

ECONOMICS OF ANTITRUST IN AN ERA OF GLOBAL AGRI-FOOD SUPPLY CHAINS: LITIGATE, LEGISLATE AND/OR FACILITATE?

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I. INTRODUCTION

U.S. agriculture has historically tended towards increased concentration in larger plants and firms that leads to fewer competitors for processors or farms.¹

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1. See MICHAEL OLLINGER ET AL., ECON. RES. SERV., USDA, STRUCTURAL CHANGE IN THE MEAT, POULTRY, DAIRY, AND GRAIN PROCESSING INDUSTRIES iv (2005) (describing broad overview of concentration in titled areas), *available at* <http://www.ers.usda.gov/publications/err3/err3.pdf>; JORGE FERNANDEZ-CORNEJO, ECON. RES. SERV., USDA, THE SEED INDUSTRY IN U.S. AGRICULTURE: AN EXPLORATION OF DATA AND INFORMATION ON CROP SEED MARKETS, REGULATION, INDUSTRY STRUCTURE, AND RESEARCH AND DEVELOPMENT vii (2004), *available at* <http://www.ers.usda>.

This is largely due to the nature of commodity markets, which are defined by economies of scale, large fixed investments including land, equipment, and facilities, and products that are difficult to differentiate in the market. This in turn can lead to cost-based competition with very thin or zero economic profit margins. The primary method to gain a competitive advantage is to adopt technologies or gain economies of size that lower costs. This leads to increases in firm size and also vertical integration when there are complementary economies of size in sequential stages of production. With extreme competitiveness this can ultimately lead to oligopoly or even monopoly production. Therefore, the underlying nature of agricultural markets creates a form of “winner takes all” cost based competition wherein the market tends toward oligopolies. The more refined characteristics of the market place (risk and uncertainty, degree of product differentiability, perishability, barriers to entry, rivalry, and so on) determine whether firms engage in non-competitive behavior or continue to behave competitively.

This presents the essential conundrum in antitrust enforcement in agriculture. Economies of size and vertical integration lead to the economic efficiencies that drive the original smaller and more numerous firms to adopt those technologies and business structures allowing them to increase profits and out-compete their rivals. As these surviving firms concentrate and integrate, however, it raises the potential for the firms to extract economic rents (prices beyond marginal costs) from either suppliers or consumers. Knowing this potential, calls arise to restrict the business structures and size of firms to return to the size and business organization structure with less risk of using market power. However, in the absence of a clear illegal action under antitrust (collusion, raising rivals costs, carving up territories, price fixing, etc.) any action that seeks to improve competition by restricting the structures or organization of these firms has the risk of also destroying the efficiency gains from those structures. Of even greater concern is that these regulatory or legislative actions to improve competition have the potential to actually protect less efficient competitors and result in reduced overall economic welfare. As Kolasky notes, “[p]unishing dominant firms for their success, and handicapping them to protect their rivals, may have some

gov/publications/aib786/aib786.pdf; JAMES M. MACDONALD ET AL., ECON. RES. SERV., USDA, CONSOLIDATION IN U.S. MEATPACKING 1 (2000), *available at* <http://www.ers.usda.gov/publications/aer785/aer785.pdf>; MICHAEL OLLINGER ET AL., ECON. RES. SERV., USDA, STRUCTURAL CHANGE IN U.S. CHICKEN AND TURKEY SLAUGHTER 1 (2000), *available at* <http://www.ers.usda.gov/publications/aer787/aer787.pdf>.

appeal and may even produce short-term gains, but all too often the only longer-term winners are inefficient rivals protected from the rigors of competition.”²

This Article argues that the risks of making mistakes in separating efficiency gains from market power results requires care in applying litigation or legislation. This is particularly true when the evidence is based solely on market observations without consideration of the underlying production technologies, exchange structures and behavior of firms. In such cases the result may be as much inefficiency protection as antitrust protection. This Article proposes a more progressive—and perhaps more lasting—approach that involves addressing the underlying inefficiencies of agricultural markets such as transactions costs or other failures such as asymmetric information that lead to outcomes of concern to market participants and policy makers while avoiding the potential for welfare reducing restrictions directly on business organization and structures.³ New technologies in traceability and information systems provide the potential for these gains.

II. MEAT SUPPLY CHAIN MARKET STRUCTURE OVERVIEW

In 1985, the top four beef packers accounted for 50% of daily steer and heifer slaughter, but by 2006 this had risen to 79%.⁴ The Department of Justice (DOJ) filing, submitted by Ranchers-Cattlemen Action Legal Fund (R-Calf) in regard to the JBS/Swift proposed merger with National Beef, estimated that the

2. William J. Kolasky, *What is Competition? A Comparison of U.S. and European Perspectives*, 49 ANTITRUST BULL. 29, 41 (2004).

3. See G.O. Virtue, *The Meat-Packing Investigation*, 34 Q. J. OF ECON. 626 (1920). This historical publication provides an overview of the packer investigation that led to the 1921 Packer Consent Decree and ultimately the Packers and Stockyards Act. It provides excellent historical insights into questions faced today and provides some perspective. For example, data showing similar concentration ratios for today's meat processors are often compared to historical packers and taken as showing the market is more concentrated today. However, a significant difference emerges in that packers not only owned the livestock slaughter phase, but retail, railroad and cars, dairy processors, eggs, cheese, stockyards, and even banks, clearly having a scope not present in today's markets and with much less international trade in place. Regardless of those approaches, one can argue that continued attempts to 'penalize' those that originally emerged out of extremely competitive markets without addressing the underlying market failure issues will be repeated as they have been over the last 150 years.

4. GRAIN INSPECTION, PACKERS & STOCKYARDS ADMIN., USDA, PACKERS AND STOCKYARDS STATISTICAL REPORT: 2006 REPORTING YEAR 44 (2008), available at http://archive.gipsa.usda.gov/pubs/2006_stat_report.pdf [hereinafter PACKERS AND STOCKYARDS STATISTICAL REPORT: 2006 REPORTING YEAR].

merger would increase the *four* firm concentration to over 91% of slaughter.⁵ Pork processing has followed a similar trajectory with the top four pork packers representing 32% of the hog slaughter market share in 1985 and about 63% by 2006.⁶

This concentration also extends downstream to the retail sector. The food sales of the top four supermarkets as reported by Supermarket News was almost 51%, and Wal-Mart alone had nearly a 29% market share—more than any single company in any other segment of agriculture except feed manufacturing.⁷ To provide additional perspective, Wal-Mart is estimated to have over \$258 billion in global food sales and would rank among *countries* as 35th in gross domestic product.⁸

Figure 1 shows a supply chain representation of concentration by using a line graph linking each stage of the meat supply chain. The call for legal or legislative action in the sector is often related to the disparate levels of concentration in adjacent stages of the chain.

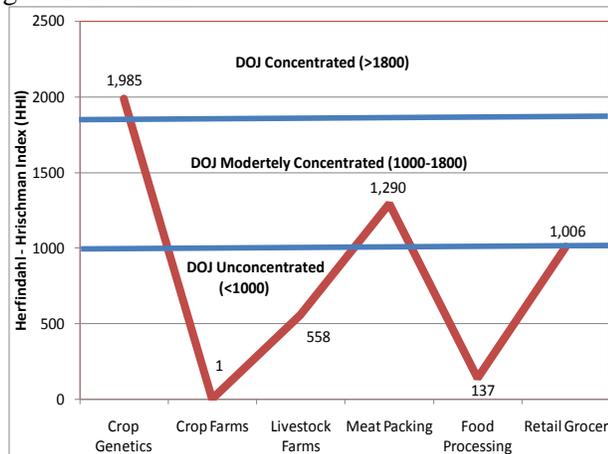


Figure 1. Meat supply chain market concentration.⁹

5. Plaintiff United States' Opposition to Non-Party R-CALF's and OCM's Motion for Reassignment and Consolidation, Exhibit A at 11, United States v. JBS S.A., No. 08-CV-5992 (N.D. Ill. Nov. 26, 2008).

