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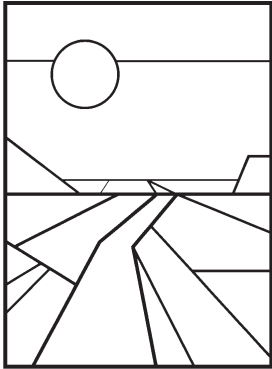
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PURDUE AGRICULTURAL ECONOMICS REPORT

MARCH 1999

Agriculture Will Turn Up, But Just a Bit In 1999*

After a difficult 1998, Indiana agriculture is facing a year of only modest improvement. Revenues from the 1999 crop are expected to be similar to 1998, with Loan Deficiency Payments once again important in marketing plans. Slightly better cropping returns will be related to modest reductions in input costs. Wheat prices are expected to be about 20 cents per bushel higher than for the 1998 crop, with corn prices unchanged and soybean prices down 20 cents.

The animal sector will experience the largest improvement. This will be particularly true for hogs, which resulted in about a \$90 million loss for Hoosier producers in 1998. This year, producers are expected to only reach breakeven, however. Income prospects for poultry include a reduction in returns to near breakeven for egg producers, but a return to profitability for turkeys after two years of losses. Dairy returns will fade somewhat as milk prices drop from record high levels in 1998, but profits will remain favorable. The Indiana beef sector will also return to profits in 1999, with prospects for several positive income years to come.

As in 1998, the strength of the general economy and the continued

flow of money from the federal government will be important in keeping the agricultural sector afloat.

A Slowing, But Positive Growth Economy

The general economy had another outstanding year of growth in 1998, but several concerns face the U.S. in 1999. Key among



these is the slowdown in world economic growth. This weakness has led to weak exports and record trade deficits as imports continue to rise. Also, manufacturing employment has been falling, perhaps as a result of reduced exports, and business investment in buildings and equipment has also slowed. Finally, the continued growth of our U.S. economy has been led by robust consumer spending. However, households have recently been spending more than they are earning, thus consumption is being kept high by drawing down their savings. This is the first time since the Great Depression that consumers have had a "negative savings rate," a situation which cannot be maintained in the longer run.

These concerns point to a more cautious forecast for 1999. The rate of growth in GDP is expected to slow to about a 2 percent annual rate of growth. It is important to note that this forecast represents only a slowing of the growth rate, not a recession. Consumers are expected to continue to spend, just at a slower

pace. The slowing of economic growth will likely lead to a small increase in unemployment. Expect to see the unemployment rate rise to 5 percent by the end of 1999, up from the mid-4 percent level at the current time.

The current inflation rate is 2.4 percent per year, not counting food and fuel. With falling oil prices, overall inflation is less than 2 percent. Only modest inflation pressure is expected in the coming year. Contributing to the low inflation rate are depressed commodity prices. This can easily be seen in low fuel prices and depressed agricultural commodity prices. Wage pressures have also been moderate as labor continues to increase incomes due to productivity increases and have not demanded a larger portion of corporate profits.

The U.S. economy faces a period of moderate income growth with low inflation and low interest rates. This provides the Federal Reserve with

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* This article was prepared by the Agricultural Economics Outlook staff: Mike Boehlje, Larry DeBoer, Craig Dobbins, Otto Doering, Howard Doster, Chris Hurt, Marshall Martin, Phillip Paarlberg, David Petritz, Wally Tyner, and Joe Uhl.

the opportunity to reduce interest rates if the U.S. economy begins to show excessive signs of slowing in 1999. Consequently, it is likely that interest rates could move lower, perhaps by .2 percent to .4 percent over the year.

Also of positive economic note are governmental budget surpluses. A number of states, including Indiana, have large budget surpluses, as does the federal government. Budget surpluses at the federal level mean that the amount of debt issued can be reduced, thereby freeing more debt capital for use by consumers and businesses. Less government demand for debt means lower interest rates. Also, if the U.S. economy does begin to falter in 1999, the federal government is in a stronger budget position to either increase government spending to stimulate the economy or to cut taxes.

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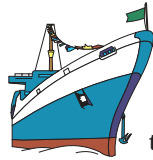
Agricultural Trade Remains Depressed

Revenues from agricultural exports are expected to weaken 6 percent in 1999 to \$50.5 billion, the lowest level since 1994. The weakness this year is a result of lower prices rather than smaller sales volumes. In fact, the total volume of agricultural exports is expected to grow about 1 percent with recovery in wheat, corn, and red meat products. However, weaker export volumes are expected for soybeans and for poultry.

Since the peak export year in 1996, the volume of agricultural exports has dropped 5 percent, but the value has dropped by 16 percent. This reflects both a weakening of demand for U.S. exports as well as a major reduction in prices. The problem is a result of increased world crop production in the past two years and of the weaker world economy.

The value of exports to Asia has been of particular concern, because they have dropped by 31 percent since their peak in 1996. Prospects remain uncertain at best for Asia, as we read almost daily in the newspaper headlines on the business page. Some believe the recessionary tendencies in Asia may abate somewhat, but a return to positive economic growth is not expected until the year 2000. While growth cannot be expected from Asia this year, there are at least signs that the worst may be behind.

One of these signals is the changing value of the U.S. dollar, which reached a peak relative to foreign currencies in the summer of 1998. Since that time the dollar has dropped sharply relative to major trading partners such as the Japanese yen. The dollar could continue to decline relative to other currencies if the U.S. economy continues to slow as expected, if large trade deficits persist, and if emerging economies begin to show signs of recovery from recession. A declining dollar means U.S. farm goods become more price competitive and would provide better



export prospects late in 1999 and especially in 2000.

Will The Government Bridge the Income Gap?

Farm incomes were under severe downward pressure in 1998 as revenues for all crops and livestock products dropped about 5 percent for all farmers across the country. However, the federal government provided



additional money to stabilize the sector as government expenditures rose by \$5.4 billion. Thus, net farm income in the U.S. only dropped by about \$2 billion, or 4 percent, from 1997. The income impacts in Indiana were more severe due to our specialization in grain and hog production, the sectors most severely affected.

At least for 1998, it is clear that additional federal government expenditures provided a valuable cushion in what would have been a more financially difficult period for farmers. Contrary to the tone of the Freedom to Farm provisions, the federal government seemed unwilling to subject U.S. farmers to the full impacts of a market-oriented agriculture. This raises the question of whether U.S. government policy has already shifted back towards providing disaster assistance as well as income supports at higher levels than perceived by the Freedom to Farm legislation. If the U.S. government found ways to largely bridge the income gap in 1998, will they, or can they, be expected to do so in 1999 and future years?

Our current farm legislation was written at a time of rapidly expanding world markets, but it reflected little thought and few provisions for a period of weak world demand and low farm prices. Key among policy issues is whether the marketplace will do an acceptable job of bringing world supply and demand back into balance or whether the U.S. government would once again become more assertive at supply management. Provision for set-asides are not contained in our farm policy, except for the Farmer Owned Reserve. Will world production drop in 1999 to

better align supply with demand, or will farmers worldwide keep producing as much as possible? If grain production continues to be large in 1999 relative to the world use, some consideration of U.S. supply management could resurface for the 2000 crop.

Corn Prospects Remain Weak

The final crop estimate set the 1998 national yield of corn at 134.4 bushels per acre.



The crop was estimated at 9.76 billion bushels, 6 percent above the previous year's crop. Total supply was a record of 11.1 billion bushels. Usage is expected to grow to a record this year of 9.3 billion bushels, with record feed usage and record food, seed, and industrial usage. Exports are expected to up by 15 percent, and the year-to-date export pace is up 18 percent. Carryover stocks are expected to reach 1.8 billion bushels which represents 71 days of use, a number which is among the higher levels over the past decade.

The Southern Hemisphere crop is expected to be smaller, led by a 25 percent reduction in the size of the Argentine crop. The South African crop will be up 18 percent, but since its production is small compared to Argentina's crop, the two on average will be down about 13 percent. The smaller crops in the first half of 1999 will be supportive to corn exports and to corn prices. Weather conditions in South America were dry during the planting season, but more precipitation fell in December. Some dry pockets, however, remain.

