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The 1994 Minnesota Rural Real Estate Market

The Farm Cash Rental Market

William F. Lazarus

Almost three-quarters of the farmland rented in Minnesota is on a cash basis (table 1). The proportion varies from around 80 percent in the south central regions (Regions 1 and 2) to about 60 percent in areas characterized by more livestock and risky cropping histories, such as Regions 5, 8, and 10 (see figure 1 for rental region boundaries). Embedded in all farmland rents are national and international influences as they play out in local markets. Corn deficiency payments, sugar prices, the GATT treaty, as well as production risk and distance from market, all affect the interplay between landlords and tenants as they negotiate rental arrangements. Tracking changes in cash rental rates can help landlords, farm operators, and others in arriving at mutually agreeable rental contracts.

In this article I report the findings of our fall 1994 Minnesota farm cash rent survey. It is divided into three sections. The first discusses the survey findings relative to the farm cash rental market in 1994 and expected rents for 1995, with a comparison to rents in 1993. Section two describes the relationship between cash rents and county assessors' estimated market value of farmland as well as general land productivity as measured by Crop Equivalent Ratings (CERs).

Section three compares the estimated cash rents for high, average, and low quality land in 1994, with expected rents for 1995.

Survey and Analysis Methods

In November 1994, the Minnesota Extension Service asked township board members to estimate cash rental rates for various grades of tillable farmland. They were also asked to predict rental rates in 1995.

Questionnaires were mailed to 1,815 boards; 878 usable responses were received.

All cash rents and related data are analyzed by the 10 major cash rental regions shown in figure 1. These regions were delineated on the basis of

*(See **Rental Market** page 2)*

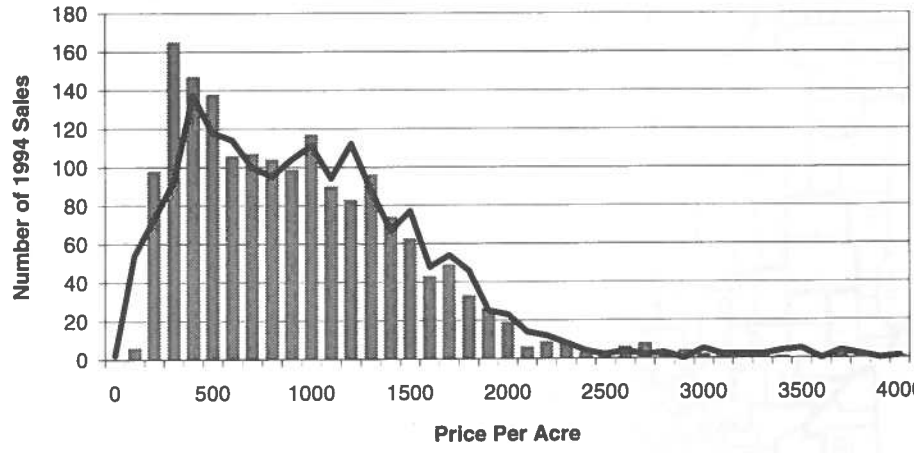
Farmland Sales Prices Down Statewide, But Up in Most Regions

Steven J. Taff

The price of a typical acre of Minnesota farmland turned downward slightly in 1994. This drop, from $839 per acre to $830, comes in spite of price increases in the southwestern, west central, and southeastern parts of the state. This seeming contradiction is due to strong pressure from the northwestern area, where lower per-acre prices and a large rise in the volume of sales

*(See **Farmland Sales** page 4)*

Figure 3. Distribution of Observed 1994 Basic Land Sales Prices (Bars) and Calculated Tillable Land Prices (Line)



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*(**Rental Market** continued from page 1)*

similarity of cash rentals; geographic location; and topographic, climatic, and crop characteristics. Regions 1 through 5, in the southern one-third of the state, are predominantly agricultural and have historically registered the highest valued farmland and highest rents in Minnesota. Regions 6 through 10 include the Red River Valley, the transition zone between agriculture and forestry, and the heavily timbered north-northeastern part of the state. The seven-county metro area is **not** included in this analysis.

Estimated Average Cash Rents by Regions

The average of the responses on estimated cash rent for land of average quality in 1994 was $61 per acre statewide, up 3 percent from 1993 (see table 1). However, some township officials responded this year who did not respond last year, and a few of last year's respondents did not participate this year. When only the townships for which we have estimates in both years are considered, average estimated rents increased by 2 percent (column labeled "same" in table 1).

Estimated rents ranged from $28 to $91 per acre over the major agricultural regions. Rents were stable to 2 percent higher in the southern third of the state, except for Region 4 which was down 2 percent. The west central and northwestern areas were also stable to 2 percent higher. The north central and northeastern part of the state increased by larger amounts. In particular the average in Region 10 was $17 per acre, 41 percent higher than 1993's $12 per acre. The range in rents reported in this region was quite wide, reflecting, perhaps, a wider range in land quality in this region.