6. PACKERS AND STOCKYARDS STATISTICAL REPORT: 2006 REPORTING YEAR, *supra* note 4, at 48.

7. *SN'S Top 75 Retailers for 2009*, SUPERMARKET NEWS, Dec. 12, 2008, available at <http://supermarketnews.com/profiles/top75/2009-top-75/>.

8. *Id.*; World Bank.org, Gross Domestic Product 2008 (Oct. 7 2009), <http://siteresources.worldbank.org/DATASTATISTICS/Resources/GDP.pdf>.

9. See U.S. DEP'T OF JUSTICE & FED. TRADE COMM'N, HORIZONTAL MERGER GUIDELINES 15 (rev. 1997), available at <http://www.justice.gov/atr/public/guidelines/hmg.htm> (The Herfindahl-Hirschman Index (HHI) is defined as the sum of the squared market shares of the top

However, not clear in this graph is the vertical integration now occurring between the farm sector and into food manufacturing. For example, in broiler production, Tyson Foods spans farm level, slaughter level, and food processing stages.¹⁰ This has created concerns about vertical restraint and foreclosure in markets, raising additional concerns about market power conduct.¹¹

III. CALLS FOR INCREASED ANTITRUST ENFORCEMENT IN AGRICULTURE

A. Legal Enforcement

The clearest statement of a shift in the philosophy of stricter antitrust enforcement is a recent statement by Assistant Attorney General Christine A. Varney to the United States Department of Commerce:

The lessons learned from this historical example [of depression era antitrust enforcement] are twofold. First, there is no adequate substitute for a competitive market, particularly during times of economic distress. Second, vigorous antitrust enforcement must play a significant role in the Government's response to economic crises to ensure that markets remain competitive.¹²

Ms. Varney's statement describing increasing enforcement by the DOJ goes on to state that she has withdrawn the DOJ "Section 2 Report:"

four firms in the sector. Data used was collected from secondary sources and aggregated to form arbitrary sectors such as "meat packing" which includes beef, pork, and poultry. These were done subjectively, and in any rigorous analysis the relevant market would need to be clearly defined using a consistent set of measures. For example, livestock farms included vertically integrated farm production stages of processors, increasing their relative size. If one omitted those vertically integrated firms from that sector, the number would decline. However, this does provide a relatively accurate characterization of the relative HHI's and serves a useful illustrative purpose).

10. See, e.g., Tyson Foods, Chicken, <http://www.tyson.com/corporate/abouttyson/liveproduction/chicken.aspx> (last visited Mar. 28, 2010).

11. See DAVID A. DOMINA & C. ROBERT TAYLOR, ORG. FOR COMPETITIVE MKTS., THE DEBILITATING EFFECTS OF CONCENTRATION IN MARKETS AFFECTING AGRICULTURE 65 (2009), available at http://www.dominalaw.com/ew_library_file/Domina-Taylor%20Report.pdf.

12. CHRISTINE A. VARNEY, ANTITRUST DIV., U.S. DEP'T OF JUSTICE, VIGOROUS ANTITRUST ENFORCEMENT IN THIS CHALLENGING ERA 4 (2009) (statement given at hearing before the U.S. Chamber of Commerce), available at <http://www.justice.gov/atr/public/speeches/245777.pdf>.

The Report sounded a call of great skepticism regarding the ability of antitrust enforcers—as well as antitrust courts—to distinguish between anticompetitive acts and lawful conduct, and raised the related concern that the failure to make proper distinctions may lead to “over-deterrence” with regard to potentially pro-competitive conduct. I do not share these concerns. I strongly believe that antitrust enforcers are able to separate the wheat from the chaff in identifying exclusionary and predatory acts.¹³

She further explains:

In particular, Chapter 3 of the Section 2 Report concluded that where conduct-specific tests are not applicable, “the disproportionality test is likely to be the most appropriate test [.]” With this baseline, conduct is only considered anticompetitive where it results in harm to competition that is disproportionate to consumer benefits and to the economic benefits to the defendant. In other words, the anticompetitive harm must substantially outweigh pro competitive benefits to be actionable. The Report’s adoption of the disproportionality test reflected an excessive concern with the risks of over-deterrence and a resulting preference of an overly lenient approach to enforcement.¹⁴

Both the Section 2 Report and Ms. Varney’s report clearly state that while certain practices such as horizontal price fixing are illegal under the Sherman Act, most practices—especially unilateral actions of a single firm—will require significant market analysis before being struck down.¹⁵ The key difference between the two categories for enforcement purposes is the comparison of any adverse price effects of market power and any offsetting economic benefits—the “rule of reason.”¹⁶

13. *Id.* at 6.

14. *Id.* at 8 (emphasis added) (quoting U.S. DEP’T OF JUSTICE, COMPETITION AND MONOPOLY: SINGLE-FIRM CONDUCT UNDER SECTION 2 OF THE SHERMAN ACT 45-46 (2008), available at <http://www.usdoj.gov/atr/public/reports/236681.pdf> [hereinafter COMPETITION AND MONOPOLY]).

15. *Id.* at 5-14; COMPETITION AND MONOPOLY, *supra* note 14, at 49.

16. F.M. SCHERER & DAVID ROSS, INDUSTRIAL MARKET STRUCTURE AND ECONOMIC PERFORMANCE 450-453 (3d ed., 1990) (The rule of reason recognizes that firms may attain large scale and even near monopoly position through superior competition which can result in increased economic welfare, so that the crime of price fixing violating the Sherman Anti-Trust Act must include two elements: “the acquisition of a monopoly position, and the intent to acquire that position and exclude rivals from the market.” Scherer and Ross trace the rule of reason to *United States v. Standard Oil Company of New Jersey*, 221 U.S. 1 (1911)).

In practice, the *Pickett v. Tyson Fresh Meats, Inc.* case provides a demonstration of an attempt to use market inference to determine market power versus the role of offsetting economic efficiency gains and the interpretation of these trade-offs.¹⁷ The results and issue of the case have been further expanded in a series of papers published in the *Journal of Agricultural and Food Industrial Organization*.¹⁸ *Pickett v. Tyson* was tried under the Packers and Stockyards Act, and the primary issue was one of the harm done to a class of cattle producers who marketed cattle in the open market.¹⁹ The producers argued that Tyson's use of "captive supplies" or advance purchases of cattle for delivery at a future time resulted in lower prices for all cattle purchased by Tyson.²⁰ Taylor, the economist providing expert testimony for the plaintiffs, specifically raises the rule of reason issue as he states:

The ROR [Rule of Reason] was not included in the plain language of the PSA but emerged from a 1911 Supreme Court opinion in a Sherman antitrust case. Perhaps more importantly, the Courts [sic] incredibly narrow and extreme interpretation of the ROR—not allowing a balancing of pro business benefit with harm to the market—is not consistent with dominant legal or economic thinking.²¹

This is an important distinction because under the Sherman Act, rule of reason is allowed, so this case is not necessarily the more general case in antitrust.²² The plaintiffs prevailed in the jury trial.²³ Shortly after trial, however, the judge set aside the verdict.²⁴

Green's response to Domina's article²⁵ includes the Court's denial of plaintiff's motion for judgment.²⁶ The denial was based on four issues: (1) "evi-

17. See Brief of American State Bank & Trust Company et al., as Amici Curiae Supporting Defendant-Appellee and in Support of Affirmance, *Pickett v. Tyson Fresh Meats, Inc.*, 420 F.3d 1272 (11th Cir. 2005) (No. 04-12137-D).

