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The Great School Milk Conspiracies of the 1980s

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Abstract Various dairy companies' allocation of school milk contracts using signalling, sham bids to honor incumbency and other devices are examined to determine whether bidding was collusive or pure oligopolistic interdependent behavior following noncooperative game theory. The schemes used to allocate contracts were found to be efficient methods for reaching agreements. Since pure interdependent (noncooperative) behavior requires rivals to correlate signals, coordinate expectations, and resolve timing-uncertainty problems within sealed-bidding constraints, detailed analysis of the economic evidence of bidding practices requires rejection of a Nash equilibrium explanation for the behavior.

Key words: Sealed-bidding, collusion, antitrust, game theory.

I. Introduction

Horizontal restraints of trade, especially price-fixing, bid-rigging and market division schemes, have generated a continuous flow of commentary on their nature and significance by lawyers and economists concerned with the interface between law and economics.¹ A major turning point in this dialogue was reached in 1976 with Richard Posner's critique of antitrust policy, which followed the substance of his 1969 *Stanford Law Review* article. Posner argued that the failure of antitrust policy and the courts to address head-on bid rigging arrangements based on tacit collusion and conscious parallelism not only has left much anti-competitive activity unchallenged, but also sometimes even deters genuinely pro-competitive conduct.²

¹ Turner (1962, pp. 655-706), Posner (1969, pp. 1562-1696), Posner (1976), Asch (1969, pp. 53-68), Kuhlman (1969, pp. 69-82), Erickson (1969, pp. 83-122), Fraas and Greer (1977, pp. 21-44), Hay and Kelley (1974, pp. 13-38), Asch and Seneca (1976, pp. 1-12), Elzinga and Breit (1976), Sonnenfeld and Lawrence (1978, pp. 145-157), Clark (1983, pp. 887-952), Salop (1986, pp. 265-290), Block and Feinstein (1986, pp. 122-131), Waldman (1988, pp. 67-93), Hay (1989, pp. 183-207), Shughart (1990), Areeda and Hovenkamp (1991, pp. 952-953), Baker (1993, pp. 143-219), Argut (1993, pp. 531-548).

² See Posner (1969, pp. 1562-1696).

In a recent examination of the current boundaries of horizontal restraints, Kevin Arquit reasons that, in the light of the *Kodak* decision,³ (a) *Matsushita*⁴ should not be interpreted so broadly as "to prevent courts from making any inferences of conspiracy in all cases unless evidence literally 'exclude(s) the possibility' that the alleged conspirators acted independently,"⁵ and (b) instead, the presence of "plus factors," in addition to parallel behavior, may justify an inference of conspiracy, especially in cases involving signaling, invitations to collude, and other facilitating practices designed to reduce interfirm uncertainty and risk of deviation from a coordinated strategy.⁶

Both Posner and Arquit recognize the need for more empirical evidence about the nature and operational aspects of tacitly collusive arrangements, as well as the presence and importance of "plus factors" in cases that at first blush may appear to fall within the *Matsushita* "equal plausibility" rule.⁶ In short, *Kodak* can be read to mean that the Supreme Court both (a) turned away from reliance on "pure" economic theory of rational oligopolistic interdependence, and (b) placed the burden on plaintiffs to present evidence from which the trier of fact could reasonably infer the existence of an agreement to restrain trade.⁷ The main focus of this paper is to present unpublished data documenting signaling, invitations to collude, and other facilitating devices and practices found in some recent Sherman Act Section 1 cases, brought by various states, which although settled prior to trial, provide a case study of precisely the type of economic evidence Posner, Arquit and

³ Agreeing with the Ninth Circuit's point (overturning the District Court) that there should be a more complete factual record on which to base a decision, and ruling that *Kodak* was not entitled to summary judgment on either of its claims regarding alleged violations of Sections 1 and 2 of the Sherman Act, the Supreme Court (a) rejected the notion of using a special standard for summary judgment in an antitrust case, holding that such motions should be treated the same way as in all other cases; (b) held that plaintiffs were entitled to a full opportunity to conduct discovery necessary to withstand defendants' summary judgment motion, and (c) reasoned that *Kodak*'s alleged conduct was "... facially anticompetitive and exactly the harm that antitrust laws aim to prevent. ... In this case, when we weigh the risk of deterring procompetitive behavior by proceeding to trial against the risk that illegal behavior go unpunished, the balance tips against summary judgment." Eastman *Kodak Co. v. Image Technical Serv., Inc.*, 112 U.S. 2072, 2083, 2988-89 (1992). In the subsequent trial, remanded to the District Court for trial on its merits, a San Francisco jury ruled against *Kodak*, and awarded \$23.9 million in damages. Cf. "Jury Awards ISOs \$23.9 Million in *Kodak* Replacement Parts Case," (October 19, 1995) *Antitrust and Trade Regulation Report*, 69, pp. 441.

⁴ *Matsushita* involved a complaint of a horizontal conspiracy by Japanese electronic manufacturers to price below cost in the U.S. market. The court found that there was no direct proof of conspiracy and that it would be economically irrational for Japanese companies to conspire to lower prices for 20 years in the expectation of recouping losses later at higher prices. The opinion concluded: "If (defendants) had no rational economic motive to conspire, and if this conduct is consistent with other equally plausible explanations, the conduct does not give rise to an inference of conspiracy." *Matsushita Elec. Indus.* 475 U.S. 574, 596 (1986).

⁵ See Arquit (1993), pp. 531-538.

⁶ *Matsushita Elec. Indus. Co. v. Zenith Radio Corp.*, 475 U.S. 574, 596-597 (1986).

⁷ See Arquit (1993), pp. 531-538.

others indicate is necessary for a finding of conspiracy based on ostensible tacit collusion.⁸

The paper will attempt to demonstrate that circumstantial evidence, such as the data discovered in the milk cases, can help answer these continuing questions about cartels which superficially appear to be based solely on tacit arrangements: Does contemporary oligopoly theory provide clear economic indicia for distinguishing unlawful oligopolistic coordination from lawful business conduct? Have antitrust authorities, private plaintiffs and the courts been misreading or misjudging the phenomenon of mature, rational business judgment, incorporating very sophisticated interdependent oligopolistic behavior? Put differently, does antitrust policy still suffer from a "cultural lag," as intimated by Turner,⁹ that does not understand the higher state of modern business acumen and gaming artistry which are capable of generating highly-sophisticated interfirm bidding/pricing/market-division mechanisms without the need or use of overt agreements? Alternatively, is game theory being misused as a clever disguise for explicit collusive activities?

These and other related questions are examined in the context of empirical data available on the widespread school milk cartels of the 1980s that were exposed and prosecuted by various state attorneys general and later by the Antitrust Division of the U.S. Department of Justice. The milk conspiracies left a trail of details depicting the nature of interfirm behavior in various oligopolistic settings, ranging from a duopoly to cases involving three-firm, five-firm, seven-firm, and nine-firm cartels, with and without the presence of a competitive fringe and threat of entry —

⁸ It is strange that tacit collusion, perceived originally as a rather simple and straight-forward economic concept, now poses a dilemma for antitrust policy. According to traditional oligopoly theory, tacit collusion characterizes the situation of a few-seller market, with very restrictive assumptions, in which a monopoly price conceptually can emerge without formal agreement or meetings. Judge Robert Bork has questioned Posner's 1976 treatment of tacit collusion and antitrust law and advanced doubts "whether tacit collusion is any important phenomenon, or even that it is a real phenomenon. ... It is hard to say with certainty that such collusive pricing does or does not occur, since, by definition, we have not detected it. ..." Bork further warned that "The attempt to apply Section 1 (of the Sherman Act) with inadequate techniques for discerning tacit collusion is, therefore, likely to produce a series of convictions of firms that have in fact done nothing at all reprehensible." Bork may have been right, but for different reasons: instead of convictions, his analysis has contributed to the "equal plausibility" rule of *Matsushita*. Nonetheless, while some activities might be able to masquerade as "conceptually plausible" pure consciously parallel behavior, a more searching examination of interfirm behavior discussed in this paper discloses that successful tacit collusion is likely to involve direct competitor communications, if not outright agreements. See Bork (1978), pp. 175).

⁹ "... economic theory has suggested that this kind of noncompetitive behavior (tacit collusion or conscious parallelism) might well arise in an 'oligopoly' situation ... without overt communication or agreement, but solely through a rational calculation by each seller of what the consequences of his price decision would be, taking into account the probable or virtually certain reactions of his competitors." Turner (1962, p. 661) and further developed in *The Journal of Reprints for Antitrust Law and Economics*, XIII, No. 2 (1982).

demonstrating conspiracy under Section 1, based on just the kind of empirical data necessary to meet economic and legal tests for illegal tacit collusion.¹⁰

Over 1,000 civil and criminal prosecutions involving price-fixing/bid-rigging allegations have been brought under Section 1 of the Sherman Act,¹¹ including the great electrical equipment conspiracy which operated before and after World II (regarded as (a) the most celebrated U.S. cartel of the past 50 years,¹² and (b) the largest criminal case in the history of the Sherman Act).¹³ Moreover, through the discovery process many Section 1 actions have generated a rich body of economic evidence on (a) different types of collusive protocols, (b) testimonial evidence and affidavits by participating officials on the conspiracies' origins, and (c) operational details on how prices were manipulated and customers and markets were divided. The evidence in these actions, however (other than the electrical equipment case), has never received a full-dress review and analysis before a trial court and no determination has been made whether the inferences of Section 1 violations are justified.¹⁴ For example, most of the bid-rigging/market allocation cases that erupt-

¹⁰ See particularly the comments of Turner (1962) and Posner (1969, pp. 1562-1696) regarding the nature of tacit collusion, whether such behavior is violative of Section 1 of the Sherman Act, and what kinds of data are probative in such cases.

¹¹ See Fraas and Greer (1977, pp. 21-44).

¹² In his *Antitrust Law: An Economic Perspective*, Posner observed that the major flaw in judicial interpretations of the Sherman Act was due to the focus of antitrust decisions on the concept of "conspiracy" (rather than price fixing/bid rigging per se). The general premise of this paper is that artificial, collective price-elevating/bid-rigging/market division arrangements differ only in terms of the basic nature and structure of the agreements, protocols, and monitoring/enforcement mechanisms, whether formalized in an overt manner (a cartel proper) or simply by means of sophisticated tacit arrangements. Furthermore, by focusing on whether competitive conduct is constrained, fettered, or steered into artificial channels, by conscious and deliberate collective action, the courts might avoid the "conspiracy" trap, which tends to couch the Section 1 issue in terms of the narrow legal construct of "a combination or confederation between two or more persons formed for the purpose of committing by their joint efforts, some unlawful or criminal act..." Black (1979, pp. 280).

¹³ The twenty separate cases (naming 29 electrical equipment manufacturers and 45 individual defendants) were concluded in 1961 with (a) a total of \$1,924,500 in fines assessed against corporations and (b) fines and jail sentences for certain corporate executives, before the U.S. District Court for the Eastern District of Pennsylvania. What made the electrical equipment conspiracy "great" was its scope (20 separate product lines), its economic impact (roughly \$7 billion of business was affected), the degree of sophistication exercised by participants (rotation of bid positions of firms through the "phase of the moon" system developed for sealed-bid business, code names, payphone communications, clandestine meetings, faked expense account records, and secret market allocations), the direct role played by the industry trade association N.E.M.A. and the antecedent role played by certain government agencies, notably NRA and OPA (National Recovery Administration and Office of Price Administration). See Smith (1961, pp. 132-137) and Sulhan (1974).

Of course, OPEC (Organization of Petroleum Exporting Countries) which gained global respect for its ability to quadruple crude oil prices in 1973 and to add on more increases over the next decade, is still regarded as the most notorious of modern times. See Griffin and Teece (1982).

¹⁴ Three recent opinions suggest a possible shift away from a broad interpretation of *Matsushita* and toward acceptances of inferences from circumstantial evidence of tacit collusion as sufficient to reach a finding of unlawful conduct, especially when viewed in conjunction with other facts. See *Petroleum Products* (In re Coordinated Petrol Proceedings in Petroleum Prods) Antitrust Litigation, 906 F.2d 432 (9th Circuit 1990) *cert. denied*, 111 S.Ct. 2274 (1991); the recent opinion by the U.S. District Court of Rhode Island ("... No formal agreement is necessary to constitute an unlawful

ed during the 1960s, 1970s and 1980s,¹⁵ involving such widely diverse products as cast iron and cement soil pipe, steel rebars, folding gymnasium bleachers, highway salt, cement, ready-mix concrete, gypsum, highway construction, antibiotics, retail gasoline, lead-based antiknock gasoline additives, chlorine, infant formula, and school milk were terminated by settlement agreements; hence, the threshold question — whether there was sufficient probative evidence to demonstrate a violation of Section 1 (based exclusively or partly on oligopolistic coordination, i.e., tacit collusion) — was never joined.¹⁶

II. The Market for School Milk Supply Contracts

Data discovered in prosecution of the widespread bid-rigging in the sale of half pints of milk to school districts in the East, Southeast and Southwest provide a good case study of economic evidence demonstrating how tacit collusion and consciously parallel behavior can lead to a practical and explicit framework for restraining trade.¹⁷ Until recently, these conspiracies received little attention (like many of the price-fixing cases of the 1960s and 1970s) perhaps because of the "lower profile" prosecution by state attorneys general.

1. NATURE OF THE MARKET FOR SCHOOL MILK CONTRACT BUSINESS

A. The Product School districts purchase a range of products from dairies (whole, low-fat, chocolate and skim milk, buttermilk, milkshake mix, orange juice, fruit-conspiracy... the essential combination in violation of the Sherman Act may be found in a course of dealings or other circumstances as well as in any exchange of words") United States v. Combeant Industries, Inc. and John P. Santos (U.S. District Court, District of Rhode Island, May 17, 1994). Commerce (1994, pp. 625); and U.S. Court of Appeals, Third Circuit ("... a nonmovant plaintiff in a section 1 case does not have to submit direct evidence, i.e., so-called smoking gun, but can rely solely on circumstantial evidence and reasonable inferences drawn from such evidence... Here, in stark contrast with the circumstances in *Matsushita*, the plaintiff's theory of conspiracy is not implausible... Therefore, given the circumstances of this case, more liberal inferences from the evidence should be permitted than in *Matsushita* because the attendant dangers from drawing inferences recognized in *Matsushita* are not present..." (emphasis added)) *Petruzzi's IGA Supermarkets, Inc. v. Darling Delaware Co.*, 998 F.2d 1224.

¹⁵ Interestingly, many of these cases were filed not by the Antitrust Division of DOJ, but by state attorneys general from California, Florida, Illinois, Minnesota, Texas, and Washington, among others. ¹⁶ Economic literature discloses that U.S. and foreign business firms have displayed unusual skill, if not real artistry in designing and implementing collusive arrangements of various types. See Stocking and Watkins (1948). Asch and Seneca (1976, pp. 1-12); Kuhlman (1969, pp. 69-82); Erickson (1969, pp. 83-122); Mueller (1968, pp. 86ff); Fraas and Greer (1977, pp. 21-44); Sonnenfeld and Lawrence (1978, pp. 145-157); and Shennefeld and Selzer (1993).

¹⁷ In terms of economic impact, the milk conspiracy cases were rivaled only by the recent complaint filed by the Attorney General of the State of Florida, (joined by several chain food stores, which ended in damage settlements) against infant formula manufacturers, charging a violation of Sections 1 and 2 of the Sherman Act, among other counts. *Cf.* State of Florida, *ex rel.* Robert A. Butterworth, and by and through Robert A. Butterworth as assignee of Toys "R" Us, Inc., Public Super Markets, Inc., and Winn-Dixie Stores, Inc. v. Abbott Laboratories, Bristol-Myers Squibb Company, and American Home Products Civ. Case No. 91-40002.

Flavored drinks, sour cream and yogurt) but the bulk of school purchases are half-pint cartons of whole white milk, whole chocolate milk, low-fat white milk, and low-fat chocolate milk. These latter products are by their very nature homogeneous (based essentially on butterfat and cocoa content). Hence, the overall result is that products sold to school districts are largely undifferentiated.

B. Nature of School Milk Contract Transactions. Typically, school districts enter into contracts with a private dairy to supply milk products served to students for an entire nine-month school year.¹⁸ Contracts almost always are awarded after a competitive bidding process, usually in the spring and summer months preceding the start of a new school year. Food service directors publish a legal notice of "invitation-to-bid" and send a copy of the bid announcement to dairies in the area.¹⁹ School boards almost invariably award the entire contract to the lowest bidder (based on the price of a specified product or weighted average price of several products) which meet the district specifications.²⁰

C. Number and Sequence of Bid Openings in a Market Area. During the bidding season a dairy may prepare as many as 50 to 100 or more bids for school districts located in its geographic service area (which normally includes also location of other trade accounts — grocery stores, convenience stores, wholesale food distributors, hospitals, prisons, institutions, factories, and restaurants). Rival dairies thus will be involved with bid openings every few days, and sometimes more than one bid opening on a given day. It will be demonstrated below that the number and sequence of bids and bid openings for school milk contracts has a special significance for the pattern of winning bidders among rival dairies, on the one hand, and in determining whether collusion existed among rival dairies, on the other.

D. Bidding Strategy. A variety of factors enter into the bidding strategy for school milk contracts, the most notable is the fact that school milk contracts typically account for roughly 5% to 15% of total dollar dairy volume. The primary business of dairies consists of sales to grocery stores and other commercial and institutional food distributors. Accordingly, dairy processors view school milk sales on an incremental revenue/cost basis, and whether school sales can be piggy-backed

¹⁸ The federal government provides support for milk in three separate nutritional programs for public schools: National School Lunch Program (NSLP), School Breakfast Program (SB), and Special Milk Program (SMP), which accounted for 60.7%, 4.4%, and 30.4%, respectively, of all milk served under these programs in 1975. Cf. U.S. Department of Agriculture (1982). U.S. Department of Agriculture (Report No. 350). Government Accounting Office (1992).

