1995

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Lynn Lutgen

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1995 Agricultural Outlook and Policy Issues

Agricultural Economics Department
Institute of Agriculture and Natural Resources

Coordinated by Lynn Lutgen

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## Outlook Reports

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For a fourth consecutive year, faculty in the Department of Agricultural Economics are pleased to offer this publication. A wide variety of topics are addressed in the pages that follow. In discussions of a number of contemporary policy issues, I particularly call your attention to the feature article on the changing structure of the pork industry by Dr. Jeffrey Royer.

As we consider the future, we make no claims of having an absolutely clear crystal ball. Our analyses are based on the best information we have at the time the individual pieces were written (late November, 1994). But many things can change as 1995 moves along. For example, it is nearly impossible to anticipate weather conditions which will surely be a factor in commodity prices sometime during the year.

Rural Nebraskans are concerned not only about agriculture, but their communities, off-farm job opportunities and preservation of our natural resources. You will find articles in each category in the publication. We live in an exciting, yet challenging, time and the array of articles presented here reflects the diverse opportunities (and obstacles) that lie before us. It is our hope that high quality information will benefit all of us as we face the future.

As in the past, this publication is being coordinated with *Nebraska Farmer* magazine (mid-January issue), which will publish a number of these articles. In addition, we will be holding a series of media conferences across the state in February to highlight our projections for the year ahead. The cooperation of our friends in both the print and electronic media is greatly appreciated.

Finally, a word of personal thanks to Dr. Lynn Lutgen for his role in coordinating this project again this year. Lynn works diligently to be certain that we have a comprehensive array of articles to present to you. Lynn and I would be pleased to hear from you, either with regard to this year's publication or suggestions for next year.

Roy Frederick
Interim Department Head
Nebraska Faces Structural Changes in the U.S. Pork Industry

Although total pork production is increasing, the number of hog farms in the United States dropped from over one million in 1967 to 236,000 in 1993. This trend towards fewer and larger farms has accelerated during recent years. Experts predict a continued decline to 100,000 farms by the end of the decade.

The recent restructuring of the industry has been driven by increased consumer demands regarding health, nutrition, and convenience, coupled with technological advances that have improved production efficiency, consistency, and quality.

Technological advances include genetically enhanced breeding stock that enables producers to raise leaner hogs more quickly and with less feed, climate-controlled buildings that ensure optimal production regardless of weather, computer information systems that allow constant monitoring of herd performance and health, and veterinary products based on the latest biotechnology research.

As a result of these advances, producers have the ability to produce hogs that are virtually identical in size, shape, and quality. Adoption of these new technologies requires substantial capital investments. Consequently, the greatest cost savings are earned by large producers, many capable of producing more than a half million hogs annually.

To ensure steady supplies of hogs and to coordinate product characteristics with consumer preferences, processors have begun to rely more on contract production and vertical integration.

Under contract production, an integrator—a processor, feed supplier, or owner of a farrowing operation—typically owns the pigs and pays the farmer a flat fee, plus performance incentives, to feed them to slaughter weight according to contract specifications. The farmer provides the land, labor, buildings, and equipment, and the integrator provides the pigs, feed, veterinary supplies, management services, and, in some cases, financing.

Under contract production, much of the control over the production process is transferred from the farmer to the integrator. In vertical integration, the integrator assumes even greater control over production through ownership of all facilities and equipment. The role of the farm producer is replaced by employees of the integrator.

The shift to contract production and vertical integration further threatens the survival of smaller, independent producers. As more of the industry's processing capacity is met by contract production and vertical integration, the market access of independent producers will be reduced. Because of strong competition from other meats, particularly poultry, some of the efficiency gains in the pork industry will pass to consumers in the form of lower prices. As prices fall, more of the smaller, less efficient producers will fail.
Large Producer Characteristics

Two recent surveys provide a glimpse of what the large producers that have emerged during the past several years look like.

A 1993 study by University of Missouri economists James Rhodes and Glenn Grimes identified 57 producers that marketed more than 50,000 head of hogs annually and accounted for 13 percent of the national slaughter. Of these producers, seven marketed more than 500,000 hogs a year. Fifteen of the producers were vertically integrated, i.e., they also were commercial feed companies or packers, and 47 were engaged in contract finishing or farrowing. More astonishing than their size is their growth. On average, these producers experienced 25 percent growth between 1992 and 1993, and they expected an additional 95 percent growth between 1993 and 1996.

Last fall Successful Farming magazine named the 31 largest pork producing firms in the nation. All had at least 10,000 sows in full production on October 1, 1994. The largest five firms together had 559,000 sows; the single largest firm had 180,000 sows. Combined, all 31 firms had over 1.1 million sows in full production and will account for one-quarter of the hogs marketed in the United States in 1995! Fifteen of the firms were vertically integrated—seven owned meat packing plants, and eight were feed suppliers.

State Corporate Farming Restrictions

Some livestock producing states have tried to protect small producers by restricting corporate farming or regulating contract production and vertical integration. Nine Midwestern states have enacted some form of corporate farming law, including seven of the 12 largest pork producing states—Iowa, Kansas, Minnesota, Missouri, Nebraska, South Dakota, and Wisconsin (Table I). Although the provisions of these laws vary widely, they generally place restrictions on the farming or land-holding activities of corporations. They may also prohibit the contract production of livestock.

Partly because of these restrictions, a number of large pork firms have chosen to establish new production and processing facilities in other states. Recent growth in pork production has occurred in the South, Southwest, and West, including nearby Colorado, Oklahoma, and Wyoming, where historically pork production has been virtually nonexistent.

Nowhere has recent growth been more rapid than in North Carolina. Since 1989, North Carolina has climbed from seventh to second in the nation in total hog and pig inventories, passing Nebraska in 1993 (Figure 1). During this period, North Carolina producers added 355,000 head to their breeding herds. Meanwhile, the combined breeding herds of the rest of the country decreased by 475,000 head. The expansion alone in North Carolina breeding herds exceeds the total size of the breeding herds in five of the 12 largest hog producing states.

North Carolina's remarkable growth is due to a number of factors, including the existence of an environment favorable to corporate farming. Eight of the 31 largest pork producing firms in the nation are headquartered in North Carolina, and another six have operations in the state. Four of the five largest firms operate in the state, and two of those maintain their headquarters there. By comparison, only 12 of the 31 largest firms operate primarily in the Midwest. Three of these have operations in Nebraska.

Other Factors Affecting Industry Expansion

In addition to corporate farming restrictions, a number of other factors are important considerations for firms locating new pork production and processing facilities. Although the availability of abundant supplies of feed grains is the primary reason for the Midwest's historical predominance in hog production, it appears that this advantage is becoming less

(continued on next page)

Table I. Twelve Largest Hog Producing States by Total Inventory, Sept. 1, 1989 and Sept. 1, 1994

<table>
<thead>
<tr>
<th>State</th>
<th>1989 Rank</th>
<th>Inventory (thousands)</th>
<th>1994 Rank</th>
<th>Inventory (thousands)</th>
<th>Increase (percent)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Iowa</td>
<td>1</td>
<td>14,600</td>
<td>1</td>
<td>14,600</td>
<td>0</td>
</tr>
<tr>
<td>North Carolina</td>
<td>7</td>
<td>2,700</td>
<td>2</td>
<td>5,700</td>
<td>+111</td>
</tr>
<tr>
<td>Illinois</td>
<td>2</td>
<td>6,100</td>
<td>3</td>
<td>5,600</td>
<td>-8</td>
</tr>
<tr>
<td>Minnesota</td>
<td>3</td>
<td>4,950</td>
<td>4</td>
<td>4,750</td>
<td>-4</td>
</tr>
<tr>
<td>Indiana</td>
<td>4</td>
<td>4,550</td>
<td>5</td>
<td>4,200</td>
<td>-8</td>
</tr>
<tr>
<td>Nebraska</td>
<td>5</td>
<td>4,350</td>
<td>6</td>
<td>4,200</td>
<td>-3</td>
</tr>
<tr>
<td>Missouri</td>
<td>6</td>
<td>2,850</td>
<td>7</td>
<td>2,850</td>
<td>0</td>
</tr>
<tr>
<td>South Dakota</td>
<td>9</td>
<td>1,750</td>
<td>8</td>
<td>1,680</td>
<td>-4</td>
</tr>
<tr>
<td>Ohio</td>
<td>8</td>
<td>2,300</td>
<td>9</td>
<td>1,580</td>
<td>-31</td>
</tr>
<tr>
<td>Kansas</td>
<td>10</td>
<td>1,550</td>
<td>10</td>
<td>1,350</td>
<td>-13</td>
</tr>
<tr>
<td>Wisconsin</td>
<td>11</td>
<td>1,300</td>
<td>11</td>
<td>1,170</td>
<td>-10</td>
</tr>
<tr>
<td>Michigan</td>
<td>12</td>
<td>1,300</td>
<td>12</td>
<td>1,120</td>
<td>-14</td>
</tr>
<tr>
<td>12 States</td>
<td></td>
<td>48,300</td>
<td></td>
<td>48,800</td>
<td>+1</td>
</tr>
<tr>
<td>United States</td>
<td></td>
<td>57,595</td>
<td></td>
<td>57,280</td>
<td>-1</td>
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Figure 1. Total Nebraska and North Carolina hog inventories, Dec. 1, 1967-93.

Important. Other costs of production must also be considered. These include the costs of construction, financing, labor, energy, waste disposal, and transportation. States like North Carolina have an advantage over Midwestern states in the transportation of finished pork products because they are closer to large East Coast consumer markets.

Environmental considerations are becoming increasingly important. Although all states are subject to federal statutes, state environmental laws and enforcement vary. Oklahoma, for example, has attempted to attract livestock by revising its environmental laws. The location of new pork facilities is also influenced by climatic differences among states. Drier climates generally pose fewer water quality problems, but they may make it more difficult for producers to acquire adequate water supplies.

Existing concentrations of livestock and human populations are also important. States with low concentrations of livestock may welcome growth while areas with high concentrations of people may not.

Conflicts between hog producers and neighbors frequently take the form of land use disputes and nuisance suits. To deal with these conflicts, some states have amended their right-to-farm laws to include generally accepted agricultural practices while others have created livestock enterprise zones to isolate production.

Incentives offered by states to attract new pork facilities include tax abatements on new livestock structures and tax incentives for new job creation.

The type of farming enterprises that currently predominate in a region may also affect the growth of new pork production activities.

Midwestern cash grain farmers are often reluctant to become involved in hog farrowing operations because of the time commitments. On the other hand, North Carolina farmers concerned about the future of the tobacco industry have been eager to enter into livestock production contracts, which provide them a means to continue farming with small land bases. In addition, because of the extensive use of production contracts in the poultry industry, farmers in that region have quickly accepted the use of contracts in pork production.

Importance of Hog Production to Nebraska's Economy

Hog production is an important industry in Nebraska. Nebraska currently ranks sixth in the country in total hog and pig inventories and is one of only four states among the 12 largest hog producing states to show an increase in inventories over the past 10 years. In 1993, Nebraska farmers marketed 7.5 million head of hogs, accounting for $847 million in cash receipts. This figure represented 9.5 percent of the state's total of $8.9 billion in cash receipts from farm marketings.

Although these figures by themselves represent a sizeable amount of economic activity, they represent only a portion of the total economic activity attributable to hog production. In addition to cash receipts from marketings, the hog industry generates a large impact on the state economy through the purchase of supplies and services used by hog producers and further value-added activities occurring beyond the farm gate, such as pork processing and transportation. Although this impact is concentrated in agricultural industries, personal income earned in these industries is spent in the rest of the economy, stimulating a wide range of service and trade businesses in urban areas.

A recent Iowa State University study estimated that every one million dollars of hog production in Nebraska creates $1.51 million in total industry output, $0.44 million in personal income, and nine jobs in the state, through the farm level. When processing activities are considered, an additional $1.54 million in total industry output, $0.21 million in personal income, and eight jobs are created by every one million dollars of hog production. These figures clearly demonstrate that the value of Nebraska's pork industry greatly exceeds the cash receipts from hog marketings.
Increased Concentration in Nebraska Hog Production

The national trend towards greater concentration in the hog industry is evident in Nebraska, as illustrated in Figure 2. In 1967, there were 34,000 hog producers in the state, but by 1993 the number of producers had dropped to 12,500. Meanwhile, the number of hogs per farm had increased from 90 to 340.

