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MINNESOTA EXTENSION SERVICE
UNIVERSITY OF MINNESOTA

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1996 Farm Real Estate Sales Prices Up Sharply Across Minnesota

Steven J. Taff

To probably no one's real surprise, our newest farm real estate price study shows the state's farmland selling at a higher level in 1996 than it did in 1995. The high prices earlier in the year are largely responsible for this bump—and these didn't last long.

Economists teach that land prices reflect people's future income expectations—how much profit they think a piece of land will return year after year after year. Higher crop prices (all else equal) lead to higher farm profits, which lead to higher annual rents, which lead to higher land prices.

The speed at which the crop price/rent/land price connection operates can be called the velocity of price transmission. This year that velocity seemed pretty quick, even though the monthly land prices didn't track crop prices all that closely (Figure 3). Of course, we know now that the crop price boom was a spike, not a new plateau. December crop prices are actually below the level of a year ago. But because our land sales records stop at September 30, 1996, we'll have to wait until next year's study to find out if price transmission works as fast going down as it did going up.

In this article, I examine our common assumption that such annual movements in the average price of observed sales is an accurate reflection of movement in the values of all Minnesota farmlands. Just what do observed prices tell us?

The more I examine the data, the less confident I am that the ways in which it is commonly reported and used are fully justified. My concern is based on both the sparseness of the sales (less than 1% of the state's land is sold each year) and on the representativeness of the properties that were sold.

My conclusion is that our study, however sparse the data might be, does accurately reflect a broader reality. Much agricultural land in the state did increase in value last year. Land sales studies such as this are still the best analytical tool we have for assessing overall land values—if they are reported honestly and applied cautiously.

Who Cares?

Why do we care about the price of farmland? I can think of three reasons. First, we're a scorekeeping society. We want to know "how we're doing," and we've decided to accept the average price of farmland as one indicator of the general level of prosperity in rural America. If the price of land goes up, then people in the country must be doing better. It's the bucolic counterpart of our infatuation with the Dow Jones Index—the Dow goes up and we all celebrate, because "the economy" is better. Both notions are largely unsupported by either economic science or common sense, but both are deeply embedded in the public psyche.

A second reason for tracking land price averages is to decide if Land is a

*(See **Prices** page 2)*

Using Surveys and Farm Records to Track Farmland Rental Rates

Bill Lazarus and Jim Molenaar

Record crop prices and government program changes made rental rates a hot topic in late 1996. But how do we know what those rates really are? For years, we got farmland rent information from a University of Minnesota survey of township boards. The most recent survey was conducted in late 1994. Since then, we haven't had the resources to conduct a statewide effort.

But there are two other sources of rent information that might fill the void

*(See **Rental Rates** page 7)*

Steven J. Taff is an associate professor and extension economist in the Department of Applied Economics.

Bill Lazarus is an Associate Professor and Extension Economist in the Department of Applied Economics. Jim Molenaar is Regional Dean, Management Education, Ridgewater College, Willmar.

(***Prices*** *continued from page 1)*

Figure 1. 1996 Minnesota Farmland Sales Prices.

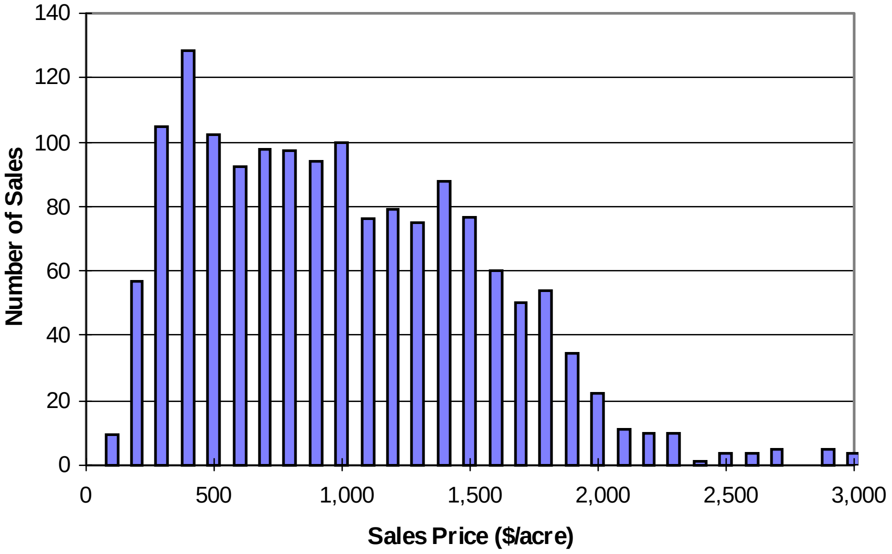


Figure 2. Minnesota Farm Real Estate Sales at a Glance.

	1996	1995
Number of sales	1,584	1,455
Deeded acres	188,055	181,726
Tillable acres	147,398	136,283
Transaction mean price ($/acre)	1,038	895
Area mean price ($/acre)	935	797
Median price ($/acre)	911	787

good investment strategy. I capitalize the word here to dramatize the difference between a piece of land, as in "the forty acres across the road," and Land as compared to other investments (such as the stock market). The average price of a whole set of land sales is felt by some to be a useful indicator of how well a future investment in any one parcel might perform.

A third use of average price data is to help put a price on an individual parcel. Two types of information help here. If you know little or nothing about how much the parcel might fetch, you might decide to use the average price of parcels in the vicinity as the starting point of your own valuation. Or, if you know what the parcel was worth last year, then you might use new knowledge of the movement of average prices to update your valuation. Either way, you use knowledge of the entire market to help you with the valuation of an individual property.

Calculating *The* Price of Land

What we actually observe on the land market is a completed transaction. We know the buyer and seller, the total amount paid, the terms of the sale, its location, the size of the parcel, and (sometimes) the productivity of the soil. Importantly, we don't know anything about all those other land parcels in the state that happened not to sell that year. Yet it is the hidden values of those lands that we frequently want to know about.

The sales we report here are those that remain after we filter the set of all "agricultural sales" (those for which the buyer indicates no intention of changing use) reported to the Minnesota Department of Revenue over the October 1, 1995-September 30, 1996 "record year." For present purposes, we analyze only sales of 40 acres or more at least half of which are tillable. We include only those sold via either a warranty deed or a contract for deed. We are left with 1,584 "farmland" sales covering 188,000 acres.

From the basic sales information, we calculate a per-acre price by dividing the total parcel price (unadjusted for terms and time and including buildings and improvements) by the number of deeded acres in the parcel. Although no single calculation serves all purposes, this particular price is comparable with others used in series such as the USDA survey (shown in Figure 4) and Professor Philip Raup's long running Minnesota land studies which this report succeeds.

Figure 1 shows the distribution of per-acre prices for 1996 Minnesota farm real estate sales. The figure casts doubt on the usefulness of using a single number to capture all the information contained in the entire distribution of prices. Nevertheless, a single number is what we generally ask for, and its movement from year to year is what we commonly use to indicate "changes in land prices."

Figure 2 provides three prices, none of which alone adequately describes the set of prices pictured in Figure 1: the transaction mean, the area mean, and the median. The first is simply the average of all the individual sales' per-acre prices. The second is an average of sales prices weighted by the size of the parcel. The median is the middle price: half the sales were at a higher price, and half were lower.

Following our own convention of past years, as well as those of other land market studies, we report here mostly the area mean, which can be thought of as the sales price of a typical acre. That's the type of average used in all the ensuing figures—except Figure 5. There I try to capture more of the information embedded in the distribution of observed sales prices by slicing the distribution of each year's sales at the median, the middle price. By slicing each half once again, I find the prices below which 25% and 75% of the sales lie. A similar slicing gives us the 5% and the 95% prices. So, for example, 5% of the 1996 sales were lower than $300, the bottom mark, and 25% were higher than $1,350, the next-to-top mark.