18. See, e.g., Thomas C. Green, Comment, *Proving Anti-Competitive Conduct in the U.S. Courtroom: The Plaintiff's Argument in Pickett v. Tyson Fresh Meats, Inc.*, 2 J. AGRIC. & FOOD INDUS. ORG. art. 11 (2004).

19. *Pickett v. Tyson Fresh Meats, Inc.*, 315 F. Supp. 2d 1172, 1172 (M.D. Ala. 2004).

20. *Id.* at 1175.

21. 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.*, 4 J. AGRIC. & FOOD INDUS. ORG. art. 9, 1-2 (2006).

22. *Id.* at 2.

23. *Id.* at 2-3.

24. *Id.* at 3.

25. David A. Domina, *Proving Anti-Competitive Conduct in the U.S. Courtroom: The Plaintiff's Argument in Pickett v. Tyson Fresh Meats, Inc.*, 2 J. AGRIC. & FOOD INDUS. ORG. 1 (2004).

dence is insufficient to support a finding that defendant lacked a legitimate business justification for its use of captive supplies[;]”²⁷ (2) “[the defendant is] justified in acquiring cattle through captive supply transactions. . . to ‘meet the competition’[;]”²⁸ (3) “evidence does not support a finding that each member of plaintiffs’ class was injured[;]”²⁹ (4) “Plaintiffs’ evidence at trial failed to establish damages or, in the alternative, a formula from which damages could be calculated at a later claims procedure.”³⁰ Items 1 and 2 are directly relevant to the comments of Ms. Varney and while they may not, as Taylor argues, be relevant to PSA, they are relevant to actions under the Sherman act as suggested by Ms. Varney.³¹ Therefore, the act of withdrawing the Section 2 Report seems to suggest that a case such as *Pickett v. Tyson* may have a similar outcome under Sherman as it did under the Packers and Stockyards Act as it was tried.³² It means that antitrust enforcement in agriculture may rely less on the ‘Black Book’ and more on the market observed behaviors of price behavior and structure.³³

B. Legislative Efforts

As the Justice Department increases its emphasis on agricultural mergers, there are also legislative initiatives underway to improve competition. A statement of frustration comes from a 2008 Congressional Hearing on Concentration in Agriculture and an Examination of the JBS/Swift Acquisitions in which Senator Kohl (WI) in his opening statement says:

Unfortunately, it appears that the Justice Department’s antitrust enforcement efforts—both in the agricultural sector and generally—have been much too weak and passive in recent years. . . . In the opinion of many experts, the Justice Department has often failed to take effective action as merger after merger in the pork, milk, and seed markets have sharply increased concentration and reduced competi-

26. Green, *supra* note 18, at 2.

27. *Pickett v. Tyson Fresh Meats, Inc.*, 315 F. Supp. 2d 1172, 1175 (M.D. Ala. 2004).

28. *Id.* at 1176.

29. *Id.* at 1177.

30. *Id.*

31. Taylor, *supra* note 21, at 9; VARNEY, *supra* note 12, at 10.

32. VARNEY, *supra* note 12, at 8.

33. Virtue, *supra* note 3, at 660, 676 (Reference is made to a “Black Book” that was a memorandum book found in Germon Sulzberger’s office at Sulzberger and Son’s meat packing where he recorded his conversations with representatives from various packing concerns on matters of common interest. This type of documentation ultimately led to the Packer Consent Decree in 1921. Separating collusion or market power actions from actions to improve economic efficiency through merger or vertical integration by using market price and quantity data remains difficult).

tion. Antitrust investigations in the dairy industry have languished with no resolution. While the Justice Department sits largely on the sidelines, agriculture concentration increases and food prices rise.³⁴

During this same hearing, Dr. Peter Carstensen, similarly concerned about lack of enforcement asked: “What can Congress do? Because you, unfortunately, cannot bring the lawsuits, which I would love to have you do.”³⁵ In addition to a few policy recommendations, Dr. Carstensen concluded: “Therefore, I think it is really time to change the institutional and legal framework for evaluating mergers and anticompetitive conduct in agricultural markets. I think the Grassley-Kohl bill, the Agricultural Competition Enhancement Act, S. 1759, is a really necessary step in that direction.”³⁶

The broadest legislation currently proposed is the Agriculture Competition Enhancement Act of 2009.³⁷ The overall objective of the legislation is to “provide for the review of agricultural mergers and acquisitions by the Department of Justice, and for other purposes.”³⁸ To accomplish this, it calls for the creation of an agriculture competition task force to investigate problems of competition in agriculture, define and focus national public interest in preserving the independent family farm, coordinate activities to address unfair and deceptive practices, identify abuses in the agricultural industry and make recommendations to congress.³⁹ Further, the task force is to “study the effects of concentration, monopsony, and oligopsony in agriculture”⁴⁰ and “select certain agricultural mergers and acquisitions that were consummated within the past ten years, review the effects of such mergers and acquisitions on competition in agricultural com-

34. *Concentration in Agriculture and an Examination of the JBS/Swift Acquisitions: Hearing Before the S. Comm. on Antitrust, Competition Policy, and Consumer Rights*, 110th Cong. 1 (2008) (statement of Sen. Herb Kohl, Chairman, S. Comm. on Antitrust, Competition Policy, and Consumer Rights), available at <http://www.gpo.gov/fdsys/pkg/CHRG-110shrg569/html/CHRG-110shrg569.pdf>.

35. *Id.* at 8 (statement of Peter C. Carstensen, Professor of Law, University of Wisconsin Law School).

36. *Id.*

37. *See* Agriculture Competition Enhancement Act of 2009, S. 364, 111th Cong. (2009).

38. *Id.* at pmb1.

39. *Id.* §§ 4(a), 4(c). Normative statements such as this are common in current legal and legislative initiatives. For example, “[s]ome believe that an economy dominated by smaller companies, though less efficient, assures greater and better competition, more opportunity, more invention and entrepreneurship, and a stronger more stabilized citizenry braced against threats to their freedom. Others see America differently. They perceive it as a country where big companies, operating at a high degree of efficiency, can do the job of running America’s economy, and competing with one another.” Domina, *supra* note 25, at 12. These issues can run counter to economic concepts of maximizing overall economic welfare, including that of consumers.

40. S. 364, § 4(d)(1)(A).

modities markets, and make recommendations to the Assistant Attorney General, the Chairman, and the Secretary.”⁴¹

Section 6 of the act calls for ensuring full and free competition in agriculture by amending Section 7 of the Clayton Act.⁴² The key provision is that those firms seeking to merge, and who have had a civil action filed against the merger either by the federal government or by other plaintiffs, when the merger will raise the market share to 20%, will face the burden of proof that the merger will not lessen competition or result in a monopoly in regional markets.⁴³ In addition, section 7 provides for post-merger review of agricultural transactions.⁴⁴ It’s not clear if these reviews would result in enforcement under section 6.