Again using responses only from those townships that reported both last year and this year, average rents were up 3 to 5 percent in the south central, southwestern, and north central areas of the state (Regions 1, 5, and 9). Rents were up by 10 percent in the central area, Region 6. They were stable to up 1 percent in the rest of the major agricultural regions. Rents were up by an average of 20 percent in Region 10.

Respondents were also asked to estimate cash rents **expected** in 1995. Rents in Regions 1 through 6 are expected to rise 1 percent. The rest of the state is expected to experience rents that are stable to down 1 percent, except for the northeast where a 2 percent increase is expected. A statewide increase of 1 percent is forecast. Figure 2 shows the percentage change between the 1993 and 1994 estimates for each county. The average is based on responses from those townships that reported both years.

Estimated Land Values and Crop Equivalent Ratings

Table 2 shows estimated average cash rents as a percent of county assessors' estimated market value of farmland in 1993 and 1994. This relationship is often referred to as the "capitalization rate" or "cap rate." Statewide, the calculated capitalization rate was 8.0 in 1994, up from 7.9 in 1993. Regionally, capitalization rates tend to be lower in regions that most reliably produce crops. In 1994, they ranged from 6.5 to 7.4 in the south central part (Regions 1 and 2) and the north central part (Regions 9 and 10) of the state, and from 7.7 to 10 percent in the southeast, southwest, and valley areas (Regions 3 through 8).

Per acre cash rents were also compared to levels of soil productivity as measured by CERs. As an index of estimated net returns on cropland throughout the state, CERs can range from 0 to 100. (For a more detailed explanation, see Minnesota Extension Service bulletin BU-2199, *Productivity Factors and Crop Equivalent Ratings for Soils of Minnesota.)* Comparing average cash rents reported by each township to the township average CER gives a

Figure 1. Minnesota Cash Rental Regions

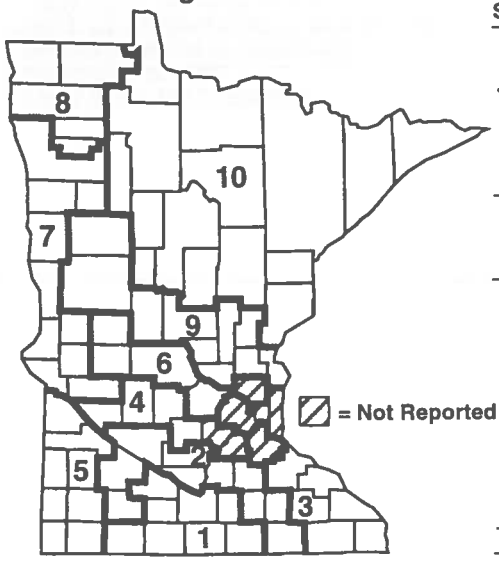


Table 1. Estimated Per-Acre Rents by Cash Rental Region

Rental Region	Percent Rented for Cash	Estimated Average Cash Rent/Acre		Percent Chg. 1993-1994		Expected Rent/Acre	Expected % Chg.
		1993	1994	All	Same	1995	1994-95
1	80	$89	$91	2	5	$92	1
2	79	83	83	0	1	84	1
3	75	76	78	2	0	79	1
4	77	69	68	-2	1	69	1
5	61	67	67	0	3	68	1
6	63	40	42	6	10	42	1
7	77	50	51	2	1	51	0
8	60	32	32	0	0	32	-1
9	75	27	28	4	3	28	-1
10	60	12	17	41	20	18	2
Statewide	**72**	**$59**	**$61**	**3**	**2**	**$62**	**1**

Table 2. Estimated Average Cash Rent as a Percent of Assessor's Estimated Market Value of Farmland and Per Crop Equivalent Rating (CER) Point

Rental Region	Percent of Market Value		Cash Rent/CER	
	1993	1994	1993	1994
1	6.9	7.2	$1.18	$1.21
2	7.5	7.4	1.19	1.18
3	9.5	9.4	1.05	1.07
4	7.8	7.7	1.04	1.04
5	7.9	8.1	1.01	1.03
6	7.2	7.8	0.82	0.87
7	8.6	8.4	0.86	0.88
8	9.9	9.8	0.68	0.68
9	6.2	6.5	0.72	0.75
10	5.0	6.6	0.42	0.66
Statewide	**7.9**	**8.0**	**$0.96**	**$0.98**

perspective on rental levels relative to soil productivity, expressed in dollars per CER unit.

