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## FARMLAND PRICE TRENDS AND IMPLICATIONS

With the possible exception of energy developments, few other economic trends have been as dramatic in recent years as those associated with the market for farm real estate. The 1970s decade saw farmland values climbing at record rates. For the forty-eight contiguous states, the average increase over the ten-year period approached 250 percent. Here in Nebraska, irrigated land appreciated 259 percent, dry cropland appreciated 275 percent, and grazing land climbed 216 percent in value. In other words, ranchland in the Sandhills selling for \$50 per acre in 1970 sold for more than \$150 per acre in 1980; eastern Nebraska dryland cropland valued at \$400 per acre in 1970 was pegged at \$1,500 per acre ten years later; and southcentral Nebraska irrigated land which could have been purchased for \$700 per acre in 1970 was valued in excess of \$2,500 per acre by 1980.

Indeed, the financial conditions of landowners have been affected greatly by land value appreciation. In fact, even considering the rate of inflation in our total economy, farm real estate owners still experienced a "real" increase in the purchasing power of their asset value, since farmland appreciated about twice as fast as the general price level.

Some interesting questions arise as we consider the current decade. Given the recent past, are we entering into a "new ballgame" in terms of farm real estate investment? Will forces keep the demand for farmland high and, hence, values trending steadily upward? Will investment decisions of the 1980s reflect influences differing from those of the 1970s? Who will be the market participants? In an agricultural state such as Nebraska, these are weighty questions, affecting many Nebraskans directly and virtually all of us indirectly. Obviously, one cannot adequately respond to any of these questions here. The issues are far too complex and the U.S. economic future too uncertain. Nevertheless, some perspective can be gained from a closer look at past and current trends.

### LAND VALUES AND EARNINGS IN RETROSPECT

In the case of a productive asset (such as farmland), a direct relationship is expected between the earnings from that asset and its value. In short, a prospective buyer in the land market is purchasing a future stream of earnings (income).

Land boom conditions of recent years have brought about a reassessment of this relationship. Aggregate farm income levels do not appear to justify the dramatic land value increases. For example, Nebraska farmland now selling for \$1,500 per acre would typically be returning about \$60 annually to the owner (4 percent of market value). If this land were being purchased with a 20 percent down payment and a conventional mortgage bearing a

12 percent interest rate, the annual amortized mortgage payment would approach \$150 per acre. Therefore, the financial obligation would exceed the current earnings level by nearly 2½ times.

However, while current earnings seldom justify today's market prices, it is the anticipation of the *future* income stream which enters into the price determination. Apparently, in recent years, market participants have expected growth in the annual income stream and the accompanying appreciation.

Recent studies of historical trends suggest that there is some precedent to expect a continuing relationship between land earnings and value.<sup>1</sup> Annual earnings attributed to farmland have generally trended upward at approximately the same rate as farmland values have appreciated. Obviously, given the inherent income variability associated with the agricultural sector, the ratio of annual earnings to market value may vary greatly from year to year. But even during the recent periods of rapid asset appreciation, returns to land were also trending sharply upward. Take, for example, central Nebraska irrigated land. While values were climbing from levels of \$600 to \$700 per acre to more than \$2,000 per acre in the 1970s, annual returns were climbing accordingly, that is, average annual cash rental rates climbed from the \$40-45 per acre range to more than \$100 per acre. Given such growth rates, the pre-tax internal rate of return to farmland investment during the 1970s often exceeded 20 percent per year. In other words, owners received an annual return of more than twenty cents per dollar of equity investment. For most investors, few if any alternatives would have yielded a higher opportunity cost. The obvious implication is that the land boom conditions of recent years had to occur in light of growth in earnings. Moreover, contrary to the opinion of some, today's investors generally *are* considering the annual earnings component and are projecting future income potential on the basis of a continued growth in earnings.