While the Agricultural Competition Enhancement Act is relatively broad, there are two acts that have more specific goals for competition. The Livestock Marketing Fairness Act has the purpose of prohibiting the use of certain anti-competitive forward contracts with two primary actions: “(1) to require a firm base price in forward contracts and marketing agreements; and (2) to require that forward contracts be traded in open, public markets.”⁴⁵ The bill also provides a provision that limits the number of livestock that can be contracted in stated form to forty head of cattle and thirty head of swine,⁴⁶ but allows the Secretary to adjust the numbers, “to reflect advances in marketing and transportation”⁴⁷

Finally, a bill to amend the Agricultural Marketing Act of 1946 was introduced.⁴⁸ The one stated objective of this bill is to increase the number of livestock transacted in the open market rather than under contracts to packers.⁴⁹ It specifically specifies that the quantity of livestock that is slaughtered by a covered packer during each reporting day in each plant, the covered packer shall slaughter not less than 25% that have been procured in an open market.⁵⁰

Each of these proposed legislative acts clearly restrict existing business structures and organizational practices and therefore have implications for the organization and structure of firms in the livestock industry. Just as with the rule of reason in litigation, if these measures result in restraints from using practices that in fact enhance economic efficiency, they have the potential to reduce overall economic welfare.

41. *Id.* § 4(d)(1)(B).

42. *Id.* § 6(a).

43. *Id.* § 6(a)(A).

44. *Id.* § 7(a).

45. Livestock Marketing Fairness Act, S. 1086, 111th Cong. § 2 (2009).

46. *Id.* § 202(a)(6)(D).

47. *Id.* § 202(b).

48. S. 460, 111th Cong. (2009).

49. *Id.* at pmb1.

50. *Id.* §§ 260(b), (c)(1).

IV. EVIDENCE OF MARKET POWER IN LIVESTOCK AND MEAT

A. *Literature Summary of Evidence*

The litigation and legislative proposals suggest there is confidence that market power exists, or that there is not sufficient evidence of economic efficiencies to offset market power. In the absence of a ‘black book’ situation, the evidence is based on *market* evidence such as size of firms, number of firms, and the behavior of prices or cost structures at various stages of the chain. What is the *market* evidence for this type of behavior?

Azzam and Anderson provide a literature review of economic evidence of pricing power and oligopoly market power at the producer-packer interface.⁵¹ While many of the studies reviewed suggest that there is negative correlation between captive supplies and negotiated prices, the authors’ conclusion is that this is not indicative of market power:

The researchers’ description of historical industry evolution suggests that changes in the meatpacking industry have resulted from technological change and dynamic rivalry between firms. The basic question addressed by this project was whether the evidence from Structure-Conduct-Performance [SCP] and the New Empirical Industrial Organization [NEIO] studies is persuasive enough to warrant the conclusion that . . . the meatpacking industry is deficient. Taken as a whole, the literature review led to the conclusion that the answer is no.⁵²

Several studies have also shown mixed results of evidence of oligopoly power. For example, Koontz, Garcia, and Hudson found some cooperative pricing behavior among beef processors but that it was declining over time.⁵³ Meanwhile, Azzam and Schroeter (1995) find that the estimated cost savings needed to neutralize the market power effects were almost half of actual cost savings of economies of scale.⁵⁴ One commonality is that previous studies have found con-

51. GRAIN INSPECTION, PACKERS & STOCKYARDS ADMIN., USDA, CONCENTRATION IN THE RED MEAT PACKING INDUSTRY 71-79 (1996), *available at* <http://archive.gipsa.usda.gov/pubs/packers/conc-rpt.pdf>.

52. *Id.* at 78-79.

53. Stephen R. Koontz et al., *Meatpacker Conduct in Fed Cattle Pricing: An Investigation of Oligopsony Power*, 75 AM. J. AGRIC. ECON. 537, 546-547 (1993).

54. Azzeddine M. Azzam & John R. Schroeter, *The Tradeoff Between Oligopsony Power and Cost Efficiency in Horizontal Consolidation: An Example from Beef Packing*, 77 AM. J. AGRIC. ECON. 825, 834 (1995) [hereinafter *Tradeoff*].

sistent impacts of small negative price effects from captive supplies.⁵⁵ However, Schroeter and Azzam (2004) cast doubt on this point as well:

Needless to say, however, the existence of this kind of negative correlation does not necessarily imply a causal linkage through which increases in the use of non-cash procurement methods *cause* the cash market price to fall. To determine whether an observed empirical regularity is a reflection of a causal relationship (in one direction or the other), one must more closely investigate the economic mechanism underlying it.⁵⁶

In 2007, the Livestock and Meat Marketing Study (LMMS), commissioned by the Grain Inspection and Packers and Stockyards Agency (GIPSA) was completed.⁵⁷ The LMMS primarily focused on the effects of alternative marketing arrangements (AMAs) including forward contracts, formula contracts, and packer owned livestock on negotiated market prices.⁵⁸ This is directly related to the bill to amend the Agricultural Marketing Act.⁵⁹ It included unprecedented access to transaction level market price data, packers' profit and loss information and survey information to account for factors such as the effects of risk preferences, livestock and meat quality, economies of size, and costs and returns for meat packing plants.⁶⁰

The key findings reported in the executive summary included that "beef producers and packers . . . believed that some types of AMAs helped them manage their operations more efficiently, reduced risk, and improved beef quality."⁶¹ The study found that "relative to direct trade transactions, prices for fed cattle sold through auction barns tended to be somewhat higher and prices for fed cattle sold through forward contracts tended to be somewhat lower."⁶² The authors

55. See, e.g., Ted C. Schroeder et al., *The Impact of Forward Contracting on Fed Cattle Transaction Prices*, 15 REV. AGRIC. ECON. 325 (1993); Clement E. Ward et al., *Impacts from Captive Supplies on Fed Cattle Transaction Prices*, 23 J. AGRIC. & RES. ECON. 494 (1998).

56. John R. Schroeter & Azzeddine Azzam, *Captive Supplies and Cash Market Prices for Fed Cattle: The Role of Delivery Timing Incentives*, 20 AGRIBUSINESS 347, 348 (2004).

57. See GRAIN INSPECTION, PACKERS & STOCKYARDS ADMIN., USDA, LIVESTOCK AND MEAT MARKETING STUDY: VOLUME 1: EXECUTIVE SUMMARY (2007), available at http://archive.gipsa.usda.gov/psp/issues/livemarketstudy/LMMS_Vol_1.pdf [hereinafter LIVESTOCK & MEAT MARKETING STUDY].

58. *Id.* at ES-1.

59. S. 460, 111th Cong. (2009).

60. LIVESTOCK & MEAT MARKETING STUDY, *supra* note 57, at ES-3.

61. *Id.*

62. *Id.* at ES-6.

attributed this to risks associated with different transaction methods and timing of sales.⁶³

Results showed that plant level profit and loss data showed significant economies of scale in beef packing, and costs were decreasing across the entire data range analyzed, and that their cost efficiency depended heavily on capacity utilization.⁶⁴ The implication of this is that there is again a reasonable economic incentive to use AMAs as a mechanism for managing plant capacity utilization and hence costs. Similarly they found that limiting the use of AMAs would increase costs and reduce gross margins.⁶⁵

Finally, two key results get to the heart of the trade-off of overall welfare and captive supplies. Using simulation models, they estimated that a restriction in AMA volumes resulted in a decrease in feeder cattle, fed cattle, packer and processor producer surplus, *and* a decrease in beef consumer surplus.⁶⁶ Further, they state that “cost savings and quality improvements associated with the use of AMAs outweigh the effect of potential oligopsony market power that AMAs may provide packers.”⁶⁷

Similar to the beef study, the use of AMAs in the hog market resulted in lower spot market prices, was associated with higher quality pork products, and was important for managing production risk exposure.⁶⁸ This loss of risk reduction would adversely affect producers and hog producers, and pork consumers would both experience a welfare decrease from the restriction of AMAs, while packers would neither gain nor lose.⁶⁹