Typical *La Niña* weather patterns would suggest dry conditions this winter in South America, and a cold wet winter in the Midwest. Drier weather might be expected in South America if the *La Niña* continues. *La Niña* summer weather in the Midwest tends toward hot and dry conditions. Both of these patterns would favor lower yields and higher prices.

Corn prices for the 1998 crop are expected to average about \$2.05 in Indiana. Nationally, over 3 billion

bushels of corn received LDPs and thus are not eligible for government loans. This means that those farmers are bearing the full costs of storage, and that the corn is likely to be sold earlier than it would have been under the old loan program. This will keep price rallies to a minimum. Expect corn prices to have only small price increases this winter. Any sustained increase will be dependent upon dry conditions in South America.

Indiana cash prices could rise 10 cents to 20 cents into the spring. If adverse weather develops, prices could move up 30 cents to 40 cents. In general, without weather problems expect very modest price enhancement.

For the new crop, planted acreage of winter wheat is expected to be down 3 million acres. Much of this is in Missouri, Illinois, Indiana, and Ohio. In addition, cotton acres are expected to drop in the South. This means that more acres will be available to be planted to both corn and soybeans. At this time, economics would seem to favor corn because the bean/corn new crop futures price ratio is only 2.3 to 1. Normally, a ratio of 2.5 to 1 or less favors corn; however, many farmers are short on cash for spring planting and thus are talking about more beans to keep their input costs down. In addition, if prices are low at harvest, the government loans favor soybeans (around \$5.40 per bushel soybean loan compared to \$1.95 corn loan).

Using 80.5 million acres planted with yields of 130.5 bushels would provide a 1999 crop in the range of 9.6 billion bushels. Usage of the 1998 crop is forecast at 9.3 billion bushels. For 1999, feed use will drop as both cattle and pork numbers will be lower, exports could continue to increase, but total use would struggle to go much higher. Thus, carryovers could rise another 200 to 300 million bushels and push toward 2 billion bushels. This means 1999 new crop prices would be at or below those of the 1998 crop if weather is normal.

In general, producers should be ready to take advantages of small

price rallies on the order of 20 cents in both the old and new crop. The year of 1999 may be a year to be conservative in marketing.

Soybeans Face Export and Acreage Hurdles

Soybean yields averaged 38.9 bushels per acre for the nation in 1998, somewhat above trend. Total production reached 2.76 billion bushels, a new record. Total supply was also a record at nearly 3 billion bushels.



Exports are the most disappointing aspect of utilization this year. The USDA is projecting a decline of 7 percent in exports, yet the year-to-date total is down 24 percent. This means that USDA will need to lower their export usage in future reports and likely increase carryovers. Carryover is currently estimated at over 400 million bushels, which represents a 60-day supply, near the highest carryovers of the last decade.

The South American crop is expected to be down by 4 percent in Argentina and 2 percent in Brazil, primarily as a result of weather that will be closer to average after an exceptionally favorable weather pattern for last year's crop. Devaluation of the Brazilian currency will make their beans more competitive in world markets.

Prices in Indiana are expected to average about \$5.30 per bushel for the 1998 marketing year. The market will watch weather maps over South America for clues as to the overall direction of prices. If weather problems do develop there, cash soybean prices should move up 30 cents to 40 cents per bushel. Without a weather scare, prices are expected to only move up 0 to 30 cents this spring.

Producers are indicating an intention to plant more soybeans in 1999. With the pool of acres to come from winter wheat, this could result in 2 million more acres of beans, or a planted acreage of 74 million acres. With trend yields of 38.6 bushels per acre, this would generate a crop of 2.8 billion bushels, another record. Current use is 2.5 billion, with the prospects of adding 200 million

bushels to carryovers, or pushing them up near 600 million bushels. This would represent over 80 days of unused stocks at the end of the year. Prices would average about 25 cents lower than this year (around \$5.05), with harvest prices dropping as low as \$4.50 per bushel. LDPs would once again become the marketing strategy to consider.

Needless to say, U.S. farmers would like to see a smaller crop somewhere in the world in the coming 8 months because the implications of such low prices in an already depressed sector would add to the financial difficulty. Adverse weather seems to provide the greatest odds of a price rally as continued weakness in the world economy makes demand-based rallies less likely.

Wheat Prospects Could Brighten

Wheat has been the crop with the most severe carryover problem.



Even though wheat acreage dropped sharply in 1998, extremely high yields at 43.2 bushels per acre provided a 2.6-billion-bushel crop. Usage is projected to be higher by nearly 200 million bushels due to more wheat feeding and to stronger exports. Carryovers will reach an estimated 150 days of use on June 1 of this year. These are among the largest carryovers in the past decade.

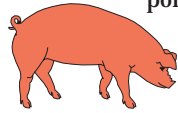
Acreage of winter wheat is expected to be down about 3 million acres. The amount of spring wheat seeded will largely depend on price relationships of soybeans and wheat this spring.

Assuming a 3-million-acre lower total seeding and trend yields at 40.5 bushels per acre, a crop of only 2.2 billion bushels would be produced. With a usage rate currently at 2.4 billion bushels, carryovers could drop, with somewhat higher prices for the 1999 crop.

Season average prices for the 1999-2000 crop year would be expected to average in the \$2.70 to \$2.90 range, or 20 cents higher than the current marketing year.

Hog Hopes Rise from Financial Disaster

After unexpectedly huge supplies of pork in November and December, pork supplies are expected to moderate in 1999. Spring supplies are expected to be near unchanged. Farrowing intentions for winter were down 1 percent and for spring down 7 percent. If so, this means that pork supplies would fall throughout the year.



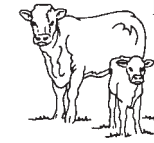
Hog prices are expected to be in the lower \$30s for March, and reach the mid-\$30s by May. Summer prices are expected to be in the very high \$30s, with prices finishing the year in the low \$40s.

Further improvements in price can be anticipated for the year 2000. Average price for 2000 will likely reach the mid-to-higher \$40s, with some prices above \$50 in the summer and fall of 2000. In the past three cycles, the time period from price low to price high has averaged 19 months. Assuming December 1998 as the low price point, this same timing would suggest high prices by the summer of 2000. The magnitude of the price increase, of course, will be affected by the degree to which the industry liquidates the breeding herd this year.

While the outlook has improved sharply, losses are expected at least through April 1999 and will continue to add to the financial pit into which hog producers have been thrown. At this point it appears that most operations which are well managed and have had a history of profitability will be able to continue in the industry. However, some operations face huge discouragement and financial difficulties they just cannot overcome. Expect nearly 20 percent of the nation's hog producers to leave the industry this year. In Indiana this number will be smaller, about 15 percent.

Beef Means Better for 1999

For 1999, USDA is estimating beef production will drop to 24.1 billion pounds, down 6 percent. Reduction in production will be evident throughout the year starting with a 4-percent reduction in the first quarter and then 7-percent to 8-percent reductions in each of the quarters from second to fourth. Per capita supplies will fall from 68.2 pounds per capita to 63.3 pounds in 1999, a 7-percent plunge.



For 1999, the beef trade deficit will remain about the same, as beef exports grow by 8 percent and beef imports grow about 7 percent.

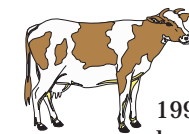
Beef will have strong competition, particularly in the first half, with the continuation of record pork supplies. Prices should average in the higher \$60s for the year. The lowest prices will occur in the first quarter and average in the \$63 to \$65 range. Second quarter prices should strengthen to the \$65 to \$69 range, with last-half prices in the higher \$60s.

Feeder cattle at Oklahoma City averaged \$72 in 1998 and are expected to rise to an average of near \$80 in 1999. Most of the strength in feeder cattle will result from the much smaller 1998 calf crop and the strength in the finished cattle market.

Calf prices at Oklahoma City for 500 pound steers averaged a disappointing \$81 per live hundredweight. For 1999 they are expected to be in the higher \$80s to low \$90s. Indiana calf prices are \$3 to \$5 below those of Oklahoma City.

