

**ARCHER DANIELS MIDLAND:  
PRICE-FIXER TO THE WORLD  
(Third Edition)**

by

John M. Connor

Staff Paper 98-10

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**Dept. of Agricultural Economics**

**Purdue University**

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## **Abstract**

Both market structure and corporate practices of Archer Daniels Midland fostered the implementation of the largest price-fixing conspiracies seen in modern times. The overcharges imposed on U.S. buyers of lysine and citric acid during 1994-1995 by ADM and its co-conspirators amounted to at least \$250 million, and the total amount of public penalties, private damages, and legal costs exceeds \$740 million. Perpetrators of price-fixing now face monetary exposures that are five times the amount of the harm caused to buyers. These events have spurred renewed attention by U.S. antitrust authorities in prosecuting international cartels.

**Keywords:** Price fixing, lysine, citric acid, sweeteners, wet-corn milling, starch industry, Archer Daniels Midland, market structure, monopoly overcharge, antitrust law, legal damages, U.S. Department of Justice.

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# **ARCHER DANIELS MIDLAND: PRICE-FIXER TO THE WORLD**

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## **Introduction**

The purpose of this paper is to describe the operation of three large international price-fixing conspiracies involving wet-corn milling products and to analyze a number of legal and economic issues raised by these events. The paper begins with a brief description of the markets for and market structures of lysine, citric acid, and corn sweeteners. A short profile of Archer Daniels Midland indicates a company with a leadership and corporate culture well suited to reckless collusive behavior and well positioned in markets that had nearly all the features necessary to carry out such a scheme. The next section chronicles the operation of the three conspiracies as far as that is possible from the public records. The final section of this paper examines the legal and economic issues surrounding the proper estimation of antitrust damages in this case.

The importance of these topics is demonstrated by the paper's five major conclusions:

- ADM was at the center of at least three international price-fixing conspiracies involving wet-corn-milling products, circa 1992-1995: lysine, citric acid, and corn sweeteners. Buyers in the U.S. were overcharged \$220 to \$345 million for the first two products alone.
- In terms of the monetary damages paid, these are by far the largest price-fixes in four decades. The huge fines paid by ADM and its co-conspirators were unprecedented; future fines and damages could reach more than *five times* the overcharges generated by a conspiracy.
- The events have spurred the Department of Justice (DOJ) into investigating more than 20 international commodity cartels for criminal price fixing. Since the ADM cases, four more cartels have been uncovered and prosecuted.
- ADM management practices have been called into question; ADM's board of directors changed over night; the "Andreas' Era" at ADM may be over; two ADM managers are facing serious criminal antitrust penalties and four more have been or will be convicted of fraud.
- These events demonstrate that import competition is no longer sufficient condition for good domestic competition and that companies with vastly different corporate cultures and globally dispersed operations can easily learn to conspire. The extraterritorial reach of the antitrust laws is more needed than ever.

## The Markets

### Lysine

Lysine is an essential amino acid that stimulates growth and lean muscle development in hogs, poultry, and fish; a small portion of production is used for human nutrition (Appendix B). It has no substitutes, but soybean meal also contains lysine in small amounts. For hogs, lysine and corn are reported to be a perfect nutritional substitute for soybean meal: 100 lb. Meal = 97 lb. corn + 3 lb. Lysine. Some sources say poultry feeds need lysine and soymeal is not a substitute. Optimal feed efficiency ratios in 1990s were 3.5 to 3.8 lb. for hogs, 1.8 for broilers, and 2.7 for turkeys at usual slaughter weights. Significant declines have occurred since the mid 1980s, somewhat reducing the demand for lysine. Improved genetic types of hogs and poultry now can absorb about 3 lb. of lysine/ton of feed, but traditional breeds only 1-2 lbs./ton of feed. For hogs, 50% were “improved” (high-lysine-absorbing) types in 1985 across the U.S., up to about 80% in 1995. Most poultry breeds in current use already absorb high-lysine feeds. Thus, with efficiency ratios declining and genetic substitution almost over, the prospects were for lysine growth slowing after late 1990s.

Sometime in the 1960s, an Asian biotechnology company (probably Ajinomoto) discovered a fermentation process that converts dextrose into lysine. By the 1980s, they were importing large quantities of dextrose from ADM and other U.S. wet corn millers and exporting high-priced lysine back to the USA. In 1989, when ADM made its decision to build its first lysine plant in Decatur, Illinois, there were three significant producers of lysine in the world. The largest with about 60 percent of world sales was Ajinomoto of Japan; together with its joint-venture partner Orsan SA of France, Ajinomoto operated the largest U.S. lysine plant (12,000 metric tonnes capacity) in Eddyville, Iowa. Another Japanese firm, with about one-fifth of the world’s lysine market, was Kyowa Hakko; Kyowa’s U.S. subsidiary, BioKyowa, operated a smaller (7,500 tonnes) factory in Cape Girardeau, Missouri. The third big manufacturer was Miwon, a South Korean concern with one plant in Korea that made about 15 percent of the world’s lysine. In 1989, the U.S. imported almost 60 percent of its 40,000 tonnes of feed-grade lysine consumed in a year. Miwon was the major supplier of U.S. imports, with smaller portions of U.S. imports from Ajinomoto in Japan and a Kyowa plant in Mexico. Lysine prices of about \$1.65 per pound made both small scale U.S. production and exports from Asia quite profitable.

In response to the rapidly growing U.S. lysine market and perhaps in anticipation of ADM’s new plant, Ajinomoto and Kyowa scaled up their U.S. plants to 20,000 and 13,000 tonnes by 1991. However, ADM’s plant had a 47,000 tonne capacity when completed in February 1991. By July 1991, ADM was operating its plant at about 50 percent of capacity; by December, it reached nearly full capacity, which was equal to total U.S. lysine consumption in 1991 (48,000 tonnes). ADM exported well over half of its production to Europe, Asia, and Latin America. The Decatur plant was quickly expanded to 60,000 tonnes in 1992 and 113,000 tonnes in 1993, scales that ADM’s rivals thought to be impossible. By 1993, ADM’s single plant could make 30 percent more than the other ten plants in the world combined.

ADM became the third U.S. manufacturer of lysine in February 1991 and quickly gained about 50 percent of the U.S. market. Real growth of U.S. lysine consumption in the mid 1990s was 10% p.a.; the U.S. market reached \$330 million in 1995; the world market was about \$600 million. Industry experts place ADM's 1995 cost of production at below \$0.85/lb.; a 1996 affidavit says the break-even point is \$0.66/lb.; Whitacre says that in 1992-1993, there were large losses when the price reached \$0.60/lb., thus, a marginal cost of lysine production by ADM of \$0.66/lb. is not unreasonable when the Decatur plant was operating at optimal capacity. The Asian company's plants probably operated at higher cost levels.

All sides writing about the U.S. lysine market during 1992-1995 agree that it has a highly concentrated oligopoly trading in a homogeneous product. During 1994, ADM supplied 48 to 54 percent of the U.S. market, Ajinomoto 22 to 23 percent, Kyowa 16 to 21 percent, and Sewon Group 5 to 10 percent. The Herfindahl-Hirshman Index of concentration was between 3300 and 3700 in those years. In addition, technical barriers to entry for a fifth supplier were also quite high. Building a new plant would take two or three years and involve a large sum of sunk capital investment. There were many animal feeds manufacturers buying lysine; some dated estimates of regional concentration show four-firm concentration (CR4) was 60 to 70 percent, but national concentration was much lower. Imports accounted for 52 percent of the U.S. market in 1994 and only 46 percent in 1995, but all imports came from the three Asian members of the price conspiracy.

Trading conditions and buying methods used in the lysine market are not known, but there is no public or trade sources of prices on a regular basis. Private treaty negotiations appear to be the major method of pricing.

### **Citric Acid**

Citric acid is an acidulent, a class of food additives that sterilizes, fixes flavors, and enhances flavors (Connor). About two-thirds of all citric acid is used in foods and beverages and the remainder in detergents. Citric acid accounts for more than 80 percent of the market for food-grade acidulents. It is sold in liquid, anhydrous, and salts forms.

World capacity in 1991 was about 1.1 billion pounds (excluding the former Soviet Union, which may have no capacity and in any case does not trade internationally). Capacity grew by about 7 percent per year, reaching 1.4 billion pounds in 1995. The U.S. share of global consumption was 32 to 33 percent in the early 1990s. U.S. plants exported about 8 percent of their production (mostly to Canada) and imported about 25 percent of U.S. consumption, mostly from Western Europe and minor shares from China, Israel, and Turkey.

During 1990-1995, there were only three U.S. manufacturers of citric acid. Haarmann & Reimer Corp., a subsidiary of the Swiss chemical company Bayer AG, sold citric acid made in two Midwestern plants operated by Miles Laboratories, another U.S. subsidiary of Bayer. Haarmann & Reimer/Bayer held a 42 percent capacity share of U.S. and Canadian consumption in 1991 which declined to about 32 percent by 1995. ADM entered the world and U.S. market by buying two plants from Pfizer in December 1990 along with the technical expertise to operate the plants. ADM's

capacity share of the U.S.-Canadian market was initially about 49 percent, but declined to about 37 percent in 1995. (Capacity shares may overstate sales shares if the plants operate at low utilization rates).

The main reason that Haarmann & Reimer's and ADM's shares slipped is that Cargill entered the industry by building a new plant in Iowa during 1988-1990 and significantly expanding that plant in 1991, 1993, and 1995. Cargill's capacity share of the U.S. - Canada market was 16 percent in 1990, 18 percent in 1992, 28 percent in 1994, and 33 percent in 1995. Thus, in 1995, adjusting for imports, the three U.S. producers controlled about 90 percent of the U.S. market with almost equal market shares. Because they were vertically integrated into wet-corn milling, ADM and Cargill may have had lower costs of production.

The two largest importers into the U.S. market were Jungbunzlauer of Austria and Hoffmann-LaRoche of Switzerland. Jungbunzlauer's three plants in Austria, France, and Germany gave it a 17 to 19 percent world share, almost double that of the three U.S. manufacturers. Hoffmann-LaRoche's Belgian plant accounted for 15 percent of world capacity in 1991, down to 11 percent in 1995. These two companies were the largest and most consistent importers to the U.S. market. A group of government owned Chinese producers aggressively entered the market in the early 1990s, with low-priced acid, but threats of trade reprisals (reportedly instigated by ADM or Cargill) caused them to pull back a bit. Smaller, more sporadic importers were located in Italy, Israel, Turkey, and Indonesia. The top five manufacturers controlled 65 to 70 percent of the world market in the early 1990s.

In 1988, list prices of citric acid delivered east of the Rocky Mountains were \$0.81 per pound anhydrous equivalent. With Cargill's impending and actual entry, prices fell dramatically to the \$0.63 to \$0.73 range during 1990 (CMR). In 1991, a series of price increases were initiated by Cargill, which were followed by a spiral of similar announcements by ADM, Cargill, and Haarmann & Reimer through 1993. From late 1993 to the end of 1995, list prices remained stuck at \$0.85 despite what CMR called "ample supplies." Information on actual transactions prices is more spotty. Importers' prices run about 2 to 4 cents lower, with Chinese imports closer to 6 cents lower than list prices. During periods of normal supply, U.S. transactions prices are reported to be about 5 to 8 cents lower than list prices, with the gap closing to as little as 1 cent at times. In a 1994 government report, domestic sales prices were reported to be \$0.804 for citric acid and its salts, or 5 percent less than list prices in that year. In the first six months of 1996 after the cartel was exposed, importers' prices fell from about \$0.83 to \$0.73.

### **Corn Sweeteners**

ADM is a manufacturer of all three major corn sweeteners: glucose, dextrose, and fructose (Connor). Dextrose is normally sold in powder form and there is a new crystalline form of high-fructose corn syrup (HFCS), but glucose and HFCS are sold in syrup forms. The leading sweetener is sucrose made from cane or beets. Three minor naturally occurring sugars are maltose, lactose, and zylitol. All six of these nutritive sweeteners have some unique uses in food processing, but for other uses they can be complementary. HFCS is commercially produced in three sweetness levels, all of which are sweeter than dextrose; glucose syrups (ordinary "corn syrup") come in ten commercial

forms, all of which are less sweet and more bulky than dextrose. Altogether there are 18 standard forms of starch-based sweeteners (made from corn in the United States but from wheat, potatoes, or other starches in other countries).

The U.S. market for corn starch sweeteners is very large, about 14.9 million metric tonnes in 1995. U.S. consumption of dextrose amounted to almost 700,000 tonnes but has grown only very slowly (25 percent from 1970 to 1995). Glucose (“corn”) syrups account for 25 percent of corn sweetener tonnage, with production up 150 percent since 1970. HFCS is now by far the largest segment (68 percent by volume), all of its growth occurring since 1970. The total value of the U.S. corn sweetener market in 1992 was \$2.9 billion (at f.o.b. manufacturers’ prices), of which 82 percent was HFCS.

Volume growth of HFCS was spectacular up to 1990 when a marked slow down occurred. Growth during 1990-1995 averaged only 3.8 percent per year. Growth of glucose syrups during the early 1990s averaged 4.3 percent, and dextrose grew at 2.8 percent per annum. The HFCS segment became a mature market around 1990, just as dextrose and glucose had been for years before. HFCS grew fastest when sucrose substitution was large (particularly in the soft drink industry). With that substitution phase at an end, corn sweeteners cannot grow much faster than the real growth of all the food processing industries (about 2 or 3 percent per year).

In 1992, there were 28 companies in the wet-corn milling industry, but 9 of them operated 23 plants that accounted for nearly all U.S. production. The top four companies operated 16 plants in North America that accounted for 86 percent of HFCS capacity in 1991; the four-firm concentration ratio (CR4) for all wet-corn milling was 73 percent in 1992. (Concentration within each of the corn products markets such as starch, corn oil, amino acids, and the like is higher than for all products taken together). ADM is the leading producer of HFCS with about one-third of industry capacity, A.E. Staley (owned by Tate & Lyle) about one-fourth, Cargill about 20 percent, and CPC International 10 to 15 percent. International trade, except small imports from Canada, is negligible.

Sales figures are more difficult to obtain than physical output. Estimates from Census data show that glucose syrups had shipments’ value of \$735 million in 1992, up 60 percent since 1982 or 1987; the U.S. market for dextrose is small, only \$284 million in 1992, up 25 percent since 1982. Finally, HFCS sales reached \$1,892 million in 1992, up 110 percent since 1982.

Wholesale list prices are quoted monthly for dextrose and glucose syrup, but not for HFCS. List prices of dextrose used to change nearly every month, but that stopped in early 1981. Then a pattern emerged of constant prices for many months (e.g., \$27.17 per cwt. For 15 months in 1981-82; \$26.36 for 16 months in 1983-84, and \$24.50 for four years 1989-94!). Census data seem to show that transactions prices were 21 percent lower than the posted list prices.

List prices of glucose syrups were far more variable since the mid 1970s than dextrose. Intra-annual prices rose as high as 83 percent and fell as much as 32 percent. Prices in 1994-1995 (the

probable conspiracy period) were 14 percent higher than in 1993, but did not increase above average 1990-1992 levels.

HFCS prices averaged about \$10.50 per cwt. in 1992, about the same as selling prices in the 1980s. HFCS with more than 50 percent fructose levels sold at a 5 percent premium in 1992, but that premium is down from 15 percent in 1982. Little else can be found about HFCS prices from public sources. However, it is known that CPC paid \$7 million to HFCS buyers as civil damages in September 1996. If a HFCS price-fixing conspiracy was in effect during 1994-1995 (the same period as lysine), then with two-year company sales of \$420 million, the implied treble damages were *at least* 1.7 percent of CPC sales of HFCS. If all sellers overcharged at the same rate, the total damages were about \$62 million (overcharges were \$21 million), but these estimates are conservative and speculative.

### **Profile of Archer Daniels Midland**

In fiscal year 1995, ADM had consolidated net sales of \$12.7 billion (ADM). However, gross sales, which includes the total sales of merchandised grain and oilseeds, totaled \$15.9 billion in 1995. Finally, total sales including those of unconsolidated affiliates were approximately \$20 billion. For the three fiscal years ending 1993 to 1995, after-tax earnings averaged 5.5% of net sales and 11.7% of stockholders' equity. Over the last nine years, ADM's net sales increased by 10.1% per year. From fiscal 1986 to fiscal 1990, net earnings rose from \$230 million to \$484 million (or by 20% per year), but from 1990 to 1994 ADM's net earnings stalled at \$500 million per year. In 1995, net earnings jumped to \$796 million, or 60% above the 1990-1994 average.

ADM has four major product divisions: oilseed products, corn starch products, dry milled grains, and other; in 1995 the four divisions contributed 60%, 20%, 11%, and 9% of net sales respectively. The oilseeds division sells corn, peanut, palm, cottonseed, soybean, canola, and sunflower oils and their byproducts. Specialty products include lecithin, vitamin E, monoglycerides, soy protein concentrate, and soy isolate. The corn starch division produces corn syrups, crystalline corn sweeteners, corn starch, alcohols, malt, and a host of biotechnology products (monosodium glutamate, citric acid, lactic acid, sorbitol, xanthan gum, lysine, methionine, tryptophan, threonine, ascorbic acid, astaxanthin, and biotin). Dry milled products include flours and pastas. Miscellaneous sales consists of aquiculture fish, hydroponic vegetables, grain merchandising, and numerous joint ventures with farmers' cooperatives. Within the corn products division, HFCS and ethanol are mature or maturing industries with slow growth and narrowing margins; however, the other bioproducts from corn generate much higher margins and represent ADM's hope for the future.

For a company of its size and diversity, ADM is managed by a remarkably small number of managers. Dwayne Andreas and three or four other top officers made all major decisions from 1970 to 1997. Until late 1996, the ADM Board contained a large majority of current and former company officers, relatives of Andreas, long standing close friends of Andreas (e.g., "Happy" Rockefeller, Ray Goldberg), or officers of companies that supply goods and services to ADM (agricultural cooperatives or legal services). Strictly speaking, at most two of the Board's 17 members were independent of ADM or Andreas. Members of the press or stock analysts almost never had open contact with ADM officers except D. Andreas himself.

An October 1995 profile of Dwayne Andreas and ADM by the *Wall Street Journal* emphasized the CEO's extraordinary grip on the company. Although he personally owns less than 5% of ADM's stock "...Andreas has gained near total control with the help of family members, loyal executives and directors whose combined stakes is nearly 15%... He collaborates with his biggest competitors, spends prodigiously to influence the media and public opinion, and spreads large sums among politicians of all stripes." (p.A1). As an example of Andreas' drive to dominate, at ADM's October 1997 annual meeting he cut off a critic's microphone and said "I'm chairman. I'll make the rules as I go along." Such rough tactics were tolerated because he presided over a period of great financial and stock performance for ADM.

Unusual among agribusiness companies, ADM has many collaborative arrangements with parties that normally would be considered rivals. Andreas often says "Keep your friends close and your enemies closer." So, in 1992, ADM built a 3.5 mile pipeline from its Decatur plant to A.E. Staley's plant to reduce risk as well as to help break a threatened labor strike. ADM owns significant shares in Staley's parent, Tate & Lyle, and has a fructose joint venture with Staley in Mexico. ADM also has alliances of various kinds with grain cooperatives like Growmark and GoldKist.

Andreas cultivated the image of an international statesman primarily concerned with world hunger and national food security. His official biography gives him credit as one of the major forces behind the PL 480 Program (Kahn). He is identified as Armand Hammer's successor as the U.S. capitalist with the closest relationship with Kremlin and other Eastern Bloc leaders. Andreas has built a legendary network of powerful business and government contacts since the 1960s. He was close friends with and contributor to a wide array of farm-state Congressmen and Senators, especially Hubert Humphrey and Robert Dole. Since 1979, Andreas and ADM have contributed more than \$4 million to candidates for national office or their parties. ADM has benefitted greatly from the U.S. sugar program and from federal ethanol subsidies and usage requirements (Bovard). Lobbying by ADM through its trade associations on these and other government favors is intense and well documented. ADM maintains a palatial suite of rooms in a Washington hotel for the frequent use of Andreas and other officers. Andreas often appears on *Forbes* magazine's list of the 400 richest people in the United States.

"Andreas, his family, and ADM are by far the largest political contributors in the country" (Hollis). These contributions have resulted in adverse publicity for Andreas at least four times. He wrote a \$25,000 check that was given to B.L. Barker, one of the convicted "Watergate Burglars," and a bundle of \$100,000 in cash given by Andreas was found in Richard Nixon's White House safe; Andreas avoided testifying about these gifts. Later, Andreas was prosecuted but not convicted for an illegal \$100,000 corporate contribution to Hubert Humphrey. In 1993, Andreas and his wife were fined \$8,000 by the Federal Election Commission for making excess political contributions.

ADM underwrites the TV broadcasts of the premier political-discussion programs on four television networks: ABC, CBS, NBC, and PBS. During 1994 and January-April 1995, ADM spent at least \$16 million supporting the four programs; its support accounts for nearly 27% of the influential Jim Lehrer News Hour on PBS. ADM owned 10% of the newspaper chain that owns the Chicago Sun-Times. In 1998, ADM created a great deal of discussion among journalists when it hired retired ABC anchor David Brinkley to produce "info-mercials" for ADM. ABC eventually decided not to accept these paid commercials which were to have appeared during Mr. Brinkley's former news program. Some commentators have sensed little or weak coverage of ADM's legal problems in these ADM-related news media.

There are several ADM management practices that bear the Andreas stamp and that could have made ADM prone to price fixing. ADM made quick and aggressive investment decisions. To enter the citric acid business, ADM paid top dollar for some aging Pfizer plants (two of which were closed soon after) primarily to obtain the production technology. In both lysine and citric acid, very large capital expenditures were incurred to expand plants to the largest feasible scales. When production problems occurred with lysine, ADM hired engineers from their primary competitor, Ajinomoto. Whitacre claims that “stealing technology” was common practice at ADM. Specifically, Whitacre asserted that ADM hired Asian engineers to build and run its Decatur lysine plant and that it stole technology and trade secrets from other companies to begin production of vitamins and medicinal products from corn. Whitacre himself was hired away from the German firm Degussa, the world leader in amino-acid research and production. Ajinomoto sued ADM in late 1996 for patent infringement on production methods for lysine, threonine, and other amino acids. Moreover, Whitacre relates that a culture that fostered or permitted price fixing permeated ADM, at least within the corn-producing division. It is clear that Dwayne Andreas has no respect for free markets, an idea he considers to be a figment of politicians’ imaginations (Bovard). Whitacre claims that taped price-fixing discussions within ADM involved the Chairman (D. Andreas), Vice Chairman (M. Andreas), President (J. Randall), and at least three VPs of operating divisions; he stated that the counsel and assistant counsel of ADM were aware of the activity as well. ADM’s own guilty pleas submitted to two federal courts are consistent with some of Whitacre’s charges. Finally, Whitacre asserts that ADM routinely rewarded managers at his level very large bonuses that were paid tax-free into foreign bank accounts by means of phony invoicing schemes. Whitacre himself and two employees he supervised admitted their guilt to such fraud, but how pervasive the practice was in ADM is now much in doubt. Whitacre embezzled more than \$9 million from 1991 to 1995; in 1998 he was sentenced to 9 years in prison for his theft.

### **Economic Conditions Facilitating Price-Fixing**

Standard industrial-organization textbooks like Scherer and Ross provide check lists of market conditions that are known from economic theory or industrial experience to encourage overt cartel behavior (price-fixing, quantity-setting, or territorial shares).

A typical list of facilitating factors is given in Table 1. The first group of factors refers to market sales concentration in its broadest sense. The number of significant sellers of the three relevant wet-corn-milling products is very small. For the three corn sweeteners, the number of sellers ranged from 3 to 8. Sales concentration is extremely high by any standard, though the HHI for corn fructose is lower than that of lysine or citric acid. Buyer concentration is generally low.

The lysine cartel consisted of four or five companies, and these companies were the only significant world producers of lysine from corn dextrose. The U.S. cartel in citric acid was comprised of four or five companies (the status of Cargill is unclear). In addition, there were one or more Chinese chemical companies consistently exporting citric acid to the United States; two other companies were sporadic or negligible exporters. In any case, U.S. imports were small, only 5 to 7 percent of U.S. consumption. Finally, little is known about the conspiracy (if any), but the five dominant producers are all located in the U.S. Midwest, and imports were nil (the only significant imports are from a CPC plant in Ontario, Canada).

For each corn product, at least one facilitating concentration condition is not met. Similarity of business cultures and geographic closeness are absent in the lysine and citric acid cases. Two lysine producers were from Japan and one from South Korea: In citric acid, two producers were

Swiss companies (one operating an U.S. subsidiary) and one was Austrian. In the case of corn fructose, all the producers were located in three contiguous Midwestern states of the USA. The missing factor is low buyer concentration: Coca Cola and Pepsico buy 73 percent of all U.S. fructose.

Product heterogeneity is never a problem for these products, but if prices become high enough, some feasible substitutes appear. Soybean meal can substitute for lysine and corn, but during 1991-1995 price relationships made this possible in only a couple of months. Malic and phosphoric acids can be substituted for citric acid in some food or nonfood uses if citric acid prices rise high enough. The most complex substitution patterns appear among the three corn sweeteners (dextrose, glucose, and fructose) and ordinary sucrose. In some uses, they are substitutes and in other uses they are complementary with each other.

The technical barriers to entry are high in all three markets. Plants are highly specialized in production (implying large sunk costs of investment), and their sizes are large relative to market demand. Technological secrecy is strong in all but the dextrose and sucrose cases. The time required from initial decision to full production is three or more years.

There are five remaining facilitating factors. Market power is difficult to exercise when accurate price reporting mechanisms exist, such as auctions in public exchanges. Lysine prices are completely hidden from public view (except when traded internationally). Like all these products, private treaty negotiations established prices. Spotty surveys of posted prices of citric acid occasionally appeared in the trade press (usually in the *Chemical News Reporter*), and regular quarterly reporting of dextrose and glucose posted prices can be found in *Milling and Baking News*. No posted prices can be determined for fructose, where substantial price discrimination appears to be standard operating practice. Most important, current transactions prices practically never appear in widely published sources. Such pricing mechanisms favor noncompetitive pricing behavior.

The development of tacit pricing cooperation among conspirators is facilitated by companies with years of experience in observing strategic moves and countermoves in an industry. The major players in the citric acid and corn sweeteners markets have interacted in this fashion for more than 20 years. Very little new entry took place that might have encouraged aggressive or maverick behavior. The purchase of A.E. Staley by the UK firm Tate & Lyle brought about no notable change in pricing behavior; Tate & Lyle is highly experienced to operating in tight oligopoly structures in their European sucrose markets. In the citric acid market, Cargill and ADM were the leading actors. These two companies have strategic contact points in several agricultural product markets. There appears to be an understanding between the two that neither will aggressively seek more than 50 percent of their overlapping markets; both companies build capacity in order to signal to each other that they will be satisfied with 35 to 40 percent market shares.

There is less “history” in the lysine market. The absence of a long period of business interaction means that tacit forms of cooperation are not an option, but overt price-fixing is. Ajinomoto had owned a U.S. soybean operation since the early 1970s, but the two South Korean companies were relative newcomers to the U.S. corn products markets. ADM made its decision to build a plant that would more than double world capacity in 1989; when its Asian co-conspirators doubted its size, ADM gave unrestricted tours of the Decatur facility to Ajinomoto and Sewon managers and engineers (Appendix A). When ADM’s new plant came on stream in 1991, it cut U.S. lysine prices from \$1.30 per pound to the \$0.60 to \$0.70 range and kept those money-losing low prices for more than one year. The Asian exporters of lysine were losing because their facilities were smaller and older, their dextrose supplies were more costly, and trans-Pacific transportation costs

were significant. This one-year lesson in how far ADM was prepared to go in obtaining a 50 percent world market share was apparently enough to convince the Asian exporters of the superior profitability of a cartel arrangement. From their point of view, half a cake was better than none at all. The history lesson was brief but pointed.