¹⁹ The announcements typically include (a) time and place for submitting bids; (b) specifications detailing the description of the products to be supplied, delivery points and schedules; equipment (coolers) and other service requirements; (c) bid opening date; and (d) the conditions for determining the winning bidder.

²⁰ Contracts usually are not split among dairies, although there are instances of such splits in the event of identical bids. Some school districts reserve the right to award bids based on local preference laws, or other considerations, but such instances are exceptions to the "low bidder" rule.

onto existing business in the vicinity.²¹ In consequence, a truly competitive dairy will attempt to obtain all the school milk business it can possibly serve, even if it means reconfiguring delivery routes.

Since school milk contracts are awarded on a sealed-bid basis over a period of months, in a competitive setting, bidder strategies tend to vary over the course of the bid season.²² Early in a bidding season, a given dairy might start out with a "low" bid price (relative to prices of the previous year and raw milk cost changes, if any) in order to generate enough business to help fill out routes. If rival(s) bid higher, then a given bidder might raise its price(s) on the next bid and still win the contract. Alternatively, a given dairy might begin the bid season with a relatively high price level, in the expectation of higher season prices. However, bid price levels must be reconciled with volume requirements, such that the need for higher sales volume tends to put downward pressure on bid prices as the season wears on, especially if the dairy in question pursued a "high" bid strategy earlier. In short, since school milk sales are a marginal cost/marginal revenue business, volume considerations dominate pricing decisions.²³

2. STRUCTURE OF FLUID MILK MARKETS

Markets for fluid milk products around the country are most accurately described as oligopolistic in structure, typically consisting of two to ten dairies. The effective geographic service areas of dairies have increased significantly over the past two

²¹ Most distribution costs (truck depreciation, maintenance, fuel cost and driver compensation) are normally allocated to commercial customers on a dedicated route. The only incremental distribution costs associated with school sales are commissions paid to drivers (e.g., 5% of gross revenue) or a proportionate share of salary/wages devoted to school deliveries. With regards to profitability of school milk contracts, distance from processing plant is irrelevant where a driver already is serving customers on nearby routes, and there is truck space and time to handle school accounts (i.e., the marginal cost of serving a given school district is relatively small). (Economic logic would suggest that also should be true for prisons, hospitals and institutions in the market area involved.) Thus, because a high volume of school milk business can help make the difference in profitability of a plant, school milk is viewed as a very desirable business. This is confirmed by a Pet Dairy document comparing the profitability of wholesale milk and school milk for the years 1986-1989, which shows that school milk gross profit per gallon averaged about five cents per gallon more than wholesale milk (e.g., \$.727 v. \$.672) and even more at high volumes (e.g., \$.805 v. \$.742). See "Appalachian Region: Sales and Gross Profit Schedules," Bates no. LST007762-007807.

²² The very nature of a sealed-bid system provides reciprocal economic benefits to all parties. In exchange for implied, if not express, commitments of bidders to extend their best independent efforts, the school district provides assurance that each bid will be sealed, protected, and not shopped around among other bidders. At the same time, the process routinely identifies the low bidder and detection of a "cheater" on cartel protocols. Thus, it needs to be recognized that the publicly-opened, sealed-bid procedure also provides bidders with a magnificently efficient communication system for detecting and policing members of a cartel enterprise.

²³ Processors attempt to operate their half-pint package assembly machines as close to capacity as possible. As a practical matter, the target utilization rate is around 80% of rated capacity. For a plant with a capacity of processing 100,000 gallons of milk per day, a half-pint package assembly line producing over 24,000 half-pints (1,500 gallons) per hour is thus capable of absorbing a significant proportion of a plant's total processed milk volume, depreciation and overhead.

decades due to improvements in: (1) sanitation on dairy farms and refrigeration, which has resulted in a longer shelf life of bottled milk;²⁴ (2) processing and packaging, especially the advent of high-speed bottling equipment, which has increased dramatically the minimum efficient size of a modern dairy; and (3) the U.S. highway transportation network. In consequence, dairies have expanded not only their scale of processing operations,²⁵ but also market service areas in order to increase their customer base. At the same time, processed milk markets vary in geographic size, depending on population density, transportation costs and dairy market strategies.

3. STRUCTURAL CHARACTERISTICS OF SCHOOL MILK MARKET FACILITATING COLLUSION

Facit vs. event 11

Most economists are in general agreement that collusive business conduct is highly correlated with certain basic structural features of a market, particularly markets with (a) relatively few sellers and relatively high concentration,²⁶ (b) relatively high capital costs, (c) homogeneous products, (d) relatively inelastic market demand, (e) relatively slow growth of industry demand, (f) similar cost structures among rival sellers, and (g) slow technological change in product and production process. The fluid milk processing industry constitutes virtually the classic case of an industry containing all of these structural features, plus other institutional arrangements, that are most favorable to the emergence of tacit cooperation and prone to some form of cartelization.²⁷ There also are other facilitators peculiarly present in the school milk.

A. *Government as a Facilitator of Collusion.*—The fluid milk processing industry is affected by several important institutional arrangements and other devices that serve to facilitate collusion among sellers: (a) pervasive federal government price and supply regulations governing raw milk production; (b) state regulatory commissions or other bodies exercising various forms of price controls; and (c) dairy products trade associations.

Direct government regulations of certain basic commodities, both federal and state, are oftentimes rationalized as necessary to ensure an "orderly supply" and to prevent so-called "cutthroat" or "ruinous" competition, especially in secularly declining industries.²⁸ In consequence, whether by design, or unwittingly, over

²⁴ Currently, milk shelf life is approximately 16 days, or more than twice the figure in the 1960s.

²⁵ These developments, in turn, have led to higher concentration in the dairy processing industry as a result of many mergers and acquisitions by publicly-owned dairy companies and dairy cooperatives. See MacAvoy (1977).

²⁶ See Fraas and Greer (1977, pp. 21-44), and Hay and Kelley (1974, pp. 13-38).

²⁷ This is not to say that such structural features automatically and inevitably lead to price fixing and bid rigging; rather, these features serve to facilitate, i.e., make it easier for sellers to reach agreements, depending upon their relative importance in different industry configurations.

²⁸ Dairy industry officials have argued for years that unfiltered competition among firms in few seller markets (oligopoly) burdened with high fixed costs, (a) has a tendency to become "cutthroat"

time such regulations can become a major facilitating device for collusive activities among ostensible competitors, particularly processors of agricultural products.²⁹

Insofar as fluid milk is concerned, ever since the 1930s a "culture of regulation" has gradually, but inexorably, emerged from the interactions of public and private interests generated by (a) the Federal Milk Marketing Program, (b) the federal price support program under auspices of the Commodity Credit Corporation, (c) various state milk "commissions" or "boards" controlling milk prices, (d) the vertically integrated ownership structure of dairy cooperatives, (e) the Capper-Volstead Act exempting cooperatives from the Sherman Act,³⁰ and (f) the fact that dairy cooperatives own and operate a number of fluid milk processors,³¹ and account for over 75% of all milk produced by dairy farmers and over 80% of all Grade A milk produced by dairy farmers.³² Raw milk pricing set by federal marketing orders (FMOs) establishes a uniform cost "floor" for all fluid milk processors³³ in each of some forty FMO markets.³⁴ The milk litigation of the

or "ruinous," (b) is likely to drive prices down to levels that yield a "less than normal" (i.e., low) rate of return on capital, and (c) that this condition can be averted by some artificial restraint such as government price regulation, or price stabilization cartels. See MacAvoy (1977).

²⁹ See MacAvoy (1977).

³⁰ Anticompetitive devices utilized by the dairy cooperative Dairymen, Inc. over the years through its Capper-Volstead antitrust exemption are chronicled in such cases as *Kinnert Dairies, Inc. v. Dairymen, Inc.*, 512 F. Supp. 608 (N.D. Ga. 1981), aff'd, 715 F.2d 520 (11th Cir. 1983). Dairymen was formed in 1968 out of a consolidation of eight separate dairy cooperatives located throughout the southeastern United States. Its producer-members have dominated milk production in Kentucky and other states in the Southeast for years. Although Dairymen's efforts were concentrated initially at the producer level, like other large dairy cooperatives, it has integrated vertically through the fluid milk processing and distribution levels, and has operated processing plants scattered throughout the Southeast for many years. Moreover, Dairymen itself is named as a defendant in the Louisiana, Georgia, and Kentucky milk conspiracies filed in the mid-1970s, 1980s, and 1990, respectively.

³¹ For example, Dairymen, Inc., one of the largest dairy cooperatives in the eastern United States, owns, has joint venture agreements, and management contracts with dairies in many states. One of Dairymen's processing subsidiaries, Flav-O-Rich, has been the single most visible participant in school milk conspiracies uncovered since recent investigations into antitrust violations by the dairy industry began in Florida in 1987. Flav-O-Rich and many of its sales managers have entered guilty pleas in Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina and Tennessee.

³² Cf. Dr. Emerson M. Babb, *Summary of Expected Expert Testimony*, The Commonwealth of Kentucky v. Southern Belle Dairy, et al. in the United States District Court, for the Eastern District of Kentucky, London Division, Civil Action 90-46, April 15, 1993, p. 7.

³³ According to industry officials, raw milk costs typically constitute approximately 50% to 60% of milk processors' total costs. For example, see deposition testimony of Douglas Stampfer (who pled guilty to conspiracy to rig bids to public schools in various Virginia school districts), Virginia Regional Manager of Pet's Dairy Division, and later Vice President and Virginia Regional Manager of Land-O-Sun Dairies (which acquired Pet's Dairy Division in 1985). (*Transcript, Douglas H. Stampfer Deposition* (dated April 29-30, 1992), p. 4); and Marva Maid, "Cost Study," Virginia Milk Commission.

³⁴ Raw milk is divided into two grades for regulatory purposes: "Grade B" which can be used only for manufactured products (butter, cheese, sour cream, etc.) and "Grade A" which can be used either as fluid milk or for manufactured products. FMO regulations cover only Grade A milk. Moreover, the class A price set by FMO in the Minnesota and Wisconsin area (the primary milk production area of the U.S.) fixes the class A price in other areas. Thus, FMO pricing serves to create a differential between the market price for Grade B milk in the Minnesota-Wisconsin area FMO and the price

1980s provides strong evidentiary support for the hypothesis that the maze of milk regulations imposed by the FMOs has provided the framework and environment, if not the catalyst, for the price-fixing/bid-rigging/market allocation schemes that have surfaced in school milk sales.³⁵

Ostensible laudable intentions of Capper-Volstead (e.g., allowing co-ops to organize and thus gain a more equal footing with both industrial corporations supplying agricultural machinery and implements, and processors of agricultural products) have had the not unexpected effect of exceeding the original goal, such that co-ops have attained sufficient monopoly power through control of graded milk supply to collect "over order" premiums on FMO prices (i.e., "economic rent"). Moreover, evidence generated by the milk cases indicates that it apparently was a fairly easy step, both philosophically and commercially, for dairy cooperatives to ratchet the rather comprehensive milk regulatory system up just one more level, especially where they enjoy the protective cover (e.g., minimum-price regulations) of state milk marketing commissions: namely, to lead or join in concerted efforts to rig the price of milk to school districts through their wholly-owned dairy subsidiaries, joint ventures with other dairies, and supply agreements with still other dairies.

B. Nature and Significance of Milk Marketing Commissions.—Many states exercise some form of control over the wholesale and retail prices at which milk can be sold in the state, either through a formal milk commission, control board, or the state commissioner of agriculture. The form of price control varies among states, ranging from regulations requiring milk processors to "post" a proposed price change with a commission prior to implementation to the establishment of *minimum* and/or *maximum* resale prices.³⁶

C. Facilitating Practices of Milk Processors.—Additionally, as explained more fully below, dairies have utilized various rules, customs, and protocols as facilitating practices for their collusive activities: (a) use of the sealed-bid process as an information exchange; (b) use of "complementary" bids to project the illusion of

set by order in each other order region. As a result, the FMO system has generated some egregious economic effects ("deadweight" economic loss in higher prices and loss of allocative efficiency) due to artificially-high Grade A raw milk prices, and creation of an overwhelming surplus of Grade A milk production and impeding the transportation of raw milk from more efficient to less efficient FMO areas. One must balance against these economic costs of regulation the social benefits actually achieved by the regulations. See "Federal Milk Order Market Statistics," 1993 Annual Summary, U.S. Department of Agriculture, *Agricultural Marketing Service, Statistical Bulletin No. 886*.

³⁵ See MacAvoy (1977).

³⁶ In practice, every month milk commissions publish the minimum price at which raw milk can be sold, which is higher than the FMO for the same milk. Interestingly, a historical review of such regulations discloses that many states have exercised extraordinary control over the resale prices of milk. For years some states controlled both wholesale and retail resale prices, by setting either a minimum or maximum levels at which the product could be resold at wholesale or retail. For a discussion of the states exercising control over resale prices of milk, see for example, "Role of Government in Pricing Fluid Milk in the United States," from *The Dairy Situation*, September 1959 and subsequent issues, U.S.D.A.

competition to school districts: (c) refusal to bid for certain school district business, despite the presence of excess capacity and specific invitation to bid; (d) consistent and uniform mutual respect for the "incumbent" bidder by rivals, and (e) exchange of pending price change announcements.

III. Milk Litigation

One of the early school milk cases, an action filed in February 1988 by the Attorney General of the State of Florida, triggered many other state investigations and complaints.³⁷ The milk conspiracies uncovered by these actions differ as to (a) organizational structure and other particulars: like some of the cases of the 1960s and 1970s (some overt, e.g., bleachers, some largely tacit, e.g., infant formula, and others a mixture of tacit and overt, e.g., school milk); (b) scope and form of protocols (some based principally on price leadership/followership conventions, while others involved more complex pricing/bidding protocols, e.g., bleachers); and (c) geographic scope of markets affected (nationally v. regional and local).

1. ECONOMIC INDICIA OF AGREEMENTS AMONG MILK PROCESSORS

A review of the milk cases discloses that the dairy companies involved in fixing prices and rigging bids to school districts at one time or another utilized the entire panoply of anti-competitive devices and practices to curb competition in the bidding for school milk contracts. When tacit collusion was not working well enough to insure market share, price, or profits objectives, firms shifted to more effective and more reliable protocols. Agreements manipulated bids, set bid prices at higher levels than would have prevailed under unfettered competition, reduced bid prices as infrequently as possible, and raised bid prices during the bidding season and from year to year.³⁸

In some of the milk cases, hard evidence of communications and agreements among competitors was disclosed in guilty plea agreements, affidavits and deposition testimony by sales officials regarding the acts of agreement and mechanics of implementation. In other cases, the evidence is mostly circumstantial. Nonetheless, examined in context with other data, the circumstantial evidence is strongly suggestive that competitors discovered the path toward agreements on pricing and

³⁷ Cf. State of Florida v. Southland Corporation, *et al.*, Case No. 88-0273-Civ-Scott (S.D. Fla., Miami Div.), naming eight co-conspirators: Southland Corporation of Dallas (parent of Velda Dairies), Flav-O-Rich of Louisville, Kraft of Chicago (Sealtess), Pet of St. Louis, Dean Foods of Chicago (parent of Hart's Dairy), T. G. Lee Foods of Orlando, and McArthur Dairies of Miami.

³⁸ The somewhat erratic life cycle found in some of the milk cartels has been used by some defendant experts to argue that cartels really seldom get off the ground, and if they should, because they are feeble and fragile, their half-life is bound to be short, turbulent and ineffective. Yet, the milk cartels of the 1980s, like others before them, confirm the proposition that many cartels endure for years, while others falter, and still others manage to re-group and start over.

bidding practices, namely allocation or assignment of school districts.³⁹ Moreover, in virtually all cases one finds excellent examples of precisely the kind of evidence that should convince the trier of fact that the activity in question is violative of Section 1 of the Sherman Act,⁴⁰ namely: (1) price discrimination by processing plants to different customers (differing prices to customers, net of transportation costs); (2) prolonged excess capacity; (3) absence of discounts during the conspiracy period, despite presence of substantial excess capacity; (4) prices of sellers in the rigged markets changing less frequently than prices of firms in adjoining competitive markets; (5) abnormally high margins and profits on school milk business during the conspiracy period relative to pre- and post-conspiracy periods; and (6) respect for incumbent sellers and resulting relatively stable market shares.

In this connection, some of the circumstantial evidence associated with the school milk conspiracies uncovered to date disclose a web of interfirm relationships spun around large dairy cooperatives (Figure 1). Dairy cooperatives (e.g., Dairy-men) normally require their processing subsidiaries (e.g., Flav-O-Rich) to purchase all of their raw milk from the co-op, and any excess supply is sold to ostensible "competitors" of processor subsidiaries. What this means in practice is that processors such as Flav-O-Rich often will be competing for school milk contracts and other commercial accounts in local areas with other processors that purchase all or part of their raw milk from their cooperative owner (e.g., Dairyman). In Kentucky, many of Flav-O-Rich's "competitors" who obtained their raw milk supply from

³⁹ In some cases, after production of plaintiffs' expert reports analyzing bidding practices and bidding patterns, various plea agreements were made, including in one instance, renegeing of earlier Grand Jury testimony by three officials, and submission of affidavits confirming that inferences made by expert reports of bid rigging, based on circumstantial evidence alone had captured the essence of the agreements among defendants.

