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The Minnesota RURAL REAL ESTATE Market in 1981

Matthew G. Smith
Philip M. Raup

Department of Agricultural
and Applied Economics
Institute of Agriculture,
Forestry, and Home Economics
University of Minnesota
St. Paul, Minnesota 55108

Including Special Studies of:
The Red River Valley
Southwestern Minnesota
A Contour Map of Minnesota Land Value
A Comparison with the U.S. Census of
Agriculture

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SUMMARY

The Minnesota Rural Real Estate Market in 1981

Rural land values in Minnesota continued to increase during the year ending in July 1981, although the rates of increase varied markedly among different areas of the state. The average statewide value of Minnesota farmland in 1981 was \$1310 per acre, as estimated by brokers, loan agency officials, and others familiar with the rural real estate market. This was an increase of 17 percent from July, 1980. Land values in the cash grain areas of south-central and western Minnesota continued on their strong upward track of recent years, while the southeastern third of the state experienced its second consecutive year of below-average increases in estimated land values.

Prices received in actual sales of farmland averaged \$1367 per acre statewide in 1981, an increase of just 4 percent over the average reported in 1980. This small increase is partly the result of a shift in the geographical distribution of tracts sold toward the lower-valued lands north and east of the Mississippi River. When the rate of increase over 1980 is adjusted to this shift in land market activity, the rate of change increases to 11 percent. It is interesting to note that in only one district, the East Central, did the adjusted rate of increase in sales price exceed that of estimated values, suggesting that over much of the state the farmland market failed to meet expectations in 1981. As it has since 1979, the southwest contained the highest-priced land in the state in 1981, averaging \$2005 per acre.

The increasing stress on the agricultural economy found some reflection in the land market in 1981. As estimated by the U.S. Department of Agriculture, the rate of forced sales of Minnesota farms, including foreclosures and defaults of contract, increased from .5 per thousand farms in 1980 to 2.9 in 1981. Also, those sellers of farmland citing a desire to quit farming for another job as their reason for sale made up 16 percent of the total in 1981, up from 12 percent the year before and reversing an eight-year decline. As in past years, death and retirement were the most frequently given reasons for selling land, accounting for 53 percent of all sales in 1981.

Overall, expansion buyers accounted for 72 percent of all farmland tracts purchased in Minnesota in 1981, a new all-time high since data of this type have been collected. Sole-tract operator buyers, those purchasing intact farms to be their only farm acreage, figured in just 17 percent of all land transfers, a new all-time low. These data reflect the increasing financial difficulty faced by beginning farmers seeking to acquire land. Investors maintained their relatively constant share of the state farmland market, picking up the remaining 11 percent of sales. Buyers also tended to live close to the tract purchased, particularly in the most agriculturally important areas of Minnesota. Statewide, 70 percent of the buyers lived within 10 miles of the tract purchased. This proportion increased to 87 percent in the highest valued counties of south central Minnesota, and fell to less than 40 percent in the Northeast, where recreational land uses are more important and first-time buyers are more common. Only 4 percent of all buyers statewide resided over 300 miles away, suggesting that "foreigners" do not exert a great influence on the state land market.

The influence of expansion buyers was also felt in relative prices paid for improved (meaning with buildings) and unimproved land. In the Southeast and West Central districts prices paid for unimproved land averaged equal to or above those paid for improved land, and unimproved prices were within 10 percent of improved in the Southwest and Northwest. This reflects the unwillingness of expansion buyers to pay a substantial premium for buildings that are in many cases not needed by them. In the East Central and Northeast districts, however, where add-on buyers are less dominant and recreational purchasers more common, unimproved land prices averaged less than three-quarters of the price of the average improved tract.

It must be noted that the 1981 Minnesota Rural Real Estate Market Survey was conducted in July and August 1981. Since survey respondents were asked to report on sales occurring between January 1 and July 1, 1981, this report is a "snapshot" of the overall condition of the market over the first half of 1981. Developments over the second half of 1981 and during early 1982 will be reflected in the 1982 Minnesota Rural Real Estate Market Survey.

PROCEDURE

Data for this study were collected during July and August, 1981 through questionnaires mailed to over 1400 real estate brokers, agricultural loan specialists, county officials and others well informed on farm land values in their part of Minnesota. Two types of information are collected: reporters' estimates of farmland values and data on actual sales of which the reporters have knowledge.

In the estimated values section of the questionnaire, respondents were asked to estimate the average value of farmland in their area, including separate estimates of the per acre value of high, medium and low quality land. Percentage changes in estimated land values were then calculated in the following manner: (1) estimates were weighted by the acres of farmland in their county, as reported by the most recent U.S. Census of Agriculture; (2) these values were added county by county for each district; and (3) this total for all counties in a district was divided by the total acres of farm land in the district. The resulting weighted average was then compared with a similar weighted average estimate of value for 1980 in order to arrive at the percentage change in estimated land values for the district. A similar procedure is used to arrive at the overall statewide rate of change. In making comparisons between 1981 and 1980, only estimates of respondents who replied in both years were used. Using this quite restrictive procedure, 471 estimates were usable.

There are distinct advantages in measuring land value changes by the estimate method rather than by reported sales. Sales prices are influenced by a variety of factors that vary markedly from sale to sale and from year to year, such as the quality of land and buildings or the particular drainage or location attributes of a given tract. Estimates of value are less influenced by the variability of individual sales, and this attribute is enhanced by the requirement that respondents report for at least two consecutive years before their contributions are used in constructing estimates of value.

The actual sales section of the questionnaire seeks data on the location, sales price, tract size, characteristics of buyer and seller, quality of land and buildings and method of financing of farmland sold during the first six months of the year. Reporters were instructed to exclude transfers between close relatives. Reports were obtained on 1278 sales in 1981.

Respondents are asked to distinguish these types of buyers of agricultural land:

- 1) Sole-tract operating farmers: Those buying complete farm units for operation as individual farms which they intend to run themselves.
- 2) Expansion buyers: Those who already own some farm land either as farmers or landlords and are adding to their existing holdings.
- 3) Agricultural investor buyers: Those who buy farm land to be rented out or managed for farming purposes.

Improved land refers to land with buildings. Reports on the quality of land and buildings reflect the judgment of individual respondents relative to the standards in their local area.

The analysis presented in this publication is possible only because of the prompt and conscientious replies of the reporters, some of whom have provided information annually for several decades.

PART I

The Minnesota Farmland Market in 1981

A. Land Market Trends

Reporters' Estimates

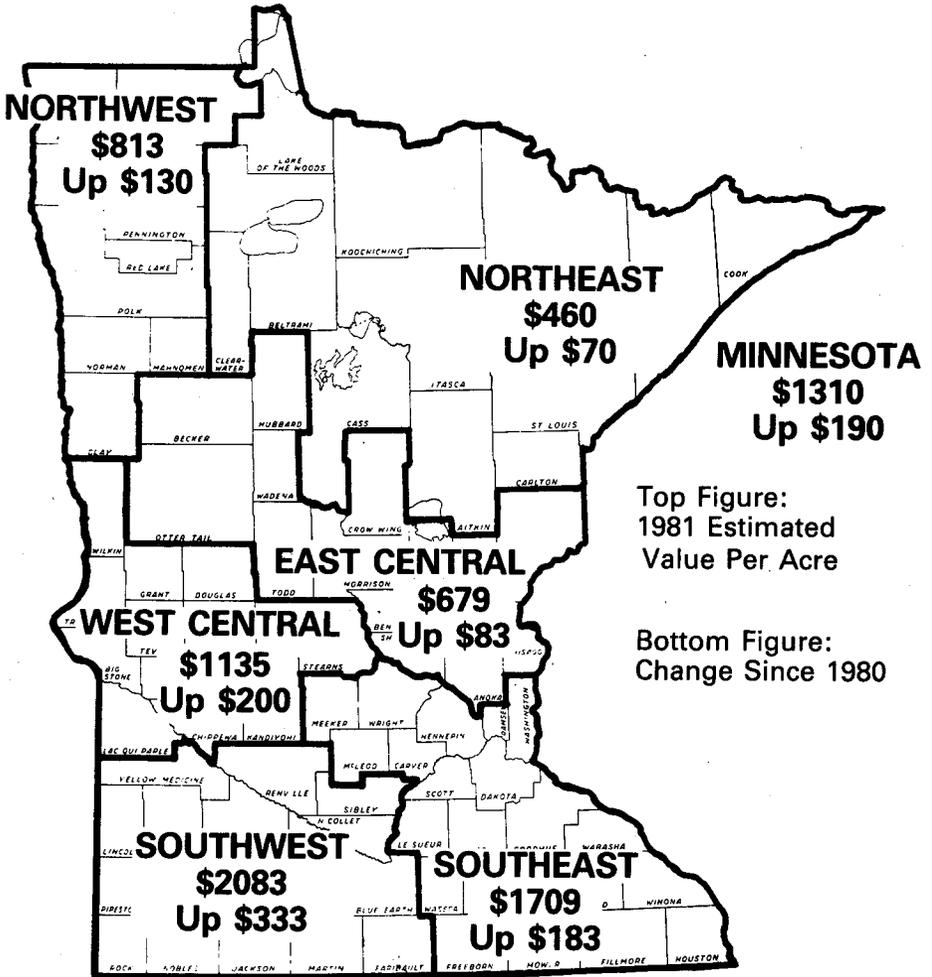
The estimated statewide average value of Minnesota farmland in July, 1981 was \$1310 per acre (Table 1). This represents an increase of \$190 per acre, or 17 percent, over 1980. In 1980 estimated land values had shown their smallest rate of increase (8 percent) since before the explosion of farmland prices which followed the massive Soviet grain purchases of 1972. Minnesota farmland values have increased over 450 percent in the 10 years from 1971 to 1981, although the rate of increase was significantly higher in the first half of the decade than it was in the second half. The 17 percent increase in 1981 could reflect a resumption of the strong upward trend of recent years, although no consistent pattern has been evident in the past 5 years. Since 1976, annual increases in estimated farmland values have been 19, 12, 17, 8 and 17 percent.

All six districts showed rates of increase substantially above those of 1980, although they were unevenly distributed (Table 2). As in 1980, the two lowest rates of increase were in the East Central and Southeastern districts (14 percent and 12 percent respectively), where livestock agricultural, rural residential, and more recreationally-oriented land uses predominate. And also as in 1980, the cash-grain farming areas of western Minnesota (the Southwest, West-Central, and Northwest) showed increases at or above the statewide average. The Northwest district, along with the Southwest district, had the greatest rate of increase (19 percent) in 1981, making this the third straight year that the Northwest district has led the state in the increase of estimated land values. The Northeast, which is heavily influenced by recreational and residential land uses as well as livestock agriculture, rebounded sharply from the slowdown in 1980 to post an increase of 18 percent.

In dollar terms, the Southwest continued to contain the highest-valued farmland in Minnesota, exceeding \$2,000 per acre for the first time in the history of this survey (Table 1). The Southwest has held this leading position for over 35 years. Second highest was the Southeast, averaging \$1709 per acre. Over the years the gap between average estimated land values in these two districts has fluctuated according to the varying demand for land in cash-grain oriented areas like the Southwest vs. the demand for the Southeast's more livestock-oriented land, which is also more heavily influenced by non-farm uses such as rural residences and recreation.

In the years immediately following the Russian wheat purchases and the resulting increases in farm commodity prices, the Southwest widened its lead over the Southeast. In the late seventies, as grain prices declined, the Southeast narrowed the gap somewhat. Now this trend seems to be reversing once again, as the Southwest has had greater increases than the Southeast in 1980 and 1981. This turnabout has its likely explanation in the decline in demand for rural residential properties

**Fig. 1 Estimated Average Land Values Per Acre
(Excluding Hennepin and Ramsey Counties)***



Top Figure:
1981 Estimated
Value Per Acre

Bottom Figure:
Change Since 1980

*Based on reported estimates of average value per acre of farmland for the first six months of 1981.

Table 1: Estimated Average Value Per Acre of Farm Land, by District, Minnesota, 1971-81*.

Years	South-east	South-west	West Central	East Central	North-west	North-east	Minn.
-dollars per acre-							
1971	333	351	204	155	119	63	232
1972	370	379	208	163	117	76	248
1973	433	459	247	194	146	115	298
1974	576	675	378	279	199	144	423
1975	674	844	503	296	295	163	525
1976	856	1106	624	349	378	210	667
1977	1027	1316	730	415	427	279	794
1978	1191	1421	803	498	483	304	889
1979	1453	1620	883	573	599	368	1040
1980	1526	1750	962	596	683	390	1120
1981	1709	2083	1135	679	813	460	1310

* Based on reporters' estimates of average value per acre of farm land in their area.

Table 2: Annual Percentage Changes in Estimated Farm Land Value Per Acre, By Districts, Minnesota, 1971-81.

Years July to July	South-east	South-west	West Central	East Central	North-west	North-east	Minn.
-percent-							
1971-72	11	8	2	5	-2	20	7
1972-73	17	21	19	19	25	51	20
1973-74	33	47	53	44	36	25	42
1974-75	17	25	33	6	48	13	24
1975-76	27	31	24	18	28	29	27
1976-77	20	19	17	19	13	33	19
1977-78	16	8	10	20	13	9	12
1978-79	22	14	10	15	24	21	17
1979-80	5	8	9	4	14	6	8
1980-81	12	19	18	14	19	18	17

in the Southeast, associated with the general slowdown in the market for residential properties of all types. This lessens one source of upward pressure on farmland prices as agricultural buyers face reduced competition for land. Meanwhile, in the Southwest, where the market has traditionally been less affected by residential and recreational demand, land buyers apparently reflected the greater optimism at the time of cashgrain farmers compared to the livestock sector. The result has been that land values in the Southeast, and particularly adjacent to the Twin Cities area, have increased only slowly since 1979 while values in the Southwest have continued to climb.

The Northwest, despite its recent large increases, is only the fourth highest valued district (after the West-Central). In recent years it has surpassed the East-Central district, however. As late as 1978, the average estimated value per acre of land in the East-Central exceeded that of the Northwest (\$498 vs. \$483). On the strength of its large increases in the past several years, the value of farmland in the Northwest now exceeds that of the East-Central by 20 percent (\$813 per acre vs. \$679 per acre). This is another manifestation of the continuing strength of the land market in 1981 in cash crop areas and its recent relative weakness in areas where livestock agriculture and residential uses are more important.

Actual Sales

Based on reports of 1278 transactions between January and July, the average sale price of Minnesota farmland in 1981 was \$1367 per acre, an increase of 4 percent over the 1980 level (Table 3). This is far short of the 17 percent increase in estimated land values recorded in 1981. This result is due in large part to a shift of buyers to lower-valued lands, which occurred in three of the state's six districts, and a shift statewide to proportionally greater activity in the lower-valued land areas north and east of the Mississippi River.