Milk Prices to Weaken After Records

After record high milk prices, which reached \$15.40 per hundredweight for all U.S. milk in 1998, prospects for 1999 are somewhat lower. Prices are



expected to drop about \$1 per hundredweight in 1999. After virtually no increase in production in 1998,

production is expected to increase by 2 percent in 1999. Usage, on the other hand, will increase about 1.8 percent, allowing only modest increase in stocks.

Low feed prices in combination with moderate reductions in the price of milk will keep the dairy industry in strong profits for 1999. Production increases could become larger by the last-half of 1999, with profit prospects weakening relative to the first half.

Poultry: Some Improvement

Egg production increased 2.4 percent in 1998, with further increases of this magnitude expected for 1999. Demand is expected to continue to remain strong, but not by enough to keep prices from dropping this year. Prices are expected to drop 5 percent to 8 percent with the industry operating near a breakeven situation.

Turkey producers have experienced losses over the past two years. Poult placements for 1999 are about 10 percent lower than last year, and this means a sharp cutback in supplies. With the recovery in prices and moderate feed costs, turkey producers should see a return to profits in 1999.

Chicken production was up only 1.8 percent in 1998, with prices up 7 percent. Russia had been buying about 17 percent of U.S. production, but that ended with the collapse of their currency last summer. For 1999, production is expected to be up about 6 percent with prices and profits headed down.



Weaker Land Values, But Not Cash Rents!

The Indiana land market appears to have weakened somewhat in the last half of 1998. After making new highs in our June survey, another survey of the same expert panel in December suggested that land values for average and high quality land had dropped around 2 percent since summer and about 5 percent for low-quality land. Confirming these results is the Chicago Federal Reserve Bank, which surveyed its commercial bank loan officers and reported Indiana land values to be down about 3 percent at the end of the third quarter of 1998.

The weakness is related to depressed crop prices and a growing concern about price prospects for the 1999 crop. Offsetting the weakened tone for operating returns is the decline in interest rates, with anticipation of even lower rates, stronger than expected government payments, and continued strength of the general economy which is keeping the development demand of farmland strong.

Land values seem to be at a sensitive point where positive news could stabilize them or more negative news could cause further erosion. Positive developments could include improvement in the Asian economies, a reduced size of Southern Hemisphere crops due to dry weather, and lower interest rates. On the negative side, continuation of the current low prices into the 1999 crop could result in a shift to more bearish long-term attitudes. This is a time to do some

forward planning. As a part of that planning buyers and owners should ask, "How would a reduction in land values of 10 percent to 20 percent affect the financial health of my business?"

Poor crop returns last year and prospects for the same in 1999 would seem to suggest downward adjustment in cash rents. However, our December survey does not indicate this to be the case. Respondents reported rents unchanged to somewhat higher for 1999.

Cash tenants seem to be caught in a trap, needing to keep rents constant or risk not farming the land in 1999, because there apparently is a pool of willing cash renters ready to pay last year's rates or higher. If crop prices do not improve, this will present a growing dilemma for a number of cash tenants as they evaluate at what rental rate they should not take the risk of farming a piece of land.

Given current markets and prospects for government payments, cash tenants who continue to bid rents higher are likely taking on considerable additional risk in 1999. We estimate that with cash rents similar to last year (\$112 per acre for 123 bushel corn land), the cash tenant raising a corn-soybean rotation has only a 30 percent chance of generating a return that will cover the cash rent plus operating expenses of \$117 per acre (\$148 per acre for corn and \$85 per acre for soybeans) and provide \$80 per acre for machinery ownership and family living expenses. If the current observation of steady to slightly higher rents is valid, clearly many tenants have prospects of not recovering costs in 1999.

Continued from page 10.

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Lysine: A Case Study in International Price Fixing

*John M. Connor, Professor**

On October 14, 1996 in U.S. District Court in Chicago, Archer Daniels Midland (ADM) company pleaded guilty to price fixing in the world market for the amino acid lysine. In the plea agreement, ADM and three Asian lysine manufacturers admitted to three felonies: colluding on lysine prices, allocating the volume of lysine to be sold by each manufacturer, and participating in meetings to monitor compliance of cartel members (Department of Justice [DOJ 1996]). A corporate officer of ADM testified that his company did not dispute the facts contained in the plea agreement. In addition to precedent-setting fines paid by the companies, four officers of these companies pleaded guilty and paid hefty fines, while four more managers have been convicted and face probable fines and jail sentences for their leading roles in the conspiracy.

The lysine price-fixing episode was one of the largest, best documented, and most important prosecutions in modern times under the Sherman Act of 1890. The lysine cartel was striking in its comprehensive, multinational dimensions. Both the structural characteristics of the world lysine market and the corporate management cultures of the principal conspirators helped facilitate collusive selling behavior for about three years. Antitrust officials have learned how easy it was for four

determined companies with sales spanning five continents to organize a highly profitable cartel that could easily have gone undetected. Managers of companies will see that the penalties for and chances of being caught fixing prices have escalated as a direct result of the lysine episode. Here I chronicle the operation of the 1992-1995 lysine conspiracy and identify a number of key legal, economic, and management issues raised by the episode.

The Market for Lysine

Lysine, an essential amino acid, stimulates growth and lean muscle development in hogs, poultry, and fish. Lysine has no substitutes, but soybean meal also contains lysine. In the 1960s, Asian biotechnology companies discovered a fermentation process that converts dextrose into lysine at a much lower cost than conventional extraction methods. (Documentation of these and other facts can be found in Connor (1998a) and other publications listed in "For More Information.") By the 1980s, two Japanese manufacturers were importing large quantities of dextrose from U.S. wet corn millers and exporting high-priced lysine back to the USA. ADM became the largest U.S. manufacturer of lysine in February 1991 and quickly gained about half of the U.S. market. U.S. lysine consumption grew 10 percent per year in the 1990s. The U.S. market reached sales of \$330 million in 1995; world sales totaled \$600 million.

Archer Daniels Midland

ADM is a large and diversified company. In fiscal year 1995, ADM had consolidated net sales of \$12.7 billion (ADM). During 1986-1995, ADM's net sales had increased by 10.1 percent per year. ADM's major divisions are oilseed and corn starch products. The corn products division produces corn sweeteners, corn starch, alcohols, and a host of biotechnology products. Within the corn products

division, fructose and ethanol are mature or maturing industries with slow growth and narrowing margins; however, the other bioproducts from corn generate much higher margins. During 1989-1995, ADM invested \$1.5 billion in its bioproducts division.

For a company of its size and diversity, ADM is managed by a remarkably small number of managers (Kilman and Ingersoll). Chairman Dwayne Andreas and a few top officers reportedly made all major strategic decisions from 1970 to 1997. Until late 1996, the ADM board contained a large majority of current and former company officers, relatives and long standing close friends of Andreas, or officers of companies that supply goods and services to ADM.

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).

Economic Conditions Facilitating Price-Fixing

With one or two exceptions, the lysine market exhibits all the economic conditions that facilitate price fixing. First, market sales concentration was very high. The lysine cartel consisted of four manufacturers that produced 95 percent of the world's feed-grade lysine. During 1994, ADM alone supplied 48 to 54 percent of the U.S. market. Second, lysine is a perfectly homogeneous product. Third, technical barriers to entry are high. Plants are highly specialized in production (implying large sunk costs of investment), and their sizes are large relative to market demand. Patents

** Dr. Connor assisted a few lysine buyers in estimating the overcharges they may have incurred as a result of the conspiracy. All statements of fact in this paper are based on publicly available materials, and all opinions expressed are Dr. Connor's own and not necessarily those of any party or lawyer involved in the legal proceedings discussed in this paper. An earlier version of this article appeared in "Choices" magazine in 1998. The author thanks Jay Akridge, Mike Boehlje, Peter Barry, Lee Schrader, Chris Hurt, and anonymous reviewers of "Choices" for their constructive comments. Purdue Journal Paper No. 15439.*

and technological secrecy impede entry. Fourth, market power is difficult to exercise when accurate price reporting mechanisms exist, such as auctions in public exchanges. Domestic lysine prices are almost completely hidden from public view. Fifth, lysine purchases were large and infrequent. Animal-feed manufacturers purchased lysine by the ton. Large and lumpy orders are easier for a cartel to monitor for compliance than frequent, small transactions.