⁴⁰ During those years (1984 and 1988), David R. Meyer, David Trauth, Dan Smith and I met on a regular basis to fix prices for those school districts between the two companies. Prices were arranged through meetings at places like restaurants and through phone calls. Dan Smith and I communicated over the phone on a regular basis concerning these bids to school districts. I also have personal knowledge that between 1984 and 1988 all bids to the thirteen school districts in Boone, Kenton and Campbell counties were rigged. . . . *Affidavit of Reynold Krassel*, dated August 10, 1993.

⁴¹ In approximately 1978 or 1979, I was involved in several meetings with Mr. Louis Trauth. . . . There was an (sic) tacit agreement reached as a result of conversations. . . . On occasions when one of the parties (Trauth Dairy or Meyer Dairy) perceived there was a violation of the tacit agreement, the party who was in violation of the agreement would receive notice from the other party. . . . *Affidavit of David E. Meyer* (former President of Meyer Dairy), dated August 9, 1993.

⁴² I am prepared to testify at trial that the conspiracy was already operating before I became President of Meyer Dairy in February of 1983. . . . I recently attended the depositions of (plaintiff experts). They have correctly analyzed, almost entirely from circumstantial evidence, the impact of the conspiracy on the thirteen school districts in Boone, Kenton and Campbell Counties. *Affidavit of David R. Meyer*, President of Meyer Dairy, dated August 9, 1993.

⁴³ Cf. Commonwealth of Kentucky, *Ex Rel. F. Chris Gorman*, Attorney General, for the use and benefit of Boone County School District, *et al.* v. Louis Trauth Dairy, Inc., and H. Meyer Dairy Company, U.S. District Court, Eastern District, Kentucky (Covington Division) Case No. 92-50. ⁴⁴ Cf. Posner (1969), pp. 1562-1569).

Flav-O-Rich's parent, Dairyman, have been implicated in bid-rigging activities.⁴¹ Likewise, in Alabama, Flav-O-Rich was involved with a bid-rigging/market allocation conspiracy with Barber Pure Milk Co., which purchased its raw milk from Dairyman during the 1980s.

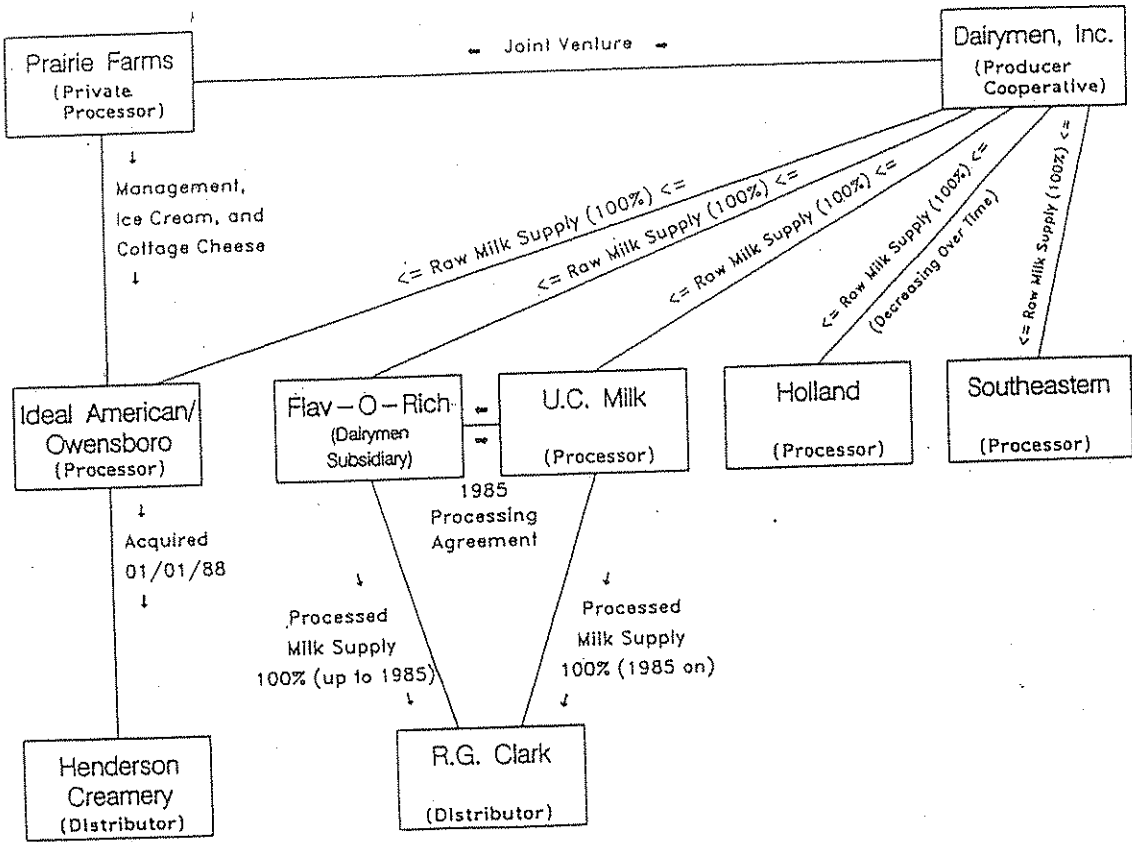
Dairyman's direct involvement in the southern Kentucky conspiracy illustrates how a dairy co-op, through continuous and extensive control, can exploit a wholly-owned subsidiary (Flav-O-Rich) to participate in school milk bid rigging and market/customer allocations. According to sworn testimony of Flav-O-Rich sales officials, the C.E.O. of Dairyman and Flav-O-Rich (James W. McDowell) pressured sales managers to get Flav-O-Rich profits up by "getting to know" their competition. More specifically, one sales manager has testified that on two occasions he had informed McDowell that he was engaging in bid rigging; on the first occasion he stated that Mr. McDowell placed his hands over his ears to indicate he did not wish to hear the actual details; and on the second occasion, which took place on board the corporation's plane, immediately after informing his superior about the bid rigging he was given a very good annual review and an increase in pay.⁴²

2. VARIANTS OF OLIGOPOLISTIC STRUCTURES IN SCHOOL MILK CONSPIRACIES

Figure 2 graphically displays (a) the geographic scope of recent conspiracies uncovered in the dairy industry, (b) the respective defendant dairies involved, and (c) a listing of actions terminated by guilty pleas of participating officials and by guilty court verdicts. Table I summarizes the record regarding the number of (a) states in which major dairy companies and (b) corporate officials, either have entered guilty pleas, or been adjudged guilty of rigging bids on school milk in various states during the 1988-1993 period. Clearly, Borden, Pet and Flav-O-Rich stand out in terms of both the number of states involved (five-to-seven) and the number of officials implicated (eight-to-nine). The data obtained through the discovery process in these cases disclose several different variants with respect to the structure of the

⁴¹ For example, U.C. Milk, Holland Dairies and Ideal American, defendants in the western Kentucky, Owensboro Division action, were customers of Dairyman during the conspiracy of the 1980s to rig school milk bids and allocate school milk contracts in western Kentucky, and Dairyman had a partnership relationship in Prairie Farms Dairy which owned Ideal American. (Southeastern, a non-defendant company, is not alleged to have been a conspirator.) An interesting confirmation of close interfirm relationships in the industry is reflected in a letter of June 22, 1985, from H. B. Howser of U.C. Milk to the Lyon County Board of Education stating that U.C. no longer would bid for the school milk contract because the company had an agreement to process milk for Flav-O-Rich's Murray and Paducah Division, to be sold by its distributor Clark Dairy: "It would be a conflict to bid against our (sic) distributor." This action by U.C. milk, and the withdrawal of its bid for the 1988-89 school year by Webster County (suggesting the bid go to its "competitor" Owensboro Milk also 100% supplied by Dairyman) after being declared the winning bidder are symptomatic of an agreement to assign or allocate school milk accounts.

⁴² Cf. Deposition of Raymond Arthur Platter, dated November 18, 1991, pp. 179-184 and 344-48, in State of Georgia *Ex Rel.*, Michael J. Bowers, Attorney General, for the use and benefit of the Camden County School District, *et al.* v. Dairyman, Inc. *et al.* (Civil Action File CV 289-153, U.S. District Court, Southern District of Georgia, Brunswick Division).



ROBERT F. LANZILLOTTI

Figure 1. Interlocking relationships among dairies western kentucky dairy conspiracy.

Guilty Pleas and Verdicts
1988-1993

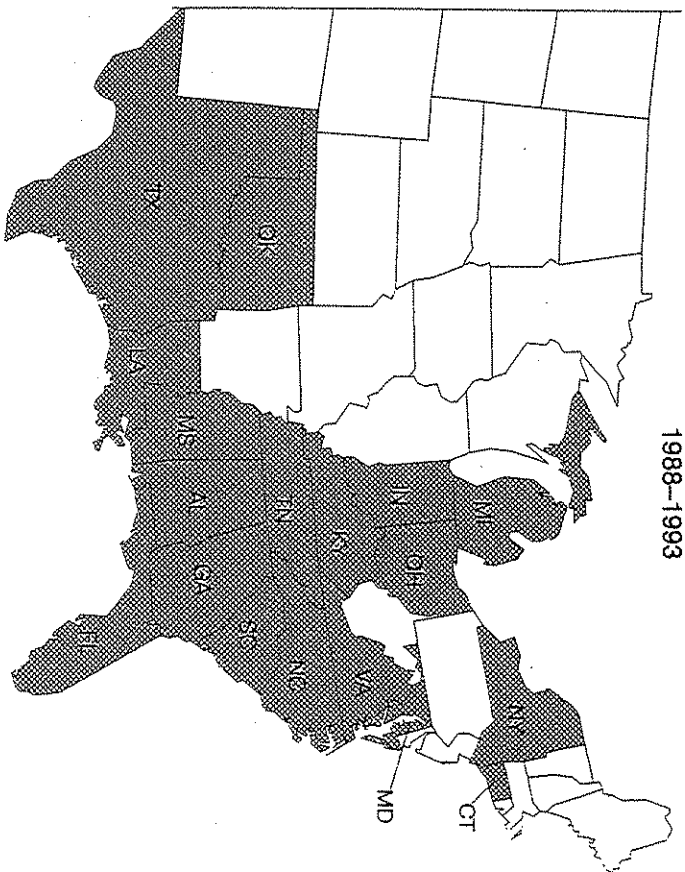


Figure 2. Conspiracies in the dairy industry. Source: Data compiled from Commerce Clearing House, Trade Regulation Reports (various issues 1988-1993) and documents on file in various U.S. district courts entitled "PLEA AGREEMENT" and "JUDGMENT IN A CRIMINAL CASE" [including Mid. Dist. of Fla. (Tampa Div.), No. Dist. of Ga. (Atlanta and Columbus Divs.), Dist. of S.C., Mid. Dist. of N.C. (Greensboro Div.), E. Dist. of Va. (Norfolk Div.), E. Dist. of Ky. (London Div.), No. Dist. of Tx. (Dallas Div.), So. Dist. of Miss. (E. Div.), Mid. Dist. of Ala. (E. Div.) among others].

conspiracies, the number and types of firms involved (national v. regional-local), and the time period of their operations.

With respect to geographic scope, the milk conspiracies consist of a local, regional, statewide, and in some cases a multi-state, patchwork or latticework of "overlapping" bidding rings. The typical pattern involves a basic "core area" conspiracy, which comes to terms with rivals along the fringe of that core on a "live-and-let-live" market-sharing arrangement, who, in turn, work out similar arrangements with still other rivals along the fringe of their rigged market. Under these circumstances, identifying the precise number of participants involved in bid rigging in a given geographic area depends on whether one includes (a) only those firms that are directly involved in that activity, or (b) those firms plus others that are indirectly

Total Guilty Pleas and Verdicts: 109

Yr	St	Defendant(s)	Dairy	Yr	St	Defendant(s)	Dairy
88	FL	Sunny Florida Dairy	Sunny Florida	92	TX	Gandy's Dairies	Gandy's
88	FL	JTH Investment Co.	Van Hoose Dist'r's	92	VA	Meadow Gold Dairies	Meadow Gold
		James T. Hall	Flav-O-Rich	92	NC	Phillip Dennis Holder	Pelland-O-Sun
88	FL	Christopher C. Howard	Flav-O-Rich	92	NC	Hugh P. Bowman,	Flav-O-Rich
		Timothy P. Tanna	Borden			Joe C. McMillan, and	Pelland-O-Sun
88	FL	A. Lamar Garrell	Borden	92	NC	Paul W. Tucker	Pelland-O-Sun
89	FL	Jack Parker Tribble, Sr.	Borden	92	NC	Southern Belle Dairy	Southern Belle
89	FL	Leonard O. Jackson	Borden	92	VA	Land-O-Sun Dairies	Land-O-Sun
89	FL	Land-O-Sun Dairies	Land-O-Sun	92	GA	Land-O-Sun Dairies	Land-O-Sun
89	FL	Lee F. Halberg	Pelland-O-Sun	92	SC	Land-O-Sun Dairies	Land-O-Sun
89	FL	Jerry R. Pippin	Borden	92	NC	Ollie L. Wood	Flav-O-Rich
89	FL	Charles R. Misler	unnamed	92	TX	Joe Gilmer	unnamed
89	FL	G. Maurice Binder	Flav-O-Rich	92	AL	Charles L. Burgess	Barber Dairies
90	FL	James R. Clark	Hart's Dairy	92	AL	Barber Dairies	Barber Dairies
90	FL	Borden	Borden	92	AL	C. Jack Williamson	Barber Dairies
90	FL	Southeastland Corp.	Southeastland Corp.	92	KY	Flav-O-Rich	Flav-O-Rich
90	FL	Charles H. Love	Borden	92	GA	Flav-O-Rich	Flav-O-Rich
90	FL	William R. Waters	Flav-O-Rich	92	MS	Flav-O-Rich	Flav-O-Rich
90	GA	James Dallas Cannady	Pelland-O-Sun	92	NC	Flav-O-Rich	Flav-O-Rich
90	GA	Jack D. Harris	Coble	92	TX	Flav-O-Rich	Flav-O-Rich
90	GA	Gerald M. Watson	Pelland-O-Sun	92	TX	Mike Compton	unnamed
90	GA	Kinnell Dairies	Pelland-O-Sun	92	GA	Daniel W. Turney	Atlanta Dairies
90	FL	Raymond A. Platler	Kinnell Dairies	92	IN	Allen Dairy Products	Allen
90	FL	Pel Incorporated	Flav-O-Rich	92	MS	Jack B. Vance	Borden
90	FL	McAthur Dairy and T. G. Lee Foods	McAthur Dairy	92	MS	M. K. Ehrhidge	Borden
90	FL	Howard W. Hutchinson	Pelland-O-Sun	93	SC	Edgar Allen Spears	Sunier Dairies
90	MD	Rosh & Co., Inc.	Rosh & Co., Inc.	93	SC	Young's Food Stores	Sunier Dairies
91	FL	Gus George Kontzaman	G. G. Kontzamanys	93	OK	Preston Dairy	Preston Dairy
91	FL	George H. Haag	T. G. Lee	93	TX	Borden, Inc.	Borden
91	FL	Date McMillan	Pelland-O-Sun	93	AL	Thomas Franklin White	Meadow Gold
91	VA	Douglas H. Stampfer	Flav-O-Rich	93	AL	Willie Edwin Burt	Dairy Fresh
91	FL	Flav-O-Rich	Marva Maid Dairy	93	MS	Dairy Fresh Corp.	Dairy Fresh
91	VA	Maryland and Virginia Milk Producers Coop. Assn.	Holland	93	AL	Dairy Fresh Corp.	Dairy Fresh
91	KY	Holland Dairies	Coble	93	MS	J. R. Dickinson	Dairy Fresh
91	GA	Coble Dairy Products	Pel	93	AL	Paschel J. Miles	Dairy Fresh
91	SC	Pel Incorporated	Pel	93	MS	Paschel J. Miles	Barber Dairies
91	NC	Pel Incorporated	Pel	93	AL	Barber Dairies	Meadow Gold
91	VA	Pel Incorporated	Pel	93	AL	Joseph F. Little, Jr.	Barber Dairies
91	NC	Coble Dairy Products	Coble	93	MI	Bertram Dairy	McDonald Dairy
91	VA	Coble Dairy Products	Coble	93	TX	McDonald Dairy	Borden
91	GA	Coble Dairy Products	Coble	93	TX	Beverly Spinks	unnamed
91	SC	Coble Dairy Products	Coble	93	KY	Kelly B. Longobram	H. Meyer Dairy
91	NC	James Ronald Crowder	Coble	93	TX	H. Meyer Dairy (OH base)	Flav-O-Rich
91	NC	Jack Lewis Power	Coble	93	GA	W. Monroe Dempsey	Flav-O-Rich
91	FL	Perry D. Branyon	Southland	93	GA	Borden	Borden
92	TX	Joseph Montgomery	Preston	93	MS	Borden, Inc.	Borden
92	VA	Joseph C. Hughes	Bertrand	93	AL	Meadow Gold Dairies	Borden
92	GA	Jerry E. Dempsey	Dempsey Brothers	93	GA	Meadow Gold Dairies	Borden
92	VA	James F. Woods,	unnamed	93	NY	Upstate Milk Coop's	Upstate Milk Coop
		James L. Garner, Sr.		93	CT	Maple Hill Farms	Maple Hill Farms
		and Edgar J. Dobbins		93	LA	Borden, Inc.	Borden
92	VA	Valley Rich Dairy	Valley Rich	93	CT	Frank Guida	Gauka-Seibert Dairy
92	TX	Bell Dairy Products	Bell	93	CT	Guida-Seibert Dairy, Inc.	Gauka-Seibert Dairy

Figure 2. Continued.