This increased concentration is even more apparent in Figure 3, which shows the proportion of the state's total inventory of hogs and pigs by size of operation. Both the number of hog operations with more than 500 head and the proportion of the state's total inventory held by these operations have been steadily increasing. Since 1978, the proportion of the state's total hog inventory held by operations with more than 500 head has increased from 29 percent to 66 percent. Meanwhile, both the number of smaller hog operations and the proportion of the state's hog inventory held by those operations has declined.

Like other Midwestern states, Nebraska has taken action to protect small producers and family farms. In 1982, Nebraska voters authorized a constitutional amendment, commonly known as Initiative 300, that prohibits nonfamily farm corporations and limited partnerships from acquiring interests in agricultural land and from farming or ranching. (Farming and ranching includes the ownership, keeping, or feeding of animals for the production of livestock or livestock products.) General partnerships and nonprofit corporations are exempt from Initiative 300's restrictions. The latter may include farmer cooperatives organized as nonprofit corporations although this has yet to be tested in court.

Overall, Initiative 300 has successfully deterred the growth of corporate farming in Nebraska. It also has prohibited Nebraska hog producers from entering into contract production and has placed restrictions on the ability of small producers to utilize networking and cooperatives to pool their capital and exploit scale economies.

Although Initiative 300 has not prevented the continuing decline in the number of hog operations in the state, the rate of decline has been lower in Nebraska than in other states since the financial crises during the early 1980s. Meanwhile, Nebraska's hog and pig inventories have shown modest growth during the past 10 years while inventories in the rest of the Midwest have generally declined. However, much of the recent success of Nebraska's pork industry can be attributed to an abundance of inexpensive corn, access to

(continued on next page)
strong hog markets, and the
growth of a few large firms in
existence before passage of Initiative 300.

The Future of Nebraska’s Pork Industry

Experts expect current trends in the pork industry to continue, resulting in fewer and larger hog producers with closer ties to processors. As small, inefficient hog operations continue going out of business, they must be replaced with larger, more capital-intensive operations if Nebraska is to maintain or improve upon its share of U.S. hog production. Yet, it is unclear to what extent independent producers will be able to make the investments in large-scale, high-technology operations necessary to be competitive while remaining outside the contract production system. Meanwhile, processors outside Nebraska have demonstrated their willingness to relocate their packing operations to states where corporate farming and contract production are permitted.

Efficient smaller operations are expected to remain competitive with large pork producing firms during the foreseeable future. However, current market conditions suggest that Nebraska’s pork industry is entering another period of major adjustments. Fall hog inventories were at their highest level in 14 years while hog prices had fallen to their lowest in two decades. If low prices continue as expected, many more of the smaller, less efficient producers are expected to exit the industry, even as other producers continue to expand.
In 1986, more than 100 nations participating in the General Agreement on Tariffs and Trade (GATT) embarked upon an ambitious program of trade negotiations known as the Uruguay Round.

Agriculture figured prominently in these talks along with other contentious areas such as trade in services, intellectual property, technical standards, dispute resolution and several more. The negotiators reached agreement in late 1993 and signed the Final Act of the Uruguay Round in April 1994 (IATRC). This agreement, which also creates the World Trade Organization (WTO) to replace the GATT, entered into force in January 1995, following notification by the governments of the participating countries.

The agricultural negotiations mainly involved an extended argument between the U.S. and the European Union (EU). The Blair House agreement between these two parties in late 1993 lead to the completion of the agricultural component of the Uruguay Round. This component is comprised of three major areas:

1. Market access. Rules require importing countries to replace non-tariff barriers such as import quotas with tariffs that are to be reduced by 36 percent over six years, and to guarantee minimum levels of access to domestic markets for foreign suppliers. For the U.S., import quotas on beef, peanuts, cotton, and dairy products will be converted to tariffs and reduced by 36 percent. It is not expected that these changes will have a significant impact on these sectors (IATRC, USDA/ERS).

2. Export Subsidies. Expenditures on export subsidies are to be reduced by 36 percent and the total volume of subsidized exports is to be reduced by 21 percent. For the U.S., these requirements mean that the Export Enhancement Program (EEP) will have to be moderately reduced. This will mainly affect wheat subsidies which have become significant in recent years. It is expected that reduced subsidies by the EU and increased demand due to the Uruguay Round will lead to increased commercial wheat exports offsetting the effects of reductions in export subsidies (USDA/ERS).

3. Domestic support. Because of the intimate link between domestic policies and agricultural trade, the agreement includes provisions for reducing certain kinds of domestic support. Trade-distorting domestic support (e.g. market price supports), aggregated for all commodities, is to be reduced by 20 percent from a 1986-88 base (IATRC). The Blair House agreement allowed the EU and the U.S. to exempt deficiency payments from this part of the agreement which is likely to have very little effect on U.S. policies.

Although the U.S. will be obligated to reduce its import barriers and export subsidies, the overall effect of the agreement will be highly positive for U.S. agriculture. The reason is that other countries, most notably the EU, will be required to reduce their trade barriers, and the expected effects of more liberal trade on general income growth will increase demand for U.S. agricultural products. The Economic Research Service of USDA predicts that the Uruguay Round agreement will lead to increases of $1.6 billion to $4.7 billion in agricultural exports by 2000 and increases of as much as $8.7 billion by 2005 (1993 agricultural exports were valued at $42.6 billion). The grains, oilseeds and livestock sectors are likely to be the major beneficiaries of this expanded trade which should give rise to increases in net farm sector income of about $2 billion by 2005 compared to what would have occurred in the absence of the agreement.

For further information:


"...new environmentally sensitive technologies must rapidly be developed and adopted, and existing technologies must be more widely used to sustain the Earth's resources. A new generation of more environmentally benign technologies are needed in energy, agriculture, manufacturing and all other sectors." — National Commission on the Environment, "Choosing a Sustainable Future."

Economic factors and environmental concern will strongly influence the rate of adoption of new agricultural technology in the future.

One of the historic driving forces encouraging the adoption of new technology has been the constant need to increase the productivity of the individual farmer and thereby increase farm earnings. The classic contribution of the Industrial Revolution was to increase wages and living standards by providing workers with a constantly increasing amount of capital to raise their productivity. In row crop production the most vivid illustration of this principle was the shift to larger, wider, faster, and more powerful farm machinery. As farmers shifted to larger equipment, they adopted many technical changes that were incorporated in the new equipment.

The shift to minimum tillage systems which reduces the amount of sediment entering streams and lakes is probably the most often cited technical change that improved both economics and the environment. Minimum tillage has been adopted because it reduced the cost of production per unit of output and permitted a dramatic increase in the scale of operation, as well as being environmentally desirable. Adoption of this technology was enhanced by the increasing concern of farmers and others about soil erosion, the manufacture of equipment suitable for minimum tillage, and educational programs which provided information about the use of minimum tillage systems.

Pest management is another example of environmentally induced technological change. Farm operators must use efficient methods to control weeds, insects, and plant diseases that threaten their crops. Two recent technological changes in weed control that enhance the environment include narrowing the space between rows so a canopy of crop leaves shades the ground, thus reducing weed germination, and guidance systems for cultivators to insure accurate removal of weeds without inadvertent damage to the crop.

Chemicals to control weeds and insects are also changing. New chemicals are more environmentally benign because they may break down into harmless elements more rapidly by interaction with soil microorganisms and/or they become more tightly attached to the soil which inhibits leaching. This shift to more environmentally friendly chemicals will permit continued use of these cost effective weed and insect control technologies.

One more futuristic technology that may enhance the environment is called variable rate application technology (VRAT). VRAT systems enable the producer to apply fertilizer and pesticides in precise, varying amounts within a given field. This technology often uses satellite based global positioning systems (GPS) to match chemical applications with soil and other field factors. When GPS systems are linked to a yield monitor in the combine, they permit precise mapping of crop yields which enables careful management. The precision systems result in lower amounts of inputs being applied which contributes to a cleaner environment.

Perhaps biotechnology provides the greatest potential for environmental enhancement in the future. The genetic alteration of plants permits placing characteristics in the plant which provide resistance to disease or insects. Biological controls of insects or weeds is a technology that uses specific microorganisms or insects which selectively attack the targeted pest. For example, flea beetles may be used to control the spread of leafy spurge. The need for other forms of less environmentally benign insect control will decline when biological control becomes both economically competitive and widely available.

In this era of global competition and environmental concern, it is essential that U. S. agriculture continue to adopt new technologies that are environmentally friendly and cost effective.
Capital Gains and Farmland Values

The federal tax on capital gains is currently at a 28 percent maximum level. Periodically, proposals to reduce this rate emerge and are debated. One general argument for reducing the capital gains tax is to encourage investors to sell current investments and invest in new and emerging industries. Another argument is that the capital gains tax is not a tax on real asset value increases, rather it is a tax on gains in asset values which may be caused in part or in whole by inflation. Hence, some suggest indexing the cost basis of investments for inflation.

Opponents of reducing the capital gains tax argue that a reduction is largely beneficial to only those with high incomes. Also, Federal Treasury receipts would fall under a reduced capital gains tax, according to critics. Proponents of a tax decrease disagree with the opponents' positions on these two issues.

The merits of these issues are not examined in this discussion of the impact a capital gains tax reduction might have on farmland values.

Capital budgeting analysis allows us to estimate maximum bid values for an asset under alternative tax provisions, and to make specific assumptions about other factors that influence prices. As discussed later, such estimates are maximum, and actual changes are expected to be less.

Two possibilities are considered: 1) a 40 percent tax on capital gains and 2) no tax on inflation-induced gains (assumes land values increase at the same rate as inflation). We assume one acre which has a base return of $40 (before-tax) in the absence of inflation. Assuming a 4 percent real (inflation free) before-tax interest rate this would result in an expected land price of $1,000/per acre on a before-tax basis. However, assuming a 4 percent inflation rate in both land returns and land values and an 8 percent interest rate, the estimated bid prices of land are as reported in Table I, assuming a 15-year holding period for the asset. Two tax bracket situations are portrayed.

It should be noted that one of the attributes of a capital asset is that its gains in value are not taxed until the asset is sold. Compared to an equally profitable (before-tax basis) savings account in which the returns are taxed each year but the principal remains fixed, a capital asset has a tax advantage from this timing aspect under current tax provisions.

Table I data demonstrate two important outcomes: 1) those in the higher tax bracket can afford to pay more for this land asset than those in the lower tax bracket. (This often-overlooked principle affects investment analysis and the structure of asset ownership.) 2) The 40 percent capital gain tax would increase land value bid prices by 5.6 percent. For the no-tax alternative the respective percentage increase is 9.2 percent. Assuming the land market is set by those in the higher tax bracket, the base bid value is $1,059 per acre under current tax provisions, and increases to $1,156 per acre under no-tax circumstances.

These should be viewed as maximum changes that are unlikely to become reality. For several reasons, were these alternative tax proposals enacted, the impact on land values would be less than those reported in Table I. First, tax law changes may be viewed as only short run and not permanent. In a related sense, current land values may reflect the anticipation of a reduced tax with the expected reduction bid into price. Second, if the tax change is only perceived as short run, land values actually may go down in the short run, not up because as investors increase the supply of land available for sale as they seek to take advantage of the lower tax rate. Third, because many land investors plan never to sell land, these tax advantages have no relevance for them. Last, the 15-year period and other specific assumptions will never exactly represent the true and changing settings of the economy.

Table I. Maximum Bid Values ($) Per Acre for Two Tax Bracket Situations Assuming a $40 Per Acre Base Return, 4 Percent Inflation, 8 Percent Interest Rates, and a 15 Year Ownership Period.

<table>
<thead>
<tr>
<th>Situation</th>
<th>15 Percent Tax Bracket</th>
<th>28 Percent Tax Bracket</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. All Gain Taxable</td>
<td>991</td>
<td>1059</td>
</tr>
<tr>
<td>2. 40 Percent Gain Taxable</td>
<td>1038</td>
<td>1118</td>
</tr>
<tr>
<td>3. Indexation For Inflation</td>
<td>1078</td>
<td>1156</td>
</tr>
<tr>
<td>(Assuming No Real Gain)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

General Outlook — 11
Agriculture seems at least as prone to “get rich quick” schemes as the public as a whole. This should come as no surprise. Americans have been bilked, gypped, bamboozled, and hoodwinked by promoters, con artists and snakeoil salesman throughout the centuries, and one would be foolish to think that agriculture is immune. P.T. Barnum claimed that a sucker is born every minute, and history seems to have proven him right. A quick look at past fiascos, their origins, characteristics, and outcomes may help to prevent us from repeating history as eagerly and as often as we have in the past.