This portrayal helps us ignore the extremely high or low prices and focus on the price distribution, not just the single average price. It's apparent that a long run increase in average prices has been due more to movements of higher-priced properties. The 25% line has hovered around $400-500 since 1989, while the 75% line has risen from around $1,000 to nearly $1,400 per acre—up $200 since last year alone. There is, however, a noticeable increase across all price levels this past year.

Excluding Buildings

Because most of the series reported here include the value of buildings, it's better to say we're tracking the prices of farm real estate, not of farmland itself. That is customary in the land price literature.

Could the jump in farm real estate prices be caused, not by increases in the land itself, but by increases in the sales price of buildings or a disproportionate number of sales with buildings? Figure 6 shows my attempt to answer the question. (The short answer is No.)

The dashed line is the same average farmland price reported in Figure 2. What I call "bare land" is the average of sales prices of just those parcels with no buildings—1,047 sales out of 1,584. The "tillable land" price series results from the more elaborate procedures we use in preparation of the annual Minnesota Agricultural Land Valuation Schedule, which county assessors use for their estimates of future land prices. Essentially, our procedure subtracts out the estimated value of any buildings and non-farmland values for each parcel and then calculates the remaining value on only the tillable portion of the parcel.

It's clear that the "purer" land price series has moved in lockstep with the total. Our observed run-up in average farm real estate prices is attributable to the land itself, not just to the buildings.

Parcel Size

Figure 7 shows the relationship of parcel size and the price paid on a per-acre basis. (As before, this is total unadjusted price divided by deeded acres.) The forty-acre multiples common in Midwest land transactions are evident. Note the massing of sales at 40, 80, 120, and 160 acres especially.

One might be tempted to exclude some of the over-$3,000 sales as "non-agricultural"—despite their buyers' claims to the contrary. For this study, however, I have chosen to leave them in. I have little evidence that they were not agricultural. Most of these sales were on the periphery of the Twin Cities metropolitan area, in Dakota, Rice, Washington, Anoka, Sherburne, and Wright Counties—all increasingly subject to development pressures. People have to pay high land prices in these areas, even to stay in farming.

Regional Movements

Figure 9 and Figure 10 give a region-by-region summary of sales information. (Figure 8 shows the boundaries traditionally used in reporting distinct Minnesota land sales studies.) The table is a modified version of the approach used in Figure 5. I report the 5%, 25%, etc. sales points for each region. In the graph, I show the movement of the average sales price (the area mean) for each region. (Keep in mind that the area mean is considered the best single number to capture the entire set of observed prices, but the "quantiles" in the table better portray the distribution of those prices.)

A final take on the regional data is provided by Figure 11, which shows the relative movements of prices. For each reporting district for each year, I divide the average price by the 1989 price. That "normalizes" all prices to an index value of 1.0 for 1989. The steeper the ascent in this price line, the faster prices in that region have risen. I've selected three major crop regions for comparison to the state as a whole.

Figure 3. Monthly Average Prices for 1995-96.

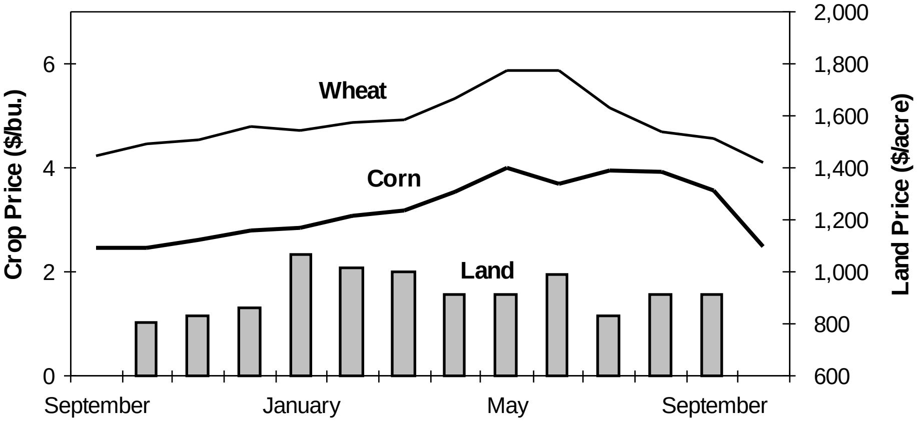


Figure 4. Selected Annual Average Minnesota Farm Real Estate Prices.

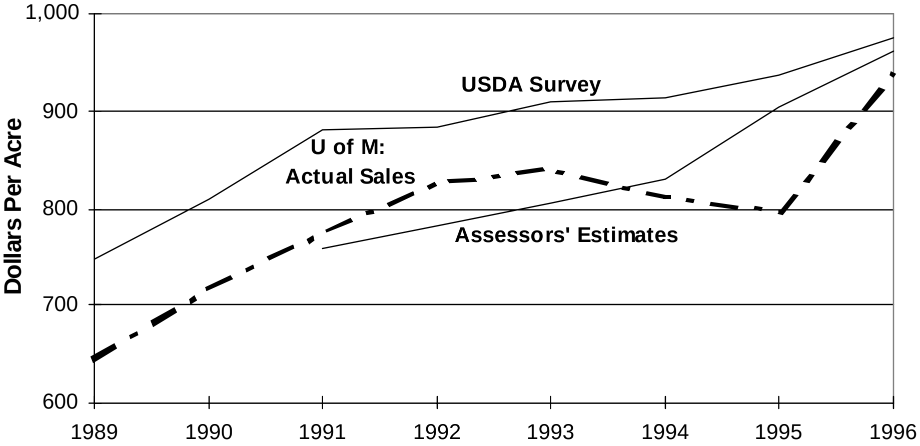
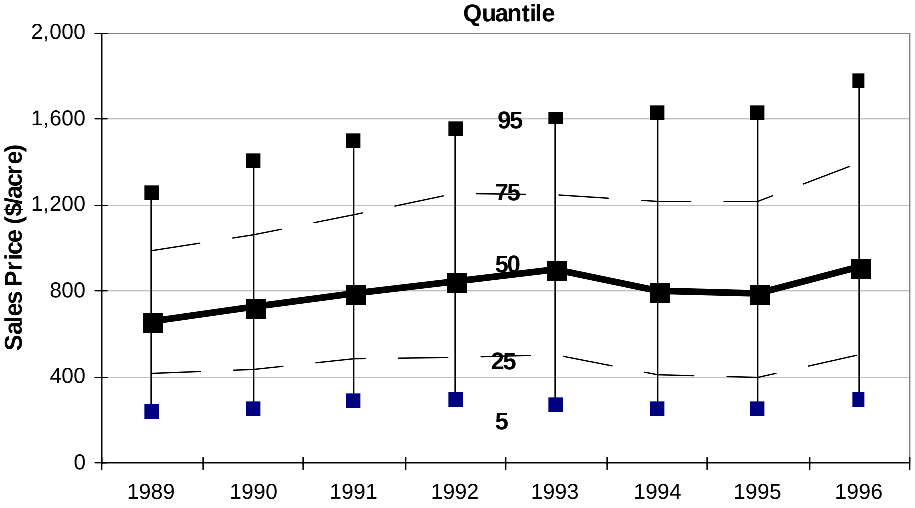


Figure 5. Annual Distribution of Minnesota Farmland Sales Prices: Percent of Sales Lower than Indicated Price.



Composition

These sales numbers are for a completely new set of lands each year, which leads to what I call the Problem of Composition. Briefly, if we have proportionately more sales of lower-priced land this year compared to last, then averages (however defined) of this year's sales might be lower than last year. This is not because all parcels in the state (which we don't observe) went down in value, but because the preponderance of lower-priced sales pulled down the calculated average.