Price-Fixing: Chronology & Mechanics

By the late 1980s, Ajinomoto, Kyowa, and one South Korean company, Sewon, were exporting about \$30 million of lysine per year to the United States and charging \$1.00-\$2.00 per pound, much less than U.S. organic chemical companies were charging for extracted lysine. Then, ADM discovered why Asian biotechnology companies were buying so much dextrose from the United States—it is a raw material for lysine made by fermentation. In 1989, ADM committed an initial \$150 million to build the world's largest lysine factory in Decatur, Illinois and hired 32-year-old biochemist Mark Whitacre to direct the new lysine division. Production began in February 1991, and a "tremendous price war" erupted (Whitacre). The U.S. price dropped from \$1.30 in 1990 (or \$1.20 in January 1991) to a record low of \$0.64 in July 1992. ADM's cost of production is, reportedly, between \$0.65 to \$0.70 per pound when the plant is operating as designed. At selling prices near \$0.60, ADM was losing millions of dollars per month in its lysine operations. Asian producers were suffering even greater losses per ton.

About this time, the lysine division was placed under ADM V.P. Terrance Wilson. In April 1992, Wilson and his subordinate Mark Whitacre met with Ajinomoto and Kyowa Hakko in Japan, where they proposed the formation of an "amino acids trade association." By this time ADM controlled one-third of the world market. In June 1992, the first of many meetings of the "lysine

association" took place in Mexico City. The three companies (and later the South Korean company, Sewon) discussed raising prices, allocating production, and setting sales shares across several regions of the world.

The conspirators apparently were successful in raising the U.S. price of lysine to \$0.98 for three months (November 1992 to January 1993). From October 1993 to August 1994, prices held at a steady \$1.08 to \$1.13 and then rose again to about \$1.20 for another six months (Figure 1). Industry output growth was constrained to half its historical rate. A year after the conspiracy ended in late 1995, U.S. lysine exports doubled.

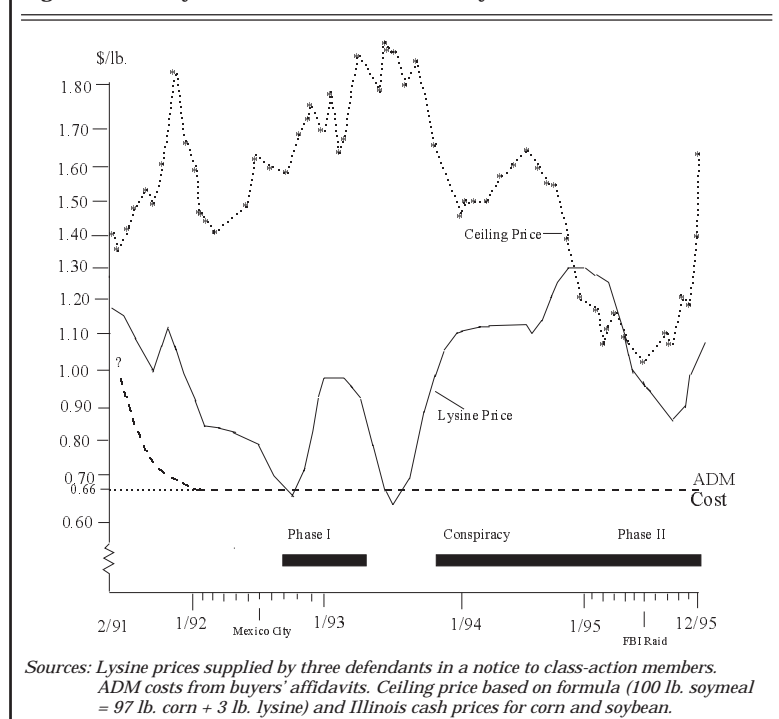
Whitacre was recruited by the FBI as a secret informant (a "mole") in November 1992. Up until June 1995, he provided hundreds of audio tapes of many price-fixing meetings concerning lysine, citric acid, and fructose. The FBI secretly made additional video tapes of the "lysine association" meetings. A federal grand jury was formed in Chicago in early June of 1995 and obtained subpoenas for all information on

price fixing by ADM and its co-conspirators.

More than 70 FBI agents raided ADM's corporate offices in Decatur, Illinois on the night of June 28, 1995; many ADM officers were also interviewed in their homes that night. Seized documents show 1992-1995 "sales targets" and "actual sales" by all members of the lysine association. Documents were subpoenaed from many other firms as well. In the three following months, ADM's stock price fell 24 percent (\$2.4 billion of market value). At its October 1995 stockholders' meeting, Chairman Andreas disallowed discussion of the price-fixing charges. By February 1996, ADM had a total of at least 85 suits filed against it, 14 by lysine buyers and many others by stockholders claiming mismanagement and failure to divulge material information.

In the spring of 1996, the Department of Justice's criminal case was beginning to falter. No indictments had yet been filed. The DOJ was targeting (Executive V.P.) Michael Andreas and Terrance Wilson for criminal charges, but not a single

Figure 1. Monthly U.S. Transactions Prices of Lysine, 1991-1995



ADM officer offered to corroborate the evidence. The Asian companies also refused to cooperate. Moreover, Whitacre's credibility was tarnished by his own admission that while an FBI mole he defrauded ADM of \$9 million.

In April 1996, ADM, Ajinomoto, and Kyowa offered to pay "civil damages" of \$45 million to the class of buyers of lysine during 1994-1995. Technically, the three companies were not admitting that they were guilty of price fixing. The class was represented by a Philadelphia law firm that made the lowest fixed-fee bid in an unusual *auction* held by a U.S. 7th District Court judge. The judge refused to consider bids based on conventional *percentage* contingency fees. Buyers had three months to decide whether to accept an assured part of the \$45 million settlement immediately or to "opt-out" of the agreement and possibly win larger settlements in the future. Based on a damage estimate that was 10 to 12 times higher than the defendants', 32 large companies did in fact opt out. The judge was criticized for rushing to judgement civil penalties that normally follow the completion of the criminal case. Law firms operating under fixed fees have incentives to settle quickly rather

than to wrest bigger settlements through protracted negotiations.

In a shocking setback for ADM, in August 1996 the three other lysine co-defendants "copped a plea." In return for lenience, the three Asian companies filed guilty pleas, and three of their executives admitted personal guilt and agreed to testify against ADM. Now isolated, ADM's lawyers began to negotiate in earnest with the DOJ. On October 14, 1996, ADM also agreed to plead guilty to criminal price fixing, to pay a \$70 million federal 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 occurred soon after: M. Andreas was placed on "administrative leave"; T. Wilson resigned; and D. Andreas was relieved of his duties as CEO (though he keeps his title of Chairman).

The criminal fines and civil damages have cost the guilty parties at least \$159 million in the case of lysine alone as of late 1997. Legal costs are around \$76 million for lysine and other commodities, and shareholders' suits were settled for \$38 million by ADM. The total monetary costs for price fixing, mismanagement, and fraud for all three products (lysine, citric acid, and

fructose) are \$600 million and rising (Connor 1998a).

Price-Fixing Injuries

The courts have held that price fixing is *per se* illegal under the 1890 Sherman Act. That is, in a criminal case prosecutors need only prove that an agreement 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. A conspiracy to manipulate 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. Plaintiffs in a civil antitrust case bear a heavier evidentiary burden of proof than in a criminal case. The plaintiff must prove "with reasonable certainty" that the violation occurred (often using evidence from an earlier criminal proceeding to do so) and that it suffered a compensable harm as a *result* of the violation. In order to estimate damages, a plaintiff must determine the difference between the revenue actually earned during the period of unlawful conduct and what would have been earned absent unlawful conduct.

