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## Nebraska's Exports of Agricultural Commodities

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### Introduction

An earlier *Business in Nebraska* article investigated possible export opportunities for Nebraska, with emphasis on the manufacturing sector. This article focuses on the export of agricultural commodities. Actual data are generally not available for individual states due to the pooled nature of agricultural commodity exports. Estimates of Nebraska's share of total U.S. exports of agricultural commodities, however, can be made on the basis of the state's share of U.S. agricultural output by commodity class.

In the early 1970s, agricultural commodity exports played only a minor role in U.S. agriculture. U.S. agricultural exports expanded rapidly in the 1970s and early 1980s. U.S. agricultural exports reached \$44 billion in 1981; however, a collapse in world agricultural commodity prices in the 1980s raises questions about the ability of the U.S. to compete in the international market. Because agricultural commodities most basic to trade (feed grains, soybeans, and wheat) are also principal crops in Nebraska, the future of U.S. agricultural commodity exports will have important consequences for the Nebraska economy.

This article reviews recent developments in exports of agricultural commodities and finds that Nebraska agriculture still holds significant competitive advantages and is in a favorable position to continue to contribute substantially to the nation's agricultural exports. A number of challenges face Nebraska agriculture, however. Changes in the customer base for agricultural products and the differing tastes of foreign cultures should be recognized. In addition, a major portion of U.S. trade in agricultural commodities is helped by export assistance programs such as the Export Enhancement Program. Nebraska must be able to use such programs to its advantage while recognizing the need to reduce dependence on subsidies. Finally, given the high level of agricultural imports relative to exports, there may be unexplored possibilities in the domestic economy, particularly in processing agricultural commodities and in the use of surplus feed grains to bolster productivity in the meat sector.

### United States Agricultural Exports

The U.S. historically has enjoyed a positive trade balance in agricultural products. Although in recent years the agricultural

balance has deteriorated, it still makes a significant positive contribution to the overall trade balance. In contrast, nonagricultural trade has shown a serious deficit since the mid 1970s. While the agricultural balance declined 48 percent between 1981 and 1988 to a positive balance of \$14,323 million, the nonagricultural deficit rose 188 percent to \$150,128 million over the same period.

### *Productivity of United States Agriculture*

During 1987, U.S. merchandise exports contributed approximately 5 percent of the value of Gross National Product (GNP). Exports of agricultural commodities, after deducting transportation and other costs between farm and export points, were about 15 percent of cash receipts from the U.S. agricultural sector in the 1987 fiscal year (October 1986-September 1987). The exported proportion is much higher for many specific agricultural commodities. In terms of volume, the exported share of U.S. wheat production was 52 percent in the 1987 fiscal year. Exports accounted for 56 percent of the U.S. soybean production over the same period. The percentage of corn exported accounted for 19 percent of U.S. corn production in the 1987 fiscal year. Although corn exports account for a significant proportion of production, the percentage contribution is much lower than in the 1984 fiscal year when 44 percent of U.S. corn production was exported. One notable characteristic of export markets for many U.S. agricultural commodities is the volatility of the U.S. export share. Volatility is due to changes in world demand, reflecting climatic changes and shifts in trade policy, for example.

Although the U.S. was able to expand its share of the world wheat market from one-fifth in 1970 to almost one-half in 1981, its share has declined in recent years, bottoming at one-fourth in 1985. Although the situation now is improving, the decline reflects an increase in international competitiveness combined with a drop in world demand that reduced the market share of more marginal producers. A similar reduction in U.S. market share also has been experienced in the world market for feed grains. In 1979, the U.S. held nearly 80 percent of the world corn market. Its share dropped to between 50 and 60 percent by 1988. Similarly, the U.S. had supplied four-fifths of the world soybean

market in the 1970s, but increasing competition from other countries and products resulted in this U.S. falling to as low as two-thirds in 1984.

A recent article by the Federal Reserve Bank of Kansas City discussed the issue of whether agriculture in the U.S. and Plains states can compete in world markets. The article concluded that although production costs for the U.S. principal export crops are not the world's lowest, these costs are competitive with average production costs in most major exporting countries. More importantly, the volume of U.S. exports of these commodities is far greater than the current least cost producer of each commodity. Because U.S. production is spread over a number of states, production costs for a significant proportion of U.S. production may be below costs in competing countries.

#### *Destination of United States Agricultural Exports*

Table 1 breaks down the major destinations of U.S. agricultural exports. The major recipient of U.S. agricultural exports in the 1988 fiscal year was Asia, with approximately 45 percent of our agricultural exports going to the region. The major customer in the region was Japan, with almost 21 percent of the value of U.S. agricultural exports. Other major importers of U.S. agricultural commodities for the 1988 fiscal year included the Republic of Korea, Canada, and the U.S.S.R. Closer examination of the statistics reveals that these countries are importing mainly wheat

and other grain from the U.S. The imports are hardly surprising, as the U.S. currently supplies approximately 60 percent of the world's demand for coarse grains.

The 1988 statistics shown in Table 1 represent some major shifts from 1987. South Korea was ranked fourth in 1987 in terms of the value of U.S. exports of agricultural commodities. An increase in the value of U.S. agricultural exports to South Korea of nearly one-third resulted in the country rising to the number two position in 1988. The emergence of South Korea as a major importer of U.S. agricultural commodities reflects the country's emergence as a major economic power. The increase also can be attributed in part to a drop in U.S. agricultural commodity prices. The reduction allowed the U.S. to expand its share of South Korea's agricultural imports to 47 percent by 1987.

#### **Nebraska's Exports of Agricultural Commodities**

Table 2 shows the value of crop production for Nebraska and the U.S. over the period 1986-1988 (fiscal years). Nebraska consistently made significant contributions to most of the commodity groups. Furthermore, Nebraska's contribution to major U.S. export commodities has risen over the period. For instance, the proportion of Nebraska's corn production to total U.S. production grew from about 11 percent in 1986 to over 16 percent in 1988. Nebraska's contribution to sorghum for grain production showed a similar increase, growing from 13.9 percent in

**Table 1**  
Major Destinations of United States  
Agricultural Exports

Region & country	Fiscal Year (\$ million)		Change 1987 to 1988	% of Ag Exports (1988)
	1987	1988		
Western Europe	7,219	8,029	11%	22.72%
European Community	6,787	7,513	11%	21.26%
Germany, Fed. Rep.	1,266	1,306	3%	3.70%
Italy	733	713	-3%	2.02%
Netherlands	1,954	2,087	7%	5.91%
United Kingdom	666	819	23%	2.32%
Spain	658	848	29%	2.40%
USSR	659	1,934	193%	5.47%
Asia	11,990	15,928	33%	45.08%
West Asia	1,664	1,903	14%	5.39%
Iraq	528	735	39%	2.08%
Japan	5,554	7,274	31%	20.59%
Southeast Asia	708	1,015	43%	2.87%
Other East Asia	3,485	4,318	24%	12.22%
Taiwan	1,354	1,577	16%	4.46%
Korean, Rep.	1,693	2,250	33%	6.37%
Africa	1,784	2,272	27%	6.43%
North Africa	1,279	1,659	30%	4.70%
Egypt	761	786	2%	2.22%
Latin American & Caribbean	3,765	4,401	17%	12.46%
Caribbean Islands	829	867	5%	2.45%
Mexico	1,215	1,726	42%	4.88%
Canada	1,776	1,973	11%	5.58%
Total	27,876	35,334	27%	100.00%
Developed countries	15,031	17,883	19%	50.61%
Less developed countries	11,498	14,346	25%	40.60%
Centrally planned countries	1,347	3,106	131%	8.79%