In order for a “get rich quick” scheme to work, a number of factors must be present.

First, a felt need must exist. People who subscribe to such ploys are often in genuine financial distress and are honestly searching for a means of improving their lot. Periods of recession are fertile times for such schemes, but they have been present in the best of times.

Second, the scheme must have an element of basic plausibility. People are often gullible, but most are not stupid. A successful “get rich quick” scheme often includes elements about which the intended victims are familiar, but not so familiar as to be able to see through the ruse. The scheme must further afford a sufficient lag time between initial promotion and ultimate failure to allow for some success as additional victims are recruited to the pyramid.

Finally, successful “get rich quick” schemes require a core of faithful and initially successful disciples to carry the message forward. As the program expands, new disciples are recruited exponentially, while the wiser of the originators often cash out.

Two related and interesting “get rich quick” schemes recently have captured much attention. Raising ostriches and emus may prove to be the latest failed scheme to afflict agriculture. While the markets for these birds and their eggs have not yet collapsed completely, many of the characteristics seem to be present.

The elements of plausibility are obvious: easy production, potential markets for both hide and meat, and few resources (other than cash!) needed to begin. Current reported prices for breeding animals and even fertilized eggs have shown weakness in recent months. It seems that perhaps the collapse is not far away. Whether and how such meat will compete with beef, chicken, turkeys, and pork has yet to be determined, since sales of animals have been almost exclusively between promoters, their disciples, and new breeders of the animals. These programs may have reached the top of the pyramid. Those still in the industry when the stock of animals for sale exceeds what can be sold to new breeders may find prices drop as quickly as they rose.

A second scheme that many Nebraskans will sadly remember is the Jerusalem Artichoke. A group of Minnesota promoters in the early 1980s introduced the plant to many Midwestern farmers as a fantastically more profitable alternative to conventional crops. The tuber from this weed was plausibly claimed to be a source of food, animal feed, sugar, and feedstock for the production of alcohol (presumably in home stills)—yet another “get rich quick” scheme. Like ostrich and emu breeders, a few of the early subscriber earned handsome profits as their production was sold at very high prices as seed stock to new disciples. When it became clear that the plant had little commercial value except to sell to new suckers, the scheme collapsed. Few farmers received any return on the crop, and several of the original promoters served time in prison.

New technologies, new crops, and new forms of livestock have been successfully developed and marketed in agriculture over time and have made many individuals quite wealthy. The apparent difference between such successful ventures and failed “get rich quick” schemes is in the development of markets for the product other than selling to other producers. One can be almost sure that a venture is a pyramid scheme certain of eventual collapse if the primary customers are new disciples. As with most aspects of life, things which seem to be too good to be true, usually are.
Structural Changes in the Beefpacking Industry

The nature of the U.S. meat-packing industry, including the state of its competitive affairs, has long been a source of public interest and concern, and a subject of lively debate as long ago as the close of the 19th century. The "Big Five" of that time — Armour, Cudahy, Morris, Swift and Wilson — had the major share of red meat slaughter and trade.

Major restructuring occurred after 1920, following government mandated divestiture of packer interests in stockyards, terminal railroads, cold storage warehouses and retail markets. Advances in refrigeration and transportation technologies, the rise of chain store distribution, and federal grading of meat all contributed to the entry of newer, smaller and rural-based competing firms, and thus to a sharp decline in industry concentration.

Plants which were once located almost exclusively in urban areas gradually became oriented toward sources of cattle. Animal-oriented slaughter, substituting the transport of meat for animals, resulted in significant cost savings from leaving the offal behind.

Structural changes took a new turn in the 1970s when packer concentration increased dramatically. The largest four packers' national market share of cattle purchases grew from 29 percent in 1977 to 78 percent in 1992. Three firms became leaders — ConAgra, Cargill and IBP — especially in boxed beef which quickly displaced carcass distribution systems. Boxed beef accounted for 82 percent of beef shipments in 1988, compared with only 29 percent in 1972, with the largest four firms having 79 percent of the boxed beef in 1990, probably more in 1994.

Boxed beef reduced the carcass to consumer cuts, leaving behind much of the bone and fat, saving transportation costs and enabling packers to automate and specialize butchering operations for further cost savings, and permitting customers to express their preference for particular cuts.

Replacing the commission agents in the "Union Stockyards" of the earlier period, packer order buyers now purchase directly from the feedlot, buying, by one estimate, 80 percent of their purchases in the Great Plains, no more than 150 miles from the plant. Packer ownership of cattle declined from a peak of 7 percent of sales in the mid-1960s to about 4 percent in the late '80s. Contractual integration with feeders has varied from 10 percent to 25 percent of sales since 1960 and is probably near the upper end of that range at present.

A large part of the growth in concentration, especially that occurring during the 1980s, resulted from mergers. Today's "Big Three" packers grew to their present positions mainly through mergers. The motives have been the subject of some debate. Larger plants are apparently more efficient than smaller ones, therefore, mergers may result in better utilization of (fewer) plants in the short run (some can be shut down) or provide larger markets needed to support construction of larger-scale plants in the long run. Or, they may be motivated by the aim of reducing competitive pressures.

Price effects of meat-packing concentration continue to be a lively if unresolved issue. Research focused on other industries suggests that concentration may have other more significant effects. By sheltering business management from the forces of competition, concentration may inflate costs, the losses being passed back to suppliers or forward to consumers. There are also questions of whether larger size leads to higher or lower levels of invention, innovation and long-run progress. One of the more serious concerns is that diminishing competitive pressures across many industries may impair the overall spirit of competition by which healthy social interactions and a democratic political system are sustained. Society's challenge is to find the appropriate balance between the adverse effects of concentration and the cost economies which may derive from larger size processing plants and business firms.
Initiative 300, Limited Liability Companies, and Networked Livestock Operations

Family farm limited partnerships exist when 1) all partners are family members, 2) a family member either lives on the farm or ranch or else provides daily labor and management, and 3) no non-family farm corporations or partnerships are partners.

Under Initiative 300 it has been difficult for neighbors to acquire the legal protection of limited liability in a networked livestock operation.

Say two neighbors, Fred and Barney, want to establish a joint farrowing operation. Fred will contribute 10 acres, feed and labor, while Barney will contribute the building, the sows and labor. If they operate on a handshake basis, Fred and Barney have a general partnership, even though they have no formal partnership agreement. This means that any property that Fred owns in his name beyond the 10 acres and feed Fred has contributed to the livestock partnership business is available to satisfy any claims brought against the livestock partnership. Similarly, any property Barney owns beyond the hog building and sows Barney contributed is at risk. This includes property owned by Fred or Barney individually, as well as property they jointly own with their wives or other family members. This risk of losing non-business property makes operating a joint business unattractive from a legal perspective.

In 1993 the Nebraska Unicameral adopted legislation authorizing limited liability companies (LLCs). LLCs are a cross between a partnership and a corporation. LLCs have the limited liability protection of a corporation, but the operational informality of a partnership. LLCs need not elect directors, hold shareholder meetings, etc. as corporations are required to. In 1994 the Unicameral authorized the formation of family farm LLCs. In a family farm LLC, all LLC members must be family members, and one family member must either live on the farm or ranch or else provide daily labor and management. LLCs are formed by two or more persons filing LLC articles with the Nebraska Secretary of State. Only LLCs that qualify as family farm LLCs are authorized to either own agricultural land or to engage in farming in ranching.

The availability of family farm LLCs makes livestock networking a more practical alternative. If Fred and Barney wanted to network their livestock operations but wanted the protection of limited liability, they could each form an LLC and the two LLCs could then establish a partnership. Fred and Barney's liability would be limited to the property they contributed to their respective LLCs.

LLCs are an important legal option available to farmers, ranchers, and other family businesses. However, establishment and operation of an LLC has important legal and tax ramifications. For more information regarding LLCs, consult your legal and tax advisors.
The financial position of the Nebraska agricultural sector appeared to be sound at the end of 1993, but lower livestock prices in 1994 and 1995 will likely erode this position. Cattle feeders experienced losses during much of 1994. These losses may be coming to an end, but lower feeder calf prices are affecting ranchers adversely this fall and this will continue through 1995. Hog prices dipped below production cost for many producers in mid-1994. This situation is expected to continue through 1995. While corn, soybean and grain sorghum prices are low, most producers will realize higher than average gross incomes from their 1994 crops due to the unusually high yields and minimal drying costs.

Balance Sheet Indicators

Balance sheet data for the Nebraska farm sector indicate that debt as a percent of assets was a modest 18.6 percent at the end of 1993. This indicator peaked at 31 percent in 1985 but has been in the 18 percent to 19 percent range for the past five years. Both assets and debt have increased during this period. Total farm debt peaked at just over $9 billion in 1983, dropped to just over $6 billion in 1988, and increased to $7.1 billion by the end of 1993. The value of total farm assets in Nebraska peaked at $42.8 billion in 1981, declined to $25.5 billion in 1986, and then increased to $38.3 billion by the end of 1993. Thus, three-fourths of the 1980s' decline in asset values has been recovered, largely due to increasing land values.

Credit Situation

A quarterly survey in the Kansas City Federal Reserve district, which includes Nebraska, indicated that the index of farm loan demand is at the highest level in 15 years, while loan repayments remain weak. The average loan-deposit ratio at reporting district banks was 59.2 at the end of June, the highest in a decade. Nearly one-fourth of the bankers indicated their loan-deposit ratios were higher than desired, but the remaining three-fourths continued to seek new farm loan accounts.

Interest rates are increasing. At the end of June, rates averaged 8.79 percent for farm real estate loans, 9.05 on feeder cattle loans, 9.21 on farm operating loans, and 9.24 on intermediate loans. Rates have increased since June, and we may experience further increases in 1995.

Income

Two measures of net farm income are typically used — Net Cash Income and Net Farm Income. The latter measure includes accrual adjustments for change in inventories, the value of home consumption, and the rental value of dwellings.

Net Cash Income in 1994 for Nebraska farms and ranches will probably be below the $2.9 billion realized in 1993. Crop yields were generally low in 1993 due to a variety of adverse weather conditions. The financial impact of the low yields was realized in 1994 when the crops were marketed, as Nebraska farmers typically market only 30 percent of their corn crop in the year of production. Government deficiency payments for feed grains were also lower in 1994. Early summer declines in fed cattle prices and late summer declines in hog prices also contributed to lower cash receipts.

Nebraska Net Farm Income (accrual) may be higher in 1994 than the weather-impacted 2.1 billion dollars in 1993. The value of inventories from a large crop harvest in 1994 will help offset lower livestock prices.

For 1995, the sale of a large 1994 crop will increase cash receipts from crops over 1994. In addition, government deficiency payments on feed grains should be higher. But, lower livestock prices will likely offset these gains. Net Farm Income (accrual) will depend a great deal on growing conditions for crops in 1995.

Factors Affecting the Livestock Industry — 15
Nebraska Farm Operators Favor Initiative 300

Nebraska farmers strongly support the provision in the state's constitution that prohibits nonfamily corporate farming, according to a recent survey. In 1982, Nebraska voters authorized a constitutional amendment, commonly known as Initiative 300, that prohibits nonfamily farm corporations and limited partnerships from acquiring interests in agricultural land and from farming or ranching.

Nebraska is one of several Midwestern states whose voters or legislatures have placed restrictions on the agricultural activities of nonfamily corporations. These states include Iowa, Kansas, Minnesota, Missouri, North Dakota, Oklahoma, South Dakota, and Wisconsin. Nebraska's restrictions on the agricultural activities of nonfamily corporations are generally considered the strictest.

Recently, these corporate farming laws have become the focus of public policy debates in Iowa, Kansas, Minnesota, and Missouri. Opponents of the laws argue that they limit the infusion of investment capital and new technology and they encourage the relocation of value-added agricultural industries to other states. Proponents of corporate farming laws argue that they have successfully protected family farmers from competition by large, investor-owned corporations.