Quite appropriately, some see today's farmland investment as being similar to what stock market analysts describe as a "growth stock." It is characterized by a relatively high price-earnings ratio, particularly during the early years of the investment period. Such a condition implies potential "cash flow" problems for farmland buyers who do not have supplemental income sources. Earnings from the land investment in the short run simply will not cover debt repayment obligations, even though the investment may be profitable in the long run. As interest rates on long-term financing have reached new plateaus,

(continued on page 2)

<sup>1</sup> Emanuel Melichar, "Capital Gains Versus Current Income in the Farming Sector," *American Journal of Agricultural Economics* 61, No. 5 (December, 1979).

(continued from page 1) this cash flow aspect has become increasingly pronounced.

### LAND VALUES IN AN INFLATIONARY ENVIRONMENT

Land price trends and general inflation are not unrelated. As one economist has noted, "The higher the general rate of inflation in the economy, the higher the annual increase in the return to land is apt to be."<sup>2</sup> One reason for this is the effect of current farm programs. These programs are set to insure that crop commodity price levels move with general inflationary trends. In effect, the framework operates much like the inflation-escalator clause of a negotiated wage package. The consequence is that higher returns to crop producers will ultimately be capitalized into the value of farmland. Hence, farmland values will move upward with the general rate of inflation.

There is also a second factor. This is the tendency during inflationary periods for wealth to gravitate toward more tangible

holdings as a hedge against inflation. If the value of the dollar and more liquid assets is expected to continue declining in an inflationary environment, then investors will be willing to pay relatively more for farmland, an appreciating asset. They perceive it as not only protecting but also enhancing their position of net worth. Thus, the demand side of the market becomes more active, and values will be bid upward at a rate equal to or greater than the rate of inflation. Paradoxically, today's farmland investor is quite likely hoping for continuing inflation, even though his rhetoric may indicate he considers it bad. Ruttan has noted, "The only thing that could be considered worse than continued inflation is deflation."<sup>3</sup>

In brief, both institutional and market forces suggest a close correlation of farmland values with general inflationary trends. So long as the economy is inflation-prone, farmland appreciation will likely continue. (continued on page 6)

<sup>2</sup> Paul R. Hasbargen, "Land Prices: Why So High? Will They Go Higher?" *Minnesota Agricultural Economist*, No. 622 (August-September, 1980).

<sup>3</sup> Vernon W. Ruttan, "Inflation and Productivity," *American Journal of Agricultural Economics* 61, No. 5 (December, 1979).

Table 1  
AVERAGE REPORTED VALUE OF NEBRASKA FARMLAND FOR DIFFERENT TYPES OF LAND  
BY CROP REPORTING DISTRICT, FEB. 1, 1980 AND FEB. 1, 1981

Type of Land and Year Reported	Crop Reporting District							
	Northwest	North	Northeast	Central	East	Southwest	South	Southeast
	(dollars per acre)							
Dryland Cropland (no irrigation potential)								
1981	419	346	1,009	519	1,409	546	754	1,060
1980	347	340	920	471	1,296	454	626	971
Percent change:	20.8	1.8	9.7	10.2	8.7	20.3	20.5	9.2
Dryland Cropland (irrigation potential)								
1981	680	533	1,225	880	1,785	733	1,432	1,402
1980	533	563	1,132	767	1,733	628	1,282	1,352
Percent change:	27.6	-5.3	8.2	14.7	3.0	16.7	11.7	3.7
Grazing Land (tillable)								
1981	251	257	622	435	881	332	697	636
1980	200	261	583	395	760	307	621	643
Percent change:	25.5	-1.5	6.7	10.1	15.9	8.1	12.2	-1.1
Grazing Land (nontillable)								
1981	164	182	418	339	620	217	398	474
1980	143	169	394	304	549	190	346	473
Percent change:	14.7	7.7	6.1	11.5	12.9	14.2	15.0	0.2
Hayland								
1981	323	331	558	482	738	368	417	532
1980	301	338	506	441	699	349	402	554
Percent change:	7.3	-2.1	10.3	9.3	5.6	5.4	3.7	-4.0
Gravity Irrigated								
1981	1,555	1,054	1,781	2,088	2,403	1,493	2,230	2,026
1980	1,369	1,020	1,547	1,976	2,317	1,329	2,046	1,968
Percent change:	13.6	3.3	15.1	5.7	3.7	12.3	9.0	3.0
Center Pivot Irrigated <sup>1</sup>								
1981	973	816	1,456	1,312	2,110	1,105	1,732	1,900
1980	894	886	1,372	1,223	2,043	971	1,535	1,795
Percent change	8.8	-7.9	6.1	7.3	3.3	13.8	12.8	5.9