\*In this table the individual country subtotals will not necessarily equal the regional totals, and the sum of the regions does not sum to the global total because some of the smaller countries and regions were omitted from the table. Source: *Agricultural Outlook*, January-February 1989

**Table 2**  
**Nebraska Crop Values, Value & Percent of U.S.**  
**(1986-1988 fiscal years)**

Commodity group	1986	Nebraska		1986	Nebraska/US (%)	
		1987 (\$ millions)	1988		1987	1988
Corn for grain	1,361,920	1,591,912	2,086,920	10.86%	11.38%	16.04%
Sorghum for grain	183,830	176,904	223,258	13.90%	14.83%	16.40%
Oats	24,001	28,577	31,616	5.10%	4.72%	5.62%
Barley	6,480	3,240	3,648	0.65%	0.33%	0.46%
All wheat	169,480	21,210	259,200	3.36%	0.39%	3.91%
Winter wheat	169,480	21,210	259,200	4.73%	0.54%	4.61%
Rye	1,449	1,668	3,300	4.97%	5.17%	8.91%
Soybeans for beans	424,536	485,534	541,620	4.58%	4.29%	4.56%
Dry edible beans	70,172	59,970	103,510	16.09%	14.06%	18.12%
All hay (bales)	251,192	274,600	419,895	2.92%	3.06%	3.95%
All potatoes	14,452	13,376	22,055	0.80%	0.81%	1.15%
Sugar beets	45,078	39,121	NA	5.00%	3.62%	NA

Source: *Nebraska Agri-Facts*, Nebraska Agricultural Statistics Service, February 1989

1986 to 16.4 percent in 1988. Nebraska accounted for over 18 percent of dry edible bean production in 1988. Although dry edible beans are relatively minor in terms of total production, dry edible bean exports have risen in recent years from 23 percent of output in 1983 to 40 percent in 1987.

It is not generally possible to determine exports of agricultural commodities from specific states. It is possible, however, on the basis of each state's contribution to production of certain agricultural commodities to estimate the state's exports of particular commodities. The United States Department of Agriculture (USDA) bases their estimates on the proportion of each state's production compared with total U.S. production. The procedure is refined using sales data from the Census of Agriculture, customs district shipments, feed-livestock balances, Agricultural Marketing Service reports, and commodity market information. Although the procedure does not reflect possible costs of transporting Nebraska products to seaports, it does provide a rough estimate of the state's agricultural exports.

In 1987, Nebraska ranked fourth overall in cash receipts from agriculture. The only states surpassing Nebraska were California, Texas, and Iowa. Table 3 shows Nebraska's rank in agricultural commodity exports for the 1987 fiscal year. In terms of the top ranked export commodities (soybeans, corn, and wheat), Nebraska ranked seventh, third, and eleventh, respectively. Because of the pooled nature of U.S. agricultural exports and the

difference between the calendar and fiscal year, Nebraska's cash receipts are not directly comparable with U.S. exports.

Nebraska is one of the nation's dominant producers of agricultural commodities. Although Nebraska is only a small state in terms of its population, it produced nearly 5 percent of the cash receipts of total U.S. agricultural commodities in the 1987 fiscal year. For individual commodity groups, the state's performance was even better. In 1987, Nebraska produced over 11 percent of the nation's cash receipts for cattle and calves.

Figure 1 shows the value of Nebraska's agricultural commodity export shares for the 1987 fiscal year. It also shows the percentage contribution of each of these commodity groups to total Nebraska agricultural commodity exports in that year. Figure 2 shows the value of Nebraska's agricultural commodity exports as a percentage of U.S. exports for that commodity group. In 1987, Nebraska contributed \$1578.3 million (5.66 percent) of total U.S. agricultural exports. In some commodity groups, the state's percentage of contribution was much higher. In the feed grains and products group, which includes corn exports, Nebraska contributed \$535.4 million (11.49 percent) of U.S. corn exports. Other significant commodity groups (as a percentage of total U.S. exports for that commodity group) were live animals and meat (12.4 percent) and hides and skins (14.05 percent). Although in dollar values fats, oils, and greases make a smaller contribution to total Nebraska agricultural exports (4.16 percent), U.S. exports in the commodity group are an even lower portion of total exports. Thus, Nebraska exports made a significant contribution to total U.S. exports of fats, oils, and greases (15.74 percent).

Some of these commodity groups represent by-products from Nebraska's livestock industry. For example, Nebraska's hides and skins exports grew over 35 percent between 1985 and 1987. The major destination of this commodity was South Korea which accounted for approximately 33 percent of the market.

#### Outlook

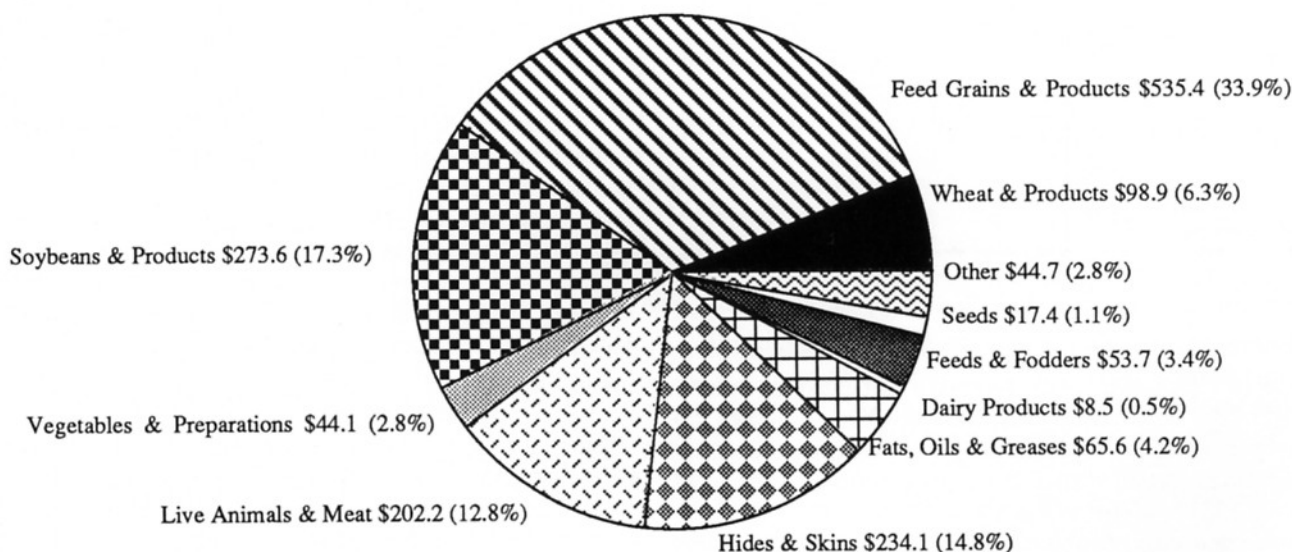
Although the trade-weighted exchange rate for U.S. trade in agricultural commodities has remained relatively stable over the past year, our competitors in wheat, soybeans, and corn have had a significant average reduction in their exchange rates. The relative change means that their exports have become relatively cheaper. The U.S. has become less competitive in the major

