; T Jefferson, *Letter to Jean Baptiste Say* Feb 1, 1804, commenting on economics after acquisition of the Louisiana Territory,

<sup>71</sup> The term “efficient” or its forms do not appear in the U.S. Constitution. Many have observed that basic freedoms, like speech, religion, press, trial, are not conducive to “efficiency”. B Siegan, *Economic Liberties and the Constitution* Business Economics Jan 1989.

<sup>72</sup> The Attorney General of Iowa collects and posts contracts packers and processors demand with producers, and cautions producers to try to help them negotiate terms. The Attorney General’s collection of contracts illustrates the point made here. See, [http://www.iowa.gov/government/ag/working\\_for\\_farmers/contracts/index.html](http://www.iowa.gov/government/ag/working_for_farmers/contracts/index.html).

supremacy<sup>73</sup> clause and the “dormant” commerce clause eradicated fifty state constitutional open courts and jury trial guarantees.<sup>74</sup> Groups like the American Chamber of Commerce, trade organizations of food processors, and organizations permitting firms to join together in lobbying efforts and effectively conspire to discuss their needs on levels previously thought to be utterly monopolistic, now assure business will get its way by flaunting its contracts, combinations, and conspiracies to pass laws restraining trade, in the halls of the United States Congress itself.<sup>75</sup> Can there be any more significant proof concentrated markets pose dangers to price, and more than the proliferation of “trade organizations,” where competitors join together to do their business under the cloak of lobbying?

The Center for Responsive Politics reported, on January 29, 2009, that U.S. companies spent a record \$3.2 billion on lobbying in 2008, while losing record amounts of money and laying off workers. Among the largest spenders were finance, insurance and real estate companies and their associations, namely: The National Association of Realtors, American Bankers Association, Private Equity Council, Mortgage Bankers Association of America, Financial Services Roundtable, U.S. Chamber of Commerce, Alliance of Automobile Manufacturers, Pharmaceutical Research Manufacturers of America, and American Hospital Association.<sup>76</sup> Others include organizations exemplifying accumulated industry interests expressing sentiments designed to achieve collective congressional results by pooling competitive information to procure lobbying objectives, include: National Meat Institute, National Chicken Council, American Auto Manufacturers Association, American Bankers Association, National Cattlemen’s Beef Association (an organization consisting originally of producers, but now dominated by packers), Meat & Poultry Promotion Coalition, and National Meat Association.

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<sup>73</sup> *Perry v Thomas*, 482 U.S. 483 (1987).

<sup>74</sup> Cf., *United Haulers Ass’n, Inc. v Oneida-Herkimer Solid Waste Management Auth.*, 550 U.S. 330 (2007).

<sup>75</sup> See, *Campaign Finance Reform: A New Era, Common Cause Agenda for Change January 2009*, <http://www.commoncause.org/atf/cf/%7Bfb3c17e2-cdd1-4df6-92be-bd4429893665%7D/COMMONCAUSECAMPAIGNFINANCEREFORMAGENDA2009.PDF>

<sup>76</sup> See, [www.opensecrets.org/news/2009/01/washington-lobbying-grew-two-threetwo.html](http://www.opensecrets.org/news/2009/01/washington-lobbying-grew-two-threetwo.html)

Trade Association offices serve as meeting halls for “competitors” to exchange ideas, aspirations, and secrets, and to pool funds for political reasons. These Associations become shared accounts, and shared staffs, dominant interests use to address issues in concert.

Unfortunately, the GAO Report’s narrow focus excluded consideration of these impactful factors.

## **VI. The Monopsonistic Buyers Who Carve Up Ag Markets Do Not Engage in Healthy Competition**

The few companies dominating the agriculture markets discussed throughout this publication claim to compete against one another. They do not. In fact, they use their power, nationally and even internationally, to drive their costs of goods down with their absolute control over knowledge of their needs and their ability to supply needs from sources outside the sphere of knowledge immediately accessible by American producers. The imbalance of knowledge, coupled with control of the procurement process and dominance in the balance of market power, creates the problem of monopsony. This is a dangerous problem. It threatens domestic producers, it drives them from business, and it increases consumer prices. At the same time, monopsony power is a threat to political stability.

The lessons of monopsony can be learned from history, though the GAO and regulators of ag markets have not exhibited awareness of historical precedent as they forge and execute policy. More than 2,000 years ago, corn farmers in Athens were regulated by the Athenian Senate to protect local farmers against transportation of cheap corn from Egypt. The problem was posed by the monopoly power of the Egyptian seller of corn, Cleomenes, satrap of Egypt.<sup>77</sup> As fabled American historian Will Durant commented, “The danger lurking in this prosperity is the growing dependence of Athens

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<sup>77</sup> Cecil Torr, *Rhodes in Ancient Times*, (1885).

upon imported grain; hence her insistence upon controlling the Hellespont and the Black Sea...and her disastrous expeditions to Egypt....”<sup>78</sup>

Ancient cultures’ monopsonists provide the example economists need to identify the presence of a thin market for produce, and market entrance with insufficient incentive to purchase available products. Monopsony power was perceived,<sup>79</sup> and the need to combat it became a driving force in the adoption of America’s antitrust laws—the first in the world.<sup>80</sup> Regulation of livestock packers was a direct response to prevalent monopsony power, in markets far less concentrated than those existing now.<sup>81</sup> Now, in the nation’s third century, concentration among packers and processors in most agricultural sectors threatens to disrupt production, continue to starve out producers, and constantly escalate costs.

But, “efficiency” continues to be the justification for monopsonies to be allowed to exist. The rationale requires examination. Sometimes, when food prices do not rise as fast as the overall cost of living index, the monopsonists claim an “efficiency” triumph they claim justifies their behavior. This claim withstands no scrutiny.<sup>82</sup>

The “efficient” food supply system today employs fewer people, furnishes fewer pensions, and provides less redundancy. “Just in time” inventory has become sacrosanct in the food sector. Grocery store backrooms all now shrink to nothing, and grocery wholesalers practice inventory turns at dramatically high levels. At the same time, the nation’s slaughter plants, particularly in beef, generate more profit per animal by owning

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<sup>78</sup> Will Durant, *The History of Civilization II: The Life of Greece*, 276 (Simon & Schuster 1939).

<sup>79</sup> James May, Antitrust in the Formative Era: Political and Economic Theory in Constitutional and Antitrust Analysis, 1880–1918, *Ohio State Law Journal* 50 (1987): 257–395.

<sup>80</sup> Tony Freyer , *Regulating Big Business: Antitrust in Great Britain and America, 1880–1990*, 1992. Rudolph J.R. Peritz , *Competition Policy in America, 1888–1992*, 1996.

<sup>81</sup> J. Lauck, *American Agriculture & the Problem of Monopoly*, (U of Neb Press 2000) p. 42 *et seq.*

<sup>82</sup> A paper in the mid-90s by a Nebraska ag economist attempts mathematical assessment of the impact from market concentration. The paper reaches dubious conclusions, but displays an intense mathematical methodology. See, Azzam, *Testing the Monopsony-Inefficiency Incentive for Backward Integration*, *Am J Ag Econ* (Aug 1996). See also, National Farmers Union Study on Concentration, <http://www.nfu.org/wp-content/2007-heffernanReport.pdf>

a steer three days than the cattle feeder can make in six months, or the rancher, who owns the mother cow, can make in two years.

When the beef product reaches the consumer, the processor's "value added" steak, roast, or loin might cost nominally less than ten years ago, as a percentage of total living costs. But the margins it commands for the retailer and the processor are significantly enhanced. The farmer, rancher, and factory worker pay dearly for this enhancement. The U.S. Department of Justice recognizes suppliers and consumers are both losers in this process:<sup>83</sup>

Consider first how a merger may lower the true economic cost of purchasing. An example might be where a merger enables the firm to commit to larger orders and thereby permits its supplier to save on its costs by scheduling longer and less costly production runs. These cost savings typically will benefit both the merged firm and its suppliers, and to the extent they lower the buyer's marginal cost of production, will tend to be passed along to some extent to final consumers. The case where a merger lowers input prices for no reason other than that the merged firm can now exercise monopsony power is entirely different. If a buyer obtains market power through merger, and thereby is able to depress prices for the inputs it purchases below competitive levels, then producers of those inputs will have depressed incentives to produce, which will result in too few resources utilized to produce the inputs compared to what would be available in a competitive market. This is likely to harm both suppliers and consumers.

While we often speak of consumers as the targeted beneficiary of antitrust enforcement, suppliers also benefit, by having healthy incentives to provide the best products and services they can, with the expectation that they will be able to do so free from anticompetitive interference. And the overall U.S. economy benefits, as the products and services desired by consumers are produced more efficiently, in greater quantities, and at competitive market prices. A focus on promoting competition goes hand in hand with our taking enforcement action in a monopsony case when the facts warrant.

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<sup>83</sup> Speech by Douglas Ross, US DOJ Special Counsel for Agriculture, Antitrust Division, to R-Calf convention (January 19, 2007).

In the latter instance, the factory worker's hours may not have elongated, but performance standards commanded more work, and as the piece count demand increased, the number of employees decreased as the cost per piece did as well. This multiplied the monopsonist processor's profits.<sup>84</sup>

The problems do not end here. Monopsonists know what quantity of raw goods is needed for production during the next production cycle... a week, a month, etc. Producers might know only how many inputs, i.e., head of cattle, hogs, poultry, or pounds of milk are used in a year, and perhaps even what fraction is handled by each processor.

But, producers do not know how much of the processor's supply is committed with marketing agreements, forward contracts, or "captive supplies" reducing processor participation in the market for raw goods. And they do not know the processor's immediate need. This is a critical information imbalance since the producer must sell a perishable product. Packers can use the threat of captive supplies, which they may or may not have, to subtly influence the psychology of the market and cash price. Processor arrangements for future delivery of raw goods are not reported as public market activity; these private contracts move animals or crops to market without any transparent price discovery.

So, in a given week, month or season, processors may be in the cash market for only a small fraction of their need. This allows them to control markets by creating uncertainty, actually withdrawing from purchasing, and wielding market power against sellers of perishable goods.<sup>85</sup> These charts illustrate the problem:

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<sup>84</sup> Consider, Stiegert, Kyle "Imperfect Competition, Agriculture, and Development." *Commodity Market Review*, FAO-UN. Rome, Italy: Food and Agriculture Organization, United Nations, 2008, pp.35-50.

