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Minnesota Farm Real Estate Sales: 1990 - 2004

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#### Steven J. Taff

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#### Abstract

This report is a summary of the data contained on the farmland sales portion of the Minnesota Land Economics (MLE) web site (<a href="http://www.apec.umn.edu/landeconomics">http://www.apec.umn.edu/landeconomics</a>) as of June 2, 2005. It is formally reissued each Spring, as new sales data become available. We no longer distribute a separate farm real estate report in *the Minnesota Agricultural Economist* (now the *Minnesota Applied Economist*: <a href="http://www.apec.umn.edu/MnApEc">http://www.apec.umn.edu/MnApEc</a>).

The present document consists largely of graphs and tables summarizing sales over the past fifteen years. It provides averages at the multi-county region and at the statewide levels of aggregation. Individual transaction data are available for downloading and analysis at the MLE web site.

An electronic version of the current report in fully navigable portable document format (pdf) is also available:

http://134.84.17.150/landeconomics/readings/Minnesota\_Farm\_Real\_Estate\_Sales.pdf.

#### Minnesota Farm Real Estate Sales: 1990-2004

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#### What's New?

We now have 38,619 sales in the MLE database, covering the period October 1, 1989 - September 30, 2004. Over the past year, the story hasn't changed—average prices are still increasing throughout the state, substantially in some areas.

Minnesota farmland prices, whether near the Twin Cities or in seemingly the most "rural" of areas, have always been affected by factors other than agricultural. But there's a heightened enthusiasm for farmland thoughout the state. While more highly productive cropland will still sell for more than will nearby less productive land, all lands are increasingly desired for other reasons: recreation, retirement, investment, development. This results in some parcels selling for far more than we might expect if we simply focused on their farm income potential. Unfortunately, we currently lack analysis tools to take these new demands into account, tools comparable to the productivity ratings that we have for purely farmland evaluation. Maybe next year....

#### Overview

This document consists largely of graphs and tables summarizing Minnesota farm real estate sales over the past decade. The goal is to give you some pictures of the data without imposing too much interpretation on you. It's my job to present the numbers; it's your job to decide what they mean.

If you want to get right to work, jump to <u>The Charts</u>. Otherwise, read along to find out how the numbers that underlie the graphs and tables were derived.

This report provides averages at the multi-county region and at the statewide levels of aggregation. All the transaction data summarized here are available for downloading and analysis at Minnesota Land Economics (MLE) web site. The data in this document were extracted from the MLE database on June 1, 2005.

The MLE site is constantly changing as new data are made available, new analyses are completed, and errors are found and (hopefully) remedied. Please check back periodically to find out what's new. As always, corrections and new data mean slightly different summary statistics and charts from year to year

in these summary reports. That's why I give it all to you fresh each year.

This report is also available as a <u>printable document</u> (about 1500 KB). We no longer distribute a separate farm real estate report in the *Minnesota Agricultural Economist*, (now the <u>Minnesota Applied Economist</u>). Some of the text here is drawn from the author's previous land market studies. Click <u>here</u> for some past issues.

Questions, comments, corrections, concerns should be directed to the author.

#### Introduction

Economists commonly look to sales data to help understand land markets. In our language, we use observations of what some properties sold for (*prices*) to form expectations—to make a prediction—about how much other properties might sell for in the future (*values*).

Why might we care? I've heard three types of reasons. First, we're a score-keeping 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 rustic counterpart of our infatuation with the Dow Jones Index—the Dow goes up and we all celebrate, because "the economy" is somehow 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 average is to decide if "Land" is a good investment strategy, compared to, say, utility stocks. 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 a class of assets. The average price of a set of land sales is felt by some analysts to be a useful indicator of how well investment in Land will perform.

A third use of average price data is to forecast a potential transaction price on an individual parcel. Two types of information might 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 negotiation. Or, if you think you know what the parcel was worth last year, then you might use new knowledge about the movement of average prices to update your valuation. Either way, you use summary data for the entire market to help you with the valuation of an individual property.

Here is not the place for me to challenge any of these rationales. Nor will I provide my own estimates of what land will sell for or whether I think average prices will rise or fall. I can tell you with great confidence what *did* happen in the state's many land markets. It's up to you to figure out what *will* happen.

#### The Data

Most of the data used in the graphs and tables on this site come from annual Minnesota Department of Revenue compilations of property transactions reported by county auditors. When a Minnesota property is sold, the transaction details must be recorded at the county courthouse on a form called a certificate of real estate value, or CRV. On it, the seller attests that such-and-such a property was sold to so-and-so on a certain date for a specific price. Other information about the property (its size, intended use, soil characteristics, prior year's estimated market value) is often entered on the CRV as well.

Sales prices here are analyzed on a per-acre basis; the price includes not just land but also associated improvements, including structures. (Most years, over half of the sales are for "bare land" only.) Sales with per-acre prices above \$15,000 are excluded from the analysis. (They're not really "agricultural" sales, even though they are still classified as such by local tax officials.) On many charts, (a few) higher priced sales are excluded for clarity. All properties in the study were previously classified as "agricultural" for tax purposes and were not intended, according to the buyer and agreed upon by local tax officials, to be converted from agriculture. The most recent sales year covers the period January 1 through September 30 only, because of the way the data is collected by the Department of Revenue. As a consequence, the remainder of the current sales year is not reported until the next sales study. So, for example, year 2004 sales that occurred in October, November, or December won't be available until the Spring 2006 study.

All these transactions can be analyzed or downloaded through the Minnesota Land Economics (MLE) web site.