**Table 3**  
**Nebraska's Rank Among States**  
**in Agricultural Commodity Exports**  
**(1987 fiscal year)**

Commodity group	Nebraska's rank
Soybeans & products	7
Feed grains & products	3
Hides & skins	3
Live animals & meat	3
Vegetables & preparations	9
Feeds & fodders	4
Animal fats	3
Seeds	5
Total	4

Source: *Foreign Agricultural Trade of the United States* (March/April 1988)

Figure 1  
Value of Nebraska Export Shares of Agricultural Commodities  
(1987 fiscal year)  
(\$ millions)



Source: 1987 Nebraska Agricultural Statistics

commodities that Nebraska traditionally has supplied to export markets.

The problem with agricultural commodities is that prices can be volatile, changing with weather conditions, government policy, and variable demands. Not only are prices volatile, but export demand fluctuates considerably from year to year. Major customers such as the Soviet Union are subject to wide swings in demand, generally only importing to make up for shortfalls in their production plan. The federal government has aimed to smooth some of the wide price fluctuations for agricultural commodity producers through target prices for grains. Unfortunately, it is difficult to determine what prices represent the trend, and such schemes typically generate subsidies. The use of long-term contracts with our major customers of agricultural commodities also serves to ease price fluctuations, but can lock in unfavorable terms if economic conditions change.

#### The Export Enhancement Program

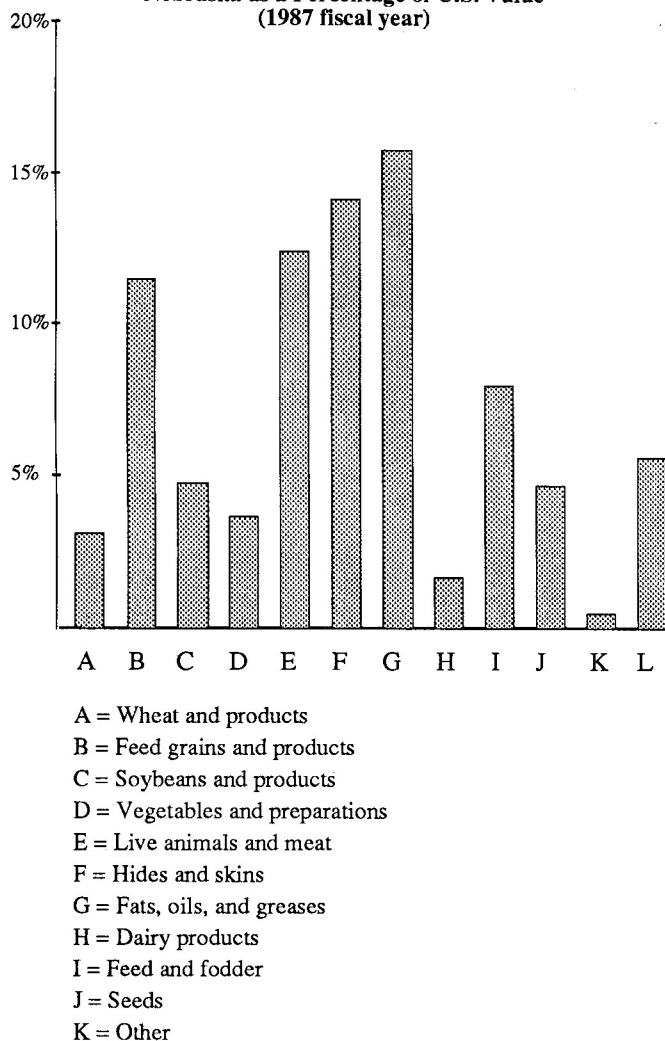
The U.S. federal government recognizes that U.S. exporters of agricultural commodities face competition from subsidized foreign exports and from importers' trade barriers. To assist U.S. exporters competing with other exporters' subsidies and to alleviate world hunger, a number of assistance programs have been developed. Perhaps the most important of these is the Export Enhancement Program (EEP). The EEP was announced in May 1985. The stated objective of the EEP was to help U.S. exporters meet competition from subsidized exporters in specific markets. Administered by the Commodity Credit Corporation (CCC), the EEP operates through a bonus system. Bonuses, which are roughly the equivalent to the difference between U.S. market prices and export prices, are awarded via a two step

competitive bid process. The CCC targets a country for a specific quantity of a commodity, and exporters then compete for sales to the targeted market on the basis of the prospects of receiving a CCC bonus. U.S. exporters then bid for the bonuses. The CCC awards the bonuses to the exporter whose sale price falls within a predetermined range and whose bonus also falls within an acceptable range. Finally, the exporter or exporters, upon presentation of proof of the commodities' arrival at their destination, receive the bonus in the form of generic certificates redeemable for CCC commodities. The generic certificates either may be sold or redeemed.

In addition to the EEP, the U.S. also operates the CCC Export Credit Guarantee Program (GSM-102) and the Intermediate Credit Export Credit Guarantee Program (GSM-103) which help importers of U.S. agricultural commodities overcome foreign exchange constraints by guaranteeing repayment of private credit to importers. As of mid-March 1988, credit guarantees approved under the fiscal 1988 program for GSM-102 and GSM-103 were approximately \$1.7 billion and \$140 million, respectively.

The Targeted Exporters Assistance Program (TEA) aids producers whose exports have been hurt by a foreign government's policies. Although the objective of the TEA sounds similar to the EEP, the TEA program differs from the EEP in several respects. First, TEA applies to all affected exporters. The TEA program promotes exports of a specified category or brand of American commodity or products in specified markets. The EEP, however, provides a price subsidy to specified exporters for specified commodities to specified markets. Second, although both the EEP and the TEA program aim to counter competitors'

**Figure 2**  
**Export Shares of Agricultural Commodities**  
**Nebraska as a Percentage of U.S. Value**  
**(1987 fiscal year)**



Source: 1987 Nebraska Agricultural Statistics

subsidies, the TEA program also can be used against unfair import policies. Finally, while the EEP involves mostly bulk commodities, the TEA involves mostly high value products.

P.L. 480 and Section 416 programs are food aid programs. The P.L. 480 program provides long-term concessional credit to designated countries for the purchase of specific U.S. agricultural commodities. About \$1.5 billion was allocated during the 1988 fiscal year for P.L. 480 programs. The Section 416 program involves donations of CCC-owned commodities overseas. For the 1988 fiscal year, 2.6 million tons of CCC grain and oilseeds were made available under the Section 416 program.