This has always been an especially vexing reporting problem in the Red River Valley (the Northwest region in Figure 8). There are two distinct land markets there, with dramatically different average prices, largely linked to land productivity. Figure 12 tracks these two markets. In 1994 and 1995, the ratio of lower-priced non-valley sales to higher-priced valley sales went from 6:5 to nearly 3:1. It was about 2:1 this year. While this partly explains the drop in average region prices after 1993, the figure shows that even prices within the valley dropped. (Of course, these are averages, similarly subject to the Problem of Composition. There is no escaping it.)

What Are We Really Seeing?

Remember that each year all we see are prices from properties that happened to sell. We rarely see the same property sell more than once over a period of several years, so each year's sales set is made up of different properties. It is premature to say, therefore, that our sales data tell us all land values are increasing or decreasing. Readers may choose to make that inference, but must be cautious in making this leap from the yearly "sampling" of the total population.

All these numbers really tell us is that the average (or 25% level, or whatever) of those properties that happened to sell this year is higher than the average (or 25% level) of those properties that happened to sell last year. Only if we assume that each year's sales set sufficiently represents all land (sold and unsold) can we use the average prices of the sales set to estimate the average values of all farmlands in the state. (This assumption, usually unstated, underlies all surveys and sales reports that attempt to estimate expected land prices.)

Figure 6. The Effect of Subcontracting Buildings and Improvements from Minnesota Farmland Sales Prices.

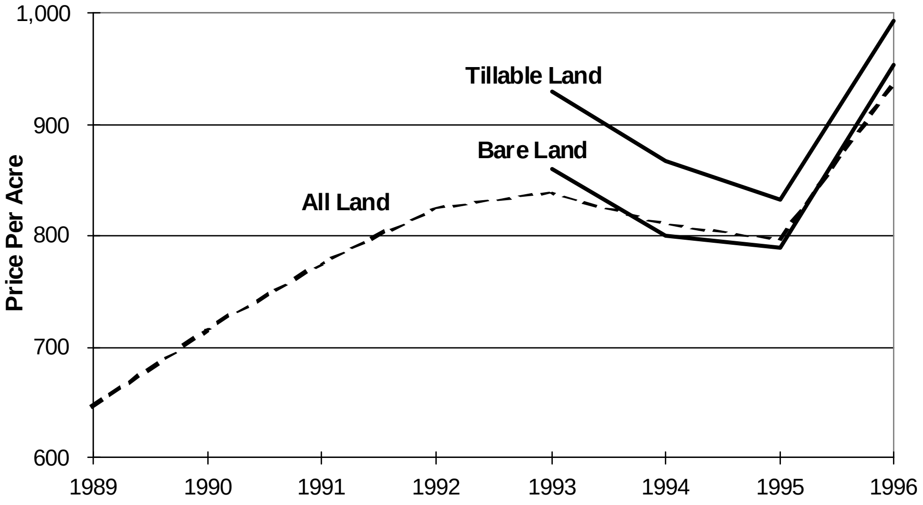


Figure 7. Parcel Size and Per-Acre Price for 1996 Minnesota Farmland Series.

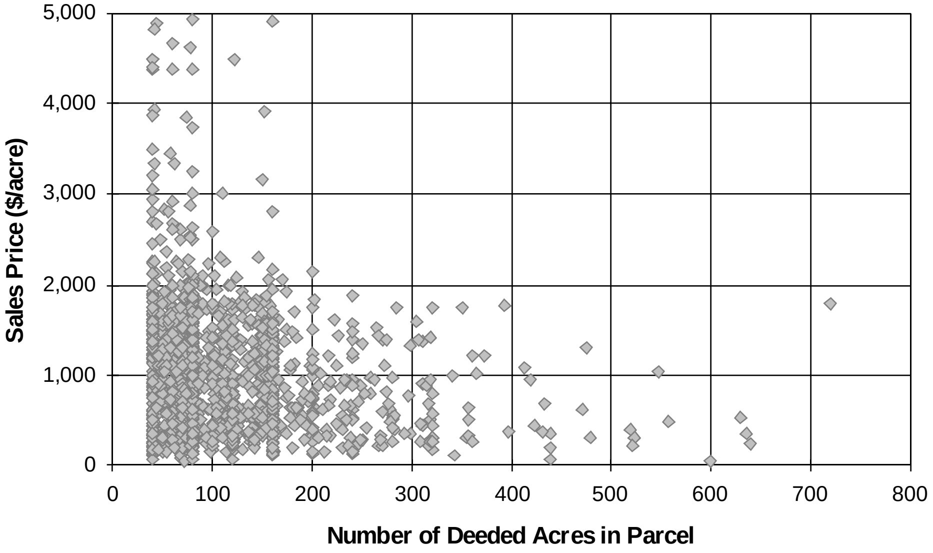
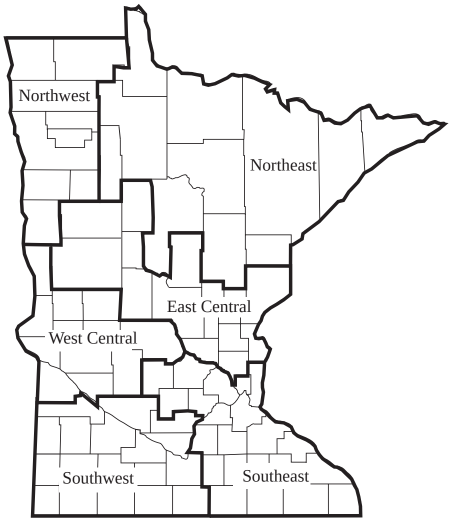


Figure 8. Sales Study Reporting Districts.



Is this a good assumption? Does the set of sales reported here “adequately” represent all farm real estate in Minnesota? There are really two potential problems: not very many sales and not very representative sales.

Are There Enough Sales?

The state has roughly twenty million acres of farmland, according to the Census of Agriculture. Each year, somewhere around 200,000 of those acres are sold. So we have a turnover rate of around 1% overall—a little higher in some areas, a little lower in others.

That’s not a very high percentage on which to base inferences about land prices. But it’s all we’ve got, and Figure 4 suggests that our observed sales averages move roughly in step with two other land price series: the USDA’s annual survey of landowner opinions and the county property tax assessors’ aggregate estimates of market value within their respective jurisdictions. (Neither of these series, however, suggested the downturn in prices that our UM study showed in 1994 and 1995.)

One way to deal with the sparseness of sales data is to combine sales from over several years. Figure 13 shows average county prices since 1989, adjusted for inflation. The implicit assumption here is that any year-to-year price differences (after inflation adjustments) are due to the vagaries of annual sampling. This permits us to average prices across over 12,500 property sales and to examine price differences among jurisdictions.

Are the Sales Representative?

How good is the assumption that each year’s set of sales is “representative” of the underlying universe of values for all properties? We need some way to characterize each year’s sales and to assess the invariance of those characteristics over time. Figure 14 shows that the relative proportions of deed types have changed since 1989: contracts for deed have fallen from 50% to now below 30% of the total. This may reflect an increasing liquidity on the part of buyers or an increasing reluctance by sellers to be locked into long-term arrangements. But Figure 15 shows that the average size of parcels sold and the average productivity of those parcels (as measured by the CER, the Crop Equivalent Rating) have remained unchanged.

Figure 9. Sales Price Distribution by Reporting District.