TABLE 1. Dairy companies and officials adjudged guilty or pleading guilty, 1988-1993

Dairy Company	Number of states with rigged bids	Number of company executives pleading guilty
Borden (Meadow Gold)	6	9
Coble	4	3
Dairy Fresh	2	5
Flav-O-Rich	7	8
Pel (Land-O-Sun)	5	8
Southland (Yelda Farms)	3	3
Others	21	19

Source: See Figure 2.

involved by their refraining from bidding (and, in some instances outright refusal to bid) against rivals in the core area (and vice versa).

Additionally, we find instances of still other potential entrants in adjacent or nearby markets who evidently were aware of higher prices to school districts resulting from the bid-rigging, and despite opportunities for profitable sales to those school districts, refrained from tendering bids. Various sanctions have been imposed or threatened against entrants who break agreements, ranging from group pressure to cutthroat pricing in the violator's market. In short, the de facto recognition and support of the core conspiracy by rival firms and potential entrants, and vice versa, serve as the vehicle through which market-sharing protocols are implemented more broadly statewide and beyond.⁴³

Another finding is that irrespective of the structure of the conspiracy (i.e., duopoly or a 3-firm, 5-firm, 7-firm, or 9-firm oligopoly) virtually all of the milk conspiracies developed and implemented very similar bidding/market sharing/customer allocation protocols. In fact, the protocols are so similar as to suggest that perhaps participants received a "common schooling" in cartel management.⁴⁴ The protocols typically included: (a) respect for incumbent dairy serving a given school district; (b) occasionally shuffling customers from year-to-year to avoid detection;⁴⁵ (c) submission of high complementary bids by non-incumbents; (d) refraining from or refusal to bid to school districts that were allocated to another

⁴³ Perhaps the best example of this structure of the milk conspiracies is provided by the Western Kentucky case, centered around a four-firm conspiracy rigging bids to school districts in an 11-county core area, but involving a major dairy cooperative with a subsidiary, a joint venture dairy partner, and 100% raw milk supply contracts with several other dairies operating in Western Kentucky.

⁴⁴ In the Western Kentucky case, according to testimony by industry witnesses, the bid-rigging arrangements were hatched at meetings of the Western Kentucky Dairy Products Association, which was usually held in conjunction with or following meetings of the Kentucky Milk Marketing and Anti-Monopoly Commission.

⁴⁵ This practice was discovered in the South Florida conspiracy, as implemented in Dade County (Miami) and Broward County (Fl. Lauderdale).

firm; and (e) submission of identical bids in cases where school districts characteristically split the business in the event of identical bids.

The evidence discovered in these cases, which support inferences regarding the existence of these bid-rigging protocols, consists largely of price and bid data during the conspiracy period. The data demonstrate, however, in marked contrast to pre- and post-conspiracy periods, (a) market share stability; (b) markedly higher incumbency rates (up to 90%-100%);⁴⁶ (c) a high correlation between low dispersion of bids and high bid/price levels; (d) significantly higher mean winning bid prices in core conspiracy areas than in adjacent competitive markets; (e) a clear tendency for bid prices to vary almost inversely with delivery distances, especially for distances greater than normal service area; (f) distinctly different relationships between bid prices and other costs (raw milk, processing, packaging and transportation costs); (g) exact bidding differentials; and (h) the presence of "bids from hell."⁴⁷ Such data were discovered in virtually all of the milk conspiracies studied, irrespective of the size distribution of the participants.

A Duopoly Variant Because defendants oftentimes argue to the court that, following Turner,⁴⁸ oligopolistic interdependence is inherent in the structure of certain markets and can only semantically be equated with collusive pricing,⁴⁹ we begin with the a two-firm conspiracy: a duopoly involving two regional dairies (Meyer and Trauth) with bid-rigging activities centered in the tri-county area of Kentucky just south of Cincinnati, Ohio (Boone, Campbell and Kenton counties).⁵⁰ Moreover, since defendant Trauth Dairy moved for summary judgment essentially on the "oligopolistic interdependence" argument and the "ambiguity" standard from *Monsanto, Matsushita and Market Force v. Rawwatasza Realty*,⁵¹ the northern Kentucky milk case provides an excellent test of the now-typical defense argument that a price-fixing conspiracy cannot be inferred from bidding patterns or other such

⁴⁶ Of course, a high incumbency rate might be consistent with open competition if associated with low prices or a particularly efficient incumbent.

⁴⁷ The Trauth/Meyer conspiracy in northern Kentucky will illustrate this phenomenon, as explained below.

⁴⁸ The formal theoretical argument, succinctly stated, is that under conditions of few sellers not only does the small number facilitate agreement, but agreement in the ordinary sense may be unnecessary. Hence, analyses based on "price leadership-followership" patterns simply describe behavior that is the inevitable result of structure, and a policy that prohibits such conduct would be tantamount to requiring irrational firm behavior. See Turner (1982, pp. 671); and *Report of the White House Task Force on Antitrust Policy* (July 5, 1968, *mimeo*), 1-4, 5.

⁴⁹ "We have no theory that allows us to deduce from the observable degree of concentration in a particular market whether or not price and output are competitive. We have as yet no general theory of collusion and certainly no one that allows us to associate observed concentration in particular market with successful collusion." Shughart (1990, p. 235).

⁵⁰ Cf. Commonwealth of Kentucky, *Ex. Rel. F. Chris Gorman, Attorney General, for the use and benefit of Boone County School District, et al. v. Louis Trauth Dairy, Inc.*, and H. Meyer Dairy, Company, U.S. District Court, Eastern District, Kentucky (Covington Division) Case No. 92-50. Testimony has revealed that these conspirators also operated in southwest Ohio.

⁵¹ 465 U.S. 752 (1984); 475 U.S. 574 (1986); and 906 F.2d 1167 (7th Cir. 1990).

circumstantial evidence.⁵² The special evidentiary value of the northern Kentucky milk case is that although the Trauth-Meyer bidding/pricing patterns at first blush might appear to satisfy the abstract Turner "tacit collusion" test, as set forth in *Monsanto-Matsushita*, the subsequent affidavits of conspirators Knassel, D. E. Meyer and D. R. Meyer instruct us that apparently purely tacit behavior, in fact, had developed much firmer collusive underpinnings. In short, the bidding/pricing patterns are entirely too complicated to be exonerated on a theory of oligopolistic interdependence.

The protocols developed by Meyer and Trauth for this tri-county market included: (1) bid rigging; (2) respect for incumbent's position; and (3) complementary bids. A series of graphs displaying bidding patterns and other data (Figure 3 and Figure 4) illustrate the operation of the Trauth/Meyer protocols between 1984 and 1988: (a) the tri-county market was shared almost 50/50 (Figure 3A) and (b) the incumbency rate averaged 90% to 100% (Figure 3B).⁵³ Figure 3C reveals the sharp contrast that emerged during the 1984-88 conspiracy period between average (mean) winning prices in the rigged tri-county market and in the surrounding competitive market, reaching a difference of three cents (25 percent higher on average) in 1988.

Moreover, Figure 4 discloses how the incumbency rule worked: the incumbent ((M) for Meyer and (T) for Trauth) are displayed below each school district or county, and the bid prices of each firm are shown in sequence during the bidding season (June-September), for the years 1983-1988. In 1983, the incumbent's position was generally not respected, and there was a tendency for bid prices to drop during the bid season. Also, note that bid prices dropped during 1989, back down to less than 12 cents per half pint, about equal to pre-conspiracy average bid prices (See Figure 3C).

As Figures 4A-4F demonstrate, in Campbell County, Trauth consistently managed to obtain the contract while steadily increasing its bid prices, and Meyer accommodated by always bidding just above Trauth. In its 1984 bid to Kenton School District, Meyer increased its 1983 winning bid price by three cents (to

⁵² In Kentucky v. Trauth-Meyer the motion for summary judgment is couched in familiar two-part boilerplate of *Monsanto/Matsushita*: (a) the theory of rational oligopolistic interdependence, and (b) contention that plaintiff's evidence is "ambiguous" (i.e., evidence that theoretically is as consistent with defendants' permissible independent interests as with an illegal conspiracy). More specifically, Trauth argued that "Plaintiff's circumstantial evidence (consisting of changes in bid-price levels over time and in relation to changes in raw milk and other costs, bidding patterns, bid-price differentials, and high incumbency rates) cannot survive summary judgment. . . that the described bidding pattern is the expected pattern of bidding for a market having the characteristics of northern Kentucky, without any conspiracy. . ." ("Motion for Summary Judgment of Defendant Louis Trauth Dairy, Inc." (dated June 1, 1993), pp. 6-15, Kentucky v. Louis Trauth Dairy, Inc., Civil Action File No. 92-50, U.S. District Court, Eastern District of Kentucky, Covington Division.)

⁵³ The "incumbency rate" is a measure of the percentage of bid opportunities in which the successful bidder to a given school district in a given year also is the successful bidder in the next year to that same school district. Based upon empirical data for milk and other industries subject to a sealed-bid procedure, incumbency rates in areas experiencing unfettered competitive bidding normally range from 50% to 60%.

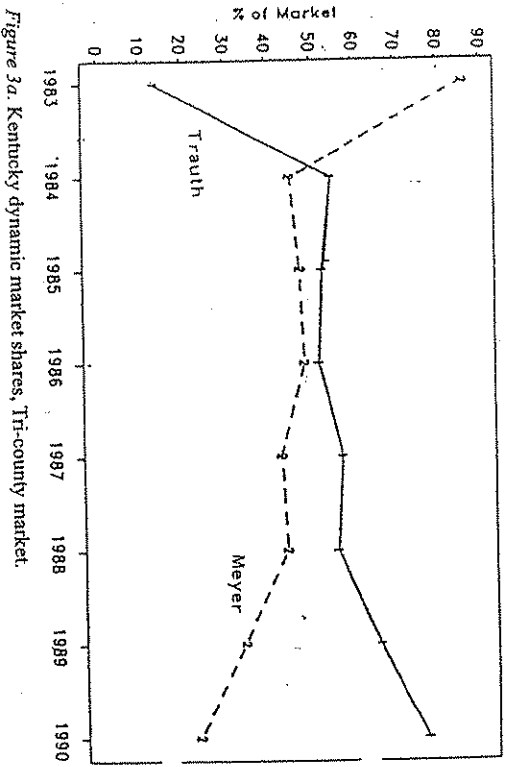


Figure 3a. Kentucky dynamic market shares, Tri-county market.

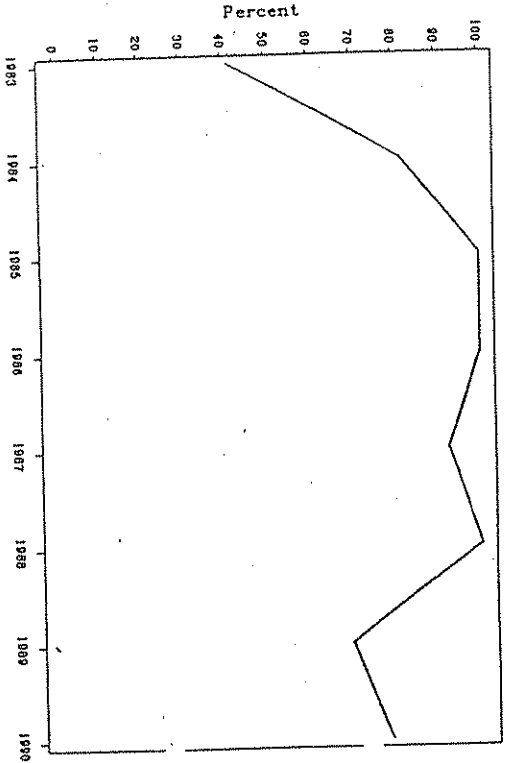


Figure 3b. Contracts awarded to incumbent supplier, Tri-county market.

13.02 cents) per half pint, just enough to have the bid go to Trauth (Figure 4B). Meyer then raised its losing 13.02 cents-bid of a few days earlier to 13.9 cents to the Boone School District, and Trauth accommodated with a bid of 13.95 cents. Finally, Meyer jumped its 1984 bid to 14.62 cents (from its 1983 winning bid of 10.95 cents) to the Ludlow School District, and Trauth accommodated with a record bid of its own, 14.75 cents.

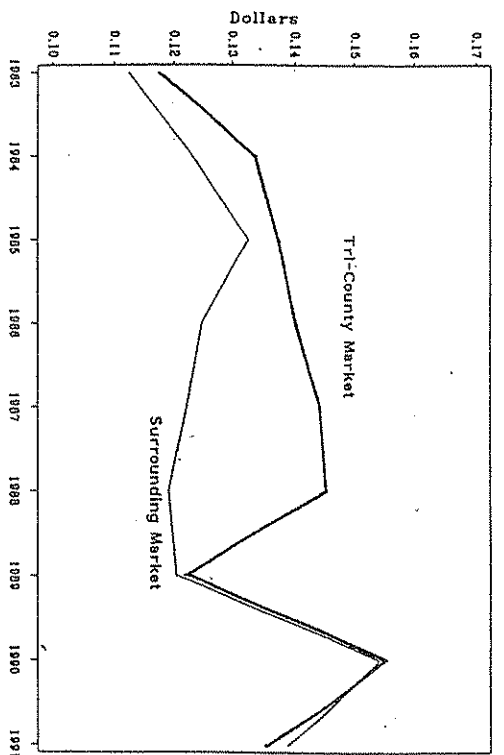


Figure 3c. Average winning lowfat white price, Tri-county vs surrounding market.

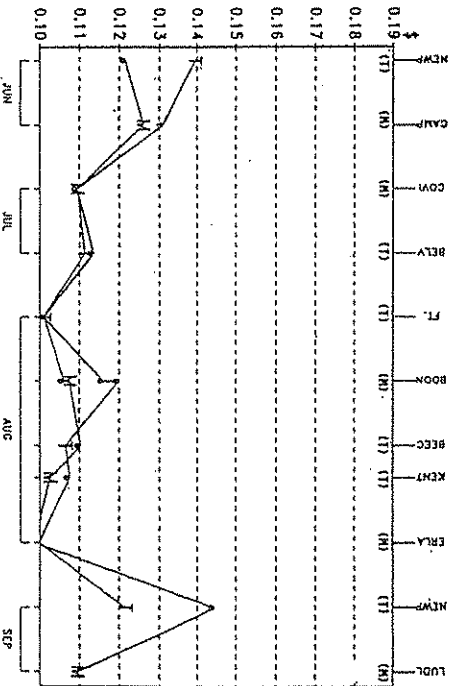


Figure 4a. Trauth and Meyer lowfat white bids. Other wins, 1983 (Boone, Kenton, Campbell).

Bid patterns for the years 1986–1988, during the heart of the conspiracy (Figures 4E, 4F and 4G), disclose the remarkable consistency with which the incumbent's bid was accommodated with a sufficiently higher rival's bid to lose, but close enough to project the illusion of competition. No amount of game theorizing can alter the fact that had Meyer, for example, (a) in early July 1987 (Figure 4E) simply re-bid its winning price of 13.75 cents of late June (to Covington) it would have had a shot at the Newport contract that went to Trauth at 13.75 cents; or

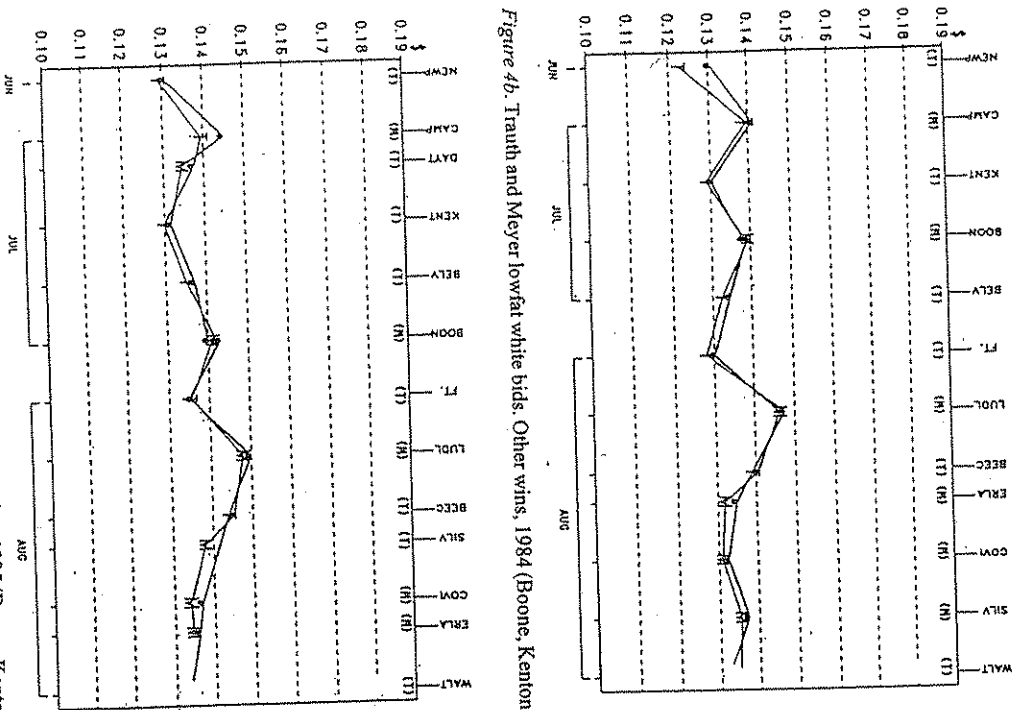


Figure 4b. Trauth and Meyer lowfat white bids. Other wins, 1984 (Boone, Kenton, Campbell).