The economic impact of these programs is difficult to measure. It appears that these programs account for a significant share of specific commodity exports. For example, export programs accounted for nearly 70 percent of wheat and flour exports during the 1988 fiscal year. In addition, four of the top five markets for wheat in 1987 were chief markets for wheat under the EEP, CCC credit guarantees, or food aid. More than half of U.S. vegetable

oil exports during the 1987 fiscal year involved export assistance programs. Only small amounts of vegetable oils were shipped under the EEP, with the bulk of export assistance coming from the Export Guarantee Assistance program and U.S. food aid. Feed grain exports remain relatively unsubsidized. There are some notable exceptions, however. During the 1987 fiscal year, importers in Mexico and South Korea, which were the second and third largest markets for feed grains, made purchases under CCC export credit guarantee programs, and Saudi Arabia, which was the fifth largest market for feed grains, imported all its U.S. barley under the EEP.

Although these programs may stimulate agricultural exports, there will be intense pressure to justify these payments. Exporters of agricultural commodities should not count on such programs always being present. The EEP and other export assistance programs may keep agricultural export prices in line with subsidized competitors, but many other exporting or import competing industries face a higher tax burden to fund such programs. Also, such subsidies may stifle development of other exports not been targeted by the CCC.

The USDA has noted that although a targeted export subsidy program generally strengthens domestic prices by reducing domestic supply, the export subsidy program may result in lower domestic prices for producers. For example, if domestic prices strengthen while competitors' prices do not, the bonus needed rises. The effect of the initial strengthening of domestic prices may be that the larger amount of bonuses paid may release CCC-owned commodities onto the market, possibly depressing domestic prices. Furthermore, lower domestic prices could result in increased deficiency payments for farmers. It is necessary, therefore, to structure export assistance programs to minimize such counterproductive effects.

The 1987 fiscal year was a disappointing one for agricultural commodity export prices. They now have rebounded. In 1987 corn prices were only \$1.95/bu. By March 1989, they had risen to \$3.03/bu. Similarly, wheat prices at \$3.11/bu in 1987 rose to \$4.88/bu by March 1989. Grain export volumes have shown a steady rise since 1985-1986. This represents the best of both worlds to Nebraska grain producers, because there is normally an inverse relationship between prices and volumes.

The USDA forecasts that the value of U.S. agricultural exports will reach \$36.5 billion in 1989. World prices for wheat, corn, and soybeans are expected to be the highest since 1985. The resulting forecast gain of \$2.5 billion in grain and feed exports is expected to more than offset anticipated declines in cotton and oilseeds. The above mentioned factors suggest further growth for Nebraska's exports of agricultural commodities. It must be stressed, however, that Nebraska's current position and continued growth in the agricultural sector are dependent on the contribution of Nebraska's groundwater for irrigation. The Ogallala Aquifer and associated aquifers provide water resources essential for agricultural prosperity. Any serious depletion in the aquifers would affect Nebraska's contribution to the nation's agricultural sector.

An important additional factor in the U.S. agricultural trade policy is the role of imports of agricultural commodities. The U.S. imposes direct and indirect trade restrictions on the import

of many agricultural commodities. It has been the objective of such trade barriers to protect U.S. producers from the effects of foreign agricultural commodities. It is possible, however, that such barriers could stifle incentives for farmers to diversify into nontraditional products.

Although total agricultural exports (\$35,323 million) exceeded total agricultural imports (\$21,011 million) in 1988, imports in certain commodity groups traditionally have exceeded exports. Perhaps the most significant commodity group in this respect for Nebraska is beef. The U.S. imported 2,335 million pounds of beef during 1988, in contrast to only 654 million pounds of beef exports for the same year. This means that over 9 percent of beef consumed in the U.S. was imported. Although beef exports have been rising at a faster rate than beef imports in recent years, there is still a substantial trade imbalance. About 90 percent of imported beef is covered by the Meat Import Law, which sets a ceiling on imports. Under this law, a trigger level is set by product weight. To ensure that the trigger level was not reached, however, voluntary restraint agreements were negotiated with Australia and New Zealand in 1988. Nebraska was the fifth largest pork producer during fiscal 1987. Imports of pork were 1,137 million pounds, in contrast to 195 million pounds of pork exports. There also may be opportunities for expansion of Nebraska pork on the domestic market. Because an even more severe trade imbalance exists in processed meat products, there may be market niches for Nebraska producers to exploit in this area. Nebraska producers could use existing feed grain surpluses (corn and sorghum for grain) to bolster sales of import competing products such as beef and pork. Also, these products can be used in processing, which enhances the value of these products.

It is clear that Nebraska's agricultural exports continue to play a significant role in U.S. agricultural trade. The chief examples

of Nebraska's export contribution are corn and sorghum for grain. Other export commodities such as hides and skins are growing rapidly. Although many of the agricultural commodities that Nebraska exports are influenced strongly by the federal government through trade policy measures, foreign aid measures, and agricultural support, there still exist entrepreneurial opportunities for Nebraska in agricultural exports. Nebraska's future growth opportunities in exports may lie in adding value to agricultural commodities through further processing.

## References

Barkema, A. and M. Drabenstott, "Can U.S. and Great Plains Agriculture Compete in the World Market?" *Economic Review* (February 1988), pp. 3-17.

Foulke, J., "Korea Becomes Second-Largest U.S. Export Market," *Farmline* (February 1989).

Nebraska Department of Agriculture, Nebraska Agricultural Statistics Service, *Agriculture Statistics* (1987).

Nebraska Department of Agriculture, Nebraska Agricultural Statistics Service, *Nebraska Agri-Facts*, Issue 04-89 (February 1989).

U.S. Department of Agriculture, Economic Research Service, *Agricultural Outlook* (various issues).

U.S. Department of Agriculture, Economic Research Service, *Economic Indicators of the Farm Sector, State Financial Summary* (1987).

U.S. Department of Agriculture, Economic Research Service, *Foreign Agricultural Trade of the United States* (March-April 1988).

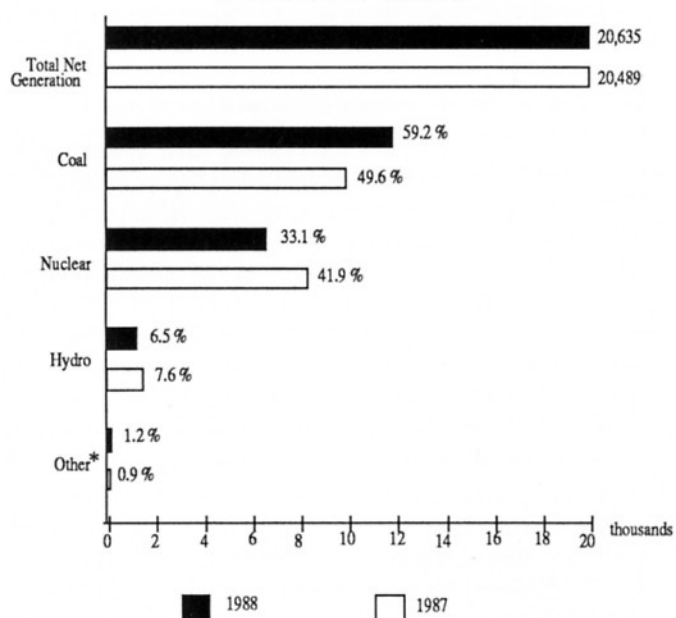
## Electric Power in Nebraska

Total net generation of electricity in Nebraska during 1988 totalled 20,635 gigawatthours (1 GWh = one billion watthours), slightly more than was generated in 1987. Total sales of electricity last year were 17,498 GWh, an increase of 4.3 percent over one year earlier.