In 1994, estimated cash rents averaged 98 cents per CER statewide (see last column of table 2), up from 96 cents in 1993. Regions 1 through 5 in the southern part of the state all reported average rents that were over $1 per CER unit. In the northern regions (Regions 6 through 10), rents averaged 66 to 88 cents per CER unit. Two soils with CERs that differ by 10, for example, are expected to exhibit cash rents that differ by $12.10/acre in Region 1, but only $6.60/acre in Region 10.

Estimated Cash Rental Rates by Land Quality, 1994-1995

Respondents' estimates of land quality reflect local norms and thus are not comparable from region to region. Average estimated cash rent for high quality land in south-central Minnesota exceeded $100 per acre in 1994, while in the northeast corner of the state the estimated rent for relatively high quality land was only about $26 per acre.

The relative percentage spread between rents for high and low quality land also varies by region, reflecting a combination of market conditions and the range of cropland productivity in each region. In the highest priced area of south central Minnesota (Region 1), rents for low-quality cropland averaged 68 percent of the level reported for high quality land. In contrast, rents for low quality land in north central Minnesota (Region 9) averaged only 48 percent of those reported for high quality land.

Expected increases in 1995 rents are fairly evenly distributed across land qualities, with slightly larger increases expected in the southern part of the state. Statewide, rents are expected to increase by 1 percent for all qualities of land.

Special thanks to the 1,006 township boards who responded to the survey. Thanks also to the Minnesota Chapter of the American Society of Farm Managers and Rural Appraisers and to the Minnesota Department of Revenue for their financial support of this effort.

Figure 2. Percentage Change in Estimated Average Rents by County, 1993-1994

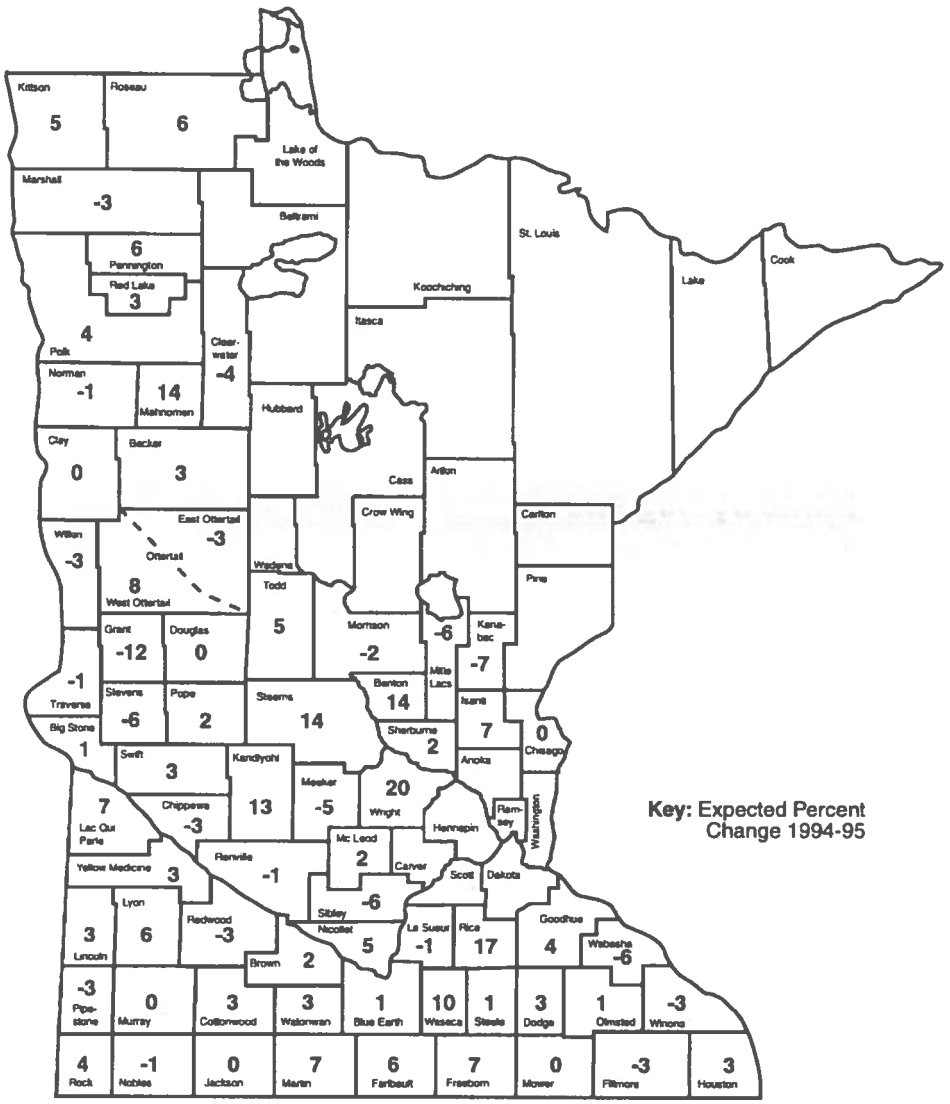


Table 3. Expected Cash Rents by Land Quality, 1995, Compared With Estimated Rents for 1994