	Number of Sales	1996 Per-Acre Sales Price Quantiles				
		5	25	50	75	95
East Central	355	199	350	492	775	1,813
Northeast	90	125	217	308	485	1,149
Northwest	162	150	266	373	777	1,335
Southeast	333	595	901	1,263	1,645	3,750
Southwest	448	606	1,050	1,373	1,628	2,000
West Central	196	360	600	813	1,045	1,607
State	1,584	225	500	911	1,400	2,051

Figure 10. Annual Average Prices (by Reporting District).

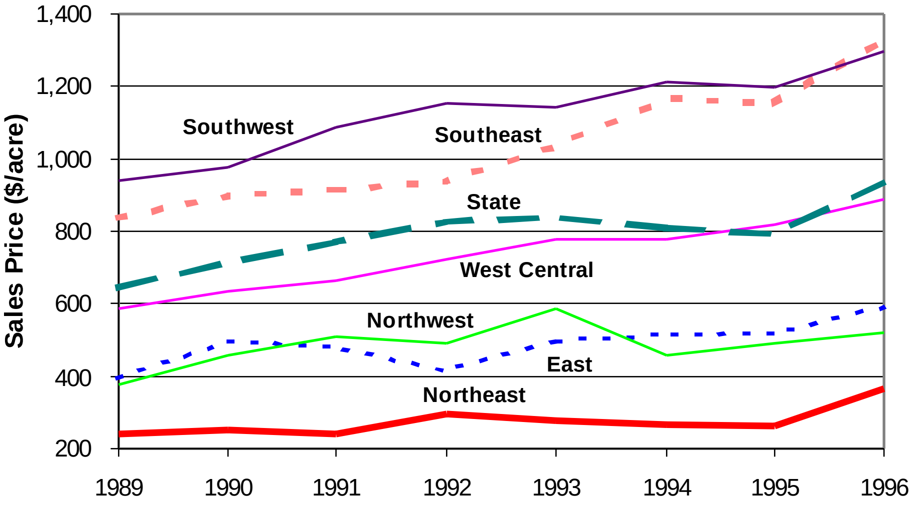
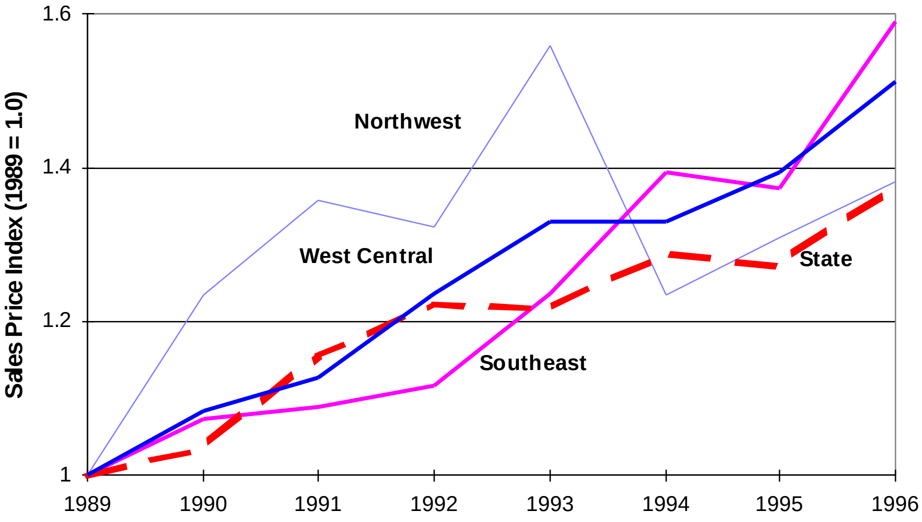


Figure 11. Price Index Movements.



In all, I judge that the set of sales observed in 1996 is similar enough to those observed in 1993 or in 1989. Because each year’s “sample” is consistent, I have some confidence that the observed changes in average prices from year to year do indeed reflect changes in the prices of all farmland in the state.

My Opinion, for What It’s Worth....

Observed farm real estate sales prices jumped considerably in 1996. This increase held across most geographic areas and for both bare land and total real estate. It was most pronounced for mid-level to higher-priced properties. It would seem that the high crop prices of early 1996 were quickly transmitted into higher land sales prices.

Readers may recall that my conclusion last year was that the prices being paid then clearly exceed the capacity of those parcels, on a per-acre basis, to return enough income to justify the buyer's investment. This year's results, a dramatic upturn in average prices unsupported by long-run higher crop prices, give me an even queasier feeling.

I worry that the current farmland market in Minnesota is overheated. Crop income alone cannot justify the prices we're seeing. One can only hope that buyers have other reasons that will prove to be financially prudent.

I worry that a collective amnesia besets us. We've conveniently forgotten that the land price boom of the 1970s was quickly followed by a bust in the early 1980s. Will that cycle repeat itself? I don't know. But I do think that potential buyers should think twice, then think again, before rushing into a purchase. There are many good reasons to buy farmland, but there is no good reason to pay too much.

The basic sales data used in this report is available for readers' own analyses at **http://apecon.agri.umn.edu/** or contact the managing editor at the address listed on the back page of this report.

Figure 12. Price Movements in Northwestern Minnesota.

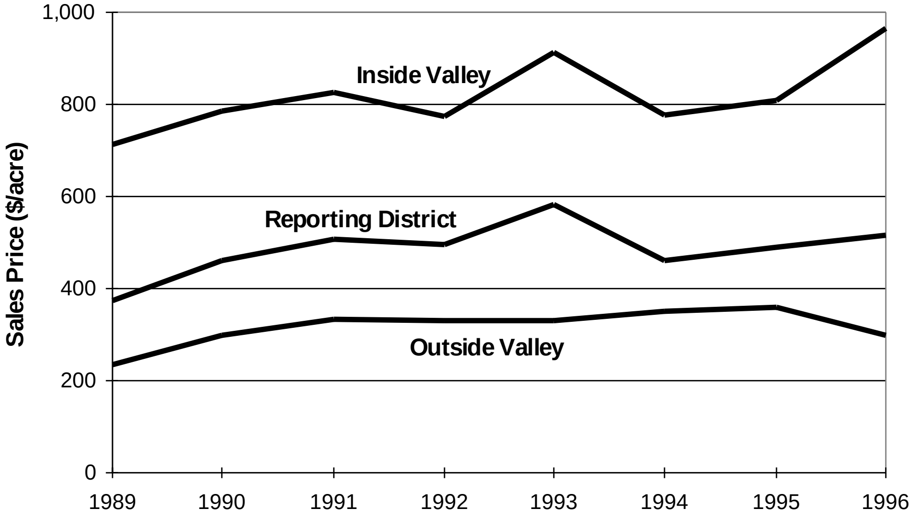


Figure 13. Inflation-adjusted Average Farmland Prices Since 1989 (in 1996 dollars).