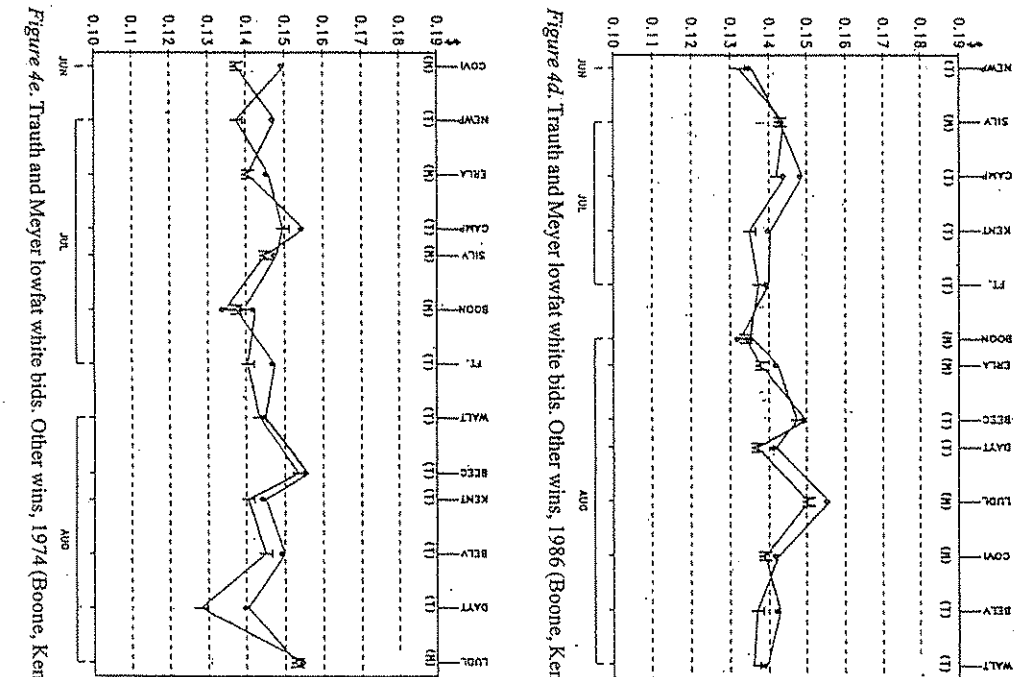


Figure 4c. Trauth and Meyer lowfat white bids. Other wins, 1985 (Boone, Kenton, Campbell).

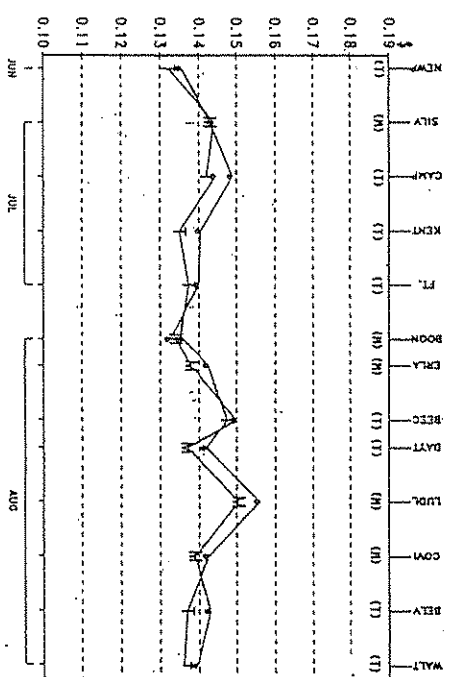


Figure 4d. Trauth and Meyer lowfat white bids. Other wins, 1986 (Boone, Kenton, Campbell).

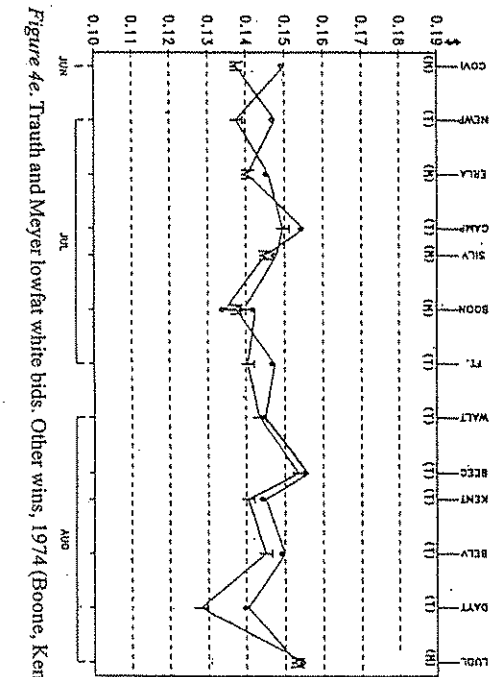


Figure 4e. Trauth and Meyer lowfat white bids. Other wins, 1974 (Boone, Kenton, Campbell).

(b) in mid-July, had simply re-bid its Erlanger-Elsmere ("Erla") School District bid of 14.25 cents a few days later to Campbell County (instead of raising its bid to 15.5 cents), it could easily have taken the bid from Trauth, which won at 15.0 cents.⁵⁴ Or, alternatively, had Trauth in late August simply re-bid its Dayton School District bid (13.0 cents) or even its Bellevue School District bid (14.5 cents) of mid-August, it could easily have won the Ludlow School District contract that was

awarded to Meyer at 15.5 cents. These bids are merely illustrative of the wealth of circumstantial bid data available, displaying a kind of "lambada" pricing dance performed by dairies participating in the school milk conspiracies.

Four national and regional firms operated alongside Meyer and Trauth in the broader 26-county market surrounding the tri-county core (namely, Borden, Kraft, Flav-O-Rich, Southern Belle and Southeastern) plus a competitive fringe of local dairies. Like many other school milk conspiracies of the 1980s in Kentucky and other states, a "live and let live" attitude prevailed among dairies in adjacent areas. This industry attitude operated in such a way that Borden, Kraft, et al. "respected"

⁵⁴ Since there were no intervening bids, capacity constraints could not be used as a justification for the higher bids.

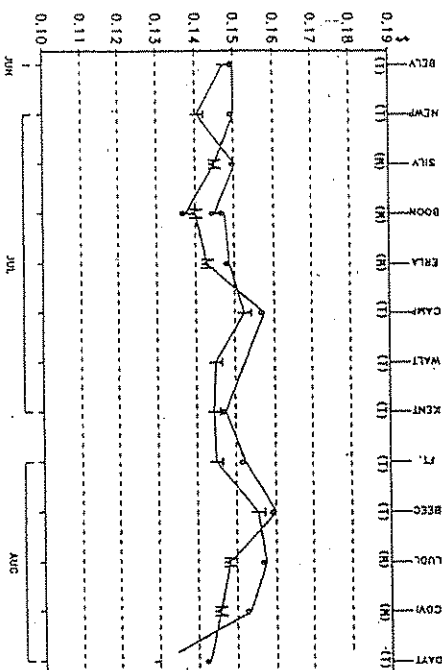


Figure 4/ Trauth and Meyer lower white bids. Other wins, 1988 (Boone, Kenton, Campbell).

the Meyer/Trauth arrangement by not competing with or disturbing their protocols in the "reserved" tri-county market.⁵⁵

B. *Three-Firm Oligopoly Variant.* The southern Kentucky case (hereinafter, "the London case")⁵⁶ involved a three-firm oligopoly milk conspiracy, consisting of Pet, Southern Belle and Flav-O-Rich (subsidiary of Dairymen, Inc).⁵⁷ The school districts allocated among Pet, Flav-O-Rich and Southern Belle in Kentucky are not contiguous to one another.⁵⁸ Based on the firms and the bidding data in the London case, together with data from the other two Kentucky cases, a reasonable inference is that a rather broad, single over-arching conspiracy existed in eastern Kentucky, organized by Flav-O-Rich, with Southern Belle and Pet (later Land-O-Sun) as co-conspirators. The bidding patterns to school districts in the Bell, Knox and Whitley counties, where all three companies were active, are very similar to the bidding patterns in the Trauth-Meyer case and observed in the other 41 school districts in this region for which summary judgment has been entered.⁵⁹ Some of

⁵⁵ The State of Ohio recently filed a complaint involving a similar market structure.

⁵⁶ The Commonwealth of Kentucky. *Ex Rel. Chris Gorman, Attorney General, for the use and benefit of Laurel County School Districts, et al. v. Southern Belle Dairy Co. et al.*, U.S. District Court, Eastern District of Kentucky, London Division.

⁵⁷ In this case, since the geographic market was so broad, a competitive fringe of six other dairies and distributors operated in different parts of the market.

⁵⁸ Some exceptions were found in which a competitor submitted a bid, sometimes winning the contract. In those instances, the conspirator to whom the account had been allocated was still the winner, or the next lowest bidder to the "intruder." Rarely, however, does the loser attempt to retaliate so as to recover lost market share through aggressive bids to some other district. Instead, the ensuing bids proceed on plan, unless disrupted at some point by another intruder.

⁵⁹ Among other data that help support the inference of a single conspiracy is the fact that as Southern Belle expanded into northern Tennessee it bid aggressively for school milk contracts against Parity

the circumstantial evidence discovered in the early stages of this case are displayed in Figure 5 and Figure 6.⁶⁰ Later in the proceedings, three companies entered guilty pleas or settled with the Commonwealth of Kentucky and the U.S. Department of Justice.⁶¹ Additionally, several officials of Flav-O-Rich and Pet have entered guilty pleas to bid rigging, and officials of Southern Belle invoked their 5th Amendment privilege at their depositions.⁶²

C. *Five-Firm Oligopoly Variant.*—The western Kentucky school milk conspiracy illustrates the case of a five-firm oligopoly, which engaged in bid rigging with one another, as well as three distributors of these firms.⁶³ The conspiracy is alleged to have existed from the early-to-late 1980s, and involved the same practices as discussed above in the Trauth/Meyer conspiracy that operated in the northern Kentucky market: rigged bids; allocation of school districts; agreements on which

Dairy (in Lebanon and Mayfield counties), both of which evidently steered clear of any bid-rigging in these areas. In fact, these northern Tennessee school milk prices are fairly consistent with prices in competitive markets and estimated "but for" competitive prices for southern Kentucky. By contrast, as Southern Belle expanded into more eastern areas it competed aggressively for regular wholesale milk business, but made no serious attempts to penetrate the school milk market in those areas (which were shared by Pet and Flav-O-Rich). Moreover, Southern Belle did not even bother to bid to some school districts, and, where it did bid, tendered prices to districts that were consistently high. Therefore, is it unreasonable to conclude that Southern Belle's posture of not contesting the Pet/Flav-O-Rich market allocations supports the single-conspiracy hypothesis?

By the same token, Pet's bidding patterns rarely threatened the stability of Flav-O-Rich/Southern Belle shared districts; by not contesting school districts apparently allocated to Pet, Flav-O-Rich and Southern Belle minimized the risk of a Pet expansion into other areas covered by the conspiracy. The rapprochement with Pet (a) expanded the geographic scope and also (b) increased the number of rigged bids to school districts, minimizing the risk of generating bid discrepancies between competitive and rigged markets, thus making it easier to conceal the conspiracy.

⁶⁰ Figure 5 discloses the selectivity with which Southern Belle bid during the conspiracy period, with no bids in the easternmost counties displayed on the map, despite the fact that the company had existing routes in those areas. Southern Belle and defendants in this and other milk cases have argued that it is not profitable to serve areas beyond a certain radius of a processing plant (e.g., 50–75 miles). Figure 6 demonstrates that as a practical business matter, distance, as such, is not a controlling factor in how far dairies reach out for milk contract business, serving areas during the conspiracy period that were 166 to 311 miles from processing plants, and at prices that were below rigged prices.

⁶¹ In addition to guilty pleas in the Kentucky case, Flav-O-Rich has pled guilty to rigging school milk bids in Florida, Georgia, Mississippi, North Carolina, South Carolina, and Virginia. Pet has pled guilty to similar changes in Florida, Georgia, North Carolina, South Carolina, and Virginia. Pet has Southern Belle settled the Kentucky and the U.S. cases.

⁶² Maurice Binder, Flav-O-Rich Sales Manager for the Western Region and later General Sales Manager, headquartered in London, Kentucky, has admitted to rigging school milk bids in 41 counties and school districts, and Summary Judgment has been entered against Flav-O-Rich as to liability for these school districts. Binder testified that most of his bid-rigging activities were undertaken in collusion with Arnold Corey, Vice President of Southern Belle, Sales (who invoked his 5th Amendment privilege with respect to questions concerning bid-rigging activities with Flav-O-Rich and Pet), and James Hatfield, Pet's Appalachian Region Manager (who also invoked his 5th Amendment privilege with respect to milk pricing in Kentucky and other states).

⁶³ The major dairies involved in the western Kentucky school milk conspiracy were Ideal American (and its alter-egos Henderson Dairy and Owensboro Dairy), U.C. Milk, Holland Dairy, R. G. Clark and Turner Dairy.

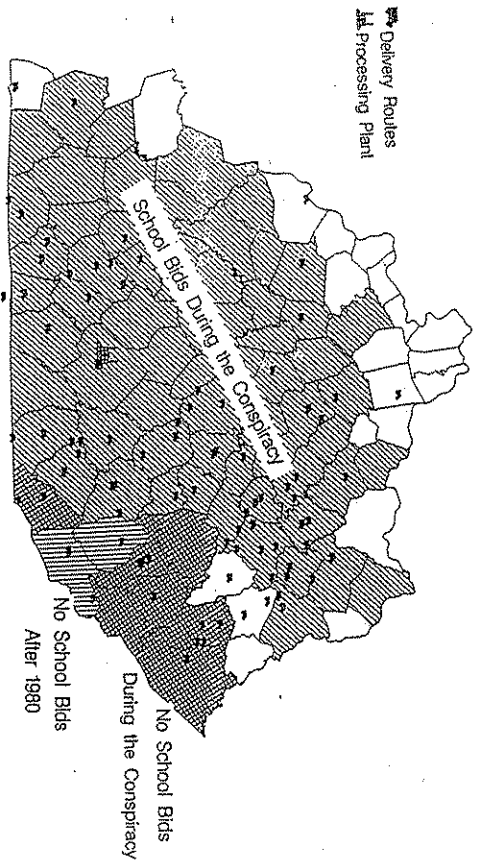


Figure 5. Southern Belle routes and school bid patterns.

firm would be the low bidder; submission of intentionally high, complementary bids; and a pattern of refraining from submitting bids on certain school contracts. Much of the evidence in this case is circumstantial, but as in other school milk cases some officials have entered guilty pleas and agreed to testify regarding the operation of the conspiracy, while others have availed themselves of their 5th Amendment rights and refused to testify at their depositions.⁶⁴

Analysis of bid patterns disclose the following: (a) high incumbency rates (well above 90%) until 1989, the year after the disclosure of the filing of the first Florida cases; (b) persistently high winning-bid prices, accompanied by low dispersion of bids; (c) complementary bids; and (d) refraining from tendering bids or simple refusals to bid,⁶⁵ even though firms had been invited to bid by school districts, had existing excess capacity, and had existing commercial delivery routes in the area.⁶⁶

⁶⁴ In addition to the Complaint in the Commonwealth of Kentucky case, a federal grand jury indictment has been filed against U.C. Milk, et al. (Criminal No. CR94-00007-0(S), April 28, 1994). Companion indictments were also filed against Ideal American, Prairie Farms, Meadow Gold Dairies, and Johnson Dairy Products in the Southern District of Indiana, charging a similar conspiracy: Criminal No. 94-67-CR (5/1/94), No. 94-73-CR (5/17/94) and Criminal No. 94-75-CR (5/18/94).
⁶⁵ Costs to potential suppliers of preparing bids and participating in the bidding process are low, which provides additional evidence that refusal to bid is a sign of collusion.

⁶⁶ Many bidding/non-bidding anomalies were found in the western Kentucky milk case. Perhaps the most bizarre episode occurred when bids for the 1988-89 school year were opened by Webster County and U.C. Milk was declared the low bidder with a bid of 16 cents per half pint. When notified, H. B. Howser of U.C. Milk said he was not aware that the specifications required coolers, and suggested the County food service director contact Owensboro Milk (the usual incumbent supplier) which quickly agreed to match U.C.'s bid of 16 cents. In the course of these dealings, the food service director asked Owensboro Milk why it always seemed to win the Webster County contract and that

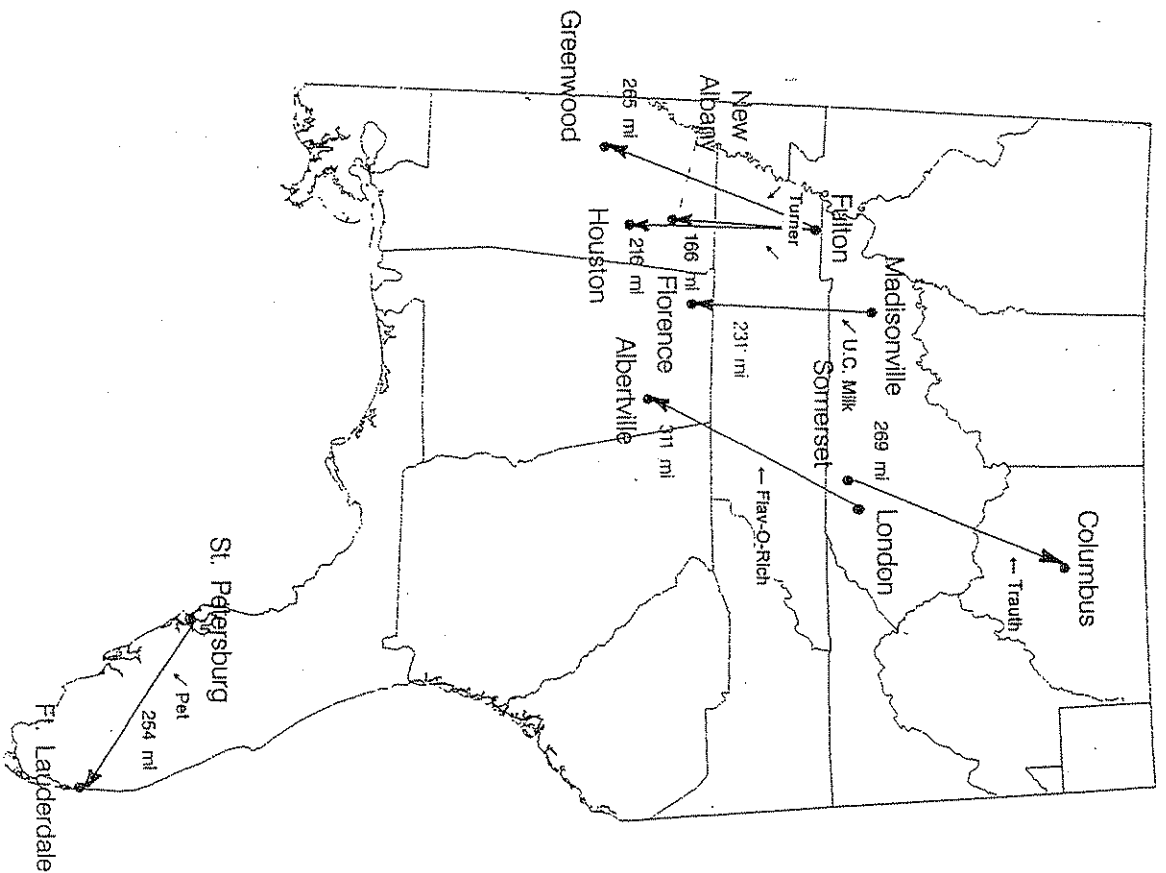


Figure 6. Long haul milk contracts.