B. *Factors Not Considered in the Literature*

This review demonstrates three fundamental issues in the empirical research on market power evidence in pricing and the use of vertical contracts. First, these results illustrate the tradeoff in evaluating market power and market efficiencies of business organization making it difficult to make definitive assessments of the appropriateness of litigation or legislation. Second, while theoretical and empirical time series models can be used extensively to hypothesize and test implications of non-competitive practices in markets, the parameterization and estimation of such models is often beyond the scope of the data. This

63. *Id.*
64. *Id.*
65. *Id.* at ES-7.
66. *Id.* at ES-8, ES-9.
67. *Id.* at ES-9.
68. *Id.* at ES-11.
69. *Id.* at ES-12, ES-13.

leaves significant doubts about the *causality* versus *correlation* of observed price behavior. This tractability problem also tends to leave out many important factors affecting both market power and efficiency issues that can affect overall economic welfare such as:

- *Economies of scope* – most major meat packers have multi-species operations, and include even multi-national markets; this may result in greater potential for market power due to having fewer substitutes, or it can dramatically improve efficiency by allowing a single source meat case solution for retailers.⁷⁰
- *Globalized meat production* – meat companies are becoming truly multi-national; firms in China, Japan and Brazil own processing in the United States, and several U.S. companies have operations in other countries. On the one hand this suggests fewer competitors on a global basis, but imparts unique economies of scope in situations such as animal disease outbreaks.⁷¹ Dispersed operations can enhance food security in this case. There are also potential spillover effects in technology adoption and increased profitability from identifying new consumer preferences through intercultural interaction and learning.⁷²
- *Downstream concentration and countervailing power* – Most market power studies focus only on the processing sector. However, downstream from the processor is the retailer. As shown in Figure 1,⁷³ there is significant concentration in the retail food sector as well. There are potential economies of size inherent in being able to enter the supply chain of these large multi-national retailers. It is likely that this relationship lowers the cost to consumers, through reduced transaction costs of logistics management and pricing. Further, the processor's ability to extract monopoly profits may also be countervailed by a large retailer. Alternatively, this drive to lower prices may increase market power incentives at the buy end of the processor, thus negatively affecting prices

70. See 3C Software, *Meat Processing Goes Global: Trends of the Meat Processing Industry*, http://www.3csoftware.com/Resources/Articles/Article_MeatIndustry.htm (last visited Mar. 28, 2010).

71. UN News Centre, *Dramatic Changes in Global Meat Production Could Increase Risk of Human Diseases*, UN NEWS SERVICE, Sept. 17, 2007, <http://www.un.org/apps/news/story.asp?newsid=23824&cr=livestock&cr1=>.

72. 3C Software, *supra* note 69.

73. See *supra* p. 5.

upstream. This phenomenon of upstream impacts of retail countervailing power has not been examined, but research on countervailing power by retailers to manufacturers can reduce prices to consumers, but only because the manufacturer offers a lower price to other retailers as well.⁷⁴

- *The relevant market issue* – Central to every antitrust enforcement action, and including policies, is the definition of relevant markets.⁷⁵ In all previous studies the relevant market is necessarily very restricted. All econometric studies focus almost exclusively on the specific livestock sector and related plants. However, the ability to extend market power depends on substitution within proteins across other foods in international trade by product level, and depending on vertical integration relationship and tying arrangements throughout the supply chain (e.g., feed mills owned by producers or retail outlets with tying agreements).⁷⁶
- *New product development and changes in retail products* – Branding has important implications for competition. Branding is in effect an attempt to increase price received or quantities sold at the sale end, presumably by offering a product consumers will prefer. Often new meat products depend on the quality of the raw material coming into the process and therefore a processor may desire to contract or own the raw material. This is one of the central incentives for vertical integration, particularly when it is impossible to verify product attributes prior to purchase. In this circumstance it is expected that prices for inputs not meeting the specifications are lower and also not contracted. This does create long-term barriers to substandard suppliers, but is not a form of discrimination or market power. A spillover of knowledge can also occur in these vertical relationships as technology and production information pass between the partner buyer and supplier since both now mutually benefit from these transfers. The organic food segment offers a good example of the necessity and benefits of coordination—so the producer receives both value for the product produced and so the buyer can be as-

74. Zhiqi Chen, *Dominant Retailers and the Countervailing-Power Hypothesis*, 34 RAND J. ECON. 612, 624 (2003).

75. See, e.g., U.S. v. Grinnell, 384 U.S. 563, 570-571 (1966).

76. See generally Neil E. Harl, Prof. in Agric. & Econ., Antitrust Issues in the New Food System, Address at American Agricultural Economics Association Workshop: Policy Issues in the Changing Structure of the Food System (July 29, 2000), www.farmfoundation.org/news/articlefiles/94-harl.pdf.

sured standards are met for attributes that are not observable in the final product.

- *Issues of capital formation and risk* – In *Pickett v. Tyson* an amicus brief was submitted by several commercial agricultural lenders.⁷⁷ The banks state:

Forward contracts, in which a cattle owner commits to sell a specific lot of cattle at a future date at an agreed-upon price . . . provide many benefits for both cattle producers and packers. While a full evaluation of the benefits of these contracts is beyond the scope of this *amicus* brief, one clear benefit is that they substantially reduce the risks that cattle producers face when marketing their livestock. And by using forward contracts to reduce those risks, producers are able to obtain financing on terms that are substantially better than those available to producers who choose to trade in the turbulent cash market.⁷⁸

The risk reducing or shifting element of contracts not only directly causes producers to offer more livestock for sale at the same price as they would without forward contracts and facing greater risk of price changes, but affects lenders in the same way.⁷⁹ Lenders provide capital at lower rates to producers, further reducing the overall cost of production and yielding higher supplies and likely resulting in lower observed cash prices without any market power implications.⁸⁰ Further, this scenario would clearly have a positive impact on consumers, but negative effects on producers outside the capital chain.

There are also lessons on the potential efficiency/market power tradeoff outside the livestock sector. Lafontaine and Slade recently published a survey of the empirical implications of various forms of vertical integration and summarize in regard to the consequences of vertical mergers:

As we will see below, however, even though authors typically choose markets where they expect to find evidence of exclusion, half of the studies find no sign of it. And where they find evidence of exclusion or foreclosure, they also at times document efficiencies

77. Brief for American State Bank & Trust Co. et al., *supra* note 17.

78. *Id.* at 5.

79. *Id.* at 4.

80. *Id.*

that arise from the same merger. Thus, although foreclosure may occur some of the time, the end result is not necessarily detrimental to consumers. In fact, consistent with the large set of efficiency motives for vertical mergers that we have described so far, the evidence on the consequences of vertical mergers suggests that consumers mostly benefit from mergers that firms undertake voluntarily. On the other hand, divorcement requirements, which are separation requirements that are imposed by local authorities, often to protect local dealers [or suppliers], typically lead to higher prices and lower service levels for consumers. In other words, consumers are often worse off when governments require vertical separation in markets where firms would have chosen otherwise.⁸¹

Even though this focuses on consumer impacts, they also examine the issue of monopsony power and the conclusions hold there as well.⁸²

Much of the prior research is prospective. That is, it addresses the question of if there is market power that suggests the need for antitrust litigation or legislation. A retrospective question is, does enforcing antitrust actually improve welfare after the fact? Research by Crandall and Winston investigates the actual results of antitrust enforcement in several industries on overall economic welfare.⁸³ They conclude that there is little evidence of improvement in welfare after enforcement.⁸⁴

Perhaps the best illustration of how dramatically interpretations of the market evidence on competition can differ is a comparison of the report issued by the United States Government Accountability Office (GAO),⁸⁵ and a response to that report authored by Domina and Taylor for the Organization for Competitive Markets.⁸⁶ The GAO report concludes based on examination of market level data and previous research that:

Most of the studies that we reviewed either found no evidence of market power or found efficiency effects that were larger than the market power effects of concentration. While a few studies found

81. Francine Lafontaine & Margaret Slade, *Vertical Integration and Firm Boundaries: The Evidence*, 45 J. ECON. LITERATURE 629, 663 (2007).