Five potential groups may be harmed by price fixing (Page). The first and clearest case of damages involves *direct purchasers*, who pay an inflated price called the "overcharge." Buyers who were overcharged have had legal standing to recover three times the overcharge since the first federal price-fixing case was decided in 1906. Lysine overcharge estimates ranged from \$15 to \$166 million. Second, a portion of the overcharge is passed on to the *indirect buyers* of products containing lysine. In the present case, hog and poultry farmers who buy prepared animal feeds containing lysine are harmed by both the higher price of animal feed and lost farm sales. Under many state antitrust statutes, indirect overcharges are recoverable in state courts, but since 1977 no standing is given to indirect buyers in federal courts. Several such lysine suits are ongoing.



The Archer Daniels Midland plant in Decatur, Illinois.

A third group of buyers may be harmed. If a cartel does not contain all the producers in an industry, nonconspirators (“fringe” firms) may raise their prices toward the cartel’s price. *Direct buyers from noncartel sellers* are harmed, but under the law only the conspirators are liable to pay damages. Thus, noncartel sellers can enjoy excess profits during the conspiracy period. This type of injury did not apply to lysine because almost all sellers in the world belonged to the conspiracy.

Those forced to buy inferior substitutes or those who reduce their purchases in response to the higher price make up a fourth group harmed by price fixing. Although this kind of harm is well accepted as a social loss by economists and some legal theorists, the parties incurring these “deadweight” losses generally have been denied standing to sue by the courts. Finally, price fixing harms those *suppliers of factors of production to the conspirators* who lose sales or income due to output contraction. 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.

Normally a civil class-action suit is settled after the conclusion of the government’s case. The lysine story is more complicated because the civil class-action suit was settled a month *prior* to the criminal pleas. Settling the class-action suit early gave ADM two enormous advantages in its legal strategy. The criminal guilty pleas could not be entered as evidence in the class-action case, nor could the size of the criminal fines be used as a guide to settling civil damages.

** These two were found guilty in District Court in Chicago in September 1998.

*** When lysine prices shot-up in mid-1992 and again in mid-1993, producers not under contract briefly incurred profit reductions. In a few months, the higher feed costs would cause supply to contract. Eventually prices of hogs would rise enough to cover the higher feed costs. Producers under contract to packers pass cost increases through immediately.

Penalties for Price Fixing

Parties guilty of criminal price fixing are sanctioned by means of fines and imprisonment. The ADM affair signaled a significant escalation in price-fixing fines. A major change in price-fixing penalties came in 1975, when Congress upgraded antitrust crimes from misdemeanors to felonies. Under 1991 federal sentencing guidelines, any felony can be punished by fines equal to twice the harm suffered by victims. Up to 1975, the maximum monetary exposure of corporations was three times overcharges plus \$1 million; since 1995, the exposure has risen to *five times* the overcharges, almost a 60-percent increase.

The first application of the “two-times” felony rule in 1995 resulted in a \$15 million fine for one company. The second time this rule was invoked was in October 1996, when ADM was fined \$70 million for the lysine conspiracy and \$30 million for its leading role in the citric-acid conspiracy. However, the DOJ explicitly rewarded ADM with a discounted fine because the company had agreed to cooperate in prosecuting other companies as well as two of its own officers (M. Andreas and T. Wilson)**. The Asian lysine producers received even larger discounts because they agreed to cooperate with prosecutors two months before ADM did. 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. Thus, the \$70 million lysine fine is at most a minimum indicator of the true overcharges incurred by buyers of lysine.

Given ADM’s share of the lysine market, one can infer that the total overcharge on direct buyers of lysine was *at least* \$65 million, but it could have been as high as \$140 million. Sales of lysine during the conspiracy were about \$495 to \$550 million, so the conspiracy raised U.S. lysine prices by 12 to 28 percent above the competitive price.



Implications for Producers

Lysine is one of 20 essential amino acids necessary for muscle and bone development in monogastric meat animals. Hogs and poultry cannot manufacture lysine on their own, so it must be ingested. Wheat and corn have traces of lysine, but soy meal is quite rich in lysine. When soybean prices are high and corn prices low to moderate, a corn-lysine mix is much cheaper than an equivalent amount of soy meal. During 1991-1995, a typical 97-lb.-corn-3 lb.-lysine mix was cheaper than 100 lb. of Midwest soy meal more than 90-percent of the time.



Experts say that a growing pig needs on average about 22 grams of lysine per day for optimal growth.

According to Pete Merna of the Illinois Pork Producers’ Association, a typical Corn Belt pork producer that utilizes 100 tons of feed per year would have to buy, directly or indirectly, about 3 tons of lysine. During the height of the lysine conspiracy in 1994, that lysine would have cost farmers or feed manufacturers \$7,200, which was almost double ADM’s cost of making lysine. Most farmers had no choice but to pass on the \$3,600 in extra costs to the packers***. When lysine prices shot up in mid-1992 and again in mid-1993, producers not under contract would briefly incur profit reductions. In a few months, the higher feed costs would cause the typical producer to reduce feed use and delay hog marketings. The delay would cause prices offered to rise enough to cover the higher feed costs. Producers under contract to packers pass cost increases through immediately. In addition, because of a small rise in retail pork prices, the quantity demanded decreased. Some pork producers were forced to cut back on production when lysine prices were artificially inflated. By my rough estimate, farm revenues from hog sales declined by \$15 to \$20 million during the conspiracy.

But the greatest injury was to producers and feed companies that were overcharged some \$65 to \$140 million for the lysine they bought

during the conspiracy. By a curious twist in federal antitrust law, only *direct* buyers of lysine can sue for the treble damages due to them. Michigan and 15 other states allow *indirect* buyers to sue for price-fixing damages under state antitrust laws. To put it in a nutshell, if a pork producer mixes his own feed *or* lives in Michigan, he is entitled to get triple damages (\$11,000 in our example) from the lysine makers. But if the producer buys pre-mix *and* lives in Indiana, he has no right to sue.

Final Observations

The lessons for public policy and managers of multinational agribusiness firms are profound. A statement of U.S. Attorney General Janet Reno on the day ADM pleaded guilty said in part "This \$100 million criminal fine should send a message to the entire world" (DOJ). Measured by the widespread attention of the world's business press and by the sharp reaction of ADM's stock prices, she is certainly right. The lysine settlements demonstrate that the cost of discovered price fixing has suddenly gone up. Moreover, the chances of being caught are now higher than ever (Bingaman). Dozens of investigations of international price fixing have since been launched by federal authorities, and a new era of multilateral coordination among the world's antitrust agencies has begun (Connor 1998b).

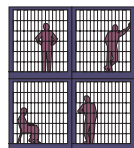
The antitrust agencies have reason to monitor wet-corn millers closely for price fixing. Lysine and citric acid are but two of a long list of synthetic organic chemicals now being made by ADM and other wet-corn milling companies. The rapid growth of specialty chemicals made from corn starch is partly the result of entry of wet-corn millers into the traditional synthetic organic chemicals industry, which had sales of nearly \$100 billion in 1995. These products include food ingredients (such as sorbitol), feed ingredients (tryptophan), and medicinals (ascorbic acid). For most specialty organic chemicals, only one to three domestic producers are active. For example, in 1994 ADM was one of at most three U.S. manufacturers of lactic acid,

sodium lactate, and sodium gluconate. As wet-corn millers continue to move into these specialty chemical markets with their high sales concentration, the opportunities for price fixing will increase.

The lysine conspiracy resulted in far-reaching changes in ADM's governance structure and leadership. Three of ADM's officers were convicted on criminal charges, and more are under indictment. The ADM board of directors has been transformed. Up to 1995, the great majority of the 17 board members were insiders by anyone's definition. In 1996, eight insiders on the board resigned, but not all their replacements pleased the stockholders. A resolution by institutional shareholders of ADM that would have imposed stricter guidelines in selecting outside directors nearly passed at ADM's 1996 annual meeting. In April 1997, Dwayne Andreas relinquished his title of CEO to his nephew G. Allen Andreas.