⁶⁷ U.C. Milk always seemed to win the Providence Independent School District contract. Owensboro's reply: "The bid process is complicated."

Figure 7 provides a sample of bidding patterns of firms in the Western Kentucky case for pre-conspiracy and conspiracy years (1980, 1983, and 1987), for various counties and school districts.⁶⁷ Relative costs were virtually unchanged during the period in question (see Figure 10C which displays costs of raw milk, 1979-1990). In the pre-conspiracy period (see 1980 bid data) winning bid prices were very close to average competitive prices observed in adjacent areas (e.g., ≈ 12 cents per half pint), and in 1983 Turner's winning bid prices consistently were below prices in adjacent competitive areas. The squares represent wins by other firms not named as part of the conspiracy. The competitive price curve was estimated from winning bids to school districts in adjacent competitive areas. By contrast, respect for incumbents and accommodation (complementary) bids are readily evident in the 1987 bid data displayed in Figure 7 for counties and school districts assigned to Holland, U.C. Milk and Ideal American, and for those allocated to Turner, Clark and Prairie Farms.

D. *Seven-Firm Oligopoly Variant*.—The Florida school milk cartel included several national dairies (Borden, Flav-O-Rich, Kraft Foods and Pei) plus several local dairies (Velda (subsidiary of Southland Corp. of Dallas), Hart's Dairy (subsidiary of Dean Foods of Chicago), T. G. Lee of Orlando, and McArthur Dairy of Miami). As the "lead" school milk case, which triggered investigations in other states, the Florida cartel contained the standard protocols used in bid rigging and market division: (a) the "live and let live" policy; (b) respect for the incumbent bidder; and (c) submission of purely complementary bids designed to project the appearance of competition and fraudulently conceal from the school districts the collective action of dairies.

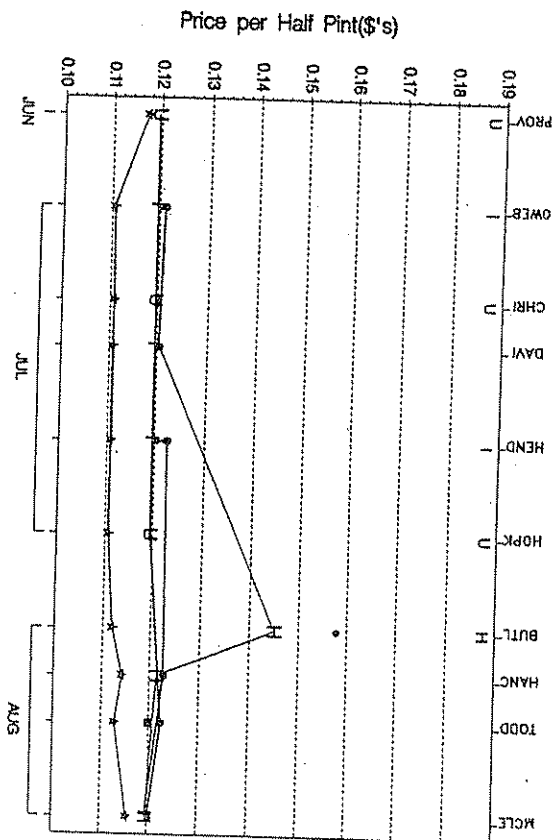
The complaint filed by the State charged the defendants with bid-rigging in sales of half-pints of milk to 32 of Florida's 67 school districts. Bidding patterns for 1979-1989 for two areas in the State of Florida, South Florida (Broward and Dade Counties) and the Tampa Bay area (Hillsborough, Pinellas and Polk counties) are displayed in Figures 8A and 8B. The data for Broward and Dade reflect the onset of the conspiracy in 1980,⁶⁸ extending through 1986 when the Florida Attorney General's Office initiated its investigation. That event led to an abrupt end to discussions among co-conspirators and the collapse of bid prices from the 16-17 cent range per half-pint back down to pre-conspiracy levels of around 14 cents.

⁶⁷ The incumbent firm is identified in Figure 7 below each county or school district, by the first initial of the winning bidder (e.g., H = Holland, I = Ideal American, T = Turner, UC = U.C. Milk; C = R. G. Clark, and P = Prairie Farms).

⁶⁸ There is some evidence that the milk conspiracy in South Florida actually may have been in force as far back as 1968. For example, one dairy official disclosed that after Velda Farms submitted its first school milk bid for Dade County, its sales representative received a call from a competitor complaining about Velda's low bid and explaining that the three major dairies had a game going there; moreover, if Velda wanted a piece of the action it "had better play ball." Unfortunately, the State was unable to discover data that far back, so it is difficult to document with any precision the actual timing of earlier competitor discussions.

HOLLAND, U. C. MILK AND IDEAL AMERICAN Lowfat White Bids

Other Wins • Other Losses • Competitive Price *



HOLLAND, U. C. MILK AND IDEAL AMERICAN Lowfat White Bids

Other Wins • Other Losses • Competitive Price *

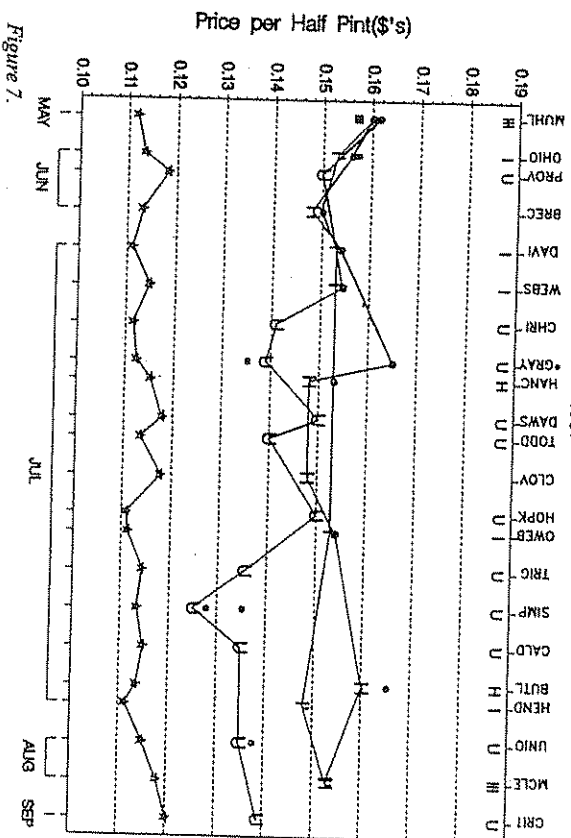
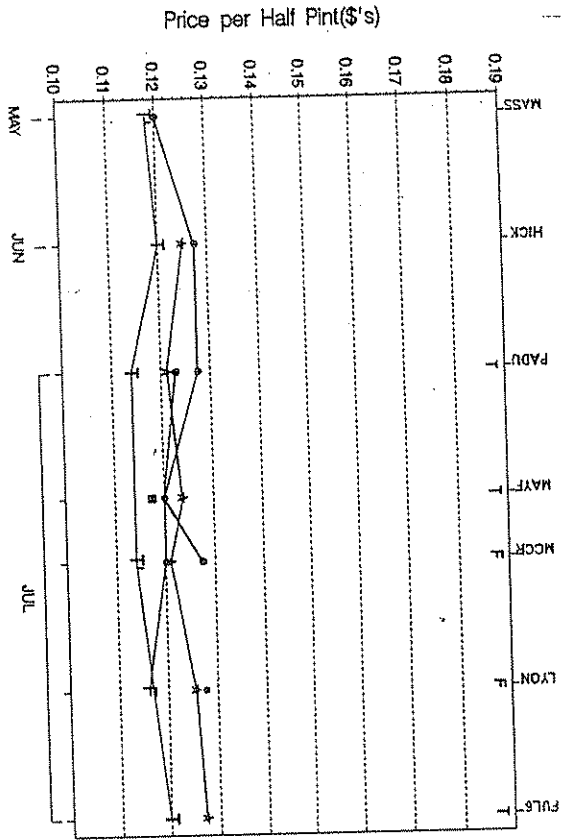


Figure 7.

TURNER DAIRY, FLAV-O-RICH And PRAIRIE FARMS Lowfat White Bids

Other Wins • Other Losses • Competitive Price *
1983



TURNER DAIRY, R.G. CLARK And PRAIRIE FARMS Lowfat White Bids

Other Wins • Other Losses • Competitive Price *
1987

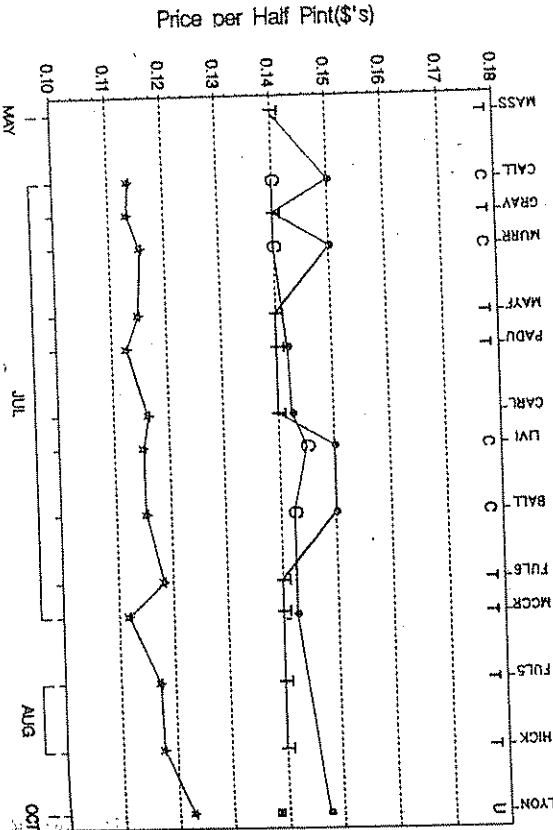


Figure 7. Continued.

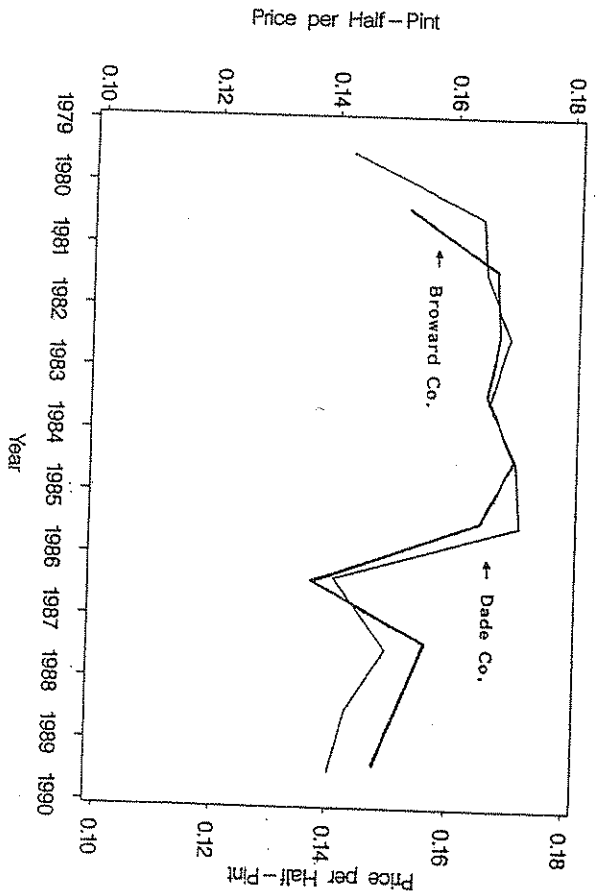


Figure 8a. Average winning bid prices, lowfat chocolate milk Broward and Dade Counties, Florida, 1979-1989.

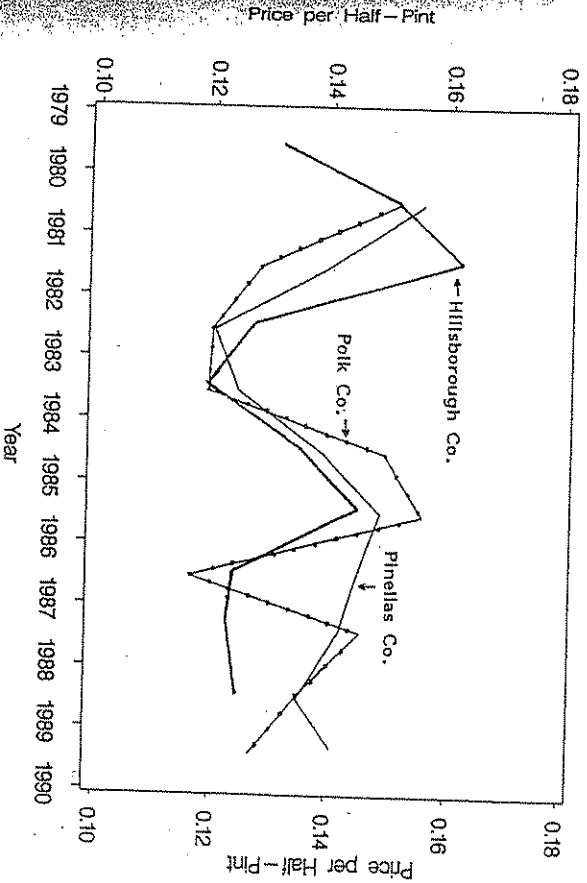


Figure 8b. Average winning bid prices, lowfat chocolate milk Hillsborough, Pinellas and Polk Counties, Florida, 1979-1989.

Bid data for the Tampa Bay area (Figure 8B) help confirm that the conspiracy in the targeted counties got underway in 1980. However, the arrangement unraveled twice, once in 1981, after Borden broke faith with a conspiracy, took some of market allocated to others, and threw in a Pet allocated market (Hillsborough); Pet retaliated with low bids all over the Tampa Bay region. As Figure 8B indicates, prices quickly dropped to the 12-12.5 cent range. After some regrouping among the co-conspirators, winning bid prices rebounded in 1984-1985 to the 14.5-15.5 cent range. The agreements again blew wide open with the onset of the Attorney General's investigation in 1986, which led to a return of winning bid prices of around 12 cents per half-pint.

In September 1988, the defendants reached a settlement agreement involving payment of \$32 million to the State, a recovery equal to treble the estimated provable damages to school districts, plus litigation costs, as follows: Borden (\$10,400,000); Southland Corporation (\$9,660,000); Kraft (\$1,800,000); Pet (\$1,700,000) Flav-O-Rich (\$1,600,000); Dean Foods, T. G. Lee and McArthur (\$7,030,000)⁶⁹

E. Nine-Firm Oligopoly Variant. — The Georgia conspiracy illustrates the case of a conspiracy involving three major dairies (Borden (and Meadow Gold which was acquired in the 1980s), Flav-O-Rich and Pet (and its successor Land-O-Sun)),⁷⁰ two dairy cooperatives (Dairymen and Atlanta Dairies Co-op), and four other dairies (Kinnett Dairies, Dempsey Brothers, Coburg and Coble). The conspiracy operated from at least 1983 until late 1987 (when Florida began its milk investigation) and covered most of Georgia's school districts. Various protocols, arranged by the major players and local/regional dairies, were centered around a "live and let live" policy that (a) respected the position of incumbents,⁷¹ and (b) employed complementary bids to project the illusion of real competition to the school districts. Implementation of the protocols was via telephone calls from public telephone booths.⁷²

⁶⁹ See Memorandum in Support of Plaintiff's Motion for Order of Voluntary Dismissal Without Prejudice, dated Sept. 29, 1988, State of Florida *Ex. Rel.* Robert A. Butterworth on Behalf of the Dade County School Board vs. Borden, Inc., *et al.*, U.S. Dist. Ct., So. Dist. of Fla., Mfa. Div., Case No. 88-0273-Civ-Scott.

⁷⁰ All three of these dairy companies had been named as defendants in a class action price-fixing suit filed by the Atlanta Board of Education in 1968 and settled in 1973.

⁷¹ A very high incumbency rate prevailed during the conspiracy period. For example, in 17 contiguous school districts, the dairy that was the incumbent in 1983 turned out to be the winning bidder in those districts for the entire 1984-1987 period.