82. *Id.* at 666-67.

83. Robert W. Crandall & Clifford Winston, *Does Antitrust Policy Improve Consumer Welfare? Assessing the Evidence*, 17 J. ECON. PERSP. 3, 6-7 (2003).

84. *Id.* at 23.

85. U.S. GOV'T ACCOUNTABILITY OFFICE., CONCENTRATION IN AGRICULTURAL, GAO-09-746R (2009), available at <http://www.gao.gov/new.items/d09746r.pdf>.

86. DOMINA & TAYLOR, *supra* note 11.

some evidence of market power, it is unclear whether this market power was caused by concentration or some other factor.⁸⁷

Conversely, the Domina and Taylor paper, considering many of the same previous research papers but adding several other relevant pieces of research and using the same or similar albeit updated data, reached the conclusion:

Weighted 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 processor are engaged in the misuse, or abuse, of market power. Both producers and consumers of food are harmed as a result.⁸⁸

Given such stark philosophical and interpretative differences and that the momentum seems to be in the direction of increased enforcement or legislation, it seems prudent to weigh the consequences of stronger enforcement as well as some alternative hypotheses that exist for the causes and consequences of observed concentration or market pricing power.

V. FACILITATING MARKET EXCHANGE EFFICIENCY

A. *Literature Review on Market Failures and Business Organization*

The apparent inadequacy and the potential risks of litigation or legislation in producing improved welfare compel consideration of a third way to address concerns about competition. One approach is to consider how the exchange functions of markets can be improved, thereby reducing incentives to engage in vertical restraints or vertical integration. In many cases this will require policy engagement but with a more progressive approach than a punitive approach. It begins with an understanding of what drives incentives for the firm organization strategies of concern.

There are three basic considerations in describing firm organization with respect to vertical integration, vertical contracts, or horizontal mergers.⁸⁹ These include: (1) economics of scale and scope, (2) transaction cost economies, and

87. U.S. GOV'T ACCOUNTABILITY OFFICE., *supra* note 85, at 3.

88. DOMINA & TAYLOR, *supra* note 11, at 77.

89. Martin K. Perry, *Vertical Integration: Determinants and Effects*, in 1 HANDBOOK OF INDUSTRIAL ORGANIZATION, 183, 185-249 (Richard Schmalensee & Robert D. Willig eds., 1989).

(3) imperfect markets such as occur with asymmetric information or moral hazard.⁹⁰

The economies of scale or scope issues are fairly straightforward. An example of this is the move from whole carcass sales to case ready meat products by meat processors.⁹¹ Traditionally, meat processors fabricated cattle carcasses into whole carcasses that were then shipped to retail outlets for portioning into consumer cuts.⁹² However, there are economies of scale gained in further fabrication of carcasses in the plant and then shipping portion cuts in boxes to retailers.⁹³ This results in both labor and transportation efficiencies and represents a form of forward integration driven by economies of scale.⁹⁴ Current competition concerns are not directly related to this issue because technical economies of scale are, for the most part, efficiency enhancing almost by definition.⁹⁵

The theory of transactions costs, first introduced by Coase (1937) but expanded on by Williamson (1971) provides much of the foundation for the market facilitation approach and relates more to the concerns raised in current litigation and legislation regarding vertical contracting and integration.⁹⁶ Transaction cost theory relates to issues of how well the product and price exchange itself functions, and therein are potential policy solutions that may reduce transaction costs and enhance the exchange function.⁹⁷ If exchange function can be improved, then incentives for vertical integration or coordination can be reduced.⁹⁸ This may provide incentives for firms to voluntarily reduce vertical integration and contracting, while at the same time potentially improving economic welfare and reducing concerns about market foreclosure and market power. Therefore, instead of approaching contracting and vertical integration as a mechanism that

90. *Id.* at 187.

91. See James M. MacDonald & Michael Ollinger, *U.S. Meat Slaughter Consolidating Rapidly*, 20 FOOD REV. 22, 23 (1997), available at <http://www.ers.usda.gov/publications/foodreview/aug1997/may97f.pdf>.

92. *Id.* at 22-23.

93. *Id.* at 23.

94. *Id.* at 23-24.

95. The challenge with using economies of scale as an approach to proving market power is that extending economies of scale beyond the point of diminishing returns to scale results in an increase in costs. At this point firms would enter the industry and in fact, could enter an industry at a lower theoretical capital cost than the existing monopolist/monopsonist because the optimal scale is smaller. Thus the barriers to entry are economically lower, and the ability to maintain this position is difficult, if not impossible, in the long run.

96. R.H. Coase, *The Nature of the Firm*, 4 ECONOMICA 386, 388 (1937); Oliver E. Williamson, *The Vertical Integration of Production: Market Failure Considerations*, 61 AM. ECON. REV. 112, 117 (1971).

97. Bengt R. Holmstrom & Jean Tirole, *The Theory of the Firm*, in 1 HANDBOOK OF INDUSTRIAL ORGANIZATIONS 60, 63-64 (Richard Schmalensee & Robert D. Willig eds., 1989).

98. See Perry, *supra* note 89, at 185-249.

causes market power and market failure due to market power, this perspective begins with the premise that vertical integration and coordination *is a response* to market failure of exchange.

Transactions costs can include search costs. For example, a firm must identify suppliers of their product and more importantly suppliers that provide the input at the lowest price. Search costs tend to increase as supply variability increases, either due to differences in quality metrics, perishability or just highly variable production.

Bargaining or haggling is another form of direct transaction cost.⁹⁹ These repetitive practices can be reduced and efficiency improved by entering a long-term contract or vertically integrating.¹⁰⁰ Transactions costs are not eliminated because no contract is complete; it cannot address every possible eventuality of the exchange.¹⁰¹ Costs remaining include such things as specifying proper price formulas and payment terms that will not disadvantage one party or another, addressing issues of delivering products such as timing and quality, and writing the contract so that it is enforceable.¹⁰²

Direct transactions costs are relatively straightforward to address and for the most part they behave like any other cost minimization problem. The more complex and more likely reasons for preferring vertical contracts or vertical integration result from the problems of asymmetric information (including uncertainty) and agency problems.

Asymmetric information arises from markets when the two parties do not share the same information in an exchange.¹⁰³ The information can include characteristics of the product, overall market conditions, or anything else that would alter the other party's willingness to pay or accept for the product.¹⁰⁴ One of the fundamental problems created by asymmetric information is the adverse selection or "market for lemons" argument.¹⁰⁵ With asymmetric information good products will be driven out of the market by bad products because buyers, unable to distinguish the good from the bad, will refuse to pay prices high enough to compensate the good (adverse selection).¹⁰⁶ This notion was first developed by Akerlof (1970)¹⁰⁷ in regard to cars and employment, but has been

99. *Id.* at 213.

100. *Id.* at 213.

101. *Id.* at 214.

102. *Id.* at 214.

103. *See* George A. Akerlof, *The Market for "Lemons: Quality Uncertainty and the Market Mechanism*, 84 Q.J. ECON. 488, 489-91 (1970).

104. *See id.* at 489.

105. *Id.* at 489-91.

106. *Id.* at 495.

107. *Id.*

extended to market organization with the remedy being contracting or vertical integration. This is also an important issue for producers seeking the elimination of contracts to recognize. If packers cannot pre-identify quality prior to purchase it is very likely they will offer a lower overall price to all producers—unfortunately this will drive out the better producers ultimately harming demand, making the problem worse. This gives a clear example of why breaking up existing structures and ignoring underlying asymmetric information or adverse selection problems could be counter-productive.