To assess the opinion of Nebraska farmers, four questions on Initiative 300 were included in the 1994 National Agricultural and Food Policy Preference Survey (Table 1). This survey, which was sent to farmers in 17 states, sought their opinions about a variety of state and national policy issues. In March, questionnaires were sent to 1,000 Nebraska farm operators randomly selected from the 39,000 active farms with cropland in the state. Of these, about 350 responded to the questions about Initiative 300.

When asked whether Initiative 300 was fair and should not be changed, 65 percent of the farmers responding to the survey agreed or strongly agreed. Only 20 percent disagreed or strongly disagreed. The remaining 15 percent of respondents were not sure. When asked whether Initiative 300 should be repealed to allow nonfamily corporations to engage in agricultural production, only 18 percent of the respondents agreed or strongly agreed. Sixty-eight percent of respondents disagreed or strongly disagreed.

Farmer cooperatives are frequently suggested as a means for enabling farmers to work together to achieve economies of scale and the advantages of group purchasing while keeping control of agricultural production in the hands of family farmers. When asked whether Initiative 300 should be modified to allow locally owned farmer cooperatives to engage in agricultural production with their members, 27 percent of the respondents agreed or strongly agreed. Forty-seven percent disagreed or strongly disagreed.

When asked whether Initiative 300 should be modified to allow nonfamily corporations to own livestock produced under contract by farmers, 22 percent of respondents agreed or strongly agreed. Forty-nine percent disagreed or strongly disagreed. Initiative 300, as currently written, effectively prohibits contract livestock production. In recent years, there has been substantial growth in the contract production of hogs outside Nebraska. Under contract production, an integrator—processor, feed supplier, or the owner of a farrowing operation—typically owns the pigs and pays the farmer a flat fee, plus performance incentives, to feed them to slaughter weight according to its specifications. The farmer provides the facilities and labor, and the integrator provides the pigs, feed, veterinary supplies, management services, and, in some cases, financing.

Table I. Nebraska Farm Operators' Opinions on Initiative 300

<table>
<thead>
<tr>
<th>Statement</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Initiative 300, which prohibits nonfamily corporate farming in Nebraska, is fair and should not be changed.</td>
<td>27</td>
</tr>
<tr>
<td>Initiative 300 should be repealed to allow nonfamily corporations to engage in agricultural production.</td>
<td>6</td>
</tr>
<tr>
<td>Initiative 300 should be modified to allow locally owned farmer cooperatives to engage in agricultural production with their members.</td>
<td>5</td>
</tr>
<tr>
<td>Initiative 300 should be modified to allow nonfamily corporations to own livestock produced under contract by farmers.</td>
<td>4</td>
</tr>
</tbody>
</table>

16 — Factors Affecting the Livestock Industry
Recent Developments in the Changing Pork Industry

Richard K. Perrin  Jeffrey S. Royer

The restructuring of the U.S. pork industry continues at a rapid pace. Hog production has been shifting from thousands of small, independent producers to fewer and larger operations, many of which produce hogs under contract. Although most production still occurs in the Midwest, many of the new, larger production and processing facilities have been built in other areas. Recently, several states have struggled to determine appropriate public policies for dealing with these changes and the environmental impacts of concentrated hog production. The following is a summary of some developments during the past year.

Iowa. Controversy concerning the placement of large confinements has increased in recent months as more have been constructed. An amendment granting counties temporary authority to regulate the location of large hog farms failed in the state legislature, but the state attorney general ruled that counties have authority to reject requests for agricultural area designations intended to protect livestock producers from nuisance suits. Further legislative action is expected this year.

North Carolina. This past fall, North Carolina's hog inventory was 6.6 million head, up 32 percent from 1993. Experts predict that the state's rapid expansion will continue in 1995 but may be hampered eventually by packing capacity and environmental pressures. Already, North Carolina pork firms have begun to expand into the Midwest and other regions.

Missouri. The 20-year decline in Missouri's share of U.S. hog production ended in 1992 when several large pork companies began operating in the state. Now the state's rate of expansion is second only to North Carolina. Much of Missouri's growth is attributed to a 1993 amendment to the state's corporate farming law exempting three northern counties. In 1994, bills to repeal the corporate farming law were introduced in the state legislature, but no action was taken. Meanwhile, the environmental impact of Premium Standard Farms, the largest operation to enter the state, has been criticized, although a recent study estimated that the operation will have contributed over $1 billion in new economic output in Missouri by 1995.

Nebraska. Recently, two Nebraska cooperatives and Farmland Industries were criticized for their plans to establish a major hog farrowing facility in eastern Colorado. The facility, which will provide cooperative members low-cost, genetically enhanced feeder pigs, was located in Colorado in part because of Initiative 300, the law restricting corporate involvement in agricultural production in Nebraska.

Minnesota. Last May, the state's corporate farming law was amended to allow unlimited participation in livestock farming corporations so long as 75 percent of each corporation is owned by Minnesota farmers. Fifty percent of the farmers are livestock producers, and no stockholder owns more than 1,500 acres in the state.

Oklahoma. Seaboard Corporation is proceeding with plans to convert an abandoned cattle slaughtering plant in Guymon into the world's largest pork processing plant. When completed this year, the plant will be capable of processing 4 million head annually from farms in Oklahoma, Texas, and Kansas. Seaboard's choice of the Guymon site was based on the area's sparse population and dry climate, state and local incentive packages, and the 1991 revision of Oklahoma's corporate farming law.

Kansas. This past spring the state legislature passed a law allowing counties to authorize hog production by corporations and limited liability companies. Elimination of restrictions on livestock ownership and contract production is expected to expand hog production in southwestern Kansas near the new Seaboard plant. By fall, 24 counties had authorized corporate hog farming although voters overturned the decisions in six of seven counties in which referenda were held.

Utah. Several North Carolina pork firms are engaged in a long-term project to place a packing plant, a feed mill, and up to 120,000 sows near Milford. If carried to completion, the project would process 8,000 hogs a day and create up to 1,500 jobs. Despite problems with groundwater access and the need to import grain, the location is strategic for reaching West Coast and Asian consumer markets.

Nationally, fall hog inventories were at their highest level in 14 years while hog prices had fallen to their lowest in two decades. Given continued expansion by large producers, experts predict prices will remain low for months to come. Consequently, many Nebraska producers will face major adjustments in 1995.

Factors Affecting the Livestock Industry — 17
The Importance of the Pork Industry to Nebraska’s Economy

The pork industry has been the center of controversy lately. Much of the industry’s recent growth has taken the form of large commercial confinements capable of producing thousands of hogs at a time. Supporters of these giant operations point to opportunities for increased employment and an expanded tax base. Opponents cite adverse environmental impacts and the threat to existing pork producers. Many of the new operations have been established outside the Midwest in states where pork has not been an important industry in the past. Decisions to locate in these areas have been influenced by various factors, including low population densities, climate, tax incentives, environmental regulations, and the absence of corporate farming restrictions. Concerns about the economic consequences of further geographical shifts in pork production, as well as the negative aspects of large confinements, have sparked important debates in several Midwestern states.

How much does the pork industry contribute to the economy? Recently, Iowa State University economists Daniel Otto and John Lawrence sought to answer that question for Nebraska and other major pork producing states in a study commissioned by the National Pork Producers Council. They estimated that in 1992 the pork industry in Nebraska generated 13,096 jobs and $503 million in personal income.

Pork production is a major economic activity in Nebraska. In 1992, total hog marketings of $777 million accounted for 9 percent of all agricultural marketings in the state. However, hog marketings represent only a portion of the total economic activity stimulated by the pork producing sector. In addition to cash receipts from marketings, the hog industry generates a large economic impact through the purchase of inputs, supplies, and services used by hog producers. Pork production also is the basis for further value-added economic activities occurring past the farm gate, such as meat preparation and processing.

According to Otto and Lawrence’s estimates, the total value of cash inputs used in Nebraska hog production sum to $586 million, or $668 million if a $6.00 per hour average value is assigned to the estimated 13.6 million total hours of labor used. Additional costs for the depreciation of fixed assets and facilities equal $75.1 million. The largest category of expenditures is feed costs. In 1992, hog production in Nebraska consumed 98.3 million bushels of corn valued at $223 million. The purchase of feed supplements and additives from Nebraska suppliers represented another $247 million. The purchase of these inputs help support corn and soybean prices, the soybean processing industry, and local grain elevators and transportation services based in rural areas.

Beyond the farm gate, the pork industry is responsible for additional economic activities that affect the state’s economy, including transportation, processing, and handling. At the processor level, the value of Nebraska’s pork industry is over $1 billion. An estimated 3,600 workers are employed in Nebraska’s hog processing and prepared meats sector, primarily in rural areas, and annually an estimated $70.2 million of wage and salary income is paid to workers in these activities.

In addition to these direct effects, income earned in the pork industry is spent in the rest of the economy, stimulating a broad range of sectors, including consumer related businesses in urban areas. Table I presents Otto and Lawrence’s estimates of the pork industry’s total direct and indirect economic contributions to the sectors of the state economy in 1992. Clearly, the future of Nebraska’s pork industry will have a major impact on economic activity in all sectors of the state’s economy, not just the pork producing and processing sectors.

Table I. The Pork Industry’s Contributions to Nebraska’s Economy

<table>
<thead>
<tr>
<th>Sector</th>
<th>Industry Output</th>
<th>Personal Income</th>
<th>Value Added</th>
<th>Jobs* Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pork Production</td>
<td>777</td>
<td>157</td>
<td>166</td>
<td>2,209</td>
</tr>
<tr>
<td>Rest of Agriculture</td>
<td>95</td>
<td>32</td>
<td>35</td>
<td>607</td>
</tr>
<tr>
<td>Manufacturing</td>
<td>1,133</td>
<td>112</td>
<td>116</td>
<td>4,299</td>
</tr>
<tr>
<td>Finance, Insurance, and</td>
<td>113</td>
<td>65</td>
<td>80</td>
<td>1,073</td>
</tr>
<tr>
<td>Real Estate</td>
<td>92</td>
<td>54</td>
<td>62</td>
<td>1,924</td>
</tr>
<tr>
<td>Trade</td>
<td>74</td>
<td>40</td>
<td>43</td>
<td>2,026</td>
</tr>
<tr>
<td>Services</td>
<td>50</td>
<td>27</td>
<td>30</td>
<td>482</td>
</tr>
<tr>
<td>Transportation, Communications, and Utilities</td>
<td>10</td>
<td>4</td>
<td>5</td>
<td>122</td>
</tr>
<tr>
<td>Construction and Mining</td>
<td>33</td>
<td>11</td>
<td>11</td>
<td>345</td>
</tr>
<tr>
<td>Government and Miscellaneous</td>
<td>2,377</td>
<td>503</td>
<td>547</td>
<td>13,096</td>
</tr>
</tbody>
</table>

* Full-time equivalent positions for pork production; other sectors may include part-time positions.
Prospects for the Prices and Uses of Farm Inputs

What will happen to farm input prices over the next few years? Since 1990, prices for crop production operating inputs have been relatively stable. That is, until the fall of 1994 when there was a jolt in the price of anhydrous ammonia. This raises the question of expectations for the future.

The figure below shows the trends in relative prices for fuel, chemicals and fertilizer since 1977. From 1990 to mid-1994 the prices of fuels and fertilizers was fairly flat. Agricultural chemicals showed a general price increase over this period.

What is ahead? Specifically, what national and international events will affect farm input prices and, how will changes in input prices affect the use of those inputs?

Energy: Seasonally, diesel prices tend to decline in the summer as diesel fuel is an alternative product to home heating fuel. The long run outlook, i.e. the next 3 to 5 years, for fuel prices is favorable for consumers.

Market Factors to Watch: OPEC activities, political conditions in the Middle East and economic development in Russia.

Strategy: Consider pricing opportunities by comparing spot prices with the average price paid over the past 3 or 4 years.

Chemicals: Annual price increases have been 5 percent to 10 percent over the past few years. Look for this to continue due to general inflation and the costs of developing new environmentally friendly chemicals.

Market Factors to Watch: The impact of provisions of the 1995 Farm Bill on the use of chemicals and the introduction of chemical resistant varieties. This new technology will have a major impact over the next five years.