<sup>85</sup> Meat bearing animals are "perishable goods." They must be slaughtered within a short time period or their optimum weights and values are surpassed, and their maintenance costs eradicate all profits.

Fig. 14. Inflation Adjusted Farm-to-Retail Marketing Margin for a Market Basket of Food for At-Home Consumption, USDA data (same grocery basket of goods for full time period)

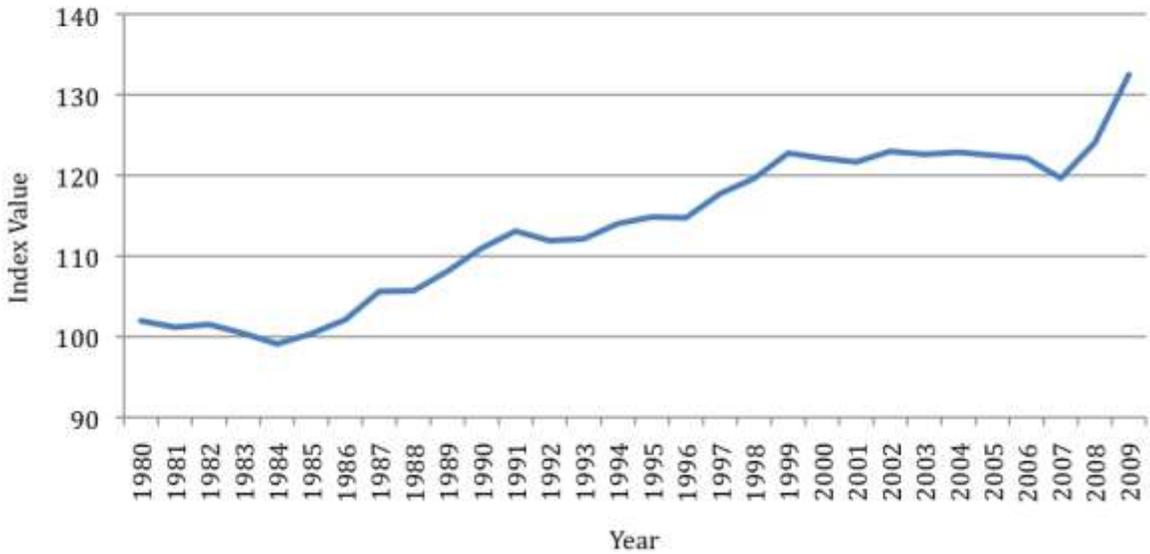
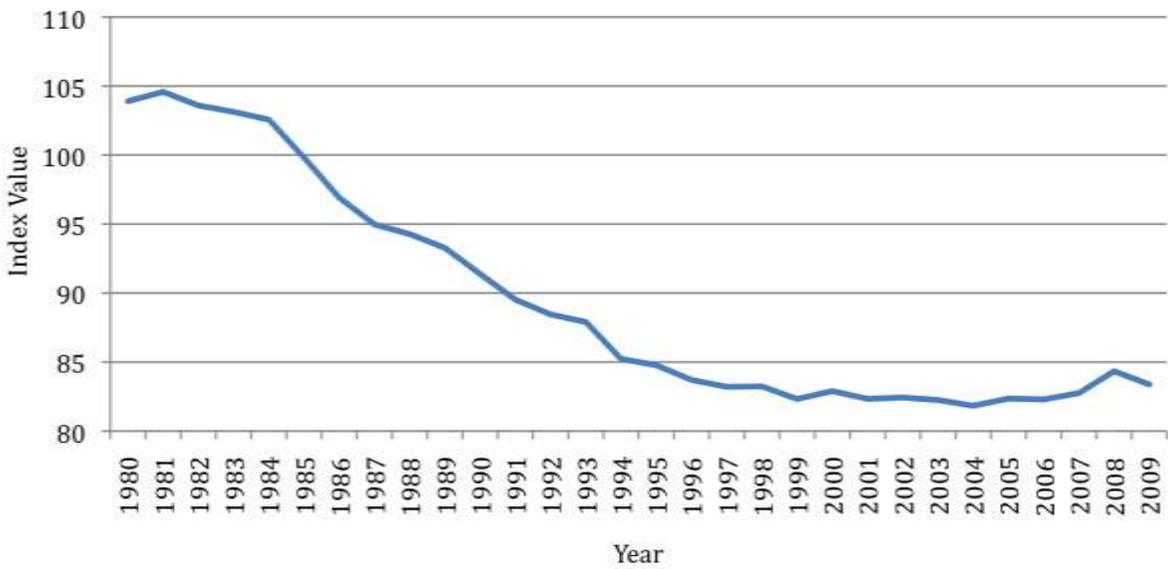


Fig. 15. Inflation Adjusted Food Marketing Cost Index, USDA Data



Figs. 14 and 15 taken together are not *absolute proof* that abusive market power is being exerted, particularly in all individual food product markets. There are no *absolute proofs* in matters of economic behavior or policy; there is only good and bad evidence. GAO's evidence is flawed as explained below. On the other hand, data, including the important information set out in Fig. 14 and 15, is persuasive evidence that market power is being abused.

Recognizing the high cost of transporting many raw agricultural commodities to market, the Department of Justice ("DOJ"), introduced the concept of "captive draw areas" for analyzing buyer power.<sup>86</sup> In a given captive draw area, there may be only one or two viable buyers, yet at the national level there may be many. In some instances, such as with contract poultry production, the buyer *defines* the captive draw area.<sup>87</sup> For example, GAO reports a four-firm (CR4) concentration of 57% for broiler production, but this is in the market for processed birds; in the market for grower services, the poultry company has a pure monopsony in some areas, making the buyer CR1 =100%.

Cash transactions are generally recorded by USDA and made available to the public. However, most agricultural contracts are not publicly available. Wisdom of ancients led them to a particular practice that facilitated simple and practical enforcement. They lacked a massive police force with an enforcement mandate, but relied instead on the simplest and least intrusive of all enforcement methods—the light of day. When a

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<sup>86</sup> The term "Captive Draw Area" was introduced in *U.S. v. Cargill, Inc., et al.*, Civil No. 1: 99CV018575, in the United States District Court for the District of Columbia. In that case the U.S. Department of Justice, Antitrust Division, was challenging Cargill's proposed acquisition of Continental Grain's Commodity Marketing Group, and was analyzing the economic impact that the acquisition would have on grain farmers in the upper Midwest who were within the Captive Draw Areas of the competing companies' grain elevators. See Complaint filed in *Cargill*, at pp. 7-9.

<sup>87</sup> Poultry companies, known as integrators, contract with growers to provide labor and physical facilities for growing birds owned by the integrator. Often these grower complexes are small geographic areas, typically a 40 mile radius around the integrator's feed mill and poultry processing facility.

significant contract was to be made, it was transacted at the gate of the city where the entire public could view and scrutinize the agreement.<sup>88</sup>

Modern competition requires that contracts see the light of day. Lack of market transparency is also a problem neglected in the GAO Report.

## **VII. Monopsony Power Leads to Abuse of Market Power. Producers and Consumers are Both Hurt.**

Human dynamics and the science of economics both offer strong evidence that the presence of monopsony leads to abusive wielding of market power by those in control of the market. John Kenneth Galbraith observed in *American Capitalism: The Concept of Countervailing Power* (1993) what he called “the case of agriculture.”<sup>89</sup>

Such, in brief, is the extraordinarily consistent record of the farmer’s efforts to develop countervailing power. Curiously enough, the whole effort is still viewed, even to some extent by farmers themselves, as vaguely artificial.... The fact that the modern legislation is now of many years standing, that behind it is a long history of equivalent aspiration, that there is not a developed country in the world where its counterpart does not exist, that no political party would like of formally attacking it are all worth pondering by those who regard such legislature as abnormal.

So far from being abnormal, given the market power of the industries among which the American farmer is sited and the probability of fluctuating demand, it is organic.<sup>90</sup>

While Galbraith’s text above is telling, his eighth footnote is more so. Galbraith wrote:

The contention that the farmer’s market position enhances his market power is broadly different from that of his suppliers and customers has been denied or put down as unproven by a number of critics, not all of them men who have conditioned themselves to hear nothing that is evil or inconvenient about the price system. This follows partly from a tendency to see market power only when it is obtrusively exercised and to assume

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<sup>88</sup> Headland, *Court Life in China* (Revell 1909); Terry Stevenson, “Economic Morality”, OCM Newsletter.

<sup>89</sup> Galbraith began his academic career as a dairy marketing economist and was thus particularly well qualified to comment on agricultural markets.

<sup>90</sup> Galbraith, *American Capitalism, The Concept of Countervailing Power, The Case of Agriculture*, p. 164 (1993)

that what is invisible is inevitably benign. It is partly the result of a failure to reflect fully on the evidence. None of these critics would deny that when aggregate demand in the economy falls, the terms of trade turn against the farmer and that his prices also fall much more sharply than do the prices he pays or the margins of those who handle or process his products. Those patterns of economic behavior are as nearly taken for granted as anything in economics. Yet they can be only explained by a broad difference in market structure which gives the farmer's suppliers and customers the power to control the adjustment of their prices to the fall in demand. This power, of course, the farmer does not have.<sup>91</sup>

The predilection to engage in misperception about demand produces classical monopsony behavior. Celebrated economists recognize that monopsony empowers the controlling monopsonist to reduce prices, and wield market power:

As in classic monopsony, the ability to reduce the price paid for intra-marginal units by reducing marginal bids creates an incentive to reduce demand. In [the case illustrated by the theorem commented upon] we are evaluating the bid for the second unit, and the first unit is the intra-marginal unit. It follows that the optimal bid for the second unit is less than [the value of the second unit].<sup>92</sup>

According to auction theory economist Paul Milgrom, the concept of reducing demand can be understood either (1) as reducing the total number of units demanded at or above any price or, equivalently, or (2) as reducing the price bid for each unit after the first. Milgrom explained:

From perspective (A) the preceding analysis looks very much like the traditional theory of monopsony: the incentive to reduce the quantity demanded depends on the number of units being purchased and the price elasticity of suspected supply at that price.<sup>93</sup>

Of course, there is no elasticity in ag markets where perishable goods are under-demanded by the monopsonist who knows the seller must sell. The under-demanding is a

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<sup>91</sup> *Id.* p 64, n. 8.