Table 3: Average Reported Sales Price Per Acre of Farm Land, By District, Minnesota, 1971-81 (unadjusted).*

Years	District						Minn.
	South-east	South-west	West Central	East Central	North-west	North-east	
	-dollars per acre-						
1971	344	343	205	150	100	44	259
1972	389	366	222	145	107	76	293
1973	444	410	223	178	120	122	298
1974	598	630	340	243	204	144	450
1975	792	844	493	299	353	159	607
1976	937	1116	664	321	377	210	735
1977	1216	1340	709	446	432	198	859
1978	1352	1321	908	554	504	256	980
1979	1675	1680	949	618	612	411	1140
1980	1837	1868	1095	603	759	394	1318
1981	1965	2005	1171	680	919	483	1367
% Change 1980-1981	7	7	7	13	21	23	4

* Based on reported farm sales, January 1 to July 1 of each year.

In order to compensate for the effects of this shift of land market activity, an adjusted average sales price was computed, holding the acreage distribution of sales constant at the 1980 levels. This removes the effects of shifts in land market activity in 1981. For example, if a large increase in average price was due mainly to an increase in the frequency of sales of better quality land, this would result in a smaller average price after adjustment. Conversely, a shift of the market toward poorer quality land would have the opposite effect. The result is a statewide average adjusted price of \$1468 per acre, an increase of 11 percent over 1980 (Table 4). While the adjusted increase is larger than the unadjusted, it is still well below the average increase in estimated value, indicating that in most parts of the state the land market's performance did not live up to expectations. Only in the East-Central district did the adjusted rate of increase of reported sales exceed that of estimated values, (19 percent vs. 14 percent), as the farmland market in the part of the state strengthened after showing no increase in adjusted values in 1980. The Northwest showed nearly equal rates of increase in reported and estimated prices (18 percent vs. 19 percent), but all other areas of the state had increases in adjusted sales prices that fell short of estimates.

Table 4: Annual Percentage Changes in Adjusted Sales Price Per Acre, by District, Minnesota, and CPI and GNP Implicit Price Deflator, 1973-1981.

District	1973-74	1974-75	1975-76	1976-77	1977-78	1978-79	1979-80	1980-81
Southeast	34	30	23	23	13	13	6	6
Southwest	52	34	33	20	2	22	12	15
West Central	51	43	32	8	18	4	9	13
East Central	34	24	6	32	37	16	0	19
Northwest	58	61	10	10	12	44	18	18
Northeast	4	10	21	8	-24	47	-27	-4
Minnesota	44	35	26	18	10	17	9	11
CPI ¹	10.2	10.4	6.2	6.4	6.8	10.3	14.3	10.5
GNP Implicit Price Deflator ^{1,2}	9.4	10.9	5.6	5.5	6.7	8.8	9.1	8.6

¹ The changes in price indexes were calculated by comparing the average prices for the first 6 months of the year with the average prices for the previous year.

² Economists often contend that the gross national product (GNP) implicit price deflator is a better indicator of price changes than the consumer price index (CPI). The CPI measures prices for a specified collection of goods and services which are typically purchased by urban consumers. The GNP implicit price deflator indicates the price changes of all goods and services measured by the GNP. The widening gap between the two measures in recent years is due largely to the influence of mortgage costs on the CPI.

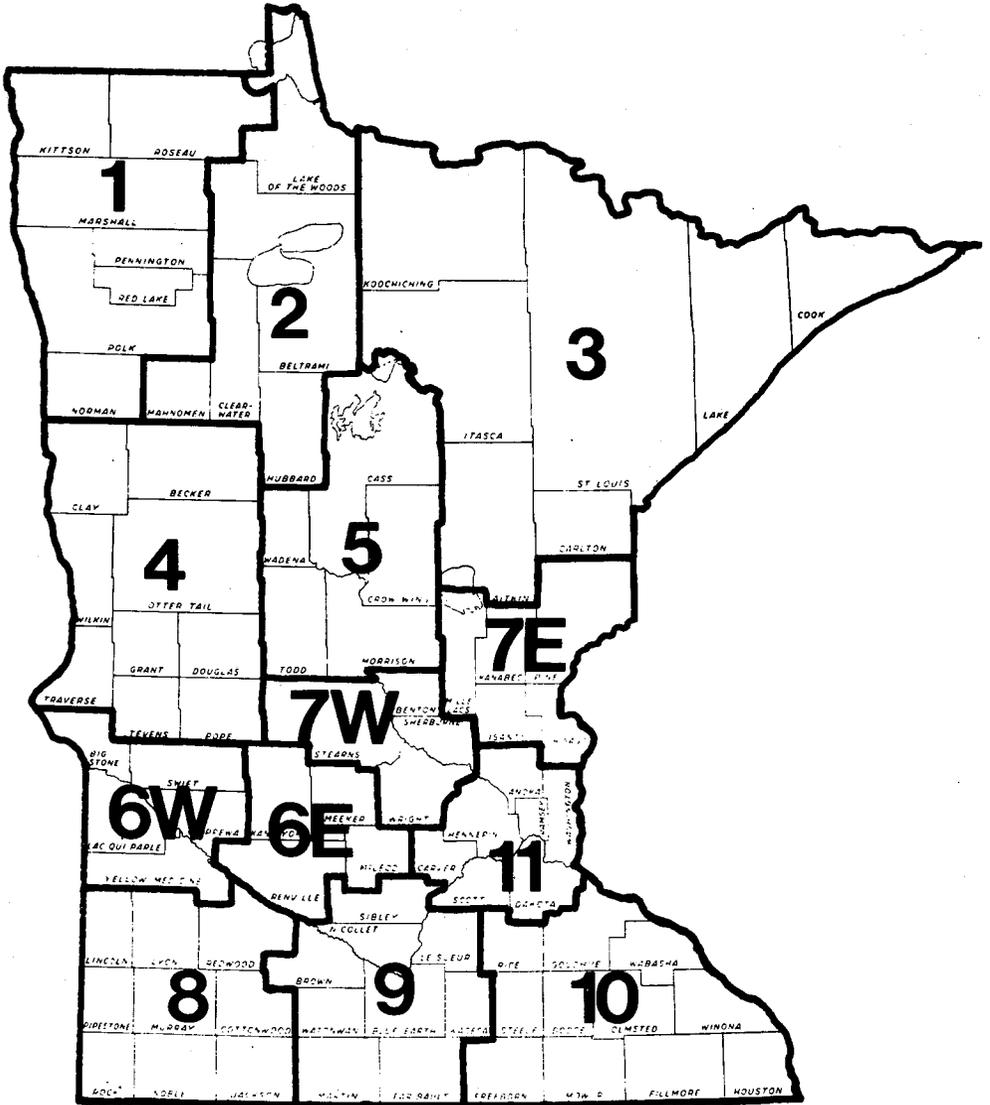
When compared to the increase in the consumer price index (CPI) between January-June of 1980 and 1981 of 10.5 percent, the increase in adjusted sales price statewide was approximately even with the rate of inflation as measured by the CPI. This means that in real terms, when the effects of inflation are removed, average land prices in Minnesota showed little change in 1981. This can be compared with 1980, which was the first year since 1971 that adjusted sales prices failed to increase as fast as the CPI. The rates of increase in adjusted sales price varied among districts, and as was true of the estimated values, the cash grain areas of western Minnesota did better than the rest of the state. The Northwest, West Central, and Southwest districts all had increases greater than that of the CPI; that is, land prices in these areas increased in real terms in 1981 (Table 4). In contrast, the Southeast and Northeast, where livestock enterprises are more prominent and non-farm land uses exert more influence, showed rates of increase that for the second consecutive year failed to keep pace with inflation. The one sharp departure from the 1980 pattern was in the East-Central district, which after adjustment showed a 19 percent increase after no change at all in 1980.

Since 1967 the State of Minnesota has recognized 13 economic development regions--groups of counties sharing similar characteristics so identified in order to simplify government coordination and planning at various levels. These regions afford a more detailed look at the Minnesota farmland market in 1981. Figure 2 depicts the economic development regions, and Table 5 shows average reported sales prices by region from 1972 to 1981.

Table 5: Average Reported Sales Price Per Acre of Farm Land, By Economic Development Regions, Minnesota, 1972-1981.

Economic Development Region	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981
-dollars per acre-										
1	105	114	199	344	330	367	433	560	732	888
2	83	108	141	206	250	277	321	520	452	645
3	81	126	148	157	162	179	280	310	271	386
4	170	192	317	446	542	558	853	828	868	973
5	127	164	197	259	235	297	478	483	506	695
6W	238	233	341	537	696	746	906	960	1051	1303
6E	361	374	569	691	923	1027	1171	1528	1735	1949
7W	290	291	430	472	596	778	927	1112	1056	1300
7E	216	203	254	316	455	473	575	768	741	790
8	323	354	534	710	906	1058	1199	1574	1674	1646
9	461	534	829	1115	1464	1835	1682	2111	2320	2865
10	368	411	565	753	915	1197	1373	1645	1864	1941
11	586	698	882	1035	1150	1437	1396	1799	1778	1830
Minnesota	293	298	450	607	735	859	980	1140	1318	1367

Fig. 2 Minnesota Economic Development Regions



Regions 1, 4, 6W, 8 and 9 make up the major cash-grain farming areas of the state. While prices in these regions generally were up, the rates of increase varied substantially among areas (Table 6). Region 1, which contains the Red River Valley, was up 24 percent in average price. Since 1977 the average price paid for farmland in that region has increased 142 percent, from \$367 to \$888 per acre. Similarly, Region 9, which contains the highest-valued land in the state, also posted a 24 percent increase, to an average of \$2865 per acre. Region 6W, around the upper Minnesota River Valley, also had a 24 percent increase, after much smaller gains the past two years. A much smaller increase was reported just to the north in Region 4, where land prices have increased 14 percent over the past three years after a 53 percent jump in 1978. In the southwest corner of the state, Region 8 had an absolute decline of 2 percent in prices paid in 1981. This decline is discussed further in Part III of this report.

Data at the regional level reveal two distinct trends in the eastern half of the state in 1981. Regions 2, 3, 5 and 7W, in northeast and central Minnesota, all recorded sharp increases after declines or small increases in 1980 (Table 6). Regions 2 and 3 posted increases of 43 percent and 42 percent, respectively, after both declining 13 percent in 1980. These two regions are heavily influenced by recreational and residential uses of rural land. To the south, the land market in Region 5 faces similar influences, but in its southern portion and in Region 7W dairying is very important. Land prices in these areas were up by 37 percent in Region 5 and 23 percent in Region 7W.

Table 6: Annual Percentage Changes in Sales Price Per Acre, By Economic Development Regions, Minnesota, and the CPI and GNP Implicit Price Deflator, 1972-81.

Economic Development Region	% CHANGE IN SALES PRICE								
	1972-73	1973-74	1974-75	1975-76	1976-77	1977-78	1978-79	1979-80	1980-81
1	9	75	73	- 4	11	18	29	31	21
2	30	31	46	21	11	16	62	-13	43
3	56	17	6	3	10	56	11	-13	42
4	13	65	41	22	3	53	- 3	5	12
5	29	20	31	- 9	26	61	1	5	37
6W	- 2	46	57	30	7	21	6	9	24
6E	4	52	21	34	11	14	30	14	12
7W	0	48	10	26	31	19	20	- 5	23
7E	- 6	25	24	44	4	22	34	- 4	7
8	10	51	33	28	17	13	31	6	- 2
9	16	55	35	31	25	- 8	26	10	24
10	12	37	33	22	31	15	20	13	4
11	19	26	17	11	25	- 3	29	- 1	3
Minnesota	2	51	35	21	17	14	16	16	4
CPI	4.8	10.2	10.4	6.2	6.4	6.8	10.3	14.3	10.5
GNP Implicit Price Deflator	4.2	9.4	10.9	5.6	5.5	6.7	8.8	9.1	8.6

The southeastern regions, including the Twin Cities metropolitan area (7E, 10 and 11), have similar recreational and urban-oriented influences on their land markets and a predominance of dairy and other livestock-oriented agriculture. Nevertheless, the performance of the market there in 1981 was quite different from that in the northeast. Average land prices in all three regions failed to keep pace with the rate of inflation; this is the second straight year that the rate of increase has fallen below that of the CPI. In Region 11, which contains the state's major urban area, land prices in 1981 averaged only 2 percent higher than those of two years before (\$1830 vs. \$1799 per acre).

One possible explanation for the divergence in land market trends experienced in eastern Minnesota in 1981 is suggested by observing that those regions experiencing the greatest surge in land values (Regions 2 and 3) are the two with the lowest average sales price in the state, while those experiencing small increases are among the most expensive. This may reflect a backlog of demand for rural residential and recreational properties after the general slowdown across eastern Minnesota in 1980, and that these buyers are becoming less willing to pay "agricultural" prices for land they intend to use less intensively. The 23 percent increase in dairy-oriented Region 7W is evidence that dairy farm purchasers may also be showing increased resistance to paying the current land prices in southeastern Minnesota, and are instead choosing to buy lower-priced farms in central Minnesota. Thus the slow market in southeastern Minnesota and the more active one in central Minnesota could both reflect aspects of the same phenomenon: as land prices increase, at least some classes of agricultural buyers begin to look elsewhere to purchase farmland.

Activity in the Land Market

The U.S. Department of Agriculture has estimated that the overall rate of farm transfers in Minnesota in 1981 was 26.5 per 1000 farms, up from 1980's record low of 23.5 (Table 7). Voluntary sales, however, declined 13 percent, to a rate of 15.9 per 1000 farms. This is the lowest rate of voluntary transfers in over 45 years. Forced sales, on the other hand, including foreclosures and tax delinquencies, went up significantly in 1981, from .5 to 2.9 per 1000 farms.

Statewide, the number of reported sales in Minnesota increased 13 percent from 1980, and the total acreage sold jumped from 184,476 to 214,247 acres in 1981, an increase of 16 percent (Table 8). Total acreage sold increased in every region in 1981, with the greatest proportional increases coming in the Northeast (up 153 percent from 1980) and West Central (up 52 percent) districts. This occurred despite the fact that in the Northeast the total number of reported transactions declined from the 1980 level.

Table 7: Estimated Number of Farm Title Transfers Per Thousand Farms, by Methods of Transfer, Year Ending February 1, Minnesota, 1966-1981.