*Electric Power Monthly*, a publication of the U.S. Department of Energy, reports that generation from coal-fired plants during 1988 accounted for 59.2 percent of total generation in Nebraska, (see Figure A). That percentage compares with 49.6 percent for 1987, a difference of nearly ten percentage points. Nuclear power ranks second as the energy source for electricity generation in our state. In 1988, approximately one-third of the generation came from nuclear power, a portion considerably less than that of 1987. Other energy sources include hydroelectricity, petroleum, and gas. Collectively, they account for less than 9 percent of electric generation.

During 1988, residential consumers purchased nearly 40 percent of the total sales of electricity. Commercial interests and industries consumed 29.0 percent and 23.7 percent of total sales, respectively.

Figure A  
Net Generation of Electricity by Energy Source  
Nebraska, 1987 and 1988



\*Includes petroleum and gas

Source: *Electric Power Monthly* (December 1988)

## Monitoring a Muddled Economy

What data should be used to chart the future economy? It is important to look at a variety of numbers. The economy is sufficiently complex that no single series can tell the whole story.

We have focused on the importance of inflation and the reaction of monetary authorities in the last several issues of *Business in Nebraska*. What other factors should we consider in predicting the future of the economy?

A basic approach to monitoring the economy is to look at its major components (the consumer sector, the investment sector, and the government sector) and identify growth rate sources. The important influence on growth rates is volatile numbers. Steadily growing numbers contribute to the base rate of growth but do not contribute to its variability.

An example is the consumer sector. Consumption of services tends to grow steadily throughout the business cycle. Consumer nondurables show somewhat more volatility, but are still rather steady. The consumption of durables is the volatile component in the consumer sector. Key components of consumer durables are automobiles, appliances, some recreational goods, and other durable household goods. Consumer durables typically have a relatively long life and are usually financed.

Automobile sales tend to run in their own cycle, related mostly to changes in disposable income, interest rates, and the composition of the stock of automobiles in the economy. 1988 was a relatively good year for automobile sales. It is doubtful that the sales of autos and light trucks will reach the same levels in 1989.

Appliance sales generally are tied to changes in housing starts. Many new home purchasers require that their homes be outfitted by the builder when purchased. Thus, household appliances with a lifetime of ten to 15 years are financed by 30 year mortgages.

Housing starts will fall throughout 1989. Thus, household appliances will not have an especially good year this year. Other consumer durables that may show high volatility are recreational goods such as boats, motor homes, and trailers. The cycle and determinants of purchases are similar to those of autos.

Another major component of economic growth is in the investment sector. The investment sector is fairly volatile. There are two major parts of this sector: residential and business investments. The housing cycle is vulnerable to changes in interest rates. Housing starts fall early in the business cycle as interest rates are increased by the monetary authority to control economic growth. The fourth quarter of 1988 appears to be an exception. Housing starts were strong despite increases in interest rates. 1989 housing starts have started to fall and probably will continue to drop throughout the year.

The business investment component has three major parts: structures, equipment, and inventory changes. Investment in structures tends to lag the rest of the economy. It is hard to stop building projects once they are under way. In the current expansion, some have argued that building projects are characterized by marginal additions to existing plant rather than a large scale expansion of new plant.

Business investors, being somewhat better informed about the business cycle than the general public, may be more capable of

anticipating downturns. Thus, business equipment purchases would be a leading indicator for the economy. Investment in equipment, however, appears to be coincident with the business cycle. The purchase of equipment in most corporations is wrapped in bureaucratic procedures. If a company commits to equipment purchases, it often is difficult to rescind those commitments.

In 1988, the U.S. economy had a near boom in capital equipment. A large part of the increase went to export markets, but a substantial amount of capital equipment went into the expansion of U.S. productive capacity. Continued high levels of capital investment can alleviate production bottlenecks and allow an expansion phase to continue. Because the series involved are volatile, monitoring capital equipment is difficult. Nevertheless, it is reasonable to suppose that as economic growth rates slow, the acquisition rate of capital goods also will slow.

Orders of capital equipment vary so much that patterns are hard to distinguish. In particular, orders in transportation and defense equipment tend to be highly volatile. For a better idea of what is happening in the capital equipment sector, one can look at sales or deliveries. These series are more stable. Further stability can be obtained with quarterly or semi-annual data or some moving average of data. Such manipulations of data tend to limit the usefulness of the resulting series as an indicator of current events. Given the coincident nature of investments in business fixed investment, downturns will be of little help in predicting a recession. Instead, such downturns may identify a recession in progress.

Business inventories are a small component of the investment sector, but they are also a volatile component. A key item to watch is the inventory-to-sales ratio. That ratio is approximately 1.5, meaning that businesses are keeping inventories equal to 1.5 month's sales. That ratio appears to be ideal for a broad range of businesses. If a slowdown begins, a rapid change in the inventory-to-sales ratio can occur. The ratio is a common monitor of the health of individual businesses. Rapid increases in the inventory-to-sales ratio will be addressed by cutting production or purchases.

The other major component in the economy to consider is the government sector. The state and local component of the government sector is fairly steady and is larger than the federal component. Although the federal component is more volatile than the state and local component, it is relatively steady when compared to other economic variables. 1988 was an exception. Federal government purchases followed a sawtooth pattern last year. It is likely the sawtooth pattern will continue until the new administration is settled.

In summary, the key variables to monitor for insights on future growth are consumer durables (especially automobiles and household appliances); housing starts; and business inventories (particularly the inventory-to-sales ratio).

# Review and Outlook

## National Economy

The economy continues to send mixed signals, typical of an economy approaching a turning point. Mixed signals can characterize an economy for an indeterminate time before a downturn starts. The variable length of the mixed signal phase is why predicting the start of a recession is difficult. Current signals are inflation at a higher rate than desired, a flat industrial sector, continued employment growth, and low rates of unemployment.

March inflation was considered acceptable by many observers. But in the first quarter, inflation accelerated. In March, the Producer Price index increased 0.4 percent from February. For the first quarter, it advanced 10.2 percent at annual rates. The Consumer Price Index advanced 0.5 percent in March, 6.1 percent at annual rates in the first quarter.

It is easy to be lulled into a false sense of confidence by the factors associated with these run-ups in price. The run-ups have been in food and energy, particularly in oil prices. There was also a singular burst in apparel prices in the latest Consumer Price Index. An acceleration of inflation does not start as neat, across the board increases in all prices. If the factors we have seen in the latest sets of price releases are short-term factors, we expect to see corrections in the second quarter. We anticipate that food and apparel price inflation will ease in the near term.