<sup>92</sup> Milgrom, *Putting Auction Theory to Work*, p. 260 (Cambridge 2004).

<sup>93</sup> *Id.* at pp. 261-62.

ploy to purchase goods, and especially goods with limited shelf life, at a lower price than would be obtained if the actual number of goods sought were demanded. This is classic monopsonist market power. It is a weekly event for producers of America's meat supply, and those same producers are constant victims of the same process practiced against them by suppliers who are so easily able to increase the price of farming inputs because of manipulated, or feigned, shortages never known to be real or unreal.

How well known is price manipulation in agriculture? If the economic theory, actual observations, and data applied to actual observations do not prove it, then perhaps these testimonials will help. In 1950, D. Howard Doane wrote:

...it is clear why manufacturers press down the prices of the raw products they purchase. Who, then, must make the concessions? The answer is those who are least able to resist.... There is but one group that regularly meets these specifications—farmers.<sup>94</sup>

A statement attributed to Dwayne Andreas, CEO, Archer Daniels Midland, is even more telling.

There isn't one grain of anything in the world that is sold in a free market. Not one.<sup>95</sup>

The authors do not rely on these anecdotes to prove any particular point. But, guidance from observers, offenders, and participants seldom converge so openly on a point so basic as the fact that America's agricultural markets are too concentrated, and market power is wielded against producers with impunity.

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<sup>94</sup> D. Howard Done, 1950.

<sup>95</sup> Attributed to Dwayne Andreas, CEO, Archer Daniels Midland (ADM), and quoted, Lieber, *Rats in the Grain: Their Dirty Tricks and Trials of Archer Daniels Midland, the Supermarket to the World*, p. 306 (Four Walls Eight Windows, New York 2000).

## **VIII. Specific Markets and Their Condition Proves that Concentration Affects Price**

A brief overview of problems in select major markets for agriculture brings to life the problems of concentration in their specific markets.

### **Slaughter Beef Sales**

The beef industry suffers from significant lack of meaningful competition and market manipulation, sometimes subtle and often not apparent to analysts who lack intimate familiarity with unique attributes of cattle and beef markets.

For a market to work, the buyers of a particular commodity must be distinct from the sellers. In a sense, a fence separates buyers from sellers, and the market works as a gate to pass goods and money from one side of the fence to the other. This should work in transactions involving buyers and sellers with relatively equal compulsions to engage in an exchange of goods for funds. Merger standards and antitrust analyses, in general, consider the possibility that buyer power can be exerted from either side of the fence, or that monopoly power can be asserted from one to create imbalance. But, economics, industrial organization, and antitrust theory do not apply very well where a firm jumps routinely back and forth across the fence, acting as both buyer and seller.

In the cattle business, a sector in which a fence is a stereotypical fixture of the industry, fences have historically separated buyers of slaughter cattle from their sellers. The paradigm for the cattle business has been simple: producers breed and feed cattle to market weight. Slaughterers kill, cut up, and box cattle carcasses for sale to the public. The two do not mix.

But, the fence between the two has been torn down by vertical integration and consolidation of market power during the past two decades. This has happened, in part, because major packers own and feed cattle. But, their ownership comes in more forms

than a simple, specific, direct, and outright procurement of cattle as calves so they can be fed to market weight. Packers have developed ownership arrangements to gain control over cattle long before they pay for them. Their primary tools are contract arrangements whereby the cattle are sold to the packer well in advance of slaughter, either at a committed price, or a formula price to be determined after delivery, but with stringent requirements that delivery must occur. In this way, the packer procures the cattle, even without paying for them, long before the slaughter date, and in many instances even before the calf is in a feedlot, so the packer need not participate in the cash market to the extent it has already captured the supplies it needs well in advance.<sup>96</sup>

By the middle of the current decade, captive supply arrangements were thought to account for at least 40 percent of all animals slaughtered. No current studies of the level of captive supply arrangements are reported, though generally the magnitude of animals controlled through such supplies are thought to be higher.

Captive supply gives the processor an additional incentive to depress the cash price downward since the ultimate formula price to be paid for cattle may be impacted by the cash price. As one representative of a packer said to a feeder upon declining to pay a premium price for premium quality cattle:

In the old days I would have been able to offer you \$67.50 for these cattle (on a \$66 market), but now paying more would screw up 20,000 formula cattle.<sup>97</sup>

Suppose the base price for the 20,000 head of formula cattle was the top-of-the-market price. Such contracts exist. Also suppose another packer—maybe a very small packer—already established the weekly top-of-the-market price at \$66.00. If the packer’s buyer pays the feeder an additional \$1.50/cwt (\$18/head) for his pen of 1,000 high quality cattle, then the “additional cost” is the extra \$18,000 for the feeder’s cattle, *plus an extra*

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<sup>96</sup> For further discussions see C. Robert Taylor, *The Many Faces of Power in the Food Systems*, Presentation at DOJ/FTC Workshop on Merger Enforcement (2004).

<sup>97</sup> Affidavit, J. Randall Stevenson, cattle feeder, Wheatland, Wyoming.

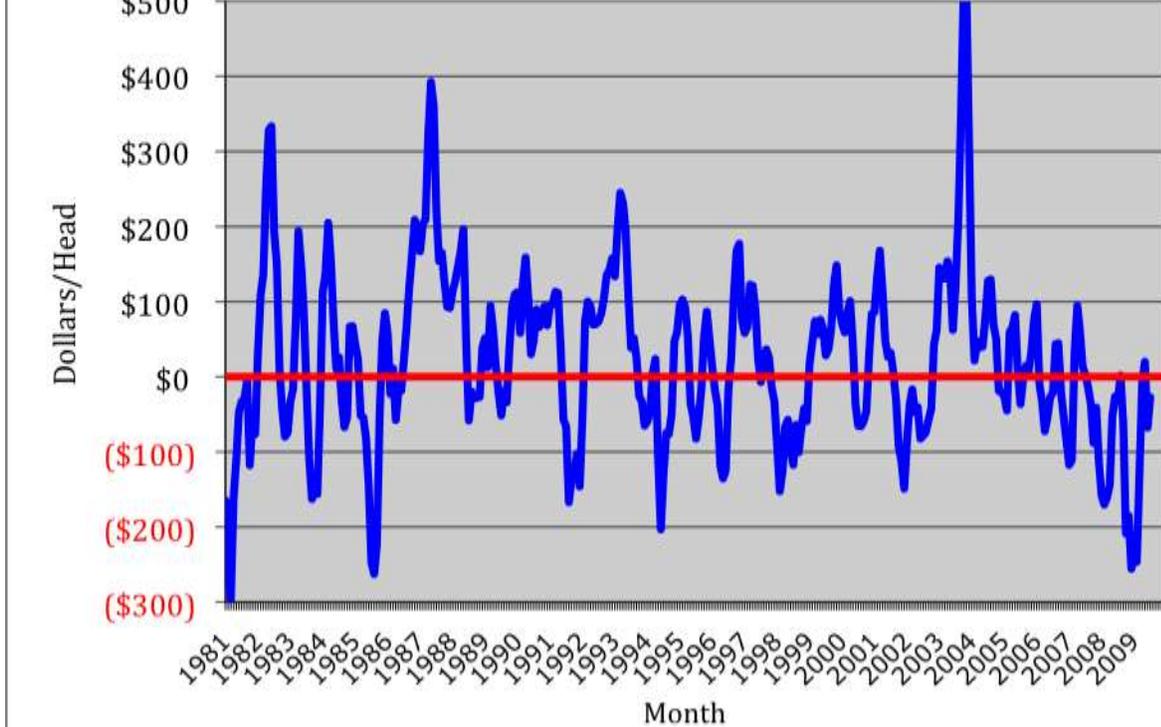
\$360,000 on the 20,000 head of formula cattle. Paying the feeder an extra \$1.50 on 1,000 head would have cost the packer an extra \$378,000. Obviously, the packer would not bid \$67.50 in a \$66.00 market. Looked at another way, offering \$67.50 for the feeder's pen of high quality cattle would have been the equivalent of offering \$117.00/cwt in a cash market without the captive arrangement. Such arrangements lower bids, in this illustration costing the feeder \$18,000. In the jargon of economics, the marginal cost of slaughter cattle is higher to the buyer because of the marketing agreements tied to cash price, *causing* cash price to be lower than it would be without such captive arrangements.

Packers, with their contract supplies of cattle, are literally on both sides of the weekly cash market. They procure a few cattle in the cash market as buyers. But, they push the cash market down because they already control other cattle more favorably priced if the cash price is lowered, and in that sense, they are suppliers motivated to drive price downward. A packer with excessively-committed captive supply cattle is a seller of the extra cattle.

Price discrimination occurs in the fed beef industry. Feeders willing to contract their supplies in advance are generally assured their formula price will allow them some small premium on the cash price. This is necessary because formula sellers know their arrangements will encourage the feedyard to depress the cash price against other cattle sellers.

Fig. 16 shows Iowa State University data on net returns (profits) to cattle feeding, adjusted for inflation.