Strategy: Analyze chemical use and the possibility of reducing usage as a means of reducing costs as well as reducing potential environmental liability.

Fertilizer: Anhydrous ammonia prices increased substantially in the later part of 1994. After four years of steady prices, this abrupt shock emphasized the need to be familiar with the fundamentals of the fertilizer market. The reasons for the price increases included: the U.S. output of ammonia was reduced because some plants shut down due to breakdowns or scheduled maintenance; imports from the former Soviet Union were reduced; strong demand from the non-agricultural sector for the use of ammonia in products such as plastics; and, favorable weather and commodity prices in the spring of 1994 resulted in higher farm use.

Market Factors to Watch: 1) Changes in energy prices. All nitrogen fertilizers start with anhydrous ammonia and the cost of ammonia is very dependent on energy prices. 2) Agricultural use of anhydrous. Look at crop acreage, soil test recommendations and commodity prices.

Strategy: Analyze annual fertilizer needs based on expected yields and soil fertility levels. Consider improved fertility management as a means of reducing production costs.

Bottom Line: There are bound to be year-to-year fluctuations in input prices. Long term planning is needed to determine the kinds and amounts of inputs used. Short term planning then determines when to price the inputs and how far into the future inputs can and should be priced.

Figure 1. Selected price index by farmers.
Manure Disposal Costs on Nebraska Feedlots

Nebraska ranks second in the US for cattle on feed and fourth in all hogs and pigs. Eight Nebraska counties each have over 50,000 cattle on feed. Fourteen counties each have over 100,000 hogs (NE Dept. of Ag). The number of livestock in these and other high density counties produce a tremendous amount of manure.

It is not uncommon for livestock producers to "dump" manure on the nearest available farm land. When manure is dumped on land it is applied at a much greater rate than is necessary for crop production. The livestock producer's concern is disposing of manure from the feedlot rather than utilizing its agronomic benefits. Farmers who accept manure on their land rarely incur a cost of over-applying manure but could incur the cost of purchasing nitrogen fertilizer if they under-applied manure to their fields. For this reason, both the livestock and crop producer have incentive to over-apply manure to farmland.

Over application of manure can cause nitrogen pollution of groundwater and phosphorus pollution of surface water. Some states (Iowa, Minnesota, Texas, Colorado) currently have legislation regulating the amount of manure that can annually be applied to land. EPA Region 6 (Louisiana, Texas, Oklahoma and New Mexico) restricts manure application rates to the amount needed by crops.

Given that current economic conditions do not give adequate incentive to spread manure according to crop needs, legislation is being considered. Limiting the number of tons which can be applied per acre would increase the cost of the feeding cattle. Figure 1 gives the cost of transporting and applying various application rates of manure from a 5,000 head cattle feedlot to the nearest crop land. The 4.3 tons per acre rate would meet the phosphorus needs of a 100 bushel/acre corn yield. Sixteen tons per acre would meet the nitrogen needs for the same 100 bushel/acre corn yield. These might be the regulated rates for different areas, depending on whether nitrogen or phosphorus is the pollution concern. The 32, 48, and 64 tons per acre manure applications are for a producer who is disposing the manure independent of the crop needs.

Assuming that a livestock producer is currently applying manure at the rate of 64 tons per acre, the estimated annual total cost is $5,351. If the feedlot feeds 9,000 head per year, the disposal cost on a per animal basis is $.60. If phosphorus limits are placed (4.3 tons per acre) the cost could increase to $27,202 ($3.02 per head). If nitrogen replacement rate of 16 tons per acre is used, the cost will increase to $9,076 ($1.00 per head). Both of these increases are significant in dollar terms and are areas that profit maximizing producers would seek to reduce. However, as a percent of total cost of production, manure disposal costs are small and the resultant increase in meat prices would likely be small.

Figure 1. Total costs of manure application (1,000 head capacity cattle feedlot).
From a systems perspective where it is recognized that land which does not receive manure will need to be fertilized with commercial fertilizers, the legislation to limit manure to nitrogen replacement levels can be less costly than dumping manure, depending on the distance from the feedlot to the field. For application on fields within one mile of the feedlot, the total fertilizer bill on the 622 acres which receive manure is $9,076. If anhydrous ammonia were used, the bill would be $15,836. The limitation on manure application may raise the cost of disposing of manure but astute feedlot operators may be able to recover many or all of these costs by marketing the manure to crop producers who will benefit by reduced fertilizer costs.

The area of livestock waste disposal offers a win-win opportunity for crop and livestock producers. Cooperation between them can lead to lower costs of production. In some situations, incentive may exist for livestock and crop production to integrate. The key to economic use of livestock waste will be the distance the manure needs to be hauled. Smaller feedlots not near any other feedlots will most likely be able to use their manure most economically.
Developing A Livestock Marketing Plan

Livestock producers often watch the cattle and hog markets and then do not have the discipline to take action when a hoped-for pricing opportunity materializes. Doing some forward pricing may be easier if a workable marketing plan is in place.

Developing a Marketing Plan

Outlined below are some guidelines for developing a marketing plan. Keep in mind that no single plan is right for everyone.

Estimate your break-even price. A good starting point for developing your marketing plan is to estimate the break-even price of your livestock. Unless you have an idea of how much it costs you to produce your cattle or hogs, a profitable marketing opportunity is tough to recognize.

Basis. Basis is defined as the difference between the cash (spot) price of a particular commodity and a specified futures contract price for the same commodity on any given market day for a specific location. Livestock producers should chart basis patterns so they have good data to use to estimate what the basis likely will be on any projected future marketing date.

In many instances, profitable opportunities are not available when you are looking for price protection. But often pricing opportunities do appear during the growing and finishing ownership periods. You may also want to include in your plan some follow-up strategies to consider should markets move after initial strategies have been implemented.

Follow through with your plan. You've estimated your break-even, can estimate basis, and have determined your market objectives—those were the easy parts! Probably the most difficult part of any marketing plan is actually carrying it out. When markets start to move either up or down, your outlook and opinions may also start to change. It is important to develop a plan that is realistic and one you will feel comfortable following through in any market.

Other considerations. With your marketing objectives in mind, a little additional homework will pay dividends in helping you follow through with your plan. Below are some additional tips for structuring your marketing plan.

- Monitor the futures or options contract month closest to your actual marketing period. Marketing plans should be separated by the marketing period. September/October slaughter hog and fed cattle marketings constitute an October marketing plan, November/December marketings a December plan, etc.

- Estimate the basis for the designated futures or options marketing month. Adjusting the current futures or options quotation by basis gives you an estimated "localized" hedge price. If the live hog futures price for your intended marketing month is quoted at $42 with a basis estimate of minus $1, the expected hedged price is $41.

- Price/Cost Analysis. Subtract your estimated break-even from your expected hedged price and analyze the difference. How much profit/loss (per head) does the market offer? Based on your market plan objectives, answer the question, "Is action called for today, tomorrow, soon?"

These suggestions should help livestock producers identify potential marketing plan needs. The job is to figure break-evens and structure your marketing plan based on your profit objectives. Do the homework necessary to monitor your present position. You're sure to find following your marketing plan, hitting your pricing targets and doing some forward pricing much easier.
Retained Ownership - Beef Cow/Calf Producers

Examples of Retained Ownership

- Weaning a calf, backgrounding it, feeding it for 30 days and selling it as a preconditioned calf.
- Weaning a calf, backgrounding it for perhaps three months and selling it as a yearling.
- Weaning a calf and feeding it to slaughter weight.
- Rather than selling a yearling in the fall, feeding it to slaughter.
- Rather than selling cull cows immediately, feeding them to heavier weights.

Positive Factors for Retained Ownership

In addition to profitability, other factors support retained ownerships. First, it can allow producers to benefit more completely from their management expertise, particularly in a breeding program. Superior genetics are more fully capitalized during the growing and finishing phases of production.

Second, retaining ownership expands producer marketing alternatives and spreads market risk. Retaining ownership may result in a greater opportunity to influence the prices received since there is more time and risk management tools available during this extended decision making period.

Where to Start?

A sound marketing plan, accurate cost information, performance history and a defined profit objective are important when considering a retained ownership program. Retaining ownership forces the producer to become more aware of the ever-changing market conditions. Selling calves at weaning means delivery time came once or twice a year, whereas marketing opportunities should be analyzed year-round. Producers who retain ownership become more market conscious and more adept at marketing.

How does a cattleman enter into a retained ownership program, and which type of program is best? The best type of retained ownership program is obviously the one offering the most return. It can be backgrounding, winter grazing, full finish in a feedlot, or a drylot wintering program. Market conditions at weaning time will indicate the costs and benefits of each. Feedgrain prices, roughage costs, winter pasture lease rates, market prices of different classes of cattle and futures market prices all enter into the formula for making the decision of how to fully capitalize on retained ownership. Whichever program is chosen, it must be remembered that when the desired profit is reached, discipline must be exercised to market or price the cattle.

Retained ownership isn’t restricted solely to the calf crop. It may include cull cow management as well. Normally a cow-calf operation receives about 20 percent of its yearly income from cull cow sales. Delaying cull cow marketings to the first quarter has consistently increased the

(continued on next page)
value of cull cows. Capitalizing on this seasonal trend may involve wintering cows in a different location offering lower feed costs. Rigid culling also improves the production efficiency of an individual cow herd, lowering annual cow-carrying costs.

These are just a few examples of retained ownership. There are any number of different variations, most of which fall into the four broader categories of backgrounding, winter grazing, and feedlot or drylot wintering. The common goal of any of these programs is to improve profitability. A cattleman has to do homework, develop a sound, realistic marketing plan, and use conservative cost estimates in order to convince himself and his lender that retained ownership will improve net returns.

**The Bottom Line**

To summarize, retained ownership has proven beneficial in the past and will continue to be an effective method to improve yearly income for many producers. Accurate costs, a detailed marketing plan and a defined profit objective are critical to the success of any program. Flexibility is the watchword. Retained ownership should not be a win or lose situation. Rather, it should offer multiple options and marketing alternatives. Once the decision has been made to retain ownership, the producer must have the discipline to closely monitor the chosen production-marketing strategy.
Producer Grain Marketing: The Hedge-To-Arrive Contract An Alternative to Forward Contracting

The trend of recent agricultural legislation has been to place greater responsibility on grain producers to look to the market for their incomes and reduce their reliance on governmental subsidies and price support programs. This trend is likely to continue in the 1995 Farm Bill.

As grain producers take increasing accountability for determining their economic destiny, they quickly discover prices at harvesttime are traditionally lower than prices earlier in the crop year. Further study reveals there are often seasonal patterns of higher prices because the market assigns “risk premiums” to new-crop futures during times when the crop may be “at risk.”

For years, knowledgeable producers have priced some fraction of their expected harvest at these times to supplement government subsidy payments. With income support payments likely to continue the present downward trend, pricing during seasonal highs becomes an increasingly important factor in determining net income.

Some producers have learned that hedging (i.e., selling new-crop futures) often results in a higher price received at harvest-time than forward contracting with a local elevator. There is a reason for this. The bid price at the local elevator is a composite consisting of the world price (current futures price) and adjustments to reflect 1) transportation costs to major demand points; 2) the local demand for, and supply of, available storage space; and 3) the elevator’s operating margin determined by local competitive conditions. These adjustments are totaled and the result is termed basis, resulting in a local price that is premium or discount to the futures price.

When a grain producer signs a forward price contract (a.k.a. flat price contract) with a local elevator, the producer is quoted a price that will be paid for grain delivered to the elevator sometime in the future—perhaps six months from now. This price will not change (i.e., remain flat) no matter how prices might change between the time the contract is signed and when the grain is delivered to the elevator.

From the producer’s viewpoint, signing a flat price contract removes the risks of a decrease in world price (futures) and a weakening of the local basis. From the elevator’s viewpoint, a flat price contract means the risks removed from the producer are shifted to the elevator. The elevator will transfer the price risk to others by selling futures. The risk of a weakening basis is minimized by incorporating an unusually weak basis in the calculation of the flat price. Using an unusually weak basis in the calculation of local price is termed “taking protection,” or simply “protection.”

Anecdotal evidence suggests 10 cents to 25 cents of protection is not uncommon when elevators calculate a flat price bid five or more months before delivery. Some producers circumvent this problem by fixing price through hedging during traditional seasonal highs—and later sign a basis contract when the elevator has removed protection from the local price calculation.