We expected oil prices to correct themselves during this year. So far, we have been wrong. The discipline within OPEC has not been good; nevertheless, oil prices have not decreased. Oil demands have been large enough to accommodate the overrun. OPEC supplies less than half of the U.S. imports of crude oil and oil products. Approximately 38.1 percent of U.S. crude oil needs are supplied by imports.

The oil spill in Alaska should not be a big factor in the long term. In 1988, Alaska provided 15.3 percent of U.S. crude oil needs. Not all Alaskan oil shipments have ceased, despite the Exxon Valdez spill. Thus, the Alaskan interruption should be short term.

The oil spill in Alaska was viewed by many, however, as an excuse to raise prices. The Alaska oil spill was compounded by an explosion in a drilling platform in the North Sea. Although the U.S. consumes little North Sea oil, it does impact the world market. There has been no retreat in prices, and there have been some remarkably strong increases at the wholesale level and in the futures market. With the summer driving season coming, demands in the U.S. for oil and oil products will accelerate. Therefore, there likely will be no substantial reduction in oil inflation until fall. Consequently, it is increasingly difficult to be optimistic about near term inflation. Instead, we expect wholesale oil price increases to lead to consumer price increases over the next several months. Energy prices have a broad influence on other prices.

So far this year, the Federal Reserve seems to be content with its degree of monetary tightness. One of the reasons for the even keel policy at this time is the mixed signaling of the real economy.

Industrial production has been flat in the first quarter. After leaping to a new high in January, the Industrial Production Index recorded no growth in February and March. Capacity utilization rates have decreased moderately. As the numerator of capacity utilization is industrial production, the decline in the capacity utilization rate has come from growth in capacity. That growth is related directly to 1988 investment levels in U.S. productive capacity. In the industrial sector, factory orders decreased in February. There has been a slight buildup in factory inventories. Consumer confidence, as measured by the Conference Board,

**Table I**  
**Income and Earnings in Nebraska**  
**(\$ millions)**

	First Quarter 1987	Second Quarter 1987	Third Quarter 1987	Fourth Quarter 1987	First Quarter 1988	Second Quarter 1988	Third Quarter 1988	Fourth Quarter 1988	% Change 1988:IV vs. Yr Ago
<b>Income</b>									
Total Personal Income	22,622	22,206	21,944	24,610	23,452	24,218	23,198	24,328	-1.1%
Nonfarm	20,327	20,494	20,830	21,262	21,542	21,760	22,067	22,607	6.3%
Farm	2,295	1,711	1,113	3,348	1,910	2,458	1,130	1,721	-48.6%
<b>Earnings by Industry**</b>									
Ag. Ser., For., & Fish.	73	72	75	82	86	84	84	97	18.3%
Mining	40	46	50	51	46	49	48	48	-5.9%
Construction	928	864	851	885	969	931	914	966	9.2%
Manufacturing	2,121	2,134	2,206	2,255	2,342	2,312	2,367	2,413	7.0%
Nondurable	1,041	1,067	1,093	1,121	1,143	1,151	1,183	1,160	3.5%
Durable	1,080	1,068	1,113	1,133	1,199	1,162	1,184	1,253	10.6%
Transp. & Pub. Utilities	1,571	1,574	1,612	1,629	1,661	1,693	1,714	1,763	8.2%
Wholesale Trade	1,105	1,116	1,142	1,160	1,199	1,230	1,242	1,335	15.1%
Retail Trade	1,528	1,543	1,556	1,574	1,613	1,633	1,655	1,683	6.9%
Finance, Insur. & Real Est.	1,161	1,149	1,177	1,197	1,192	1,216	1,240	1,252	4.6%
Services	3,154	3,207	3,279	3,387	3,355	3,530	3,597	3,772	11.4%
Government	2,886	2,917	2,936	2,999	3,032	2,973	3,011	3,015	0.5%
Federal, Civilian	453	451	462	467	470	466	467	481	3.0%
Military	396	397	400	400	407	405	405	408	2.0%
State & Local	2,037	2,069	2,075	2,132	2,156	2,102	2,139	2,126	-0.3%

\*All data are seasonally adjusted at annual rates

\*\*Earnings are the sums of wages and salaries, other labor income, and income earned by sole proprietors



has been up and down in the first quarter. The unemployment rate dropped to 5.0 percent in March.

Consumer spending continues to rise, especially in the consumer service area. Consumption of nondurables is relatively flat, while the consumption of durables fell sharply in February. That decrease is related to a drop of automobile sales in February. March auto sales were lackluster. The auto industry tried to correct the downturn with incentives. Ford and GM recently announced planned production cutbacks of 2 percent to 3 percent to cut bloated inventories. These inventories amount currently to 80 days of sales. The auto industry tries to keep inventories in the 60 to 65 day range.

First quarter GNP statistics confuse the picture of the current economy. Growth in the first quarter was high, in large part because of accounting adjustments for last year's drought. First quarter real GNP growth was 5.5 percent on an annualized basis. Without the drought adjustment, real GNP would have grown 3.0 percent. This rate of growth will be revised in later releases of the GNP statistics.

Given the size of the change, the size of the revisions could be substantial. It is unlikely that increases in the remainder of this year will be of the magnitude of the increase of the first quarter. The typical forecast calls a growth slowdown in the second quarter.

Can we survive without a recession? Professor Lawrence Klein, Nebraska Nobel laureate and founder of the WEFA Group (a forecasting organization), assures us that a recession is a natural phenomena and cannot be avoided. Other economists (the so-called control theorists) believe that it is possible, although difficult, to avoid a recession.

From our point of view, the possibility of a recession is strong. The question of when a recession will occur is a difficult one.

Pessimists have looked for a recession since 1986. The economy was weak in 1986, but an oil price deflation deflected the threat of a downturn at that time. Calling a recession is difficult—even when one begins, analysts will not be able to recognize the onset.

## Nebraska Outlook

Personal income in Nebraska for 1988 recently was reported by the U.S. Department of Commerce. The state's performance showed a solid gain of 6.6 percent over 1987. That increase was led by a strong advance of 10.4 percent in farm sector personal income. The nonfarm component increased 6.2 percent. The large increase in Nebraska's farm income occurred despite a downturn in the fourth quarter of 1988. The 1988 drought had a favorable impact upon Nebraska personal income.

In comparison to the U.S., Nebraska's personal income gains lagged slightly. For the U.S. as a whole, personal income increased 7.3 percent. Nebraska's gain in personal income outstripped the Plains states. The region showed a 5.5 percent gain. Nebraska's positive farm income growth ran directly opposite to farm income decreases in the region. The latter decreased 21.6 percent in 1988. The picture reverses in the nonfarm component of personal income. Nebraska's nonfarm personal income gains of 6.2 percent lagged those of the Plains states (6.7 percent) and were well behind the U.S. pace of 7.5 percent.