Antitrust prosecutors tend to target companies like ADM that lead their industry. Targeting high-profile companies is a wise use of constrained administrative resources because it increases the deterrence effect. Moreover, the DOJ imposed sanctions on ADM that have markedly changed the rules of the price-fixing gambit. Since 1996, price fixers have faced public penalties and private damages that are *five times* their illegal profits, far higher than their previous exposure. If the "two-times" rule for fines is fully applied, then patient private plaintiffs will have a clearer guide to the treble damages they may seek.

Perhaps the most important lesson of the lysine conspiracy for antitrust enforcers is the ease with which an international cartel was formed and executed. The two smaller lysine producers claimed that they were coerced into joining the cartel by leaders ADM and Ajinomoto, and leaked tapes of the price-fixing meetings corroborate the charge (Eichenwald). With just two or three top managers from each company attending meetings around



the world every three months, the conspirators were able to arrive at complex allocations of production from at least six plants, exports from three countries, and sales to five 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. Were it not for a well placed whistle-blower, the lysine cartel might still be in full operation today.

Because it was an international conspiracy, overcharges as large as those in the United States were very likely incurred by buyers of lysine in other parts of the world. In mid-1997, antitrust authorities in the European Union and Mexico opened duplicative investigations of lysine price fixing. The multinational character of the lysine conspiracy underscores the need for multinational legal approaches (Connor 1998b). Recent court decisions make it clear that U.S. authorities can seek redress from off-shore conspiracies that affect U.S. trade or domestic commerce. However, effective national prosecution is unlikely unless the target companies own significant assets in the affected nation's territory. Bilateral antitrust protocols have been signed and formal annual meetings have recently begun among the U.S., Japanese, European Union, and other antitrust agencies, but so far cooperation is limited to gathering and sharing of information. It is difficult to envisage a legal structure that would permit multilateral prosecutions of international cartels.

For More Information

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Continued, page 5.

New Staff

Allan Gray is an Assistant Professor in the Department of Agricultural Economics at Purdue University. He has teaching, research, and extension responsibilities in strategic decision-making for agribusiness. In addition, he is responsible for development of courses in the new Executive MBA program scheduled to be launched in the fall of 1999.

Allan grew up on a small farm in North Texas. He received a Bachelor's degree in Agricultural Economics from Tarleton State University in 1992. He continued his education at Texas A&M University earning a Master of Science and Doctor of Philosophy degree in Agricultural Economics in August 1998. Allan has a wife and two daughters and resides in West Lafayette, Indiana.

Allan's research interests are in agribusiness management, strategic planning, decision-making under uncertainty, and simulation. His current research includes the impacts of biotechnological advances on the economic and financial outcomes of input supply firms. Allan is also researching the impacts of identity-preserved



Alan W. Gray

grains on the logistics and financial outcomes of farmers and country grain elevators.

Allan has published on a range of topics. Those publications include implications of the 1995 Farm Bill for agricultural producers, farm-level impacts of revenue assurance, a simulation approach to agribusiness behavior modeling, and agribusiness strategic planning under risk. Allan has also received awards for distinguished policy contribution and third place in an outstanding poster competition from the American Agricultural Economics Association.

synopsis of the most important issues discussed in that chapter of the book.

You may or may not agree with our analysis. We encourage you to read the complete analysis in *Food System 21: Gearing Up for the New Millennium*

which is available for \$29.95 from: **Agricultural Communication Service Media Distribution Center**
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Beef Sector

*Chris Hurt, Jake Atkinson,
Larry Bohl, Kern Hendrix,
and Ron Lemenager*

The beef industry has a storied history, but an uncertain future. In 1996, as an example, farm level receipts of beef were \$31 billion, accounting for 15 percent of sales of all crop and livestock products produced on U.S. farms. In contrast, the second leading enterprise was corn, with gross receipts of \$27 billion, and third was dairy at \$23 billion.

Clearly, beef is still the king of all agricultural enterprises, but its dominance continues to erode. Dominance is demonstrated by the fact that beef remains the most highly consumed animal species when weight is measured on a boneless basis and is highly valued, as evidenced by the fact that beef commands the highest retail prices of major livestock and poultry species. Decline, on the other hand, is demonstrated by declining per capita consumption.

In fact, the "king of agriculture" has been in a downtrend for over 20 years. Lower cost animal proteins and changed consumer lifestyles have been nibbling away at its kingdom. The future seems to point to a continued decline, as competitors beat beef in price, in product innovation, and in adapting to new markets. The hurdles for the beef industry are high and include the

Food System 21: Gearing Up for the New Millennium - Part IV

Introduction

The U.S. agricultural production and food distribution industry is currently in the midst of major structural changes. To assist in understanding the implications of these changes and the future of the industry, faculty in the School of Agriculture at Purdue University in collaboration with industry representatives undertook a study to assess the future of the food production, processing, and distribution system. The results of

this analysis are reported in detail in *Food System 21: Gearing Up for the New Millennium*—winner of a Gold



Award for editing from the Agricultural Communicators in Education. Congratulations to Laura Hoelshcer, PhD, Editor, Agricultural Communications Service, for this accomplishment.

In this issue is a summary of a key chapter of that book, the beef sector. This summary presents the "Key Questions & Responses" section, of this chapter which provides a

need to lower production costs, to increase coordination from ranch to consumer, to overcome health concerns, and to improve quality, consistency, and product innovation.

Key Questions & Responses

► Why has beef been losing consumer market share to poultry?

Beef has been losing market share since the mid-1970s. In recent years this has been at the rate of about 1 percent per year. Poultry has gained nearly all of the market share that beef has lost. The reasons for beef's decline include continued human health concerns from beef consumption, lower retail prices for chicken and turkey, lack of new products that fit changing lifestyles of consumers, slow growth of new products that fit the convenience market over the past 20 years, diversification of fast-food menus, and inconsistency in meat quality.

But keep in mind that declining per capita consumption is offset by growth in domestic population of about 1 percent per year. Thus, the total pounds consumed in the domestic market is fairly constant.

► Can the trend toward declining market share be reversed?

It will be difficult to reverse this trend. The beef industry will have difficulty reducing costs due to biological factors such as:

a long gestation period, single births, a long grow-out period, high feed consumption per pound of lean gain, and a low dressing percentage relative to other species. Movement of cattle through the marketing chain is poorly coordinated relative to the poultry and pork industries. There are many small cow herds, with diverse genetics and management programs. Also, the four segments of the industry (beef cows, backgrounding, feeding, and processing) tend to remain commodity driven, with segments in competition with each other. Cattle are moved around the country inefficiently, and the true consumer value



of calves and cattle is not well identified by existing market systems.

► Aren't packer concentration and captive supplies causing low cattle prices?

The cattle industry has been greatly concerned about greater concentration in packing and about purchasing practices which reduce the number of cattle which have prices determined in the open market. It is true that packer concentration has sharply increased in the past decade. It is also true that packers are seeking ways to have an assured supply for a portion of their capacity. They have tried to assure these supplies with marketing programs that offer forward contracts which establish both delivery and price before animals move to slaughter. On these cattle, packers do not have to bid for them on the day they move to slaughter, since that negotiation was previously made.

The USDA has commissioned several studies to examine these concerns. Those findings tend to suggest that the impact of packer concentration and captive supplies can be identified but has been small, and that the low cattle prices of recent years are not attributable to these factors. The federal government continues to have many complaints from cattle producers regarding lack of competition, market access, and packer buying practices. Thus, government officials indicate that they plan to continue to watch these issues closely in the future.

► How can beef cost be lowered and quality increased?

The industry can work to lower the costs of beef by improvements in the production efficiency in the beef cow sector.



There are still many herds which do not use existing cost-lowering technologies. Better coordination of genetics in the cow-calf sector and coordination through the marketing chain to the consumer are needed. Through adoption of proven technologies, the industry could reduce costs and increase product consistency.

The industry also needs to increase innovation of new products to capture consumers' desire for convenience and to adapt products to changing lifestyles. Greater coordination of animals through the marketing chain is needed and is expected to develop.

The question remains: "Who will do the coordinating?" There are likely to be multiple players, e.g. very large cow-calf operations, alliances of smaller operations, regional cooperatives, and packers.

► Will environmental and land use issues have major impacts?