<sup>1</sup>Pivot not included in per acre value.

Source: 1980 and 1981 *Nebraska Farm Real Estate Market Survey*.

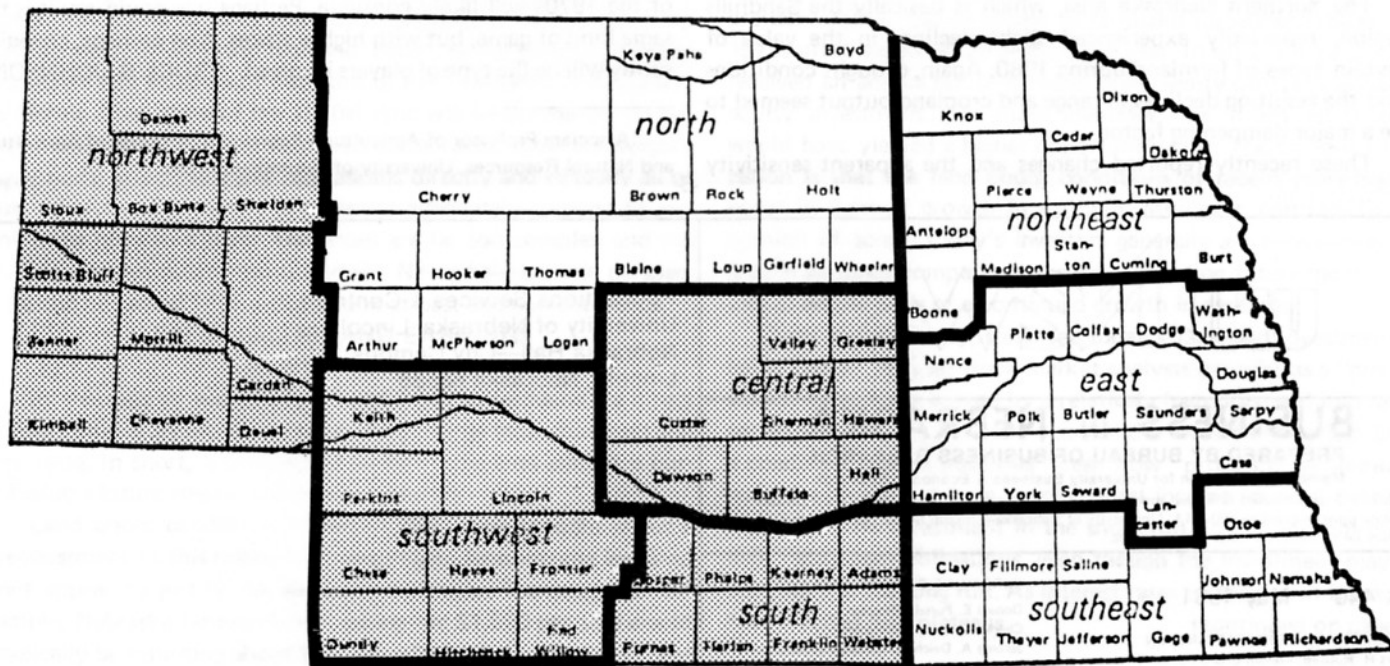
Table 2  
 AVERAGE REPORTED VALUE PER ACRE OF NEBRASKA FARMLAND  
 FOR DIFFERENT TYPES OF LAND AND GRADE, BY CROP REPORTING DISTRICT, FEB. 1, 1981