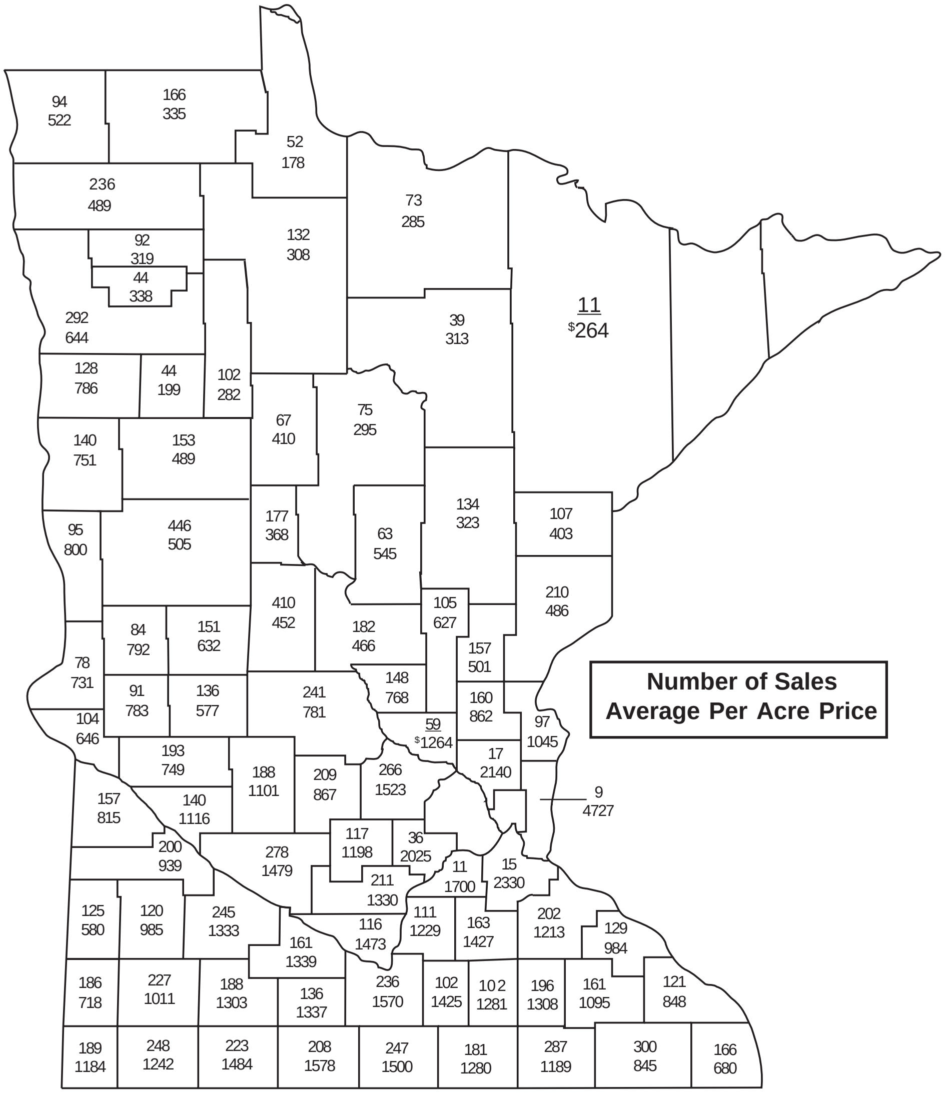

94 522
166 335
52 178
236 489
73 285
132 308
92 319
44 338
292 644
39 313
11 $264
128 786
44 199
102 282
67 410
75 295
140 751
153 489
95 800
446 505
177 368
63 545
134 323
107 403
410 452
105 627
210 486
84 792
151 632
182 466
78 731
157 501
148 768
91 783
136 577
241 781
160 862
Number of Sales
Average Per Acre Price
104 646
59 $1264
97 1045
193 749
17 2140
188 1101
209 867
266 1523
157 815
140 1116
9 4727
117 1198
36 2025
200 939
278 1479
11 1700
15 2330
211 1330
125 580
120 985
245 1333
111 1229
202 1213
116 1473
163 1427
129 984
161 1339
186 718
227 1011
188 1303
136 1337
236 1570
102 1425
102 1281
196 1308
161 1095
121 848
189 1184
248 1242
223 1484
208 1578
247 1500
181 1280
287 1189
300 845
166 680

Figure 14. Deed Type for Minnesota Farmland Sales.

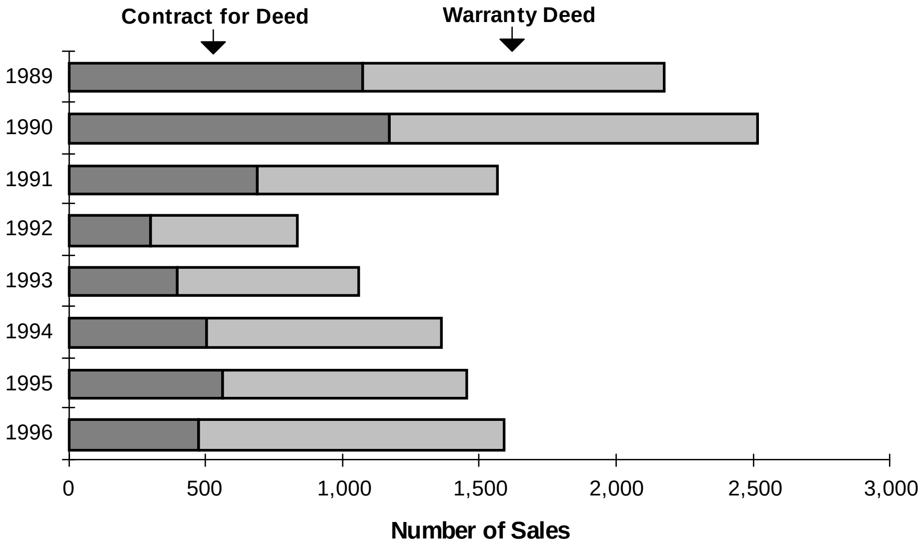
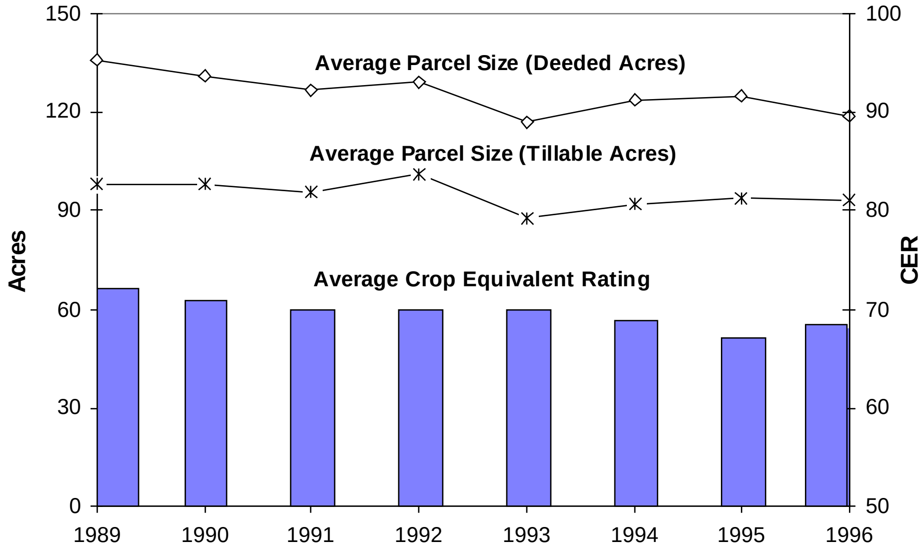


Figure 15. Characteristics of Parcels for Minnesota Farmland Sales.



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

in at least some parts of the state: surveys by county extension offices and farm business record summaries. In this article, we examine each data source and compare their findings.

Extension Office Studies

In many counties where interest in farmland rental rates is high, county extension offices insert questionnaires into extension or USDA Farm Service Agency newsletters that are mailed to farmers. Thus, the population surveyed (farmers) is different and larger than that in the University's state-level survey which questioned only one board member in each township. Farmers presumably report rents that they themselves have paid, whereas township board respondents were asked their estimate of the "going rates" in their area.

The extension questionnaires usually ask for details that were not on the state survey, such as crop base and tile drainage. If enough farmers respond, these surveys can provide a representative and descriptive view of the farmland rental situation in those counties.

The counties that conducted local rent surveys in 1995 and/or 1996 are shown in Figure 1. The available surveys cover counties in the south central, southwestern, and west central parts of the state, as well as the southern and eastern parts of the metro area. We have no record of any surveys from the northern half or the southeastern corner of the state. (Figure 4 shows the rental rate region boundaries used in this report.)