The safest answer seems to be "Yes," even though it is harder to pinpoint how this will occur. Environmental concerns are nearly universal. Rising concerns over air and water contamination, and growing land use issues seem to be likely influences. Keep in mind that there is still much to be learned about the impact of livestock and poultry production on the environment. Scientists are just beginning to find potential technological solutions to environmental degradation from animal production and processing. Brood cows appear to be less affected by environmental regulations due to the small herds, which primarily graze and thus are not concentrated in small areas.

Conflicts over land use are also growing. Neighbors of livestock operations have gained a greater voice in recent years. The right to enjoy their property without undo disruption to their lifestyle is increasingly supported in our society. These pressures make it likely that cattle will continue to move to areas where fewer people are located.

► What types of operations will grow?

The brood cow segment of the industry has been changing very slowly compared to other segments and other meat and poultry industries. There has only been a moderate reduction in the number of farms with beef cows and a modest increase in the average size of the

herd. This slow trend to larger size will likely continue but will not accelerate unless new technology allows cows to move away from grazing toward dry-lots where they can be intensively managed. Operations that can grow to 100 cows or greater will have lower costs. Some operations will have many thousands of head. There will be a strong movement toward coordinating programs which will add value to the final beef product with greater coordination through the marketing chain.

► **Will there be changes in the location of the industry?**

The location of the industry is expected to move more toward the Great Plains region, although slowly. Increasing conflicts with people in the East, Southeast, Corn Belt, and West will be the driving force. Included among conflicts are property rights concerns, which may

force producers to fence cattle away from open streams, and water rights in the West. Increasing population in the Rocky Mountain states is also expected to push more cattle into the central part of the country. The Southeast will likely remain an important but declining part of calf production, and Corn Belt states should expect declining cow numbers. This means that concentrations of beef cows, backgrounding, feeding, and processing can be expected in the Great Plains region, with increases in infrastructure investment.

► **Won't exports provide a positive tone for the industry?**

Yes, trade is expected to be a positive factor for beef. Exports should grow sharply, and some suggest a doubling within a decade. However, imports will also be likely to grow somewhat, offsetting the positive

export picture. Imports of hamburger-quality beef will likely grow. Also, the industry should expect greater imports of live animals, including more feeder cattle from Mexico and more fed cattle from Canada. Exports should grow faster than imports, providing a positive trade picture, but changes in trade may provide a growth potential of only .15 to .25 percent annually for total production.

Perhaps more important, the U.S. market may become even more of a dual market based upon quality. Domestic producers will focus on the high-quality and high-value products in the U.S. and foreign locations for both the at-home and the away-from-home markets. The other market will be a lower quality hamburger-based market which will source beef from the domestic dairy and import markets. The important point is that export growth probably will not be the industry's salvation.

Critical Questions About the Farm Crisis: Causes and Remedies

Otto Doering, Professor and Phil Paarlberg, Associate Professor

Just over a year ago everything seemed settled. The new Freedom to Farm legislation (the FAIR Act) ended farm programs as we knew them, eliminating acreage restriction on crops that could be planted, eliminating supply control with land set asides. Now we have "transition" payments to farmers that are fixed amounts in contrast to the counter cyclical target payments that increased when prices were low. Freedom to Farm passed because prices were high, exports were supposed to increase over the next decades, and agribusiness consultants claimed that increased land in production (no set-asides and a smaller CRP) would not reduce prices, just create more jobs. Times were good. For 1996 wheat land owners and producers got almost \$2 billion in payments under Freedom to Farm, compared to less than 40

million they would have received under the old program. Corn land owners and producers received a little over \$5 billion in payments in 1996 and 1997, instead of just a little over \$1 billion under the old program.

What a change today. The Asian financial crisis, declining exports, big crops in the bins, and a good '98 harvest have lowered prices. Gloom replaces optimism. Exports of agricultural products by the United States for fiscal 1998/99 are forecast at 52 billion dollars, 4 billion dollars lower than in 1997/98. Freedom to Farm payments looked good with high prices, but with low prices producers feel the decline in government support under the new program.



Did Asia Do It?

Many believe the economic problems in Asia caused most of our commodity price problem. During the 1990s, Asia emerged as a major market for U.S. agricultural products. However, many of the factors causing the current financial crisis, like overextended credit, had initially boosted economic growth and fueled agricultural imports. In the summer of 1997 this house of cards collapsed.

While serious for most U.S. export commodities, the price impacts to this point have not been as large as the media portrays. The Asian problems have not been the major cause of the decline in U.S. agricultural prices. Using the elasticities the Economic Research Service used to analyze effects of the Uruguay Round trade agreement, the devaluations and falling aggregate demand in Asia resulted in a short-run 4.1

percent drop in the wheat price, a 3.7 percent drop in the coarse grains price, and a 10.2 percent fall in the soybean price. We estimate that the devaluations and falling national income reduced the price of beef 1.5 percent, pork by 9 percent, and poultry by 5 percent. Rice, in contrast, shows a much larger price effect, falling 29.9 percent. Except for rice, these Asia-specific impacts are much smaller than the overall price declines observed, and rice has other mitigating factors that have reduced even its large overall price decline. A recent analysis using a global macroeconomic model with an agricultural sector supports these small price impacts.

Why might price declines be



smaller than expected? First, the Asian countries most severely affected were neither major agricultural importers nor exporters. Of the Asian Tigers (Korea, Malaysia, Indonesia, Philippines, Thailand, Hong Kong, and Taiwan) only Korea was a large importer of U.S. agricultural products, with a market share of 5 percent, and Korea received over 1 billion dollars in General Sales Manager (GSM) credit guarantees. The remaining six nations combined accounted for 13 percent of U.S. agricultural exports. Of these, the most severely affected, Indonesia, Thailand, and Malaysia, buy only small amounts of agricultural goods. Rice is again a different story, with Indonesia and Thailand being important importers or exporters. Data for Japan and China through May 1998 do not show a large fall in trade. Japan shows a small, but persistent, drop in purchases from the United States during the past two years. Except for December 1997 and May 1998, Chinese purchases are at or above year earlier levels. The data for the Asian Tigers show that monthly purchases of U.S. agricultural commodities fell sharply starting in the fall of 1997, but because they are small customers, the impact is modest.

Why might price declines be smaller than expected? First, the Asian countries most severely affected were neither major agricultural importers nor exporters. Of the Asian Tigers (Korea, Malaysia, Indonesia, Philippines, Thailand, Hong Kong, and Taiwan) only Korea was a large importer of U.S. agricultural products, with a market share of 5 percent, and Korea received over 1 billion dollars in General Sales Manager (GSM) credit guarantees. The remaining six nations combined accounted for 13 percent of U.S. agricultural exports. Of these, the most severely affected, Indonesia, Thailand, and Malaysia, buy only small amounts of agricultural goods. Rice is again a different story, with Indonesia and Thailand being important importers or exporters. Data for Japan and China through May 1998 do not show a large fall in trade. Japan shows a small, but persistent, drop in purchases from the United States during the past two years. Except for December 1997 and May 1998, Chinese purchases are at or above year earlier levels. The data for the Asian Tigers show that monthly purchases of U.S. agricultural commodities fell sharply starting in the fall of 1997, but because they are small customers, the impact is modest.

Adverse impacts of the Asian Crisis may worsen. For the 1998/99

year, the problems experienced by the Asian Tigers could spread. Japan alone accounts for roughly 18 percent of U.S. agricultural exports—our largest single export market. Japan's current recession follows years of low growth. Nearly half of its exports go to the weakened markets in Asia. The Japanese banking system holds extensive bad debts, and past attempts to stimulate domestic demand failed. In China, which accounts for 3 percent of U.S. agricultural exports, slowed economic growth and unmet reforms may force a currency devaluation to boost exports. Competitive devaluations by other Asian nations may follow. Latin America and Brazil in particular, which are large buyers of U.S. agricultural goods and a rival exporters of some, are experiencing currency and financial problems related to the Asian Crisis.