Rental Region	1994 Estimated Rent			1995 Expected Rent			1994-95 Expected Change		
	high	average	low	high	average	low	high	average	low
1	$108	$91	$74	$110	$92	$74	2%	1%	1%
2	100	83	64	101	84	65	1	1	1
3	97	78	60	97	79	60	1	1	1
4	85	68	51	87	69	52	2	1	2
5	80	67	54	80	68	54	1	1	1
6	53	42	28	53	42	28	1	1	0
7	63	51	39	64	51	40	1	0	1
8	41	32	23	40	32	23	-1	-1	0
9	41	28	20	41	28	20	0	-1	-1
10	26	17	9	26	18	9	0	1	0
Statewide	$75	$61	$47	$76	$62	$47	1%	1%	1%

*(**Farmland Sales** continued from page 1)*

combined to pull the statewide average down (figure 4).

This overall decline in spite of several regional increases points out one of the problems with numerical averages such as "the" state price—they sometimes hide more than they reveal.

In this article, I present the summary findings of our analysis of the 1994 Minnesota rural real estate sales market. In doing so, I will try to make sense of how we use "averages" and other terms to describe activity in this market. I also create several summary statistics and point out a few differences among the state's major producing regions. The tables and figures are largely self-explanatory, so I'll focus on the procedures used to determine price. Readers are encouraged to form their own conclusions from the data.

The Data

The basis of the price series reported here is the recorded sales price for land previously classified as "agricultural" and for which the buyer has not indicated an intention of changing use. Transactions are compiled over an October 1, 1993–September 30, 1994 "record year." The reported prices include values for buildings and other improvements.

These sales are reported to the Minnesota Department of Revenue by local assessors and auditors. Neither I nor that Department claims that these constitute the complete set of agricultural land sales. Agency and county officials strive to identify all sales data, but inevitably miss some. Consequently, readers should not make too much of the **number** of sales reported. Changes in this number from year to year may not reflect changes in actual market intensity.

Nevertheless, the data we do have are appropriate to characterize the farmland market in general.

Calculating a Per-Acre "Price"

What we actually observe on the land market is a completed transaction. From that information we want to calculate a particular summary statistic, a "farmland price." This may sound simple, but is not as straightforward as it first appears.

Depending on the purpose of our analysis, we sometimes first adjust both acreage figures and reported sales prices.

All sales reports contain two types of acreage: "deeded" and "tillable." Deeded acres represent the total acreage of the parcel. Tillable acres exclude forested land, developed land, wetlands, ravines, etc. For many parcels, the two figures are substantially different, as the distribution in figure 5 clearly shows.

Not all Minnesota land sales are for "full title"—at least not right away. In many instances, the reported sales price is not for a warranty deed, but rather for some other conveyance—most often a contract for deed, whereby the seller retains title until the end of a specified period marked by annual buyer payments. Figure 6 shows that roughly a third of Minnesota farmland sales over the past several years have been contracts of this sort.

Consequently, we have two possible sales prices: one that assumes full title, and another that is "terms and time adjusted." As part of some work we've done for the Minnesota Department of Revenue, we have calculated the terms and time adjusted sales price for each transaction. The reported sales price and the adjusted sales price are most often quite similar, although they do diverge significantly for a few sales.

Another sales price adjustment can be made for the cost of buildings and other improvements. These can skew the per-acre price if the building value is a sizable proportion of the total value. We have calculated an "improvements-adjusted" sales price for all 1994 sales in our Department of Revenue research. In essence, we subtracted the value of improvements from the total reported sales price and divided this adjusted price by the number of tillable acres. Unfortunately, the resulting computations must rely on different building appraisal techniques used by different assessors, different reporting procedures, etc.