Type of Land and Quality	Crop Reporting District							
	Northwest	North	Northeast	Central	East	Southwest	South	Southeast
	(dollars per acre, rounded to nearest \$5)							
Dryland Cropland (no irrigation potential)								
High grade	520	380	1,380	685	1,550	625	890	1,290
Low grade	340	270	820	415	1,025	405	580	820
Dryland Cropland (irrigation potential)								
High grade	745	610	1,480	1,260	1,995	800	1,565	1,575
Low grade	510	420	980	700	1,325	565	925	1,105
Grazing Land (tillable)								
High grade	285	325	750	530	1,035	400	865	700
Low grade	190	225	550	375	730	260	470	515
Grazing Land (nontillable)								
High grade	195	230	535	375	760	245	480	525
Low grade	135	135	340	265	500	180	330	350
Hayland								
High grade	370	395	795	560	905	490	535	620
Low grade	260	270	420	355	640	305	365	475
Gravity Irrigated								
High grade	1,930	1,385	2,090	2,450	2,705	1,665	2,465	2,275
Low grade	1,100	935	1,445	1,480	1,820	1,165	1,655	1,630
Center Pivot Irrigated <sup>1</sup>								
High grade	1,000	910	1,745	1,555	2,295	1,215	1,815	2,075
Low grade	710	610	1,130	930	1,595	850	1,270	1,545

<sup>1</sup>Pivot not included in per acre value.

Source: 1981 Nebraska Farm Real Estate Market Survey.

Figure 1  
 NEBRASKA CROP REPORTING DISTRICTS  
 (Shaded districts recorded three or more land classifications with a 10 percent or greater increase in value, 1980-81)





## Review and Outlook

The level of economic activity in Nebraska rose a healthy 2.3% as measured by the index of physical volume output in January 1981 compared with December 1980. This increase in Nebraska output was approximately three times the rate of increase recorded by the physical volume index for the United States, the index rising 0.8% nationally.

The December-to-January increase in the state's economic activity was observed in all sectors except government. Agriculture and construction had sharply higher percentage increases on a month-to-month basis. It should be noted that January changes are based upon revised data which produced significant changes in some of the sectors. These changes are annual revisions in the

data series which are used to calculate the indexes, especially the employment and cash farm marketing data series. The indexes in Table 2 reflect the changes, including new seasonal adjustment factors, and are not directly comparable to data published in previous issues of *Business in Nebraska*.

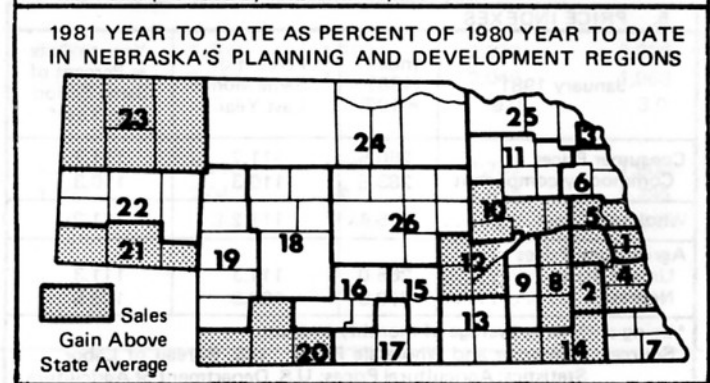
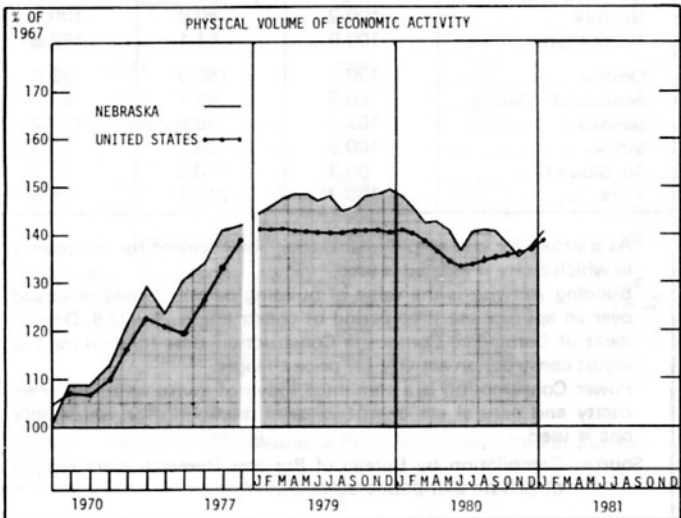
The agriculture sector recorded a December-to-January output increase of 10.5%. Agriculture output changes are extremely volatile. Cash receipts totaled nearly \$610 million on a seasonally unadjusted basis, which was down about 8.6% from the previous month. Cash farm marketing receipts for the United States on a seasonally unadjusted basis were \$13.2 billion, down 0.8% over the same interval. Comparing January 1981 with January 1980, cash farm marketings were off (continued on page 5)