Agency or moral hazard problems create other transactions costs. For example, suppose a producer gives an animal an antibiotic shot and breaks the needle off. The packer cannot observe the broken needle in the animal when it is purchased, and it may not be found until the consumer eats the product and finds the needle potentially holding the packer liable. This leads the packer to implement metal detectors in the plant that increases monitoring costs. This type of agency or moral hazard problem is often described in the labor—employer relationship wherein an employer cannot detect an employee's full use of effort unless he monitors or supervises the worker.¹⁰⁸

Although somewhat dated, Mahoney (1992) provides an excellent review of how these 'failures' create incentives for vertical relationships.¹⁰⁹ Mahoney describes the advantages of vertical integration strategy that include concerns about market power advantage such as increasing barriers to entry, foreclosing on competitors, and raising rivals' costs, in addition to the Williamson type recognition of positive benefits including the reduction of moral hazard created by asymmetric information.¹¹⁰ These include improved audit and resource allocation, better coordination and control of uncertain supplies, and in markets with high asset specificity (such as agriculture), reduced double margining (in the case of slightly imperfectly competitive markets), increased motivation by improved monitoring, and enforcement and improved communication of either proprietary information or technology or simply in common nomenclature.¹¹¹ Lafontaine and Slade provide two additional reasons: process complexity and temporal specificity as reasons for vertical integration.¹¹² These seem particularly relevant for livestock sectors in which complex production interactions between, feed, genetics and meat are part of branding processes, and the products are perishable.

108. See Armen A. Alchian & Harold Demsetz, *Production, Information Costs, and Economic Organization*, 62 AM. ECON. REV. 777 (1972); see also Oliver Hart, *Corporate Governance: Some Theory and Implications*, 105 ECON. J. 678 (1995).

109. See Joseph T. Mahoney, *The Choice of Organizational Form: Vertical Financial Ownership Versus Other Methods of Vertical Integration*, 13 STRAT. MGMT. J. 559 (1992).

110. *Id.* at 560.

111. *Id.* at 568-69.

112. Lafontaine & Slade, *supra* note 81, at 655, 657.

Mahoney also points out that there are disadvantages to vertical integration that firms may seek to dismiss if the exchange function operated more efficiently or with fewer transaction costs.¹¹³ He classifies these into three categories: (1) bureaucratic costs; (2) strategic costs; and (3) production costs.¹¹⁴ The chief factor with bureaucratic costs is the loss of market discipline, due to the loss of a quality price signal, this can lead to inertia and lack of innovation.¹¹⁵ Strategic issues include the loss of information from competing non-integrated firms who they no longer procure from or sell to having broken those relationships as part of their own merger.¹¹⁶ The strategic costs also include the increased fixed costs and potential for excess capacity if the two vertical stages aren't compatible in size, and thirdly, they lose flexibility in choosing among suppliers and risk obsolescence of their higher fixed assets.¹¹⁷ Production costs simply imply that as a vertically integrated firm with by definition higher capital requirements, it may be difficult to reach efficient economies of size in both stages, making it non-competitive with firms still operating at large scale in each independent stage.¹¹⁸

Martinez (2002) takes these theoretical concepts and provides an excellent overview of how transactions costs lead to vertical coordination in the context of the poultry, egg, and pork industries.¹¹⁹ These industries exhibit significant economies of scale in both farm production and processing with highly specific investments given the increased specialization of technology and production systems at all stages.¹²⁰ There is asymmetric information of production and more importantly quality in the modern meat industry. Quality includes both dimensions of further processed meats that require specific quality metrics but also issues such as food safety often linked to on-farm practices such as the use of antibiotics or foreign bodies in meat due to health treatments. This leads to greater costs of uncertainty in short and long run prices because the assets cannot be easily re-directed so that the incentives to assure supplies or access at each stage are clear.

113. Mahoney, *supra* note 109, at 570.

114. *Id.* at 569-570.

115. *Id.* at 569.

116. *See id.* at 570.

117. *Id.*

118. *Id.*

119. See STEVE W. MARTINEZ, ECON. RES. SERV., USDA, VERTICAL COORDINATION OF MARKETING SYSTEMS: LESSONS FROM THE POULTRY, EGG AND PORK INDUSTRIES (2002), <http://www.ers.usda.gov/publications/aer807/aer807.pdf>.

120. *Id.* at iii.

B. *Facilitating Markets to Reduce Incentives for Non-Competitive Prices*

This background provides the foundation for the argument to facilitate the exchange transaction so that transactions costs are minimized, thus reducing the underlying incentives for vertical restrictions or coordination. Doing so potentially increases market efficiency and competition of the kind described by litigation and legislation while allowing the firm managers to choose the organizational structure they deem most profitable and efficient. What are some of those possibilities?

First, an effort needs to be made to examine the economic efficiencies in modern production systems that focus on the supply chain, not just one link of the chain such as the economies of scale of a meat processing plant. It's widely recognized that the production process for meat now extends to genetic inputs and every part of the process has a role to play in delivering a high quality and safe product. It is reductionist and simplistic to focus on a single node of the chain and doing so risks significant harm by not recognizing the second and third degree impacts from the point of origin. This would help establish with more confidence whether there is a need for intervention through litigation or legislation or if there is a role for market facilitation.

Second, a virtual marketplace for physical livestock should be developed using new information technologies. Many production processes and logistics issues associated with markets can be measured, collected in real time databases and communicated throughout the supply chain. This reduces many of the transactions costs of product transfer, including reducing asymmetric information and agency problems since monitoring and verification become more efficient. At the same time, this may allow buyers greater flexibility in buying from a broader pool of suppliers by gaining greater information, and leads to the potential to form efficient electronic marketplaces where livestock need not be physically present for the transaction to occur and which reduces the incentives for vertical integration or contracting.

One of the provisions in some of the proposed legislation is to have open market transactions of contracts.¹²¹ This could readily be accomplished now with an electronic web based market where contract terms could be bid on. The biggest barrier is to overcome issues of product quality in products with biological variation and when quality cannot be observed until the animal is processed into meat.¹²² This is a primary difference between selling bandwidth or books online

121. See S. 460, 111th Cong. § 260(a)(3)(B) (2009).

122. See *Minimize Variations in Product Quality*, EMERGING FOOD R&D REPORT, July 2004.

that are truly homogeneous products and many agricultural products that are similar but differentiable and where the differentiability is not observable at the time of transaction.¹²³ However, this also can be overcome with information technologies accompanying traceability protocols. For example, treatments, weights, production systems, and genetics can all be reported and verified well in advance of delivery making the potential to have a differentiated open market available for at least some portion of the market.¹²⁴ The challenge is the cost of implementation, but one could argue that the dead weight losses of a firm break-up from anti-trust could easily offset the public good benefits of these tradeoffs.