Years	Voluntary Sales	Forced Sales (Foreclosures, Tax)	Inheritance, Gifts and all other Transfers	Total All Classes
1966	35.5	2.1	14.9	52.5
1967	37.5	1.4	14.2	53.1
1968	38.1	2.4	9.8	50.3
1969	33.5	2.0	11.8	47.3
1970	31.8	2.2	9.6	43.6
1971	36.1	2.2	10.4	48.7
1972	34.7	1.6	9.6	45.9
1973	42.3	2.4	11.9	56.6
1974	47.7	1.1	11.1	59.9
1975	37.4	0.3	10.0	47.6
1976	29.3	0.6	9.5	39.5
1977	31.6	0.3	9.7	41.6
1978	21.7	2.5	6.0	30.2
1979	20.3	1.2	10.6	32.1
1980	18.2	0.5	4.8	23.5
1981	15.9	2.9	7.7	26.5

Source: "Farm Real Estate Market Developments", CD-86, Economic Research Service, USDA, August, 1981.

The average size of tracts sold increased slightly in 1981 to 168 acres, reflecting the increased share of land market activity in the Northeast and West Central districts, where tract sizes tend to be above the state average. Average tract size declined in the Southwest, however, which has experienced a relatively stable number of acres sold since 1979 but an 18 percent increase in the number of purchases. This again reflects the influence of expansion buyers, who place more value on smaller land parcels than a first-time farm operator would. This is because expansion buyers have typically already achieved or even exceeded the minimum farm size necessary to realize most economies of size. Thus they find smaller land parcels more attractive than a sole-tract operator would, whose interest is in acquiring a parcel of sufficient size to be economically viable on its own. Expansion buyers consequently are willing and able to outbid other buyers for smaller tracts of farmland.

Table 8: Number of Reported Sales, Acreage of Land Sold and Average Acres Per Sale, by District, Minnesota, January-July 1, 1979-1981.

District	No. of Sales*			Acres Sold			Acres/Sale		
	1979	1980	1981	1979	1980	1981	1979	1980	1981
Southeast	310	333	336	49,326	46,894	47,236	159	141	141
Southwest	285	300	337	43,532	43,867	44,975	153	146	133
West Central	200	165	232	42,393	29,789	45,439	212	181	196
East Central	136	176	207	23,537	27,089	27,463	173	154	133
Northwest	140	116	131	41,339	31,929	36,679	295	275	280
Northeast	48	37	35	10,538	4,908	12,456	220	133	356
Minnesota	1,119	1,127	1,278	210,665	184,476	214,247	188	164	168

* These sales should not be interpreted as a record of total farm land transactions for the years indicated. The majority of farm land sales occur in the first half of the calendar year, which explains the choice of the Jan. 1-July 1 reporting period. Some sales do occur in the latter half of the year, but they are not included in the data reported above.

Real Interest Rates and the Market for Farmland

In 1981 over 80 percent of Minnesota farmland transactions were financed by methods other than cash purchase, suggesting the central role that interest rates play in influencing activity in the land market. More important that the specified or "nominal" interest rate, however, is the "real" rate of interest--the nominal rate minus the inflation rate. This more accurately reflects the true cost of money to the borrower. The black line in Graph 1 shows the interest rate on Federal Land Bank farm mortgages, deflated by the Consumer Price Index (CPI). This approximates the real interest rate on farm mortgages over the past 20 years. The dashed line indicates the rate of change in estimated farmland values in Minnesota over the same period, again deflated by subtracting the change in the CPI. The difference between the two lines thus suggests the real net increase in wealth being captured by purchasers of farmland operating with borrowed funds. It is the real rate of appreciation of the asset minus the real rate of interest charged for the capital to purchase it.

Graph 1 helps to explain some of the workings of the Minnesota farmland market over the past decade. Up until 1973, there was no consistent pattern of land values appreciating more or less than the interest rate. In the mid-1970's, however, the gap between real land value appreciation and real interest rates increased dramatically. This was the result of two factors: First, land values began to increase rapidly, a fact that has been amply described in this series of reports. Secondly, lenders

tended to underestimate the future pace of inflation and thus charged interest rates that failed even to recoup the original purchasing power of the money they loaned out. This set of circumstances allowed participants in the land market to increase their wealth by buying land with borrowed money in anticipation of it appreciating in value, and then borrowing against the increase in value to purchase still more land. To be successful, this strategy requires that land values increase at a rate higher than the interest rate, and that lenders be willing to restructure or refinance the debt. Problems could arise if interest costs begin to exceed the appreciation in land values, making it difficult to generate enough cash (either through earnings or borrowing) to service the accumulated debt.

The data summarized in the graph indicate that since 1979 precisely this situation has begun to occur. The real rate of land value appreciation has fallen from its peak in the mid-1970's, while real interest rates have climbed to the highest levels since the 1930's. This combination of a rapidly increasing interest burden and uncertain prospects for future land value increases suggests that the strategy of wealth accumulation by debt-financed acreage expansion has become a less attractive option than it was in the mid-1970's.

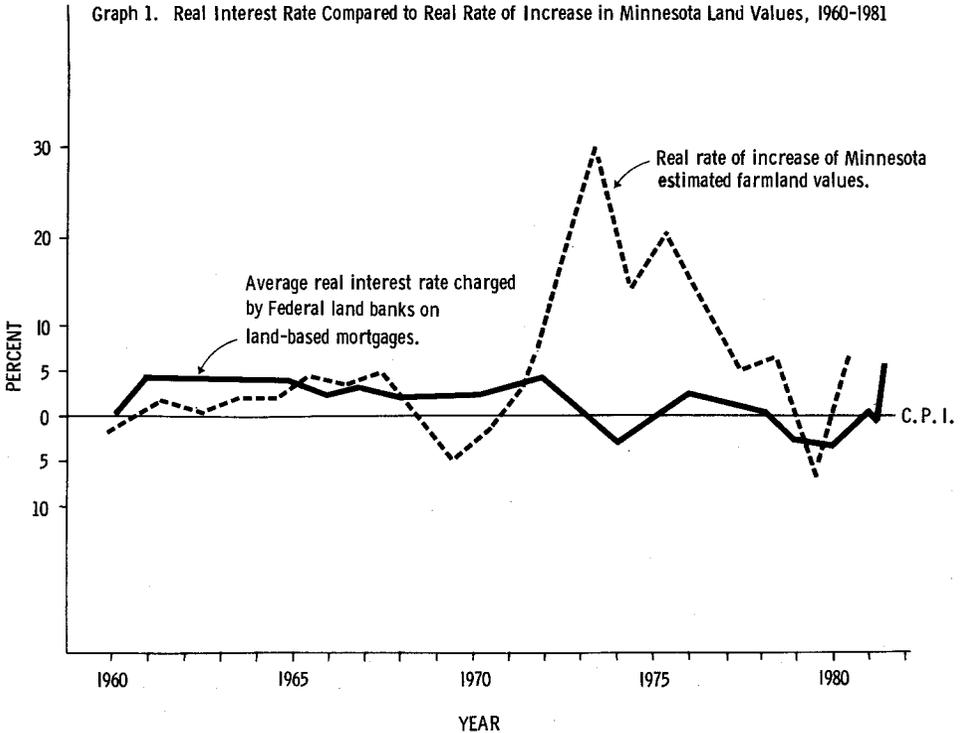


Table 9: Real Rate of Interest on Federal Land Bank Loans Compared to Real Rate of Increase of Minnesota Estimated Land Values, 1960-1981.

Year	Rate of Interest, Federal Land Bank Land Based Mortgages (deflated by Consumer Price Index) ^{a/}	Rate of Increase, From Previous Year, Minnesota Estimated Land Value Index (deflated by Consumer Price Index)
-percent-		
1960	-	- 2.8
1961	4.71	- 0.6
1962	3.71	1.4
1963	4.04	0.1
1964	4.00	1.6
1965	3.34	1.6
1966	2.54	4.4
1967	3.02	3.2
1968	2.32	4.9
1969	2.46	0.6
1970	3.31	- 4.3
1971	2.72	- 1.5
1972	3.30	3.6
1973	1.75	15.4
1974	- .73	31.7
1975	- .51	13.7
1976	3.43	20.8
1977	2.54	12.6
1978	1.00	5.2
1979	.56	6.7
1980	1.37	- 6.6
1981	1.93	6.5

^{a/} Source: Federal Reserve Bank of Minneapolis, Data Series on Real Rates of Interest, Print-Out of May 19, 1982.

B. Analysis of Reported Sales

Reason for Sale

Death and retirement have traditionally been the reasons for the majority of farmland sales in Minnesota, and they were again in 1981, accounting for 53 percent of all sales (Table 10). The decision to leave farming for another job was cited as the reason for 16 percent of the sales statewide, up from 12 percent in 1980. This reverses an eight-year decline in the proportion of sellers who are quitting farming, but is still below the levels of earlier years. Exit from farming was highest in the livestock-dependent East-Central district, accounting for nearly a quarter of the sales in 1981. The rate was lowest in the Southwest.

"Other" was the second most frequently given reason for sale in 1981. Ill health, financial difficulty and sales for a profit by both farmers and investors are frequently mentioned under this heading.

Table 10: Reason For Selling Land, By District, Minnesota, 1981.

Reason For Sales	South-east	South-west	West Central	East Central	North-west	North-east	Minn.
	----- percent -----						
Death	17	25	13	14	8	3	17
Retirement	34	36	34	40	41	39	36
Left Farming	18	10	17	23	17	13	16
Moved, Still Farming	8	7	9	8	12	26	9
Other	22	22	27	15	22	19	22

Improved vs. Unimproved Land

The statewide average price of improved land (meaning with buildings) in 1981 was \$1137 per acre, while unimproved land averaged \$1417 per acre (Table 11). This reflects the dominance of expansion buyers, who place a premium on cropland free of buildings. The overall proportion of sales of improved land fell to 53 percent of total transfers, a new low since data on this subject were first collected in 1953. This is consistent with the decline of sole-tract operator buyers' share of the state land market. In cash grain areas that experienced especially heavy expansion buying, unimproved land accounted for a higher percentage of sales. It should be noted that despite the fact that at the statewide level unimproved land averaged more valuable than improved land, land with buildings sold for more than land without in every district except the West-Central. This results from the concentration of the bulk of unimproved land sales in areas of higher land values, where expansion buyers predominate.

Table 11: Proportion of Sales and Average Sales Price Per Acre of Improved and Unimproved Farm Land, by District, Minnesota, 1980 and 1981.

District	Improved Land				Unimproved Land				Price of Unimproved Land as a Percentage of Price of Improved Land	
	1980		1981		1980		1981		1980	1981
	%	\$	%	\$	%	\$	%	\$		
Southeast	61	1874	57	1954	39	1734	43	1959	93	100
Southwest	52	1895	44	2082	48	1823	56	1929	96	93
West Central	45	1057	52	1164	55	1144	48	1182	108	102
East Central	71	611	69	711	29	566	31	568	93	73
Northwest	44	712	36	964	56	818	64	865	115	90
Northeast	73	382	66	501	27	418	34	368	109	73
Minnesota	56	1327	53	1337	44	1302	47	1417	98	106

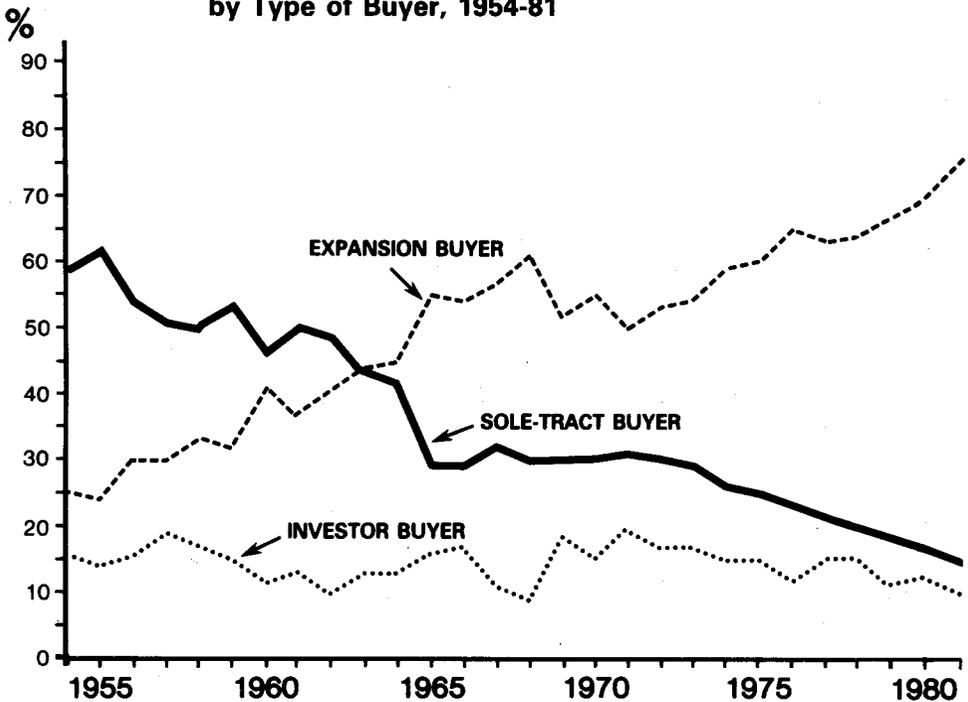
Type of Buyer

The farmland market has traditionally fulfilled several functions. One of these is to transfer farms between generations; from parents to children, from retiring to beginning farmers. The other role has been to change the size and structure of farms. Through the mechanism of the land market, farm units can be parcelized into smaller independent tracts, or they can be consolidated into larger units, making one larger farm where several smaller ones existed before. This survey divides farmland buyers into three classes, each of whose role in the land market tends to promote one or both of these functions. Sole-tract operators are farmers buying intact farms to be their only farm acreage; they exercise the function of farm transfer without contributing to the parcelization or consolidation of farmland. Agricultural investors are those whose land purchase is not being used to enlarge a farm already owned, and who will rent out or otherwise manage the land for farming purposes. If they buy an intact farm they are completing a transfer, and if they buy a tract from an existing farm unit they are contributing to parcelization. The third type of buyer, those operating farmers or investors whose purchases serve to enlarge their existing farm units, contribute solely to the consolidation process.

The rate of participation of each type of buyer in the Minnesota farmland market can help indicate the degree to which the state land market is fulfilling its various functions, and how these roles have shifted over time. This is illustrated by Graph 2. In the mid-1950's, sole-tract operators accounted for nearly 60 percent of all farmland purchases, indicating that at that time the market was primarily fulfilling a transfer function. The consolidation function, as reflected in the

share of purchases by expansion buyers, was relatively less important, amounting to less than 30 percent of all land transfers. Over the years these functions have gradually been reversed in importance until by 1980 expansion buyers accounted for nearly 70 percent of all purchases and sole-tract operators figured in less than 20 percent of farmland transfers. Over the past 35 years the functional role of the state farmland market has shifted dramatically from that of facilitating the transfer of farm units to that of effecting the consolidation of farmland into fewer and larger farm units. Investor buyers have held a relatively constant share of the state land market over this time, ranging between 10 and 20 percent of all transfers each year.