Notes for Tables 1 and 2: (1) The "distributive" indicator represents a composite of wholesale and retail trade; transportation, communication and utilities; finance, insurance, and real estate; and selected services. (2) The "physical volume" indicator and its components represent the dollar volume indicator and its components adjusted for price changes using appropriate price indexes—see Table 5, page 5.

ECONOMIC INDICATORS: NEBRASKA AND UNITED STATES				
1. CHANGE FROM PREVIOUS YEAR				
January 1981	Current Month as Percent of Same Month Previous Year		1981 Year to Date as Percent of 1980 Year to Date	
	Nebraska	U.S.	Nebraska	U.S.
Indicator	Nebraska	U.S.	Nebraska	U.S.
Dollar Volume	104.9	108.6	104.9	108.6
Agricultural	100.2	111.5	100.2	111.5
Nonagricultural	105.6	108.5	105.6	108.5
Construction	111.9	98.5	111.9	98.5
Manufacturing	105.6	108.9	105.6	108.9
Distributive	105.3	109.3	105.3	109.3
Government	104.8	108.1	104.8	108.1
Physical Volume	95.1	98.0	95.1	98.0
Agricultural	92.0	100.2	92.0	100.2
Nonagricultural	95.5	97.9	95.5	97.9
Construction	102.2	89.9	102.2	89.9
Manufacturing	95.2	97.9	95.2	97.9
Distributive	94.3	97.8	94.3	97.8
Government	99.8	100.6	99.8	100.6
2. CHANGE FROM 1967				
Indicator	Percent of 1967 Average			
	Nebraska	U.S.		
Dollar Volume	357.7	343.9		
Agricultural	328.2	359.1		
Nonagricultural	362.0	343.4		
Construction	292.3	340.3		
Manufacturing	374.6	309.2		
Distributive	370.3	367.1		
Government	353.3	325.8		
Physical Volume	140.5	138.2		
Agricultural	121.6	135.0		
Nonagricultural	143.3	138.3		
Construction	93.7	109.1		
Manufacturing	164.1	133.4		
Distributive	142.1	140.9		
Government	145.9	150.1		