In addition to the conditions for transferring products, it is also necessary to have marketplace participation; processors and producers must choose to use the marketplace. As pointed out by Wheatley and Buhr, marketplace choice depends on network externalities as related to liquidity and market choice, the role of ownership and pricing, and the importance of beliefs and expectations by buyers and sellers about how the market place will perform (is it a fair and competitive marketplace).¹²⁵ Without the proper conditions the marketplace will fail. One of the findings of Wheatley and Buhr was that while participant owners of a marketplace likely have the advantage of providing liquidity through their own use, government regulation and facilitation of marketplaces may yield more efficient marketplaces.¹²⁶ This is because the beliefs by buyers and sellers of a "fair" marketplace outweigh potential liquidity issues.¹²⁷ This is already the case with regulated exchanges such as the CME Group or the New York Stock Exchange.¹²⁸ While privately held, the exchanges are a third party to the actual buyers and sellers, and the exchanges have significant government regulatory oversight to establish marketplace rules.¹²⁹ While complex and potentially costly, the development of efficient electronic marketplaces that exchange products, prices,

123. See W. PARKER WHEATLEY ET AL., DEP'T OF APPLIED ECON., UNIV. OF MINN., E-COMMERCE IN AGRICULTURE: DEVELOPMENT, STRATEGY AND MARKET IMPLICATIONS 12 (2001), <http://ageconsearch.umn.edu/bitstream/13938/1/p01-06.pdf> (This paper provides an overview of market place development in the context of e-commerce and the Internet. It includes issues of competition, market participation, and mechanism design, all of which are issues which must be addressed to develop a marketplace).

124. See Brian L. Buhr, *Traceability and Information Technology in the Meat Supply Chain: Implications for Firm Organization and Market Structure*, 34 J. FOOD DISTRIBUTION RES. 13 (2003).

125. W. Parker Wheatley & Brian L. Buhr, *After the Bubble: The Survival and Ownership of Internet Marketplaces for Farmers and Agribusiness*, 30 J. AGRIC. & RES. ECON. 502, 503 (2005), available at <http://ageconsearch.umn.edu/bitstream/30979/1/30030502.pdf>.

126. *Id.* at 513.

127. *Id.*

128. *See id.* at 515.

129. *See id.* at 513.

quality information and planned production could provide an avenue for long-term solutions to the underlying market failures that lead to incentives for concentration, vertical integration and contracting that are of so much ongoing concern.¹³⁰

Third, a key issue related to asymmetric information and uncertainty is the value of planning production. The mechanism to help accomplish this exists within the futures market. As Arrow points out, futures markets that are efficient enough can reduce incentives for firms to pursue monopoly/monopsony rents.¹³¹ Although the futures market for lean hogs and cattle already exist, given recent concerns about the influence of funds and speculative trading, in addition to trade concerns about the behavior of basis, efforts should be stepped up to improve its functioning for hedgers and speculators.

In the livestock markets this means improving liquidity to the point that it makes sense to have all contract months traded which may improve convergence of futures prices and cash prices. This eliminates some of the need to resort to market contracts. A second issue is to consider extending the trading of deferred contracts—which would allow longer-term risk management alternatives sought by producers who are making long-term investment decisions. The challenge of course is to have enough liquidity to make the markets in what are traditionally very thin markets. But blending concepts of an open market for forward contracts with a futures market pricing mechanism raises some potential to improve liquidity and develop these alternatives to forward contracts and vertical integration.

Finally, organizational structures and capital access in agriculture must be improved. Much of farm level agriculture is financed with debt capital.¹³² This capital tends to be higher cost and higher risk than equity capital generated by publicly traded firms.¹³³ This skews the risk relationship between packers and producers and creates incentives for lenders to tie loans to contracts with packers. The risk management improvements above are one way to address this, but we must also find ways to reduce the cost and risk of capital at the farm level. An alternative is also to improve competitiveness for smaller producers that may mean focusing on achieving bargaining power. Again, arguing that if there are economies of scale, then the key may be countervailing power in the supply chain.

130. *See id.* at 502.

131. Kenneth J. Arrow, *Vertical Integration and Communication*, 6 BELL J. ECON. 173, 180-81 (1975).

132. Paul S. Estenson, *Farm Debt and Financial Instability*, 21 J. ECON. ISSUES 617, 617-18, 622 (1987).

133. *See id.* at 618.

The approach of market facilitation is not without its risks. Mandatory price reporting policies while intended to improve market exchange through improved information also have the potential for information pooling and collusion.¹³⁴ Njoroge suggests that as the policy enforces greater truth in pricing that meatpackers will have fewer and fewer incentives to deviate from the reported price because any higher price will cost them relative to their competitors.¹³⁵ By providing prices, MPR can basically allow packers to assure that they comply and remove incentives not to comply or ‘cheat’ the cartel.¹³⁶ Njoroge concludes that contrary to the Act’s well-intended objectives, “this is consistent with the promotion of collusion and the reduction of market efficiency.”¹³⁷ Philips offers a similar assessment in general. “In the United States the discussion [on antitrust implications of information sharing] centered on ‘open price systems.’ The embarrassing conclusion was that market transparency among competitors does not promote competition but, instead, makes tacit collusion among oligopolists easier.”¹³⁸ Another intriguing implication is that firms may seek to manipulate a reported or transparent price such as MPR as a mechanism to mislead their competitors into what would be a non-optimum pricing decision, i.e., raising their prices in response to the misreported price. Still facilitating underlying markets by reducing transactions costs, information asymmetry and the potential for adverse selection and moral hazard is likely to improve market performance without litigation or legislative intervention on size and business structure of firms.

VI. SUMMARY

The current deep recession is causing financial stress across agriculture. It is likely that there will be mergers and acquisitions as rivals purchase financially weakened firms. In addition, concentration is high in several nodes of the agricultural supply chain and there are concerns about the use of both forward and backward market power due to vertical integration and contracting. As a result there is increasing political pressure to intervene in agricultural markets because of the potential for market power and its harm to competition. Although not new requests, recent philosophical changes about antitrust and competition

134. See, e.g., Livestock Mandatory Reporting Act, 7 U.S.C. § 1635e(a) (2010) (providing that the Secretary of Agriculture shall establish a program of price information reporting for live cattle); Kenneth Njoroge, *Information Pooling and Collusion: Implications for the Livestock Mandatory Reporting Act*, 1 J. AGRIC. & FOOD INDUS. ORG. 1, 8 (2003).

135. Njoroge, *supra* note 134, at 8.

136. *Id.* at 12.

137. *Id.*

138. LOUIS PHILIPS, *THE ECONOMICS OF IMPERFECT INFORMATION* 182 (1988).

by administration appointees show that the Department of Justice and Congress are considering intervention to improve “competition” in agriculture.

The evidence on the actual exertion of market power based on previous research is mixed. While there is evidence of oligopsony market power resulting in lower prices paid, this is frequently offset by the efficiencies gained due to economies of scale and efficiencies gained through integration.¹³⁹ More importantly, there is research showing that restricting the use of current business arrangements such as contracting and vertical integration would lead to a reduction in overall participant welfare.¹⁴⁰ Therefore, litigation and legislation to restrict these practices should be taken with caution or risk reducing overall welfare. Those who are intent on a more normative criterion of what our agri-food system *should* look like will be disappointed by this broader view.

An alternative approach to litigation or legislation restricting business organization is to improve the efficiency of market function. This approach is based on the premise that failing to address the underlying market inefficiencies that lead to incentives for horizontal and vertical integration will result in a recurrence of the practices litigation and legislation seek to restrict. Facilitating market exchange includes improving information systems and reducing direct transactions costs, asymmetric information and moral hazards at the point of exchange. Innovative information technologies such as genetic identification, traceability technologies and digital information systems can enable increased exchange of information on production qualities and characteristics that processors seek. A supporting necessity is the price discovery improvement by development of electronic exchanges for physical products and also to improve risk management options including current futures contracts, and capital access. This approach offers firms innovative potential on the production, capital finance and organization of the business, while reducing the incentives to vertically integrate cause by market failures. This improves the likelihood that overall economic welfare will be improved. Further, the role of policy makers is to help facilitate these markets including assistance for research and development.

139. See *Tradeoff*, *supra* note 54.

140. See LIVESTOCK & MEAT MARKETING STUDY, *supra* note 57, at ES-7.