Graph 2 MINNESOTA: Percentage of Farmland Sales by Type of Buyer, 1954-81



These market trends continued in 1981. Expansion buyers accounted for 72 percent of all tracts purchased, a new all-time high. Sole-tract operators figured in 17 percent of all transfers, a new all-time low. Investors were responsible for the remaining 11 percent of purchases, down slightly from the 1980 level of 13 percent. Expansion buyers figure even more prominently in the higher-valued land areas such as the Southwest, where they were responsible for 85 percent of the purchases (Table 11). Sole-tract operators, on the other hand, have their biggest share of the market in the districts where farmland values are usually lowest. In 1981 they accounted for 45 percent of the purchases in the Northeast and 42 percent in the East Central.

Expansion buyers continued to pay much higher prices than operators and investors in 1981. They paid a statewide average of \$1495 per acre, 32 percent more than the price paid by investors (\$1135), and 30 percent more than that paid on average by sole-tract operator buyers (\$1149). Compared to last year, however, expansion buyers paid slightly less per acre in 1981 than they did in 1980 (\$1514), while sole-tract operators paid 20 percent more and investors increased their bids by 4 percent. Both sole-tract operating and expansion buyers paid their highest average prices in the Southwest in 1981, while investors paid the most in the Southeast.

Table 12: Proportion of Tracts Purchased and Average Sales Price Per Acre by Type of Buyer, by District, Minnesota, 1980 and 1981.

District	Operating Farmer				Expansion Buyer				Investor Buyer (AG)			
	1980		1981		1980		1981		1980		1981	
	%	\$	%	\$	%	\$	%	\$	%	\$	%	\$
Southeast	17	1566	18	1748	70	1982	70	2051	13	1611	12	1751
Southwest	5	2128	7	1924	81	1935	85	2062	14	1473	8	1547
West Central	18	926	11	1200	75	1170	80	1199	7	1046	9	1053
East Central	41	576	42	792	42	700	42	634	18	456	16	864
Northwest	17	639	12	968	76	846	80	922	8	634	7	688
Northeast	42	424	45	421	24	408	33	561	33	239	21	445
Minnesota	18	957	17	1149	69	1514	72	1495	13	1093	11	1135

Land and Building Quality

Land described by survey respondents as "good" accounted for 40 percent of land sales statewide and sold for an average price of \$1716 per acre, a 3 percent increase over 1980 (Table 13). Average land made up 47 percent of the total and had an average price of \$1261 per acre, an 8 percent increase. "Poor" land filled out the remaining 13 percent and averaged \$850 per acre, a 1 percent decline from 1980. As in past years, expansion buyers paid the highest prices for good - and average - rated land, but operating farmers surpassed expansion buyers in prices offered for poor land. This is because expansion and investor buyers paid less for poor land in 1981 than they did in 1980, while operators paid 40 percent more. Investors tend to purchase a smaller proportion of good land and a higher proportion of poor land than other buyers, and to pay the lowest average prices for poor land. This suggests that investors are the "bargain hunters" of the Minnesota farmland market.

The relative attractiveness of improved and unimproved land to different classes of buyers, discussed earlier in the report, is reflected

in the data comparing building quality and type of buyer (Table 14). Seventy-one percent of the purchases by operator farmers included good buildings in 1981, while only 25 percent of expansion purchases included buildings of that quality. Evidence of expansion buyers' reluctance to pay for high quality buildings can also be found in the fact that investor buyers outbid them by an average of 35 percent for land with buildings rated as good by survey reporters. For land with no buildings, however, expansion buyers outbid investors by 24 percent in 1981. As with poor land, investors devoted a greater share of their purchases to poor buildings than did other classes of buyers.

Table 13: Proportion of Purchases and Price Paid Per Acre by Type of Buyer for Land of Various Quality, Minnesota 1980 and 1981.

Type of Buyer	----- Land Quality -----											
	Good				Average				Poor			
	1980		1981		1980		1981		1980		1981	
	%	\$	%	\$	%	\$	%	\$	%	\$	%	\$
Operating Farmer	34	1229	36	1446	56	811	53	956	11	707	11	987
Expansion Buyer	41	1847	43	1789	47	1365	45	1390	12	895	12	874
Agricultural Investor	20	1291	27	1727	57	1086	53	1143	23	865	20	620
All	37	1658	40	1716	50	1173	47	1261	13	858	13	849

Table 14: Proportion of Purchases and Price Paid Per Acre by Type of Buyer for Land with Various Quality of Buildings, Minnesota, 1981.

Type of Buyer	Building Quality							
	Good		Average		Poor		None	
	%	\$	%	\$	%	\$	%	\$
Operating Farmer	39	1224	32	1162	16	782	12	1171
Expansion Buyer	10	1643	15	1697	17	1282	58	1481
Agricultural Investor	10	2227	22	1224	26	851	42	1194
All	15	1471	19	1484	17	1159	48	1439

Method of Finance

Land sales financed by contracts for deed made up 61 percent of the total in 1981, equalling last year's record high (Table 15). Mortgage sales, on the other hand, rebounded from last year's all-time low to a 1981 level of 23 percent. Cash sales accounted for the remaining 16 percent of transfers. Over the years there has been a general decline in the proportion of sales financed by mortgages and a corresponding increase in contract for deed sales. There were no sharp differences among districts in the proportionate use of different methods of finance in 1981, although such differences have been more prominent in the past.

The relative values of lands financed by the different methods shifted in 1981. Mortgage sales averaged the highest price per acre in 1980 (\$1470) but were the lowest in 1981 (\$1295), a decline of 12 percent (Table 16). This may reflect the impact of continued high interest rates, as sellers are forced to compensate mortgage buyers for the added burden

Table 15: Proportion of Farm Sales By Method of Financing, By District, Minnesota, 1965, 1970, 1975, 1979-81.

Method of Financing	South-east	South-west	West Central	East Central	North-west	North-east	MN
----- percent -----							
<u>Cash</u>							
1965	17	15	22	21	29	29	19
1970	15	13	14	19	20	31	16
1975	12	16	13	15	18	30	15
1979	12	19	17	13	18	15	16
1980	14	22	11	16	31	33	18
1981	17	20	17	9	16	10	16
<u>Mortgage</u>							
1965	33	39	41	30	27	3	35
1970	19	23	28	28	40	26	25
1975	28	27	24	36	30	25	28
1979	20	24	31	20	23	23	23
1980	21	24	25	12	19	12	20
1981	20	22	19	28	27	32	23
<u>Contract For Deed</u>							
1965	50	45	37	49	44	68	46
1970	66	64	58	53	40	43	59
1975	60	58	63	49	52	45	57
1979	68	57	53	67	59	62	61
1980	65	54	63	72	50	55	61
1981	63	58	63	63	57	58	61

of finance charges, as well as a significant increase in mortgage sales activity in the Northeast and East-Central districts, where land values are below the statewide average. Cash buyers paid an average of \$1613 per acre, an increase of 20 percent over 1980 (\$1346), while contract for deed sales went for an average of \$1318 per acre, up just 2 percent from last year (\$1290). Cash buyers paid the highest average prices for all qualities of land in 1981, while contract for deed purchasers paid the lowest prices for good and poor land and mortgage prices were lowest for land rated as average in quality. Although mortgage prices declined for all qualities of land, the greatest decrease was for poor land - a fall of 21 percent from 1980. Perhaps buyers are becoming especially resistant to paying high finance charges for property of less certain worth.

At the district level, cash buyers paid the highest prices in the three western districts and the Southeast, where expansion buying plays a predominant role in the land market (Table 17). The implication is that much of the buoyancy of land prices in western Minnesota in 1981 was fueled especially by expansion buyers prosperous enough to generate substantial cash and optimistic enough about future prospects to invest it in increasing their land holdings. Cash prices are the lowest of the three finance methods in the Northeast, a pattern consistent with the generally less prosperous condition of agriculture there and the much greater influence of first-time purchasers on the land market.

Table 16: Price Paid Per Acre and Proportion of Sales, By Method of Financing and Quality of Land, Minnesota, 1980 and 1981.

Land Quality Class	----- Method of Financing -----							
	Cash		Mortgage		Contract For Deed		All Sales	
	1980	1981	1980	1981	1980	1981	1980	1981
Good								
\$ per Acre	1485	1909	1933	1712	1677	1660	1648	1723
% of Sales	41	39	39	39	35	38	36	39
Average								
\$ per Acre	1283	1524	1226	1181	1137	1189	1176	1241
% of Sales	48	49	48	45	51	48	50	47
Poor								
\$ per Acre	793	1054	976	804	839	781	863	813
% of Sales	11	12	13	16	15	14	14	14
All Grades								
\$ per Acre	1346	1613	1470	1295	1290	1318	1318	1367
% of Sales	100	100	100	100	100	100	100	100

Table 17: Average Sales Price Per Acre of Farm Land By Method of Financing By District, Minnesota, 1979-1981.

Method of Financing	South-east	South-west	West Central	East Central	North-west	North-east	MN
----- dollars per acre -----							
<u>Cash</u>							
1979	1614	1737	894	589	739	284	1165
1980	1774	1945	1109	694	877	319	1346
1981	2091	2058	1251	758	1084	397	1613
<u>Mortgage</u>							
1979	1629	1623	896	740	671	381	1146
1980	1798	2066	914	610	720	443	1470
1981	1900	2021	1115	494	1039	514	1295
<u>Contract For Deed</u>							
1979	1675	1670	990	607	543	439	1125
1980	1883	1746	1144	594	717	415	1290
1981	1947	1174	1174	843	851	478	1318

Distance of Buyer from Tract Purchased

Local buyers tend to dominate the Minnesota rural real estate market. In 1981, 70 percent of buyers statewide lived within 10 miles of the tract purchased (Table 18). This percentage was even higher in the cash grain districts where expansion buyers predominate, as in the Southwest, where 82 percent of the buyers lived within 10 miles and the median distance was only 3 miles. In contrast, in the Northeast and East-Central districts, where recreational and "hobby farm" uses are more common, less than 40 percent of purchasers lived within 10 miles of the tract, while 23 percent of the buyers in the Northeast resided 300 miles or more from the land they purchased. Overall, however, only 4 percent of all buyers across the state lived over 300 miles away, and the proportion was even lower in the highest-valued land of southern Minnesota. This suggests that the tremendous increases in land prices in recent years have been in the main paid by Minnesotans themselves, and that "foreign buyers" do not exert a significant influence on the state land market.

Table 18: Classification of Farm Land Sales by Distance of Buyer's Residence from Tract, by District, Minnesota, 1979, 1980 and 1981.

Distance of Buyer's Residence from Tract Purchased	South-east	South-west	West Central	East Central	North-west	North-east	MN
	-percent-						
<u>Less than 2 Miles</u>							
1979	22	29	16	18	14	14	21
1980	26	27	22	18	19	21	23
1981	24	27	17	13	15	13	21
<u>2-4 Miles</u>							
1979	30	36	35	21	26	7	30
1980	29	35	26	13	35	3	27
1981	31	37	29	18	27	13	30
<u>5-9 Miles</u>							
1979	18	21	14	12	20	19	17
1980	22	20	22	14	16	0	19
1981	20	18	24	8	26	10	19
<u>10-49 Miles</u>							
1979	22	10	21	29	22	33	20
1980	16	10	21	23	17	55	17
1981	18	12	16	25	17	10	17
<u>50-299 Miles</u>							
1979	6	3	12	16	14	14	9
1980	6	8	8	26	5	7	10
1981	6	4	14	26	8	32	10
<u>300 Miles and Over</u>							
1979	2	2	2	4	4	14	3
1980	1	1	1	5	7	14	3
1981	1	3	1	9	8	23	4
<u>Median Distance in Miles</u>							
1979	4	3	4	8	5	13	4
1980	4	3	5	10	3	15	4
1981	4	3	5	15	5	55	4

PART II

The Farmland Market in the Red River Valley

Between 1977 and 1981, farmland prices in the Northwest district increased faster than the statewide average. In order to examine the land market in northwestern Minnesota more closely, the area has been divided into two parts: the Red River Valley and the Non-Valley Comparison Area. The Red River Valley is narrowly defined here as the fertile land of the Red River Valley Lake Plain. The Non-Valley Comparison Area, while lying within the drainage basin of the Red River, is characterized by less fertile soil and consequently lower land values. The boundaries of the Valley and comparison areas are illustrated in Figure 3.

Table 19 makes it plain that the strength of the farmland market in the northwest district in recent years has been due more to the performance of the comparison area than that of the Valley itself. From 1973 to 1976, land prices in the Red River Valley increased at a faster rate than those in the comparison area to the east. After 1976, however, this trend reversed itself, and from 1977 to 1981 the average sales price in the comparison area increased at a faster rate than prices in the Valley proper. In 1981, the average reported price in the comparison area was 24 percent higher than a year before, while in the Red River Valley the average price was up just 7 percent.

Despite the slower rate of increase in recent years, land prices in the Red River Valley remain substantially higher than those outside of it. Farmland sold for an average of \$1195 per acre in the Valley in 1981, compared to an average price of \$788 in the comparison area. One result of the recent more rapid increases in land prices outside the Valley, however, has been to narrow the relative gap in land values between the Valley and comparison areas. In 1972, before the beginning of the grain export boom that touched off the inflation of land values, the average price of land in the Non-Valley Comparison Area was 52 percent of that in the Red River Valley (\$78 versus \$151 per acre). By 1981 this relative proportion had increased to 66 percent (\$788 versus \$1195 per acre).

Expansion buyers dominate the land market in the Red River Valley. In 1981 they accounted for 90 percent of all reported transactions there, offering higher prices (\$1276 per acre) than sole-tract operators (\$1126) and almost twice as much as investors (\$699), whose bids for land have shown no discernible increase since 1978 (Tables 20 and 21). Another familiar indicator of the influence of expansion buyers is the proportion of unimproved land sales. Because farmers wishing to expand often already own buildings adequate to service a larger acreage than they currently operate, they are less attracted to improved land. As might be expected, sales of land without buildings represented three-quarters of the transactions in the Valley in 1981. Buyers paid a premium for unimproved land as well, offering nearly 20 percent more for bare land than they did for land with buildings (Table 22).