3. NET TAXABLE RETAIL SALES OF NEBRASKA REGIONS AND CITIES (Adjusted for Price Changes)			
Region Number and City	City Sales*	Sales in Region*	
	Jan. 1981 as percent of Jan. 1980	Jan. 1981 as percent of Jan. 1980	Year to date '81 as percent of Year to date '80
<i>The State</i>	103.6	101.4	101.4
1 Omaha	104.8	105.6	105.6
Bellevue	111.5		
2 Lincoln	106.1	104.5	104.5
3 So. Sioux City	90.0	90.5	90.5
4 Nebraska City	108.5	101.0	101.0
5 Fremont	102.9	100.7	100.7
Blair	105.2		
6 West Point	94.5	91.8	91.8
7 Falls City	111.3	96.5	96.5
8 Seward	106.1	108.4	108.4
9 York	100.6	90.6	90.6
10 Columbus	130.9	107.0	107.0
11 Norfolk	98.2	90.2	90.2
Wayne	90.1		
12 Grand Island	104.6	100.9	100.9
13 Hastings	96.8	95.6	95.6
14 Beatrice	114.6	105.2	105.2
Fairbury	93.0		
15 Kearney	101.7	98.1	98.1
16 Lexington	100.0	90.6	90.6
17 Holdrege	113.5	97.7	97.7
18 North Platte	93.6	89.1	89.1
19 Ogallala	106.6	86.8	86.8
20 McCook	108.8	111.4	111.4
21 Sidney	104.7	103.7	103.7
Kimball	117.4		
22 Scottsbluff/Gering	101.8	98.5	98.5
23 Alliance	115.0	100.8	100.8
Chadron	121.9		
24 O'Neill	95.7	84.6	84.6
25 Hartington	99.1	89.2	89.2
26 Broken Bow	90.3	86.1	86.1

\*State totals include sales not allocated to cities or regions. The year-to-year ratios for city and region sales may be misleading because of changes in the portion of unallocated sales. Region totals include, and city totals exclude, motor vehicle sales. Sales are those on which sales taxes are collected by retailers located in the state. Compiled from data provided by Nebraska Department of Revenue.



(continued from page 4) approximately 1%, or \$6.2 million. Nationally, cash farm marketing receipts were up 11.5% when January 1981 is compared with year-previous levels.

Output in Nebraska's nonagriculture sector was up 1.3% on a month-to-month basis. Construction recorded one of the sharpest percentage increases, rising 7.0%. This sector, of course, has been depressed for some time. A moderate recovery started in 1980 and appears to have gained some momentum in January 1981.

Output in Nebraska's manufacturing sector was up 0.6% December-January 1981. While data revisions make comparisons difficult, output in the manufacturing sector is gradually increasing.

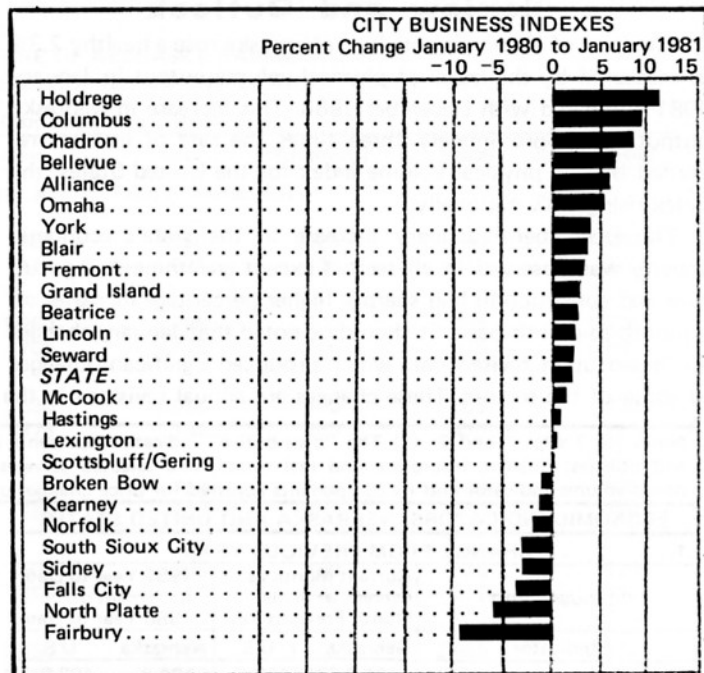
Nebraska's distributive trade sector recorded a 1.7% increase December-January 1981. This represents one of the largest monthly gains for the distributive sector for the past twelve months. The government sector was the only area of the Nebraska economy to decline in January, the index dropping 0.8%.