Fig. 16. Net Returns to Feeding #1 Yearling Steers to Choice Grade, Iowa/Minnesota (in 2009 constant dollars)  
Iowa State University Data

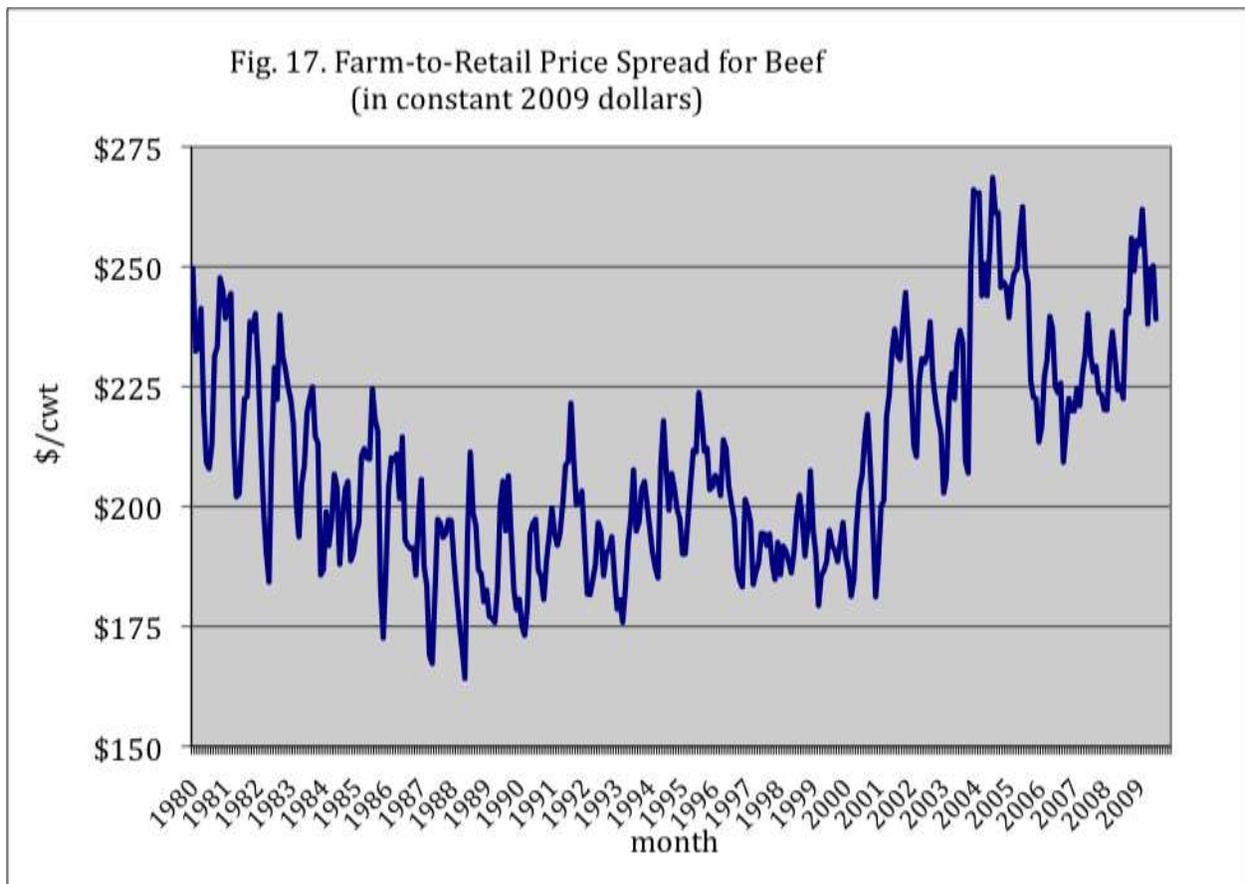


In a competitive market one would expect net returns averaged over a long time period, such as a 12-13 year cattle cycle, to be the same for different cycles. Ignoring the negative returns for the past year, net returns to cattle feeding averaged \$36/head over the 1981-1994 period, but only \$14/head over the 1995-2008 period. Taking out the spike due to a ban on importation of Canadian cattle in 2003, returns to feeding averaged a *loss* of \$4 over the 1995-2008 period. This comparison suggests that prices paid for slaughter cattle have been depressed in the past decade.

GAO did not consider these matters. But, the GAO Report did conclude, “The 13 studies reviewed in this sector suggested that concentration has not enabled beef processors to pay farmers less than the competitive price for cattle or to charge retailers

more than the competitive price for beef.” The most recent data used in any of the referenced studies was 1996. Much has changed in the beef industry since 1996, as is obvious from inspection of beef price and marketing margins in the last decade.

Fig. 17, below, shows the inflation adjusted farm-to-retail price spread for beef from Jan. 1980 through July 2009. This data was obtained by USDA and are for a specified grade of animal (choice) and specified cuts of meat sold in the same marketing channel over the full time period. Consequently, there are no quality changes or marketing changes in data shown in this chart.



Even more specific data, compiled in tabular form, is supplied by the Department of Agriculture’s Economic researchers. USDA ERS data (Fig 18) discloses these facts.<sup>98</sup>

<sup>98</sup> <http://www.ers.usda.gov/Data/MeatPriceSpreads/> last updated August 14, 2009. Data not corrected for inflation.

**Fig. 18. Beef price spreads, in nominal dollars [Not Adjusted for Inflation]**

Date	Retail value	Wholesale value	Gross farm value	Byprod. allow.	Net farm value	Total	Whl. to retail	Farm to whl.	Farmers' share	
	Cents per pound of retail equivalent								Percent	
	Annual averages									
2003	374.6	222.9	201.2	19.9	181.3	193.3	151.7	41.6	48.4	
2004	406.5	218.9	203.5	19.8	183.7	222.8	187.6	35.2	45.2	
2005	409.1	226.1	211.3	19.6	191.7	217.4	183.0	34.4	46.9	
2006	397.0	228.0	206.6	19.3	187.3	209.7	169.0	40.7	47.2	
2007	415.8	231.0	222.6	24.8	197.8	218.0	184.8	33.2	47.6	
2008	432.5	234.7	223.2	26.2	197.0	235.5	197.8	37.7	45.5	
	Quarterly averages									
2006	III.	392.7	226.9	205.1	19.2	185.9	206.8	165.8	41.0	47.3
2006	IV.	394.4	223.1	209.9	21.3	188.6	205.8	171.3	34.5	47.8
2007	I.	405.4	235.8	218.6	22.8	195.8	209.6	169.6	40.0	48.3
2007	II.	426.5	241.5	226.8	24.8	202.0	224.5	185.0	39.5	47.4
2007	III.	417.7	222.5	221.6	25.6	196.0	221.7	195.2	26.5	46.9
2007	IV.	413.4	224.4	223.2	26.1	197.1	216.3	189.0	27.3	47.7
2008	I.	416.3	224.8	218.5	27.3	191.2	225.1	191.5	33.6	45.9
2008	II.	423.6	235.3	223.0	27.3	195.7	227.9	188.3	39.6	46.2
2008	III.	445.9	249.7	236.9	29.5	207.4	238.5	196.2	42.3	46.5
2008	IV.	444.0	229.5	214.3	20.7	193.6	250.4	214.5	35.9	43.6
2009	I.	433.1	216.3	197.8	16.4	181.4	251.7	216.8	34.9	41.9
2009	II.	429.4	221.5	202.6	17.4	185.2	244.2	207.9	36.3	43.1

Academic studies relied on by GAO only covered the time period represented in the left half of Fig. 17. As can be seen, the gross farm-to-retail margin declined during the 1980s. This downward trend is consistent with a competitive market in which there are efficiency gains or lower real wages paid to packing plant and retail meat counter employees. Beef packers achieved efficiency gains in the 1980s as they switched to larger plants. Wages paid to animal slaughter and processing facility workers also declined substantially during this period (see Fig. 7).

These flaws are particularly troubling when added to the GAO Report's failure to even mention captive supply in the beef industry.<sup>99</sup> Empirical studies all show a strong, statistically significant negative relationship between captive supply and cash price.<sup>100</sup>

Packers have often claimed that they need captive supplies "to be assured of a dependable supply of slaughter animals." Fig. 19 shows domestic beef production. This chart shows the amplitude of production changes are greater with extensive captive supply than during the 1980s when captive supplies were small or nonexistent. Actual production data suggests the packers' claim that captive supplies assure a dependable supply is nothing more than pretext. In fact, the supply of animals to slaughter is consistently sufficient; the packer's issue is price, and market power, not availability of raw goods.

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<sup>99</sup> See, *Market Structure of the Livestock Industry*, testimony of Dr. Robert Taylor to US House of Representatives Committee on Agriculture, Subcommittee on Livestock, Dairy and Poultry (April 17, 2007).

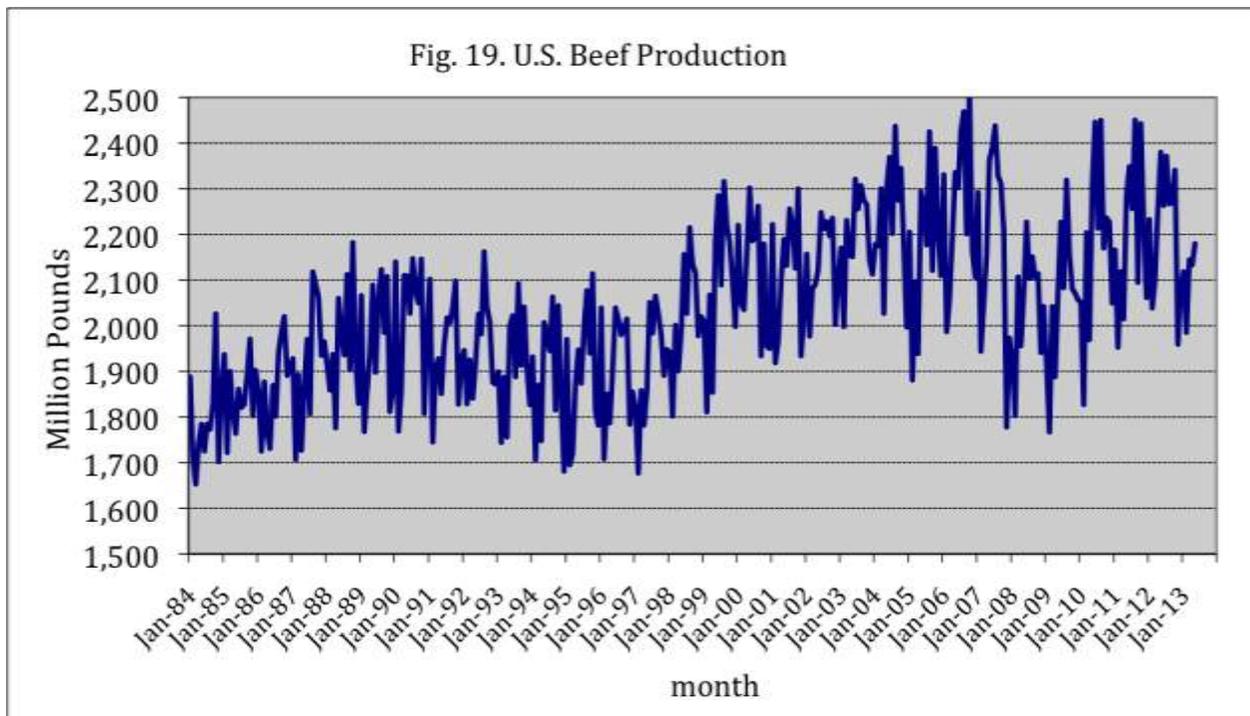
<sup>100</sup> Robert Peterson was president of IBP, Inc. acquired by Tyson Foods, Inc., a processor, and now functioning as Tyson Fresh Meats, made essential admissions about use of market power. Peterson first worked within the industry as a cattle buyer and who, as CEO of IBP (now Tyson), was responsible for acquisition of about one-third of fed cattle slaughtered nationally over 17 years. Peterson emphasized the leverage the packer obtained in the cash market with captive supplies in talks to cattlemen in 1988, just before IBP had significant captive arrangements, then again in two talks to cattlemen in 1994. Selected excerpts follow:

"...our competitors are promoting contracts... and seeking more. These (forward) contracts coupled with packer feeding could represent a significant percentage of the fed cattle during certain times of the year ... Do you think this has any impact on the price of the cash market? ... you bet! ... We believe that it's having a significant impact on the market—on the cash market place."