For those producers who feel uncomfortable with hedging, the Hedge-To-Arrive (HTA) contract is an alternative. The HTA contract permits setting world price (the futures price) at a time decided by the producer—and designates a “time window” in which the producer can set the local basis. If the time window stretches far enough into the future, the producer has the opportunity to establish basis when elevator management has removed most, if not all protection in the calculation of local price. Thus, the HTA contract permits a producer to mimic the actions of a hedger who later signs a basis contract, but without using of a broker, brokerage, and possible margin calls.

1 The contract specifies the basis that will be used in calculating the price paid. The futures month is specified as well as a “time window” when the grain is to be delivered. A typical contract might state, “Producer will deliver 5,000 bushels of corn to the elevator during the first week in November and be paid 20 cents per bushel under the DEC futures on the day of delivery.”

2 However, many elevators charge a small fee (five or so cents per bushel) for a Hedge-To-Arrive contract.

James Kendrick

Commodity Marketing — 25
The Impact of Biofuel Production on Corn Prices

Steven L. Elmore  Michael S. Turner

A 1994 EPA ruling promoting ethanol and other renewable fuels for environmental reasons may boost Nebraska’s economy. This ruling could potentially open new demands for renewable biofuels. If this occurs, corn will be a major input for ethanol production. A new major corn consumer will increase the demand for corn and should raise the price that corn producers receive.

The Minnesota Corn Processors (MCP), located in Columbus, Neb., began producing ethanol from corn in August 1992. A comparison of the cash corn prices before and after that period could indicate what may happen to the price at the other sites in Nebraska (Figure 1). The existing and proposed sites could use an equivalent of 150 million bushels of corn annually.

Basis was established by subtracting the Chicago Board of Trade nearby corn futures price from the bid prices given to producers by local elevators. The sites in Northeast Nebraska chosen to evaluate the economic impact of MCP were Columbus, Herman, Monroe, North Bend, Platte Center, St. Edward, Scribner, and Shelby. The results of the analysis are shown in Table I.

The study showed that local corn prices increased when a corn processor was introduced to an area. The MCP had the greatest impact at Columbus and Shelby ($0.04); followed by Monroe, Platte Center, and St. Edward ($0.03). There was statistically no difference in the prices paid at Scribner, Herman, and North Bend.

Scribner and Herman are not rail shippers and are far enough away from the Columbus MCP plant that added transportation costs made it unprofitable to haul the corn to that location. As a result, these elevator prices were not impacted.

North Bend is a rail shipper located 32 miles east of Columbus and was the price leader among firms considered in the study area before MCP opened. It remained the price leader following the opening of MCP but with a smaller price premium which was statistically the same as their bid prices prior to MCP. The two locations outside of the case study regions (Albion and Aurora) were not significantly different, suggesting that MCP did not have an impact on their local prices.

The increased demand for corn provided additional revenue that producers would have lost if MCP had not located in Columbus. Because of the EPA ruling there is the potential for improved demand throughout the state, not only corn, but for sorghum, crop stover, and switchgrass.

An increase in local consumption would allow Nebraska farmers to take advantage of increased demand due to ethanol production. However, National Petroleum Refiners Association is already lobbying to block this automotive fuel additive. If their efforts are successful the EPA ruling may be reversed and additional demand may not occur.

Table I. Elevator location, corn basis before MCP opened (8/92) and after it opened, and the difference between the two periods.

<table>
<thead>
<tr>
<th>Elevator</th>
<th>Local Basis Before MCP</th>
<th>Local Basis After MCP</th>
<th>Difference</th>
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</thead>
<tbody>
<tr>
<td>Columbus</td>
<td>17.47</td>
<td>13.82</td>
<td>3.65</td>
</tr>
<tr>
<td>Herman</td>
<td>26.42</td>
<td>24.82</td>
<td>1.60</td>
</tr>
<tr>
<td>Monroe</td>
<td>16.59</td>
<td>13.86</td>
<td>2.73</td>
</tr>
<tr>
<td>North Bend</td>
<td>15.54</td>
<td>13.77</td>
<td>1.77</td>
</tr>
<tr>
<td>Platte Center</td>
<td>20.26</td>
<td>17.21</td>
<td>3.05</td>
</tr>
<tr>
<td>St. Edward</td>
<td>18.63</td>
<td>16.01</td>
<td>2.62</td>
</tr>
<tr>
<td>Scribner</td>
<td>22.09</td>
<td>23.55</td>
<td>1.46</td>
</tr>
<tr>
<td>Shelby</td>
<td>18.27</td>
<td>14.38</td>
<td>3.89</td>
</tr>
</tbody>
</table>

Figure 1. Existing and proposed biofuel plants and yearly capacity (measured in bushels of corn), 1994.
Agricultural Land Market Update and Outlook

For Nebraska agriculture, 1994 was a year of mixed blessings. Most of the state had a favorable crop year leading to large 1994 harvests. But the rest of the country also enjoyed a bumper harvest which undercut favorable weather lowered crop production costs, other input costs such as interest on debt and fertilizer costs rose.

Given this “economic kaleidoscope” the local markets for agricultural real estate exhibited a “patchwork quilt” effect in late 1994 and into 1995. While land values generally have moved upward in recent months, variation among local markets has been greater than usual. Throughout much of western Nebraska, values remained fairly stable during 1994. Likewise, the range and livestock areas of the state experienced little or no change in land values. However, some local markets in the major cash-grain areas of eastern and central Nebraska were robust. In those areas, low harvest time commodity prices could not throttle the optimism of “bin busting” crops. Bidding was spirited and land values made sizable advances into early 1995.

When we conduct our annual survey in February 1995, likely there will be some areas of the state showing gains of 8 percent to 10 percent over year-earlier levels.

Ironically, the impact of rising interest rates during 1994 has not yet appreciably altered the land market. Higher mortgage rates for borrowers as well as better returns to investment alternatives will tend to dampen the demand side of the agricultural land market. However, most Nebraska buyers have purchased for expansion purposes with a heavy cash outlay up front, higher interest rates have not had much effect. In time, that may change.

Cash rental rates for cropland have also moved upward throughout much of Nebraska. Early indications suggest that negotiated rates for the 1995 crop year are up 5 percent to 10 percent — particularly in areas where competition among tenants is keen. Regarding pasture land, lower cattle prices in recent months likely will mean stable to somewhat lower 1995 pasture rental rates.

As for what lies ahead for agricultural land values in 1995, there are some major unknowns to consider. First, the emerging pattern of commodity prices in the months ahead will impact heavily on farm income conditions for 1995. In turn, income levels will influence the land value movements in the short run.

Second, passage of the 1995 farm bill will have some implications for agricultural land values, particularly in those areas with high commodity program participation. Also, a key aspect of that legislation is the future status of the current Conservation Reserve Program (CRP). If Congress terminates or drastically reduces that program, a considerable amount of CRP land may soon enter the agricultural land markets. A supply expansion of this type may dampen values in some local markets if demand is not similarly increasing.

Third, the November 1994 elections introduced an additional policy issue that may send a signal to the agricultural land market. Congress may reinstate a tax reduction on capital gains. For many agricultural landowners who would like to sell their holdings, possible future reinstatement of a reduced capital gains tax would certainly be a reason to not sell in the very short run. Thus, supply may be reduced and values would move upward as demand chases fewer offerings.

Fourth, the general state of the U.S. economy and the perennial concern over the rate of inflation has overtones for the agricultural land market in the coming months. Presently, the U.S. economy is growing steadily with inflation well under control. However, the fact that the Federal Reserve intervened six times during 1994 to combat the potential of inflation certainly would suggest it remains a threat. If inflation were to accelerate in the future, interest in holding tangible assets such as agricultural land would probably rise, and with it land values.

In summary, it appears that outside forces will bear on Nebraska’s 1995 agricultural land market more than usual. These forces represent both upward and downward influences on land values. All things considered, look for agricultural land values to continue a gradual upward climb.
How Government Programs Can Influence Prices

People in the grain industry spend much of their time during the year forecasting prices in order to determine whether to store and sell or forward price crops that are not yet grown.

In forecasting we typically look at the basic supply and demand for the product. We compare total predicted supply against total usage or demand. We then predict the amount of carryover stock and use this as the basis for our predictions.

The market analyst generally doesn't look at the impact of farm programs in a micro sense, but since farm programs are important and change every few years, we should.

Recently the Department of Agricultural Economics did some work on the present and past wheat programs. We created a model to look at loan rates, target prices, set-aside acres, CRP acres, domestic use, exports, imports, total production, and inventory.

The model indicated what the price impact would be for changes made in 1) loan rates; 2) target prices; 3) ACR or land retirement (CRP); 4) demand as reflected in changes in exports and domestic use; and 5) supply of wheat as reflected in production, imports, and carry over stocks.

The model indicates that for every $1 increase in the base loan rate, wheat prices will increase $.78. This is consistent with the operation of market forces because world prices increase due to U.S. loan price increases. However, this is not a one-to-one relationship.

Wheat prices are responsive to total supply and demand conditions, meaning that a higher U.S. loan rate (and market price) will increase world production, but world and U.S. wheat prices remain below U.S. loan rates.

On the other hand, raising the target price has an opposite impact on wheat prices compared to loan price changes. A $1 increase in the target price is estimated to lower the wheat market price by $.49 a bushel. As target prices rise, deficiency payments rise, thereby causing more participation in the wheat program and more wheat to be planted across the United States, especially in areas that have small wheat bases and are predominately feed grain areas. Under a higher target price it then is more profitable to plant wheat and participate in the program than it is to grow competing crops.

The model also indicated that for every 1 million acres removed from production, wheat prices will increase 2.7 cents per bushel. This appears to be realistic under the present parameters of the farm program for relatively small changes in land retirement. If large changes in land acreage retirement are implemented it would not be expected that the same relationships would hold.

The model indicates that for every 1 million bushels of increased use, the price of wheat will rise by $.002/bushel. The model also indicates that for every 1 million bushels of increased supply the price of wheat will decrease by $.0013/bushel.

Consequently, as we look to price forecasting and possible changes in the 1995 farm program it is important that we have a more complete understanding of the impacts of farm programs on prices.
Commodity Price Impacts from Expiring CRP Contracts

Richard T. Clark

Soil and Water Conservation Society (SWCS) surveys in 1990 and 1993 indicated that about 52 percent and 63 percent of the CRP land would return to annual crop production, respectively. Nebraska survey results in 1993 indicated that producers planned to re-crop 36 percent of their CRP, but producers on about 41 percent of the land were undecided as to whether they would use or sell their CRP land. The remaining 23 percent planned to leave their CRP in permanent cover.

Impacts of expiring contracts

Several studies compared scenarios likely to occur once the CRP contracts begin to expire (Table I) to identify potential impacts. Results are based on comparing a scenario that extended all CRP contracts to one permitting up to about 50 percent of the CRP acres to return to crop production.

Without knowing all assumptions used in above studies, it is difficult to explain some of the differences. However, some important points can be observed. Price impacts for listed commodities are all in the same direction. Magnitudes are a bit different, especially for wheat, but so are acres estimated to return to production. Impacts on the livestock sector are estimated to be small. The amount of crop acreage base (CAB) required for set-aside was handled differently by the studies. Set-aside was determined endogenously according to the rules of the 1990 farm bill in the Taylor et al., Knutson et al. and FAPRI models. The scenarios chosen from the other two studies assumed the set-aside to be 5 percent of CAB. All of the studies assumed that the commodity programs in place upon CRP expiration would be similar if not identical to the 1990 Food, Agriculture, Conservation and Trade Act.

The treatment of the Acreage Reduction Program (ARP) upon contract expiration is critical. Heimlich and Osborn estimated that, without any major increase in demand, releasing CRP would require ARP rates (set-aside) as high as 20 percent to 25 percent to keep corn and wheat prices near their baseline estimate.