Figure 1 summarizes the rental rates reported for the surveyed counties for 1995 and 1996, along with projected rates for 1997. In all, 1995 data are available for 24 counties. Data are available for 19 counties for 1996, including two that were not surveyed in 1995. In eight counties, the 1996 survey asked about projected 1997 rental rates.

For the 17 counties with both 1995 and 1996 data, most showed slight increases of between one and five percent (Figure 2). Three showed declines, two were unchanged, and three showed increases of over five percent.

Because the 1995 and 1996 data are from two different sets of surveys with different samples of farms responding, caution must be used when comparing the two sets of data. The 1997 projections are from the same respondents as the 1996 data. For the eight counties with 1997 projections, increases of three to six percent were expected.

Farm Records Data

How accurately do these surveys reflect what farmers actually paid? A second source of rental rate information are farm business records from the Farm Management Programs of the Minnesota State College University (MnSCU) system and the Minnesota Farm Business Management Associations (FBMA) coordinated by the University. The records are summarized annually by the University using FINPACK Version 8.0's FINAN module.

The record summaries are published in six regional MnSCU publications and two regional FBMA publications. The FINAN crop enterprise section includes data for each crop grown, including tenure type (owned, cash rented, or share rented), acreage for each tenure type, and dollars of rental expenses paid, along with other direct crop expenses. The summary publications include per acre crop enterprise analyses split out by land tenure (owned land, cash rented land, and share rented land) for the major crops. Average rent paid per acre is available by farm record region and by crop.

A disadvantage of the farm record databases as a source of information for upcoming land rental negotiations is the two-year time lag from negotiation to reporting. For example, this article summarizes rates paid in 1995, which would have been negotiated in late 1994. The records were summarized by MnSCU and FBMA in early 1996. So the first time the 1995 information could be used was this summer and fall for the 1997 crop year.

More timely surveys will continue to be needed to assess the current state of the land market, but the farm records do give us a retrospective "reality check" on the accuracy of the survey information.

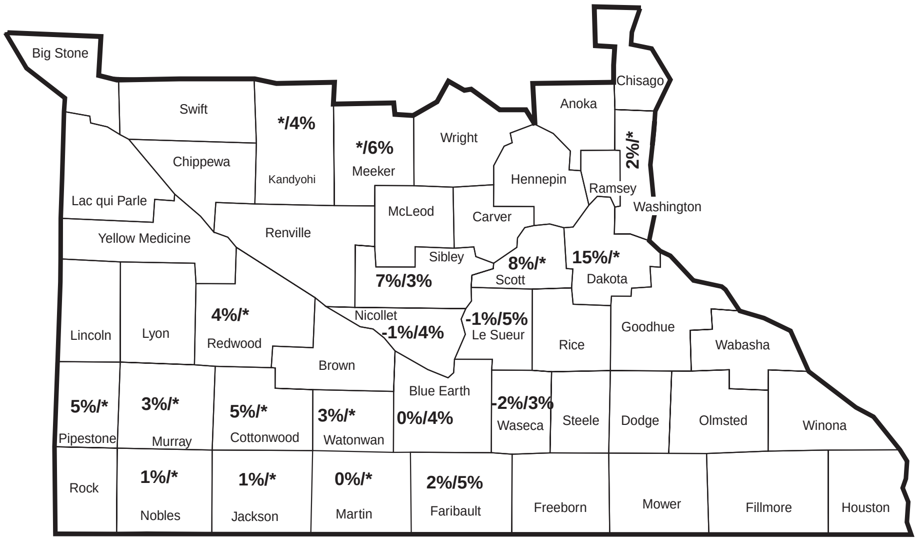
This report summarizes the rental expenses paid by the MnSCU and FBMA farmers, reported differently from the way the data appear in the

Figure 1. Cropland Rental Rates from County Extension Office Surveys, 1995, 1996, and Projected 1997.

		1995		1996		Percent Change	Projected 1997	Projected Change
Region	County	Farms	Mean	Farms	Mean	1995-96	Rent	1996-97
1	Blue Earth	412	$95	395	$95	0%	$99	4%
1	Faribault	351	101	437	103	2%	108	5%
1	Jackson	65	90	66	91	1%		
1	Martin	112	97	48	97	0%		
1	Waseca	144	95	108	93	-2%	96	3%
1	Watonwan	22	98	26	101	3%		
2	Cottonwood	85	85	79	89	5%		
2	Le Sueur	71	89	123	88	-1%	92	5%
2	Nicollet	128	97	193	96	-1%	100	4%
2	Redwood	43	84	52	87	4%		
2	Sibley	43	91	145	97	7%	100	3%
4	Chippewa	156	82					
4	Kandiyohi			62	69		72	4%
4	Meeker			**	68		72	6%
5	Lac Qui Parle	352	66					
5	Murray	32	70	37	72	3%		
5	Nobles	63	84	77	85	1%		
5	Pipestone	14	64*	17	67*	5%		
6	Douglas	**	38					
7	Big Stone	55	54					
7	Grant	91	57					
7	Stevens	51	54					
7	Swift	146	64					
7	Yellow Medicine	259	71					
Metro	Dakota		68	145	78	15%		
Metro	Scott		72	140	78	8%		
Metro	Washington		50	86	51	2%		

*Pipestone County data is from the southeastern portion of the county only.
**The number of farms was not reported for Douglas and Meeker Counties.

Figure 2. Change in Estimated Cropland Rental Rates: Selected Counties, 1995-96 and Projected 1996-97.


Big Stone
Swift
*/4%
Kandyohi
*/6%
Meeker
Wright
Anoka
Chisago
2%/*
Chippewa
Hennepin
Ramsey
Washington
Lac qui Parle
McLeod
Carver
Yellow Medicine
Renville
Sibley
7%/3%
8%/*
Scott
15%/*
Dakota
4%/*
Redwood
Nicollet
-1%/4%
-1%/5%
Le Sueur
Lincoln
Lyon
Brown
Rice
Goodhue
Wabasha
5%/*
Pipestone
3%/*
Murray
5%/*
Cottonwood
3%/*
Watonwan
Blue Earth
0%/4%
-2%/3%
Waseca
Steele
Dodge
Olmsted
Winona
Rock
1%/*
Nobles
1%/*
Jackson
0%/*
Martin
2%/5%
Faribault
Freeborn
Mower
Fillmore
Houston

(*=not available)

published regional summaries. The procedure used to extract the information summarized in this report was to sum, for each farm, the rental expense paid on all crop enterprises on cash rented land and acres of those cash rented crops. Both cropped and setaside acres were included. Then total rental expense paid was divided by the total rented acres to arrive at a rental rate per acre for the farm. We excluded from these any pasture, CRP land, or miscellaneous crops such as cranberries, apples, and cordwood.

The database included 1,451 farms with cash rented cropland. Of these, 1,235 were participants in the MnSCU program, and 216 were FBMA farms. There were 104 farms with cash rented pasture land, 85 from MnSCU and 19 from FBMA.

The rental rates were then aggregated by county, region, and the state overall. County level data are listed here only for counties with at least twenty reporting farms.