"...we believe that some of those who are feeding cattle and using forward contracting are creating aberrations within the market place by coming in and out of the market; that is not reflecting the true value of the cash market."

"But with the packers in the feeding business and forward contracting, there's going to be a major, major shift against the leverage system."

"In my opinion the feeder can't win against the packer in the real fair play if we go into the feeding and the hedging program."



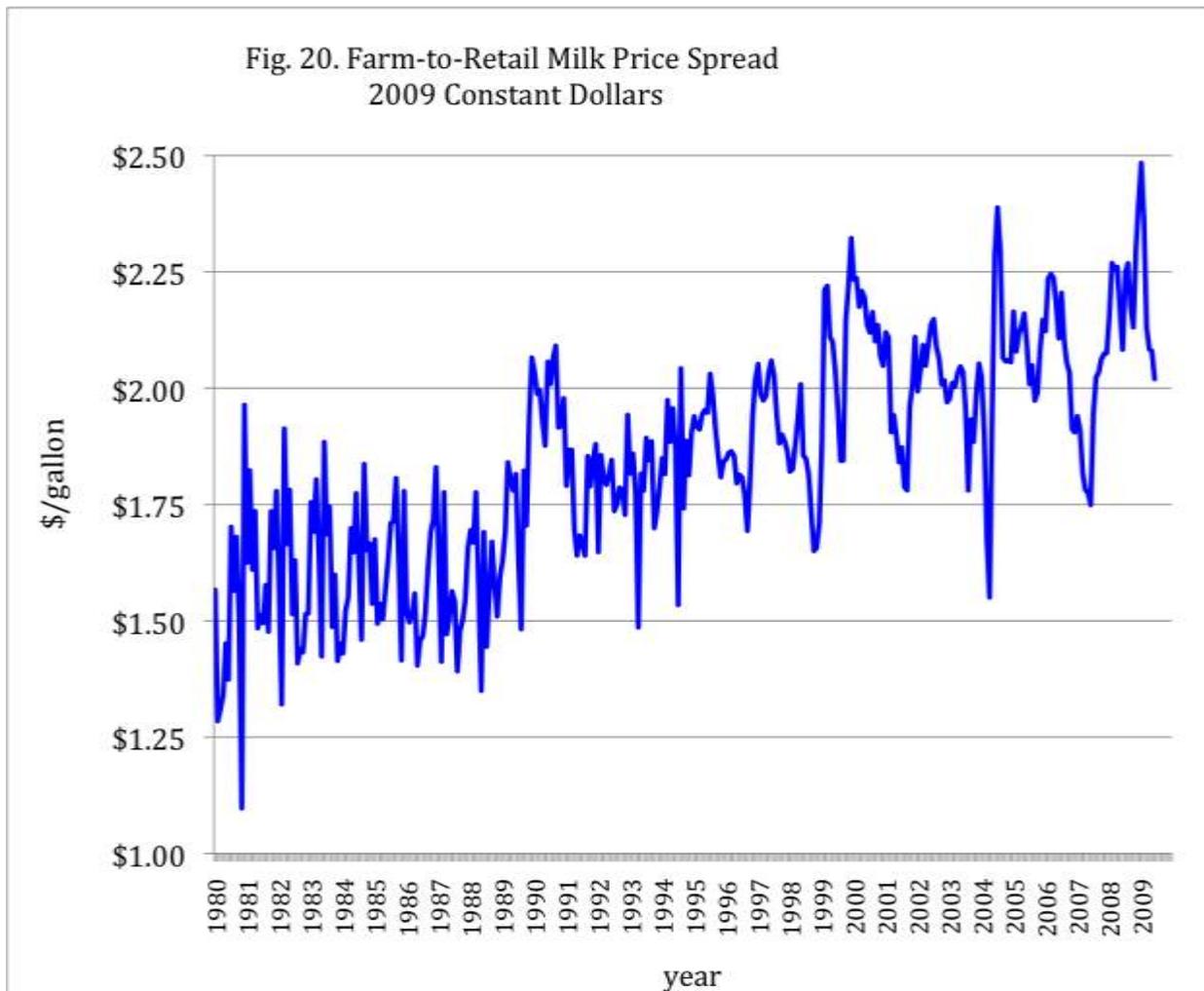
The GAO’ work in beef is far from comprehensive. In fact, it fails to demonstrate a grasp of the industry. This is true in other sectors as well.

### **Dairy Processing**

The GAO’s consideration of the dairy industry also discloses superficiality and misunderstanding. The GAO Report does not deal with separate market order areas, the federal milk marketing order’s oligopsonistic consequences, the problem of imports of milk protein concentrates and casein supplies, or other fundamentals impacting dairy farming and dairy products offered to consumers.

The GAO Report concluded, *“Overall, four studies found that concentration in dairy processing had little or no adverse impact on commodity or food prices.”* Again, GAO did not consider all the evidence. These USDA figures document the farm to retail

spread for milk (see Fig. 20).<sup>101</sup> Fig. 20 discloses a substantial upward trend in the inflation adjusted farm-to-retail price spread for a gallon of whole milk beginning in 1990 is apparent from Fig. 20. Since marketing costs have not increased, data shown in Fig. 20 are strongly suggestive of market power exertion between the dairy and the milk consumer. Major UK retailers accepted fines amounting to 116 million pounds imposed by the UK Office for Fair Trading for price collusion with milk and dairy product processors during the early 2000s.<sup>102</sup> The global economy for dairy products



<sup>101</sup> USDA Economic Research Service data, <http://www.ers.usda.gov/Data/FarmToConsumer/pricespreads.htm#dairy>

<sup>102</sup> Tim Lloyd, Steve McCorriston, Wyn Morgan, Anthony Rayner and Habtu Weldegebriel, "Buyer Power in U.K. Food Retailing: A 'First-Pass' Test," *Journal of Agricultural & Food Industrial Organization*, Vol 7, Article 5, 2009, p. 26.

affects domestic prices. This subject, not considered by GAO, has a known impact on dairy markets. It is so extensive a topic that it is reserved, by the authors, for a separate study.

The United States Department of Justice, as early as 2001 and again in 2002, found concentration in dairy markets was a serious problem, even though the concentration involved producer-owner cooperatives. In December 2002, DOJ challenged Suiza Foods' proposed acquisition of Dean Foods, and in April 2003, it challenged Dairy Farmers of America's acquisition of Southern Belle Dairy Co. LLC. The Department required Suiza Foods to change its originally-proposed acquisition of Dean Foods in two ways. First, it was required to divest 11 processing plants in eight states to try to preserve some competition for milk. Second, it was required to modify its supply contract with DFA.

Since these events occurred, matters have worsened. The American Antitrust Institute observed, in 2004:

While the reach of antitrust law with regard to agricultural coops has been limited by certain statutory exemptions, it appears to us that antitrust can fairly clearly reach the type of agreements involved in the DFA/NDA/Hood transaction. This, then, means it will be up to the Department of Justice... to determine if the transaction is anticompetitive on... vertical foreclosure grounds....

Events in the dairy industry appear to be rushing toward an end-game, and antitrust intervention at this point, if it occurs, will undoubtedly come late in the game.<sup>103</sup>

The dairy industry's problems are multiple. In addition to concentration, price is based upon the Chicago Mercantile Exchange's cheese trading. The cheese futures trade car lot units of cheddar cheese in sessions well documented as lasting approximately 30 minutes per week. Fluid milk, milk powder concentrate, and casein, do not trade on the

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<sup>103</sup> H Miykawa, *Competitive Issues in the Dairy Industry; the Pending DFA/NBH/Hood Transaction*, (American Antitrust Institute 2004).

CME. The cheese trade is believed to involve 40 or fewer traders who market 80 percent of the cheese in the United States. The cheese trade is dominated by no more than a half dozen trading firms.<sup>104</sup> GAO did not investigate the identity and role of processing firms in the cheese market.

Fig. 20, *supra*, shows the farm-to-retail marketing margin for a gallon of whole milk, expressed in 2009 dollars. From the chart, it can be seen that there was essentially no trend to the spread in the 1980s, but that it has been trending upward strongly for about 20 years. Studies referenced by GAO did not use data shown in the right half of this chart. Since inflation adjusted wage rates in food processing and retailing have been constant and productivity trending upward, exertion of market power is the only plausible explanation for the farm-to-retail spread increasing by about 30 percent.

GAO's Report did not consider this data. Its daily impact can be confirmed readily by random interviews of dairy farmers who are suffering financial failure at unprecedented rates. As demand holds steady and supply of raw milk decline, prices remain below production costs month after month, even after government buyouts of cows to reduce fluid milk availability. The reason: increased imports of milk fats and substitutes by dominant milk processors.<sup>105</sup>

## **Poultry Markets**

Poultry was vertically integrated in the 1950s, a half century ago. Since then, there has been no viable cash market for broilers in the United States. Instead, processors, called integrators in the chicken industry, contract with growers to provide production facilities (chicken houses) and labor for day-to-day management and care of

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<sup>104</sup> For a comprehensive description of the cheese industry and its impact on dairy, see Ham, L.G., and March, R., *The National Cheese Exchange: Impacts on Dairy Industry Pricing, Dairy Markets and Policy Issues and Options*, (February 1995) (downloadable at [www.cpdmp.cornell.edu/CPDMP/Pages/Publications/Pubs/M7.pdf](http://www.cpdmp.cornell.edu/CPDMP/Pages/Publications/Pubs/M7.pdf))

<sup>105</sup> Sen. Bernie Sanders and Sen. Chuck Schumer recognized this with demands for investigations in August 2009. GAO used aged dairy data.

growing birds.<sup>106</sup> Poultry packers, call “integrators,” supply and own the birds throughout the birds’ lives. They pay farmers to add weight, requiring they be paid based on the pounds delivered at the end of the growing season. The GAO Report mentions none of these facts.