Another key event took place in 1991 that may have emboldened ADM to seek an understanding with its Asian rivals. In that year, a federal judge in Des Moines, Iowa dismissed a price-fixing case against ADM and other defendants in the HFCS (corn fructose) market. This case had been prosecuted by the Department of Justice for ten years. Its dismissal was a rare and humiliating defeat for the DOJ.

Another characteristic feature of all the corn products markets is the large and infrequent procurement patterns in these markets. Animal feeds manufacturers, beverage bottlers, detergent makers, and other buyers purchased these ingredients by the ton. In the case of citric acid, buyers signed one-year supply contracts, but for the other ingredients purchases were made somewhat more frequently. In any case, large and lumpy orders are easier for a cartel to monitor compliance than a frequent, continuous negotiation process.

Finally, empirical studies of discovered price-fixing cases have established that price-fixing is characteristic of slow-growing or decelerating markets. Citric acid markets were growing at a steady 4 to 6 percent annually; HFCS, after enjoying 20% real growth rates in the early 1980s, slowed to a mere 4 percent per year by the early 1990s. Lysine growth rates were more robust (about 10 percent per year), but by the late 1990s prospects for continued high growth in the U.S. market were dim because the substitution of high-absorption genetic types in hogs would be at an end.

In sum, nearly all of the market preconditions for price-fixing were met for lysine and citric acid. The major exception is the surprisingly pluralistic composition of the conspirators and their globe-girdling locations. Industrial economists must apparently accept the fact the cultural diversity and geographic space are no longer necessary conditions for effective collusion among multinational corporations. The corn sweetener markets do not fit the price-fixing profile quite so well. Seller-side concentration is high enough, but high buyer concentration may countervail attempts to exercise seller market power. Because of their great bargaining power in the HFCS market, it is quite possible that Coca Cola and PepsiCo would pay no overcharge to a HFCS cartel (and this might well explain why these two companies refused to join the class action suits). Moreover, significant substitution and complementarities exist among corn sweeteners and sucrose. There is some pricing transparency for glucose and dextrose (posted prices), but none for HFCS. These considerations (plus the dismissal of the 1981-1991 federal HFCS antitrust case) in all probability swayed the DOJ in its decision to drop prosecution of ADM and others in the HFCS market; lack of video or audio tapes of meetings among HFCS producers was probably a factor as well (tapes of discussion *about* HFCS among the lysine conspirators do exist, which is sufficient evidence in a criminal conspiracy trial, but may be insufficient to assess fines or establish private injuries). If there was in fact an effective conspiracy in HFCS, the defendants benefitted greatly from the plea bargain offered by the DOJ because U.S. sales of corn sweeteners were nearly *four times* the sales of lysine and citric acid combined (Table 1).

Table 1. Conditions Facilitating Price-Fixing in the U.S. Corn Refining Markets, Circa 1992

Market Conditions	Lysine	Citric Acid	Three Corn Sweeteners
World market size	\$0.6 bil.	\$1.1 bil.	\$4.0 bil.
U.S. market size	\$0.3 bil.	\$0.4 bil.	\$3.0 bil.
Concentration:			
Small numbers of suppliers	4	6 <sup>a</sup>	3 to 8
High U.S. sales concentration	CR4=100% HHI=3500	CR4=90% HHI=3500	CR4>85% HHI=2150
Low buyer concentration	CR4<30%	CR4<50%	CR2=73%
	Regional higher		
Cartel culturally & geographically close	1 US 4 Asia	3 US, 1 Asia 3 Europe	U.S. Midwest 1 from UK
Small U.S. imports outside the cartel	None	5-7%	None
Product homogeneity among sellers	Perfect	Yes, except some imports	Standard grades
Product substitutes few	Soy meal, if lysine price high	Some other edible acids	Complex, depends on uses
Entry barriers:			
High MES plant scales (sunk costs)	\$150 mil.+	\$150 mil.	\$300 mil.
Technology secret	Yes	Yes	Yes, HFCS no for others
Building capacity slow	3 yrs.+	3 yrs.+	3 yrs.+
Other factors:			
Transparent price info.	No	No	Some
Major rivals have history	Some	Much	Much
Large, infrequent transactions	Yes	Yes	Yes
Market growth slow or slowing	Yes(10%)	Yes(5%)	Yes(4%)

Sources: Affidavits in court records, expert consultants' reports, and industry trade journals.

<sup>a</sup>In 1992-1995, there were 2 U.S. manufacturers and two consistent European importers. Imports from China were significant but may have come from one government-owned company or one export association. There are at least six more manufacturers, but exports from one Italian and one Israeli firm were very small and quite irregular; the other four firms are not known to be exporters to the

## Price-Fixing: Chronology & Mechanics

The purpose of this section is to summarize the events surrounding the price-fixing conspiracies initiated by ADM in 1992 and discovered by the public in 1995. Details and sources are given in Appendix A. As of October 1997, not all legal procedures have reached their culmination and the results of many private legal negotiations may never be known. The record is much fuller in the case of lysine than for citric acid and corn sweeteners.

### Lysine

In the 1960s, Ajinomoto or some other Asian biotechnology company discovered how to convert dextrose into feed-grade lysine, an essential amino acid that stimulates growth as leanness in hogs and poultry. By the late 1980s, Ajinomoto, Kyowa, and one South Korean company (Sewon) were exporting the majority of the U.S. lysine supply and charging about \$1.00 to \$3.00 per pound, much less than U.S. organic chemical companies were charging for lysine made by extraction methods. The remaining U.S. supplies of lysine came from two small Midwestern plants owned by Ajinomoto and Kyowa.

In 1988, ADM discovered why Asian biotechnology companies were buying so much dextrose from the United States—it is the raw material for lysine made by fermentation. In 1989, ADM commits an initial \$150 million to build the world's largest lysine factory in Decatur, Illinois and hires 32-year-old Mark Whitacre to direct the new lysine division. Production began in early 1991 and a “tremendous price war” begins. The U.S. price drops from \$1.32 in January 1990 (or \$1.20 in January 1991) to a record low of \$0.64 in July 1992 (Figure 1). ADM's cost of production is reported to be between \$0.60 to \$0.70 per pound when the plant is operating as designed (production glitches occurred in 1991 and 1992). At selling prices near \$0.60 ADM is losing millions of dollars per month in its lysine operations. Asian producers are suffering even greater losses.

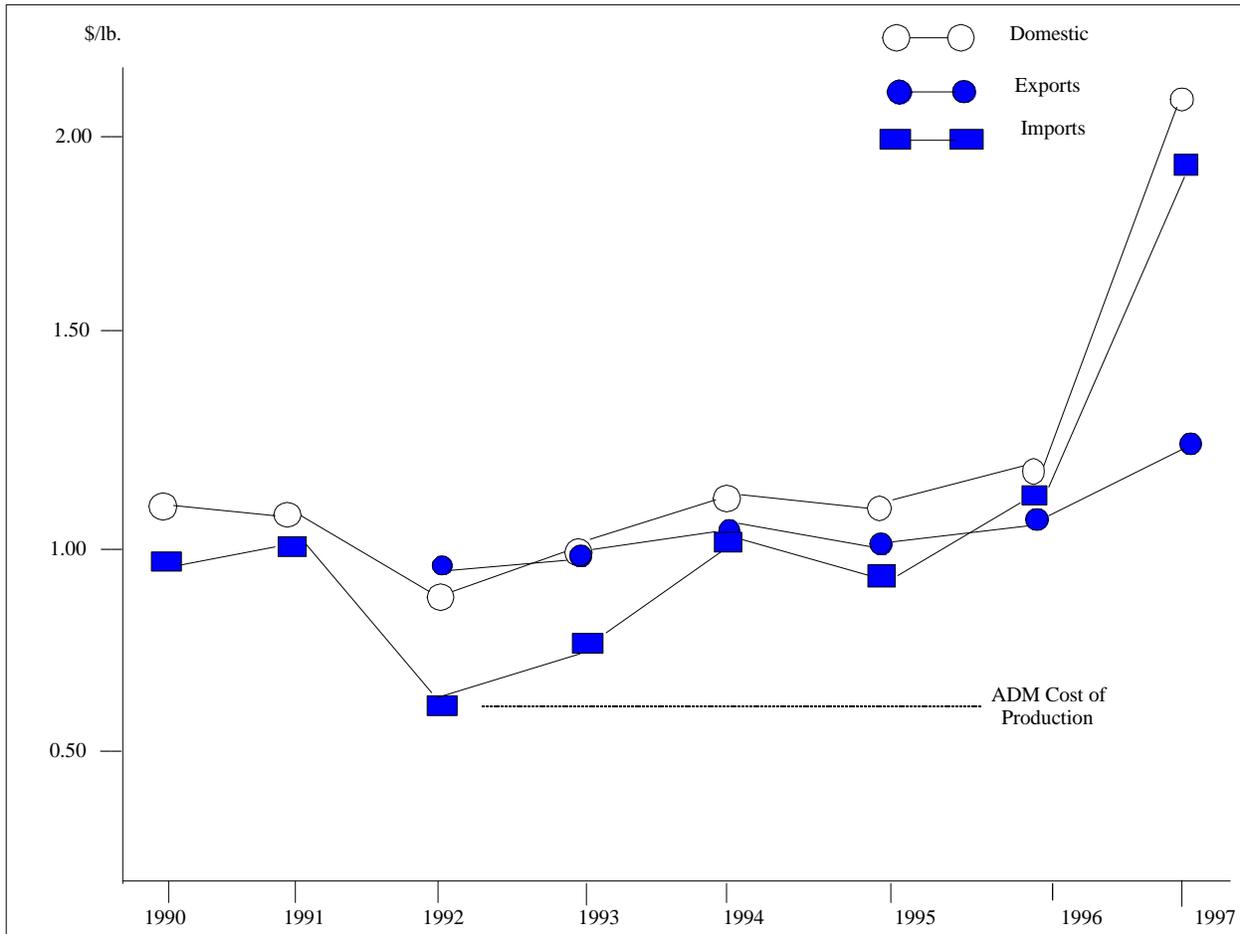
About this time, the lysine division was placed under ADM V.P. Terrance Wilson, who directed Whitacre to meet with the Asian lysine producers. In April 1992, Whitacre met in Japan with Ajinomoto and Kyowa Hakko where he proposed the formation of an “amino acids trade association.” By this time ADM controls one-third of the world market.

In June 1992, the first of many meetings of the “lysine association” took place in the Nikko Hotel in Mexico City. The three companies (and later a fourth South Korean company, Sewon) discussed raising prices, allocating production, and sales shares across several regions of the world. Wilson led the discussion, often repeating ADM's creed:

“The competitor is our friend,  
and the customer is our enemy.”

The lysine conspiracy evolved through two distinct phases: Phase I from November 1992 to March 1993 and Phase II from about October 1993 to at least July 1995. The conspirators apparently were successful in raising the U.S. price of lysine to \$0.98 for three months (November 1992 to

Figure 1. Annual Average U.S. Feed-Grade Lysine Prices, 1990-1997



Source: National Trade Data Bank and Connor (1998a).

Note: Up to 1991 U.S. trade data do not distinguish between feed-grade lysine and lysine for human consumption, the latter being higher priced. However, during 1990-91 nearly all imports were feed-grade, so the all-lysine import price is used for those years. The domestic sales price is from antitrust litigation records from 1990 to mid 1996. The import price is derived from low-priced imports from countries with feed-grade lysine factories; for 1996-97, the domestic price is estimated to be 10 percent above the import price. After 1991, exports of lysine were dominated by feed-grade lysine, so the all-lysine export price is used for 1992-1997.

March 1993 that broke down the consensus on production limits (Figure 2). By June 1993, prices had plunged to an historic low of \$0.62, but by July prices were again way up above ADM's putative production cost. The rift was apparently resolved at an October, 1993 meeting between ADM and Ajinomoto in Irvine, California. New production quotas were adopted by the cartel. A key meeting of the cartel was held on December 18, 1993 in the Palace Hotel in Tokyo. A tape recording of that meeting reveals that Wilson, M. Andreas, Yamada, and others adopted the worldwide lysine sales plan developed by Andreas and Yamada at their Irvine, California meeting two months earlier. It was at this December meeting that Wilson explained how ADM's arrangements in its citric-acid conspiracy could be a useful model for lysine as well. These arrangements included setting market shares and prices in each country or region, elaborate reporting of trade secrets (e.g., prices charged to individual customers in each geographic market), regular audits by professional accountants, and a compensation scheme for members that failed to achieve their targeted sales (Klein). Indeed, from October 1993 to August 1994, prices held at a suspiciously steady \$1.08 to \$1.13 and then were raised again to about \$1.20 for another six months. If ADM's cost of production was \$0.65 to \$0.70 per pound, then ADM was able to raise prices by 80 percent above a more competitive level; the other conspirators probably had higher production costs.

Whitacre has stated that the conspiracy lasted until late 1995. Prices fell during the first nine months of 1995, probably in response to the corn-soybean ceiling price, which fell from mid 1995. In late 1995, lysine prices rose briefly, just as the ceiling price did. Why this occurred (and continued for five months in 1996) is puzzling. Perhaps it indicates that the industry was entering a new period of tacit price cooperation.<sup>1</sup> Or perhaps there was an unexpected surge in demand for lysine outside the United States. Annual U.S. exports plateaued at about \$100 million during 1992-1995 (Figure 3). After the conspiracy ended, exports more than doubled, which would be consistent with monopolistic output reduction by the members of the lysine cartel through 1995.

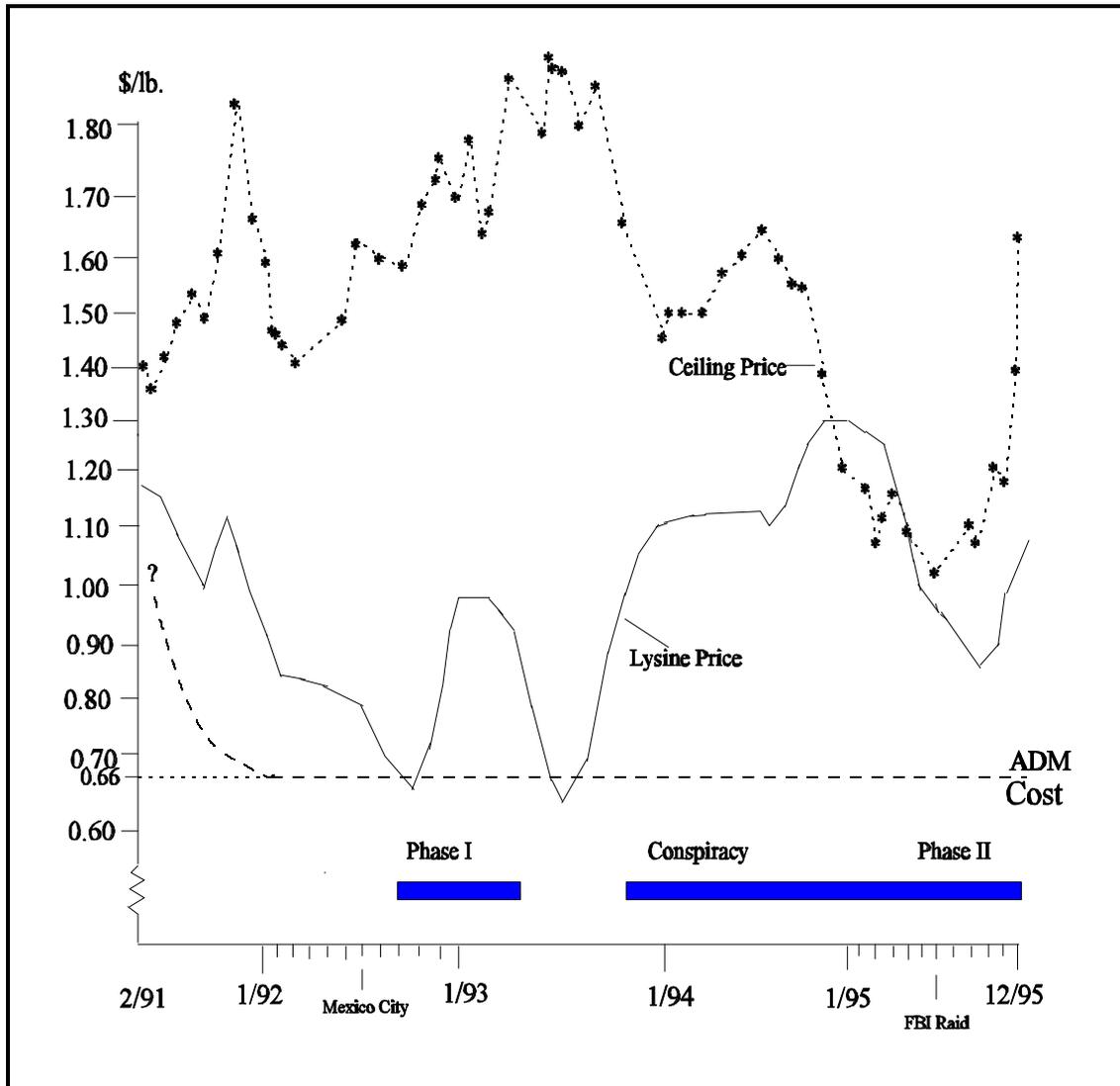
The dimensions of the global conspiracy are illustrated in Table 2. In 1991, ADM's first year of production, Ajinomoto held 36 percent of world capacity, ADM 22 percent, and Kyowa and Sewon 15 percent each. In 1992, ADM's Decatur plant reached the size at which it was to remain for several years. Ajinomoto's global capacity share was to remain close to one-third throughout 1992-96 and Kyowa's at 20 percent or less. ADM's share slid from 30 percent in 1992 to 23 percent in 1996, while Sewon's increased somewhat during the period. The four members of the lysine cartel (with Cheil joining in 1994 or 1995) controlled at least 90 percent of world lysine capacity throughout the 1990-1996 period.

However, the lysine cartel chose to restrain world *production*, not capacity, in order to raise prices. Prior to the cartel's initiation in 1993 or 1994, production shares were similar to capacity shares. At the October 1993 meeting of the cartel, 1994-1995 production shares were set equal to actual 1993 shares (33, 26, 18-13, and 7 percent, respectively). Shares in 1996 were much the same

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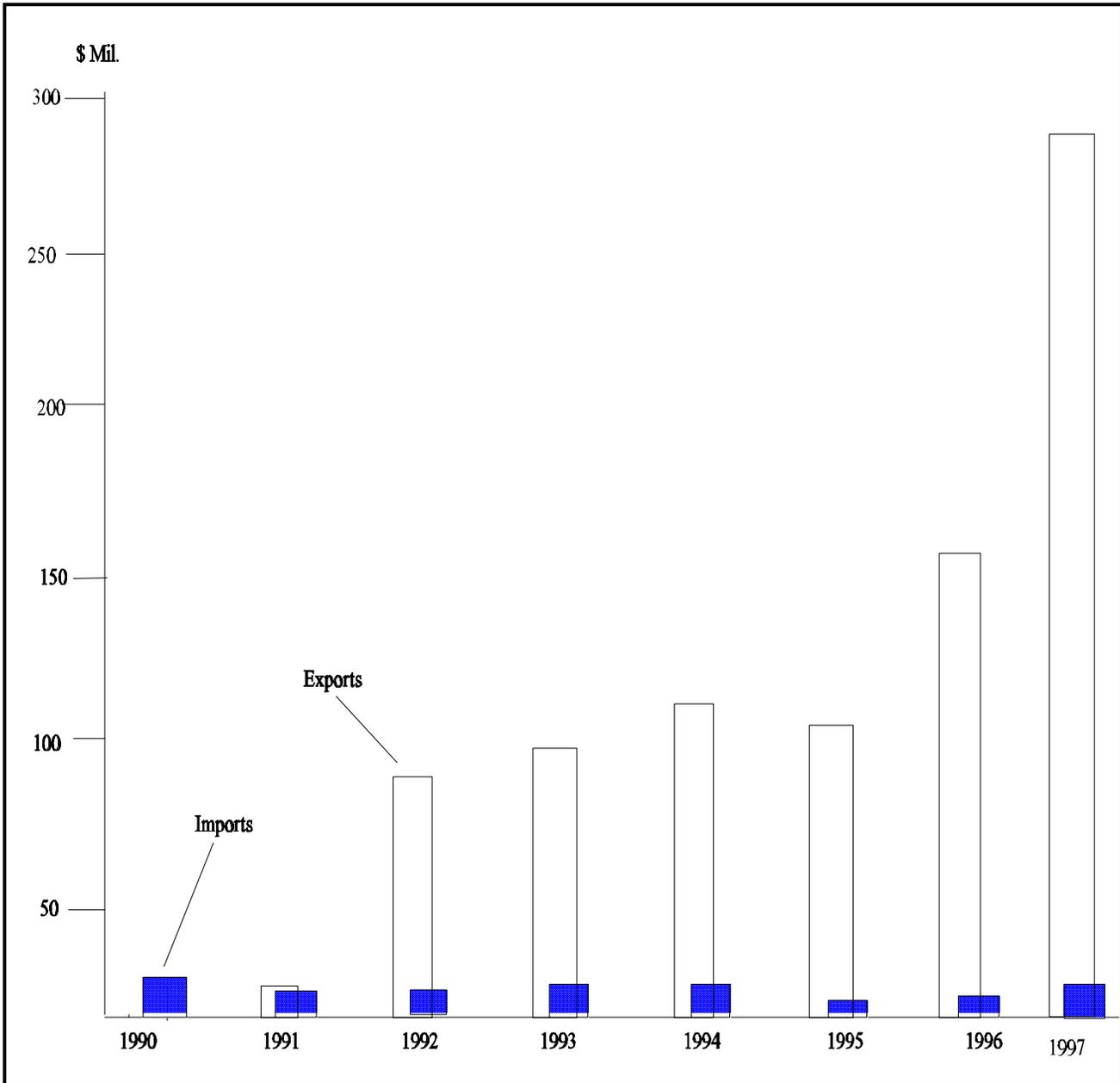
<sup>1</sup> Over the six years 1990-1995, there is a price pattern consistent with a seasonal price cycle, with a trough in August and a peak around November (except in 1995). Six years of data is insufficient to confirm such a pattern statistically.

**Figure 2. Monthly U.S. Transactions Prices of Lysine, 1991-1995**



Sources: Lysine prices supplied by three defendants in a notice to class-action members. ADM costs from buyers' affidavits. Ceiling price based on formula (100 lb. soymeal = 97 lb. corn + 3 lb. lysine) and Illinois cash prices for corn and soybean.

**Figure 3. Lysine Exports and Imports, 1990-1995**



Source: STAT-USA on-line data service of U.S. Dept. of Commerce. HTS Code No. 292241000. Data for 1997 projected from January - August data.

as before even in the absence of an overt agreement. At the global level, concentration measures are very similar whether calculated with capacity or with production figures, except in 1991 when ADM's new plant was scaling up to full production.

Table 3 illustrates the structure of production within the U.S. market. The left side of Table 3 calculates lysine supply by summing North American plant capacity and imports from Europe and Asia. The right side of the table displays data on sales taken from legal documents provided by the original four members of the lysine cartel. Import volumes of Sewon and Cheil are converted to sales using average U.S. sales prices of the four companies. In the case of this *national* market, capacity and production shares are quite different, except during the cartel phase of 1993-1995.

Before ADM's entry, the 1990 U.S. lysine market of about \$90 million was supplied by Ajinomoto and Kyowa (35 to 40 percent shares each) and Sewon (20 to 25 percent share). By late 1992, ADM had grabbed half of the \$120 million U.S. market. Moreover, ADM began aggressive export sales that accounted for about 30 percent of the global market outside the United States. (The non-U.S. market at the end of 1992 was about 135,000 metric tonnes, or about \$100 to \$130 million in sales value). Although there is no explicit journalistic source on U.S. cartel quotas, it appears from the data in Table 3 that the cartel also froze U.S. sales shares during 1994-95 at 1993 levels. ADM was awarded the lion's share of the U.S. market, 57 percent, which share persisted through 1996. Ajinomoto claimed a 18-20 percent share, while Kyowa made do with 15 to 16 percent. Sewon's share was rather unstable, but within the 6 to 9 percent range. Cheil Jedang was kept to a mere \$1 to \$2 million in sales, but rapidly invaded the U.S. market when the cartel ceased explicit cooperation in late 1995 to 1996. Even the U.S. export share was stabilized by the cartel at close to 30 percent of domestic sales, but this share rose rapidly after early 1996. Concentration measured by U.S. sales varied from 3850 to 3950 (Herfindahl Hirshman Index) during the cartel period, somewhat lower than the Herfindahl based on capacity (4200 to 4300).

Whitacre was recruited as a secret agent ("a mole") in November 1992. He was guaranteed immunity from prosecution for price-fixing from November 1992 to late 1995. Up until June 1995 he provided hundreds of audio tapes of many price-fixing meetings concerning lysine, citric acid, and HFCS. The FBI made additional video tapes of the "lysine association meetings. Statements made by participants clearly indicate that they knew the association was a convenient cover-up for price fixing. A federal grand jury was formed in early June in Chicago and obtained subpoenas for all information on price-fixing by ADM and its co-conspirators.

The lysine case is fairly typical from the point of view of the evidence that supported the allegation of price fixing. The DOJ relies on six sources of evidence to help decide whether "probable cause" exists (Daniel *et al.* 1997). First, an allegation by an insider informant, such as Whitacre, is the most common source. Most informers are participants in the price fixing seeking reduced sentences; they often make unreliable witnesses. Second, prosecutors get information from their own investigators, the FBI in this case. Third, evidence from parallel legal or regulatory investigations may come to light. The lysine investigation yielded information about citric-acid collusion. Fourth, customers or suppliers may register complaints. Fifth, non-insiders may alert prosecutors to possible price fixing for monetary rewards. Finally, DOJ experts will be asked to evaluate industry characteristics for the likely feasibility of price-fixing behavior; industry screening programs may be initiated.

**Table 2. Global Feed-Grade Lysine Production and Capacity, 1991-1996**

Year	Capacity <sup>a</sup>						Production <sup>b</sup>					
	Ajino-moto	ADM	Kyowa	Sewon	Cheil	Other	ADM	Ajino-moto	Kyowa	Sewon	Cheil	Other
	<i>Thousand metric tonnes</i>											
1991	98	60	41	40	10	8	81 <sup>E</sup>	14	30 <sup>E</sup>	30 <sup>E</sup>	8 <sup>E</sup>	7
1992	125	113	62	40	20	8	70 <sup>E</sup>	60	33 <sup>E</sup>	30 <sup>E</sup>	12 <sup>E</sup>	7
1993	128	113	72	50	20	8	79	63	43	32	16	7
1994	128	113	80	50	25	14	84	67	46	34	17	10
1995	128	113	75	80	25	14	89	71	49	36	18	12
1996	156	113	70	80	30	44	99 <sup>E</sup>	85 <sup>E</sup>	50 <sup>E</sup>	40 <sup>E</sup>	20 <sup>E</sup>	16 <sup>E</sup>
	<i>Percent</i>											
1991	36	22	15	15	4	3	48	8	18	18	5	4
1992	33	30	16	11	5	2	33	28	16	14	6	3
1993	33	29	18	13	5	2	33	26	18	13	7	3
1994	31	28	20	12	6	3	33	26	18	13	7	4
1995	29	26	17	18	6	3	32	26	18	13	7	4
1996	32	23	14	16	6	9	32	27	16	13	6	5

<sup>a</sup>From Tables 6 and 7 of Connor (1998a).