Observed Rental Payments

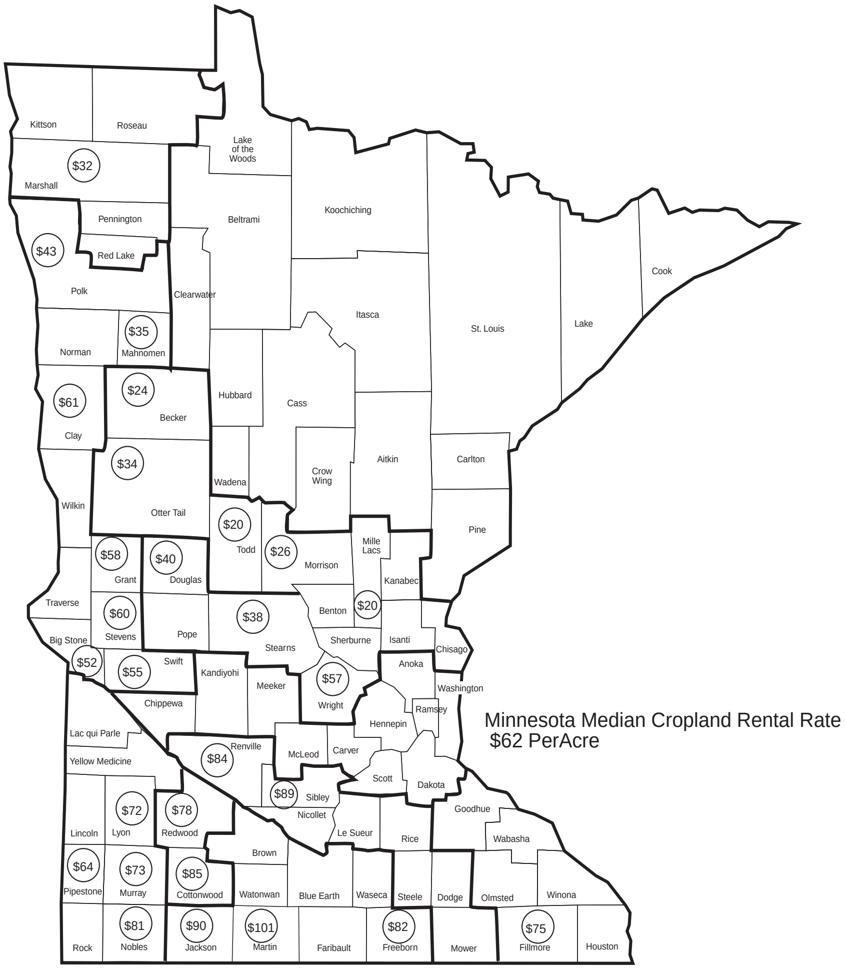
There is no single “going rate” for any county. Rather, there is a distribution of rates from low to high. So, how do we best describe the distributions? The measures we use here are:

- *median (50th percentile)* - the rent where there are an equal number of farms with higher and lower rates.
- *20th percentile* - twenty percent of the farms paid this amount or less.
- *80th percentile* - twenty percent of the farms paid more than this amount.
- *farm mean* - a simple arithmetic average of all farms’ rent per acre. Each farm counts equally, regardless of acreage.
- *area mean* - total rent paid by all farms divided by total acres. Large farms count more than small farms in this measure.

The median rates are shown on the map in Figure 2 for the 29 counties that have 20 or more farms covered in the records. (Figure 4 delineates the boundaries of the ten regions, plus the metro counties.)

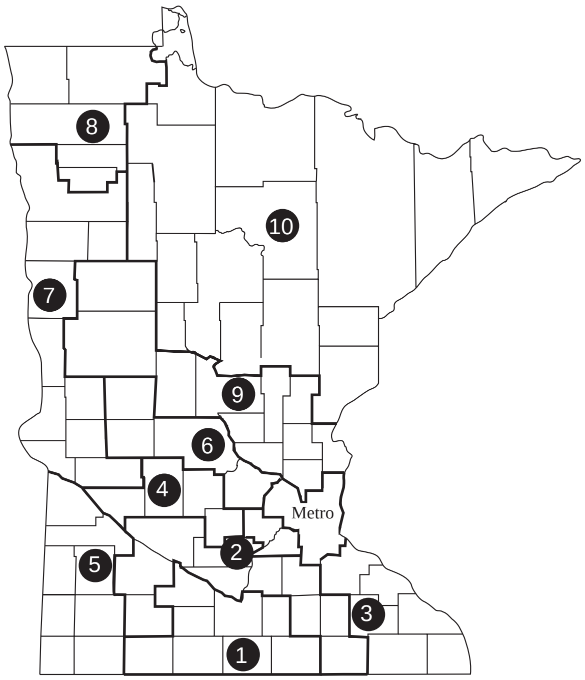
Figure 5 shows all of the measures for these counties. It’s interesting to note the relationship between the county medians and the farm and area means in this table. The median is probably the best measure to use for rent summaries because it is affected less by extreme high or low values than are the farm

Figure 3. Median Cropland Rental Rates Paid by Farmers in 1995: Counties with Twenty or More Farms Participating in Farm Business Record Summary Programs.



Kittson
Roseau
Lake of the Woods
$32
Marshall
Koochiching
Pennington
Beltrami
$43
Red Lake
Cook
Polk
Clearwater
Itasca
Lake
St. Louis
$35
Norman
Mahnomen
$24
$61
Hubbard
Cass
Becker
Clay
$34
Aitkin
Carlton
Crow Wing
Wadena
Wilkin
Otter Tail
$20
Mille Lacs
Pine
Todd
$26
$58
$40
Morrison
Grant
Douglas
Kanabec
Traverse
$20
$60
Benton
$38
Stevens
Pope
Sherburne
Isanti
Big Stone
Chisago
Stearns
$52
Swift
Anoka
$55
Kandiyohi
$57
Meeker
Washington
Chippewa
Wright
Ramsey
Hennepin
Minnesota Median Cropland Rental Rate
$62 PerAcre
Lac qui Parle
Renville
Carver
McLeod
Yellow Medicine
$84
Scott
Dakota
$89
Sibley
$72
$78
Goodhue
Nicollet
Lincoln
Lyon
Redwood
Le Sueur
Rice
Wabasha
Brown
$64
$73
$85
Pipestone
Murray
Cottonwood
Watonwan
Blue Earth
Waseca
Steele
Dodge
Olmsted
Winona
$81
$90
$101
$82
$75
Rock
Nobles
Jackson
Martin
Faribault
Freeborn
Mower
Fillmore
Houston

Figure 4. Rental Rate Regions Used in this Study.



8
10
7
9
6
4
Metro
2
5
3
1

and area means. The area mean is higher than the farm mean in most of the counties with sufficient farms to report (24 out of 29). Because large farms count more heavily in the area mean than in the farm mean, we can infer that rental rates are generally higher on large farms than on small ones.

The data do not tell us how many separate parcels are rented by each farm operation, so we cannot tell for sure what the relationship is between individual parcel size and rental rate.

Figure 6 shows the rental rate measures by rent-reporting region and for the state overall. The median rate for the state was $62 per acre, with 20% of the farms paying $30 or less and 20% paying $87 or more. For the regions, the medians and farm means are much closer than for the individual counties.

Twelve counties had a sufficient number of farms with farm records to permit a comparison with extension surveys from the same year (Figure 7). The survey and payment data seem fairly close overall. The county survey mean rents per acre were higher than the records median rates in five of the twelve counties, lower in five, and the same in two counties.

The county survey mean rents per acre were higher than the records mean in seven counties. The greatest discrepancy is in Watonwan County, where the survey mean of $98 per acre was $14 higher than the records mean, and $7 higher than the farm records median. Pipestone and Swift Counties also had fairly large differences between the survey mean and the records mean, although in Pipestone the records median was only $2 less than the survey mean.

Pasture Rental Rates

Pasture rental has not been given much attention in past surveys, but it is of interest to some producers. There were 104 farms in the MnSCU and FBMA databases that rented pasture land on a cash rental basis, with half of the farms located in two regions in the northeastern part of the state. A summary of pasture rental rates paid by two regions and for the state overall is shown in Figure 8. The median rate for the state is $6 per acre. The 20th percentile is zero, indicating that at least 20% of these farms paid no rent on the pasture land. The 80th percentile is $16 per acre.