The land market in the Non-Valley Comparison Area is distinguished by the greater role of sole-tract operators and investors buyers, a phenomenon that seems to be generally associated with relatively lower-valued farmlands. For example, in 1981 these two classes of purchasers

Fig. 3 The Red River Valley and Comparison Area

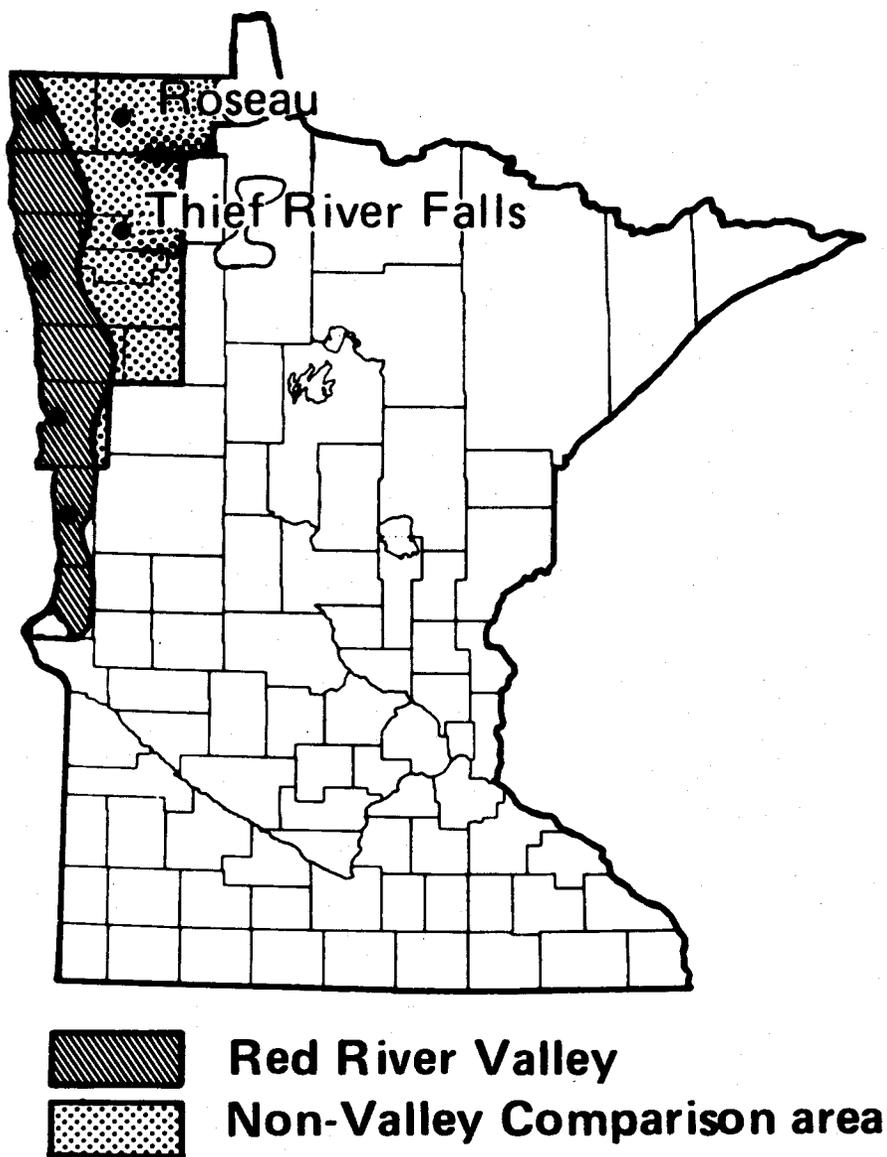


Table 19: Analysis of Reported Sales in the Red River Valley and Non-Valley Areas, Northwest District.

Item	Red River Valley				Non-Valley Area			
	1978	1979	1980	1981	1978	1979	1980	1981
Number of Sales (Jan-June)	65	56	56	55	77	84	64	82
Average Size of Tract (acres)	270	257	204	281	290	321	317	284
Average Sales Price Per Acre (dollars)	849	993	1112	1195	385	461	638	788
Change in Sales Price over Preceding Year (percent)	9	17	12	7	26	20	38	24

Table 20: Proportion of Sales by Type of Buyer, Red River Valley and Non-Valley Comparison Area.

Type of Buyer	Red River Valley				Non-Valley Area			
	1978	1979	1980	1981	1978	1979	1980	1981
-percent-								
Sole-Tract Operator	3	11	2	4	6	14	25	15
Expansion Buyer	95	85	95	90	74	77	65	77
Investor	2	4	3	6	19	9	10	8

Table 21: Average Sales Price Per Acre By Type of Buyer in the Red River Valley and Non-Valley Comparison Areas.

Type of Buyer	Red River Valley				Non-Valley Area			
	1978	1979	1980	1981	1978	1979	1980	1981
	----- dollars -----							
Sole-Tract Operator	770	738	900	1126	440	347	628	814
Expansion Buyer	853	1036	1138	1276	363	557	653	792
Investor	750	688	735	669	422	300	624	703

were involved in 23 percent of all reported transfers in the comparison area, compared to their 10 percent share of the market in the Red River Valley. Sole-tract operators paid more than expansion buyers on average in the comparison area as well, another indication of their relatively greater influence on the market. In 1981 they paid an average of \$814 per acre, a 30 percent increase over the 1980 figure. Expansion buyers, who still dominate the market with 77 percent of the purchases in the comparison area in 1981, paid \$792 per acre. One other feature of the comparison area that differentiates it from the Valley proper is that the price relationship between improved and unimproved land is closer to what would normally be expected. Buyers there have consistently paid higher prices for improved land, including 1981 when land with buildings sold for an average of \$209 per acre more than land without. Buyers outside of the Valley value farm buildings, and they are willing to pay for them.

The Red River Valley and the comparison area also demonstrate marked differences in the predominant methods of financing land purchases (Table 23). In the Valley, nearly a third of the purchases in 1981 were financed with cash, and the year before nearly half had utilized this method. In both 1980 and 1981 cash buyers also paid the highest average prices in the Red River Valley. Contracts for deed were used in 36 percent of the transfers there in 1981, and the prices paid under that method were the lowest of the three types listed. In the comparison area, in contrast, contract for deed financing predominates, figuring in over two-thirds of all transfers there in 1981. Contract for deed buyers also paid the highest prices for land in the comparison area in both 1980 and 1981.

Table 22: Proportion of Sales and Average Sales Price Per Acre of Improved and Unimproved Land in the Red River Valley and Non-Valley Comparison Area.

Area and Year	Percent of Sales		Price Per Acre		Price of Unimproved Land as a Percentage of Price of Improved Land %
	Improved %	Unimproved %	Improved \$	Unimproved \$	
Red River Valley					
1978	31	69	729	901	124
1979	25	75	1025	977	95
1980	29	71	951	1204	127
1981	25	75	1083	1293	119
Non-Valley Comparison Area					
1978	45	55	402	364	91
1979	35	65	524	421	80
1980	52	48	670	584	87
1981	39	61	886	677	76

Table 23: Proportion of Sales and Price Paid Per Acre By Method of Finance, Red River Valley and Non-Valley Comparison Area.

Method of Finance	Red River Valley				Non-Valley Area			
	1980		1981		1980		1981	
	%	\$	%	\$	%	\$	%	\$
Cash	48	1134	31	1373	16	588	10	705
Mortgage	23	1066	33	1231	21	530	22	674
Contract For Deed	29	1119	36	1069	63	669	68	813

Table 24: Proportion of Sales and Price Paid Per Acre By Quality of Land, Red River Valley and Non-Valley Comparison Area.

Land Quality	Red River Valley				Non-Valley Area			
	1980		1981		1980		1981	
	%	\$	%	\$	%	\$	%	\$
Good	54	1308	71	1322	35	681	30	817
Average	41	969	23	990	54	624	51	837
Poor	5	814	6	415	11	366	19	455

The quality of land sold, as survey respondents judged it relative to their locale, also illustrates the differences between the Valley and comparison area (Table 24). Land judged "good" in the Red River Valley made up 71 percent of all reported transfers in 1981, compared to the classification of "good" given to only 30 percent of the tracts sold in the comparison area. "Poor" land figured in only 6 percent of the sales in the Valley, but in 19 percent of the transactions outside of it. The data also indicate that much of the activity in the comparison area was centered on "average" land, where the mean price increased 34 percent from 1980 to 1981, to \$837 per acre. This figure is slightly higher than the average price of "good" land in that area in 1981. This result is most likely due to differences in subjective estimates of land quality among respondents, as well as the influence of building quality on farmland prices.

PART III

The Farmland Market in Southwestern Minnesota

Most of Minnesota's best farmland is in the southwestern quarter of the state, but some of these areas are susceptible to climatic risk, especially drought. This weather variability is reflected in crop yield fluctuations from year to year within counties. On the basis of these data, southwestern Minnesota has been divided into three regions, as shown in Figure 4. The low-risk region, in south central Minnesota, is a block of nine counties that have traditionally had the highest priced farmland in the state. The high risk region of west central Minnesota is a group of nine counties that historically have experienced large annual fluctuations in crop yields due to occasionally severe weather. Between these two is the transitional area, where land is of approximately the same quality as in the high-risk area, but climatic risks are less extreme.

When analyzed by crop-risk areas, the performance of the land market in the southwest is brought into clearer perspective. The phenomenon observed in Economic Development Region 8, where average prices dropped slightly in 1981 while the regions on either side had large increases, seems to be strongly identified with the performance of the transitional area, where the rate of average price increases lagged well behind those of both the low and high-risk regions.

The average price of farmland in the high-risk counties surged ahead by 22 percent in 1981, to \$1159 per acre, the greatest percentage increase of the three crop-risk regions (Table 25). This followed a price decline of 3 percent in 1980. The upsurge in 1981 was chiefly on the strength of expansion purchasers, who increased their share of the market in the high-risk area from 79 percent in 1980 to 88 percent in 1981 (Table 26). In terms of actual numbers of sales reported by respondents, expansion buyers purchased 55 percent more tracts in 1981 than in the year before. Another evidence of the influence of expansion buyers was that on average unimproved land sold for only slightly less than improved land (\$1149 vs. \$1170 per acre), as buyers were more attracted to open cropland than entire farms with buildings. All types of buyers increased their bids for land in the high-risk region in 1981, with investors paying the highest average price (\$1172 per acre), followed closely by expansion buyers (\$1170) and sole-tract operators (\$1165).

Prices in the low-risk region (the south central counties) were also up significantly in 1981, to an average of \$2760 per acre. This represents a 19 percent increase over 1980, and continues a pattern of increases over the past decade. Except for a decline in 1978 and an increase just slightly below that of the CPI in 1980, the average price of farmland in the low-risk region has increased faster than the rate of inflation in seven of the nine years since the grain export boom of the early seventies. Expansion buyers dominate the land market of south central Minnesota more heavily than they do in any other part of the state. In 1981, 93 percent of all transactions there involved purchasers adding to acreages already owned. As in the high-risk region, unimproved land sold for 98 percent of the price paid for land with buildings (\$2725 vs. \$2794 per acre), another indication of the influence of expansion buyers. This most valuable of Minnesota farmland is also apparently remaining in local hands, since 87 percent of all purchasers lived less than 10 miles from the tract

Fig. 4 High-Risk, Low-Risk and Transitional Areas of Southwest Minnesota

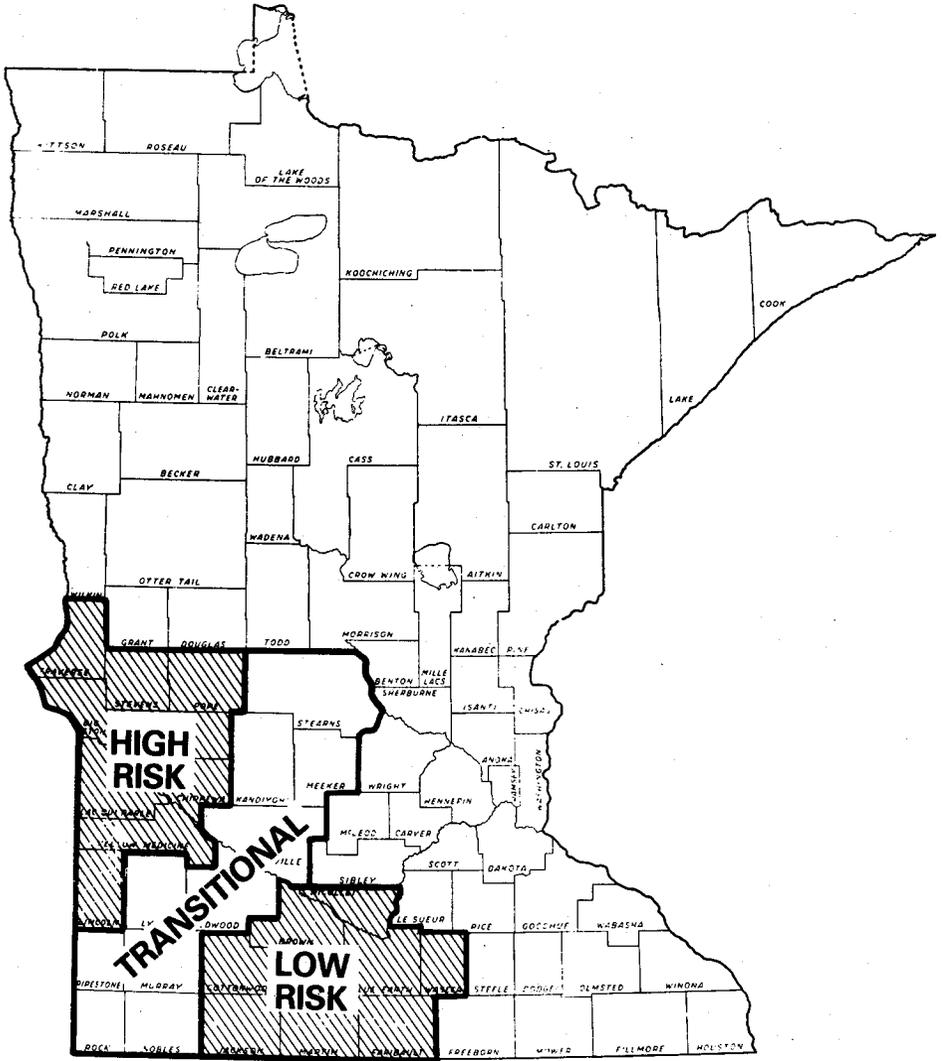


Table 25: Analysis of Reported Farm Sales in the High-Risk, Transitional, and Low-Risk Areas, Minnesota, 1978-1981.