<sup>b</sup>From known production allocations of the lysine cartel during 1993-95 (Eichenwald).

<sup>E</sup> = Estimated

**Table 3. U.S. Feed-Grade Lysine Sales and Capacity, 1991-1996.**

Year	North American Capacity and Imports <sup>a</sup>						Domestic Sales <sup>b</sup>						U.S. Exports
	Ajinomoto	ADM	Kyowa	Sewon	Cheil	Total	Ajinomoto	ADM	Kyowa	Sewon	Cheil	Total	All companies
	<i>Thousand metric tonnes</i>						<i>Million dollars</i>						
1991	18	60	22	8	0	108	35.0	21.0	35.0	19.1	0	110.0	6.2
1992	40	113	27	7	0	187	27.2	52.0	27.2	12.6	0	118.9	37.7
1993	40	113	29	7	0	189	26.7	82.9	21.8	13.1	0.7	145.2	43.7
1994	43	113	35	7	0	198	38.5	109.4	31.5	16.5	0.7	196.6	51.4
1995	40	113	33	5	1	192	36.5	106.2	29.8	10.5	1.9	184.9	49.2
1996	61	113	33	7	3	217	41.0	130 <sup>E</sup>	33.6	17.3	8.1	230.0 <sup>E</sup>	71.4
	<i>Percent</i>												
1991	17	56	20	7	0	100	32	19	32	17	0	100	6 <sup>c</sup>
1992	21	60	14	4	0	100	23	44	23	11	0	100	32 <sup>c</sup>
1993	21	60	15	4	0	100	18	57	15	9	0	100	30 <sup>c</sup>
1994	22	57	16	4	0	100	20	56	16	8	0	100	26 <sup>c</sup>
1995	21	59	17	3	0	100	20	57	16	6	1	100	27 <sup>c</sup>
1996	28	52	15	3	1	100	18	57	15	8	4	100	31 <sup>c</sup>

Source: Connor (1998a)

E = Estimated

<sup>a</sup>Tables 6 and 17 of Connor (1998a).

<sup>b</sup> From antitrust litigation documents on ADM's volume and sales (monthly), four "settling defendants'" monthly sales and prices, and imports valued at domestic prices.

<sup>c</sup>Proportion of total domestic sales.

About 70 FBI agents raided ADM's corporate offices on the night of June 28<sup>th</sup>; almost all ADM officers were interviewed in their homes that night as well. Offices of other possible co-conspirators were also raided. Seized documents show 1992-1995 "sales targets" and "actual sales" by all members of the lysine association. In July 1995, Kyowa Hakko stated that it was "coerced" into colluding by Ajinomoto. Documents were subpoenaed from many other firms by the DOJ during July-October. ADM's stock price fell 24% (\$2.4 billion dollars of market value) in the days following the raid (from \$17 to \$13 per share); 27 million shares were traded in one day, more than ten times normal volume.

Prosecution of ADM and its co-conspirators was given an unusually high priority by the DOJ. Initially, investigation and prosecution was handled by the chiefs of the Antitrust Division's regional offices in Chicago (for lysine), San Francisco (citric acid), and Atlanta (HFCS). Grand juries were empaneled in each city. However, sometime in late 1995, the number 2 official in the Justice Department, Deputy Attorney General Jamie Gorelick, had assumed overall direction of the several prosecutions. When Whitacre's alleged embezzlement came to light, Gorelick assigned a highly experienced assistant U.S. District Attorney (Scott Lassar) to help prosecute the lysine case. By the spring of 1996, Joel Klein was transferred from the White House to work with Gorelick, a move that may have signaled the highly sensitive political dimensions that the ADM cases were assuming. In October 1996, Klein replaced Anne Bingaman as Assistant Attorney General for Antitrust. While the size of the resources devoted to the cases by DOJ is not known, the involvement of so many high DOJ officials in one case may be unprecedented. ADM, its officers, and its Board were likewise represented by major law firms and their leading partners.

By February 1996, ADM had a total of at least 85 private suits filed against it, 14 of them by lysine buyers and many others by stockholders claiming mismanagement and failure to divulge material information. At ADM's October 1995 stockholders' meeting, Dwayne Andreas imperiously quashed discussion of the price-fixing charges. ADM's legal costs reached \$6 million during September-December 1995 and were to rise for higher during 1996-1997.

In the Spring of 1996, the DOJ's case was beginning to falter. The DOJ was targeting Michael Andreas (Executive V.P.) and Terrance Wilson for criminal charges, but not a single ADM officer would offer to corroborate the evidence. Moreover, Whitacre's credibility is tarnished by his own admission that he received almost \$10 million in "bonuses" while an FBI mole on which he did not pay taxes. Whitacre was fired in August 1995 and was eventually sued by both the government and ADM for fraud. (Perhaps in desperation, the DOJ announced that Dwayne Andreas was no longer a target of its investigation; this is a rare action by the DOJ). Whitacre's duplicity hurt the government's case in two ways. First, the tape recordings themselves, though quite graphic and convincing, would be regarded as potentially tainted. Whitacre had the opportunity to turn in selectively damaging tapes while withholding exonerating tapes. Second, the government absolutely needed one participant to testify as to the authenticity of the taped evidence (Daniel *et al.* 1997). Without Whitacre or one of the other participants prepared to testify that the conspirators knew what the purpose was, the defendants could claim that the video tapes showed play-acting or some such innocent activity.

In April 1996, ADM, Ajinomoto, and Kyowa offered to pay "treble damages" of \$45 million for buyers of lysine during 1994-1995. Technically, the three companies were not admitting that they

were guilty of price fixing. The negotiations were carried out by a Philadelphia law firm that made the lowest bid in an almost unprecedented *auction* held by U.S. 7<sup>th</sup> District Court Judge Shadur! The judge refused to consider bids based on traditional *percentage* contingency fees of 20 to 30 percent. Instead, the Philadelphia firm agreed to cap its fees at \$3.5 million. Buyers must decide by July 15<sup>th</sup> whether to take a certain portion of the \$45 million settlement immediately or to “opt-out” of the agreement and sue privately for might be a larger settlement. Based on overcharge estimates that are 10 to 12 times higher, many large feed companies do in fact opt out (see Appendix B). The judge is criticized for rushing to judgement civil penalties that normally follow the completion of the criminal case by public prosecutors. Auctions for *fixed* fees appear to introduce perverse incentives for the winning law firm: the less resources the firm spends, the greater its profits, and its profits are unrelated to the damages sought for its clients.

I estimate that lysine class-action plaintiffs will eventually receive about \$80 million. This recovery amount is nearly 200 times the amount paid by antitrust class-action defendants historically (Elzinga and Wood). It is about 40 times the average recovery in “naked cartel” cases like lysine.

In a shocking setback for ADM, in August 1996 the three other lysine co-defendants “cop a plea.” In return for lenience, the three Asian *companies* filed guilty pleas, and three *executives* also admitted personal guilt and agreed to cooperate with prosecutors and testify against ADM. This is the beginning of the end for ADM.

On October 14, 1996, ADM also agreed to plead guilty to criminal price-fixing, to pay a \$70 million fine for its lysine activities, and to fully cooperate in helping the DOJ prosecute M. Andreas and T. Wilson. Numerous changes in ADM’s Board of Directors take place; M. Andreas is given a 15 percent raise and placed on “administrative leave”; T. Wilson resigns; and D. Andreas is relieved of his duties as Chairman (though he keeps his title). The stock market reacts favorably to the apparent resolution of ADM’s legal problems; ADM’s stock price rises by about 20 percent.

The \$70 million fine is five times larger than the previous highest fine for price-fixing. It is based on new (1991) federal sentencing guidelines for felonies that permit fines that are *double* the illegal profits from price fixing. (The *treble* damages to private parties still stand in addition). Thus, the penalties for price fixing have dramatically escalated since 1991, to an amount up to *five times* the overcharges to buyers. As large as they were, DOJ lawyers opine that they did not sufficiently hurt ADM; some commentators believe that the fines are a “bargain” for ADM.

I estimate that the total fines and civil actions have cost the guilty parties at least \$175 million in the case of lysine alone as of May 1997 (Table 4). Legal defense and offense costs are around \$164 million for all three commodities, and shareholders’ suits were settled for \$38 million by ADM. The total for all related price-fixing, mismanagement, and fraud cases is \$740 million and rising.

The \$70 million fine paid by ADM for lysine is an implicit admission by the DOJ that 1994-95 overcharges were *at least* \$70 million for all four guilty conspirators; it is probably a “discounted” fine because of ADM’s agreement to help prosecutors. Overcharges of \$70 million would imply treble damages of at least \$210 million, which is 4.7 times the class-action settlement for lysine in July 1996 and about 50% of the estimate shown in Appendix B.

**Table 4. Summary of U.S. Costs and Fines Proposed or Paid up to March 1998.**

Case	Defendants	Date Offered	Amount
			<i>\$Million</i>
A. Lysine Criminal	ADM	10/96	70.0 <sup>a,b</sup>
	Ajinomoto	11/96	10.0 <sup>b</sup>
	Kyowa Hakko	10/96	10.0 <sup>b</sup>
	Sewon America	12/96	1.25 <sup>b,c</sup>
	Cheil Jedang, Ltd.	12/96	1.25
	3 executives	8/96	0.2+
	3 executives	pending	1.1 <sup>E</sup>
Lysine Civil Class Action by Direct Buyers	ADM	4/96	25.4
	Ajinomoto	4/96	10.0
	Kyowa	4/96	10.0
	Sewon	pending	1.0 <sup>E</sup>
Lysine Civil, 32 Opt-Out firms State Indirect Class Actions	ADM <i>et al.</i>	1996-97	20.0 <sup>E</sup>
	ADM <i>et al.</i>	1997-98	<u>15.0<sup>E</sup></u>
Subtotal for Lysine			175.2
B. Citric Acid Criminal	ADM	10/96	30.0 <sup>a,b</sup>
	Bayer/Miles/H&R	1/97	50.0 <sup>a</sup>
	Hoffmann LaRoche	3/97	14.0 <sup>a</sup>
	Jungbunzlauer	3/97	11.0 <sup>a</sup>
	2 executives	3/97	0.3
	1 executive	pending	0.4 <sup>E</sup>
Citric Acid Civil Class Action	ADM	9/96	35.0
	Bayer/Miles/H&R	12/96	38.0
	Hoffmann LaRoche	10/96	5.7
	Jungbunzlauer	10/96	7.6
	Cargill(dismissed)	1/98	0.0
Citric Acid, 5 opt-out firms State Indirect Class Actions	ADM <i>et al.</i>	7/97	113.7 <sup>E</sup>
	ADM <i>et al.</i>	1997-98	<u>40.0</u>
Subtotal for Citric Acid			345.7
C. HFCS Civil Class Action	CPC Intl.	9/96	7.0
	ADM	pending	N/A
	Cargill	pending	N/A
	A.E. Staley	pending	N/A
	Am. Fructose	pending	N/A
HFCS Criminal	ADM	10/96	0.0 <sup>b</sup>
	Others	pending	<u>N/A</u>
Subtotal for high-fructose corn syrup			7.0

**Table 4. Continued**

D. Shareholders' suits: Mismanagement and failure to divulge material information	ADM Co. ADM Board	10/96 6/97	30.0 8.0
E. Fraud and Embezzlement <sup>f</sup> of ADM	Marc Whitacre, three others	3/98 pending	11.4 5.0 <sup>E</sup>
F. Legal costs of defendants Legal costs of private plaintiffs	ADM <i>et al.</i> many buyers	1995-97 1995-97	79.2 <sup>Ed</sup> <u>84.4<sup>Ed</sup></u>
TOTAL			\$745.9

N/A = Not available at present.

<sup>E</sup> = Estimated by the author from market shares, similar fines, and other public information. None of the participants in the litigation nor their counsel provided the author any information on these settlements. The author has had no access whatsoever to confidential information on these settlements.

<sup>a</sup>These fines are based on the "two-times" (profits or injury to buyers) rule outlined in 1991 federal felony sentencing guidelines.

<sup>b</sup>This fine was reduced substantially because the party agreed to cooperate with DOJ prosecutors and FBI investigators. The reduction in the fines was much larger for the three Asian companies than for ADM because the former agreed to cooperate with prosecutors at an earlier date. *Proportional* fines for the three companies would have been \$170 million based on their share of cartel sales 1993-95.

<sup>c</sup>Very low fine because company unable to pay calculated amount due. The DOJ initially proposed \$10 million.

<sup>d</sup>Extrapolated from costs of legal defense reported to shareholders by ADM to be 14% of amounts of fines paid by defendants. Assumed plaintiff's costs were 25% for class-action suits. Prosecutorial costs omitted.

<sup>e</sup>The five plaintiffs are Procter & Gamble, Kraft, Quaker Oats, Unilever, and Schreiber Cheese. They are seeking \$1 billion in damages for \$350 million in citric acid purchases from 1991 to 1995. Their purchases accounted for 19% to 24% of total U.S. sales. Except for Unilever, the opt-out firms settled with ADM in 3/98 for \$36 million. It is very likely that ADM's three co-conspirators paid an additional \$57.2 million to the four buyers. Unilever's settlement amount was not announced, but probably amounted to about \$25 million.

<sup>f</sup>Criminal prosecution by DOJ settled in 3/98 for 9 years in jail and return of stolen money. Whitacre's wife and mother, although originally indicted, were not prosecuted as accessories.

In January, 1997, the USDA announced that ADM's guilty plea does not prevent the company from participating in federal food contracts. However, the Commodity Futures Trading Commission does place restrictions on ADM. No ADM employee connected with the price-fixing can trade contracts.

In February 1997, the Mexican Competition Law Commission began investigating ADM for lysine price-fixing. In June 1997, the European Union's competition directorate did likewise. About 25 percent of ADM's lysine sales are in Europe.

In April 1997, the \$30 million settlement in the shareholders' suit against ADM was approved by a federal judge. Two months later, ADM proposed a \$8 million settlement in the case of 17 shareholders' suits alleging board of directors mismanagement. Both of these settlements are being appealed by some large stockholders as insufficient.

The Asian defendants might have been hoping that the evidence of meetings held outside U.S. territory would become inadmissible. But a March 18, 1997 ruling in a federal appeals court in Boston makes price fixing by foreign companies abroad illegal if it affects U.S. trade or commerce (Wilke).

In July 1997, rival Cargill announced that it will build a new Nebraska plant that will give Cargill one-third of world lysine production (165 million pounds) at a cost of about \$100 million. ADM has half of world production and production costs of about \$0.60 per pound. Cargill's action comes shortly after ADM's announcement of a new Iowa plant to manufacture lysine (100 million pounds) by the fall of 1998. Moreover, lysine output at Decatur will be expanded to 350 million pounds at a cost of \$80 million.

In June 1997, G. Allen Andreas was appointed CEO and President of ADM. In fiscal 1997, ADM spent \$1.8 billion on mergers and expansions. ADM becomes the leading grinder of cocoa with two large acquisitions. In July, Congress extends the ethanol subsidiary that benefits ADM primarily. By 2007, the U.S. Highway Trust Fund will have spent \$10.9 billion on this subsidy.

By late 1997, scores of state-level price-fixing suits against ADM are proceeding in Alabama, Tennessee, and Michigan. Most are class actions. One class-action suit tried in San Francisco County Superior Court resulted in a \$1 million judgement against ADM *et al.* Each client received 17 percent of the value of the lysine purchased; normally in cases of this kind, less than 7 percent is recovered. A second class-action suit by *indirect* buyers of lysine was settled for \$2.125 million in Michigan, covering buyers in 16 states where indirect recoveries are permitted.

### **Citric Acid**

Somewhat less is known publicly about the citric acid conspiracy than about lysine (see Chronology, Appendix A). The allegations first surfaced shortly after the June 1995 FBI raid on ADM's Decatur, Illinois headquarters. Documents containing detailed information on prices charged and volumes of production of major citric acid manufacturers worldwide were found in ADM files. Audio tapes provided by Mark Whitacre and video tapes taken by the FBI of the "Lysine Association" contain references to the citric-acid conspiracy. In addition to the lysine meetings, ADM's Terrance Wilson apparently met with representatives of Bayer and Hoffmann-LaRoche in hotels in Paris and London, but it is possible that no video tapes exist for these meetings because the product was not managed by Whitacre.

The DOJ prosecution activities were centered in the U.S. Attorney's office in San Francisco, partly because citric acid is used in many processed tomato products. By February 1996, ADM was facing at least seven private price-fixing suits on their citric-acid activities. Lawyers were trying to form a class-action group that will be recognized by a judge. The federal case was described as "stalled" in the spring of 1996. The lack of video taped information is a disadvantage because none of the conspirators is ready to confess. ADM was reported ready to argue that the conspiracy arose outside the United States without ADM's overt participation.

By August, ADM was on the defensive because three Asian co-conspirators agreed to testify against ADM in the lysine case. With surprising suddenness, on September 29, 1996 ADM offers to settle the class-action citric-acid suit for \$35 million. The offer was surprising because the three

European co-conspirators do not make separate offers until a month or two later. The timing was surprising because plaintiffs were still arguing for class-action status in federal court just the previous week. However, the timing could prove to be a smart move if the plaintiffs quickly accept, because the agreement would not involve an admission of guilt and because the amount of the settlement might have escalated had it occurred after the settlement of the criminal case with federal prosecutors. Just two weeks prior to the citric-acid offer, ADM's Board of Directors had undergone its second shake-up; two old (74 and 79 years) former officers resigned, bringing to eight the total resignations since the price-fixing allegations erupted. At the time ADM's stock price was near its nadir, so the Board may have thought that dramatic offers to settle were in the best interest of stockholders. Moreover, the Directors themselves could have been held legally liable for failure of their duties had they not settled quickly and fully. A few weeks later at ADM's annual meeting, it is revealed that a "corporate governance" committee of seven "outside directors" was created a year before and authorized to make any plea agreements necessary with DOJ prosecutors. Seventeen shareholders' suits are eventually filed against the board of directors of ADM.

On October 14, 1996, ADM announced that it will plead guilty of criminal price-fixing in U.S. federal court in San Francisco and pay a fine of \$30 million to the government for the citric-acid portion of the case (and \$70 million more to settle the lysine portion). The fines paid are based on the DOJ's new "two-times" rule (fines are twice the agreed-upon overcharges made by ADM to its customers), but the \$30 million may have been discounted because ADM also made a major concession to the DOJ. ADM promised to offer full cooperation to the DOJ in its criminal prosecution of two ADM executives, M. Andreas (still the Executive V.P. of ADM) and T. Wilson (recently retired President of the Corn Products division of ADM), as well as prosecution of citric acid co-conspirators (both companies and individual officers). In addition, the DOJ offers immunity from prosecution for price-fixing to Barrie Cox, V.P. of the citric-acid division of ADM, in return for Cox's full cooperation in its citric-acid investigation.

Cox divulged details of ADM's conspiracy with Haarmann & Reimer (Bayer's U.S. subsidiary handling citric-acid sales), Hoffmann-LaRoche, and other co-conspirators. The DOJ states publically that Cox "did cooperate...and it is substantial..." in its citric-acid investigation. Legal counsels for Bayer and Hoffmann-LaRoche also state that their companies are fully cooperating with the DOJ. In its plea agreement filed in U.S. District Court in Chicago, ADM admitted that its representatives attended meetings in the United States and overseas in which "...agreements were reached as to the prices the firms would charge for citric acid...and the volume of citric acid each firm would sell."

On December 9, 1996, four companies submitted an offer to pay \$94.25 million to settle the class-action private antitrust suit concerning the citric-acid overcharges in San Francisco District Court. The offers include ADM for \$35 million (made in early October), Hoffman-LaRoche for \$5.68 million, and Jungbunzlauer for \$7.57 million (both made in late October). The latter two companies imported citric acid made in their French, German, and Belgian factories. The fourth company was Haarmann & Reimer, a wholly owned subsidiary of Bayer AG, which offered \$46 million. The DOJ signaled its approval of the \$94 million private class-action suit by indicating that it would not seek further civil damages for injured buyers (Table 4).

In March 1997, plaintiffs attorneys in the civil class-action suit in San Francisco state that the overcharges to all buyers are as high as \$400 million. They further ask the judge to approve legal fees

at the conventional 25 percent rate (or \$23.5 million on top of the \$94 million in damages to be paid). However, in July 1997, Judge Smith approves a slightly reduced settlement of \$86.2 million; the new settlement reduces Bayer's share from \$46 to \$38 million. Four or five large buyers of citric acid opt out of the agreement; their 1991-95 purchases of citric acid were \$350 million, which accounts for about 19 to 24 percent of total sales during those years. In March 1998, ADM announced that it was paying \$36 million to four of the opt-out firms. I estimate that ADM, *et al.* Paid a total of about \$114 million to settle with the opt-outs, which is a settlement rate two to four times higher than the federal class received. Cargill still refuses to negotiate with plaintiffs, and in January 1998 Cargill was dismissed from the class action.

Hans Hartmann, a German senior manager of H&R, was indicted for criminal price-fixing in January 1997. In addition, Bayer agreed in January 1997 to pay the DOJ a criminal fine of \$50 million for its role in the citric-acid case. In March 1997, the remaining two co-conspirators pleaded guilty to price fixing in the U.S. citric-acid market. Jungbunzlauer and Hoffmann-LaRoche supplied the U.S. market from its Western European facilities; they paid hefty fines of \$11 and \$14 million, respectively. Two executives of these Austrian and Swiss firms also pleaded guilty to criminal price fixing and paid small fines. Whether other importers from Europe or China cooperated with the cartel is not known, but they were probably not active members of the conspiracy. Thus ended the government's role in the lysine and citric acid cases, which Gary Spratling of the DOJ termed "...one of the largest—if not the largest—conspiracies ever prosecuted by the Department of Justice."

Federal officials emphasized that the \$105 million paid in corporate criminal fines for citric acid (as well as the \$91.3 million for lysine) could have been even larger had the four companies not helped the DOJ investigation. Under DOJ sentencing guidelines the fines paid could have been as high as double the overcharge for the two year conspiracy. Joel Klein, acting chief of the Antitrust Division, specifically refused to identify the total overcharge in the citric acid case at a January 29, 1997 press interview. Therefore, all we know is that the \$105 million fines were discounted substantially from the maximum possible fine, perhaps by 25 to 50 percent. Bayer seems to have been fined much more heavily than the others (\$50 million for its 31-33 percent market share). Using Bayer's fine as a guide the true overcharge by the four conspirators ranged from \$150 to \$165 million for the two-year period. The two most reliable sources on U.S. citric-acid production are slightly inconsistent, but annual U.S. consumption (production plus net imports) was in the range of 300 to 425 million pounds per annum in 1994-1996 (CMR, USITC). The most accurate consumption figure seems to be 366 million pounds, and the most reasonable price around \$0.80 per pound. Therefore, total 1994-1995 wholesale sales were around \$580 to \$730 million. An overcharge of \$150 to \$165 million implies that prices were raised by 21 to 28 percent.

Recall from page 4 above that in 1990 when Cargill entered into production of citric acid, prices fell to as low as \$0.63 per pound. It is possible that Cargill's marginal cost of production was in the \$0.60 to \$0.65 range. During 1994-1995, list prices of citric acid sold in the United States were \$0.85 per pound. However, while some smaller buyers actually purchased citric acid at \$0.85, the largest buyers seem to have paid closer to \$0.80 per pound. Although these price data in no sense prove that price fixing occurred, they are consistent with the estimates just derived from Bayer's fine. That is, the citric acid overcharge on smaller buyers was in the 31 to 42 percent range, while that imposed on larger buyers was in the 24 to 34 percent range.

The role of Cargill in the citric-acid conspiracy remains obscure. Cargill accounted for about 30 percent of the U.S. citric-acid market in those years. Cargill steadfastly refuses to admit that it participated in price-fixing and has refused to negotiate with plaintiffs in the private suits. No criminal fines were imposed on Cargill. Even if Cargill is not liable, as seems likely at this point, it may have raised prices to the level that the price-fixers were charging; if so, under the law, the *conspirators* are liable for Cargill's over-priced sales. If Cargill kept its prices low, then the \$150 to \$165 million overcharge simply refers to a smaller sales base; in this case the conspiracy raised prices by 30 to 40 percent. In sum, the citric-acid conspiracy raised prices by 21 to 40 percent.

In June 1997, Haarmann & Reimer announced its intention to withdraw from citric acid production. Bayer's decision does not seem to be directly related to its large fines and bad publicity. Rather, H & R is the only U.S. manufacturer of citric acid that is not integrated backward into corn refining, a factor that may drive up costs. H & R's market share had been shipping badly prior to 1995, with ADM and Cargill benefitting. Up for sale are seven plants employing 1310 workers and with 1996 sales of citric acid of \$393 million. The plants are in the United States (3), UK, Brazil, Columbia, and Mexico.

In September 1997, finally responding to complaints of European buyers, the EU began investigating ADM, Bayer, *et al.* for citric acid price-fixing in Europe.

### **Corn Sweeteners**

The least information is available concerning the alleged price-fixing in corn sweeteners. It is not even clear that HFCS was the sole sweetener suspected of being the object of price fixing.

For ten years the DOJ pursued a civil price-fixing charge regarding HFCS against ADM and others in the Des Moines U.S. District Court, which dismissed the government's case in 1991. Whether this dismissal emboldened ADM to initiate new price-fixing agreements is not known, but price-fixing discussions (illegal in themselves) began in late 1992. In June 1995, the DOJ established a federal grand jury in Chicago, Illinois to investigate price-fixing in lysine, citric acid, and HFCS. At least four companies were subpoenaed: ADM, Cargill, CPC International, and A.E. Staley. These defendants tried to get the civil cases consolidated into one class-action suit and moved back to the same judge that dismissed similar cases in Des Moines in 1991. The number of private HFCS suits rose to a maximum of 28 by February 1996.

By early 1996, the grand-jury probe of the criminal HFCS case had moved to Atlanta. Two of the largest buyers, who control nearly 75 percent of the market, declined to sue ADM *et al.* The high buyer concentration and the absence of tapes showing ADM meeting with other corn-sweetener manufacturers weakened the government's case from the beginning. By September, ADM had offered settlements in both the lysine and citric-acid private class-action suits, but the HFCS class-action lawsuit in Peoria, Illinois was left unchanged by defendants. However, CPC International did agree to pay \$7 million to settle private suits against it. Cargill consistently denies any knowledge of price fixing in HFCS; this position is backed up by an interview published in *Fortune* by Mark Whitacre, who quotes M. Andreas as saying that Cargill would never participate in price fixing.

In October 1996, as part of its plea agreement with the DOJ, ADM was granted immunity from criminal prosecution in the corn-sweeteners markets during 1992-1995. The DOJ says that its Joliet, Illinois grand jury investigation of price fixing in these markets by other companies will continue. No progress has been noted recently in this investigation.

### **Other Products**

Lysine and citric acid are but two of a long list of synthetic organic chemicals now being made by ADM, Cargill, and other wet-corn milling companies. Maize fermentation technologies are being applied to produce a widening array of organic chemicals at lower costs than traditional methods. The rapid growth of specialty chemicals made from corn starch is partly the result of encroachment of wet-corn millers into the traditional synthetic organic chemicals industry, which had sales of nearly \$100 billion in 1995 (USITC). These products include food ingredients (such as sorbitol), feed ingredients (tryptophan), vitamin (C and E), and medicinals (ascorbic acid). In November 1997, it became known that the DOJ had begun investigating possible cartel activity in the vitamin E industry.