Chicken producers make huge investments in houses that may cost from \$500,000 to \$1 million, have a 20-30 year economic life, and have no practical alternative use. Once built, the producer is at the integrator’s mercy. The integrator controls the breed, quality of chicks, feed deliveries, quality of feed, timing of deliveries of both chicks and feed, and the pay system for the grower. Economists call this a “tournament pay system” but, due to variable feed and chick quality, more of a “lottery.”

Growing chickens is a family business. Yet, one becomes a contract producer, now, “by invitation.” One who wants to produce chickens must have a contract with an integrator. Deliveries of sickly or underweight chicks, late deliveries, bad feed deliveries, bad advice from the integrator’s field representative, or simple pricing power can all ruin the producer’s business. This can occur quickly. It is well known in the chicken industry that producers dare not speak out against integrators.<sup>107</sup>

Despite these facts, the chicken industry does not “appear” to be excessively concentrated based a calculation of the HHI and the four firm concentration statistics. The CR4 for the broiler industry may be only 57 percent. Standing alone, this suggests concentration is no problem. But, with a single merger, a cluster of growers in a particular region can be left with no contracting alternative even at the end of a contract term. Even where there are multiple integrators, tacit collusion of integrators can suppress grower switching. Simply, the CR4 statistics comment on the macro market, but ignore regionality, transportation restrictions, and other barriers to distant markets.<sup>108</sup>

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<sup>106</sup> For spread statistics concerning poultry by the USDA’s ERS, see <http://www.ers.usda.gov/Data/MeatPriceSpreads/>

<sup>107</sup> Taylor, C. Robert, *Restoring Economic Health to Contract Poultry Production*, Agriculture and Resource Policy Forum, Auburn University College of Agriculture (May 2002).

<sup>108</sup> *Id.*

Highly regarded University of Missouri Agricultural Economist Harold Breimyer's warning from almost a half-century ago has gone unheeded:

Not the least among the consequence of the integration of broiler production in the United States is the change in the status of the grower. Formerly an independent entrepreneur in the traditional sense, he bought his supplies on the open market; he directed his enterprise as he saw fit; he was at once manager, investor of capital, and worker; and he sold his produce also on the open market for the best price it would bring. If he is still in the business, in all probability he is a contract grower. In some areas he not only would find it hard to survive as an independent producer but might not be able to operate at all because no processing outlet would be available to him. Fully integrated production brings to an end one of the old and established characteristics of a freely competitive market system, namely, freedom of entry.<sup>109</sup>

To some extent, GAO's inability to find direct data to support the impact of concentration on poultry farmers is understandable. Once a market is destroyed, useful data cannot be gleaned from it, just as a house cannot be inhabited once it has burned to the ground.<sup>110</sup> The GAO Report states "*We did not identify reliable information on prices poultry farmers received (p. 15).*" USDA does not report prices contract poultry producers receive. Most poultry integrators participate in a common private reporting service, known as AgriStats, and share information on contract grower pay by month. They do not share this information with growers or outsiders.

The sharing of price information by so-called competitors is well known as a significant antitrust issue. GAO was apprised of this practice in the poultry sector, but never mentioned it in the Report, and apparently did not seek to obtain "reliable information on prices poultry farmers received." Similarly, GAO overlooked detailed

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<sup>109</sup> Harold F. Breimyer, Individual Freedom and the Organization of Agriculture, University of Illinois Press, 1965, p. 214.

<sup>110</sup> Cf., Tim Lloyd, Steve McCorriston, Wyn Morgan, Anthony Rayner and Habtu Weldegebriel, "Buyer Power in U.K. Food Retailing: A 'First-Pass' Test," *Journal of Agricultural & Food Industrial Organization*, Vol 7, Article 5, 2009.

information on contract grower pay showing growers have not received a competitive return for labor, management, capital, and risk for over 10 years.<sup>111</sup>

## Hog Markets

Meat packers have robbed the pork industry of its competitiveness. Hog producers fear their business is being “chickenized”, but even now, they fear taking affirmative action before the industry’s agonal competitive breaths are exhaled. Nearly all swine are now bought and sold under exclusive contracts, formula pricing, and other captive supply arrangements that “marry” a single producer with a single packer for a long term. Departure from one packer to another is seen as disloyalty and is seldom permitted to occur within the industry.

The pork industry suffered openly from dramatic problems as long as ten years ago. In a report called *Killing Competition with Captive Supplies*, the Land Stewardship Project found that in 1999 about 70 percent of all hogs were sold through contracts, bypassing the open market; 60 percent of pork slaughter was controlled by four firms.<sup>112</sup>

Purdue University reported, after a comprehensive three-year research study conducted between 2002 and 2005, that the U.S. pork industry experienced substantial structural changes.<sup>113</sup> Purdue’s study found four slaughter firms, by the end of the 20<sup>th</sup> century, killed 60 percent of the pigs in the U.S. and produced nearly 30 percent of them on company owned or contracted farms. The study empirically modeled the industry and evaluated it, making findings. The study concluded there was a dramatic restructuring of the U.S. pork industry. Purdue’s researchers noted:

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<sup>111</sup> See the Farm Business Analysis summary for poultry available at <http://www.aces.edu/menus/Financial.tmpl>. See also C. Robert Taylor, “Restoring Economic Health to Contract Poultry Production,” [Agricultural and Resource Policy Forum](#) Auburn University, College of Agriculture, May, 2002.

<sup>112</sup> Brian DeVore, Report: *Packers are Killing Competition with Contracts, Other “Captive Supply” Arrangements*, [Motion Magazine](#), May 3, 1999, summarizing *Killing Competition with Captive Supplies*, LS Land Stewardship Project, White Bear Lake, MN.

<sup>113</sup> Foster, *Estimating the Changing Market Conduct in the U.S. Pork Slaughter Industry*, Agricultural Economics, Purdue University, [reis.usda.gov/web/crisprojectpages192873.html](http://reis.usda.gov/web/crisprojectpages192873.html).

Traditionally, government inquiries into anti-competitive activity in the U.S. pork industry have centered on the relationship between hog producers and pork slaughter firms. But, the results indicate that attention might be better focused on the pricing of pork products. Future research could analyze the interactions between pork wholesalers and retailers to provide better understanding of the dynamics of pricing wholesale and retail pork.<sup>114</sup>

The Purdue study concluded that hog farmers lack market power. GAO found that four firms controlled approximately 64 percent of hog slaughter. But, current USDA data discloses the swine trade (Fig. 21) actually proves there is no real “trade” at all as the cash market for hogs is nearly gone:

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<sup>114</sup> *Id.*

**Fig. 21. USDA Data Showing Limited Cash Trading in Hogs**

LM\_HG204

Des Moines, Iowa

Fri, Aug 28, 2009

USDA Market News

IOWA/MINNESOTA DAILY DIRECT PRIOR DAY HOG REPORT BASED ON STATE OF ORIGIN  
 PLANT DELIVERED PURCHASE DATA FOR Thursday, August 27, 2009

**CURRENT VOLUME BY PURCHASE TYPE  
 BARROWS & GILTS LIVE AND CARCASS BASIS**

	Actual Prior Day	Actual Week Ago	Actual Year Ago
Producer Sold			
Negotiated	11,499	13,067	11,844
Other Market Formula	7,821	11,055	14,093
Swine or Pork Market Formula	88,134	85,136	65,915
Other Purchase Arrangement	6,905	8,525	11,394
Packer Sold (all purchase types)	13,640	9,682	11,887

	NEGOTIATED	OTHER MARKET FORMULA	SWINE OR PORK MARKET FORMULA	OTHER PURCHASE ARRGMENT	TOTALS/ WTD AVG
<b>Barrows &amp; Gilts (carcass basis):</b>					
Producer Sold					
Head Count	8,197	7,821	85,939	6,905	108,862
Base Price	45.65	45.30	46.35	50.64	46.49
Packer Sold					
Head Count					12,380
Base Price					50.81

NEGOTIATED PURCHASE (Including Packer Sold)

Barrows & Gilts (carcass basis): 8,197  
 Compared to Prior Day's closing weighted average (LM\_HG204), 0.04 lower  
 Base Price Range \$39.00 - \$46.96, Weighted Average \$45.65  
 Base Price is the price from which no discounts are subtracted and no premiums are added.<sup>115</sup>

This USDA data in Fig. 21 makes it clear packers control the swine market and are able to manipulate as little as 9 percent of the total trade in order to control procurement and procurement prices. Hog prices, unfortunately, have been at low ebb<sup>116</sup>