If the Asian problems have not been the major cause, how do we account for the sharp fall in commodity prices? Weather and the production response to the high prices of 1996 both weigh in. Despite the strong *El Niño* in 1997/98, expectations of short global food supplies failed to materialize. Production of all grains worldwide rose from 1,872 million tons in 1996/97 to 1,889 million tons in 1997/98. With excellent crops in South America and the United States, world oilseed production rose from 261 million tons in 1996/97 to 287 million tons in 1997/98. Production forecasts for 1998/99 continue to be positive. Current forecasts for the United States show record or near record production. USDA projects world grain production to fall only slightly in 1998/99 to 1879 million tons and estimates world oilseed production to remain at a high level as the U.S. soybean crop offsets a return to normal crops in South America.

It is the combination of these negative forces that has so sharply reduced agricultural prices and called into question the decision to adopt the Freedom to Farm legislation. Since the middle 1990s the

world has added around 150 million tons to the average level of annual world grain output. The concern now is that the economic problems in Asia will spread to other major markets for U.S. agricultural goods—in Japan and in Latin America—while global food supplies remain at record levels. If this happens, recovery will be a three-to-five-year process.

Is such an outcome likely? There is little to support the idea that recovery in Asian economies will boost demand before early in the next century (only a year or two away). What about adjusting output? Arguments for and against a quick supply response can be mustered. Even the authors disagree.

Paarlberg sees a drop in global supply occurring within the next few years. With Freedom to Farm, U.S. farmers will react to market signals and will abandon marginal lands.

The European Union has the ability and will use set-asides to cut area. Other exporters, like Argentina and Australia, are more open to world prices than in the 1980s and will adjust. Also weather can play a role. Already Russia appears to have a crop disaster, and the United States is extending concessional sales to that nation. We could move substantial food aid to the former Soviet Union this winter (but Congress appears unwilling). Looking at our past experience, *La Niña* could cut U.S. crop yields by 10 percent or more. A 10-percent decrease in U.S. coarse grains yields translates into an output loss of around 25 million tons, well above the 10 million tons of coarse grains exports some have estimated lost due to the economic problems in Asia.

Doering has a different view. He argues that farmers have few alternatives and so production is very price inelastic.

It will take several years of low prices to cut production. Actual policy reforms resulting from the Uruguay Round were limited, and most countries continue to protect farmers while severing the link between domestic prices and world prices. Those nations

will not adjust production. In nations where reforms did occur, governments will intervene to support farm prices or farm incomes. Relying on weather to cut output is a risky strategy given the recent experience with *El Niño* which was also supposed to tighten world food supplies. At least one *La Niña* event was associated with a 20-percent yield increase in the United States!

Is Freedom to Farm a Failure?

Freedom to Farm has done what it was supposed to do, and it has done it very well. It removed planting and acreage restrictions, gave farmers production signals from commodity markets rather than from price supports, and stabilized government program expenditures at fixed amounts that can be counted on for budgetary purposes. The problem is that the 1996 optimism about demand for commodities has not panned out, prices have gone down, and with low prices, Freedom to Farm does not pump as much extra cash to landowners and producers as the old programs would have.

What are the Issues and Alternatives Now?

On September 2nd, Senator Tom Harkin, in the political rhetoric of an outspoken critic of the FAIR Act, said, "There are two things we can do to save the '96 Farm Bill." He wanted to uncap loan rates and "for this year only" institute a farmer-held reserve. Farmers had freedom to farm, according to Harkin, but they needed "freedom to market," —in this context a farmer-held reserve to hold grain off the market until prices are higher. He concluded that "we are facing a farm crisis in America unlike anything we have seen in a long time."

Congress was already laying out alternatives to deal with the farm financial problem when Harkin spoke. With the October 1998 omnibus spending bill, Congress made available large disaster payments (\$2.58 billion) to producers who suffered extreme weather and other

crop and livestock losses. In addition, Congress made Fair Act payments that would normally be made in 1999 available to farmers in 1998. This belies the claim of keeping expenditures predictable. Will Congress let landowners and producers go through 1999 without additional payments? Not likely.

Under FAIR, the Loan Deficiency Payment (LDP) still does provide a safety net under prices. If markets fall below a very low fixed loan rate, the government will pay the farmer the difference between the loan rate and the market price. Unlike under the old program, the government does not take title to grain and accumulate stocks. The FAIR Act sets the loan very low to prevent outlays except in extremely low price situations like we had late this summer. However, it does provide a low level of counter cyclical support and can trigger substantial government payments.

In the pre-election budget compromise, Congress also voted an additional "one time" payment to FAIR program farmers (about half of the 1998 transition payments) of over \$3 billion. If farmers took just the first half of their 1999 transition payments at the end of 1998 and locked in LDP payments at the early fall commodity prices, the federal commodity and conservation expenditures might look like this:

| | |
|--|------------------------|
| 1998 Freedom to Farm | |
| Transition Payments | @ \$5.7 billion |
| First half 1999 transition payments payable in Nov.-Dec. '98 | @ \$2.7 billion |
| CRP and other conservation payments | @ \$2.0 billion |
| Special disaster and market loss assistance | @ \$5.9 billion |
| Estimated potential LDP payments | @ <u>\$2.5 billion</u> |
| | \$18.8 billion |

This is a big increase over the \$5.7 billion FAIR Act transition payments and the \$2.0 billion conservation payments that would have been paid in a normal year. The political issue is that many want even more government payments in low price

years—the extreme example being the \$26 billion expenditure in 1986 during the farm financial crisis.

The Issues Joined

The cusp of the debate that resulted in the Clinton veto of the Ag. Appropriations bill on October 7th, 1998 revolved around:

1. The distribution as well as the amount of the payments
2. The extent to which agricultural programs return to being counter cyclical entitlements subject to large outlays during bad times.

Clinton, with Daschle looking over his shoulder, vetoed the Ag. Appropriations bill, H.R. 4101, "because it fails to address adequately the crisis now gripping our Nation's farm community." The message also stressed the inadequate "safety net" of Freedom to Farm and supported Daschle and Harkin's proposal to lift the cap on the marketing loan. Clinton said, "I firmly believe and have stated often that the federal government must play an important role in strengthening the farm safety net."

The Daschle and Harkin debate also questioned the beneficiaries of the transition payment. Freedom to Farm puts the landowner in the best position to capture the transition payments and capitalize them into the value of the land. The equity concern, while it has been raised, will not likely be addressed directly. Congress has been unwilling to have agricultural programs means tested like other income transfer programs, or to really tackle the large farm versus small farm issue. Congress's traditional solution pumps some money to most parties and very liberal amounts to a few.

Lifting the cap on the marketing loan is exactly what the Republican leadership (especially Dick Armey, who dislikes farm programs more than almost anything else) wanted to avoid at all costs. That is one reason the GOP leadership rushed to move the 1999 Freedom to Farm payments ahead to 1998 and approved the

disaster and market loss assistance payment to farmers—to keep the structure of Freedom to Farm.

Lifting the cap would destroy the discipline of fixed payments and take us back to the countercyclical payments of old without supply control.

The Decision for Now—Does It Settle the Issues?

In the pre-election rush, Congress has spoken. The market-based character of the Fair Act itself has been preserved, but Congress has gone beyond the program and increased income transfers to agriculture. Congress also proved again it is unable to enforce discipline on crop insurance, allowing those who did not take the required crop insurance under Freedom to Farm to receive the disaster payments if they promise to take subsidized crop insurance

for the coming two years. Where does this leave us?

1. The income transfers beyond the Freedom to Farm program will dampen the market-based supply response that might otherwise have occurred in the United States (proving Doering right for the wrong reasons).
2. However, Freedom to Farm payments and added government transfers fall below the payments that probably would have been made under the old program.
3. Congress demonstrated again that it can hardly resist sending aid to disasters—making subsidized crop insurance that much more difficult to sell.

4. This year proves that the FAIR Act will be challenged when prices are low, and foretells of a real debate in 2002 when FAIR expires—unless, of course, prices are very high in 2001 and 2002. If it so chooses, the Commission on 21st Century Production Agriculture may have an opportunity to suggest another course. Income insurance, anyone?

Contact the authors or the editor for a list of the references.

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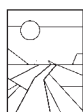
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