While these chemicals are made by more than 700 U.S. manufacturers, the number of domestic sellers of the individual products is at times minuscule. For most specialty organic chemicals, only one to three domestic producers are active (USITC). For example, ADM was one of three U.S. manufacturers of lactic acid, sodium lactate, and sodium gluconate in 1994. As wet-corn millers continue to move into these specialty chemical markets with their high sales concentration, the opportunities for price-fixing may increase. Moreover, public information on these markets is getting worse. The ITC's report on the synthetic organic chemicals industry, which it published annually for nearly 80 years, was terminated by order of the Chairman of the ITC's Congressional oversight committee, an unusual intrusion by Congress into the operations of an independent federal agency.

### **Measuring the Injuries**

The courts have held that price-fixing is *per se* illegal under the 1890 Sherman Act. That is, prosecutors need only prove that an agreement (a written or verbal overt contract) was "beyond a reasonable doubt" made to restrain prices or output; it is not necessary to prove that the agreement was in fact put into operation or had any measurable effects on prices or output to establish illegality. In addition to the existence of an "illegal combination" (a cartel) or conspiracy, prosecutors must establish that the participants knew what they were doing (e.g., it was not play-acting) and that the proposed activity was directed at interstate or international trade or commerce. A conspiracy to raise (or lower) prices is illegal even if no economic harm can be identified.

However, antitrust offenses typically do cause economic harm to many groups: rival firms, buyers, suppliers, employees, shareholders, and other stakeholders. The adverse economic effects of illegal anticompetitive acts are called *injuries*. An injured party that can establish that an antitrust violation was the direct and identifiable cause of an injury is said to have *standing*. Standing is the right to stand before a court of law and sue a perpetrator for compensation for the injury. The compensation is termed *damages* under the law. If a cartel raises prices in an industry, rivals outside the cartel have no standing, but buyers probably would.

Plaintiffs in a civil antitrust case must meet a lower standard of proof but bear a heavier burden of evidence than in a criminal case. The plaintiff must prove “with reasonable certainty” that the violation occurred (and may use evidence from an earlier criminal proceeding to do so); that it suffered a compensable harm as a *result* of the violation; and that the harm occurred within the statute of limitations (civil actions must be initiated no later than four years after cessation of the violation). Estimating damages is the work of economists, accountants, and other experts.

### **Economic Theory and the Law**

In order to estimate damages, a plaintiff must determine the difference between the revenue or profits actually earned during the period of unlawful conduct and what would have been earned absent unlawful conduct. The amount of damages will also depend on which parties have standing (Page).

Figure 4 illustrates the degree of overlap between economic concepts of injury and the legal treatment of damages in the case of an effective price-fixing conspiracy. There are five potential groups that may be harmed by price-fixing. (Although illustrated by a case of raising the selling price of a finished product, the analysis also applies to cases where a cartel colludes to reduce the price paid for an input).

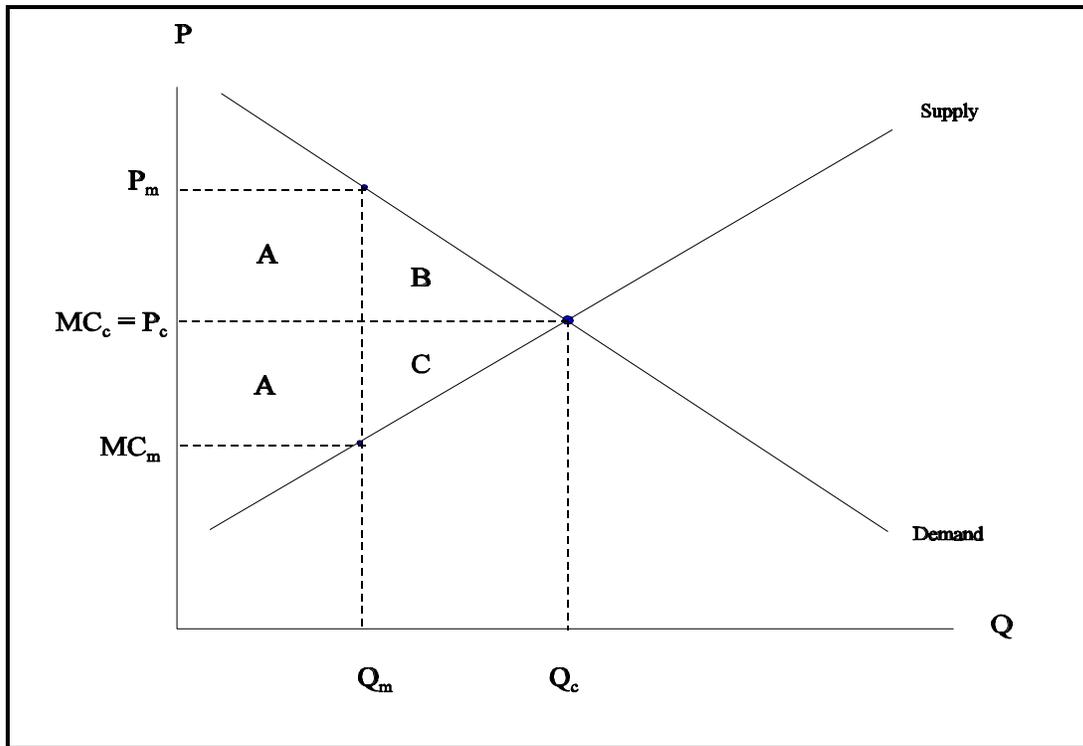
The first and clearest case of damages occurs in the case of actual *direct purchasers* who pay an inflated price called the overcharge (rectangle A in Figure 4).<sup>2</sup> Direct buyers of lysine spend  $P_m Q_m$  during the conspiracy, which generates “excess” or “monopoly” profits of  $(P_m - MC_m)Q_m$ . Under economic reasoning the entire monopoly profits rectangle A is a transfer from buyers to the cartel and should be considered damages, but under legal standards only the upper portion of the rectangle  $(P_m - P_c)Q_m$  is recoverable as damages. Direct buyers of lysine have had standing to recover the overcharge since the first federal case was decided in 1906.

A portion of the overcharge is passed on to the *indirect* buyers of products containing Q. In the present case, hog and poultry farmers who buy prepared animal feeds containing lysine are harmed by the higher price of animal feed. Indeed, if an indirect buyer has a “cost-plus” contract with a feed manufacturer, *all* of A is passed on to the farmer. With other purchasing methods, rectangle A shrinks depending on the location of the *derived* demand and supply curves (shown in Figure 5). Under many state antitrust statutes, indirect overcharges are recoverable in state courts, but since the famous *Illinois Brick* decision of the Supreme Court in 1977, no standing is given to indirect buyers in federal courts. Since 1977, bills have been introduced in Congress each year trying to overturn the *Illinois Brick* ruling, but none has yet passed.

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<sup>2</sup>The lower half of rectangle A represents short-run economic profits; in the long run profits will be smaller if there are fixed costs of production because the average total cost curve will intersect  $Q_m$  above  $MC_m$ .

**Figure 4. Price Fixing: Injuries and Standing**



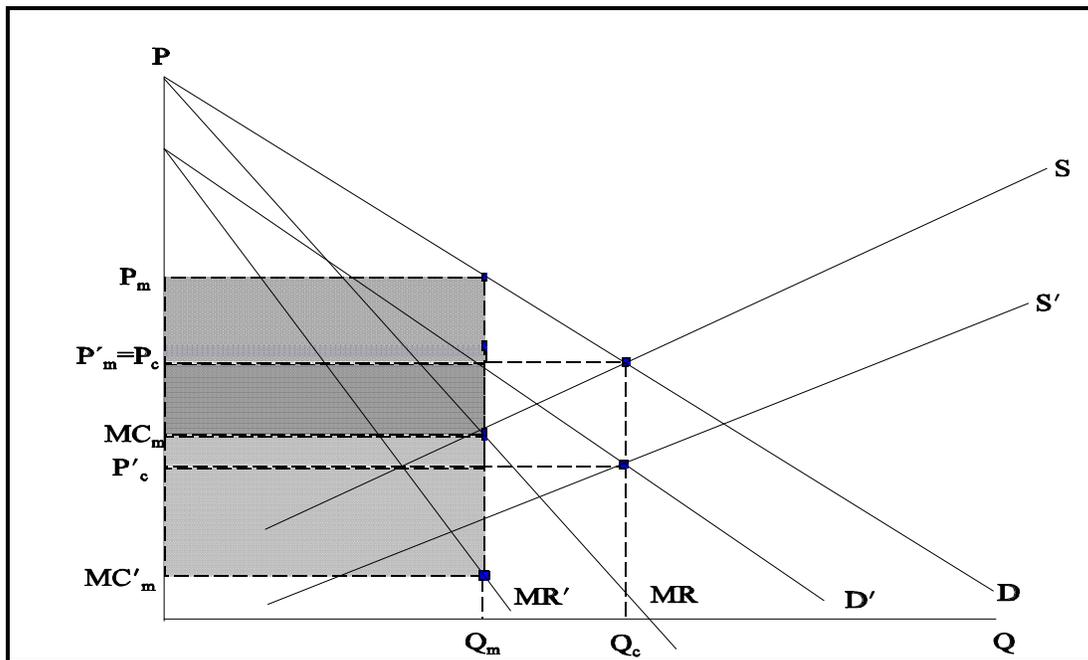
P is price, MC is marginal costs, Q is output, c is perfectly competitive case, m is observed market or monopoly case.

Five Groups

- A Overcharge to direct purchasers from cartel (e.g. lysine buyers). Courts always allow standing.  $A = (P_m - Mc_m)Q_m$  or  $(P_m - P_c)Q_m$
- A' Indirect or "derived" overcharge (portion of A passed on to indirect buyers, e.g., animal feeds buyers). Some state courts allow standing, U.S. not since 1977. [Shown in Figure 5].

- A" Portion of overcharge paid by direct buyers from noncartel ("fringe") suppliers that raised their prices toward  $P_m$ . No Supreme Court ruling; District Courts are split but have allowed payments in major beef and salmon cases.
- B Dead Weight Loss (DWL) to buyers forced reduce their purchases or to purchase an inferior substitute. Courts allow claims from nonpurchasers that were regular clients of the conspirators, but proof is viewed as difficult.  $DWL = \frac{1}{2}E_d(P_m - P_c)^2 P_c Q_c$ , where  $E_d$  is own-price elasticity of demand.
- C DWL to suppliers of factors of production to cartel members (reduced derived demand due to output contraction). Usually input suppliers have no standing because courts consider the injury "remote". An exception is made for injured whistle blowers.

**Figure 5. Indirect Overcharge From Price Fixing.**



Note: P is price, Q is quantity, MR is marginal revenue, and MC is marginal cost. D and S are the primary demand and supply of lysine, whereas D' and S' are the *derived* demand and supply of lysine. That is, the demand for lysine by feed manufacturers, and S is the supply of lysine by corn refining companies in the U.S. or abroad. The curve D' is the demand by farmers for animal feeds containing lysine (measured in lysine-pound-equivalents). With monopoly pricing of lysine,  $Q_m$  is lysine output, lysine buyers pay price  $P_m$ , and farmers pay price  $P'_m$ .

- The *direct* legal overcharge on feed manufacturers is  $(P_m - P_c) Q_m$ .
- The *indirect* legal overcharge on farmers is  $(P'_m - P'_c) Q_m$ .
- Both overcharges are less than the profits made by lysine producers  $(P_m - MC_m) Q_m$  or by feed manufacturers  $(P'_m - MC'_m) Q_m$ .

These profits are shaded ■ and ■ respectively, and correspond to rectangles A and A' as discussed on Figure 4.

A third group of buyers may be harmed. If a cartel does not contain all the producers in an industry, it may happen that nonconspirators (“fringe” firms) raise their prices toward  $P_m$  (the “umbrella” effect). Direct buyers from noncartel sellers are harmed, while the fringe firms enjoy serendipitous excess profits during the conspiracy period. There is no Supreme Court ruling on standing in this case, but while U.S. District Courts are split on the issue, the great majority have allowed standing. Thus, cartel members are liable to pay damages even to direct buyers of output sold by nonparticipating sellers. This type of injury does not apply to lysine (because all sellers in the world belonged to the conspiracy), but it may apply to citric acid or HFCS.

A fourth group harmed by price-fixing is those forced to buy inferior substitutes or those who reduce their purchases in response to the higher price. This injury is represented by the consumer portion of the dead-weight loss (triangle B in Figure 4). Although well accepted in economic theory, the parties incurring deadweight losses generally have been denied standing.<sup>3</sup> However, the courts might allow damage claims if the parties can show “a regular course of dealing with the conspirators” during non-conspiracy periods. Moreover, one could argue that the deadweight loss should be computed when assessing penalties in *public* trials even when they are not permitted in private antitrust suits.

The last injured group are those supplies of factors of production to the conspirators who lose sales or income due to output contraction. This corresponds to triangle C in Figure 4, the supply side of the deadweight loss. The courts do not usually allow standing for such parties, such as workers forced into unemployment, because the injuries are viewed as indirect or remote.<sup>4</sup> A clear exception is that standing is allowed for employees who were fired because they refused to participate in price-fixing arrangements or became whistle blowers.

### **Empirical Estimation Issues**

Estimation of the overcharges to direct buyers is in principle straight forward.  $P_m$ , the actual price paid by buyers, and  $Q_m$  the volume sold, can be obtained from the business records of the plaintiffs or more conveniently from the cartel members during the pre-trial process called “discovery.” Other information required is  $P_c$ , the price that would have governed sales “but for” the illegal conspiracy and the length of the conspiracy period.

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<sup>3</sup>The legal reasoning is that treble damages are meant to deny conspirators the fruits of their illegal conduct, but the deadweight loss is not a gain to conspirators. The courts view these losses as “remote” and identifying which non-buyers are injured as a speculative exercise. Many legal commentators believe that actual calculation is problematic, but the formula shown in Figure 4 is quite feasible to apply.

<sup>4</sup>Legal theory supports the identification of producers’ deadweight losses as compensatory harms. Buyers who buy less during a conspiracy are harmed as directly as those who continue to buy at the higher price. Those who stop purchasing are in the same position as those who stop buying because of a refusal to deal; both are being illegally prevented from entering into a beneficial transaction.

Determination of the unobserved “but for” price  $P_c$  is often the most contentious area of expert opinion. The correct level of  $P_c$  can be calculated in four ways: the “before and after” approach (that is, examining price levels immediately before or after the known conspiracy period); time-series fixed costs); and theoretical oligopoly models that require information on actual concentration among all sellers (not just the cartel) and elasticity of demand for the cartel’s product. econometric estimation of demand and supply relationships to obtain the competitive price (a dummy variable can be inserted to model the conspiracy period); obtaining information on costs of production by the conspirators (proprietary information on production capacity, utilization, variable costs, and

In proving the extent of damages incurred by plaintiffs in conspiracy cases, the *intent* of the conspirators must be sharply distinguished from the degree of *success* in fixing prices. Strictly speaking, even an admission of guilt by the conspirators does not imply that the market’s price was affected as intended. Thus, an appropriate damages analysis must be neutral with respect to either allegations or admissions by the defendants. The before-and-after approach is particularly prone errors of estimation if no additional market information is not available to confirm the height of the overcharge and the duration of the conspiracy’s effects. Economic theory supports the possibility that the conspirators’ prices can be lower than the monopoly price; conspirators may wish to limit entry or conceal their collusive activity. Cheating on cartel agreements may occur. However, in practice, an admission of guilt does lend plaintiffs some strategic advantages in antitrust suits or out-of-court settlement negotiations.

An analysis of the lysine overcharge and deadweight losses using the first approach is shown in Appendix B. The overcharge was based on an *assumed* period covering two conspiracy periods of 31 months during 1992-1995. The *inferred*  $P_c$  was \$0.70 per pound for lysine, so the monthly differences between the actual lysine price ( $P_m$ ) and \$0.70 yielded an overcharge estimate of \$155 million to \$166 million (see Figure 2). The deadweight losses were estimated to be \$5 to \$14 million, or 3 to 8 percent of the overcharges. The inferred competitive price was backed up by credible information that ADM’s cost of lysine production was \$0.66 per pound during most of the conspiracy period (if the Asian producers had higher costs, the overcharge might be less). In other words, the estimate of  $P_c$  was derived using the first method discussed above and was cross-checked using the third method.

Defendants’ economists (both were former Chief Economists of the Antitrust Division of the Department of Justice, one serving during the Nixon-Ford years and the other during the Reagan administration) made several criticisms of these estimates, but they never provided alternative estimates of their own. First, the defendants argued that the first conspiracy period was never effective and that the conspiracy began in mid 1993 and ended in July 1995 about the time of the FBI raid in Decatur. This may be a just criticism, though there is conflicting evidence in the public records and no court testimony on the subject. If correct, the overcharge estimate is reduced to about \$120 to \$130 million. Second, the defendants suggested that there was a pronounced annual seasonality in lysine price movements that would account for some of the upward movements observed during the alleged conspiracy period. This is also a criticism with some face validity. Animal feeds use peaks somewhat in the winter months, so regular season shifts in the derived demand for lysine might well induce systematic seasonal patterns in lysine prices. However, the four years of data available are too few to test this notion satisfactorily, and the fact that lysine is storable suggests that the idea should be treated with skepticism.

As expected, the third and most serious issue turned on the proper height of  $P_c$ . It is in general illogical to identify  $P_c$  simply on the basis of the lowest observed prices. The \$0.70 price was the average each of two periods (May-July 1992 and April-July 1993) that were given to be non-conspiracy periods. If the conspiracy period assumption is correct, then this procedure is a reasonable method of determining the “but-for” *competitive* price. However, the defendants made a more interesting economic argument concerning  $P_c$ . They presented data that demonstrated that the lysine market was highly concentrated (HHI = 3500), with high barriers to entry, no product differentiation, and large numbers of dispersed buyers. This information was available to the defendants but not to the plaintiffs prior to a July 1995 hearing, but there is little basis on which to doubt that the lysine industry has an oligopoly structure. Perhaps the only debatable portion of the assertion is that the animal feeds industry was atomistic; on a national basis that is true, but the animal-feeds market is geographically localized, which would imply moderate levels of buyer concentration.

The defendants then go on to assert that, given such a market configuration, “conditions are conducive to the implicit oligopolistic coordination that would keep prices substantially above the long run [competitive] price...”(White). Moreover, they assert that the homogeneous Cournot model is the appropriate model to use to calculate the “but for” price and that  $P_c$  would be well above \$0.70. (Warren-Boulton). In other words, the defendants take the position that in the absence of *overt* collusion (price-fixing) the lysine industry would have generated supra-competitive prices using a method of *tacit* collusion (“implicit coordination” of prices or output). Moreover, without admitting that  $P_c$  was actually within the range of their illustration, they hint that  $P_c$  was mostly well above the \$0.70 figure (Table 5). The predicted Cournot price is very sensitive to the assumed elasticity of demand for lysine by feeds manufacturers. In fact, the price is *infinite* if the absolute value of the elasticity is equal to the HHI of 0.35 and *negative* if less than 0.35 — a patently nonsensical result. The predicted price is also quite sensitive to the marginal costs of production which for ADM is believed to have been between \$0.60 and \$0.70 per pound. The model assumes that all firms in the cartel had equal cost structures, but the Asian lysine producers’ were probably higher than ADM’s costs.

Although it is likely that the elasticity is between 0.15 and 0.50 (see Appendix B) for individual feed types (i.e., meat animal species), it is possible that lysine buyers can easily shift among feed types. In this case the proper derived demand comes from all meat, poultry, and fish (except beef), and this is likely to be quite inelastic, perhaps in the 0.10 to 0.40 range that yields the most ridiculous predicted selling prices. Given information about the monopoly price ( $P_m$  during the conspiracy) and marginal costs, it is possible to *derive* the exact elasticity from a well known monopoly formula. During the height of the conspiracy in 1994,  $P_m$  varied from \$1.10 to \$1.20. Marginal costs for ADM most likely varied from \$0.60 to \$0.70. Under these price-cost conditions, the cartel was behaving as if it believed that demand was highly elastic (-2.00 to -2.75).

There are several fundamental problems in assuming that Cournot pricing is the appropriate “but for” model. One might first ask why Cournot was chosen in the first place. Defendants’ economists said that it is the oldest, the “standard model,” and the oligopoly model “most often used by economists.” All true, but irrelevant. The truth is not the result of a popularity contest. The main reason that the Cournot assumption is the one made most frequently by economists is because of its “mathematical tractability” (Kwoka & White, p.11). Indeed the Bertrand homogeneous model is nearly as popular, but using Bertrand was not in the defendants’ interest because with three or more

firms, Bertrand predicts an equilibrium price identical to the perfectly competitive price! It is also possible to question whether Cournot, Bertrand, or any other theoretical model with tacit collusion is reasonable for the lysine industry. Case studies generally support the proposition that long term historical interaction among firms must occur before companies can learn to cooperate for mutual benefit. It is doubtful that the 1991-1992 price war was the kind of experience that would induce *tacit* cooperative behavior over the 1992-1995 period. As in so many aspects of industrial organization, theory cannot solve this conundrum, only rigorous empirics can.

Many economists might have profound philosophical objections to adopting an oligopoly model as the standard of comparison in a price-fixing case. The fundamental purpose of the antitrust laws is uproot the sources of market power so as to maximize consumer welfare. The perfectly competitive market, while rarely achieved in practice, does that. Adopting an oligopoly price as the benchmark leads to a *reductio ad absurdum*. Future developments in theory might well lead to the publication of an oligopoly model that predicts the monopoly price. Or, defendants might argue that they intended to merge their operation into one legal organization. In either case, the “but for” price becomes the monopoly price and the justification for antitrust laws vanishes.

### **Public Penalties and Private Awards**

There are many legal sanctions and remedies for price-fixing violations, and the ADM affair has signaled a significant escalation in those penalties (Table 4).

First of all, federal or state prosecutors have to decide whether the price-fixing is serious enough to warrant criminal charges or merely a civil suit. Criminal charges require that the prosecution prove “beyond a reasonable doubt” that defendants intentionally conspired to raise prices; that means that a jury must be convinced that there is no possible alternative explanation for the agreement. In a civil case, the standard of proof is lower, “the preponderance of the evidence.” Under federal statutes only the Department of Justice can bring criminal antitrust cases.

Federal criminal procedure requires a grand jury indictment in order to commence a felony prosecution. After a grand jury is convened, it may subpoena individuals to testify, subpoena documents, issue search warrants, and immunize testimony through plea bargaining (Daniel *et al.* 1997). The jury hears only evidence presented by the prosecution. After sufficient evidence is uncovered, the prosecutors will request authority from the Assistant Attorney General for Antitrust to present an indictment to the jury. If granted that authority, prosecution attorneys then negotiate informally with defendants’ counsel allowing them to present arguments against seeking indictments from the grand jury. Some or all of the defendants may decide to bargain for a guilty plea at this point (eventually, seven corporate and five individual guilty pleas were made). The pleas are presented to a presiding federal judge for approval. If some of the defendants refuse to plead guilty, then indictments are presented to the grand jury and subsequently filed with the Court upon majority vote of the grand jury. In the lysine case, three executives were under indictment and awaiting trial in 1998 (though Ajinomoto’s former general manager has so far avoided arrest by remaining in Japan).

**Table 5: Hypothetical Equilibrium Price Under Homogeneous Cournot Conditions.**

Marginal Cost of Lysine	<u>Own-Price Elasticity of the Derived Demand for Lysine in Animal Feeds</u>						
	-0.20	-0.40	-0.50	-0.60	-0.70	-0.80	-0.90
	<i>Dollars per Pound</i>						
\$0.40	-0.53	3.20	1.33	0.96	0.80	0.71	0.65
\$0.50	-0.67	4.00	1.67	1.20	1.00	0.89	0.82
\$0.60	-0.80	4.80	2.00	1.44	1.20	1.07	0.98
\$0.70	-0.93	5.60	2.33	1.68	1.40	1.24	1.15
\$0.80	-1.07	6.40	2.67	1.92	1.60	1.42	1.31

Note: Assumes HHI = 3500, entry is blockaded, homogeneous product, all manufacturers with identical costs of production, and that each firm conjectures that all other firms will hold output constant if the firm changes its output. The predicted price is negative when ever the elasticity is less than 0.35 (HHI) and is infinity when equal to 0.35. If elasticity is -2.0, the price varies from \$0.49 to \$0.97.

When conspirators are informed of the charges likely to be filed against them, informal negotiations between prosecutors and defense lawyers begin. If the defendants refuse to admit their guilt, a trial occurs within a year or two. With a guilty verdict by a jury, the prosecutors propose separate penalties for the company and for the individual managers who colluded, and a judge makes a final determination of the penalties. If during pre-trial negotiations the defendants agree to plead guilty, prosecutors will usually propose lower fines and jail terms. Penalties for individuals may include up to three years in jail and \$350,000 in fines. So far, five managers have pleaded guilty and paid small fines, and three more have been indicted and face large penalties. Up until 1991, the maximum penalty for guilty companies was \$10 million, but in 1991 new sentencing guidelines permitted assessing fines that were double the profits or double the injury done to buyers.

The first application of the “two-times” rule in 1995 resulted in a \$15 million fine. The second time this rule was invoked was against ADM in October 1996 when it was fined \$70 million for the lysine conspiracy and \$30 million for its leading role in the citric acid conspiracy. These fines were front-page news around the world. However, it should be noted that the DOJ explicitly rewarded ADM with a discounted fine because the company agreed to cooperate in prosecuting two of its own officers (M. Andreas and T. Wilson) as well as the officers of Asian, Swiss, and Austrian co-conspirators. The Asian lysine producers got even larger discounts. The size of the discount awarded to the lysine producers for their good behavior is not known, but could be as high as 50 percent. In addition, the DOJ agreed to forgo prosecuting ADM for its role in the potentially larger corn-sweeteners case, albeit the weakest of the three commodity price-fixing cases. Thus, the \$70 million lysine fine is at most a minimum indicator of the true overcharges incurred by buyers of lysine. ADM had a U.S. market share of 48 to 54 percent during 1994-1995. The defendants maintained in court that the conspiracy was effective for only 18-20 months, but it could have lasted as long as 31 months. Therefore, one can infer that the total overcharge on buyers of lysine was *at least* \$65 million to \$73 million during an 18 to 20 month period, but it could have been as high as \$140

million. Sales of lysine during that time were estimated to be \$495 to \$550 million, so the conspiracy raised lysine prices by a minimum of 12 to 15 percent.<sup>5</sup>

When guilty pleas are entered, normally a civil class-action suit is formed by injured private parties seeking treble damages under the Clayton Act. Indeed, the Clayton Act specifically authorizes the use of facts and judgements made in federally prosecuted cases in private suits. That is, Congress envisioned or intended private cases to follow public ones. The lysine case is more complicated because the class-action suit was settled in July 1995 for \$45 million and accepted by all but 32 larger feed manufacturers who opted-out of the agreement. Note that the \$45 million represents *treble* damages, or three times the implicit overcharges. In other words, the feed companies who took the early and safe money (apportioned according to procurement shares) got a bad deal. The \$45 million was only 25 to 35 percent of a *minimum* estimate; had they waited the feed manufacturers could have received damage awards of \$210 million or more.

The opt-out firms have negotiated privately with ADM, Ajinomoto, and Kyowa Hakko to arrive at an agreement on damages from lysine. Unless those negotiations break down (and there are no signs that they have) so that the cases go to open court, the treble damages paid to these firms will never become public. They should be able to recoup 15 to 20 percent of their purchase values of lysine if their lawyers do their jobs well. Tentatively, it appears that these feed manufacturers will receive about \$20 million.