The strongest gains in the earnings component of Nebraska's nonfarm personal income came from agriculture services (12.4 percent), followed closely by wholesale trade (11.2 percent) and durable goods manufacturing (11.1 percent). Services grew 9.0 percent. All other major segments except mining showed increases in 1988. The mining sector, a small sector in our state, fell

**Table II**  
Employment in Nebraska

	Revised Feb. 1989	Preliminary Mar. 1989	Mar. % Change vs. Year Ago
Place of Work			
Nonfarm	696,650	702,844	3.7%
Manufacturing	97,339	97,335	5.2%
Durables	47,277	47,554	4.7%
Nondurables	50,062	49,781	5.7%
Mining	1,352	1,328	-7.8%
Construction	22,033	23,463	6.8%
TCU*	46,342	47,011	8.2%
Trade	179,423	180,839	4.1%
Wholesale	51,038	51,501	5.0%
Retail	128,385	129,338	3.8%
FIRE**	48,543	48,627	2.3%
Services	162,162	163,561	4.2%
Government	139,456	140,680	0.5%
Place of Residence			
Civilian Labor Force	803,244	812,370	1.2%
Unemployment Rate	3.2%	3.5%	

\*Transportation, Communication, and Utilities

\*\*Finance, Insurance, and Real Estate

Source: Nebraska Department of Labor

**Table III**  
Price Indices

	Mar. 1989	% Change vs. Year Ago	YTD % Change vs. Year Ago
Consumer Price Index - U*			
(1982-84 = 100)			
All Items	122.3	5.0%	4.8%
Commodities	115.2	4.9%	4.7%
Services	130.0	5.0%	4.9%
Producer Price Index			
(1982 = 100)			
Finished Goods	112.2	5.6%	5.2%
Intermediate Materials	111.6	6.7%	6.4%
Crude Materials	103.1	9.6%	8.2%
Ag Prices Received			
(1977 = 100)			
Nebraska	163	15.6%	16.9%
Crops	142	43.4%	46.0%
Livestock	176	5.4%	6.1%
United States	149	14.6%	14.1%
Crops	137	24.5%	24.3%
Livestock	160	8.1%	7.2%

U\* = All urban consumers

Source: U.S. Bureau of Labor Statistics

1.0 percent. The performance of personal income in 1988, and of the farm sector in particular, explains the state's strong retail sales growth. The latest data show that January net taxable retail sales were 8.8 percent ahead of year ago levels.

Nebraska's unemployment rate for March was 3.5 percent, a slight increase over the revised February rate of 3.2 percent. Nevertheless, Nebraska remains well below the U.S. unemployment rate. Such rates indicate that Nebraska remains close to full employment levels.

Looking ahead, the inflation in oil prices will affect the Nebraska economy adversely. Increases in fuel prices will raise farm costs, from the operation of tractors to center pivot irrigation systems. Furthermore, increases in gasoline prices will impact tourism and trucking in the state.

There is substantial doubt that Nebraska can sustain the types of gains in farm income that were experienced in 1988. The overall outlook for total income in our state calls for a reduction in rate of growth. The size of the reduction is related critically to future changes in agricultural income.

If the moisture conditions in our state that have characterized our early spring continue throughout the crop year, Nebraska's crop volumes will be affected more adversely this year than in 1988. Last year's drought brought good prices to Nebraska farmers, and production expenses stayed within reasonable bounds. These conditions, coupled with a good year in the livestock sector, created the substantial increase in farm personal income. Low moisture conditions across the food and feed grain belts this spring may result in good crop prices again.

Production expense may prove to be an Achilles heel, however. Reports indicate that irrigation systems are already in operation to sprout the corn crop. Expenses not typically incurred at this juncture of the season are arising. It is not clear what USDA will do concerning drought relief. USDA is looking at alternatives to a direct payments system. Also, federal budget slashers will continue to look longingly at ag subsidies and may score major successes if the economy falters this year.

John S. Austin

**Table IV**  
**City Business Indicators**  
**January 1989 Percent Change from Year Ago**

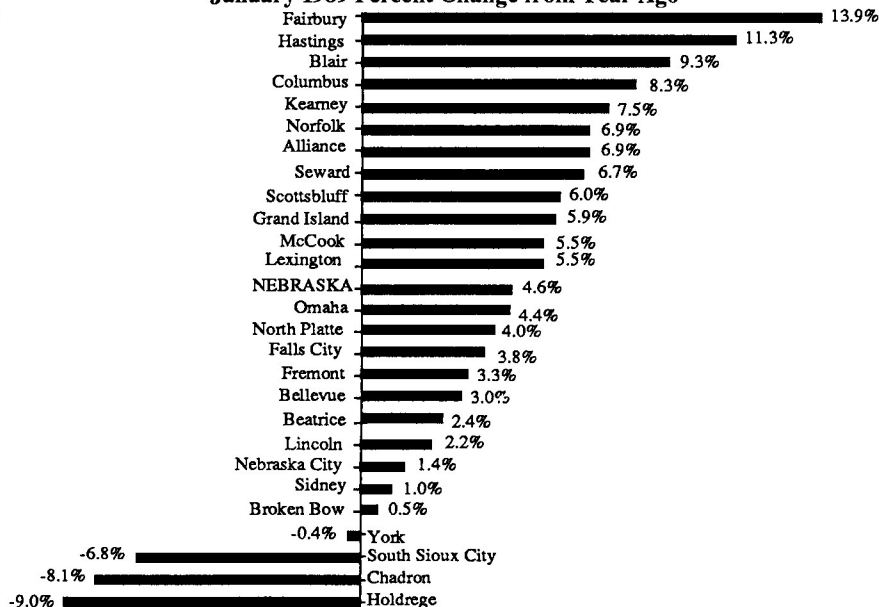
The State and Its Trading Centers	Employment (1)	Building Activity (2)
NEBRASKA	5.1%	34.8%
Alliance	2.9%	247.7%
Beatrice	2.6%	59.4%
Bellevue	2.5%	52.1%
Blair	4.0%	612.1%
Broken Bow	1.3%	-52.7%
Chadron	-4.5%	-52.4%
Columbus	4.2%	224.6%
Fairbury	3.6%	1490.4%
Falls City	1.4%	563.6%
Fremont	3.7%	16.7%
Grand Island	5.1%	45.6%
Hastings	3.7%	-10.6%
Holdrege	2.9%	-82.0%
Kearney	0.6%	19.6%
Lexington	3.4%	51.8%
Lincoln	3.1%	10.0%
McCook	3.8%	0.8%
Nebraska City	1.9%	59.1%
Norfolk	6.1%	-5.0%
North Platte	2.8%	54.1%
Omaha	3.6%	36.9%
Scottsbluff/Gering	1.2%	16.3%
Seward	3.1%	58.3%
Sidney	1.7%	23.6%
South Sioux City	2.3%	431.0%
York	2.4%	-62.2%

(1)As a proxy for city employment, total employment (labor force basis) for the county in which a city is located is used

(2)Building activity is the value of building permits issued as a spread over an appropriate time period of construction. The U.S. Department of Commerce Composite Cost Index is used to adjust construction activity for price changes

Sources: Nebraska Department of Labor and reports from private and public agencies