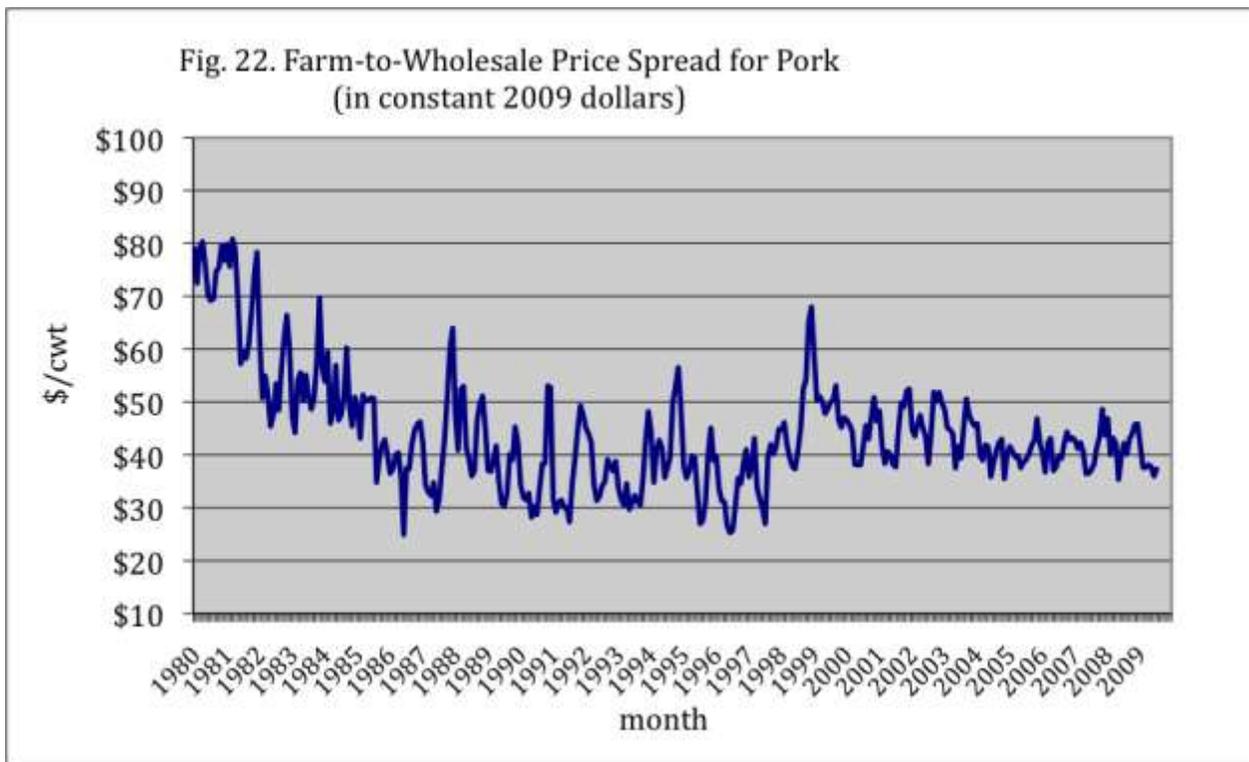
At the same time, grocery store pork prices remained remarkably high. As Reuters reported on August 5, 2009, "the price at the grocery store was up but the cost to

<sup>115</sup> August 28, 2009 USDA Market News, [http://www.ams.usda.gov/mnReports/lm\\_hg204.txt](http://www.ams.usda.gov/mnReports/lm_hg204.txt)

<sup>116</sup> *Lowest Hog Prices Seen in Two Years*, Farm Futures (August 7, 2009).

groceries was down and what farmers were getting paid for hogs was down,” Reuters quoted Ron Plain, a livestock economist at the University of Missouri.<sup>117</sup>

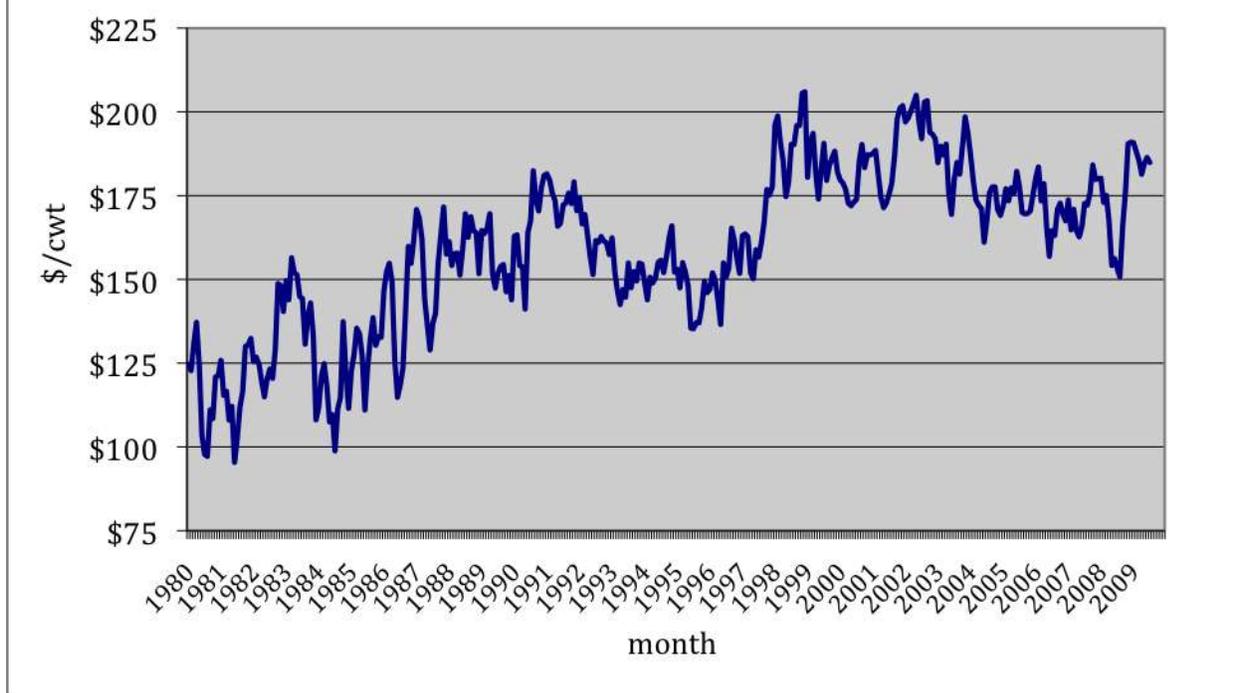
There is more economic evidence of this fact readily available, but not cited by GAO. Fig 22 shows the farm-to-wholesale price spread for pork. Like beef, there is a downward trend in this spread during the 1980s that is consistent with efficiency gains and lower packing plant wages in a competitive market. For the 1990s the trend is flat, as it was during the last decade. But, the average spread increases about 10% for the 2000s compared to the 1990s.



The wholesale-to retail price spread for pork is shown in Fig 23, below. This price spread is substantially higher in recent years, suggesting market power exertion between the pork packer and the final pork consumer.

<sup>117</sup> Reuters, *US Pork Prices High Despite Slump in Hog Values*, (August 5, 2009).

Fig. 23. Wholesale-to-Retail Price Spread for Pork  
(in constant 2009 dollars)



### Seed and Seed Traits (Traits and Genetics Differ)

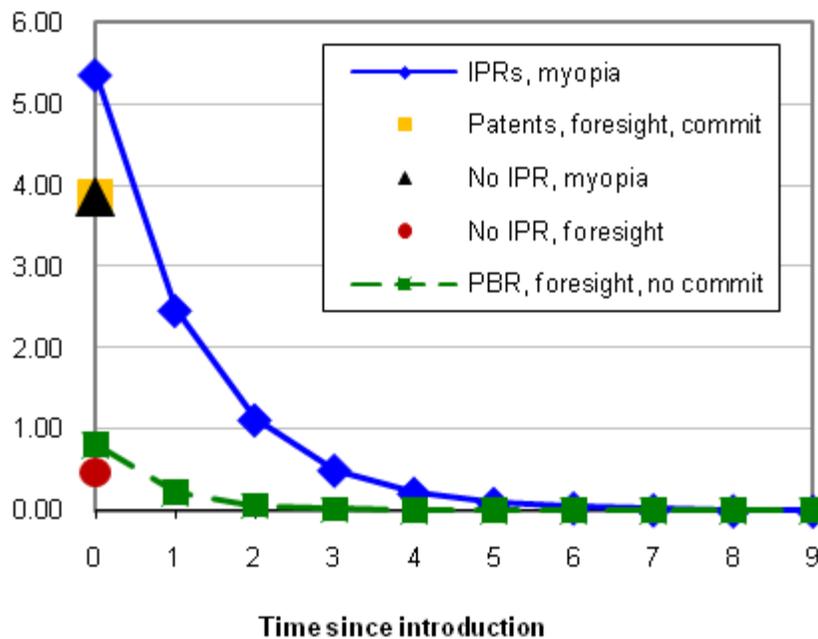
Seed traits, often confused with genetics but actually different, are dominated by one U.S. company. Traits are characteristics added to seed to make a plant have certain features, such as the ability to withstand certain herbicides, while retaining the plant's reproductive genetics. USDA ERS data led its researchers to comment as follows, identifying one seed to exemplify dominance:

Recent studies of the world commercialization of the Monsanto-owned Bt insect-resistance trait in cotton provide some idea of the empirical relevance of these scenarios. In India, where no IPRs for varieties or traits had been available prior to 2005, Bt cotton was introduced in hybrid cotton and Qaim (2003) found that in 2001 the Bt hybrid seed cost farmers 287% more than a non-Bt counterpart. As a hybrid, there would have been little incentive for farmers to save seed, so this premium is essentially a lease rate on the trait, allowing the seed company to reap normal monopoly rents equal to about half the potential social benefits. But

Tripp et al. (2007) report that by 2004, the monopoly was substantially eroded by clandestine breeding to incorporate the Bt gene.<sup>118</sup>

Economic benefits, i.e., the intangible advantages of economic activity do not justify or explain the Monsanto hold on the seed traits market. Perrin and Fulginiti data portrayed in Fig. 24, discloses specifics about sales, time, and prices for seed and traits<sup>119</sup> as they found Equilibrium time paths of trait price,  $P_t$ , for  $T = 10$ ,  $i = 0.05$ .

Fig.24. Time-Paths of Trait Prices Under Alternative Market Structures.



Perrin and Fulginiti found producer surplus (trait owner revenue) amounts to  $\delta/4$ , which for  $T = 10$  and  $i = 0.05$ , equals 0.06 MSWB (applicable welfare benefits). . They found the present value of consumer surplus consists, for first-year buyers  $((k_0/2 - \delta/2)/2 + k_0/8)$  plus the value of these MSWB, calculated at  $\delta (k_1/8)$  for a total of 0.91 MSWB. This yields a total social

<sup>118</sup> Perrin & Fulginiti, *Pricing and Welfare Impacts of New Crop Traits: The Role of IPRs and Coase's Conjecture Revisited*, 11 AgBioForum No. 2, Article 7, [www.agbioforum.org/v1n2/v1n2a07-fulginiti.htm](http://www.agbioforum.org/v1n2/v1n2a07-fulginiti.htm). The Tripp findings are not consistent with market conditions and ongoing consolidation of the marketplace.