There is more information available on the citric-acid case. ADM was assessed a \$30 million criminal fine by the DOJ, and three European co-conspirators were fined an additional \$75 million (Table 4). The time period is not known, but probably covers at least the two years (1994-1995) and may extend back to as early as 1992. ADM's fine was discounted from the maximum application of the "two-times" rule, but the fine assessed Bayer seems to be closer to the maximum. Bayer's U.S. subsidiary Haarmann & Reimer had a 31 to 33 percent capacity share of the U.S. market. Thus, the total 1994-1995 overcharge by all four cartel members was at least \$155 to \$160 million. The U.S. ITC survey reports that 1994-1995 manufacturer sales were from \$525 to \$555 million; net U.S. imports were \$54 million (Stat-USA). However, *CMR* reports higher U.S. citric-acid consumption, which at prices of \$0.79 to \$0.85 per pound implies U.S. sales in the range of \$680 to \$730 million. Therefore, the citric-acid price-fixing overcharge was from 21 to 27 percent of industry sales during 1994-1995.

The private parties in the San Francisco class-action suit are allowed to claim damages that are treble the actual overcharge. Based on the DOJ penalties as of March 1997, private treble damages in citric acid ought to be at least \$230 to \$240 million. However, seven weeks before the DOJ announced the huge criminal penalty on Bayer, the parties in the class-action suit initially agreed to payments of only \$94 million (later reduced to \$86 million). At the time, the lead attorney for the plaintiffs stated that "We think this is an excellent result for the class..." In retrospect, the class-

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<sup>5</sup> Application of the full "two time" penalty rule in the future will become an important data source for IO economists and will assist plaintiffs in ascertaining the expected treble damages if the fines are announced before civil suits are settled. Because the two-times penalties are based on prosecutors' estimates of the overcharges, bargaining costs can be saved for private litigants. In general, the new information should favor plaintiffs.

action settlement seems like a good deal for the defendants, with plaintiffs getting less than half of what is due them.

Confirmation that the federal class-action suit resulted in a low settlement rate came in March 1998 when ADM was forced to reveal the size of its settlement with four of the five citric-acid, opt-out firms. ADM paid \$36 million. By extrapolating ADM's share of the market to its co-conspirators, it is possible to estimate that the opt-outs were paid about \$114 million (see Appendix A). Thus, the opt-outs got from 2.0 to 3.5 times more damages (per dollar of citric acid purchased) than did the settling class. Just as was the case with lysine, patience and risk was well rewarded.

In summary, price-fixing overcharges on lysine and citric acid amounted to at least \$220 million. Yet, proposed class-action settlements announced *prior* to the full imposition of criminal penalties amount to a paltry \$131 million, which is at most 30 percent of the potential private damages that were due to plaintiffs. The opt-out firms received another \$115 million or so, but the actual private settlements may never be known. Despite the fact that members of the class were under compensated, by historical standards the lysine and citric-acid settlements are quite high (Table 6). It appears that in terms of the total recovery value or settlement amount, these cases were the fourth largest in history (Table 7).

Table 8 lists all six of the international price-fixing cases prosecuted by the U.S. government in the 1990s. (A seventh possible case, the Japanese thermal fax paper case involved collusion on exports only). Taken together, the lysine and citric-acid cases resulted in fines totaling \$200 million, or nearly half of the total fines assessed to date. While there are still at least 25 investigations ongoing (including graphite electrodes), the two ADM cases rank at the top based on fines imposed. Because during 1990-1995, the largest possible fines were \$10 million per company, total fines imposed prior to 1995 were insignificant by comparison (*The National Law Journal*, 10/20/97).

### Conclusions

The world markets for lysine, citric acid, and many other specialty products of the wet-corn milling industry have the structural characteristics that facilitate collusive price-fixing conduct. In most cases the products made by fermentation of corn starch are homogeneous and have few, if any, close substitutes over normal price ranges. Corn refining technologies increasingly are able to produce low-cost versions of many synthetic organic chemicals used as food or feed ingredients or medicinals, and the lower prices will make substitution even less likely in the future. The markets for these new biotechnology products are typically tight oligopolies: few sellers, high sales concentration, high barriers to entry due to scale economies or technological secrecy, large numbers of buyers, and the absences of price information from open markets.

Archer Daniels Midland had a corporate culture and a decision-making structure that was well suited to the high-risk game of price-fixing. ADM was conditioned to viewing markets not so much as inexorable engines for price formation but as creatures malleable to the intervention of regulators, politicians, and powerful businessmen. ADM's leaders were used to thinking that the whole world was its oyster, that global domination of trade was an achievable goal, and that active multinational networking is an essential means to that goal. The company prided itself in its quick, decisive, and large-scale moves into new industries, even if technological barriers were to be skirted by ethically dubious methods. The dismissal in 1991 of price-fixing charges against ADM concerning HFCS and

the looming slowdown in most of its soybean, gasohol, and corn sweetener lines of business may have been among the proximate causes that emboldened ADM to embark on its reckless decision to form two or more international cartels.

The financial impacts on ADM have so far proven more modest than the stock market at first predicted. Recall that the information about the FBI raid and the ensuing uncertainty caused ADM's market value to fall by \$2.4 billion for a few days after the June 28, 1995 FBI raid. For most of 1996, ADM's value was 10 to 15 percent below its mid-June level. In late 1996, as announcements of class-action suit settlements were made, the market rewarded ADM with a 20 to 30 percent stock-price premium above its pre-raid price (though fundamental market factors also played a role in the price). As of mid 1998, total financial costs to ADM appear to be in the \$310-\$330 million range, far less than the stock market predicted initially. ADM's after-tax profits declined by 13 percent in FY 1996 (year ending June 30, 1996) and by 53 percent in FY 1997 when compared to the monopoly-bloated profits of FY 1995. The direct antitrust expenses incurred by ADM (which are not tax-deductible) accounted for 70% to 80% of the FY 1996 decline in net income and for 76% to 78% of ADM's FY 1997 profit decline. Using another benchmark, ADM's direct antitrust expenses in FY 1997 (the larger of the two years) amounted to 18% of its liquid assets available in June 1996. While not fatal to the company, the antitrust costs were not negligible either. But did the gains from lysine price fixing outweigh the costs? Probably not in the U.S. market. Assuming ADM earned monopoly profits proportional to its market share, then the direct antitrust costs were from 2.6 to 2.7 times the illegal profits (or about half the maximum possible). Illegal profits earned on exports are another matter. Additional fines and legal costs are likely from prosecutions initiated in Europe and Latin America.

However, there are other costs that are likely to outweigh the strictly financial penalties in the long run. ADM has lost several capable, if unscrupulous managers. Top management has been greatly distracted by legal actions, and this dilution of management resources will continue for some time. Some 100 to 125 suits were filed in U.S. courts (many consolidated into class actions), of which 70 were still unresolved as late as June 30, 1997 (ADM). Foreign antitrust investigations are just beginning to exact their toll as well. Although many ADM managers remain loyal to the company, there is little doubt that the company's reputation has suffered: an April 1997 survey by *Fortune* magazine placed the company at the bottom of a long list of large U.S. food processors. While significant changes in the company's governance structure have occurred, many of ADM's largest institutional investors remain highly critical of the modest reforms of the board of directors. The board has experienced a turnover in the majority of its members, but the number of truly independent members remains small. Dwayne Andreas is still chairman, his son, Michael Andreas, was employed as a "consultant" to ADM through 1998, and his nephew, G. Allan Andreas, is CEO.

Something there is that doesn't like a big, successful company that fairly exudes hubris. The Department of Justice, smarting from the loss earlier in 1996 of a major international diamond cartel case, pursued ADM with everything it had. One reason the DOJ poured such large resources into pursuing ADM *et al.* was that the diamond case was dismissed because key evidence and witnesses in South Africa could not be obtained through normal subpoena processes (Daniel *et al.* 1997). Of course, targeting high profile companies is a wise use of constrained administrative resources because the deterrence effect is so large, but the DOJ's vigor may well have been driven by a hubris of its own (Preston and Connor). In any case, the DOJ sought and received levels of penalties that

**Table 6. Settlement Recovery Rates in Class-Action Antitrust Litigation, Selected Cases**

Case	Number of Years of the Violation	Settlement Amt./ Defendants' Sales (%)
1. In re Amino Acid Lysine Antitrust Litigation, MDL No. 1083 (No. District Ill. 1996)	1.5 (or 2.6)	19.5 (11.3)
2. In re Citric Acid Antitrust Litigation, MDL No. 1092 (No. District California 1996)	2	14 to 15
3. In re Catfish Antitrust Litigation, MDL No. 928 (No. Dist. Miss. 1996)	10	8.3
4. In re Folding Cartons Antitrust Litigation, MDL No. 250 (No. District Ill. 1980)	4	4.2
5. In re Eastern Sugar Antitrust Litigation, MDL No. 201a (East District Pa. 1976)	4	2.5
6. In re Chicken Antitrust Litigation, Civil A No. C74-24548 (No. District Ga. 1979)	2	1.0
7. Bagel Inn v. All Star Dairies, Civil Action No. 80-2645, (District of New Jersey 1982)	4	1.0+
8. In re Armored Car Antitrust Litigation, Civil Action No. 78-139A (No. District Ga. 1979)	2	3.9
9. In re Plastic Tableware Antitrust Litigation, Civil Action No. 94-3654 (East. District Pa. 1995)	NA	3.5
10. In re Anthracite Coal Antitrust Litigation, MDL No. 293 (Middle District Pa. 1978)	4	3.1
11. Fisher Bros. v. Phelps Dodge Industries, Inc., Civil Action No. 83-2457 (East. District Pa. 1985)	4	2.4
12. In re Domestic Air Transport Antitrust, MDL 681 (No. Dist. GA. 1994) Litigation	6	0.3 <sup>a</sup>

Source: Court records of MDL No. 1083 and Lexis-Nexis search.

<sup>a</sup>This gargantuan case involved a class of four million individual and corporate plaintiffs against six of the largest U.S. airlines. The settlement awarded coupons worth about \$300 million, but many of these coupons have not yet and may never be exercised.

**Table 7. Major U.S. Class-Action Antitrust Awards.**

Name of Case	Settlement Amounts		
	Recovery	Legal Fees and Costs	Total
	<i>million dollars</i>		
1. NASDAQ Dealers (1998 Pending)	1,009	NA	1,160E
2. Corrugated Containers	550	44	594
3. Heavy Electrical Equipment <sup>a</sup>	405	NA	446E
4. Lysine and Citric Acid	321	NA	401E
5. Folding Carton <sup>b</sup>	218	14	232
6. In re Plywood (1983)	171	26	198
7. Petroleum Products	140	29	169
8. Infant Formula (1993, federal)	126	33	159
9. Travel Agency Commissions	87	29	116
10. Antibiotics	90	22	112
11. Brewer v. South Union Corp.	81	11	92
12. Fine Paper Antitrust Litigation	80	10	90
13. Gypsum	75	9	84
14. Sugar - Western Cases	60	10	70
15. Superior Beverage	58	18	76
16. Carbon Dioxide	53	10	63
17. Red Eagle Resources	53	19	72
18. Chlorine & Caustic Soda	53	12	65
19. Workers' Compensation	50	12	62
20. Cumberland Farms	50	14	64
21. Industrial Gas	50	12	62
Average treble damages <sup>d</sup>	0.45	0.19	0.64

E = Estimates - NA = Not Available.

<sup>a</sup>Estimate contained in Shepherd (1985) of the results of about 1,900 private suits, only some of which were class actions. The bidding ring consisted of 29 companies. Public prosecution netted \$1.9 million in fines and conviction of 45 company officers. Collusion involved seven products over "decades."

<sup>b</sup>Collusion among 23 manufacturers during 1960-1974 in a market with \$1 billion in sales in 1974. Public prosecution netted brief jail sentences for 15 of 48 convicted managers and fines of \$5,000.

<sup>c</sup>In addition, the three formula manufacturers paid \$200 million in a Florida class action suit (1993) and in 1996 paid \$33 million to 17 states for overcharging state WIC programs. Several indirect-purchaser cases still in litigation.

<sup>d</sup>Average of 49 cases reported in Elzinga and Wood.

Sources: Shepherd (1985); Class Action Reports, Inc. "Attorney Fee Study;" Table 4.

**Table 8: Major International Price-Fixing Cases Brought by the Department of Justice, 1985-98.**

Year: Industry and sales	Conspiracy Period	Fines Imposed		
		On Corporations	On Individuals	Amount
<i>\$ mil.</i>				
<b>1996:</b>				
Amino acid lysine, world sales in 1995 \$600 million (or 275,000 mt), U.S. sales \$300 million.	12/93-7/95	5	6	94 <sup>1</sup>
Citric Acid, world sales \$1.1 billion, \$400 million in the U.S.	1993-1995	4	4	106 <sup>2</sup>
<b>1997:</b>				
Sodium Gluconate, global 1996 sales \$50 million, U.S. sales \$4 million.	8/93-6/95	4	4	35
<b>1998:</b>				
Bid-rigging for heavy-lift marine construction services, global sales not released.	1993-5/97	2 <sup>3</sup>	1	49
Bid-rigging in semisubmersible heavy-lift transportation services, global sales more than \$200 million.	1990-5/95	2	2	16
Graphite electrodes, global 1996 sales of \$500 million, total \$1.75+ billion during price-fixing period.	7/92-6/97	4 <sup>4</sup>	0	139 <sup>5</sup>
Total October 1996-April 1998		20	17	436

<sup>1</sup>These fines were imposed in October 1996 and were record amounts at the time. The previous high fines were imposed in 1995 on a domestic explosive-industry cartel that operated in four states during 1992-1995. Thirteen corporations, led by Dyno Nobel of Utah (\$15 million), and three individuals paid total fines of \$40 million. Dyno Nobel was the first corporation to pay more than \$10 million under the “two-times” felony sentencing guidelines.

<sup>2</sup>These fines, imposed in late 1996 and early 1997, were a new record at the time. ADM along paid \$70 million for the lysine conspiracy and \$30 million for the citric acid conspiracy, still a record for a single company. Bayer paid \$50 million, the largest amount for the citric acid case.

<sup>3</sup>Includes one unindicted co-conspirator. The fines were paid by one company, HerreMac, v.o.f.

<sup>4</sup>Includes one co-conspirator (Carbon/Graphite Group) that received amnesty and one company, SGL Carbon AG of Weisbaden, Germany, not yet indicted.

<sup>5</sup>Fines paid by UCAR Internation of Danbury, Connecticut (\$110 million) and Showa Denko Carbon, Inc. of Ridgeville, South Carolina (\$29 million).

Sources: Klein (1998); *Connecticut Law Tribune*, 4/13/98; *The Legal Intelligencer*, 4/9/98; *Business Crimes Bulletin*, Vol. 4, No. 12, p. 10 (January 1998).

have markedly changed the rules of the price-fixing gambit. Price-fixers now face public penalties and private damages that are *five times* their ill-gotten gains, roughly a 50 percent increase in their previous exposure. Moreover, if the “two-times” rule for fines is fully applied prior to private suits, then private plaintiffs will have a sure guide to the treble damages to which they are entitled. Thus, the new penalty guidelines may lower the time, uncertainty, and costs of legal negotiations.

The “two-times” rule for fines was applied by the DOJ to four price-fixing conspirators in the U.S. lysine market and four conspirators in the U.S. citric-acid market for the period 1994-1995. Total corporate criminal penalties were \$91 million for lysine and \$105 million for citric acid. To put the \$196 million in perspective, these fines alone (paid in federal fiscal year 1997) were *five times* all antitrust fines obtained by the DOJ in each of the previous two fiscal years (Daniel *et al.* 1997). However, these fines are known to be less than the maximum possible because several of the perpetrators were rewarded with reduced fines because they agreed to cooperate with prosecutorial investigations. Based on the public record, it is apparent that ADM paid proportionately the largest lysine fine and Bayer the largest citric-acid fine. From their market shares it is possible to infer that total price-fixing overcharges were at least \$220 million or about 20 percent of U.S. sales in the two markets. Because they were international conspiracies, additional overcharges were very likely incurred by buyers of lysine and citric acid in Canada and other parts of the world. Lysine exports from ADM’s plant doubled in 1996, the year after the price fixing ended, and it is likely that production restraints on other lysine and citric-acid plants were lifted as well. No information was released on the effectiveness of price fixing outside the United States, but as 60 percent of the world market is outside the United States, non-U.S. overcharges were probably substantial. The final point is that private parties in the United States were entitled to treble damages of at least \$600 million (but possibly as much as \$900 million, depending on the DOJ’s discounting policy). As of 1998, civil settlements for lysine and citric acid are known to total only \$166 million.<sup>6</sup> Therefore, private parties in the United States have so far recovered only 15 to 25 percent of the maximum allowed under the antitrust laws. The haste with which class-action settlements were reached in July 1995 (lysine) and late 1996 (citric acid) is one reason for the low damages. Perhaps this is one case where the old adage “Justice delayed is justice denied” *should* be turned on its head.

Perhaps the most important lesson of the ADM scandal for antitrust enforcers is the ease with which an international cartel was formed and executed. Although the two companies were direct rivals for less than two years, ADM and Ajinomoto apparently led the lysine conspiracy, coercing the two smaller Asian companies (Kyowa Hakko and Sewon) into joining. With just two or three top managers from each company attending meetings around the world every month or two, the conspirators were able to arrive at complex allocations of plant production, exports from three countries, and sales to at least four distinct continents that were, if not optimal, highly profitable. The cartel hung together in the face of gyrating and uncontrollable soybean and corn prices and a presumptive cultural chasm between ADM and its three co-conspirators. On the other hand, the Japanese companies hailed from a national business culture that rewards corporate cooperation.

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<sup>6</sup> Most plaintiffs that were not members of the lysine class-action suit have probably settled secretly. Moreover, some lysine and citric acid buyers have not sought damages. The \$166 million refers only to direct buyers; indirect buyers may recoup \$55 million in damages from state-level cases (Table 4).

Management of the citric-acid cartel was if anything even more challenging. The cartel controlled output from three U.S. plants (two owned by Bayer, one by ADM) and five European plants (three belonging to Jungbunzlauer, one to Hoffmann-LaRoche, and one to ADM). Additional complexity in coordinating output restrictions was provided by the apparent absence of Cargill's formal cooperation (though it may have passively followed) and the more aggressive and erratic sales by Chinese government-owned chemical companies (probably acting in consort). Reports suggest that cheap Chinese exports to the U.S. market may have been tamed partly through the intervention of U.S. trade officials who followed up on dumping charges made by ADM, Cargill, or Bayer. As in the lysine case, initiative in the citric-acid cartel was taken by ADM and one large partner, the U.S.-based subsidiary of Bayer; the other two European exporters with only 16 percent of the U.S. market simply fell into line at some point.

Why the 1990s have spawned a major outbreak of international price-fixing cartels is something of a puzzle. U.S. authorities have increasingly targeted foreign companies and individuals in criminal antitrust cases. In 1991, only 1 percent of all such federal cases involved foreign corporate defendants (Klein). In 1997, fully 32 percent of all corporate defendants and 32 percent of the individual defendants were foreign. More than 20 federal grand juries were investigating international price-fixing conspiracies in 1996 (Bingaman). Fines announced in two recent international cartel cases indicate that the DOJ is becoming if anything harsher in sanctioning price-fixers. In September 1997, four corporate defendants—all foreign—were assessed total fines of \$32.95 million for price fixing in the sodium gluconate market during 1993-1995. Given the small size of this market, the fines imposed represent an extraordinary 400 percent of total U.S. sales. In April 1998, Ucar International announced that it had set aside \$340 million to pay a \$110 million DOJ fine and future fines and private settlements for 1992-1997 price fixing in the global market for graphite electrodes. In nominal terms the \$110 million surpasses ADM's fines (but in net present value is somewhat less). The global lysine and citric-acid conspiracies were among the events that have demonstrated the need for U.S. antitrust agencies to step up efforts to monitor international antitrust violations and to increase international cooperation in prosecution (Connor 1998).

The multinational character of these two conspiracies underscores the wisdom of antitrust extraterritoriality. U.S. law is now clear that U.S. authorities can seek redress from off-shore conspiracies that affect the U.S. trade or domestic commerce. However, effective national prosecution is limited by the existence of significant assets in the nation's territory. One defendant in the criminal lysine prosecution, Cheil Sugar Co., was fined only \$1,250,000 because its U.S. sales office was "unable to pay more," even though its parent's global sales exceeded \$1 billion. Formal annual meetings have recently begun among the U.S., Japanese, European Union, and other antitrust agencies. Cooperation is probably limited to sharing of information and prosecutorial procedures; the era of coordinated legal prosecution seems far off. Another approach would involve a multilateral agency in some aspects of antitrust enforcement. In April 1998, the director of the EU's competition agency formally proposed enlarging the World Trade Organization's mandate to encompass antitrust matters.

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# APPENDIX A

### Chronology - Lysine and ADM\*

- Prior to 1960, produced for decades by an extraction process in the organic industrial chemicals industry at high price (about \$2.00 to \$3.50 per pound). (USITC).
- In 1960s, three Asian chemical companies (Ajinomoto, Kyowa, Toray) develop a biotechnology that converts dextrose or sucrose into lysine by bacterial fermentation. Commercial production begins in Japan circa 1976. (*Chemical Week* 2/11/76, *Nihon Keizai Shimbun* 2/9/82).
- Circa 1988, ADM discovers why Asian companies are importing so much dextrose from USA — to make lysine. (Whitacre).
- In late 1989, total U.S. consumption of lysine is estimated to be about 40,000 tonnes per year, of which half is imported. There are two domestic manufacturers. Heartland Lysine, a joint venture between Ajinomoto of Japan and Orsan, SA of France, operates a plant in Eddyville, IA that is producing close to its rated capacity of 12,000 tonnes. The second U.S. plant in Cape Girardeau, Mo is owned by BioKyowa, a subsidiary of Kyowa Hakko of Japan; this plant has a 7,500 tonne capacity, but is being expanded to produce 13,000 tonnes by 1990. Current list prices are reported to be \$1.65 per pound, with some larger transactions in the \$1.60 to \$1.64 range.

Ajinomoto and Orsan own and operate plants in Japan, the U.S., France, and Thailand that account for roughly 60 percent of world lysine production capacity. Kyowa Hakko owns plants in Japan, the U.S., and Mexico with 20 to 25 percent of world capacity. The Mexican plant is a joint venture with Sumitomo and the Mexican government called Fermex. The South Korean company Miwon owns one plant in Korea with about 15 percent of world capacity. Toray, Inc. of Japan has 2-3 percent of the world market but does not export much from Japan. [CMR 10/2/89:22].
- In 1989, ADM commits \$150 million to build the world's largest lysine plant in Decatur, IL. When finished, at 250 million pounds (133,000 metric tons) rated annual capacity, this plant will account for almost 50% of world supply in early 1990s. Eventually ADM invested \$1.5 billion in its Biotech Division 1989-1995. (Whitacre).
- October 1989. ADM hires Mark Whitacre to head the new Biotech division (B.S., M.S. Animal Science, Ohio State U.; Ph.D. Biochemistry, Cornell U.), then 32 years old. [Whitacre]. Whitacre had worked for Degussa and was familiar with its amino-acids technology and strategies. [Hollis].

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\*Gleaned from scores of articles in *Fortune*, *The Wall Street Journal*, *The New York Times*, *AgBiz* (an Internet magazine), *Chemical Marketing Reporter*, and similar sources. Other citations may be

found in the “References” section above. This section summarizes all events not specifically about citric acid or high fructose corn syrup (see below).

- In early 1990, lysine prices begin to drop to the \$1.33-1.35 per pound range in anticipation of new ADM production. ADM promises production on line by August 1990 in its 47,000 tonne plant. Imports in 1989 were 23,000 tonnes: 10,000 from Japan; 7,000 from Korea; and 2,500 from Mexico. [CMR 2/26/90:16]. ADM production is delayed six months.
- U.S. price reaches \$1.30 in 1990. One trade source reports U.S. consumption is 150 to 200 million pounds, (worth \$200 to \$250 million) but this estimate is too high (see next entry).
- Industry sources report that feed-grade dry lysine averaged \$1.40/lb. in January 1990 and dropped steadily through May to a list price of \$1.05/lb. (with discounts to \$0.95 for large buyers). In June, new July 1, 1990 list prices of \$1.20 are announced; the firming of prices can be explained by scheduled 7-10 day shutdowns of the Ajinomoto and BioKyowa plants during normal plant “turn-arounds”. The June ceiling price is \$1.40. [CMR 7/29/91:5].

North American consumption is estimated to be 44,000 tonnes for 1989 and 48,000 tonnes in 1990. In July ADM’s plant is reported to be operating at 40-45% of capacity, which is to be expanded to 60,000 tonnes by 12/91. ADM’s rivals are skeptical that ADM can reach 60,000 tonnes [CMR 7/29/91:5].

- In 1990, U.S. imports reach \$39 million at a price of about \$1.00/lb. [Stat-USA]. Later research shows that this figure refers to all organic and amino acids, of which lysine is only a portion.
- February 1991: ADM builds plant in record time, about 15 months from engineering plans to production. Production starts February 1991. “Tremendous price war” begins. Whitacre states that ADM’s original strategy was to cause one of their “weaker competitors” to exit with the low prices. [Whitacre].
- In 1991, a federal judge in Des Moines dismisses a 10-year antitrust case brought by the DOJ against ADM and others that alleged price-fixing in the corn fructose industry.
- Sometime in 1991, Marc Whitacre began embezzling funds from ADM. The first instance involved a \$100,000 kickback from a payment of \$300,000 to an independent contractor.
- December 1991: ADM is near full capacity of 60,000 tonnes and aggressively prices lysine at \$1.05 to \$1.10/lb. with a few large transactions reported as low as \$0.95/lb. ADM is exporting well over half of U.S. output to Europe (where it is marketed by BASF), Asia, and Latin America. September prices were about \$1.20-\$1.30/lb. [CMR 12/16/91:20].
- December 1991: Total U.S. consumption in 1991 is about 48,000 tonnes. Total U.S. lysine capacity is about 93,000 tonnes (of which ADM 60K, Heartland 20K, and BioKyowa 13K). Outside the U.S., Miwon has a 40,000 tonne plant in Korea; and in 1991 Cheil Sugar of Korea opened a new 10,000 tonne plant in Indonesia. [CMR 12/16/91:20].

By 1992-1993, ADM is reputed to be the lowest-cost producer of lysine; industry executives believe that ADM's break-even price is below \$0.85/lb. [WSJ 7/28/95:A1].