**Figure I**  
**City Business Index**  
**January 1989 Percent Change from Year Ago**



**Table V**  
**Net Taxable Retail Sales of Nebraska Regions and Cities**

Region Number and City (1)	City Sales (2)		Region Sales (2)		YTD % Change vs. Year Ago
	Jan. 1989 (000s)	% Change vs. Year Ago	Jan. 1989 (000s)	% Change vs. Year Ago	
<b>NEBRASKA</b>	<b>\$742,275</b>	<b>6.4</b>	<b>\$852,281</b>	<b>8.8</b>	<b>8.8</b>
1 Omaha	259,924	7.2	314,222	8.1	8.1
Bellevue	10,543	4.1	*	*	*
Blair	3,704	-0.2	*	*	*
2 Lincoln	103,155	5.3	117,065	7.5	7.5
3 South Sioux City	3,921	-33.0	5,547	-24.8	-24.8
4 Nebraska City	3,073	0.4	15,457	11.8	11.8
6 Fremont	13,050	6.5	24,478	6.8	6.8
West Point	2,387	13.0	*	*	*
7 Falls City	1,641	-9.8	7,617	0.0	0.0
8 Seward	3,603	11.6	13,201	7.7	7.7
York	5,785	11.9	13,685	17.2	17.2
10 Columbus	12,604	6.1	23,358	10.3	10.3
11 Norfolk	16,346	14.6	29,313	11.4	11.4
Wayne	2,324	-14.9	*	*	*
12 Grand Island	28,219	8.6	41,044	15.4	15.4
13 Hastings	15,718	28.3	24,564	25.5	25.5
14 Beatrice	6,703	1.9	14,949	5.0	5.0
Fairbury	2,298	1.9	*	*	*
15 Kearney	17,561	19.3	25,410	21.0	21.0
16 Lexington	4,826	8.9	14,625	14.3	14.3
17 Holdrege	3,490	-0.5	7,296	10.5	10.5
18 North Platte	12,617	6.0	15,799	8.7	8.7
19 Ogallala	4,716	7.1	10,498	24.8	24.8
20 McCook	6,783	13.1	10,212	18.5	18.5
21 Sidney	3,149	2.4	7,289	9.5	9.5
Kimball	1,453	1.6	*	*	*
22 Scottsbluff/Gering	15,481	15.4	22,385	18.9	18.9
23 Alliance	4,452	3.5	12,171	6.1	6.1
Chadron	2,338	-1.6	*	*	*
24 O'Neill	3,683	10.7	12,649	25.1	25.1
Valentine	1,982	7.2	*	*	*
25 Hartington	1,393	8.0	7,652	14.8	14.8
26 Broken Bow	2,903	12.6	10,797	17.8	17.8

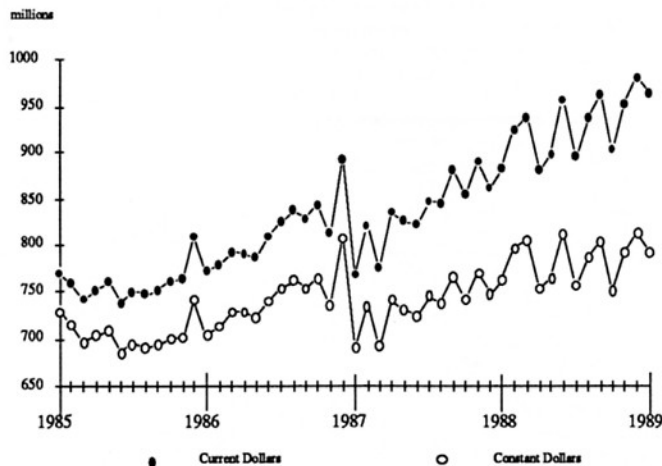
(1) See region map

(2) Sales on which sales taxes are collected by retailers located in the state. Region totals include motor vehicle sales

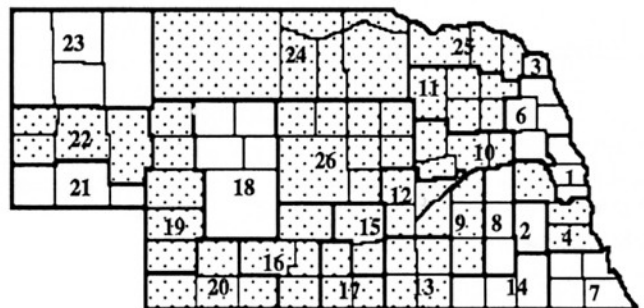
\* Within an already designated region

Compiled from data provided by the Nebraska Department of Revenue

**Figure II**  
**Nebraska Net Taxable Retail Sales**  
**(Seasonally Adjusted)**



**Figure III**  
**Region Sales Pattern**  
**YTD as Percent Change from Year Ago**



(1) The Consumer Price Index (1982-84 = 100) is used to deflate current dollars into constant dollars

Shaded areas are those with sales gains above the state average. See Table V for corresponding regions and cities

# Scoreboard

Percent change from same month one year ago

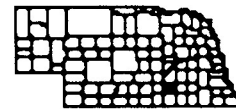
	State	Metro+	Nonmetro
<b>Motor Vehicle Sales (Jan.)</b> Constant \$	22.7%	12.6%	29.6%
<b>Nonmotor Vehicle Sales (Jan.)</b> Constant \$	1.7%	2.2%	1.1%
<b>Building Activity (Jan.)</b> Constant \$	30.7%	22.8%	44.3%
<b>Employment (Mar.)</b>	1.7%	1.2%	2.3%
<b>Unemployment Rate* (Mar.)</b>	3.5%	3.2%	3.8%

+Omaha and Lincoln

\*Unemployment is this month's rate, not a percent change from year ago

## County of the Month

# Clay



**Size of county:** 570 square miles, ranks 63rd in the state

**Population:** 7,600 (estimated) in 1987, a change of -6.4 percent from 1980

**Median age:** 33.0 years in Clay County, 29.7 years in Nebraska in 1980

**Per capita personal income:** \$16,586 in 1987, ranks 10th in the state

**Net taxable retail sales (\$000):** \$32,148 in 1988, a change of +4.8 percent from 1987; \$2,529 during January 1989, a change of +16.8 percent from the same period one year ago

**Number of business and service establishments:** 188 in 1986; 70.2 percent had less than five employees

**Unemployment rate:** 2.9 percent in Clay County, 3.6 percent in Nebraska for 1988

### Nonfarm employment (1988):

	State	Clay County
Wage & salary workers	688,146	2,145
	(percent of total)	
Manufacturing	13.8%	4.4%
Construction and Mining	3.8	4.1
TCU	6.5	9.0
Retail Trade	18.5	10.4
Wholesale Trade	7.3	17.5
FIRE	7.0	2.5
Services	23.0	13.3
Government	<u>20.1</u>	<u>38.8</u>
Total	100.0%	100.0%

### Agriculture:

Number of farms: 664 in 1982, 719 in 1978

Average farm size: 543 acres in 1982

Market value of farm products sold: \$110.8 million in 1982 (\$166,917 average per farm)

Sources: U.S. Bureau of the Census, U.S. Bureau of Economic Analysis, Nebraska Department of Labor, Nebraska Department of Revenue

Merlin W. Erickson

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