Figure 4. Relative Sales Price Movements Since 1989

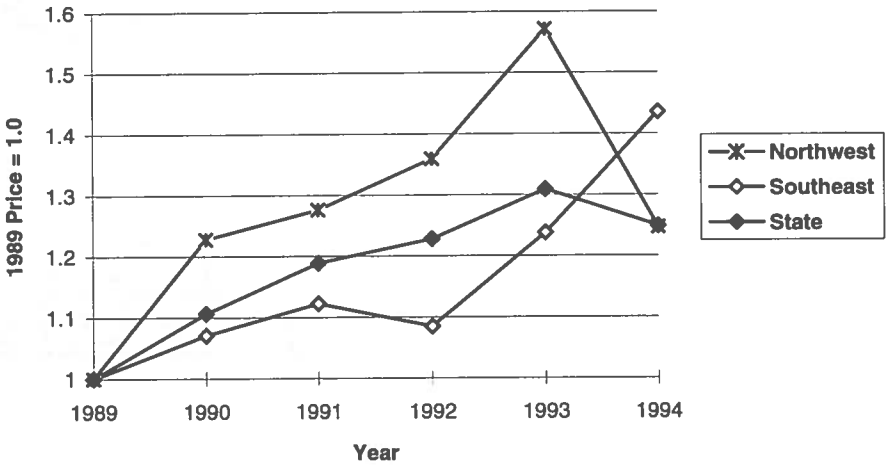


Figure 5. Not All Farmland Is Farmable

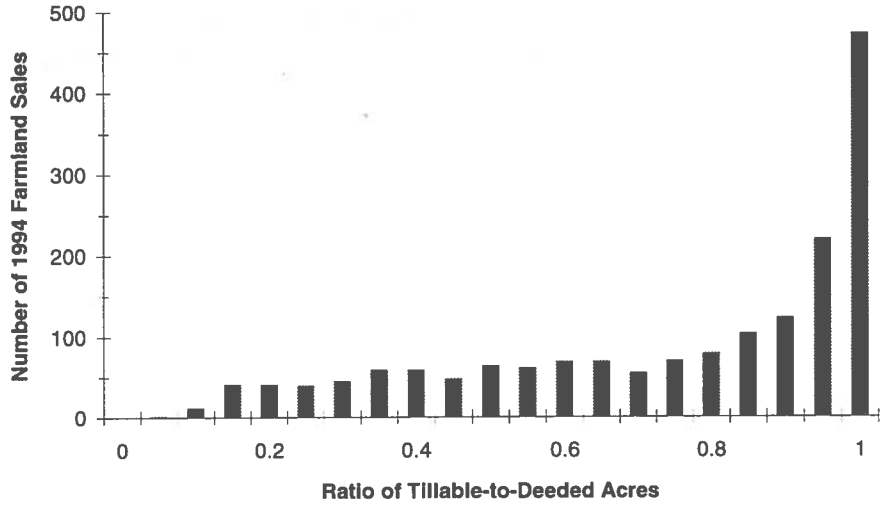


Figure 7 shows how this adjusted price differed from the unadjusted price on a parcel-by-parcel basis. Some of the adjustments substantially altered the per-acre price, although the overall distribution of the prices (and hence the mean) is relatively symmetric around zero.

These adjustments may be useful for certain property tax equalization processes, but they do not result in a price that is comparable to the "price of farmland" estimated by other groups such as the U.S. Department of Agriculture, the Bureau of Census, or by Professor Philip Raup's long-running farm real estate survey that the present series succeeds.

For present purposes, therefore, I have chosen to report only the "basic per-acre price"—the unadjusted total sales price divided by the number of deeded acres. Although no way of calculating per-acre price serves all purposes, this particular price is comparable with other price series and requires the fewest number of analysis assumptions. Figure 3 (front page) shows the effect of this decision on my part. The distribution of the adjusted tillable land sales price (the line) is not, in my judgment, substantially different from the basic price distribution (the bars).