Item	High Risk Area				Transition Area				Low Risk Area			
	1978	1979	1980	1981	1978	1979	1980	1981	1978	1979	1980	1981
Number of Sales (Jan-June)	131	143	120	167	216	192	179	226	123	122	143	153
Average Size Tract (Acres)	188	221	167	191	150	252	152	156	130	127	140	111
Average Sales Price Per Acre (Dollars)	810	981	951	1159	1130	1541	1558	1680	1699	2051	2314	2760
Change in Sales Price Over Preceding Year (Percent)	26	21	- 3	22	10	36	1	8	- 6	21	13	19

Table 26: Proportion of Sales and Average Price Per Acre, By Type of Buyer, in the High Risk, Transitional, and Low Risk Areas, Minnesota, 1978-1981.

Type of Buyer and Year	High Risk Area		Transitional Area		Low Risk Area	
	%	\$	%	\$	%	\$
Operating Farmer						
1978	19	730	21	1130	7	1814
1979	18	807	12	1290	9	1585
1980	12	816	11	1313	6	2181
1981	5	1165	13	1557	3	2763
Expansion Buyer						
1978	71	828	63	1205	84	1725
1979	71	1041	78	1591	89	2124
1980	79	975	74	1634	87	2389
1981	88	1171	76	1752	93	2790
Agricultural Investor						
1978	10	848	16	919	9	1436
1979	11	988	11	1301	2	1499
1980	9	938	16	1453	7	1838
1981	6	1172	10	1405	4	2765

purchased, and only 1 percent resided more than 50 miles away. One notable feature in the low-risk counties in 1981 was that 28 percent of all sales were reported as financed with cash, compared to 19 percent in the transitional and 14 percent in the high-risk regions (Table 27). Cash buyers paid the highest prices in both the high and low-risk regions, offering 28 percent more than mortgage-financed purchasers in the high-risk counties and 12 percent more in the low-risk area. Only in the transitional belt, which experienced a relatively small price increase in 1981, did mortgage buyers pay higher prices than either contract for deed or cash purchasers.

Table 27: Proportion of Sales and Price Paid Per Acre, By Method of Finance, in the High Risk, Transitional and Low Risk Areas, Minnesota, 1978-81.

Method of Financing	High Risk Area		Transitional Area		Low Risk Area	
	%	\$	%	\$	%	\$
Cash						
1978	9	562	10	1074	20	1587
1979	17	941	15	1739	17	2362
1980	14	1075	14	1674	24	2481
1981	14	1335	19	1646	28	2893
Mortgage						
1978	35	892	33	1169	26	1669
1979	33	831	22	1632	28	2011
1980	29	836	16	1550	28	2453
1981	24	1042	19	1842	24	2583
Contract For Deed						
1978	56	796	57	1111	54	1741
1979	50	1085	63	1465	54	1963
1980	57	972	70	1527	48	2169
1981	62	1165	63	1626	47	2680

For the transitional belt of counties running diagonally from the southwest corner into central Minnesota, 1981 marked the second straight year of below average increases in reported sales prices. The price of farmland there averaged \$1680 per acre, up 8 percent from the 1980 level and only 9 percent over the average price paid in 1979. The 1979 price, however, was an increase of 36 percent over 1978, indicating that the land market in the transitional area may still be adjusting to the effects of the large price rise three years ago. While expansion buyers account for the bulk of transactions in the area (76 percent), they are not quite as dominant as in either of the other two regions. In contrast to the low

and high-risk areas, there was a noticeable premium paid for improved land as compared to unimproved land (\$1736 vs. \$1694 per acre). Expansion buyers offered prices averaging only 7 percent above the 1980 level, significantly below the increases recorded by their counterparts in the high-risk (up 20 percent) and low-risk (up 17 percent) regions. Another point indicating the relative slowness of the 1981 farmland market in the transitional region was that investor buyers paid 3 percent less for land there than they did in 1980 (\$1405 vs. \$1453 per acre).

Table 28: Proportion of Sales and Price Paid Per Acre, By Quality of Land in the High-Risk, Transitional, and Low Risk Areas, Minnesota, 1978-1981.

Quality of Land, and Year	High Risk Area		Transitional Area		Low Risk Area	
	%	\$	%	\$	%	\$
Good						
1978	37	1007	36	1337	39	1937
1979	32	1106	44	1667	54	2390
1980	34	1281	35	1937	46	2494
1981	47	1342	36	2034	47	3153
Average						
1978	41	781	47	1117	41	1754
1979	54	1029	42	1421	35	1780
1980	49	912	50	1493	41	2302
1981	37	1112	48	1641	43	2592
Poor						
1978	22	546	17	784	20	1198
1979	15	515	13	1027	11	1433
1980	17	566	16	1041	13	1551
1981	16	620	16	1091	11	1841

Tracts of land are described by survey respondents as "good", "average", or "poor" quality relative to the standards of their local area. For a number of years, land rated as "good" in the high-risk area has brought lower average purchase prices than land rated "poor" in the low-risk area. In 1972, just before the recent rapid escalation of land values began, good quality land in the high-risk region sold for 79 percent of the price of poor quality low-risk land (\$260 vs. \$328 per acre). As farmland prices soared shortly thereafter, the price of good high-risk land increased relative to that of poor low-risk land, reaching a peak relative price of 98 percent in 1972 (\$692 vs. \$704). Since 1975 this ratio has gradually reverted to earlier levels, standing at 75 percent in 1981 (\$1342 vs. \$1781) (Table 28). The historic relationship between relative land values among the two regions seems to have been disrupted by the initial land price inflation of 1973 to 1975, but now seems to have settled back closer to the pre-inflationary ratio.

PART IV

A Contour Map of Minnesota Land Values

Contour maps are generally used to depict the physical characteristics of a land area--elevation and average rainfall are common examples. Such maps may also be used to convey economic information, such as the generalized pattern of land values across the State of Minnesota. Figures 5, 6, and 7 reproduce such land value contour maps for the years 1959, 1969, and 1976, respectively. Figure 8 is a contour map of Minnesota land values based on reports of actual farm sales in 1981, augmented by reference to sales reported in 1979 and 1980. In constructing these maps, reported sales are identified by township in order to approximate the variation in land values within a given county. This is particularly important in areas where land types change dramatically in the space of a few miles, such as along the Mississippi River in southeastern Minnesota and along the Red River in the northwest. These maps are intended to depict the general topography of land values across the state, as reflected by current market prices. Of course, "islands" of higher or lower value may exist within the intervals drawn on the map; to attempt to depict all the variation in land values across the state would require a map so complex that its visual usefulness would be severely reduced.

While the 1981 land value contour map represents a carefully considered evaluation based on all farmland sales reported to this survey, some cautions in regard to its interpretation are in order. The most important point to bear in mind is that the map presented here reflects the land market of the first six months of 1981. As has been noted earlier in this report, there are indications to suggest that farmland prices may have declined somewhat since the data analyzed here were collected. Thus, the 1981 land value contour map may represent the high water mark to date of state land values. Secondly, it should be recognized that the value of any tract of farmland is influenced by a variety of factors, including building quality, drainage, road access, and vegetation type--each of which is unique to a given land parcel and cannot be depicted by a map of this type.

The ultimate determinant of the value of a parcel of land, however, is the amount that buyers stand able and willing to pay for it. While the willingness of buyers to pay for a tract of land is related to its physical characteristics, it is also greatly affected by such intangible factors as the buyers expectations of future crop and livestock prices and judgment as to the future availability of the parcel if it is not purchased now. Based on the recent experience of steadily increasing land values in the face of relatively stable or declining prices for farm products, one might argue that much of the pattern of Minnesota farmland values in 1981 can be explained in terms of the buyer's degree of optimism about the future income potential from land and also the extent to which buyers face competition for land parcels coming onto the market. This phenomenon seems notably to be the case in south central Minnesota, in which a "finger" of lower land values extending through central Faribault and into Blue Earth and Waseca Counties has had no counterpart in previous years' maps, and for which no explanation in terms of physical land quality is readily apparent. Since survey data indicate that the farmland market in this part of the state is dominated by local farmers expanding their holdings, the implication is that farmers in these townships tended to be less "bullish" than their counterparts to the east and west.

Fig. 5 : Contour Map of Minnesota Land Value, 1959
 Based on reported farm land sales, by township and county, 1959-61, as submitted by respondents to the annual survey of the Minnesota Rural Real Estate Market.

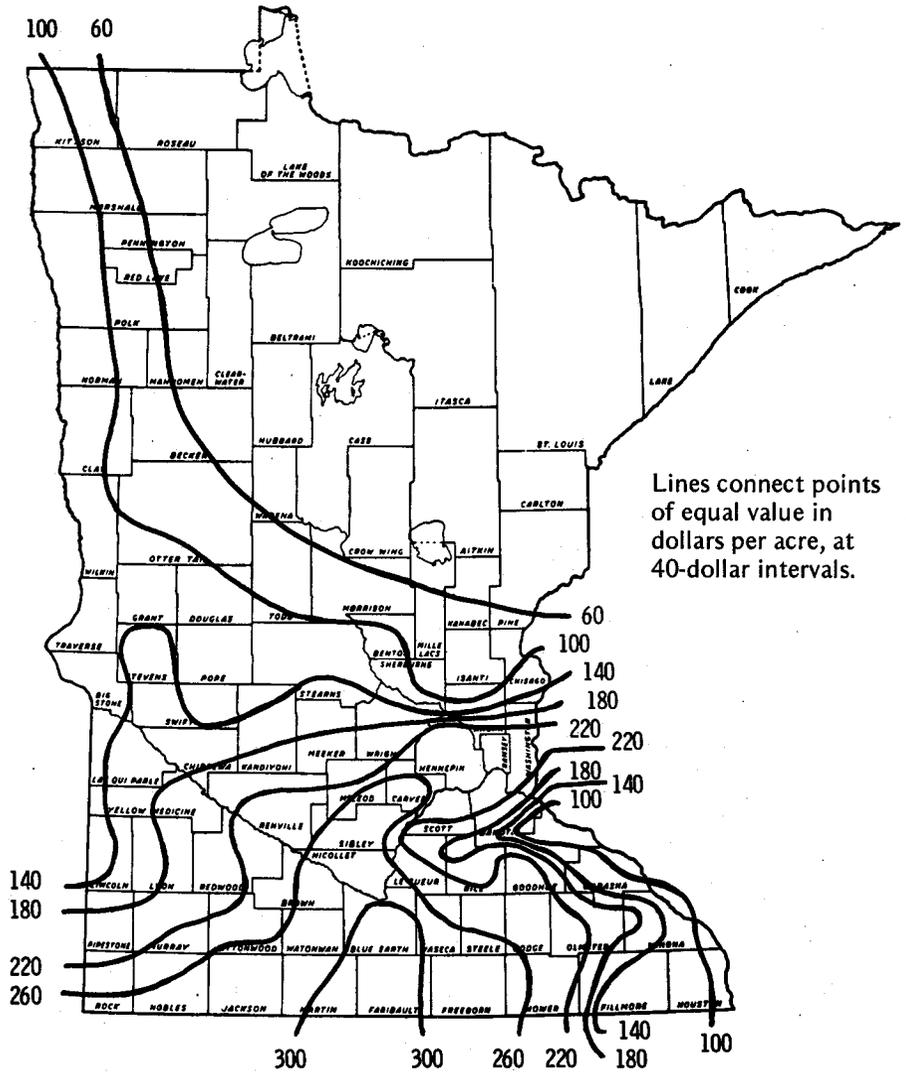
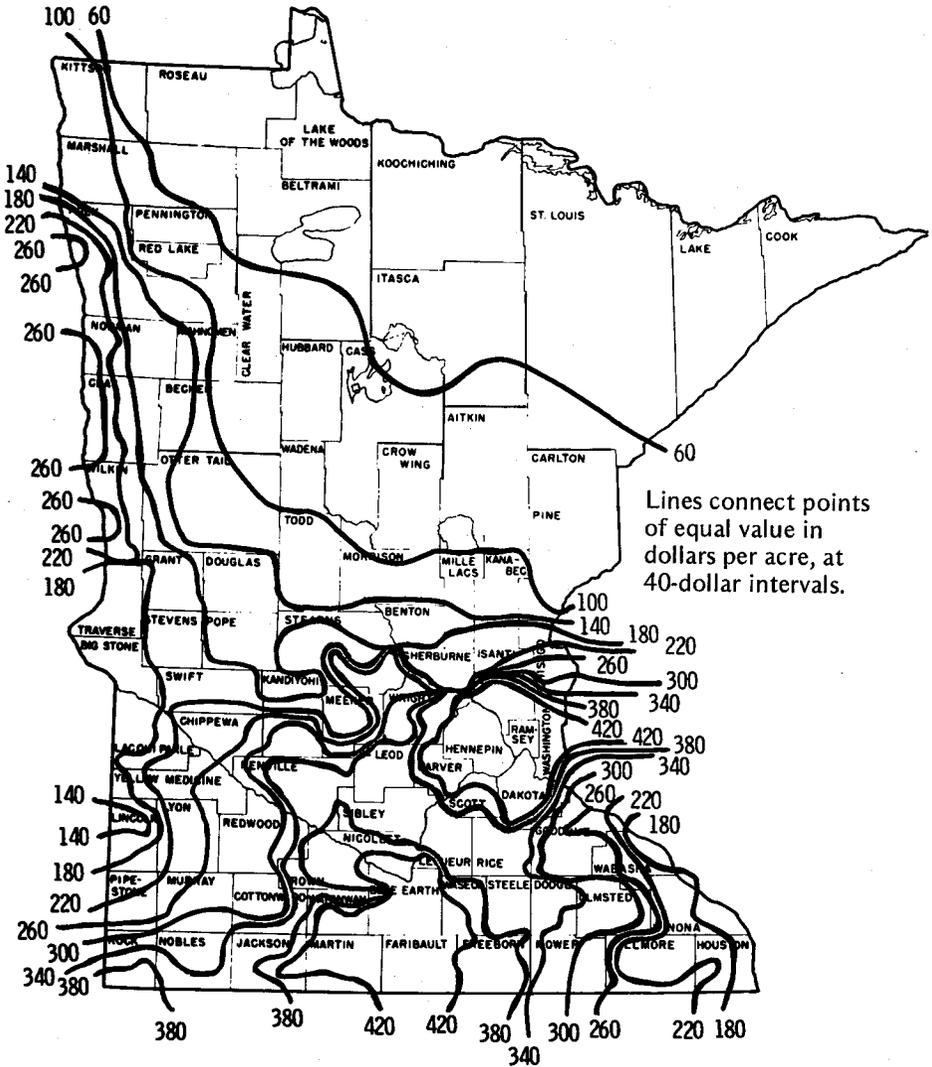


Fig.6 Contour Map of Minnesota Land Value, 1969

Based on reported farm land sales, by township and county, 1969-71, as submitted by respondents to the annual survey of the Minnesota Rural Real Estate Market.