- ADM's price drips to as low as \$0.60 in early 1992; ADM's market share soars, but is "...losing...a few million dollars a month." [Whitacre].
- In early 1992, both the lysine and citric acid divisions are reorganized, placed under V.P. Terrance Wilson, head of corn products. Wilson urges Whitacre to meet with lysine producers. [Whitacre]
- Spring 1992: Mark Whitacre and at least three ADM employees who reported to Whitacre opened up bank accounts in Switzerland and the Cayman Islands. Prior to November 1992, Whitacre and associates implemented a system of false invoices for services performed for ADM and sent to phony corporations controlled by Whitacre. For example, on November 23, 1993, a bogus invoice for \$220,000 was sent to ADM for services rendered by Nordkron Chemie. Payment was approved by Whitacre and sent by ADM to an account controlled by Whitacre. By the end of 1992, Whitacre had defrauded ADM of \$2.5 million. [Eichenwald].
- April 1992: Whitacre and Wilson meet with Ajinomoto and Kyowa Hakko in Japan. ADM has 1/3 of world market and all are losing money at \$0.60/lb. ADM proposes forming an "amino acids trade association." Ajinomoto and Kyowa react favorably. [Whitacre].
- June 23, 1992: Wilson, Whitacre, and Japanese managers have the first meeting of the "lysine association" in the Nikko Hotel in Mexico City. First of many meetings around the world. They discuss prices and volumes. Wilson repeats an ADM mantra:

**"The competitor is our friend, and the customer is our enemy".**

- August 1992: Japanese producers apparently are skeptical of ADM's large volume claims, so Ajinomoto and Kyowa managers and engineers tour ADM's Decatur plant to prove size of ADM's capacity. Whitacre claims 250 million pounds (110,000 tonnes) capacity is operational. [Whitacre].
- Summer 1992: Mark Whitacre told Dwayne Andreas that there were severe production problems in the lysine plant during the last few months. He gave the following explanation: Some employee of ADM was sabotaging the production process by contaminating the dextrose vats and trying to extort money from ADM. He said that a "Mr. Fujiwara" of Ajinomoto had called him to inform him that Ajinomoto had placed a mole inside ADM's lysine plant, that Fujiwara wanted millions of dollars wired to his Swiss bank account, to stop the mole and to pay for Ajinomoto's proprietary microbes to fix the problem. Whitacre's report of this meeting is contained in written FBI investigative reports obtained by the *New York Times*.

Later, it was discovered that Whitacre's tale of the mole, the call, and the extortion was a complete fabrication. However, D. Andreas believed the story and acted upon it. In August, 1992, Mr. Andreas contacted an associate, who got in touch with CIA representatives in

London. The CIA decided that the alleged extortion was an FBI matter, which was turned over to the local Decatur, IL FBI agent, Brian Shepard, in November. Notes show that Whitacre repeated the tale to Shepard. [Eichenwald].

- October 1992: Whitacre reports fermentation problems. Lysine production costs were “running about double our market price” because of production problems. The market price for all suppliers was about \$0.70 per pound at the time. Dwayne Andreas asks an FBI friend to help with suspected sabotage in fermentation operations. Michael Andreas was “pissed off” at his father’s action and tells Whitacre not to cooperate fully with FBI (i.e., not to reveal “lysine association”). [Whitacre]. Whether M. Andreas actually ordered Whitacre to obstruct the FBI investigation is in retrospect doubtful.
- November 1992: Whitacre talks privately with Decatur FBI agent Shepard and agrees to become a “mole”. Telephones are tapped and Whitacre is wired. Whitacre is promoted to Corporate VP and eventually earns a salary of \$320,000 per year. Whitacre’s undercover role lasts officially from January 1993 to July 1995. His FBI contract promises no prosecution for price-fixing activities from November 1992 onward. [Whitacre].
- November 9, 1992: Mark Whitacre makes his first tape for the FBI to prove that ADM was indeed conspiring to fix lysine prices with rival manufacturers. He used government-supplied equipment to record telephone conversations with Asian co-conspirators.

However, as his involvement increased, Whitacre became agitated about his role. At 9:10 on the night of November 16, 1992, he called FBI agent Shepard at his home, complained that the FBI was “destroying him,” that is was trying to hurt M. Andreas and “other innocent people,” and that he wanted to end his role as a mole. On November 18, he again called Shepard saying that his ADM superiors were “turning against him” and that he was depressed and suicidal. He complained that he “could not figure a way to win in this situation.” [Eichenwald].

- November 1992-June 1995: FBI gets hundreds of audio and video tapes of many meetings involving Wilson, Mick Andreas, Whitacre, James Randall, Barrie Cox, and Japanese and European managers agreeing to worldwide volume and prices of lysine, citric acid, sweeteners and other corn products. The conspiracy starts shortly after November 1992. [Whitacre]. James Randall is never indicted.
- December 17, 1992: Whitacre is concerned that he might be prosecuted. He offers to strike a deal with the FBI. Before the agreement was concluded, Shepard insisted on hearing more details about the alleged Japanese sabotage. On December 22, Whitacre failed an FBI lie-detector test about the truth of his story. He confessed the story was false, but again failed a lie-detector test when he made up a second cover-up story. [Eichenwald].
- 1992-1993: Sometime in late 1992 or 1993, the FBI became aware that Whitacre was receiving cash kickbacks from vendors to ADM’s Bioproducts Division. He told prosecutors later that the payments were authorized bonuses. It is not clear when the FBI became aware of Whitacre’s embezzlement of ADM. [Eichenwald].

- December 1992: From 60,000 tonnes capacity in late 1991, ADM's Decatur plant was expanded to a rated capacity of 113,000 tonnes by 12/92. [CMR 5/10/93].
- January 9, 1993: Whitacre signs an agreement to become an undercover FBI informant in return for certain immunities. [Eichenwald].
- January 1993: Shortly after agreeing to become an FBI mole, Whitacre shows his newly hired gardener, Rusty Williams, his FBI-supplied briefcase with its hidden micro-cassette recorder. He refers to himself as "agent 014" because he considers himself twice as smart as James Bond (agent 007). [Eichenwald].
- February 21, 1993: Whitacre authorizes a payment of \$3.75 million by ADM to a Swiss bank account controlled by Mr. Whitacre. [Eichenwald].
- March 17, 1993: Whitacre has a taped meeting with his bosses at ADM headquarters. T. Wilson and J. Randall attend. Whitacre tells them that Ajinomoto is accusing ADM of backing out of their agreement to limit production even if lysine prices fall. A message from Ajinomoto expressed anger that ADM had not held to its agreement to limit lysine production to 9 million pounds (4,080 tonnes) per month if lysine prices remained low. (Prices were about \$1.00/lb. in the U.S. at the time). Whitacre replied that no definite production limit had been promised, only that he would "talk with his production people" if prices failed to rise. Mr. Randall asked for Ajinomoto's reply. Whitacre said they threatened aggressive pricing action. Wilson said that Ajinomoto's complaints were unjustified. (See 10/25/93 entry below). [Eichenwald]. Other evidence indicates that ADM in mid 1993, was operating at about 10 mil. lb./month (56,000 tonnes/year). See July 1993 entry below.
- In May 1993, lysine prices fell to \$0.78-\$0.80/lb. With ADM the most aggressive in its pricing. Industry sources speculate that ADM may be trying to force Miwon (Sewon) to withdraw from the U.S. market. [CMR 5/10/93].
- July 1993: Experts report that in the U.S. in July 1993 four companies sell lysine: ADM, Ajinomoto, and Kyowa each have 30 percent of the market (18,000 tonnes each) while Miwon supplies about 10 percent (7,000 tonnes). U.S. exports jumped from 6,200 tonnes in 1991 to 38,000 tonnes in 1992, most going to Canada and Europe. With ADM doing nearly all the lysine exporting in 1992-1993, it appears that its production at Decatur had reached 53,000 to 56,000 tonnes (47% to 50% capacity utilization), of which 64% to 67% was exported. U.S. imports in 1992 were 11,000 tonnes, of which 65% originated in So. Korea and were made by Miwon, which sells through its agent, Southerland Co. USA. [CMR 5/10/93]. Thus, total U.S. lysine supply in 1993 is approximately 65,000 tonnes (feed-grade 61,000).
- By 1992-1993, ADM is reputed to be the lowest-cost producer of lysine; industry executives believe that ADM's break-even price is below \$0.85/lb. [WSJ 7/28/95:A1].
- October 25, 1993: M. Andreas and M. Whitacre meet with 2 Ajinomoto executive to resolve ADM's dispute with Ajinomoto about ADM's failure (in Ajinomoto's opinion) to adhere to

an agreed-upon 9-million-pound production limit. This meeting at the Marriott Hotel in Irvine, California, was recorded by the FBI by cameras hidden in the room's table lamps.

Andreas proposed that 1993 lysine sales or production levels be used to decide on company production quotas for 1994 and future years. He further suggested limiting the industry growth rate to 6 percent per year (or 14,000 tonnes increase in 1994). The four participants then began to haggle over the allocation among companies. M. Andreas says: "What would we be willing to accept out of that 14,000 tons [sic] and what you would be willing to accept, isn't that the question?" The meeting ended in agreement over total industry and company production targets. Ajinomoto agreed to convey the agreement to the other members of the lysine cartel and to enforce compliance with the allocation. [Eichenwald].

- World sales targets for 1994 were agreed to be: Ajinomoto 84,000 tonnes; ADM 67,000; Kyowa 46,000; Sewon 34,000; and Cheil 17,000. (WSJ 3/27/96).
- October-December 1993: In the months following the Irvine, California meeting, the lysine cartel works out details. ADM informs the others about strategies it uses to fix prices in the citric acid market, suggesting that the lysine cartel do the same.

A key meeting was held on December 18, 1993 in the Palace Hotel in Tokyo. A tape recording shows that T. Wilson, M. Andreas, K. Yamada (all criminal defendants by 1997), and others "...adopted with minor changes the volume allocation plan for 1994 worldwide sales [of lysine] developed by defendants Andreas and K. Yamada... in an earlier recorded meeting on October 25, 1993, in Irvine, California." This quotation is from a 1998 ruling handed down by the federal judge in Urbana, Illinois that allows Whitacre's tapes to be entered as evidence. The ruling also notes that Wilson explained how ADM's arrangements in its citric-acid conspiracy were valuable as a model for lysine [*Chicago Tribune* 1/14/98: Business p.1].

The "citric acid association" receives monthly reports from each member. Each year, a Swiss accounting firm audited the numbers at ADM's London and Decatur offices. [Eichenwald].

- December 8, 1993: Based on an audio tape made by Mark Whitacre, the details of one lysine price-fixing meeting at the Palace Hotel in Tokyo were recorded in full detail. The meeting lasted four hours and involved executives from four lysine manufacturers (ADM, Ajinomoto, Kyowa Hakko, and Sewon), who calmly discussed production and prices in four regions of the world (probably No. America, Asia, Europe, and Latin America). Terrance Wilson is recorded as suggesting that each of the companies telephone its monthly sales figures to Ajinomoto, which would then tabulate the figures and report back to each company. Mr. Wilson is quoted as saying: "We have to watch our telephones. We have to watch that. It can be done, but we must be very careful." He urged establishment of an association that would "conceal that...competitors were secretly meeting to discuss price and sales volumes."

The *New York Times* reporter who listened to this and other tapes wrote that: "One of the most striking aspects of the whole sorry story was the matter-of-fact nature of its day-to-day

planning. Here was the stuff of high drama...yet the executive haggled over their illegal production quotes as if they were negotiating a run-of-the-mill joint venture.” [Eichenwald].

- December 1993: World lysine production capacity is estimated to be approximately 200,000 tonnes in 1993, of which the United States consumes 60,000 tonnes per year. Growth in volume has been sustained at 10% p.a. for many years. [CMR 5/10/93].
- March 10, 1994: The “lysine association” holds a meeting in Hawaii to exchange sales data. One executive distributed an agenda for the association’s meeting, commenting that the organization was “an easy cover-up” for price fixing. At this meeting each company shared its February sales figures. They further debated whether to have their monthly or annual reports to each other formally audited; some expressed concern that audits of only one product might prove suspicious.

Terrance Wilson reiterated that the representatives of ADM’s competitors were his friends. He said “I want to be closer to you than I am to any customer, because you can make it [sic] where I can make money or I can’t make money... Let’s put the prices on the board... Let’s all agree what we’re going to do and walk out of here and do it.” [Eichenwald].

- As late as March 1995, Whitacre is still highly regarded by ADM. In that month, D. Andreas circulated a laudatory report by the investment firm Dain Bosworth which mentions Whitacre as the likely next president of ADM. [Hollis].
- Federal grand jury in Chicago established by DOJ in early June 1995, before raids began. [WSJ 6/29/95:C17].
- The government’s lysine case was initially headed by James M. Griffin, chief of the DOJ antitrust division’s regional office in Chicago. By March 1996, Deputy Attorney General Jamie Gorelick (the no. 2 Justice official) has assumed supervision of the three ADM-related grand juries and the criminal investigation of Whitacre [WSJ 3/27/96]. Assistant Attorney General for antitrust Anne K. Bingaman was also involved in supervising the prosecution. In the fall of 1995, Gorelick brought in Scott Lassar, first assistant U.S. District Attorney in Chicago, to co-direct the prosecution with Griffin when Whitacre’s embezzlement and tax fraud came to light. Lassar, a highly regarded and experienced prosecutor, would probably become the lead trial lawyer against ADM.

Joel I. Klein was transferred from the White House in the late spring of 1996 to work together with Gorelick on the ADM cases. Gorelick left a few months later, and when Assistant Attorney General Bingaman resigned from her post in October 1996, Klein was appointed acting Assistant Attorney General for antitrust. He was confirmed by the Senate in mid 1997. [Hollis]. Like Bingaman, Klein would become identified with a newly assertive Justice Department in antitrust matters.

- The night of June 27, 1995: FBI sends 70 agents to houses of ADM officers, raids Decatur corporate headquarters of ADM, and issue subpoenas for records on corn products from 10 multinational manufacturers: ADM, Cargill, Ajinomoto, Kyowa Hakko, Sewon, Samsung,

Tate and Lyle's A.E. Staley, CPC International, Bayer, and Hoffman-LaRoche. Events widely reported in world press. [WSJ 6/29/95: C17].

Virtually every corporate officer of ADM from D. Andreas on down was interviewed by the FBI that night. However, the search warrant restricted the headquarters' search to the offices of only M. Andreas, Wilson, Cox, and Whitacre. D. Andreas immediately hires the Washington law firm of Akin, Gump which is governed by Robert Strauss, friend of D. Andreas and ADM director. [Hollis].

- Subpoenaed and seized ADM documents show 1992-1995 monthly "sales targets" for lysine and actual monthly sales for three largest world producers. [WSJ 7/28/95: A1].
- June 28, 1995: Whitacre confides his role as FBI mole to John Dowd (attorney of Akin Gump team hired by ADM to interview employees). Whitacre claims that Dowd promised attorney-client confidentiality. [Whitacre].
- June 29, 1995: Whitacre ordered to leave ADM headquarters, is formally fired August 7, 1995, and is charged with fraud and embezzlement of at least \$2.5 million. (Amount later raised to \$10 million). Whitacre hires a personal lawyer to defend himself; he attempts suicide in late August. [Whitacre].
- July 1995: Kyowa Hakko states that it was a "minor player" in setting lysine prices and that bigger Ajinomoto coerced Kyowa into colluding. Cargill denies involvement in price fixing in citric acid or corn sweeteners. [WSJ 7/28/95: A1].
- July 1995: Howard Buffett, son of billionaire investor Warren Buffett, resigns his post with ADM's Board of Directors and as a special assistant to D. Andreas, in reaction to the ADM scandal. [Ag Biz 9/7/97].
- July 19, 1995: At its regular quarterly meeting, the ADM Board of Directors appointed 9 of its 17 members to a special subcommittee in charge of advising the management on the criminal and civil suits arising from the alleged price fixing. Co-chairs were M. Brian Mulroney (Canadian Attorney) and John H. Daniels (ret. ADM chairman). Other members are Shreve Archer (private investor, heir of founder), Ralph Bruce (retired ADM exec.), Ray Goldberg, R. Ross Johnson (Chair of RJM Group), Mrs. Nelson "Happy Rockefeller, John Vanier (farmer). O. Glenn Webb (Chmn. Growmark). Ages are 56, 73, 72, 78, ?, ?, 69, 67 and 59. Archer is father of ADM Treasurer C.P. Archer; Vanier is brother-in-law of H.D. Hale, Chair of ADM Milling Co.; Webb is CEO of co. With ADM JV; Mulroney handles ADM's Canadian legal business; Goldberg and Goldberg's father were close friends of D. Andreas, as is Rockefeller. [Thus, only Bruce and Johnson are believed to be outside director, in the strict sense].

It is normal practice for cos. To form special committees for sensitive matters, excluding employee board members, and including only "outside" members [WSJ 7/20/95:A4].

- July-October 1995: Subpoenaed documents from a dozen firms are received by DOJ investigators. ADM stock price falls 24% or by \$2.4 billion in market value.
- September 1995: More than 20 civil suits filed against ADM by buyers of lysine, citric acid, or HFCS. Several seek class-action status. Some want consolidation across products or change in venue. [WSJ 9/26/95:B8].
- October 27, 1995: A long news article in the *Wall Street Journal* profiles the extraordinary management style of ADM and its CEO.

Dwayne O. Andreas, born in 1918, was made a director of ADM in 1965 and groomed for the position of CEO from that time. Although he owns personally less than 1% of ADM's stock, "...Andreas has gained near-total control with the help of family members, loyal executives and directors whose combined stake is nearly 15%... He collaborates with his biggest competitors, spends prodigiously to influence the media and public opinion, and spreads large sums among politicians of all stripes." (A1). "Over the years, he has moved aggressively to neutralize any obstacles to his dominance..." At the 10/95 annual meeting, "...he summarily cut off a critic by turning off his microphone [and said] 'I'm chairman. I'll make the rules as I go along.'" Article called this "rough tactics."

Andreas is given much credit for ADM's superb performance: 1987-97 stock appreciation of 17% p.a. vs. 15% for the Wilshire 5000. Wall St. analysts see ADM as impervious to take-over.

The sugar program's major beneficiary is ADM; fructose generates about 40% of ADM's earnings. Also, ADM dominates ethanol production, which gets a 54¢/gal. federal subsidy.

Andreas was called the "Forest Gump of the political-influence money game" by Fred Wertheimer. Andreas & ADM's PAC has given generously to both parties and all presidents. He gives to the Democrats and to GOPAC. "He buys futures in Washington" says Charles Vanik. He courted both Gorbachev and Yeltsin, Robert Dole *and* Elizabeth Dole (\$1 million to Red Cross). Lobbying is through National Corn Growers Association, Corn Refiners Association, Renewable Fuels Association, etc.

Andreas often says "Keep your friends close and your enemies closer." So in 1992, ADM built a 3.5 mile pipeline from its Decatur plant to A.E. Staley's plant. Reduces risk and helped Staley break a (threatened?) strike. ADM owns 8% of Tate & Lyle (Staley's parent) and has a Mex. JV with Staley in HFCS. Andreas denies having an alliance with Tate. Does have many JVs with grain coops: Growmark, Gold Kist own 2.0, 2.7 mil. shrs. of ADM and are on the Board.

ADM Board is "exceptionally supportive" of Andreas. 4 members are Andreas, 6 are current or former ADM officers. Even four "outsiders" are closely connected to Andreas: Mulroney, Strauss, Goldberg, Webb. Total 17.

All major decisions made at the top by 3 or 4 officers, D. & M. Andreas, James Randall, and T. Wilson. Managers have no budgets, little paperwork, informal meetings. Secrecy within and without is extreme, e.g., no quarterly earnings reported.

Andreas delights in his image as the most important agribusiness leader & his role in back-channel diplomacy for U.S. presidents.

Legal problems have not stuck: gave \$100k in cash to R. Nixon; wrote \$25k check given to Watergate burglar B.L. Barker; prosecuted for illegal \$100k *corporate* gift to Humphrey; fixed \$8k by FEC in 1993. ADM sued by rivals for theft of tech. (Ajinomoto, Ralston).

ADM hedges its bets with generous support of key news programs on ABC (This Week With David Brinkley), NBC (“Meet the Press”), CBS (“Face the Nation”), and PBS (Jim Lehrer Newshour). Spent at least \$16/mil. 1/94-4/95, incl. 27% of the PBS show’s budget. ADM also owns 10% of American Publishing newspaper chain which owns the Chicago Sun Times.

More subtle contacts: Andreas is chairman of the SewView condo in Bal Harbour, FL., where Bob Dole and Brinkley both own condos. [WSJ 10/27/95:A1].

- Another form of influence cultivated by Andreas and ADM is through its membership and support of agricultural trade associations and other agricultural support groups. Most ADM lobbying for subsidies, trade barriers, or other government favors is done through the Corn Refiners Association, the Renewable Fuels Association (for ethanol), and the National Corn Growers Association (NCGA). The large membership rolls of groups like the NCGA impress members of Congress. ADM has given millions to land-grant universities “...virtually buying deans, professors, and chairs.” (Andreas was the founding patron and president of the International Agribusiness Management Association).

D. Andreas has a long history of making large political contributions, and has got into trouble at times. Investigators during the Watergate scandal found a \$25,000 check written by Andreas in one of the burglar’s bank accounts. After President Nixon resigned, a bundle of \$100,000 in cash given by Andreas was found in the White House safe and later returned. “During Senator Sam Ervin’s impeachment hearings, Andreas reportedly dodged subpoenas by living in Europe.” Andreas and his wife were fined by the Federal Election Commission for excess contributions. “Andreas, his family and ADM are, by far, the largest political contributors in the country.” [Hollis].

- 1995: Department of Justice sources gave the annual world lysine “market shares” of the cartel members as: Ajinomoto 34.0%, ADM 26.4%, Kyowa Hakko 18.1%, Sewon 14.2%, and Cheil 6.3%. Other companies not in the cartel accounted for 1.0% of the world market. The Herfindahl Index of concentration was 2,422 and CR4 = 92.7%.

Whether the shares are based on production volumes or sales revenues is not stated, but it is probably the former. These shares correspond very closely to the shares reported by Eichenwald (1997) and shown in Table 2 of this report. (WSJ 7/9/98: B10).

- November 1995: ADM faces 11 private antitrust suits by lysine users. More than 30 shareholders sue for “material mismanagement.” Total suits rise to more than 70. M. Andreas and Wilson told they will be indicted by the DOJ. [WSJ 11/17/95].
- January 1996: The lysine class-action suit is assigned to Judge Milton Shadur of Chicago’s U.S. District Court. He auction’s the right to represent plaintiffs to Kohn, Swift & Graf of Philadelphia for a fixed fee of \$3.5 million. [WSJ 2/15/96:B10].
- February 1996: Total suits against ADM reaches 85+, including 14 by lysine buyers or groups of buyers. Some of these are later consolidated. ADM creates a “reserve fund” to pay suitors, but size is unknown, and states that it is willing to consider settling out of court (SEC filing). ADM’s legal costs for October-December 1995 reach \$6 million. [WSJ 2/15/95:B10].
- March 1996: Michael Andreas (Exec. VP), James Randall (President), and two more ADM officers resign from the 17-member ADM Board. Board will consist of majority “outsiders” for first time. Dwayne Andreas (77 years old) remains Chairman, CEO, and Board member; other Andreas’ close friends include brother Lowell, M. “Happy” Rockerfeller, Ray A. Goldberg, Ross Johnson, and Brian Mulroney (former Canadian premier and lawyer representing ADM in Canada). [WSJ 3/22/96:A2].
- Spring 1996: DOJ’s case falters because not a single ADM officer will agree to cooperate; Wilson refuses to plea-bargain; in a very unusual move, DOJ announces that D. Andreas is not a target. Whitacre’s testimony is weakened by ADM’s embezzlement suit and by his own admission that he did not pay taxes on at least \$10 million in income. Some large lysine buyers (e.g., Tyson Foods) refuse to cooperate (Don Tyson is another close friend of D. Andreas). Powerful Washington law firm of Williams and Connolly hired to defend ADM from DOJ lysine prosecution. [WSJ 3/27/96:A1].
- March 1996: ADM and its Board now have 70 civil suits against them. In an unusual move, all three grand jury cases against ADM *et al.* come under the supervision of Jamie Gorelick, No. 2 DOJ antitrust official; shows government’s high priority and extreme caution. [WSJ 3/27/96:A1].
- April 1996: For the two years 1994-1995, ADM, Ajinomoto, and Kyowa agree to pay “treble damages” of \$45 million (\$25, \$10, and \$10 million, respectively) to about 150 buyers who agree to join a class-action group. Settlement was negotiated by Kohn, Swift and Graf of Philadelphia which won a novel January legal-services auction. Kohn’s fees were the lowest offered (capped at \$3.5 million for any settlement  $\geq$  \$25 million). Such a fee arrangement offers perverse incentive to settle with haste. Kohn never hired any economic experts and completed the deal a shockingly swift time (3 months). (Normally, civil suits are negotiated and tried and settled *after* criminal cases settled, but ADM *et al.* have not yet been indicted!) Moreover, no ADM officials have yet submitted to pre-trial “discovery” (fact-finding). Legal experts consider a settlement offer at this early stage of discovery very surprising. Judge Milton Shadur must approve this class-action deal. Lysine buyers must decide to join, opt out and pursue a separate suit later, or to bring no actions whatsoever.

An executive of one large buyer of lysine (probably Tyson) said they will not sue because even at \$1.20/lb., it was “still a good buy” compared to lysine obtained in soybean meal; i.e., the buyer was still receiving a *portion* of its consumer’s surplus.

It is reported that six outside directors form a special committee to oversee the antitrust legal strategy; this committee is urging ADM to plea-bargain with the DOJ. [WSJ 4/12/96:A1].

- Wall Street reacts positively to the news of the proposed lysine class-action settlement. ADM’s stock rose 2% in one day. If accepted, the class-action settlement would represent an annual overcharge of 2 to 3% of U.S. sales. [WSJ 4/15/96:A1].
- April 19, 1996: Three replacements on the ADM Board are announced, but two are believed to be “close” to D. Andreas: Mollie Hale Carter, daughter of retiring ADM VP and niece of a remaining Board member; John Block, Illinois hog farmer, former Secretary of Agriculture, and active member of many associations in which D. Andreas is active. [WSJ 4/19/96:A4].
- May 1996: ADM starts to negotiate actively to settle class-action suits (lysine, citric acid, and shareholders). More than 90 suits have been filed. [WSJ 5/16/96:B8].
- June 1996: ADM fights subpoenas by DOJ concerning Whitacre’s untaxed income through phony invoices. Whitacre claims that it was company policy to reward top officers in this way, that it avoided jealousy by junior officers with lower compensation. Whitacre has admitted to receiving \$3.75 million in ADM funds through a phony Ukrainian company in 2/95 and \$2.5 million through a bogus contract with a Swedish agricultural company in 10/93 ostensibly to pay for fermentation technologies. [WSJ 6/19-1996:A3]
- July 9, 1996: 25 ADM lysine customers opt out of the proposed class-action settlement and 7 others object to the size of the proposed settlement, partly because of analysis by John M. Connor that concluded that a fair settlement would be 11 to 12 times larger than the proposed \$45 million. ADM’s lawyers and economists criticize the estimate as too high. The DOJ has not yet filed criminal indictments. [WSJ 7/10/96:B4]. See Appendix B.
- July 15, 1996: Plaintiffs that opted out argue before Judge Shadur that the proposed settlement of \$45 million unreasonable and hasty. ADM *et al.* promise to pay that amount. ADM is ordered to reveal lysine cost of production to the lawyers representing the opt-out firms. [WSJ 7/16/96:A2].
- July 21, 1996: Judge Shadur approves the class-action settlement as “reasonable and fair”, but 33 companies decide to “opt out”, which frees them to bring their own private antitrust suits. Most of the “opt-out” firms probably settled privately with ADM *et al.* in late 1996 or early 1997, but the terms of these settlements are not revealed. Some of the “opt-out” firms take no action. [WSJ 7/22/96:B5].
- August 27, 1996: In a shocking setback for ADM, the three largest other co-conspirators file guilty pleas in U.S. District Court. Ajinomoto, Kyowa, and Sewon admit price fixing and agree to testify against ADM. Three executives admit guilt, pay personal fines of \$75,000

each, and also agree to cooperate with the DOJ. The DOJ now has three credible witnesses to corroborate Whitacre's charges. [WSJ 8/28/96:A3].