Figure 6. Types of Land, Sales Agreements, 1989-1994

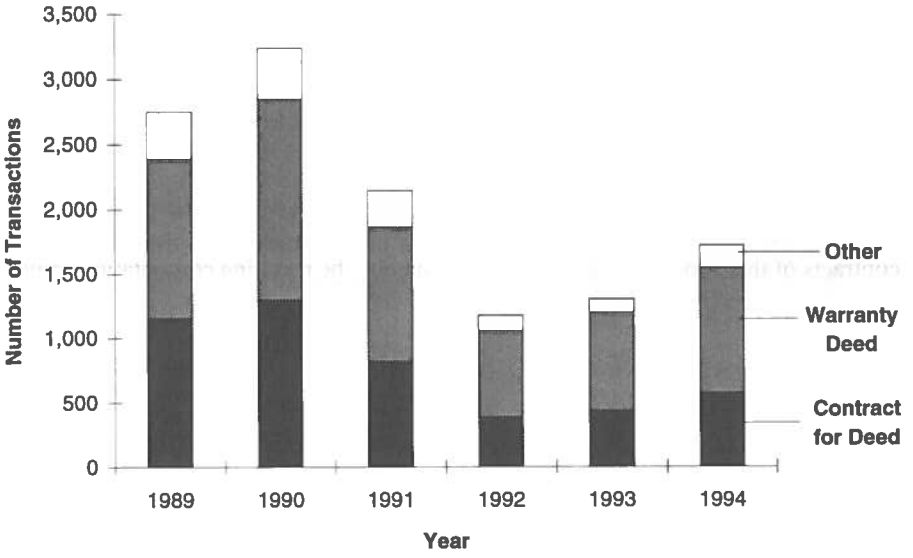
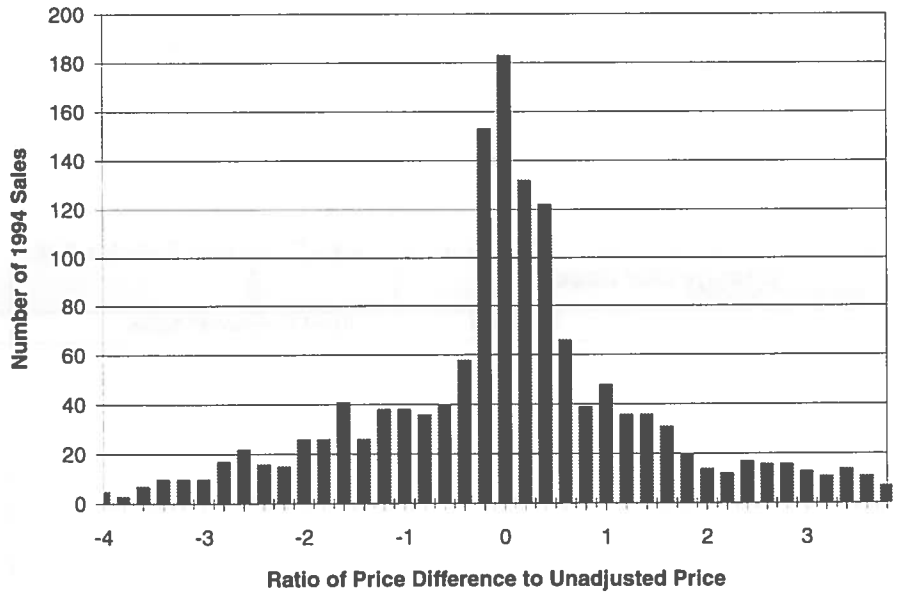


Figure 7. Individual Sales Can Exhibit Quite Different Adjusted and Unadjusted Prices



Calculating an Average Price

So figure 3 presents the recorded, per-acre prices for all 1994 Minnesota farmland sales. But what is the price of an "average" or a "typical" farmland acre?

"The price," or "the average price," is merely a single number that the writer thinks best captures the flavor of this whole range of observed prices.

There are actually two different types of averages used in the literature: "transaction mean" and "area mean."

Transaction mean is derived by dividing the sum of all per-acre prices by the number of parcels sold. We can think of this as "the average parcel price."

Area mean is calculated by first summing the total dollar sales and then dividing it by the sum of all acres sold in the same geographic area. This can be thought of as "the price of a typical acre."

The two calculations can yield different "averages" for any given geographic area, as shown in table 4. (District boundaries are shown in figure 8. The averages reported are area means.)

Another facet of the geography of land sales prices is examined in figure 9, which breaks the state into its official economic development regions. The highest area mean was in the metro area (#11 on the figure 9 map), but this region only reported 28 sales. Of the more extensively agricultural parts of the state, the south central region (9) and the central region (7W) both had area means exceeding $1,300 per acre.

Table 4. Average Per-acre Sales Prices by Reporting Districts

Reporting District	Transaction Mean		Area Mean	
	1993	1994	1993	1994
East Central	661	622	507	529
Northeast	383	320	290	277
Northwest	588	512	586	465
Southeast	1,116	1,281	1,021	1,184
Southwest	1,239	1,245	1,160	1,191
West Central	803	848	772	787
STATE	923	908	839	830

Figure 9 also shows the wide range in reported sales prices. Region 7W, for example, had sales ranging from $285 per acre to $5,930 per acre.

Are These Sales Really "Farmland"?

Our goal is to characterize "agricultural land" sales, not rural land in general. Are the sales we report on really "farmland"? Does the inclusion of all 1,733 agricultural land transactions bias our results in some predictable manner? To test this, we removed from the basic data all sales that (a) had less than 20 percent tillable land, (b) were fewer than 20 deeded acres in size, (c) used something other than a land contract or regular warranty deed, or (d) needed substantial terms adjustments (because they were "peculiar" in some sense).

The remaining 1,468 "real farmland" sales tended to be only slightly higher in price on average, no matter which adjustment or averaging technique was used (table 5). I judge the difference to be insubstantial and am comfortable in continuing to use all 1,733 reported sales for present purposes.