⁷² According to sworn testimony of former Borden officials Charles Love and William R. Waters, Flav-O-Rich Sales Manager located in Columbus, Georgia, the Georgia conspiracy: (a) was a spillover from the Florida conspiracy, involving Borden (which had acquired Sunshine State Dairymen Co-op in 1982, after which Borden decided not to seek other school milk accounts in Georgia); (b) the area sales manager was instructed to keep only the schools Borden was currently serving, but not to compete for other school business (even though the company had branches in Thomasville and Bainbridge); and (c) to use pay telephones whenever it was necessary to talk to competitors about school district contracts.

3. OTHER BEHAVIORAL EVIDENCE

As outlined above, the Section I charges in the milk cases rely heavily on behavioral evidence of market division, customer allocation, and bid-rigging, deduced from analyses of bidding patterns and practices of defendant dairies and confirmed by admissions of the participants. This section presents a sample of selected exhibits summarizing economic and statistical analysis of defendants' bid data, which are offered as additional test data for making inferences about the presence of an illegal bid-rigging conspiracy based on tacit collusion.⁷³

A. Defendant Bid Data Analysis. — Defendants bidding data were analyzed over time (during the alleged conspiracy period as contrasted with pre- and post-conspiracy periods) with respect to certain particulars, which are summarized in various exhibits displaying (1) vendor "bid interaction" plots, (2) bid dispersions, (3) incumbency rates, (4) comparison of bid prices in rigged markets with bid prices prevailing in adjacent competitive markets, as well as prices to state institutions, (5) complementary bids, (6) non-bidding patterns in certain areas vis-a-vis existing route systems of non-bidders, and other related analyses.

B. School Milk Bids v. Bids to State Agencies. — Another piece of evidence suggestive of school milk bid manipulation was disclosed by a comparison of bids on half pints of milk made to school districts with bids made on the same product to state agencies located in Kentucky counties where school district and agency half-pint requirements, including service and delivery, were similar.⁷⁴ For example, one finds very little difference between bid prices (on whole white milk) to state agencies and to school districts in several counties without any traces of bid-rigging, e.g., (a) to schools in Fayette County and Eastern State Hospital (in Fayette County) (Figure 9A), and (b) to Hardin County schools v. Lincoln Village agency (in Hardin County) (Figure 9B).

By contrast, bid prices to Danville Schools exceeded bid prices to Kentucky School for the Deaf (both in Doyle County) by more than five cents per half pint during 1983-1988 (Figure 9C). Similarly, one finds the same kind of discrepancy in bid prices to Owensboro schools and the Owensboro Treatment Center (both in Daviess County) (Figure 9D). Thus, even if one were to assume that the two-cent difference found in 1990 was "normal" (for whatever reasons - possibly due to an upward spike in the raw-milk price, such as occurred in 1990) one still must find an explanation for the other three cents school districts paid above prices to other state agencies.

⁷³ As oftentimes happens, in the course of later stages of discovery following submission of plaintiffs' expert reports, certain individuals entered into plea bargains, admitted participation in bid rigging and submitted affidavits corroborating inferences made from circumstantial evidence produced as indicated herein.

⁷⁴ State agency bidding normally is conducted once per year, with all agency bids let on the same day.

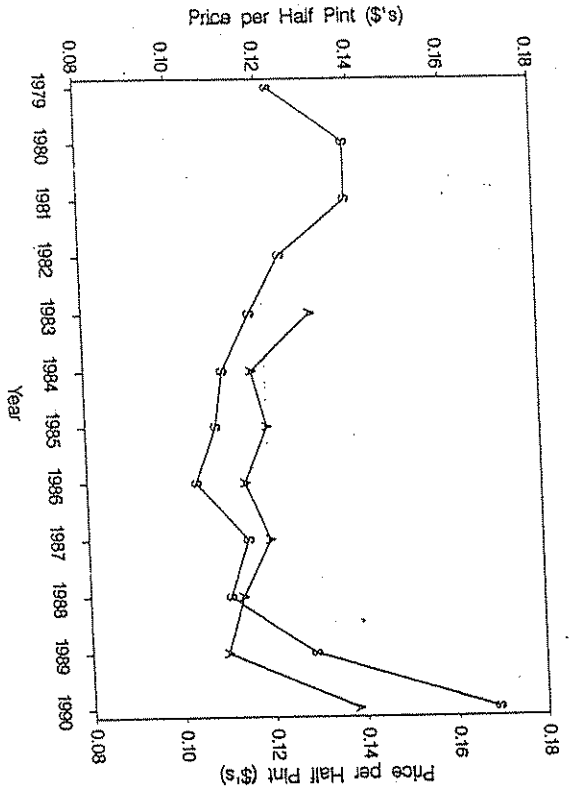


Figure 9a. School District (S) vs State Agency (A), Winning Prices, District = Fayette, Agency = Eastern State Hospital, Whole White.

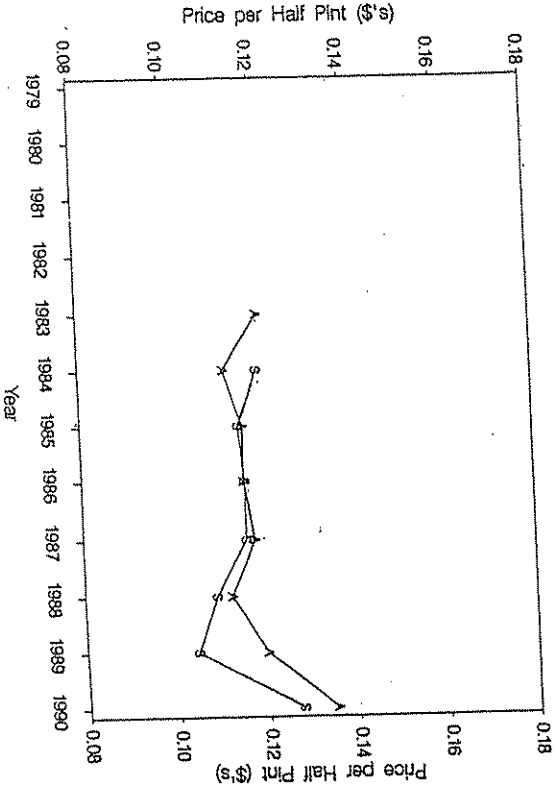


Figure 9b. School District (S) vs State Agency (A), Winning Prices, District = Elizabethtown, Agency = Lincoln Village, Lowfat White.

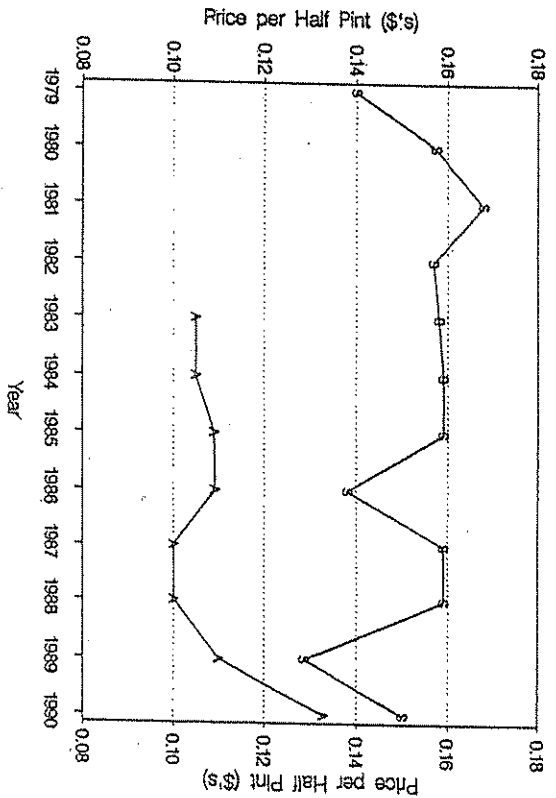


Figure 9c. School District (S) vs State Agency (A), Winning Prices, District = Danville, Agency = Kentucky School for the Deaf, Lowfat Chocolate.

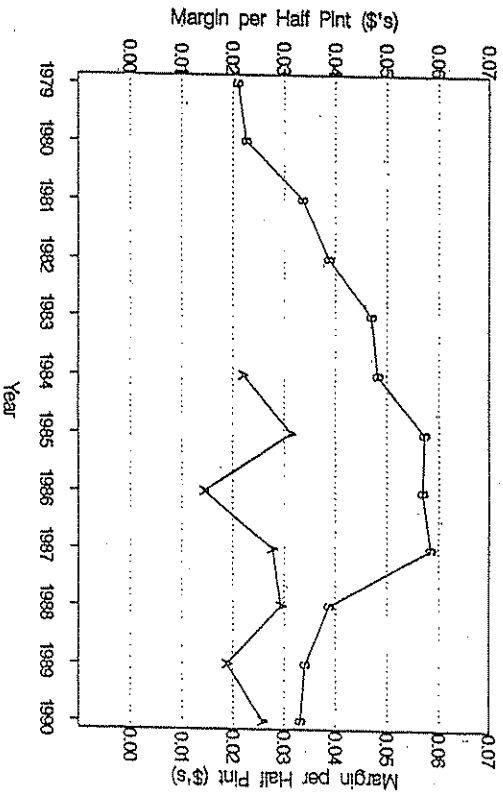


Figure 9d. School District (S) vs State Agency (A), Margins (Price-Dock Costs), District = Owensboro, Agency = Owensboro Treatment Center, Lowfat White.

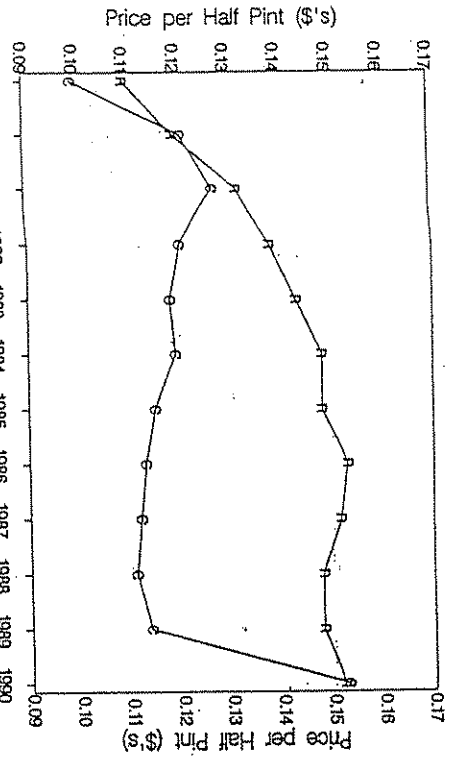


Figure 10a. Kentucky Core Conspiracy (R) and Competitive (C) Median Winning Prices, Lowfat White.

Figure 10A provides a broader comparison of winning-bid prices for lowfat white half pints in the conspiracy "core" area and a composite of median winning bid prices in competitive areas (competitive school districts in Kentucky).⁷⁵ See also Figure 10B which compares median gross-profit margins in the Kentucky "case" area with margins in the competitive areas. These comparative data (Figures 9 and 10) reveal that the average agency bid prices were about the same as the bid prices in the areas identified as "competitive," and well below winning bid prices in the conspiracy "core" area.⁷⁶

C. *Geographic Price Discrimination.*—Defendants in the milk cases have offered a variety of reasons for not tendering bids to school districts near processing plants, such as (a) the school districts did not "fit" existing route structures, (b) the cost of meeting cooler requirements, and (c) concern about school districts awarding

⁷⁵ The big jump in 1990 winning bid prices to 15.25 cents from 11.25 cents per half pint might appear to be a resumption of conspiracy actions. The basic explanation for this movement was the sharp increase in 1990 FMO order prices from \$13.25 to more than \$15.00 per cwt., and an increase in raw milk costs from \$13.50 to almost \$16.00 per cwt., which works out to the rough equivalent of 2.5 to 3.0 cents per half pint. (See Figure 9C.)

⁷⁶ Also, these data provide a strong rebuttal to defendant arguments that the areas identified as "competitive" are somehow economically different from the rigged markets. Co-located agencies with similar half-pint requirements in the rigged markets received much lower bid prices than school districts in the same area, whereas bids were very similar in the markets identified as "competitive." Evidently, the only economic difference found was that the school bids were rigged, while state agencies, for the most part, appear to have avoided the rigging, perhaps due in part to the use of a single annual bid date for all agencies.

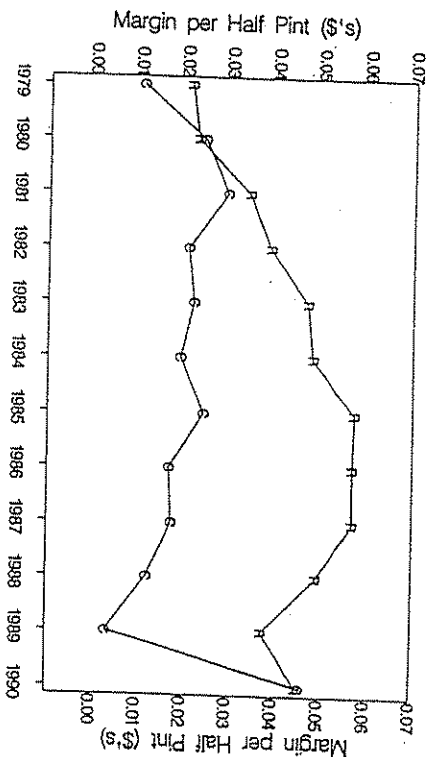


Figure 10b. Kentucky Core Conspiracy (R) and Competitive (C) Median Winning Margins (Price-Dock Costs), Lowfat White.

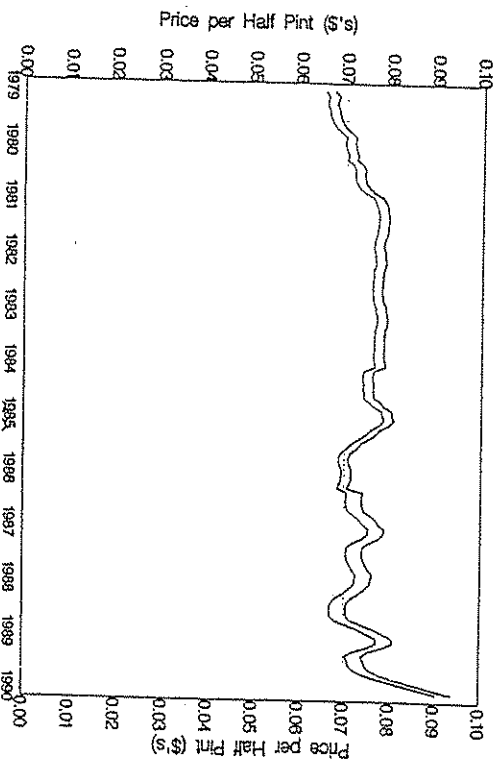


Figure 10c. Raw Milk Cost Stable Over the 1980's FMO Order 11 and Order 46.

bids based on preference for a local dairy, among other things.⁷⁷ Figure 5, *supra*, demonstrates Southern Belle's selective bidding pattern in the eastern Kentucky

⁷⁷ There is some very isolated evidence of contracts being awarded to a local dairy which was not the low bidder. Also, some deposition testimony contain allegations of gifts (tinting rifles) which purportedly led to special consideration by school boards, but no corroboration exists for these allegations.

counties where the company had existing delivery routes.⁷⁸ Southern Belle stopped bidding in two counties after 1980, and stopped bidding in eight other counties during the conspiracy period. This "no bid" protocol resulted in higher bid prices to the affected school districts.

Market division and customer allocation schemes in school milk sales presented something of a dilemma to co-conspirators faced with continuing excess capacity. Since school milk bids were made public, any attempt to "steal a march" on a co-conspirator through a low bid would be subject to immediate detection and possible retaliation. Accordingly, from time to time, dairies evidently "dumped" their excess capacity by means of long-haul sales outside the immediate conspiracy area. Figure 6 graphically illustrates this phenomenon, displaying some of the long-distance sales (and delivery routes) of milk to school districts by various dairies involved over the past ten years. School milk has been hauled as far as 300 miles from processing plants by Turner and by Clark, which is supplied by U.C. Milk, which is supplied by Dairymen, and sold at prices that generally are significantly lower than prices charged to school districts subject to the western Kentucky conspiracy.

Figure 11 compares Turner Dairy's winning prices in 1987 and 1988 to school districts in Kentucky with its winning price to schools in Mississippi ranging from 166 to 285 miles south of its Fulton plant. More specifically, while Turner continually was able to win rigged Kentucky school districts contracts at a price of 15 cents per half pint during 1986-88, it bid one-to-two cents lower to obtain school contracts in competitive Mississippi areas. Even more interesting, U.C. Milk, which swore to the immutability of delivery routes in Hopkins County (U.C.'s base of operations), at times tendered three-cent-lower bid prices per half pint to accounts fifty miles away.

These data demonstrate that Kentucky dairies evidently were involved in geographic price discrimination, i.e., they were discriminating in prices charged to variously-situated school districts in several states (measured in terms of net prices, processing plant (net of transportation and other costs)). Even though the data are not sufficiently comprehensive for a full demonstration of systematic price dis-

⁷⁸ A typical defendant explanation for terminating or refusing to bid to school districts in certain counties is that the company did not have an existing delivery route in the area, or that the location of schools in the county "did not fit" existing routes. According to testimony of David Lowenstein of Holland Dairy, a co-conspirator in the western Kentucky case, during the period of the conspiracy route structure determined the customers for which the company would compete, whereas in the post-conspiracy period the location of actual and potential customers for which the company competed determined the structure of delivery routes. The fixation of defendants on the almost immutability of a given delivery route structure lends support to the inference that one of the objectives of the milk conspiracies was to preserve existing delivery routes, which is consistent with the federal indictments in the Western Kentucky case, asserting that the conspiracy included a territorial division agreement which covered northwestern Kentucky and southern Indiana. This territorial protocol in the Western Kentucky case was used to implement several price-fixing zones, which resulted in lower bid prices in the southern tier of counties (bordering Tennessee) than in counties north of U.S. Highway 70. Another Holland official has testified that another reason for dividing the western Kentucky market into zones was to facilitate the fixing of prices to commercial accounts.