(continued on next page)

Table I. Potential impacts of returning various amounts of CRP to annual crop production compared to extending all CRP contracts as estimated by alternative studies by year 2000

<table>
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<tbody>
<tr>
<td>Acres returning to</td>
<td>19.2 million</td>
<td>19.8 million</td>
<td>11.8 million</td>
<td>12.6 million</td>
<td>NR</td>
</tr>
<tr>
<td>all annual crops</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Acres to wheat</td>
<td>4.8 million</td>
<td>8.4 million</td>
<td>5.1 million</td>
<td>+4% production</td>
<td>4.2 million</td>
</tr>
<tr>
<td>Acres to corn</td>
<td>2.4 million</td>
<td>2.6 million</td>
<td>2.1 million</td>
<td>+2% production</td>
<td>0.6 million</td>
</tr>
<tr>
<td>Wheat price</td>
<td>-5.2%</td>
<td>-20.5%</td>
<td>-7.2%</td>
<td>-9%</td>
<td>-7.2%</td>
</tr>
<tr>
<td>Corn price</td>
<td>-5.9%</td>
<td>-10.2%</td>
<td>-2.3%</td>
<td>-5%</td>
<td>-5.4%</td>
</tr>
<tr>
<td>Livestock price</td>
<td>-0.1%</td>
<td>-1.3%**</td>
<td>NR*</td>
<td>NR</td>
<td>0**</td>
</tr>
<tr>
<td>Deficiency payments</td>
<td>+$957 million</td>
<td>+$1 billion</td>
<td>NR</td>
<td>+21%</td>
<td>$990 million</td>
</tr>
<tr>
<td>Net farm income</td>
<td>-3.8%</td>
<td>-3.7%</td>
<td>NR</td>
<td>NR</td>
<td>-3.6%</td>
</tr>
</tbody>
</table>

* Not reported
** Price change for fed steers.

Government Programs and Implications — 29
Environmental impacts are expected to occur upon expiration of CRP. Heimlich and Osborn estimated an increase of 112 million tons of erosion over maintaining CRP. Wildlife will also suffer losses from returning much of the CRP to annual crop production. Estimates of loss are not available, but fish and wildlife benefits from all CRP have been estimated to be $8.6 billion (which excludes benefits from large game and fishing) (Johnson et al.). Conservation compliance requirements may limit the increase in erosion from CRP lands returning to annual crop production; however, many wildlife benefits will be lost when the land is removed from the permanent cover provided by CRP conserving uses.

Conclusions

Projections of adverse price impacts due to expiration of CRP contracts range from small for livestock sectors to more substantial for wheat and corn. Some adverse price impacts are expected to moderate over time as U.S. and world markets expand. The treatment of the ARP rate was different and is an important factor in estimating potential impacts. Permitting the CRP contracts to expire without adjusting ARP rates does not seem likely. Increases in annual set-aside requirements can help ameliorate adverse price impacts but will not reduce the environmental losses.

References

For a list of references, please contact the author.
Farm Program Participation and Crop Insurance Linked

Producers wishing to participate in the 1995 wheat and feedgrains programs will be required to enroll in catastrophic insurance coverage for all crops that are expected to contribute 10 percent or more of their total crop value.

The intent of the crop insurance reform legislation passed in October 1994, was to provide an alternative to disaster programs. The disaster programs have been criticized as undermining the multi-peril crop insurance program and as providing assistance to some farmers at no cost while others have been left out. Since farm program participation has been at relatively high levels in recent years (over 80 percent in most instances), linking farm program participation to the catastrophic, “CAT”, coverage is expected to result in broad CAT participation. As a result, there should be less pressure on Congress to pass disaster legislation. The CAT coverage has the added attraction that indemnity payments will be based on individual losses and will not require that the county be declared a disaster area. The CAT coverage level is similar to recent disaster programs with indemnity payments for yields below 50 percent of established yields at 60 percent of established prices. The CAT indemnity payments would not be subject to budget reduction as have disaster payments. Also, receiving CAT indemnity payments will not affect deficiency payments.

Farmers will be required to pay a $50 CAT processing fee per crop up to $200 per county and $600 per producer. There will be no additional premium unless the producer elects additional coverage. Additional coverage will be available under the Actual Production History Program, APHP, for up to 75 percent of established yields and 100 percent of established prices. A Group Risk Plan, GRP, will also be available for corn, sorghum, and soybeans for some counties in Nebraska. Additional coverage under GRP will be available for up to 90 percent of expected county yields and up to 150 percent of expected county per acre revenue. GRP coverage has been widely criticized, since a producer can experience a low yield while the county yield remains above indemnity levels, but GRP can be an economical risk management alternative particularly in dryland situations where drought is a major risk and the farmer’s established yield is low relative to APHP yields. GRP and APHP coverage can be combined with supplemental private insurance coverage for hail, for example, as in the past.

Farm program participation will continue to provide attractive income support for most producers and generally will be strengthened as a risk management tool when combined with crop insurance. Although the income support will continue to be provided as deficiency payments, the method of calculating the deficiency payment has changed beginning with payments for the 1994 marketing year. The national average will be determined from the smaller of the 5-month average plus 10 cents for corn and grain sorghum (7 cents for wheat) and the 12-month average. The deficiency payment will be for the difference between the target price and the national average price. The result of this change will likely be a smaller deficiency payment. Since set aside requirements in 1995 are expected to be above 1994 levels, incentives for participation in the wheat and feedgrains programs will be reduced in 1995 unless the risk of lower prices becomes the overriding consideration.

Another change in the farm program in recent years is the introduction of the marketing loan. The loan deficiency payment, LOP, provisions of the marketing loan, will become a consideration in 1995 if prices fall below the loan rate. A LOP can be requested for the amount the posted county price is below the loan rate but grain receiving a LOP is no longer eligible for a non-recourse loan. If a non-recourse loan is requested, the loan can be repaid at the posted county price under the marketing loan provisions.
Federal Aspects of Conjunctive Use

Conjunctive use is emerging as one of the top water policy issues in Nebraska. Surface water users are concerned that groundwater withdrawals may be depleting streamflows, while groundwater users are concerned that future conjunctive use policies may lead to state regulation of groundwater withdrawals.

Nebraska water law has only recently begun to deal with conjunctive use. Legislation adopted in 1993 authorizes public water suppliers to obtain surface water rights if their wells depend on streamflow for recharge of groundwater supplies. Irrigation wells drilled after September 8, 1993 and located within 50 feet of a stream must obtain a surface water right and are regulated by the Nebraska Department of Water Resources (DWR) as surface water withdrawals.

In 1993, Governor Nelson established a Water Council to consider conjunctive use policy options and to make legislative recommendations. The Water Council’s legislative recommendation on LB108 would authorize natural resource districts (NRDs) to regulate groundwater uses to minimize conjunctive use conflicts, and would authorize the DWR to regulate groundwater withdrawals (as well as surface water irrigation practices) if NRD regulations did not adequately address conjunctive use problems.

Two federal developments have significant implications for conjunctive use policy debates in Nebraska: the Edwards Aquifer endangered species litigation in Texas; and the Kansas v. Colorado litigation in the U.S. Supreme Court.

Edwards Aquifer Litigation. In 1992 the Sierra Club sued the U.S. Fish and Wildlife Service (FWS), arguing that groundwater withdrawals from the Edwards aquifer for municipal and irrigation purposes were depleting streamflows upon which several Texas endangered species depended upon for habitat. The Sierra Club argued that the groundwater withdrawals constituted an illegal “takings” under the federal endangered species act because the withdrawals harmed endangered species habitat. The federal district court ruled in favor of the Sierra Club. In response to the endangered species lawsuit, the Texas legislature has adopted satutes to reduce groundwater withdrawals in the Edwards Aquifer.

Kansas v. Colorado. In 1985 Kansas sued Colorado in the U.S. Supreme Court because Colorado groundwater irrigation wells were depleting the flows of the Arkansas River into Kansas in violation of the Arkansas River Compact. The Supreme Court referred the case to a special master to make preliminary findings and recommendations to the Supreme Court. The special master concluded that the Colorado wells were depleting the flow of the Arkansas River into Kansas in violation of the Arkansas River Compact. Those conclusions are now before the U.S. Supreme Court. Nebraska water officials expect Colorado to be required 1) to shut down all pre-compact wells in the Arkansas Valley (which probably would require the state of Colorado to buy and retire those wells) and 2) to pay Kansas money damages for lost irrigation due to streamflow depletion from Colorado irrigation wells.

Nebraska implications. The FWS is negotiating habitat streamflow requirements for the Platte River with the state of Nebraska, Colorado, and Wyoming. Colorado and Wyoming have resisted requirements to make habitat water releases at the state line, noting that Nebraska water law does not prevent wells from withdrawing habitat water released by upstream states. In the extreme, FWS officials might be able to proceed against Nebraska groundwater users depleting the Platte River under legal theories similar to those in the Edwards Aquifer endangered species litigation. In addition, Kansas water officials suggest they will sue Nebraska for violating the Republican River Compact due to the stream depletion effect of Nebraska irrigation wells.

Some Nebraska groundwater irrigators have voiced concern regarding possible state regulation of groundwater withdrawals under the Water Council’s conjunctive use proposals. All Nebraska water users need to consider whether they would prefer having conjunctive use policies determined by the Nebraska Unicameral, or by a federal judge acting under the federal endangered species act.
Potential Impacts from Conjunctive Use Legislation

Concern over surface water supplies has resulted in serious discussion of conjunctive use legislation for Nebraska. Surface water supplies in some areas have been trending downward due in part to soil and water conserving agricultural practices and in part to groundwater pumping. Reduced tillage, eco-fallow and other soil and water conserving practices reduce runoff from the land and increase crop water use, hence decreasing the amount of water which reaches streams and reservoirs. Groundwater pumping in areas that are hydrologically connected to streams also has a direct impact on stream flow, but the impact is not always immediate and may be delayed for months or years.

Nebraska law does not recognize the conjunctive link between surface and groundwater. This has created a situation where some surface water users face growing shortages while uncontrolled groundwater use continues. Surface water users both within Nebraska and in downstream states find this unfair and are understandably seeking a legislative solution. The Nebraska Water Council has been discussing potential legislation and may present specific legislative recommendations to the governor during the 1995 session. Although legislation is likely to address general policy and procedures rather than specific actions, it is useful to consider the potential effects of alternative scenarios on agriculture.

Actions to address conjunctive use will necessarily reallocate some existing water supplies, although many users will not be affected. Certainly users of groundwater that is not a tributary to a stream will not be affected. Likewise, some surface water rights are not impacted by groundwater use and therefore will not be affected by any change in conjunctive use policy.

However, for those cases where groundwater and surface water is interconnected and where there is an insufficient total supply, a change in how the shortages are shared can be expected. It could take the form of applying the appropriation doctrine to both groundwater and surface water, which would mean recently drilled wells and recently granted surface rights would be the first to be shut off in times of shortage. A variation of this approach would be to give all current wells a top (oldest) priority and make only new wells subject to the appropriation doctrine. An alternative policy might involve some kind of correlative rights or equal sharing of shortages could be adopted.

Who gains and who loses will obviously depend on what policy is adopted. Potential negative effects can be mitigated, however, if policy provisions were adopted to allow for water rights transfers and supply augmentation. If those facing a shortage situation are able to buy rights from others where the value of the water is less, the potential negative effects will be lessened. Similarly, if water users are allowed to continue to use what they need provided they replace what is taken, it may be possible to reduce the economic cost of a shortage situation through off peak augmentation of surface water supplies. In cases where adequate storage facilities are available, for example, augmentation could take the form of pumping into a reservoir in the fall or spring so that there will be sufficient supplies for both groundwater and surface water users during the irrigation season.

There is no scientific answer to how we should best manage surface and groundwater. Only the legislature can decide how water rights should be allocated. It is important for all water users to participate in this policy debate, however, to insure that the difficult policy decisions which must be made reflect accurate facts and produce equitable consequences.
Income Distribution Across Nebraska’s Communities

From Abie to Yutan alphabetically, or from Monowi to Omaha, size wise, the 1990 census counted 538 villages, towns, and cities in Nebraska. Four communities were added since the 1980 census. These villages, towns, and cities are dispersed across Nebraska, each possessing unique characteristics and heritage. The economic base and the earnings of community residents are equally dispersed. This economic diversity is reflected in the inequality of incomes earned by residents in the communities across the state. If household income was equally distributed among community residents across the state, the proportion of income in each community would be equal to the proportion of the state’s population in each community. Income is not distributed equally across Nebraska’s communities. Lincoln and Omaha with 44 percent of the household captured close to one-half of the household income within Nebraska. The tier of communities from 10,000 to 40,000 population captured the share of income equal to their population. Finally, small communities captured less of the state’s income in relationship to their population. The trend from 1980 to 1990 was toward greater inequality of income distribution based on the size of Nebraska’s communities.