Analyzing the Data: All the basic data underlying the land sales report are available for readers' own analyses. The paucity of sales observations in any single year makes it hazardous to rely upon a single "average" to tell us much about the rural real estate market at any level more disaggregated than the county or even multi-county district. Readers are encouraged to try their own hands, however. Contact the managing editor at the address listed on the back page.

Figure 8. Recorded 1994 Farmland Prices (Area Mean) by Reporting District

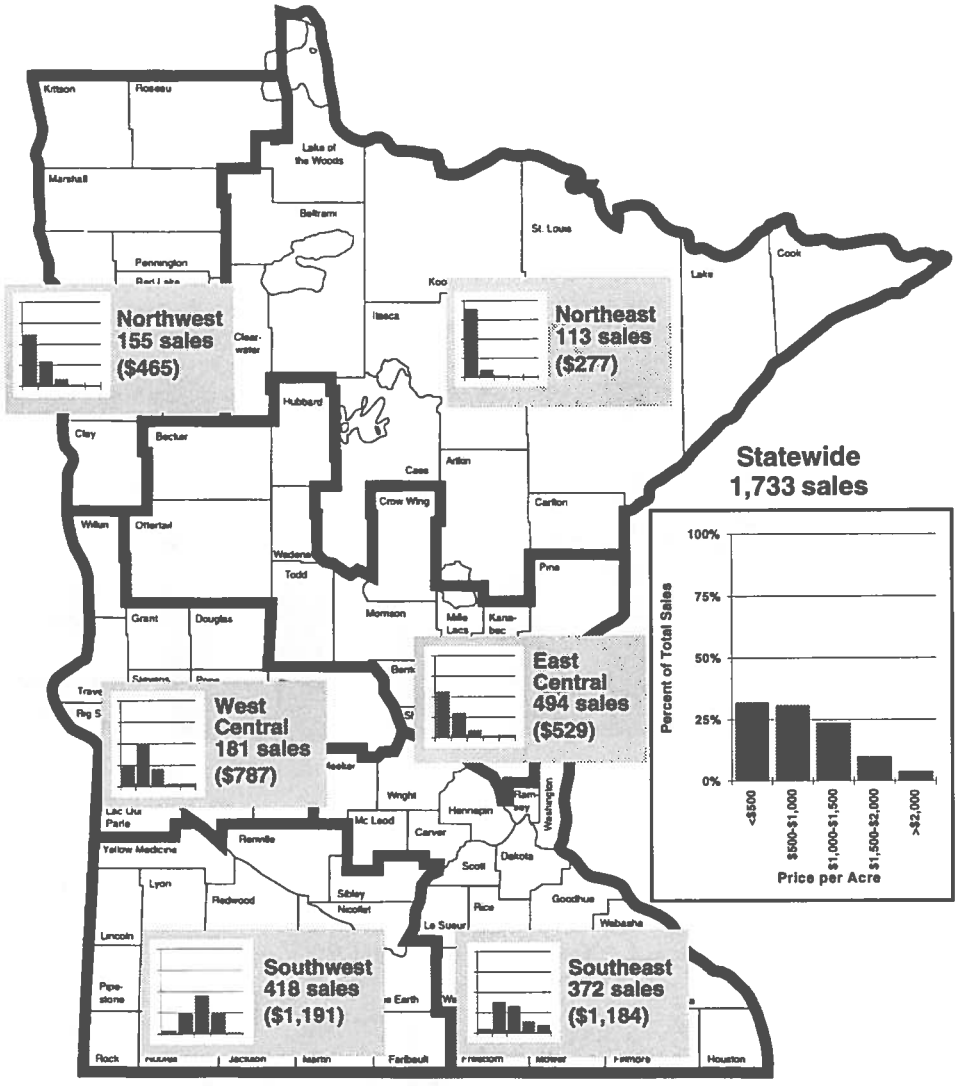
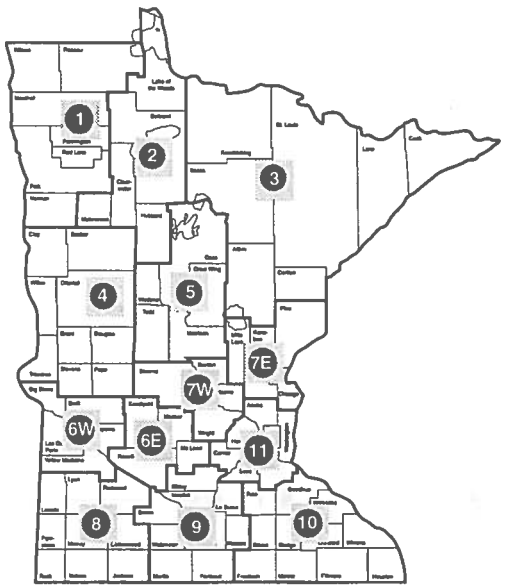
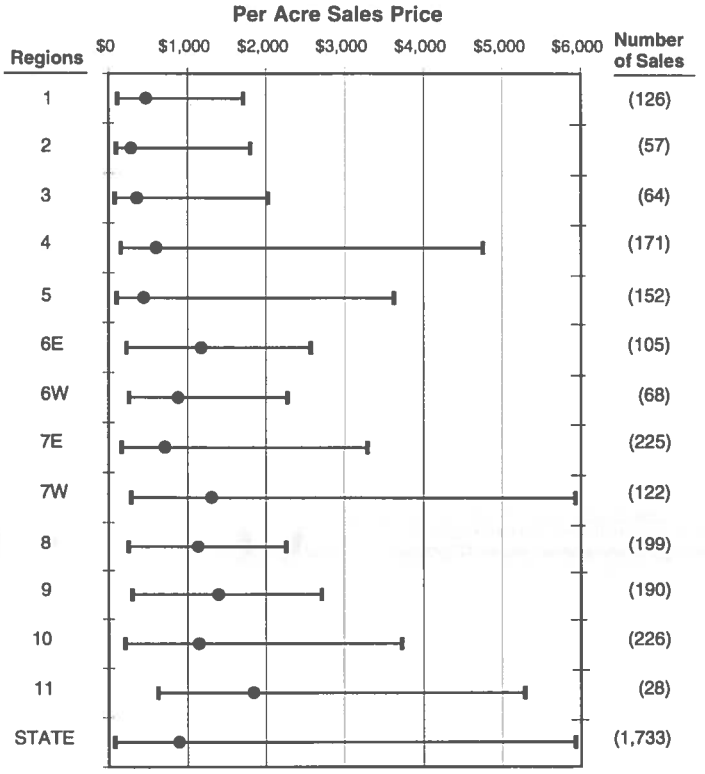