- September 1996: Two inside ADM Board members resign. The two former ADM officers cite their ages as reasons (74 and 79 years) for quitting. Since the scandal erupted, 8 board members have resigned. However, 10 of the current 17 board members are ADM officers, retired officers, or close relatives of officers. D. Andreas's salary remains fixed at \$3.6 million; no bonus or merit raise is awarded. SEC filing shows that "outside" directors were paid "unusually high fees" of more than \$100,000 per year. One new "outside" director is Glenn Webb, Chairman of Growmark, Inc., a major supplier of ADM. ADM's fiscal 1996 net income was \$696 million, a 12.6% decline from fiscal 1995. On June 30<sup>th</sup>, ADM had \$2.5 billion in cash and liquid securities. [WSJ 9/17/96].
- September 1996: In ADM's annual report for the fiscal year ending June 30, 1996, the company reports that selling general and administrative (S,G, & A) expenses increased at least \$37 million because of the lysine and citric-acid antitrust litigation. As no fines or settlements were paid up to June 1996, these represent lawyers' fees, probably in the \$40 to \$50 million range for 1997. (From other SEC filings, we know that legal costs were \$6 million during 10/95-12/95 and \$25 million during 7/96-9/96). [ADM].
- September 22, 1996: ADM files \$30 million suit against Mark Whitacre, including \$20 million in punitive damages, for embezzlement of \$9.5 million from ADM. [WSJ 9/23/96].
- September 29, 1996: ADM surprisingly offers to pay \$30 million to settle a shareholders' suit arising from its price-fixing activities. ADM's lysine sales are estimated to be \$300 million worldwide. [WSJ 9/30/97:A3].
- October 15, 1996: ADM pleads guilty of criminal price fixing and will pay the DOJ \$70 million for the lysine conspiracy. It also agrees to help the DOJ prosecute its own corporate officers, M. Andreas and T. Wilson. Barrie Cox and other ADM officers are given immunity. ADM stock climbs to a record high \$21.75, up 5.5% in one day. *The Wall Street Journal* claims that the "Andreas Era" at ADM could be over. However, D. Andreas has a brother on ADM's Board and one son and two nephews who are current ADM officers.

Although the fines paid by ADM for lysine are almost five times larger than previous fines, ADM gets two valuable concessions from the DOJ. First, the DOJ will not prosecute ADM for price-fixing in corn sweeteners, potentially the largest case in terms of fines and overcharges. Second, the DOJ agrees to end a federal grand jury investigation in Springfield, Illinois of ADM's theft of technology and trade secrets. [WSJ 10/14/96:A3 and 10/16/96:A4].

Hollis suggests that the dim prospects for Bob Dole's winning the presidency may have played a role in the timing of ADM's capitulation. He also notes that ADM "upstaged the DOJ press conference" set for 10/16/98 by leaking news of the plea and by emphasizing the huge fine rather than DOJ concessions.

- October 15, 1996: The DOJ states that ADM is the first of many price-fixers to pay new higher fines based on the “two-times” rule (up to twice the profits made from the conspiracy or twice the harm to victims, or less if the perpetrator cooperates). The \$70 million lysine fine is termed a “turning point” in determining fines for criminal price fixing. Because ADM controlled ½ of the U.S. market, the implied overcharge for 1994-1995 by all three conspirators is *at least* \$70 million and treble damages \$210 million. This latter amount is 4.7 times larger than the class-action settlement approved by Judge Shadur in July but is about 50% of the amount calculated by Connor for the same period. [WSJ 10/16/96:A4].
- Where does the \$70 million fine (plus \$30 million more for citric acid) actually end up?

Since 1994, the U.S. Treasury has placed all criminal fines assessed for price-fixing and other illegal acts into a special “Crime Victims Fund.” Monies in the Fund are dispersed to the states annually on the basis of population to aid victims of violent crimes, such as those injured or killed in the Oklahoma City federal-office bombing. In 1996, the fund dispersed \$529 million. The largest source of funds in 1996 was a fine of \$340 million paid by Daiwa Bank for fraudulently covering up huge bond-trading losses; the \$100 million paid by ADM was the second largest contribution to the Fund. Other ADM co-conspirators paid an additional \$95 million to this fund in 1996 and 1997, bringing the total to \$195 million. [Bloomberg News Service Wire].

- October 15, 1996: ADM reveals that, during its fiscal quarter ending September 30<sup>th</sup>, it incurred price-fixing costs of \$174.4 million, compared to quarterly operating earnings of \$180 million. Of the \$174.4 million, \$100 million is to settle the DOJ criminal cases, \$25 million for the lysine class-action civil suit, \$25.4 million for the proposed citric-acid class-action suit, and \$25 million for legal costs for three months (July-September 1996). [WSJ 10/16/96]. The fines and settlement payments are not deductible for federal income-tax purposes.
- October 15, 1996: Testimony in an unnamed civil suit said that ADM raised prices of lysine by 75% during the conspiracy. Steven Ross of the DOJ is reported to have said that the fine imposed on ADM is hard to make high enough to hurt the company. [*St. Louis Post Dispatch* (10/15/96):A1].
- October 16, 1996: ADM sues Mark Whitacre in a Swiss court to force the return of \$6.25 million deposited there. In addition, ADM is seeking \$30 million from Whitacre in state court in Decatur, IL.
- October 17, 1996: ADM holds its annual shareholders’ meeting. M. Andreas is placed on “administrative leave” and T. Wilson, age 58, announces his retirement, at a contentious annual meeting. At last year’s meeting, Chairman D. Andreas imperiously dismissed the importance of the gathering legal storm and stifled discussion on the price-fixing charges. This year, he briefly apologizes to shareholders. The Board of Directors rejected Andreas’ offer to resign. A resolution offered by two major institutional owners to raise ADM’s standard of “independence” for outside directors receives an unusually high 42% of the vote. The Board awarded M. Andreas with a 15% raise just before placing him on leave; D. Andreas also gets

a smaller pay raise. There is no known successor for the 78-year-old chairman. [WSJ 10/18/96].

- October 20, 1996: Ajinomoto tries to plea “no contest” in criminal price fixing in lysine. (This type of plea cannot be used in evidence in related civil trials). U.S. District Court Judge Ruben Castillo angrily rejected the plea when he learned that Ajinomoto destroyed evidence after the June 1995 FBI raid. Kyowa was allowed to plead guilty and pay \$10 million. Kyowa and Sewon stated that they were forced to join the conspiracy because of “threats and intimidation by Ajinomoto and ADM”. Nine Ajinomoto executives were granted immunity because they will testify for the DOJ, but the lead conspirator Kazutoshi Yamada was not. Sewon’s U.S. unit says it is too poor to pay \$10 million. [WSJ 10/21/96:A4].
- On October 21, 1996, Ajinomoto sued ADM for patent infringement in U.S. District Court in Delaware. Ajinomoto claims that 14 Russian inventors working for a firm called Genetika sold patent rights to production methods covering 20 amino acids, including lysine, threonine, etc. in October 1991.
- November 1996: the ADM Board names a three-person “Office of the Chief Executive” to assist chairman D. Andreas in managing the company he has led since 1970. The three include James Randall (age 72), long-time President and COO of ADM; Charles Bayless, VP for soybean processing; and a nephew of D. Andreas. Board member Gaylord Coan, CEO of Gold Kist, is named Vice chairman, a title also held by M. Andreas. Gold Kist has a joint venture with ADM. These changes are the first step in assuring Wall Street that ADM has a succession plan for D.Andreas. [WSJ 11/1/96:A3].
- November 1996: Ajinomoto pleads guilty to one count of criminal price fixing of lysine.
- Fall 1996: Buyers of lysine that opted out of the class action suit quietly negotiate private agreements with ADM *et al.* Settlement amounts may never be known because ADM does not have to reveal costs of settlement that it decides will not have a “material effect” on its earnings.
- December 3, 1996: A federal grand jury in Chicago hands down four criminal indictments for a price-fixing conspiracy in the world lysine market. Under the Sherman Act the maximum personal penalties are 3 years in prison and \$350,000. The four are: Michael Andreas, Terrance Wilson, and Mark Whitacre, all former employees of ADM; and Kazutoshi Yamada, managing director of Ajinomoto, whose U.S. subsidiary Heartland Lysine, Inc. is headquartered in Chicago. In late December 1996, an arrest warrant was issued by a U.S. federal magistrate for Mr. Yamada who has refused to come to the United States to face trial. The Japanese Ministry of Justice is considering extraditing Yamada to face trial in the United States. A small South Korean company, Cheil Jedang, Ltd. also pleaded guilty and paid a \$1.25 million fine. Wall Street analysts worry that tapes of price-fixing meetings could contain items that would further damage ADM’s relations with customers.

Mark Whitacre, an FBI mole for 2½ years, was apparently charged because he refused to admit tax fraud and wire fraud against ADM; some of the fraud took place while Whitacre

was a mole. The DOJ offered Whitacre immunity against pricing fixing charges from the time he began cooperating in November 1992, but he is being indicted for price-fixing activities that took place *prior* to November 1992. Whitacre claims that the FBI induced him to confess but never told him of his “Miranda” rights. [WSJ 12/3/96:A6 and 12/4/96:A3].

- December 1996: The Japanese Ministry of Justice will consider extraditing Kazutoshi Yamada of Ajinomoto to the U.S. to face criminal price-fixing charges if a request is made by U.S. officials. Mr. Yamada will not voluntarily appear in Chicago, as ordered on 12/9/96. [WSJ 12/30/96].
- January, 1997: More details emerge about Whitacre’s tax-evasion indictment, returned in U.S. District Court in Springfield, IL. The scheme began in 1991, when he declared on his income tax return that he owned no foreign bank account. By 1994, he had bank accounts in Switzerland, Hong Kong, and the Cayman Islands. He also is charged with obstruction of justice because he is alleged to have tried to persuade a witness to lie to the grand jury. [AgBiz 9/7/97].
- February 1997: In a *Fortune* interview, Mark Whitacre states that in November 1992 (when he began his FBI mole role) ADM had started lysine price-fixing discussions, but had not yet implemented the plan quite yet. (Note that Whitacre has immunity from all price fixing charges beginning in November 1992, but not before). He also quotes M. Andreas as saying that Cargill would never fix prices as a matter of policy. He charges the FBI with suppressing this and other evidence, including price fixing discussions involving D. Andreas and President Jim Randall. When the DOJ found out about the non taxed income Whitacre had received, they canceled certain payments or allowances that he had been promised. Whitacre claims that he has a tape of M. Andreas approving a \$2.5 million illegal bonus for Whitacre. Whitacre says that he is being treated for manic-depression.

In December 1996, the DOJ launched an internal investigation of Whitacre’s charges of official misconduct: suppression of price-fixing tapes (about Cargill & D. Andreas), denying Whitacre access to a lawyer or doctor, and failure to follow Miranda rules. Whitacre’s charges about FBI misconduct, if true, will be useful to the other ADM defendants.

Whitacre admits he has tapes about price-fixing meetings and his dealings with the FBI that he has not turned over to prosecutors. In November 1996, those tapes were subpoenaed by a federal grand jury and Whitacre was questioned about them by the panel. [Fortune 2/3/97:82-92].

- February, 1997: Mexico opens an investigation of lysine price fixing [ADM].
- March, 1997: It is reported that opt-outs from lysine class action suit settled for \$20 million. One lawyer representing lysine plaintiffs said that those who took the \$45 million settlement were “as dumb as rocks.” [Alan Guebert. “Ag Is Sacred.” *The Pantograph* (3/2/97):E3].
- March, 1997: A class-action case under California state law by 20 animal-feeds manufacturers against ADM *et al.* was settled in San Francisco County Superior Court. Each client was

awarded \$50,000, which was 17% of the value of the lysine purchased. Lead attorney Jeff Parrish stated that this settlement was one of the largest class-action settlements ever recorded (in California?). “In most class-action suits the amount of recovery is 7% or lower,” he said. Other lawyers interviewed agreed with the “7% or lower” figure [San Jose, CA *Business Journal* (3/17/97):3].

- April, 1997: A Corporate Reputation Survey by *Fortune* magazine ranks ADM last among food processors. [*Fortune*].
- April, 1997: A deputy director of Japan’s Fair Trade Commission came to central Illinois in the last week of April to learn more about how the lysine case was investigated. [*Journal of Commerce* 4/30/97:6B].
- April, 1997: The class-action case encaptioned “Big Valley Milling et al. v. ADM et al.” was settled for \$2.125 million. The settlement covers *indirect* buyers of lysine in 16 states that allow such recoveries. [*Feedstuffs* (4/21/97):5].
- April, 1997: One writer calls ADM “Jim Lehrer’s Fallen Angel” and opines that the fines were “a bargain” and a “sweetheart deal.” ADM has underwritten NPR’s news program for several years at a cost of \$3.8 million [*Nation* (4/7/97):11].
- April, 1997: Settlement of ADMs shareholder’s suit was approved by the court on 4/11. Three ADM officers (M. Andreas, T. Wilson, and M. Whitacre) scheduled to go on trial May 1998.
- May, 1997: ADM announces its intention to build a new bioproducts manufacturing plant in Cedar Rapids, IA to make glycerol, lysol, xanthan gum, citric acid, lactic acid, theronine, and tryptophan. [*Feedstuffs* (5/12/97):1]. Another source states that the new Cedar Rapids plant will make 100 million pounds of lysine annually beginning in the fall of 1998. Moreover, lysine production at ADM’s Decatur, IL plant is to be expanded to 350 million pounds by 12/97 at a cost of \$80 million. [*Cedar Rapids Gazette* 5/8/97].
- May, 1997: The lawsuit in Switzerland against Mark Whitacre is quietly dropped. [Ag Biz 9/9/97]
- June 12, 1997: The EU opens an investigation of ADM’s European lysine business, which accounts for about 25% of ADM’s world lysine sales of \$280 million and also 25% of the EU’s total lysine market [*WSJ* 6/13/97:A16]. The day of the announcement, ADM’s stock fell 4.0%.
- June 12, 1997: DG-4, the competition-policy directorate of the European Commission, announced that its investigators raided offices of ADM and Kyowa Hakko Kogyo in Britain and Germany seeking information on price fixing in lysine. ADM’s offices in Kent and Weisbaden and Kyowa’s offices in Dusseldorf were affected. According to a Commission source, Ajinomoto is cooperating with DG-4. Under EU laws, companies that cooperate on such investigations can receive reduced fines [*The Guardian* 6/13/97:25].

- June 1997: ADM made a proposed settlement in response to 17 shareholders' suits charging gross mismanagement by the Board of Directors. The Directors agree to pay \$8 million to ADM (covered by insurance), to require classes in corporate governance for directors, that only outside directors will serve on the board's audit committee, that no directors on the board's audit committee, that no directors on the board before audit committee, that no directors on the board before June 1995 can nominate new directors. No specific directors are required to resign. [WSJ 6/2/97:A6].
- June, 1997: G. Allen Andreas, nephew of Dwayne Andreas, is appointed CEO and President of ADM, assuming most of the responsibilities of A. Andreas, G. Andreas, and 72-year-old President James Randall. Randall "typically built plants with plenty of excess capacity...a strategy that...helps warn away competitors from markets in ADM's gunsights." G. Andreas has spent \$1.8 billion on acquisitions and plant expansions in fiscal 1997 alone, including two acquisitions of cocoa plants with 410,000 tonnes of grinding capacity that makes ADM the world's largest processor. Three firms control 40% of world cocoa capacity. [WSJ 6/24/97:B13].
- June, 1997: Tapes made by Mark Whitacre of price-fixing meetings are ordered to be released to attorneys representing class-action plaintiffs. Both the DOJ and lawyers for M. Andreas and T. Wilson object to their release.
- June 30, 1997: ADM issues its annual report for its fiscal year ending this day. The "Management Discussion" reveals that S,G, & A expenses increased substantially in FY97 because of antitrust litigation expenses of \$240 to \$250 million (an increase of \$171 million over FY96 antitrust expenses of \$70 to \$80 million). Moreover, ADM's effective income-tax rate rose from its historical 33 to 34% level to 41% principally because the fines and settlements are not tax-deductible (see Table A-1).

Pre-tax income declined from \$1,182 million in FY95, to \$1,054 million in FY96, and to \$644 million in FY97. Changes in profits for ADM in most years are driven by changes in output volume, output prices, and raw material prices. However, direct antitrust litigation costs were equal to 55 to 63% of the 95-96 profit decline and 59% to 61% of the 96-97 decline. In addition, the price declines of lysine and citric acid from FY95 to FY97 were probably in the 10 to 20 percent range, thus reducing ADM's worldwide sales of these products by \$40 to \$100 million, *ceteris parabus*. Finally, ADM's top management was so distracted by the litigation during 1995-1997 that it is possible that profitable strategic moves were lost. It is conceivable that all of the ADM profit declines may be attributable to antitrust violations.

The FY97 antitrust costs for ADM amounted to 18% of ADM's liquid assets available at the beginning of FY97. A FY96-FY97 decline in liquid assets off \$627 million was the primary factor responsible for a decline in stockholders' equity, the first such decline by ADM in many years.

- July, 1997: Two state pension funds (California's CALPERS and Florida) appeal the settlement of the shareholders' suits against ADM's Board of Directors. They object to the

lawyers' fees (49% of \$8 million) and to the weak definition of an "independent director." [Ag. Biz 9/9/97]

- July, 1997: The Commodity Futures Trading Commission bars any ADM employee involved in ADM's criminal conduct from working for two futures-trading companies owned by ADM. The two companies will be required to perform special weekly monitoring of trading for four years. [Ag Biz 9/9/97].
- July, 1997: Cargill decides to enter the U.S. lysine market, rivaling ADM. A joint venture with Degussa AG of Frankfurt, Germany, the world's largest maker of amino acids, to be built in Blair, NE at 165 mil. lb. capacity. The Blair plant began operating in 1995 after an investment cost of \$300 million. To add the lysine capacity the added cost will be about \$100 million, but will give Cargill about 1/3 of world market of about \$1 billion. ADM has 1/2 world market and production costs of \$0.60/lb. Degussa has 25 plants, 26,000 employees, and \$24 billion in sales. Cargill employs more than 76,000 people. [AgBiz 9/9/97 and WSJ 7/9/97:A4].
- September 30, 1997: ADM's SEC 10-K report lists three federal grand juries and three foreign investigations involving rice-fixing against ADM (Mexico-lysine, EU-lysine, and EU-citric acid). In addition, ADM is a defendant in 30 federal HFCS suits, 1 HFCS plus corn syrup, 6 California state class actions on HFCS, 1 Alabama state class-action on HFCS, 5 state class action lysine cases, "several" opt-out-firm lysine cases, 13 citric-acid cases (11 class actions), 6 state class actions on HFCS plus citric acid, 6 state class actions on all three products. [ADM].
- October 12, 1997: Mark Whitacre pled guilty to fraud and embezzlement of \$9 million from ADM and tax evasion. During most of the period (1991-1995) Whitacre was an FBI informant. The DOJ will recommend a jail sentence of 6 1/2 to 8 years. Three subordinates of Whitacre were involved in a complex scheme that created phony subsidiaries, fake invoices, and secret bank accounts in Switzerland, Germany, Hong Kong and the Cayman Islands. Marty Allison, who was working for ADM in Germany, pleaded guilty in early 1997; Reinhard Richter, who was based in Mexico City, has also been charged. Whitacre formerly charged the FBI with misconduct, but no supporting evidence has come to light. [WSJ 10/13/97:B10].
- In late 1997, Ajinomoto was reported to be expanding its IA plant, and Cheil sugar its Indonesian plant. Sewon announced an expansion of its Korean plant from 96k tonnes in 1997 to 135k by mid-1998. [CMR 10/27/97:16]. Moreover, Biokyowa intends to expand its MO plant to 25k tonnes capacity in 1998, and will double the capacity of its Fermex plant (to 40k for three amino acids), bringing its global capacity to 100k tonnes. [CMR 1/26/98:4]. However, in March 1998 the Asian financial crises blocks Kyowa's plans. It's parent, Daesang Group agreed to sell all its lysine assets (including technology) to BASF for \$600 million. Lysine sales are about \$150 million and account for 20% of Daesang's sales. Daesang's debt/asset ratio will drop from 3.5 to 1.5! This is the first large So. Korean company to be sold to a foreign owner.

**Table A-1. Financial Results for Archer Daniels Midland, 1992-1998.**

Item	Fiscal Year Ending June 30						
	1992	1993	1994	1995	1996	1997	1998
	<i>Million dollars</i>						
Consolidated net sales	9231	9811	11374	12671	13240	13858	
Pre-tax income	760	746	738	1182	1054	644	
Net income	504	568	484	796	696	377	
Selling, gen., admin, expenses:	295	325	371	429	473	675	
Provisions for fines, settlements	0	0	0	0	31	200	10-20
Est. Antitrust legal expenses	0	0	0	0	40-52	42-52	70
	<i>Ratios in percent</i>						
Pre-tax income/sales	8.23	7.60	6.49	9.33	7.96	4.65	
Net income/sales	5.46	5.79	4.26	6.28	5.26	2.72	
Pre-tax income/equity	16.92	15.27	14.63	20.19	17.15	10.64	
Net income/equity	11.22	11.63	9.59	13.60	11.33	6.23	
SG&A/sales	3.20	3.31	3.26	3.39	3.57	4.87	
Antitrust expenses/SG&A	--	--	--	--	7-18	30-37	

- During 1995-1996, U.S. lysine prices “hovered just above \$1.00 per pound” reports this trade magazine [in fact, prices in 1995 actually ranged from \$0.90 to \$1.30 in 1995 alone!]. Prices sometime in 1997 (no dates given) reached a peak of \$2.80 to \$3.00 per pound, but plunged “recently” (probably, fall of 1997) to as low as \$0.79. The plunge was ascribed to aggressive selling by one producer, guessed to be Chiel Sugar Co. By October 1997, lysine prices had reached \$1.00 as buyers bought large quantities on speculation [CMR 10/27/97:16].
- November 6, 1997: Sidney D. Hulse is indicted by a grand jury for filing false income-tax returns. Hulse was the head of ADM’s Atlanta sales office for its Bioproducts Division and reported to Mark Whitacre. Hulse operated some financial accounts in the Cayman Islands and Switzerland for Whitacre. He is the fourth ADM employee to be indicted for tax evasion or fraud. [WSJ 11/7/97].

- November 1997: From newly released court records and froms till-confidential tape recordings, transcripts of tapes, FBI investigation notes, and other corporate and government files, a clearer picture is finally emerging of the extent and mechanics of the ADM price-fixing scheme.

Taped discussions at ADM headquarters suggest a wider involvement of ADM officers than the three who have been indicted (M. Andreas, T. Wilson, and M. Whitacre), "...with some tapes indicating that even the company's president, James R. Randall, now retired, was told of [the conspiracy meetings]." Randall's lawyer has stated that Randall had no knowledge that anything improper transpired at the meetings.

Another startling fact is that the conspirators employed an accounting firm to audit portions of the price-fixing scheme. [Eichenwald].

- March 2, 1998: Federal prosecutors said that Mark Whitacre had retracted his allegations that an FBI agent had told him to destroy tape recordings that might exonerate T. Wilson or M. Andreas of criminal price fixing. The retraction was sent to the DOJ in an affidavit received a few days before the 3/2/98 pre-trial hearing held before U.S. District Judge Blanche Manning in Chicago. Defense Attorneys have requested that the tapes made by Whitacre be ruled inadmissible. [WSJ 3/3/98: B10]. Whitacre's suit against the FBI was dismissed in February 1998.
- March 4, 1998: Mark Whitacre was sentenced to 9 years in federal prison for defrauding ADM of \$9.5 million by Judge Harold Baker in U.S. District Court, Urbana, Illinois. In addition, restitution of \$11.4 million was ordered (\$9.5 plus \$1.9 million in interest). Judge Baker stated that Whitacre had sometimes displayed "socio-pathic behavior" and was motivated by "garden-variety venality and greed." Whitacre still maintains that his behavior was due to his bipolar disorder and that ADM superiors approved of the diversion of funds. A DOJ spokesperson said that no evidence exists that ADM approved the diversion. Mr. Whitacre had failed to appear for his original sentencing hearing in late February; he told his lawyer that he had again attempted suicide, but local authorities considered the incident to have been staged.

Some of Mr. Whitacre's 237 audio tapes of price-fixing meetings were played for a special "antitrust committee" of ADM's Board of Directors (probably around July-September 1996). These tapes were the main reason that the Board instructed ADM's management to negotiate a quick end to the government's criminal case. [WSJ 3/5/98:B5].

- March 18, 1998: BASF, Ag announced that it had agreed to buy the lysine business of Daesang Co. Ltd. of South Korea. BASF will pay about \$600 million for the division that had annual sales of \$250 million (21 percent of the world market) from its Kunsan plant (234 employees). In 1997, 90 of Daesang's lysine sales were exported.

In 1997, BASF generated \$1.25 billion in animal nutrition products. Daesang is South Korea's 29th largest company with sales of \$12 billion.

- April 17, 1998: U.S. District Judge Blanche Manning ruled that the audio tapes made by Mark Whitacre will be allowed as evidence in the trial of M. Andreas and T. Wilson. She was highly critical of the FBI for giving Whitacre far too much discretion as to which conversations to tape. Though improper, the governments' misconduct was not intentional, and, thus, the evidence cannot be suppressed [WSJ 4/20/98:B9].

### **Chronology - Citric Acid**

- 1991: ADM enters citric-acid business by buying 3 plants of Pfizer, Inc. Whitacre claims that ADM wanted the technology quickly. In July 1992, the citric-acid division headed by Barrie Cox is placed under ADM's chief of corn products, Terrance Wilson. [CMR].
- 1991-1993: Increasing U.S. imports of citric acid from China cause price instability. Though of lower quality, prices are 20% below domestic producers. Domestic producers (ADM and Cargill) begin to pressure the U.S. Trade Representative's office to raise or threaten to raise import Tariffs on Asian citric acid. [CMR].
- June 1995: Citric acid first mentioned as target of federal grand jury after FBI raid on ADM headquarters. Documents on prices and volumes of citric acid producers worldwide are found in ADM files. [WSJ 7/28/95:A1].
- July 1995: Terrance Wilson reported to have met European conspirators in London & Paris hotels. Bayer AG makes citric acid in Europe and in Miles Labs' Elkhart, Indiana plant; says it is cooperating with DOJ. Hoffman-LaRoche is a big importer into the USA from European plants. [WSJ 7/28/95:A1].
- November 1995: ADM faces four private price-fixing suits; rises to seven by February 1996. [WSJ 11/17/95].
- March 1996: DOJ investigation, centered in U.S. Attorney's San Francisco office, said to be moving slowly. No videotapes of price-fixing meetings exist. Documents in ADM offices show that ADM shared detailed sales figures with several European and Asian producers, but ADM will argue that conspiracy arose outside USA without ADM's participation. [WSJ 3/27/96:A1].
- September 27, 1996: With surprising suddenness, ADM offers to settle the class-action suit for \$35 million. Plaintiffs had not yet received class-action status in the San Francisco District Court. ADM did not admit guilt in price fixing, but it signals intent to settle the DOJ cases as well. [WSJ 9/30/96:A3].
- October 1996: It is revealed that a committee of 7 "outside" ADM directors was authorized to make any plea agreements necessary with the DOJ as early as October 1995. On October 15<sup>th</sup>, ADM announces a guilty plea agreement with the DOJ in the lysine and citric acid cases. Fines of \$100 million are seven times larger than ever previously paid. ADM also agrees to help prosecute its own managers, Michael Andreas and Terrance Wilson. In return, DOJ

agrees not to prosecute ADM for price-fixing in corn fructose (which has \$3 billion in world sales vs. \$1.5 billion for the other two). In addition, Barrie Cox, VP for citric acid is given immunity if he will testify for the prosecution against Haarman and Reimer (U.S. subsidiary of Bayer) and Hoffman-LaRoche.