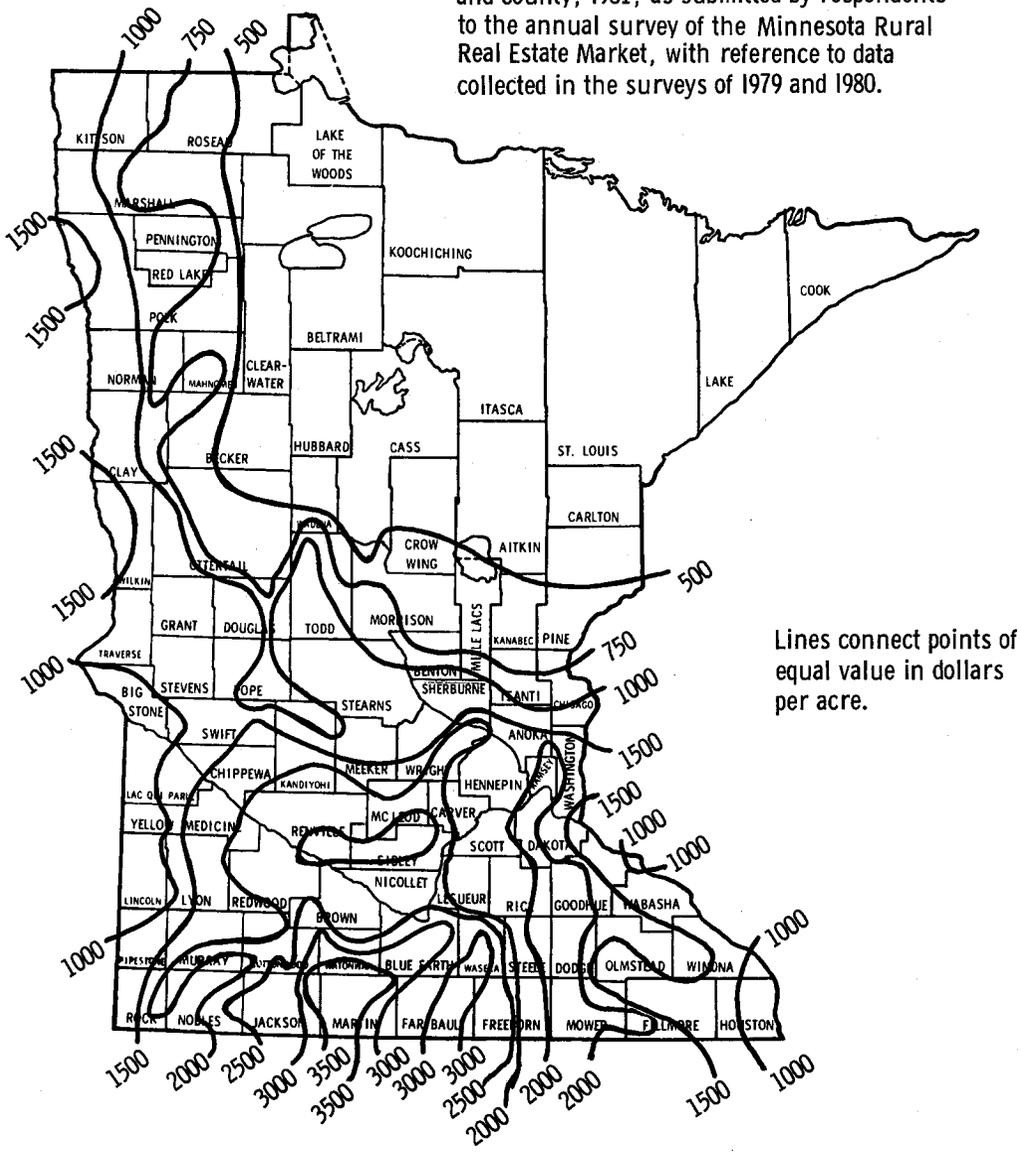
(Hennepin & Ramsey counties excluded in determining contours)

Another notable feature of the 1981 contour map in comparison to the 1976 map is the decline in the importance of the Twin Cities as a determinant of rural land values. In 1976, Minnesota's major urban area was surrounded by one of the two "plateaus" of the state's highest valued farmland, the other being located in the fertile south central counties. The situation seems to have been almost completely reversed in 1981, with Minneapolis and St. Paul at the head of a "ravine" of lower-valued land spreading south from Hennepin County. One obvious explanation for this turnabout is the recent slowdown in the market for residential properties, which is being felt in these suburban fringe counties in the form of reduced competition for farmland from recreational and "hobby" users.

As in previous years, Minnesota's highest valued farmland is concentrated in the south central part of the state. It's value rests at least in part on its agricultural productivity; rich soil, adequate moisture and long growing season combine to produce consistently high yields. Land values decrease as one moves to the north and west, due to declining soil quality and increasing risks due to weather variability. The southwestern corner of Minnesota is analyzed more fully elsewhere in this report.

Northwestern Minnesota exhibits a steep gradient of land values, as one moves eastward from the flat and fertile area along the Red River to the less productive land outside the Valley. These land quality differences and their implications for the land market in that part of the state are discussed in Part II of this report. One other prominent feature of the Red River Valley area is the "islands" of higher value centered on the Fargo-Moorhead and Grand Forks-East Grand Forks urban areas, due apparently to the competition between urban and agricultural uses for rural land.

Fig.8 : Contour Map of Minnesota Land Value, 1981.
 Based on reported farm land sales, by townships and county, 1981, as submitted by respondents to the annual survey of the Minnesota Rural Real Estate Market, with reference to data collected in the surveys of 1979 and 1980.



Lines connect points of equal value in dollars per acre.

PART V

Comparisons with the U.S. Census of Agriculture

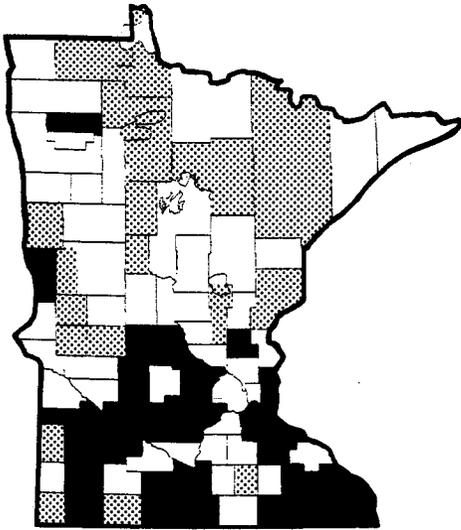
Another source of information on farmland values in Minnesota is the U.S. Census of Agriculture. The Census data consist of estimates of the value of land in operating farm units as reported by all respondents with annual farm product sales of over \$2500, and a sample of operators with under \$2500 in annual sales. The census estimates of land values are thus self-reported and are derived in a different manner from the estimated values reported in this survey, which are obtained by surveying real estate brokers, bankers, local officials and others close to the local land market. The average sales prices reported in this bulletin reflect a third method of monitoring trends in land values, as indicated by the prices bid for the tracts of land that are transferred through the market.

These alternative indicators of Minnesota farmland values are thus not strictly comparable with one another, since each relies on information collected from a different source. Nevertheless, a comparison of county-level land values according to each source can be useful in determining where the Census of Agriculture data deviates from the values reported by the Minnesota Rural Real Estate Market Survey, and can perhaps also suggest some reasons why this is so.

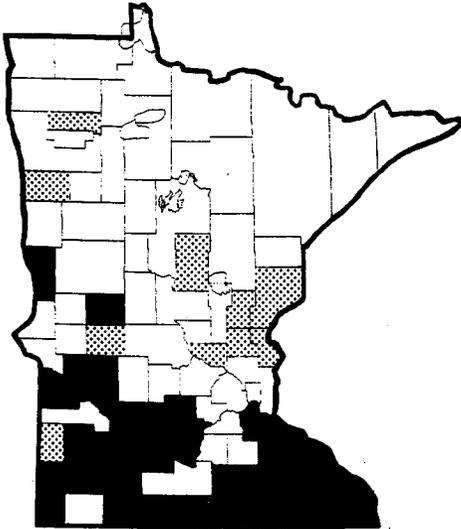
Table 29 lists the average dollar value per acre of Minnesota farmland on a county by county basis from each of the three different sources for 1974 and 1978, the dates of the two most recent Censuses of Agriculture. Figure 9 compares the location of those counties with Census values higher than both the average estimated values and average reported sales prices reported by this survey with those counties where the land values reported by the Census were below both of those reported here. (Those counties with less than 3 estimates of value or 3 reported sales have been deleted.) The pattern that emerges from this is a fairly consistent one over the two Census years: relative to the results generated by the two methods used in this survey, the U.S. Census of Agriculture tends to be on the low side in many of Minnesota's most agriculturally important counties. Those counties where the Census values are high compared to this survey tend to be concentrated in northeastern Minnesota and in other areas where land values are lower than that of the best state farmland. The implication that the Census overvalues poorer land and undervalues better land (relative to the values reported by this survey) is further strengthened by comparing the simple average of estimated land values (as reported by the respondents to this survey) of the counties where the Census was "high" and "low" for 1974 and 1978. In 1974, the average estimated value of the 19 counties where the Census figure was the highest was \$321 per acre while in the 27 counties where it was lowest the average value was \$666 per acre. The average estimated value statewide for that year was \$423 per acre. Similarly, for 1978, the Census value was highest in 10 counties with a simple average value of \$574 per acre. The 1978 estimated statewide average value was \$889 per acre.

One possible explanation for this divergence between the land values estimated by the two sources lies in the manner in which the data are obtained. The Census relies on self-reported estimates of land values from farmers. If in areas where land values are high, farmers tend to be conservative in estimating the worth of their own holdings, while in lower-valued areas farmers tend to be optimistic in assessing land values,

Figure 9: Alternate Measures of Land Value: The U.S. Census of Agriculture and this Survey



1974



1978

 Census values higher than both measures published by this survey.

 Census values lower than both measures published by this survey.

 Insufficient data, or census value between measures published by this survey.

then the situation arising during the 1974 and 1978 Census is not an unexpected one. The data collected by this survey, on the other hand, are more reflective of the actual market for agricultural land, through both the reported sales averages and the estimates reported by brokers and others who are actually involved in the market. From another point of view, basing land value estimates on market transactions may also introduce biases, if one proceeds from the assumption that in the poorer quality land areas it is the poorest farms that change hands most often, while in the better land areas the expansion buyers who dominate the local farmland market are often competing with one another for small nearby tracts and drive local market prices well above the average value of farmland in their area.

However one wishes to interpret the divergent estimates of land values at the county level, the convergence of the estimates of value when aggregated to the statewide level is striking. In 1974, the Census estimate of the statewide average value per acre was within 3 percent of the estimate reported by this survey. In 1978 the difference was less than 2 percent*. This suggests that, with the results of this annual survey as a reference point, the U.S. Census of Agriculture achieves an accurate estimate of the statewide average value of Minnesota's agricultural land resources, but it may be systematically biased at a county level, overvaluing the poorer lands and undervaluing the better lands.

* The statewide average sales price reported by this survey was the highest of the three measures in both years, but is not strictly comparable with the estimated values at the state level since it is in an unweighted average of sales and is thus biased toward the land values of the counties where the bulk of the acreage is sold.

Table 29A: Comparison of Dollar Value Per Acre According to Three Different Sources, by Counties, Minnesota, 1974.

County	Reporters' Estimates 1974	U.S. Census of Agriculture 1974	Reported Sales 1974
REGION 1			
Kittson	188 ^a / ₁	194	92
Marshall	275	216	134
Norman	313 ^a / ₁	290	313
Pennington	186	185	217
Polk	300	291	207
Red Lake	175 ^a / ₁	199	171
Roseau	123	166	141
REGION 2			
Beltrami	120	143	142
Clearwater	200 ^a / ₁	157	135
Hubbard	163	170	122
Lake of the Woods	93	151	143
Mahnomen	250 ^a / ₁	202	174
REGION 3			
Aitken	130 ^a / ₁	196	161
Carlton	120 ^a / ₁	183	-
Cook	114 ^a / ₁	-	-
Itasca	163	213	170
Koochiching	-	153	150 ^b / ₁
Lake	100 ^a / ₁	222	-
St. Louis	157	198	112
REGION 4			
Becker	228	224	210
Clay	380	418	361
Douglas	311	283	199
Grant	338	381	309
Ottertail	328	249	226
Pope	276	294	266
Stevens	411	413	405
Traverse	375 ^a / ₁	344	322 ^b / ₁
Wilkin	575	466	523
REGION 5			
Cass	145	174	205
Crow Wing	175	203	100 ^b / ₁
Morrison	250	220	212
Todd	268	239	237
Wadena	188	192	129

(continued)

Table 29A: Comparison of Dollar Value Per Acre According to Three Different Sources, by Counties, Minnesota, 1974 (continued).

County	Reporters' Estimates 1974	U.S. Census of Agriculture 1974	Reported Sales 1974
REGION 6W			
Big Stone	279	292	221
Chippewa	427	507	393
Lac Qui Parle	415	379	363
Swift	379	369	311
Yellow Medecine	460	449	451
REGION 6E			
Kandiyohi	546	423	437
McLeod	630	608	628
Meeker	573	440	426
Renville	692	600	665
REGION 7W			
Benton	317	301	258
Sherburne	350	406	496
Stearns	342	330	342
Wright	668	599	686
REGION 7E			
Chisago	500a/	426	493
Isanti	435	383	387
Kanabec	319	262	233
Mille Lacs	305	347	267
Pine			
REGION 8			
Cottonwood	708	605	516
Jackson	713	776	774
Lincoln	342	412	289
Lyon	471	442	444
Murray	556	492	496
Nobles	758	643	654
Pipestone	375	442	454
Redwood	740	610	717
Rock	563	589	540
REGION 9			
Blue Earth	878	742	946
Brown	735	646	559
Faribault	1036	900	1011
Le Sueur	708	608	587
Martin	1048	885	1079
Nicollet	741	684	620
Sibley	757	684	726
Waseca	746	697	680
Watsonwan	789	781	1009

(continued)

Table 29A: Comparison of Dollar Value Per Acre According to Three Different Sources, by Counties, Minnesota, 1974 (continued).