Table 5. The Exclusion of "Suspicious" Sales Does Not Substantially Change Our Results

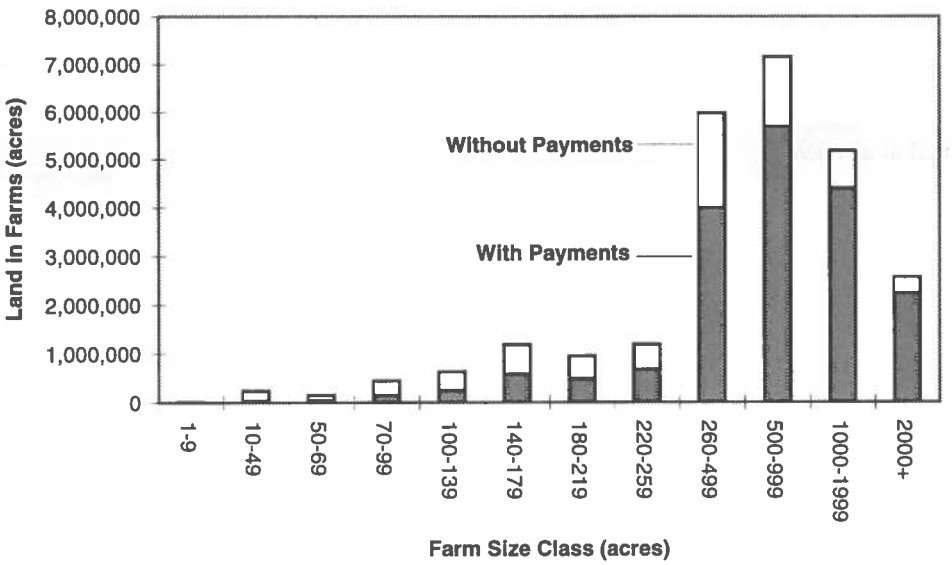
	All Sales	"Real Farmland" Sales
Number of sales	1,733	1,468
Average size (acres)		
deeded	115	115
tillable	84	87
Average price (dollars per acre)		
unadjusted:		
transaction mean	908	916
area mean	830	842
adjusted:		
transaction mean	897	904
area mean	819	833

Figure 9. Area Mean and Range of Sales Prices by Economic Development Region





Manipulation of data from the just-released *1992 Census of Agriculture* for Minnesota permits us to calculate how many acres are under the control of farmers who receive federal farm program payments. Roughly half of the state's 75,000 farmers are in this category; they control more than 70 percent of the state's farmland acres. However, that leaves 30 percent, or some 7 million acres of Minnesota farmland, on farms that do **not** receive government payments. As a consequence, those lands are not "protected" by the conservation requirements of the federal farm programs.



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