The DOJ states that ADM and Barrie Cox, VP for citric acid, “did cooperate” in its citric-acid case and “it is substantial.” This cooperation led to a *lower* fine for ADM. In its plea agreement, filed in Chicago District Court, ADM admitted for the first time that its “representatives” attended meetings in the U.S. and overseas in which “...agreements were reached as to the prices the firms would charge for citric acid... and the volume of citric acid each firm would sell.” ADM’s Comptroller Steven Mills states for the legal record that “The Company does not dispute the facts as presented.” The names of the co-conspirators were not revealed at this time.

All criminal charges against ADM as a company are resolved, but criminal indictments against M. Andreas and T. Wilson are still pending as are scores of civil injury suits. [WSJ 10/15/96:A3].

- December 9, 1996: Haarman & Reimer Corp., based in Springfield NJ, becomes the fourth company to file a proposed settlement agreement in the citric-acid class-action civil suit. H & R, a wholly-owned subsidiary of Bayer, AG of Basel, Switzerland, offers to pay \$46 million to citric-acid buyers. A federal judge in San Francisco must approve the proposed settlement.

The first offer from ADM of \$35 million came in October. Later in October, two citric-acid importers also made offers to settle: Hoffmann-LaRoche of Basel, Switzerland offered \$5.68 million, and Jungbunzlauer AG of Vienna Austria offered \$7.57 million. The fifth defendant in this case, Cargill Inc., refuses to negotiate with plaintiffs.

Attorneys representing plaintiffs in the citric-acid class-action suit state that damages in this market could be as high as \$400 million, yet they settle for \$94 million. Of the total \$117.5 million settlement, 25 percent represents proposed legal fees.

The DOJ is continuing its criminal investigation of citric acid producers with the cooperation of ADM. The investigation is focusing on the coordination of restrictions in output by U.S. and European manufacturers as the method for lifting citric acid prices in major markets. [WSJ 12/10/96:B12].

- January 29, 1997: Haarmann & Reimer GmbH, the New Jersey subsidiary of Bayer AG pleaded guilty to criminal price fixing in the world citric acid market. The company will pay a fine of \$50 million, the second-largest antitrust fine ever assessed. The DOJ stated that the conspiracy was “one of the largest, if not the largest, conspiracies ever prosecuted by the Department of Justice.” Officials repeated their assertion that the ADM and Bayer fines would have been much larger had the firms not cooperated with investigators, but they declined to state the size of the overcharges. Private lawyers call the new fine structures “a staggering development for business.”

In addition to fines, a senior executive of Haarmann & Reimer, Hans Hartmann, a German citizen, was arraigned in U.S. District Court in San Francisco for criminal conspiracy charges. He can be sentenced up to 3 years and \$375,000. The DOJ will not seek civil penalties against Bayer because of the likely class-action settlement, but investigations continue in lysine and citric acid in Asia, Europe, and the United States. [WSJ 1/30/97:B6].

- March 26, 1997: The two largest U.S. importers of citric acid, Jungbunzlauer and Hoffmann-LaRoche, plead guilty to criminal price-fixing and pay fines of \$25 million. These fines bring the total U.S. corporate criminal fines for lysine and citric acid to \$195 million, several times the previous highest fines. Two executives of these companies also plead guilty and pay fines of \$150,000 each. [WSJ 3/27/97:A5].
- March, 1997: Plaintiffs' attorneys in the civil class-action case claim that damages from overcharging may be as high as \$400 million. They are asking the judge to approve legal fees of 25% (i.e., \$23.5 million on top of the \$94 million in payments to plaintiffs). The case against Cargill continues.
- June 10, 1997: Four large buyers of citric acid filed a lawsuit in San Francisco charging that ADM conspired with others to fix the price of citric acid. (See the March 1998 entry below for more information). [Des Moines Register, 6/12/97:8].
- June, 1997: Haarmann & Reimer division of Bayer announces its intention to sell its citric acid business. The unit employed 1,310 people and sold \$293 million of acid in 1996 from seven plant sites: 3 in U.S., 1 in UK, 1 in Brazil, and 2 majority-owned subsidiaries in Mexico and Columbia. The article claims that H&R is the only U.S. manufacturer that is not integrated into corn refining [Chem. Marketing Reporter (6/9/97):1].
- July, 1997: Judge Smith in Federal District Court in San Francisco gives final approval to the (slightly reduced) citric acid class action suit for \$86.2 million (ADM \$35 million, Bayer \$38, Jungbunzlauer \$7.6, and Roche \$5.7). Settlement reduced because four large buyers opted out and are seeking \$1 billion or more in damages (incl. P&G, Kraft, Quaker, Unilever, Schreiber Cheese). Opt-outs bought \$350 million from 1991 to 1995. Cargill still fighting suit. Pepsi and Coca Cola have joined neither suit.
- July, 1997: The DOJ ordered the FBI to turn over tape recordings to plaintiffs suing ADM et al in Peoria for price fixing in fructose. [Chicago Tribune 7/6/97]. The FBI and Whitacre made 1400-1600 audio or video tapes of the price conspiracies, according to one source [Ag Biz 4/7/97]. A January 28th DOJ memo written by James Griffen, Chicago field office chief, says that 237 tapes were made and will be turned over to defense attorneys [Corporate Crime Reporter 3/17/97]. The 237 tapes appear to be audio tapes only made by Mark Whitacre.
- In September 1997, ADM reported that the EU antitrust authorities begin investigating ADM et al. for citric acid price fixing [ADM].
- March 1998: ADM stated that it had agreed to pay \$36 million to four citric-acid customers that had opted out of the July 1997 civil class-action antitrust settlement. The four recipients

are Procter & Gamble Co., Quaker Oats Co., the Kraft Food unit of Philip Morris Companies, and Schreiber Foods, Inc., a cheese company located in Green Bay, Wisconsin. Although not reported, it is highly likely that Bayer, Jungbunzlauer, and Roche paid an additional \$52.7 million to the four buyers.

It appears that on the basis of Unilever's size in the U.S. market that the four sellers probably paid Unilever about \$25 million. Because the five opt-out firms accounted for 19% to 24% of citric-acid sales by the four defendants, the total civil settlement of \$113.7 million is considerably more advantageous than the March 1997 class-action settlement (measured as a percentage of sales). The two largest U.S. buyers of citric acid (Coca-Cola and PepsiCo) declined to sue, perhaps because the defendants sold citric acid to these two companies on a preferential basis (i.e., with little or no overcharge). If Coke and Pepsi account for 30% to 40% of citric acid purchases, then the class held about 36% to 51% of the U.S. market. The class settlement of \$86.2 million represented an assumed overcharge of \$1.7 to \$2.4 million per percentage point of the market. However, the opt-out firms received \$4.7 to \$6.0 million per percentage point, or *from 2 to 3.5 times* more than the federal class. [ADM].

- March 4, 1998: Kenneth Adams, lawyer for P&G, Kraft, Quaker, and Schreiber, announces that ADM is the last of four companies to settle with his clients. Bayer, Jungbunzlauer, and Roche Holdings settled earlier for amounts that must remain confidential. [*Chicago Tribune* 3/5/98: business p.1].
- January 24, 1998: Cargill was dismissed from the federal, civil, class-action suit in U.S. District Court in San Francisco. Testimony by the former Bayer official who was convicted of criminal price fixing exonerated Cargill. [*Omaha World Herald* 1/25/98:8M).

## Chronology - HFCS

- 1971: High fructose corn syrups (HFCS) begins to be produced commercially in the USA.
- 1971 -1985 : Period of very rapid growth and numerous improvements in technology of production. Real growth 1970-1980 is 39% p.a.; during 1980-85 it is 19% p.a.
- 1981-1991: DOJ (civil) antitrust price-fixing case in Des Moines federal court filed against ADM in 1981 but dismissed in 1991.
- 1990 -1995 : Market enters mature phase, growth slows to about 4% per year. There are U.S. 25 to 30 producers of wet-corn products but only 6 or 7 manufacturers of HFCS.
- July 1995: DOJ reveals that a federal grand jury in Chicago is investigating ADM, Cargill, CPC International, and Tate & Lyle's A.E. Staley subsidiary, for price-fixing.
- November 1995: more than 20 private antitrust suits against ADM by HFCS users. Coca-Cola and Pepsico hold back. [WSJ 11/17/95].
- February 1996: Number of price-fixing suits vs. ADM reaches 28.
- DOJ leaks indicate that HFCS prices are discussed during videotaped meetings, but no tapes of meetings among HFCS producers exist. Prosecutors consider HFCS the weakest of their cases. Coke and Pepsi, which now own many of the bottling operations that buy HFCS and account for 73% of HFCS sales, have not sued ADM. [WSJ 3/27/96:A1].
- September 1996: CPC International pays \$7 million to settle a private civil suit by HFCS buyers. [WSJ 9/23/96]. In 1997, CPC announces that it will sell its fructose business.
- October 1996: As part of a plea agreement with the DOJ, ADM agrees to plead guilty to price fixing in lysine and citric acid and to pay \$100 million in fines. In return, the DOJ agrees to grant ADM immunity from further prosecution for price-fixing in the corn-sweeteners markets. However, the DOJ says that its Joliet, Illinois grand-jury investigation of price-fixing by other companies in corn sweeteners *will* continue, but little is heard of this matter through early 1997. [WSJ 10/14/96:A2 and 10/16/96:A4].
- February 1997: Whitacre quotes M. Andreas as saying that Cargill would not conspire on HFCS prices as a matter of company policy. [Whitacre].

## Chronology: Related Legal Cases and Events

- December 1982 - 1991: The U.S. DOJ filed a civil Sherman Act suit in U.S. District Court in Des Moines, Iowa charging the ADM, a major manufacturer of high-fructose corn syrup (HFCS), with monopolizing the market. At issue is ADM's lease of two plants from Nabisco Brands, Inc., in Clinton, Iowa and Montezuma, NY. The government claims that ADM controls 40% of U.S. fructose production when the two plants are included. ADM claims 10% of the U.S. sweetener market [*UPI*, 1/27/83].
- In 1990, the U.S. Congress passes the Antitrust Improvements Act, which raises corporate price-fixing fines from \$1 to \$10 million and individual fines from \$100,000 to \$250,000. A year later, the DOJ issues sentencing guidelines that permit criminal fines up to double the illegal profits made or overcharges to buyers. [Bingaman].
- October 1996: A few days before ADM pleads guilty to price fixing in lysine, ADM lawyers quickly settled a damages case brought by a group of Missouri ranchers who claimed that ADM feed had killed 86 calves. A new process for extracting cottonseed oil developed by ADM had apparently created toxic levels of "free gossypol" in cottonseed cake. The farmers were paid double their original claim of \$105,000. [Hollis].

In an unrelated food-safety issue, Whitacre reportedly claimed in an affidavit that ADM routinely sold toxic animal feed ingredients. For example, ADM sprayed biomass waste on corn gluten for export, a step that would fraudulently increase measurable protein levels.

However, there are many difficulties in prosecuting such cases. A 1992 conspiracy by Japanese fax paper makers is held up in the courts because one defendant, Nippon Paper Industries, challenges the extraterritorial reach of U.S. laws. (All the other companies pleaded guilty). Moreover, because Japan's market was not affected, the Japanese government will not cooperate. The Japanese government considers the case a violation of international admiralty law and of Japanese sovereignty. Finally, some conservative U.S. economists think that such prosecutions will injure the free flow of foreign direct investment because subsidiaries are often held "hostage" until fines are paid. In a March 18, 1997 ruling, a federal appeals court made price fixing illegal even if solely foreign companies conspire outside U.S. territory (see below).

In 1994, the OECD member states signed a draft agreement on greater antitrust coordination and enforcement. Despite good intentions of JFTC, Japanese business practices generally foster price coordination. [*WSJ* 2/5/97:A1 and 3/19/97:B5].

- January, 1997: The USDA informed that ADM will be allowed to continue to participate in federal food contracts despite ADM's guilty plea. In 1996, Sun-Diamond Growers were barred from contracts for making illegal gifts to Agriculture Secretary Mike Espy. [Ag Biz 4/7/97].

- February 1997: DOJ prosecutors allege that international price fixing is becoming increasingly common. There are now 22 federal grand jury investigations of alleged international price fixing conspiracies. The 1995 dynamite case resulted in criminal price fixing pleas and fines of \$25 million on two companies (U.S. subsidiaries of Norway's Dyno Industries and UK's ICI PLC). The 1996 lysine/citric acid cases involved criminal fines of \$170 million against six companies.
- March, 1997: ADM case is part of an explosion of international criminal antitrust cases. In 1991, 10% of all corporate antitrust defendants in the U.S. were foreign companies; in 1996, 20% of all corporations charged and 27% of all individuals charged were foreigners [Howard Adler, Jr. and David J. Laing. "Explosion of International Criminal Antitrust Enforcement." *The Corporate Counselor* (3/97):1].
- March 18, 1997: For several years, U.S. and Canadian antitrust authorities jointly investigated alleged price fixing in the \$120 million North American market for thermal fax paper. Between 1990 and 1992, five Japanese paper companies conspired to raise prices on exports to North America. Several of the companies and their managers pleaded guilty, paid fines of more than \$10 million, and agreed to cooperate with prosecutors. However, in September 1996, one defendant, Nippon Paper Industries, was dismissed from the case because none of the conspiratorial acts occurred within U.S. jurisdiction. In March, this decision was overturned, re-affirming the extraterritorial reach of the Sherman Act (Daniel *et al.* 1997). Later, the U.S. Supreme Court let the Appeals Court decision stand.
- June 10, 1997: Four large buyers of citric acid filed a lawsuit in San Francisco charging that ADM conspired with others to fix the price of citric acid. (See the March 1988 entry below for more information). [*Des Moines Register*, 6/12/97:8].
- June 12, 1997: DG-4, the competition-policy directorate of the European Commission, announced that its investigators raided offices of ADM and Kyowa Hakko Kogyo in Britain and Germany seeking information on price fixing in lysine. ADM's offices in Kent and Weisbaden and Kyowa's offices in Dusseldorf were affected. According to a Commission source, Ajinomoto is cooperating with DG-4. Under EU laws, companies that cooperate on such investigations can receive reduced fines [*The Guardian*, 6/13/97:25].
- July, 1997: The federal subsidy for ethanol was expected to be extended by the Congress for a few more years. Begun in 1978, the subsidy has cost the U.S. Highway Trust Fund \$7.1 billion to date and will cost \$3.8 billion more if extended to 2007. ADM is the principal recipient of this subsidy. [Ag Biz 9/9/97]
- August, 1997: Igene Biotechnology files a \$300 million federal lawsuit against ADM for theft of a trade secret, a chemical process that turns farm-raised salmon pink. [Ag Biz 9/9/97].
- September 1997: Another international price-fixing cartel is revealed by the Department of Justice. The product is *sodium gluconate*, an industrial cleaner widely utilized for glass

bottles and steel parts of food machinery. The world market for sodium gluconate in 1996 was about \$50 million, of which \$4 million was in the USA. Sodium gluconate is derived from potato starch by three companies: Fujisawa Pharmaceutical Co. of Japan, Roquette Freres of France, and a joint venture of two Dutch firms, Akzo Nobel and Avebe.

- October 1997: The two-times-harm rule for imposing fines requires a higher burden of proof for prosecutors than the \$10 million “Statutory” fine of \$10 million. The amount of the overcharges must be proven with reasonable certainty.

In FY 1996, corporate fines were the largest ever recorded (\$205 million) for antitrust, but sanctions on individuals were among the lowest. In FY 1996, only 5 persons got prison time for price fixing, the lowest number since 1980. However, the 5 got the longest average prison time (15 months) since 1980. Individuals can in principle be fined more than the \$350,000 statutory fine by using the two-times rule, but no applications of this rule yet. [*National Law Journal*, 10/20/97].

These three companies conspired to fix prices from August 1993 to June 1995. The Dutch and French producers pled guilty in September and paid corporate fines of \$10 million and \$2.5 million respectively. In February 1998, Fujisawa also pleaded guilty and paid a \$20 million fine. Finally one Japanese, two Dutch, and one French executive paid personal fines of \$200k, \$100k, \$100k, respectively. The total fines of \$32.95 million represent a truly extraordinary 410% of total U.S. sales! (*Antitrust Report* 9/97:19).

It appears that Fujisawa was the leader of the cartel and that it was resisting cooperation with the DOJ. Because the fine exceeded \$10 million, the DOJ clearly applied the “two-times” felony rule in assessing Fujisawa’s fine.

If the DOJ applied that rule to *U.S.* sales only, it implies that the percentage overcharge on sodium gluconate sales was from 125% (if Fujisawa’s U.S. market share was 100%) to 250% (a 50% share). If applied to *world* sales (which is doubtful given the DOJ’s jurisdiction), the percentage overcharge was probably in the range of 15 to 30%.

- November 1997: The Justice Department has convened a grand jury in Dallas, Texas to examine possible price-fixing in the market for human and animal vitamins, a \$3 billion industry world-wide. The industry is dominated by a small number of manufacturers: Roche Holding, Ltd. (Switzerland), BASF AG (Germany), and Rhône-Poulenc SA (France) are the largest. Roche controls 45%-50% of the world market for 14 major vitamins.

Recently, ADM and Cargill have begun to manufacture vitamins C and E using corn fermentation technology. The last major vitamin manufacturing plant in the United States closed in the 1960s, so most U.S. supplies now are imported from Europe. Prices for most vitamins have increased by 2% to 3% per year in recent years. However, wholesale prices of “natural” vitamin E have recently been increasing by 10% to 12% per year. Consumer demand for vitamin E is strong because of studies that indicate that the vitamin may reduce the risk of heart disease and cancer.

DOJ investigators have interviewed officers of animal-feeds companies in recent months asking about suspected price irregularities. No formal action is expected soon. [WSJ 11/20/97:B10].

- December 16, 1997: U.S. District Court Judge Blanche Manning expressed frustration over the government's handling of the criminal trial against M. Andreas and T. Wilson. She was "deeply concerned" about the difficulty the defendants have had in finding out whether any tape recordings may have been destroyed. Mark Whitacre alleged in November that the FBI had told him to destroy tapes favorable to ADM and said that he had sent them to David Hoech. Hoech, a consultant for Asian companies that want to form joint ventures with U.S. companies, is a friend of Whitacre. Hoech has worked hard to spread Whitacre's views on ADM to the media "... sending a regular bombardment of letters filled with allegations about widespread wrongdoing at ADM." Hoech has refused to answer questions when subpoenaed by the defense, and Manning chastised the FBI for not requesting immunity for Hoech. James Griffen, the DOJ prosecutor in Chicago, said that the government believes that Hoech has no credible evidence to offer.

Robert Herndon, one of Whitacre's supervising FBI agents, testified that Whitacre had requested a payment of 10% of the government's fines recovered as a result of the investigation that he had initiated.

Sidney Hulse, a Georgia ADM employee once supervised by Whitacre, pleaded innocent that he helped embezzle nearly \$1 million from ADM with Whitacre. (Hulse was not charged with tax evasion).

In late October 1997, another Whitacre associate, Reinhard Richter, pleaded guilty to conspiracy to defraud ADM and tax evasion. Sentencing was expected in January 1998. [*Chicago Tribune*, 12/17/97:1].

- January 1998: Three firms were charged in two related cases of international bid-rigging in markets for marine services. The three agreed to pay a total of \$65 million in fines for criminal violations of the Sherman Act.

In the first case, HeereMac v.o.f. of the Netherlands and its commercial director Jan Meek were charged with conspiracy (with unindicted co-conspirators) to rig bids for heavy-lift marine construction services from 1993 to May 1997. HeereMac has agreed to pay a \$49 million fine and Meek \$100,000. Heavy lift derrick barges are used to construct offshore oil and gas drilling platforms.

In the second case, Dockwise N.V. of Belgium and Dockwise U.S.A. of Texas conspired with unnamed co-conspirators to rig bids for heavy-lift semisubmersible marine transport services from 1990 to May 1995. World revenues in this market were more than \$200 million in 1996. Dockwise and Dockwise U.S.A. paid fines of \$15 million and \$1 million, respectively; Christiaan Bernardus van der Zwan and Bastiaan Albertus de Jong, former officers of Dockwise paid fines of \$150,000 and \$75,000, respectively. In addition,

Dockwise has agreed to apy \$4 million in civil damages to the U.S. Navy. [*Business Crimes Bulletin*, Vol. 4, No. 12:10]

- January 9, 1998: The Commerce Ministry of the New Zealand government proposed raising the maximum penalty for price fixing under the 11-year-old “Commerce Act” from \$NZ 5 million (\$US 2.8 million) to a higher amount closer to U.S. and Australian (\$A 10 million = \$6.4 million U.S.) levels. The proposal also suggests that the ADM *et al.* case should imply that fines should be based on a percentage of the illegal gains as well. The country’s manufacturers’ association, citing high industrial concentration, agreed with the proposal. [Wellington *Evening Post*, 1/9/98:11].
- February 26, 1998: Joel I. Klein, Assistant Attorney General for Antitrust, testified about the importance of international price fixing cartels for the DOJ. Enforcement is more difficult because of globalization, rapid technological advances, deregulation, and the need for international cooperation. Record numbers of large mergers in 1997 and 1996.

In FY1996, criminal fines of \$205 million were secured - - more than 5 times higher than any previous year. In the first *half* of FY97 the total would be \$445 million. Cartels for lysine, citric acid, sodium gluconate, graphite electrodes, marine construction, and marine transportation uncovered from 1996 on.

Overcharges in these industries are costing business and consumers hundreds of millions of dollars each year. The lysine conspiracy raised prices by 70% in three months (“...during its first year” ? Klein appears to refer to prices in 10/93 compared to 7/93). In a second price fixing case (apparently graphite electrodes) prices increased over 60% during the conspiracy.

The uncovered international cartels “have been governed by precise and elaborate arrangements among the conspirators...”: fixed prices, fixed world volumes, fixed market shares in each country, exchanges among participants of trade secrets (e.g., monthly sales by geographic area, prices charged to customers in each geographic areas, prices to be charged to individual customers), and sophisticated methods to monitor the effects of the agreements. In the citric-acid cartel a “compensation system” was in force: if a company sold more than its allotted share in year 1, it had to buy that amount from another company in year 2!

Since the beginning of FY97, over 90% of all fines secured by the Antitrust Division of DOJ came from prosecution of international cartels. In 1987-90 *no* antitrust defendants were foreign. To date, the *only* domestic company to pay fines above the statutory \$10 million is ADM (but Ucar was added in March) - - all 7 others have been forgiven! [After graphite electrodes is complete, it will be 2 U.S., 8 fgn.].

As of 2/98, 25+ grand juries are focused on *international cartels*, or 1/3 of all the Division’s criminal investigations currently on-going. Targets are located in 20 countries on five continents; more than half of the international cartels are in \$100 million + markets.

The DOJ proposed more mutual assistance agreements at the OECD's Committee on Competition Law 2/98. The DOJ recently set up an "International Competition Policy Advisory Committee" to make recommendations on dealing with international cartels, international coordination of merger reviews, and possible anti-competitive effects of free trade agreements.

The Antitrust Division in FY98 has 831 positions and a budget of \$93 million - - lower than in 1980 (982 pos.). The President's request for FY99 is \$98 million.

The Division has used the "2X" rule for fines (18 U.S.C. 3571(d)) *eight times* up to 2/98. They would have liked to have used it *six more* times, but had to settle for \$10 million. He proposed raising the "statutory" maximum to \$100 million. [Klein 1998].

- March 16, 1998: A Delaware federal court ruled that ADM had infringed on a patent for a process to make the amino acid *threonine*, ADM reported in its quarterly report. The U.S. patent was owned by Ajinomoto, which acquired it from a Russian company. According to Ajinomoto, the technology was illegally licensed later to a Swedish company, which later licensed it to ADM. ADM must pay damages of about \$12 million plus interest (at a royalty rate of \$1.23 per kg., implying ADM's threonine production has been 21.5 million pounds). ADM may appeal. [WSJ 3/17/98:A4].
- March 23, 1998: The Supreme Court, without comment, let stand a decision of the U.S. Federal Appeals Court in Chicago that will allow a civil, class-action, price-fixing case against pharmaceutical companies to go to trial in early December. The plaintiffs are about 40,000 independent retail drugstores; defendants now include many leading drug manufacturers (*Abbott Labs vs. HJB*) and at least seven drug wholesalers (*Amerisource vs. HJB*).

In June 1996, eleven drug manufacturers (Merck, Eli Lilly, SmithKline Beecham, etc.) reached a settlement totaling \$351 million. The retailers alleged that they were harmed by a price-discrimination conspiracy that began in the 1980s that awarded lower prices to HMOs and other managed-care organizations. Manufacturers claim that the dual prices were a response to pressure by HMOs for discounts; wholesalers deny conspiring.

This settlement is one of the few class-actions larger than the ADM-related price-fixing cases.

- April 12, 1998: Yet another international price-fixing cartel is uncovered, this one in the \$500 million/year world market for *graphite electrodes*, devices used in the making of steel. The conspiracy was active from July 1992 to June 1997-- about five years -- during which sales totaled \$1.75 billion.

The first company charged, Showa Denko Carbon, Inc., the U.S. subsidiary of a Japanese company, pleaded guilty and paid a criminal fine of \$29 million. In late March, the CEO and CFO of Ucar International of Danbury, Connecticut suddenly resigned. On April 12, 1998 Ucar pleaded guilty to price fixing and agreed to pay a fine of \$110 million, numerically the

highest ever paid. (The fine will be paid over a six-year period, so at an 8% discount rate the net present value in 1998 is about \$91.5 million). The DOJ announced that Ucar is “cooperating,” thus implying that the fine represents less than double the overcharge.

Two other companies are under investigation: Carbide/Graphite Group of Pittsburgh, Pa. And SGL,AG of Germany. Ucar and SGL are the two largest manufacturers of graphite electrodes.

On April 16, 1998 a class-action civil suit was launched against Ucar, which has set aside \$350 million as a contingency. (*Conn. Law Tribune* 4/13/98).

- April 20, 1998: In an SEC filing, Ucar International, Inc. said that the \$340 million that it has put in a reserve for antitrust-related expenses (\$110 million fine) for price fixing in the *graphite-electrodes* market may drive it to bankruptcy. An investigation by Canadian antitrust authorities may result in more fines and probes in other jurisdictions as well. The plea agreement with the DOJ last week “...makes it difficult to defend against antitrust civil lawsuits.” [*WSJ* 4/20/98:A6]).
- May 6, 1998: House Speaker Newt Gingrich took the highly unusual step of rebuking Ways & means Chairman Bill Archer by packing the House-Senate conference committee that will decide the future of the ethanol subsidy with supporters of the subsidy, even though the House had voted to oppose its continuance. Archer has been a foe of the \$600 million/year ethanol subsidy, the majority of which flows to ADM, contained in the \$215 billion highway appropriations bill. Archer and many House colleagues have opposed ethanol as an egregious example of “corporate welfare.” Supporters include Albert Gore, Richard Gephardt, Trent Lott, Tom Harkin, and many members of Congress from major corn-growing states. [*Washington Post*, 5/7/98:A4]. (Former Senator Robert Dole, a major sponsor of the ethanol subsidy and now a lobbyist, gave a \$300,000 loan to Gingrich last year. Is there a connection?).