Table I. Town size by percent of income earned by residents.

<table>
<thead>
<tr>
<th>Town Size</th>
<th>No. of towns</th>
<th>Households</th>
<th>Income</th>
<th>% income per %HH</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 - 10,000</td>
<td>481</td>
<td>35.4</td>
<td>30.2</td>
<td>2 - 2.6</td>
</tr>
<tr>
<td>10,000 - 40,000</td>
<td>12</td>
<td>20.3</td>
<td>20.0</td>
<td>0.8 - 1.5</td>
</tr>
<tr>
<td>&gt; 40,000</td>
<td>2</td>
<td>44.3</td>
<td>49.8</td>
<td>1.1</td>
</tr>
</tbody>
</table>

The differences between the haves and have-nots in Nebraska’s communities are disguised by averages. For complete equality the ratio of income percentage per household percentage equals unity for each community. For Nebraska communities the range of the income distribution ratio increases as community size decreases. Charting the income distribution ratio for Nebraska’s larger communities shows on average equal income distribution for this tier of communities and the dramatic range in community’s ability to obtain an equal share of income distribution. The suburb communities of Papillion and Bellevue garner a greater share of income in proportion to their population while Scottsbluff lags. The disparity in the income distribution ratio within the smallest communities is even more pronounced.

Community population, while showing some relationship to distribution of income, does not fully explain inequality of income distribution across Nebraska communities nor does it show the causes. For example, urban communities attain a greater proportion of the Nebraska’s income, regardless of size. Communities with wealthy and/or absence of poor residents capture a greater portion of the state’s income. A community’s ability to stem Nebraska’s pattern of outmigration, create high paying jobs, and provide the development to attract or grow industry ultimately determines a community’s equitable share of the state’s income. Given current trends in income distribution we expect to see continued inequality of income distribution across Nebraska’s communities. Yet, community size alone won’t dictate the pattern of income inequality among Nebraska communities.

Figure 1. Income distribution (communities 10 to 40 thousand population). Source: US Census, 1990
Rural Telecommunication Insights

The role of telecommunication in rural development was the purpose of this current regional research project. In the first phase, information was collected during visits to 10 rural Nebraska, Kansas, and Iowa communities selected for their size, telecommunications, and development history.

In each community, more than a dozen personal interviews were arranged. While several business, education, health, and government leaders were interviewed, additional interviews were arranged in barbershops, cafes, and coffee break rooms. These interviews were designed to obtain information from people with varying degrees of special knowledge, network connections, and resources important to the application of these technologies.

Attention focused on just one general question: What is the role of telecommunication technologies in development and revitalization of your community? Responses explored potentials and concerns important to their community, business, and personal growth. People expanded the expected list of telecommunication technologies to include computers, satellites, radios, and other technologies.

Differences among these rural communities became apparent:

- They differed in their development attitudes and assertiveness. Differences were evident in organizational leadership and planning, the number of development projects and their continuing commitment when frustration or failure confronted them.
- In some communities, telecommunication task forces have been established. They obtained and exchanged information, organized educational programs and raised funds. A few have designed and constructed community facilities with special programs designed to encourage the application of these technologies.
- Variations in population density and geography also differentiate development strategies. Interviews in communities more than a day's drive away from urban centers consistently highlighted barriers to participation in regional, state, and national training workshops and conferences. Long drives and extended time away from business, family, and community limit personal growth, business performance, and community development. For these communities, videoconferencing capabilities were recognized as a critical resource.
- Elsewhere, telecommunication technologies were important to development strategies involving attempts to attract back-office businesses and industries, to expand retail trade territories, to attract consultants, artisans and skilled craftsmen who serve national and international markets.
- Rural merchants generally discounted economic leakage associated with mail order and TV shopping. However, threats posed by competition from regional malls and discount stores were widely recognized.
- Rural consumers initially confirmed merchants assumptions about limited mail order and TV shopping. However, most of these people worked from 8am to 5pm and they often complained about the limited time that work and family obligations left for local shopping. Mail order catalogues and TV shopping channels coupled with 800 numbers and overnight delivery services may be decreasing the market share of many "main street" businesses.

A few "main street" businesses are using telecommunication technologies to expand their traditional trade territories. These strategies were most often reported by auto parts stores, pharmacies, banks, and hotels or motels. However, examples were found in ladies clothes, a sailboat dealer, a cosmetics businesses and wood working and cheese shops. They usually combined 800 numbers, overnight delivery services and unique marketing techniques. For example, urban trade, craft, and fashion shows were used to establish and maintain connections with distant customers.

Wholesale suppliers and parent firms are prominent providers of telecommunication technologies applied by "main street" businesses. Computerized records were used to identify customers' and clients' needs and characteristics along with the goods and services they purchased. These records were useful for inventory, purchasing, and marketing.

Other discoveries important to government, education, and health and families were presented by "main street" business and community leaders. The general impression is that "main street" business and community leaders vary widely in their knowledge and confidence, their connections, and access to critical resources is important to the application of these technologies.

1 A regional RUPRI (Rural Policy Research Institute) project with investigators John Allen, Bruce Johnson, and Larry Leistritz.
A Baseline for Rural America

Evert VanderSluis

Although baseline projections focusing on specific aspects of rural economies have existed for many years, such as the Food and Agricultural Policy Research Institute (FAPRI) Agricultural Outlook for agricultural products, the RUPRI baseline provides a first projection of future rural U.S. economic and demographic patterns in general.

The RUPRI baseline provides separate but linked projections for four U.S. county groupings: core metropolitan counties, other metropolitan counties, rural counties adjacent to metropolitan areas, and other rural counties. While much diversity exists within each grouping, the groupings reflect systematic differences between metropolitan and rural areas. The projections are based on a 14-sector model of the economy—11 private, one of which is the agriculture, forestry and fisheries sector; and three public sectors. The baseline provides both short-term and long-term projections.

In the short-term, through the year 2000, rural areas are projected to share in the current economic expansion, but in a different way than do metropolitan areas. Gross output for the rural areas, which is analogous to gross domestic product for the nation, is projected to expand by 12 percent from 1994 to 2000, compared to 15 percent for metropolitan areas. Over the same period, productivity (output per job) is projected to expand by over 6 percent in rural areas, versus 5 percent in metropolitan areas.

Also, personal income per capita is projected to grow more slowly than in the past in rural areas. Although rural incomes will grow at about the same rate as in metropolitan counties, the current income disparity between metro and rural America will remain unchanged. The net result is that job growth in this period is projected at close to 5 percent in non-metropolitan areas, much less than the 11 percent projected for metropolitan areas. The projected increase in productivity in rural areas is a source of economic strength for the U.S. as a whole, enabling the U.S. to compete more effectively in the world economy. However, the resulting displacement of jobs and businesses places disproportionate adjustment burdens on rural metropolitan areas.

In the long-term, the retirement of a large number of people of the baby boom generation, beginning in about 2010, will have a major impact on rural areas and on the national economy as a whole. Rural areas are projected to continue to contain a disproportionately large number of elderly. The number of workers will remain unchanged from current levels, so that the proportion of those in the working age will fall, and output and income per capita will grow at a slower pace.

Current work on the baseline includes updating the projections to recent projections of the national economy, and implementing policy scenarios on national health care reform. Future policy applications include, but are not limited to, welfare reform and aspects of the 1995 farm bill.
Acreage reduction programs have been used in the United States since the 1930s to reduce commodity production and improve the environment. In recent years, these programs have become increasingly controversial. Much of the debate over the next federal farm bill is expected to center on them. While specific effects of acreage reduction programs vary by program such as success in controlling production or cost-effectiveness, the land covered under the various programs is lumped together in the study reported here.

The central question seems simple enough—should the government continue paying farmers to take cropland out of production? Program advocates argue that the policies have been successful in lifting crop prices and in enhancing environmental quality. Others counter that large-scale land withdrawals have slowed the growth of U.S. agriculture and put American producers at a competitive global disadvantage.

We examined one aspect of these programs: their effects on rural economies. In particular we asked: Did these programs change the demand for the services of the rural nonfarm population?

Many goods and services used in agriculture are supplied by rural nonfarm people. The demand for these items by farmers is in a sense a demand for the people who supply them. The dynamics of this demand in turn depends on factors affecting the profitability of agriculture, as well as on cropland diversion programs. The supply of these goods and services from rural nonfarm people, and thus the supply of the rural nonfarm population, also depends on the local earnings and on economic opportunities that exist elsewhere.

We used data from 100 randomly selected farming-dependent U.S. counties, observed over four decades between 1950 to 1990. With a relatively high dependence on federal subsidies and few economic alternatives to agriculture, these counties are sensitive to farm policy changes. The study includes all major federal acreage reduction programs of the time period.

We used estimated rural nonfarm service supply and demand equations to calculate the impacts of changes in the number of cropland acres on the rural nonfarm population. The results showed that the number of rural nonfarm people decreased by approximately 50 (per decade) for each 1,000 acres of cropland diverted. Without the cropland diversions, the average rural nonfarm population in each county would have been approximately 1,150 larger per decade. The crop cutbacks led to a population loss of 7.4 percent per 10-year period, based on the average population of the sample counties. Thus, although cropland diversion programs may have attained their primary goals—supply reduction and environmental protection—they may also be responsible for losses in the economic well-being of rural communities.

These results are not incompatible with the current desire of some agricultural leaders to have CRP contracts extended. The contracts provide a constant flow of revenue to farmers and are not subject to market fluctuations, contributing to more stable economic conditions in rural areas. Also, farmers may have acquired alternative income sources, further contributing to their financial stability. Forcing farmers to make cropland productive again would require the use of resources, previously used for the alternative income sources.

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What Beast Drives Nebraska's Solid Waste Management Decision Making?

Who's driving the waste management beast? Apparently not economics because we don't really need 28 landfills in the state.

There is nothing illegal with having 28 landfills, but it's unlikely that Nebraskans will pay the price for maintaining all of them. To keep them financed, people will either have to pay a high fee for limited Nebraska waste or accept out-of-state wastes—neither of which seems likely.

Only six of the 28 landfills are privately owned, so private enterprise isn't taking the risk. Garbage is big business, but only when there's enough of it. Twenty-eight landfills will spread garbage too thin for many operations to succeed unless they accept out-of-state wastes.

The population base needed to support a landfill isn't absolute. Many engineering firms and consultants suggest, however, that a cost-effective landfill probably serves a minimum of 100,000 people. Nebraska has about 1.6 million people. Apart from separate landfills at Douglas, Lancaster, and Sarpy counties, that would mean 25 landfills would serve the remaining 800,000 Nebraskans.

The U. S. Supreme Court has ruled flow control illegal, which limits local governments' ability to direct waste in order to keep their operations financially viable at whatever costs. The likelihood of a philosophical change in Congress from this fall's election doesn't appear to support a Congressional redress of this issue.

Increasingly, communities and counties are considering material recovery facilities—both source separated and mixed waste. National reports indicate that these facilities send only 15 percent of their waste for landfilling. That would mean even less trash to bury.

Accepting other states' wastes would help provide the volume needed for Nebraska's landfills to be financially viable. Operations unwilling to accept that must make the costly decision to close. Any landfill that took trash after October 1993 is subject to 30 years post-closure monitoring, which can easily exceed $100,000 per year—more than $3 million total. In addition, many operations have bonded indebtedness. Most fortunate are those still planning because they have time to reconsider accepting wastes.

So what beast drives the program in Nebraska? Evidently a phantom beast clothed in the fear of the unknown, distrustning centralized decision making, convinced that local control is worth the cost. But the dollars aren't there for the phantom to live forever. Eventually there will be fewer landfills and more regionalized planning. And the phantom's burial will be expensive.

Nebraska's progress towards an environmentally sound solid waste disposal system is evolving.

More than 300 landfills in the state have been reduced to just 28 operating or proposed landfills since enactment of the Integrated Solid Waste Management Act of 1992. Nebraska will probably have even fewer landfills in the years ahead. For current sites or proposed sites electing to close, the costs will be high.
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