While output in Nebraska was up, employment declined on a month-to-month basis. Compared with year-previous levels, employment in January 1981 was down 3,600. Nebraska's unemployment rate in January 1981 was estimated at 5.1%, up from 4.8% in December 1980 and 4.4% in January 1980. Employment increases usually lag changes in output levels, and January 1981 seems to be no exception.

Nebraska retail sales recorded substantial gains in January 1981. Dollar volume retail sales were up approximately 11.7% in January 1981 compared with January 1980. The commodity component of the Consumer Price Index was up approximately 10.3% on a January-to-January basis, leading to a price-adjusted retail sales gain of 1.4%. Cities recording sharply higher real increases in retail sales in January 1981 compared with January 1980 include Columbus, 30.9%; Chadron, 21.9%; Kimball, 17.4%; Beatrice, 14.6%; Holdrege, 13.5%; Bellevue, 11.5%; Falls City, 11.3%; and Alliance, 11.0%. These are substantial gains in real retail sales and represent one of the best monthly changes in many months.

The city business indexes reflect these gains. Cities recording substantial gains include Holdrege, Columbus, Chadron, Bellevue, Alliance, and Omaha—all up 5% or more (see chart on page 5).

D. E. P.



Source: Table 3 (page 4) and Table 4 below.

4. JANUARY CITY BUSINESS INDICATORS			
The State and Its Trading Centers	Percent of Same Month a Year Ago		
	Employment <sup>1</sup>	Building Activity <sup>2</sup>	Power Consumption <sup>3</sup>
<i>The State</i> .....	100.6	106.1	98.5
Alliance .....	103.6	58.6	93.0
Beatrice .....	99.3	52.9	100.9
Bellevue .....	100.3	119.8	86.8
Blair .....	99.5	144.1	112.6
Broken Bow .....	99.8	227.6	103.2
Chadron .....	99.9	90.2	84.3
Columbus .....	99.7	46.6	98.0
Fairbury .....	99.6	28.6	89.2
Falls City .....	100.6	14.2	99.5
Fremont .....	107.3	76.8	99.3*
Grand Island .....	99.6	129.4	105.1
Hastings .....	101.0	136.3	83.1
Holdrege .....	100.3	278.3	97.2
Kearney .....	100.4	72.9	105.9
Lexington .....	100.3	101.3	94.0
Lincoln .....	100.2	98.2	100.4
McCook .....	100.5	60.9	96.3
Nebraska City .....	NA	NA	NA
Norfolk .....	100.2	80.9	100.5
North Platte .....	100.9	54.1	103.8
Omaha .....	100.3	180.0	99.4
Scottsbluff/Gering ..	100.6	82.1	87.7
Seward .....	102.8	69.6	107.2
Sidney .....	100.9	28.7	95.9
So. Sioux City .....	96.3	170.9	95.7
York .....	100.7	212.1	96.5

<sup>1</sup> As a proxy for city employment, total employment for the county in which a city is located is used.

<sup>2</sup> Building Activity is the value of building permits issued as spread over an appropriate time period of construction. The U.S. Department of Commerce Composite Construction Cost Index is used to adjust construction activity for price changes.

<sup>3</sup> Power Consumption is a combined index of consumption of electricity and natural gas except in cases marked \* for which only one is used.

Source: Compilation by Bureau of Business Research from reports of private and public agencies.

5. PRICE INDEXES			
January 1981	Index (1967 = 100)	Percent of Same Month Last Year	Year to Date as Percent of Same Period Last Year*
Consumer Prices .....	260.5	111.7	111.7
Commodity component	283.5	110.3	110.3
Wholesale Prices .....	245.4	111.2	111.2
Agricultural Prices			
United States .....	266.0	111.3	111.3
Nebraska .....	270.0	108.9	108.9

\*Using arithmetic average of monthly indexes.  
Sources: Consumer and Wholesale Prices: U.S. Bureau of Labor Statistics; Agricultural Prices: U.S. Department of Agriculture.