County	Reporters' Estimates 1974	U.S. Census of Agriculture 1974	Reported Sales 1974
REGION 10			
Dodge	668	637	573
Fillmore	465	436	442
Freeborn	692	726	906
Goodhue	614	536	624
Houston	518	321	462
Mower	668	625	635
Olmstead	595	590	639
Rice	688	636	618
Steele	681	691	623
Wabasha	550	447	441
Winona	593	409	523
REGION 11			
Anoka	-	602	489
Carver	996	791	962
Dakota	979	735	892
Hennepin	-	-	1627 ^{b/}
Ramsey	-	-	-
Scott	895	789	758
Washington	992	961	1249
Minnesota	423	436	450

^{a/}Less than 3 estimates given in 1974

^{b/}Less than 3 sales reported in 1974

Table 29B: Comparison of Dollar Value Per Acre According to Three Different Sources, by Counties, Minnesota, 1978

County	Reporters' Estimates 1978	U.S. Census of Agriculture 1978	Reported Sales 1978
-dollars per acre-			
REGION 1			
Kittson	-	441	198
Marshall	567	524	372
Norman	700	766	676
Pennington	417	442	394
Polk	767	644	574
Red Lake	400 ^{a/}	574	416
Roseau	417	406	382
REGION 2			
Beltrami	283	355	358 ^{b/}
Clearwater	350	285	214
Hubbard	-	329	225
Lake of the Woods	300 ^{a/}	322	-
Mahnomen	500 ^{a/}	448	470
REGION 3			
Aitken	250 ^{a/}	343	-
Carlton	325 ^{a/}	368	282
Cook	-	426	-
Itasca	367	379	-
Koochiching	250 ^{a/}	284	399 ^{b/}
Lake	150	417	-
St. Louis	479	523	170 ^{b/}
REGION 4			
Becker	450	460	664
Clay	1050	831	799
Douglas	720	653	906
Grant	950 ^{a/}	816	1158
Otter Tail	541	563	688
Pope	629	659	512
Stevens	925	854	831 ^{b/}
Traverse	900 ^{a/}	649	954
Wilkin	1044	858	1046
REGION 5			
Cass	317	284	262
Crow Wing	285	374	332
Morrison	575	474	512
Todd	450	552	566
Wadena	284 ^{a/}	416	422

(continued)

Table 29B: Comparison of Dollar Value Per Acre According to Three Different Sources, by Counties, Minnesota, 1978 (continued).

County	Reporters' Estimates 1978	U.S. Census of Agriculture 1978	Reported Sales 1978
-dollars per acre-			
REGION 6W			
Big Stone	650	676	688
Chippewa	1208	976	1207
Lac Qui Parle	852	764	796
Swift	813	787	940
Yellow Medicine	1036	914	900
REGION 6E			
Kandiyohi	1100	946	912
McLeod	1325	1249	1303
Meeker	1113	933	1065
Renville	1557	1340	1443
REGION 7W			
Benton	-	736	758
Sherburne	650	819	628
Stearns	799	714	796
Wright	1281	1128	1144
REGION 7E			
Chisago	850	871	770
Isanti	688	775	579
Kanabec	400	544	371
Mille Lacs	470	593	907
Pine	403	449	378
REGION 8			
Cottonwood	1556	1427	1447
Jackson	1750	1488	1682
Lincoln	717	767	757
Lyon	1158	921	999
Murray	1225	1113	1167
Nobles	1543	1335	1213
Pipestone	1014	950	994
Redwood	1456	1107	1357
Rock	1214	1149	1178
REGION 9			
Blue Earth	1835	1512	1482
Brown	1750	1278	1370
Faribault	2125	1640	2099
Le Sueur	1583	1237	1217
Martin	2167	1753	2080

(continued)

Table 29B: Comparison of Dollar Value Per Acre According to Three Different Sources, by Counties, Minnesota, 1978 (continued).

County	Reporters' Estimates 1978	U.S. Census of Agriculture 1978	Reported Sales 1978
-dollars per acre-			
REGION 9(cont)			
Nicollet	1594	1398	1559
Sibley	1504	1292	1532
Waseca	1538	1492	1672
Watonwan	1915	1658	1912
REGION 10			
Dodge	1521	1393	1594
Fillmore	1126	938	1176
Freeborn	1642	1383	1492
Goodhue	1250	1099	1208
Houston	1138	743	932
Mower	1372	1297	1466
Olmstead	1380	1240	1478
Rice	1413	1289	1268
Steele	1525	1381	1804
Wabasha	1020	1000	1127
Winona	1367	915	1425
REGION 11			
Anoka	1000 ^{a/}	944	1500 ^{b/}
Carver	1508	1318	1313
Dakota	1506	1291	1558
Hennepin	-	1726	1990 ^{b/}
Ramsey	-	3300	-
Scott	1563	1378	1296
Washington	1567	1541	1450
Minnesota	899	901	980

a/ Less than 3 estimates given in 1978

b/ Less than 3 sales reported in 1978

STATISTICAL APPENDIX

One disadvantage in the use of average prices based upon actual sales is that the averages do not indicate the degree of variation in the data. Quality of land varies greatly in any one county or district, for example, but it is not possible to derive an accurate measure of land quality from this survey. Over time, the quality of land involved in the sales from year to year may also vary.

One measure of this variability in prices is indicated in Table 32. The standard deviation represents the dollar range from the average within which approximately two-thirds of the reported sales fall. For example, in 1981 the West Central District had an average of \$1171 per acre with a standard deviation of \$427. This means that approximately two-thirds of the sales in that district fell between \$744 and \$1598 per acre. The coefficient of variation is the standard deviation divided by the average sales price, and multiplied by 100 to convert it to a percentage form. In the above example, the coefficient of variation is 36.5 percent. Wider variations in sales price above and below the average create larger coefficients of variation.

Table 30: Average Estimated Value Per Acre of Farm Real Estate in Minnesota by Districts, 1910-11 through 1944-45, by Two-Year Periods, and Annually, 1946 through 1981.

Years	South-east	South-west	West Central	East Central	North-west	North-east	Minn.
1910-11	58	54	39	24	24	11	41
1912-13	69	69	46	29	29	13	49
1914-15	82	84	56	34	32	14	58
1916-17	92	100	67	41	37	15	68
1918-19	117	118	78	50	40	18	82
1920-21	141	152	98	68	57	24	104
1922-23	114	119	82	56	44	23	85
1924-25	104	110	74	49	44	22	78
1926-27	106	109	72	49	36	22	76
1928-29	100	102	67	44	33	21	71
1930-31	88	88	51	36	22	18	60
1932-33	64	65	42	27	20	14	45
1934-35	52	58	38	26	22	15	40
1936-37	59	64	38	29	22	24	44
1938-39	60	68	37	28	22	25	45
1940-41	59	68	36	26	22	24	43
1942-43	65	76	40	29	24	25	48
1944-45	78	90	48	35	29	28	56
1946	88	104	56	39	33	32	65
1947	96	116	62	43	37	35	72
1948	104	129	69	47	41	38	79
1949	107	136	73	49	44	39	83
1950	109	141	76	50	46	40	85
1951	125	166	89	59	54	46	99
1952	131	175	96	65	68	42	107
1953	130	175	95	62	64	40	105
1954	139	187	99	66	72	40	113
1955	150	205	103	68	73	45	121
1956	156	214	107	70	76	42	126
1957	165	230	122	77	86	49	138
1958	179	242	123	84	90	65	147
1959	191	255	134	89	103	58	157
1960	188	248	133	94	99	64	155
1961	189	247	133	95	100	64	156
1962	192	250	138	99	104	69	159
1963	194	246	142	103	114	68	161
1964	206	252	145	111	115	59	166
1965	219	261	146	112	113	51	171
1966	242	277	153	122	112	58	183
1967	262	303	163	128	108	62	194
1968	286	333	181	134	122	57	211
1969	308	350	196	146	120	54	223
1970	317	347	198	161	120	62	227

(continued)

Table 30: Average Estimated Value Per Acre of Farm Real Estate in Minnesota by Districts, 1910-11 through 1944-45, by Two-Year Periods, and Annually, 1946 through 1981 (continued).

Years	South-east	South-west	West Central	East Central	North-west	North-east	Minn.
1971	333	351	204	155	119	63	232
1972	370	379	208	163	117	76	248
1973	433	459	247	194	146	115	298
1974	576	675	378	279	199	144	423
1975	674	844	503	296	295	163	525
1976	856	1106	624	349	378	210	667
1977	1027	1316	730	415	427	279	794
1978	1191	1421	803	498	483	304	889
1979	1453	1620	883	573	599	368	1040
1980	1526	1750	962	596	683	390	1120
1981	1709	2083	1135	679	813	460	1310

Table 31: Annual Percentage Change in Estimated Farm Land Values Per Acre, Minnesota, 1946-1981.

	%		%
1945-46	16.1	1963-64	3.1
1946-47	10.8	1964-65	3.0
1947-48	9.7	1965-66	7.0
1948-49	5.1	1966-67	6.0
1949-50	2.4	1967-68	8.8
1950-51	16.5	1968-69	5.7
1951-52	8.1	1969-70	1.8
1952-53	- 1.9	1970-71	2.2
1953-54	7.6	1971-72	6.9
1954-55	7.1	1972-73	20.2
1955-56	4.1	1973-74	41.9
1956-57	9.5	1974-75	24.1
1957-58	6.5	1975-76	27.0
1958-59	6.8	1976-77	19.0
1959-60	- 1.3	1977-78	12.0
1960-61	0.6	1978-79	17.0
1961-62	1.9	1979-80	7.7
1962-63	1.3	1980-81	17.0

Table 32: Average Price Per Acre of Reported Farm Sales, Standard Deviation and Coefficient of Variation, by District, Minnesota, 1961-1981*.

Years	South-east	South-west	West Central	East Central	North-west	North-east	Minn.
Average Price Per Acre (Dollars)							
1961	189.1	255.8	130.3	89.0	92.0	37.9	165.2
1962	195.7	228.5	140.5	76.3	73.9	30.3	161.1
1963	214.1	221.9	136.2	86.2	108.8	47.6	168.1
1964	213.3	234.3	150.3	86.3	103.6	51.6	178.1
1965	202.0	232.7	133.2	95.8	106.2	39.7	178.0
1966	253.4	260.4	164.3	113.0	103.4	30.6	203.4
1967	272.4	306.1	178.6	92.9	116.6	51.2	214.8
1968	316.0	329.0	186.0	104.0	90.0	47.0	232.0
1969	340.7	334.1	193.6	129.7	120.8	50.7	238.3
1970	346.0	340.0	206.0	141.0	113.0	45.0	243.0
1971	343.6	343.0	204.5	150.3	100.1	43.7	259.0
1972	389.4	365.7	221.7	145.1	107.2	76.4	293.3
1973	443.5	410.1	223.0	178.1	119.7	121.7	298.4
1974	598.4	630.1	339.8	242.7	204.0	144.4	450.1
1975	791.8	843.9	492.9	298.5	352.8	159.3	607.0
1976	937.2	1115.7	663.7	321.3	377.0	209.7	735.2
1977	1216.0	1340.4	708.6	445.7	431.7	197.9	858.8
1978	1351.7	1320.7	907.6	554.0	504.4	256.3	979.6
1979	1674.6	1679.5	949.3	618.1	612.2	410.9	1139.9
1980	1837.1	1868.2	1095.3	603.0	758.8	394.5	1318.5
1981	1965.3	2004.6	1170.6	680.1	918.7	482.8	1367.1
Standard Deviation (Dollars)							
1961	83.5	71.9	40.0	47.8	54.1	20.1	86.8
1962	80.7	68.6	45.1	39.1	57.2	29.7	88.5
1963	79.4	77.1	50.8	43.7	69.4	26.1	88.6
1964	91.6	77.3	70.1	52.4	89.9	39.0	97.2
1965	96.3	87.0	82.1	63.5	91.1	31.7	98.1
1966	142.7	95.3	56.7	66.5	65.7	32.2	199.4
1967	115.3	106.2	62.8	67.6	85.4	29.8	127.6
1968	179.0	124.2	77.5	108.5	70.5	41.6	160.7
1969	228.6	123.4	64.5	104.2	83.9	45.0	174.0
1970	189.7	129.6	75.4	105.6	89.5	29.3	162.5
1971	154.3	128.1	66.6	100.7	66.9	28.9	157.4
1972	154.9	136.4	79.0	96.7	70.0	38.8	164.4
1973	183.3	164.1	94.0	97.2	76.8	86.6	188.9
1974	265.2	290.0	147.2	153.0	127.5	60.6	287.7
1975	291.3	373.8	225.0	142.5	220.8	72.2	360.4

(continued)

Table 32: Average Price Per Acre of Reported Farm Sales, Standard Deviation and Coefficient of Variation, by District, Minnesota, 1961-1981* (continued).

Years	South-east	South-west	West Central	East Central	North-west	North-east	Minn.
Standard Deviation (Dollars) con't.							
1976	359.0	501.4	243.0	176.2	273.2	100.6	457.8
1977	476.9	606.8	305.2	244.1	294.3	99.4	599.0
1978	454.4	496.9	329.2	304.0	260.9	100.5	539.7
1979	850.3	833.3	361.4	357.2	354.7	228.3	791.6
1980	639.5	746.7	487.2	298.1	337.2	152.9	780.1
1981	675.8	891.3	426.9	624.5	332.2	157.0	826.6
Coefficient of Variation (Percent)							
1961	44.2	31.8	30.7	53.7	58.7	53.1	52.6
1962	41.2	30.0	32.2	51.2	77.3	98.0	54.9
1963	37.1	34.8	37.3	40.7	63.8	54.8	52.7
1964	42.9	33.0	46.6	60.8	86.7	75.5	54.6
1965	47.6	37.4	61.6	66.2	85.8	79.8	55.1
1966	56.4	36.7	32.6	58.9	63.8	105.4	58.7
1967	42.3	34.7	35.2	72.8	73.2	58.2	59.4
1968	56.6	37.3	41.6	103.8	78.3	88.5	69.2
1969	67.1	36.9	33.3	80.4	69.5	88.9	73.0
1970	54.8	38.1	36.6	74.9	79.2	65.1	66.9
1971	44.9	37.4	32.6	67.0	66.8	66.1	60.8
1972	39.8	37.3	35.6	66.6	65.3	50.8	56.1
1973	41.3	40.0	42.2	54.6	64.2	71.2	63.3
1974	44.3	46.0	43.3	63.0	62.5	42.0	63.9
1975	36.8	44.3	45.7	47.7	62.6	45.3	59.4
1976	38.3	44.9	36.6	54.8	72.5	48.0	62.3
1977	39.2	45.3	43.1	54.8	68.2	50.2	69.7
1978	33.6	37.6	36.3	54.9	51.7	39.2	55.1
1979	50.8	49.6	38.1	57.8	57.9	55.6	69.4
1980	34.8	40.0	44.5	49.4	44.4	38.8	59.2
1981	34.4	44.5	36.5	91.8	36.2	32.5	60.5

* Each acre is treated as a unit in calculating standard deviations and coefficients of variation.