<sup>119</sup> *Id.*

welfare benefit of 97% of the maximum available from the trait (Table 19, last column). These values were found to be a function of time horizon,  $T$ , and interest rate,  $i$ . For combinations of  $T$  from 5 to 20 years and  $i$  from 0.01 to 0.20, owner benefits range from 0.03 to 0.14 MSWB (for  $T = 20, i = 0.01$ ; and  $T = 5, i = 0.20$ , respectively). Consumer benefits were found to range from 0.96 to 0.79 MSWB and total social benefits are above 93% in all cases. Social welfare benefits are high because nearly complete adoption occurs immediately—time horizon and discount rate have their primary effect on the distribution of these maximum benefits, rather than the total social benefits realized. Perrin and Fulginiti compiled this data (Fig.25).

**Fig. 25. Theoretical social welfare benefit achieved, vis.maximum SWB achievable from a trait.**

		Intellectual property rights regime		
Market characteristic	Welfare recipients	Strong patents	Strong plant breeders rights	None
<b>Myopia</b>	Trait owners	0.69*	0.69*	0.50
	Consumers	0.24*	0.24*	0.47*
	Total social welfare	0.93*	0.93*	0.97*
<b>Foresight w/commitment</b>	Trait owners	0.50	0.50	0.06*
	Consumers	0.25	0.25	0.91*
	Total social welfare	0.75	0.75	0.97*
<b>Foresight w/o commitment</b>	Trait owners	0.50	0.11*	
	Consumers	0.25	0.84*	
	Total social welfare	0.75	0.95*	(as above)

\* These fractions will vary with trait life,  $T$ , and interest rate,  $i$ , here 10 years and .05, respectively.

Shi, Chavas and Stiegert, analyzed bundle pricing and market concentration in the corn seed market using farm level data from 2000-07. They found:

The partial effects of changes to the traditional Herfindahl indexes (HHI) for each trait ... indicate that an increase in market concentration for

conventional seeds has a positive and statistically significant effect on the price of conventional seeds.<sup>120</sup>

There is growing concern that seed companies control genetic modification of gene trait research, and even scientific publications.<sup>121</sup> A coalition of twenty-four corn insect scientists, speaking through Cornell University entomologist Elson J. Shields, expressed significant concern:

Because the scientists rely on the cooperation of the companies for their research—they must, after all, gain access to the seeds for studies—most have chosen to remain anonymous for fear of reprisals. The group has submitted a statement to the EPA protesting that “as a result of restricted access, no truly independent research can be legally conducted on many critical questions regarding the technology.”

It would be chilling enough if any other type of company were able to prevent independent researchers from testing its wares and reporting what they find—imagine car companies trying to quash head-to-head model comparisons done by *Consumer Reports*, for example. But when scientists are prevented from examining the raw ingredients in our nation’s food supply or from testing the plant material that covers a large portion of the country’s agricultural land, the restrictions on free inquiry become dangerous.<sup>122</sup>

The seed industry’s dominant single firm is clearly the commanding market presence and power in the seed industry. Seed pricing forces buyers to endure and pay prices reflecting monopoly market power in the seller’s hands.

### **Increasingly Problematic Business Practices**

Two increasingly prevalent business practices that merit detailed, objective economic analyses as potentially unfair and/or anticompetitive are: (a) partial vertical

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<sup>120</sup> Guanming Shi, Jean-Paul Chavas, and Kyle Stiegert, “An Analysis of Bundle Pricing: The Case of the Corn Seed Market,” Food System Research Group, University of Wisconsin-Madison, Working Paper FSWP2008-01, Nov. 2008.

<sup>121</sup> See n. 25, *supra*.

<sup>122</sup> *Do Seed Companies Control GM Crop Research?* Scientific American (Aug 13, 2009).

integration of food processors backward into livestock and crop production, and (b) long-term fixed-price contracts between food retailers and food processors.

The domestic poultry industry vertically integrated in the 1950s. In more recent years, beef, pork and other ag commodities have been integrating backward into raw material production, but only partially. It is doubtful that these industries will fully integrate as the poultry industry did.

Limited evidence suggests that the food processors are integrating backward to cover predictable high probability demand. In other words, if a processor has a prime contract with a retailer for 60 percent of its production, then it integrates backward for 60 percent of its production. The processor obtains the other 40 percent of its production, which may be marketed with less certainty than with prime buyers from the cash market. The concern is that when demand shifts, such as recent decline in demand for meat and poultry, the processor may cut back purchases on the cash market but continue full production with integrated operations. This makes the cash market the shock absorber for the industry, and raises issues of fairness.

Partial vertical integration through marketing agreements—the dominant captive supply arrangement in the beef industry—raises issues of market access. Marketing agreements generally insure the feeder a market, an assurance not given to feeders selling on the cash market. Thus, marketing agreements raise fairness issues over both market access and competition issues about how they distort buyer incentives and are used to manipulate the cash market.

Long-term fixed-price contracts between food processors and retailers also raise competition concerns. Public data on the extent of these contracts is not available, but indications are that they account for 50-80 percent of the meat and poultry products sold on the domestic retail market. The problem is that when demand shifts in the short term, as it often does, these contracts will limit market adjustments. In a truly competitive market, a shift in demand will result in both price and quantity adjustments at all market levels, i.e., retail, wholesale and farm. But with a fixed price contract, retail purchasers

adjust the quantity bought, but not the price paid. This transfers the entire downward adjustment back to the farm level, leading to price and quantity variations larger than experienced in a competitive market.

Ultimately, concern must focus on the basic theory and purposes of antitrust laws. The GAO Report does not reach this issue, either. Reference to *The Antitrust Legacy of Thurman Arnold*, by Spencer Weber Waller, is enlightening. Arnold was a highly regarded Columbia University economist and author of the celebrated work, *The Folklore of Capitalism*.<sup>123</sup> Arnold believed in a number of non-economic justifications for antitrust as part of the attack on concentrated economic power in an inefficient democracy that both destroyed local business and drained away local capital. In 1955, Arnold wrote:

The most significant evil at which the antitrust laws are aimed is the evil of absentee ownership and industrial concentration that makes for such depressions. We were slow to learn after 1929 that great corporate organizations cannot continue to take money out of local communities without somebody putting it back.

The purpose of the antitrust laws is to ensure freedom of business opportunity. They are not designed to protect small business from larger and efficient competitors. They are not designed to prevent the growth of nationwide business enterprises so long as that growth is a product of industrial efficiency. Even if, through greater efficiency in operation and distribution, a corporation achieved a monopoly, that in itself would not violate the Sherman Act. But this has never yet happened. Monopolies have been built up by using financial strength to buy out competitors or force them out of business. It is this sort of growth and only this sort that the antitrust laws are designed to penalize ... This process repeated in industry after industry during the period between the first World War and the depression created a system of absentee ownership of local industries which made industrial colonies out of the West and South, prevented the accumulation of local capital and siphoned the consumers' dollars to a few industrial centers like New York and Chicago.”<sup>124</sup>

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<sup>123</sup> Arnold, Thurmon, *The Folklore of Capitalism* (2000).

<sup>124</sup> Letter from Thurman W. Arnold to Alfred Friendly, August 9, 1961, in *Voltaire and the Cowboy: The Correspondence of Thurman Arnold*, E. Gressley (1977).

The need to rediscover the purposes for antitrust laws and their enforcement has never been more acute than now. Agriculture's markets are besieged by lack of competition and monopsony power. Transparent, vibrant markets with no dominant buyer or seller wielding inappropriate, manipulative power are essential. Without balance being restored, market gyrations will continue, concentration will end with an unacceptable accumulation of more and more wealth in fewer and fewer hands, and both producers and consumers will continue to suffer.

### **Conclusion**

Weighed fairly and appropriately the evidence proves excessive market concentration exists in all major agricultural and food markets. The concentration creates market power in the hands of the concentrated few. Market power is prone to be abused. The packers and processors are engaged in the misuse, or abuse, of market power. Both producers and consumers of food are harmed as a result.

Care must be taken to avoid the seductive reassurance that the food processors who dominate, and abuse agricultural markets now pose no risk to the public because they are "too big to fail". America's recent experience with big bank failures should be lesson enough that the nation cannot afford a similar mistake with its food supply. We might be able to survive without bankers, but we cannot survive without food.

It is worth noting that, in 2005 persons no less distinguished than the President and Vice President of the Federal Reserve Bank in Minneapolis wrote a book length warning directed to policy makers about the risks of public expectations for a federal bailout following large bank failures. Their book, Stern & Feldman, *Too Big To Fail: The Hazards of Bank Bailouts*,<sup>125</sup> enjoyed a favorable forward by Paul Volcker<sup>126</sup>, an economist currently providing direct advice to President Obama. But, its warning was not

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<sup>125</sup> Stern & Feldman, *Too Big To Fail: The Hazards of Bank Bailouts* (Brookings Institution Press 2004).

<sup>126</sup> Mr. Volcker was Federal Reserve Chairman 1979 – 1987, and is currently Chairman of President Obama's Economic Advisory Board.

taken seriously enough to turn the tide against the thought that the banking system was safe because its big entrants were “too big to fail”. A similar mistake with food could have dire consequences to health and domestic stability; history proves such consequences are predictable among populations suddenly faced with food shortages.<sup>127</sup>

Immediately, abuse of market power threatens our family farms and ranches, and forces concentration of lands and ag production in fewer hands. Major firms in each of our top food sectors are so large that a failure by any one of them would have major ripple effect across the entire sector, and all of agriculture. These risks make agricultural market structure, in concentrated hands, a risk to everyone.

In the long run, the concentration and integration risk will continue to drive food prices up, bring an end to the nation’s affordable food policy and contribute to a rapidly deteriorating agricultural and rural economy. GAO’s conclusion that market concentration does not adversely impact prices is unfounded. To the contrary, market concentration in too few corporate hands poses price, biosecurity, and lack of redundancy risks to all American consumers. Corrective action is an urgent national need.

David A. Domina

C. Robert Taylor

October 5, 2009

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<sup>127</sup> Britain’s Chief Scientist, Professor Sir John Beddington speech to UK Sustainable Development Conference, “Climate Competitiveness 2: When the Global Ponzi Scheme Collapses (circa 2030) March 20, 2009, downloadable at <http://climateprogress.org/2009/03/20/competitiveness-green-jobs-global-warming-cap-and-trade-bill-ponzi-scheme/>