(continued from page 2)

### RECENT MARKET TRENDS IN NEBRASKA

While inflation continued at a double-digit rate during 1980, Nebraska farmland values generally showed more modest gains during the year. Income levels for much of Nebraska's farming sector were down considerably in 1980—the culmination of drought, high input costs, and low prices for some outputs. Decline in earnings evidently precipitated some caution in the farmland market.

This was a general conclusion drawn from the 1981 *Nebraska Farm Real Estate Market Survey*, the fourth annual survey conducted by the Department of Agricultural Economics, University of Nebraska-Lincoln. Some five hundred questionnaires were mailed in early January to individuals across the state who are knowledgeable about the farm real estate market in their area.

Survey reporters were asked to estimate farmland values in their respective counties as of February 1, 1981, by major land use. Preliminary results of these estimates are presented in Table 1 (p. 2) and Table 2 (p. 3).

Largest percentage increases were most evident in the western portion of the state. For example, dryland cropland with no irrigation potential was reportedly 20 percent higher than a year earlier in the northwest, southwest, and south districts. In large measure, this may be attributed to a good wheat crop and more favorable price levels during 1980. However, a more "bullish" market apparently existed for other types of land (Figure 1, p. 3).

In rather marked contrast was the eastern part of the state. More modest advances were generally reported. More severe drought conditions prevailed there and quite likely slowed market enthusiasm for a time. Even when crop commodity prices rebounded somewhat in mid-year, caution continued to exist. For northeast, eastern, and southeast Nebraska, most farmland appreciated at rates below the general rate of inflation. In other words, holders of real estate in these areas experienced some loss in the purchasing power of their land assets.

The northern Nebraska area, which is basically the Sandhills region, reportedly experienced slight declines in the value of certain types of farmland during 1980. Again, drought conditions and the resulting declines in range and cropland output seemed to be a major dampening factor.

These recently reported changes and the apparent sensitivity

to farm income conditions reinforce the argument that the farm real estate market tends to move somewhat erratically in the short run. Real and even nominal decreases in farmland values can and do occur as short-run optimism wanes. However, as previously discussed, the longer-run expectations predominate in the farmland market. Thus, the 1980 performance may be merely a momentary slow-up and adjustment in expectations to an otherwise upward-climbing land value trend.

### IMPLICATIONS FOR FARMLAND INVESTMENT

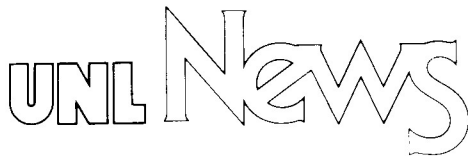
Many factors suggest that the value for farm real estate will continue climbing in the 1980s, with periodic but short-lived interruptions. Barring any major economic collapse in our U.S. economy, land values in five to seven years could well be double today's levels.

As to a potential investment, farmland will likely remain attractive. The stakes of the game, however, will obviously be higher and often riskier. Increasingly, the farmland investment decision framework is presuming on the future.

This would imply increasing selectivity in who will be purchasing farmland in the years ahead. The high cash-flow requirements will preclude those potential buyers who do not have access to funds apart from the earnings from the land being purchased. For beginning farmers with limited earnings, the barriers to entry via land ownership will become increasingly formidable. Yet, the absence of this buyer group will not likely soften the market, because the very same forces will serve as economic incentives to investors with established wealth. For example, tax provisions strongly encourage the conversion of ordinary income into capital gains; thus, for investors in higher tax brackets, the earnings distribution mix of a farmland investment is ideal. While tenure patterns change slowly, due to the low ownership-turnover rate of farmland, still the direction would suggest some movement toward a "landed" aristocracy.

In the final analysis, the 1980s may hold interesting developments for the farm real estate market. Many trends and influences of the 1970s will likely continue. Perhaps one could say it is the same kind of game, but with higher stakes. And perhaps, changing subtly will be the type of players involved. BRUCE B. JOHNSON\*

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