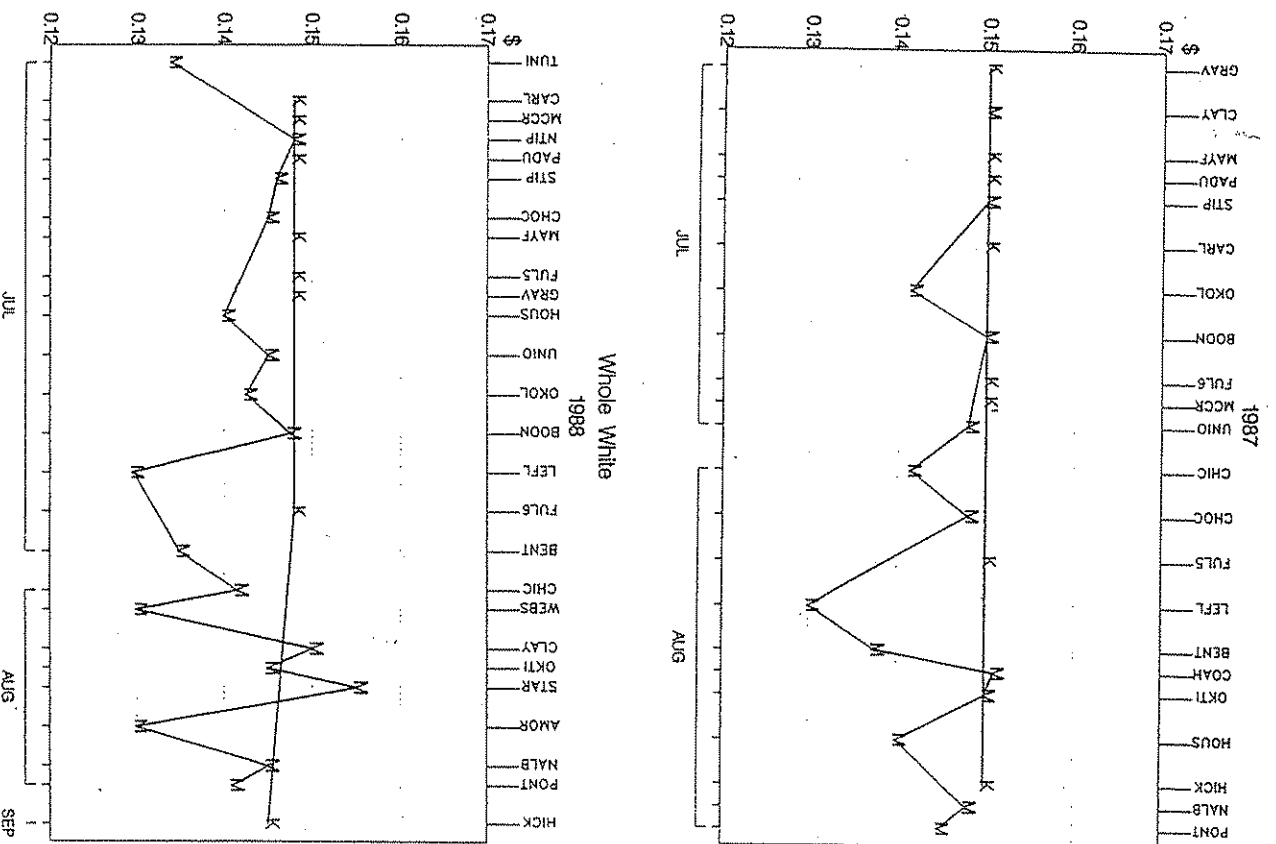


Figure 11. Turner Winning Prices in Kentucky (K) and Mississippi (M) Whole White.

crimination, following conventional economic doctrine, they can serve as another corroborating "plus factor" in reaching inferences about tacit collusion.

D. *Telephone Records of Co-Conspirators.*—Another piece of circumstantial evidence that can assist in making inferences about collusion in school milk bid prices consists of telephone records. For example, in the Western Kentucky case, telephone records discovered from Ideal American disclose that over 600 telephone calls were made to co-conspirators' telephone numbers over the 1985–1990 period. A close examination revealed that the calls tended to be "bunched" around the period prior to bid-submission dates during the bidding season, with other calls spread over the rest of the year. Again, this information is limited, but it provides further "plus factor" material that begs the question: Do the number and frequency of these phone calls to competitors support inferences that such communications could reasonably be construed to be connected with school district allocations and bid-price manipulations on school milk?

E. *Estimated Aggregative Economic Impact of Bid Rigging in School Milk.*—It is unclear at this time whether bid rigging for school milk contracts is strictly an eastern states phenomenon, as displayed in Figure 2, or whether other shoes are yet to drop in mid-western and far western states. Figure 2 indicates the states affected through the year 1993. A number of states have obtained settlement agreements involving cash and in-kind payments by defendant dairies charged with rigging school milk bids. The State of Florida settlement evidently is the largest reported to date, amounting to \$32.2 million, with smaller sums reported by Georgia, Alabama, Ohio, Tennessee and other states shown in Figure 2. Based on estimated overcharges prepared in several cases for trial purposes and used in settlement negotiations (ranging from 15 to 20 per cent), *potential* national overcharges (if all states were similarly affected by bid manipulations) for the five-year period 1984–1988 would be on the magnitude of roughly \$600 to \$800 million.⁷⁹

IV. Conclusion

The stated purpose of this paper was to examine some empirical data used to support contentions of agreements to allocate and assign school district contracts and to rig bids for school milk. Most defendants vigorously argued that their behavior simply reflected the workings of intelligent, rational oligopolistic interdependence.

⁷⁹ These are hypothetical estimates and are used purely for illustrative purposes, based on a total expenditure of almost \$20 billion for the three special federal nutritional programs NSLP, SB, and SMP. Since milk costs amount to about 20 per cent of total meal costs of \$19,746 million for the five-year period 1984–1988 (= \$3,949 million) plus \$82 million for SMP = an estimated expenditure for milk of \$4,031 million. Based on estimated overcharges of 15% to 20%, the total economic impact (assuming all school milk bidding was rigged) would range from approximately \$600–\$800 million for the 1984–1988, which represents the alleged conspiracy period most typically used in the state complaints. Federal expenditure data from *The World Almanac and Book of Facts*, 1994, p. 123.

I have attempted to demonstrate that close examination of the data reveals bidding patterns and practices that could not have been driven by, and not compelled by, the simple workings of dairy companies' interdependence, nor were they the inevitable product of an oligopolistic market structure. The totality of the evidence discovered in the milk cases, consisting of the chronology of market shares, incumbency, price comparisons, and market entry or its absence, is generously buttressed by other material disclosing the presence of facilitating practices. Although it may be difficult to quantify its statistical probability, the likelihood that these market relationships could have existed and persisted without communication and agreement among the independent firms must be infinitesimal. The defendants consciously and collectively developed and implemented bid-rigging and market-division agreements. The belated confessions and affidavits confirming the nature and operation of the agreements serve as an evidentiary bonus to the findings revealed by the other materials.

Analysis of milk litigation documents disclose that while first-blush inferences about collusion might be regarded as speculations, it was possible to uncover, and to correctly identify from circumstantial evidence the machinery used by milk processors for rigging bids to large numbers of school districts. At the same time, our review of the circumstantial evidence in these cases helps answer the question posed earlier concerning the adequacy and usefulness of oligopoly theory in identifying the relevant criteria for detection of Section 1 violations, with and without explicit (but covert) collusive actions. I was able to confirm that the business strategy of choice on school milk contracts—collusion—emerged out of structural characteristics most economists agree are highly correlated with the incidence of collusion (fewness of sellers, homogeneous products, relatively inelastic and slow-growing industry demand, similar processing costs, and slow technological change). I also found that various federal and state statutes regulating milk production and pricing, and other institutional arrangements provided a fertile environment and catalyst for collusion among processors in sales of milk to school districts.

Thus, I conclude that no new or novel theory of oligopoly is required to identify activities that compromise independent behavior among ostensible competitors. Although there is no generally-accepted theory of collusion under oligopoly, the current state of oligopoly theory, supported by the accumulation of empirical cases, enables us to identify the determinants of collusion and the most effective forms of implementation.⁸⁰ Also, while economic theory does not provide "bright line" indicia for legality or illegality—it offers useful generalities drawn from logical deductions about how rivals might behave under different assumptions and

⁸⁰ The late George J. Stigler observed that clandestine activities like collusion are difficult to study because of limited information, and offered a theory of oligopoly which he felt can "... isolate the determinants and forms of successful collusion - or rather the determinants of successful cheating and hence unsuccessful collusion ...". He noted that "The most efficient method (of collusion) is the joint sales agency ... Somewhat less efficient collusion is achieved by the assignment of customers, whether individually or by geographic area or otherwise ...". See Stigler (1966).

market circumstances. Given the bidding patterns and other associated behavior, explicit collusion must have been present in school milk bidding. Put differently, the milk cases confirm that assignment of individual school district customers and allocation of geographic areas to different sellers, was an "efficient" method for reaching agreements on bid rigging.⁸¹

Our review of the evidence in the milk cases confirms the proposition that collusion and cartel agreements come in many colors, sizes and shapes, depending on the characteristics of the industry and marketing procedures. Analysis of those documents further suggests that tacit collusion may be only a special, limited variety of collusive oligopolistic behavior, requiring some very restrictive assumptions, especially in the presence of facilitating mechanisms such as exist in the milk industry. Manipulation of sealed bids for school milk contracts represent vastly different market transactions than run-of-the-mill, infrequent, once-or-twice-per-year changes in posted or list prices of many manufactured products, which is implicit in much of the interdependence theorizing underlying *Matsushita*.

Therefore, to argue it is equally plausible that pure, rational oligopolistic interdependence can explain interfirm bidding and pricing actions such as found in the milk cases begs the question as to whether even the most sophisticated and intricate game-theoretic models are capable of replicating bid prices and bidding patterns in numerous bidding opportunities, to many different school districts, over a lengthy period of time, all under the constraint of a sealed-bid process. A finding of equal plausibility under these constraints requires some very heroic economic assumptions indeed, and stretching of economic theory beyond limits of credibility. In short, one lesson of the milk cases is that collusive activities are more properly studied empirically, rather than simply deduced from tacit assumptions.

Despite some noteworthy advances in game theory for dealing with tacit collusion and the oligopoly pricing problem (beyond simple, static Cournot-type oligopoly models)⁸² the tools of game theory (including new "supergame" models) do not provide clear, mechanistic strategies and solutions for repeated oligopolistic pricing situations, especially under the constraints of a sealed-bid process. Game theory provides an understanding of the structural and strategic aspects of business rivalry and conflict, as well as some alternative theoretical solutions. Game-theory models, however, do not tell us much about the actual behavioral assumptions made by managers operating under imperfect information and uncertainty about rivals'

⁸¹ Stigler also noted that "The government as a buyer usually uses bidding techniques (sealed public bids) which make secret price cuts impossible. Hence, collusive systems usually work best against governmental buyers (emphasis added)." See Stigler (1966, pp. 269).

⁸² See especially Von Neumann and Morgenstern (1944); Harsanyi, J. (1967-1968, pp. 159-182, 320-334, and 486-502); Shubik (1964); Nash (1951, pp. 286-295); Friedman (1983); Green and Porter (1984, pp. 87-100); Fudenberg and Tirole (1989, pp. 259-327); Jaquemin and Slade (1989, pp. 414-473); and Shapiro (1989, 329-414).

behavior.⁸³ If officials of rival firms keep one another informed through private communications of bidding plans, preferred or targeted customers, and specifics as to future bid prices to particular customers (as found in the milk cases), then cooperation is much more likely; but this is hardly the stuff of tacit collusion based on purely interdependent (i.e., noncooperative) behavior generated by game-theory models.

Contentions that pure tacit collusion does not violate Section 1 are based implicitly on the proposition that noncooperative game theory provides a framework to model market situations in which each firm makes an optimal decision based on certain assumptions, beliefs and expectations regarding the actions and reactions of rivals, who, in turn, are assumed to be rational and simultaneously making predictions and strategic determinations aimed at maximizing their own profits, or some other commercial goal. The so-called "Nash equilibrium"⁸⁴ represents a strategy selection by rival firms under which no rival can gain by following a different strategy, given the strategy of rival firms. All rivals also must have complete information, or not only be able to correctly predict the equilibrium outcome, but also the ability to predict that rivals will correctly predict that outcome, and so on. In short, for game-theory models to convincingly demonstrate that tacit collusion can emerge from this kind of reasoning, rivals must have some mechanism for receiving correlated signals in order to coordinate their expectations. If rivals cannot resolve the information, communication, timing and uncertainty problems (all within the constraints of a sealed-bidding process), it is difficult to see how purely interdependent pricing behavior, without more, can lead to tacit collusion under the guise of a Nash equilibrium.⁸⁵

The milk conspiracy findings instruct us that oligopoly theory cannot, does not, and should not provide any special "interdependence" shield for voluntary and deliberate acts by oligopolists to allocate contracts by submitting pro forma complementary bids, by refusing to bid to certain school districts, by withdrawing bids after winning (in favor of a competitor), and similar practices. Put differently, if such a shield were raised as a defense, it would be badly tarnished by the "plus factors" cited. Moreover, one might hazard a guess that the court could now revisit *Matsushita*, by finding a Section 1 conspiracy based on such evidence as adduced in milk, where earlier it was not willing to find predation.

Hopefully, this empirical review of economic data also can provide a fresh start toward resolving the confusion that exists in the economic and legal literature between the purposes of theory (economic or legal) and the requirements of legal

⁸³ Game theory does not predict a particular tacitly collusive outcome; it simply indicates that tacit collusion is theoretically supportable *a priori*, as often one of many possible non-cooperative equilibria generated by a game-theory model.

⁸⁴ Nash-type equilibria, by design, are supposed to be self-enforcing, based on credible punishments inflicted on rivals who inadvertently or otherwise stray from the equilibrium path. See Fudenberg and Tirole (1989, pp. 259-327).

⁸⁵ This would be especially true in the western Kentucky case involving some 600 telephone calls to co-conspirators, probably designed to (illegally) overcome these information problems.

proof. Tacit collusion (per oligopoly theory) creates an "uncompetitive" or non-competitive event, but legal theory argues that firms should not be found in violation unless they *intentionally* contributed to that result. Furthermore, short of "smoking gun" or testimonial evidence confirming competitor agreements, proof of violation in Section I cases inevitably depends on examination of phenomena that are largely economic and statistical, with which courts seem uncomfortable as forms of proof. Thus, even though agreements of some sort may exist, they are not likely to be found in the conventional form courts like to see in order to find liability. The upshot of all this is that courts at times appear confused about the policies they believe they are enforcing, the rule of law and its application, as well as burden of proof. Viewed in this context, further clarification may yet emerge from the *Matsushita/Kodak* nexus.

Finally, our study of the milk litigation poses some public-policy implications that go beyond the scope of this paper, but nonetheless deserve comment. Because of the maze of regulations and other interventions with market forces, both federal and state agencies could be recognized as *accessories before the fact* in the U.S. milk cartels. Additionally, one can reasonably question whether Capper-Volstead has outlived its original rationale and usefulness as public policy. In the same vein, Congress could usefully review the objectives, control and administration of various nutritional programs. As is the case with many other programs under its jurisdiction, the U.S. Department of Agriculture has a built-in conflict of interest between support for private agricultural interests and sensitivity to the public interest of consumers. The way the system works in practice, consumer interests almost uniformly are sacrificed for other public-policy objectives: restricted production; supracompetitive prices; and misallocation of resources. At the state level, school districts can help protect themselves from bid rigging by revisions in sealed-bid procedures, e.g., adoption of a common, once-per-year state-wide bid-opening date, pooled buying, outright rejection and re-letting of all the bids, re-visiting local-seller preference practices, and acquisition by state education departments of new high-tech bid monitoring systems such as those currently being used to monitor highway construction bidding.

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A Note on Price Cap Regulation and Competition

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Abstract This paper examines the properties of a price-cap regulatory regime similar in design to a plan recently proposed by AGT Ltd. in hearings on Alternative Forms of Regulation before the Canadian Radio-television and Telecommunications Commission. The price-cap plan incorporates a number of novel features which include (i) quantity weights that evolve through time rather than remaining fixed; (ii) adjustments for productivity that incorporate yardstick competition; and (iii) allowing the weights to reflect the firm's market power or absence thereof in the presence of competition. Hence, should competitive circumstances permit, the regulatory regime allows for its own sunset.

Key words: Regulation, incentives, price caps, competition.

I. Introduction

Until recent years, the traditional method in North America and elsewhere of imposing earnings restrictions on firms subject to government oversight was through regulation of the rate-of-return on assets. The procedure that was followed essentially consisted of four steps:

1. Establish an appropriate asset base;
2. Establish an appropriate system for calculating allowable costs;
3. Establish an appropriate rate-of-return which would be allowed on the asset base.
4. Establish a set of prices such that the earnings defined as the difference between revenues that these prices would yield and the associated allowable costs do not exceed the allowed rate-of-return.

However appropriate rate-of-return regulation might be in the context of a single supplier, it is clearly much less so in a context, such as in the telephone industries in the U.S., Canada, and elsewhere, in which competition is emergent but where the incumbent retains a dominant presence in the market. Regulation

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