Figure 5. 1995 Cropland Rental Rates Paid by Farm Business Record Farms (Counties with Twenty or More Participants).

Region	County	Number of Farms	1995 Per Acre Rental Rate 20th Percentile	Median	80th Percentile	Farm Mean	Area Mean
1	Freeborn	24	$70	$82	$93	$82	$85
1	Jackson	47	70	90	99	86	89
1	Martin	107	85	101	109	96	99
1	Watonwan	21	73	91	98	85	84
2	Cottonwood	73	73	85	94	82	85
2	Redwood	33	74	78	91	79	80
2	Renville	22	70	84	96	84	87
2	Sibley	23	79	89	95	88	91
3	Fillmore	25	52	75	87	70	77
5	Lyon	30	60	72	80	71	72
5	Murray	50	63	73	83	73	72
5	Nobles	74	70	81	91	80	85
5	Pipestone	23	57	64	74	61	62
6	Douglas	21	31	40	54	42	46
6	Stearns	59	26	38	52	40	44
6	Wright	38	47	57	66	57	59
7	Big Stone	22	46	52	61	55	55
7	Clay	77	50	61	76	62	66
7	Grant	22	54	58	66	60	65
7	Mahnomen	26	23	35	45	34	38
7	Polk	40	29	43	64	45	46
7	Stevens	39	51	60	68	60	61
7	Swift	28	48	55	71	58	60
8	Marshall	23	24	32	51	36	39
9	Becker	28	13	24	44	28	38
9	Mille Lacs	21	12	20	26	21	21
9	Morrison	45	20	26	38	31	30
9	Otter Tail	23	20	34	50	33	44
9	Todd	21	18	20	28	24	29

Figure 6. 1995 Cropland Rental Rates Paid by Farm Business Record Participant Farms, by Region.

Region	Number of Farms	20th Percentile	Median (50th Percentile)	80th Percentile	Farm Mean	Area Mean
1	208	$76	$93	$105	$91	$94
2	182	74	85	96	84	86
3	55	52	75	89	70	77
4	49	62	73	89	74	76
5	220	60	73	85	72	75
6	125	30	45	60	45	49
7	291	42	56	69	55	58
8	61	24	30	38	32	34
9	170	18	25	38	28	34
10	74	6	14	23	16	20
11	16	*	*	*	*	*
State	**1,451**	**$30**	**$62**	**$87**	**$60**	**$65**

*Metro area farms included in the state measures only.

Figure 7. 1995 Cropland Rental Rates: Farm Business Records Compared to County Extension Office Surveys

Region	County	Farm Records Number of Farms	Median	Mean	Extension Surveys Number of Farms	Mean
1	Jackson	47	$90	$86	65	$90
1	Martin	107	101	96	112	97
1	Watonwan	21	91	85	22	98
2	Cottonwood	73	85	82	85	85
2	Sibley	23	89	88	43	91
5	Murray	50	73	73	32	70
5	Pipestone	23	64	61	14	66*
6	Douglas	21	40	42	**	38
7	Big Stone	22	52	55	55	54
7	Grant	22	58	60	91	57
7	Stevens	39	60	60	51	54
7	Swift	28	55	58	146	64

*Pipestone County data are from the southeastern portion of the county only.
**The number of farms was not reported for the Douglas County Extension Survey.

Figure 8. 1995 Pasture Rental Rates Paid According to Farm Business Records

Region	Number of Farms	20th Percentile	50th Percentile	80th Percentile	Farm Mean	Area Mean
9	35	$0	$5	$10	$8	$7
10	18	0	2	10	5	4
State	**104**	**$0**	**$6**	**$16**	**$12**	**$6**

Summary

Resources have not been available at the state level to conduct farmland rental surveys since 1994, but there are two other sources of rental information that can fill the void in at least some parts of the state: surveys by county extension offices and farm business record summaries. The county surveys cover the south central, southwestern, and west central parts of the state (with the exception of Brown County), and the southern and eastern parts of the metro area.

Data from 1995 farm business record summary databases are available for 29 counties, giving fairly good coverage of the state including a few counties in the northwest and southeast. In addition, the records provide a limited amount of information on pasture rental rates which have not been included in the county surveys. On the whole, the average rental rate reported in extension surveys is close to the actual rental payments reported in the farm business records.

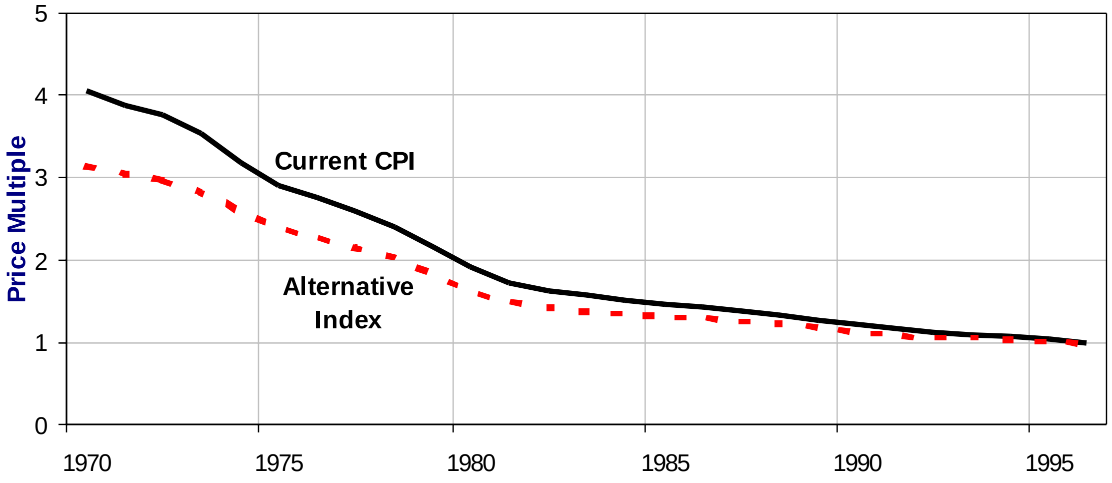
For more rent survey information, contact your county extension office.

A New Price Index?

Economists use indexes, like the widely reported Consumer Price Index, as a quick gauge of how much more an item costs today than it did last year—or in 1950. Trouble is, the CPI (and its counterparts) are usually reported in terms of some "base" year (1982-83 is what we presently use) that makes it hard to link to today's prices.

In this chart we've converted the CPI so it more naturally shows what many people want to know: how much more does it cost to buy something today than it did in some previous year? To use the chart, simply find the "multiplier" on the vertical axis associated with the year you're interested in. Multiply that number by the price of the item in that year to get what it would cost today. For example, a house that sold for $40,000 in 1973 would sell for about 3.5 x 40,000 = $140,000 today. The reverse works, also. A house selling for $140,000 today would have fetched $140,000/3.5 = $40,000 in 1973.

All this, of course, assumes that the prices of the item you're interested in—houses, in our example—were subject to the same inflation as all consumer goods in aggregate, measured by the CPI. It also assumes that the goods haven't changed over the years, that the house in 1945 is essentially the same today. This second assumption is more plausible for houses than it is for goods like computers. These concerns underly recent proposals to change the way the CPI is calculated. Small revisions can have dramatic effects on our calculations. For example, the alternative index shown in the figure results from whatever changes in CPI calculation that would result in a reduction of 1% in each year's inflation rate. If the alternative index is "correct" that $140,000 house would have cost 140,000/2.9 = 48,300 in 1973.



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Steven J. Taff.........Managing Editor
(612) 625-3103
sjtaff@dept.agecon.umn.edu

Kathleen Cleberg...Production Editor
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kcleberg@mes.umn.edu

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