Before a price enters the MLE data base, it passes through an series of filters and adjustments designed to make comparison among transactions more meaningful and more reliable. A first step is to ensure that the numbers are correct. There is always the chance that simple recording errors are made. Next, local or state officials remove any sale not deemed "arms-length," because it was sold, for example, to a member of the seller's immediate family.

After this filtering, sales prices are adjusted to make comparison among sales more appropriate. First, to expunge the effects of inflation, sales prices are deflated by an officially reported rate to January 2 of the year in which they were recorded. This "adjustment for time," which has been relatively minor in years (like the past decade) where inflation has been low, is now done by the Department of Revenue.

A second price adjustment, "for terms," is also made by the Department of Revenue where appropriate. Not all farm real estate sales are for the full title by warranty deed. Some are made through a contract for deed, an arrangement that allows the buyer to pay a certain amount now and other amounts at stated intervals. Until the final payment is made, the property title remains in the possession of the seller—even though the land has been "sold." Because the agreed-upon payment schedule is entered on the CRV, the Department can calculate a present value of the initial and subsequent payments. This becomes the official recorded sales price for the transaction.

Adjustments don't end with a time- and terms-adjusted sales price. In most cases, users of the data are

interested in per-acre prices, not per-parcel prices. That means some chosen total price must be divided by some total acreage. But which price? Which acres? Should we use the total price or should we first subtract out the value of buildings, personal property, ancillary property, or machinery to get closer to the "true" land price? Should we use all the land in the property, or just cropland?

In this report, I mostly use the median price—although I also report other averages (see below)—the halfway point in the distribution of time- and terms-adjusted total sales prices, minus the value of personal property, divided by the entire acreage of the parcel. Because I do not attempt to strip out the value of buildings and other "improvements"— the data are unreliable—it's best to speak of the numbers here as referring to markets in farm real estate, not the "farmland" per se.

The graphs and tables included on this site (see <u>The Charts</u>) array the sales at the region or statewide levels only. The region boundaries used here are USDA agricultural statistics reporting districts. Here's a <u>map of the district boundaries</u>. The particular county groupings has problems, as would any such combination. For example, the Red River Valley, with its two worlds-apart farm real estate markets, is still lumped into a single reporting area. And the Twin Cities metropolitan area is split among three regions. You can create your own aggregations and do your own analysis by going to <u>Minnesota Land Economics</u>. If you need a clean copy of any of the charts for publication, please <u>contact the author</u>.

#### How I calculate" average prices

If there is any single story to be stressed from this analysis it is that use of a single number as "the" price of land for any area—county, region, state—can be misleading. There is a huge range in farm real estate prices throughout Minnesota. Reliance upon the movement of any single number like the mean may mislead more than it informs. All that we actually observe are the recorded prices of hundreds of individual parcels, of varying characteristics, scattered throughout the state.

For some markets, year to year price movements can be measured from repeated readings of the same property or the same asset. But in land sales studies, each observed transaction is for a different piece of land: we rarely see the same parcel sell more than once in a number of years. We opportunistically use observed sales as what statisticians sometimes call a "sample of convenience," a sample from which to estimate the average price of *all* land, sold and unsold combined, for that year.

If observed sales happen to be of properties that disproportionately represent one end of the (unknown) range of prices for all parcels, then the sample's average may mislead us. The wider the actual range and the fewer the number of observed sales, the more likely it is that such a disproportionate and hence misleading sample may be "drawn."

Do the observed sales analyzed here provide sufficient information for us to describe the distribution of—and to make predictions about—the value of all farmland parcels? There are two potential problems: not very many sales and not very representative sales.

For any level of aggregation, three different averages, single numbers that are intended to capture the flavor of the whole distribution, can be calculated:

- (1) The *transaction mean* is obtained by dividing the sum of all per-acre sales prices by the number of properties sold. This might be thought of as "the average parcel price."
- (2) The *median*, the price at which half of the transactions are higher and half are lower, can be thought of as the "middle price."
- (3) The *size-adjusted mean* (which I called the "area mean" in earlier publications) is the quotient of total dollar sales in an area divided by the total acreage sold in the same area. This final average can be thought of as the price of a "typical" acre.

We'd like a way to calculate an average from observed sales that best reflects the real but unobserved prices of all the other land in the area. At the region or state level, the median is a pretty good average: there's enough observations to leave us feeling comfortable that annual movements in this single number is a reasonable indicator of what's happening in that area. But at a county level, say, the median might be based on too few observations. We'd like to base our calculations on samples for which the range of (unknown) prices is small enough and for which the number of observations is large enough that we can feel comfortable that our observations are representative and that calculated statistics like the mean are useful.

For the <u>price summary tables</u>, I first assigned a weight to each county based upon its relative proportion of the state's total farmland. Then I multiplied each county's weight by its average price so that sales from counties where there is more farmland are given more emphasis in the creation of a region or statewide average price. The size- and location-adjusted mean price for a region or the state is simply the sum of these weighted county prices. This procedure reduces the chance that in any given year a dramatic increase in the number of sales from an area with, for example, relatively low land values, will unrealistically pull down the region average for that year.

For comparison, I provide three kinds of average prices in the price summary tables. But there is greater knowledge to be gained by examining the statewide <u>price distributions</u> and the region-level <u>box plots</u> that I've prepared for you. For these, I show only the median prices, thus ensuring consistency in presentation. The importance of location is illustrated by the not-surprising finding that average land prices in different parts of the state <u>move differently</u> over time. I've also tested the argument that more productive land sells at a higher price, through graphs that <u>compare selling price to agricultural productivity</u>. There's more: check out <u>The Charts</u>.

#### Land market dynamics

When owners are ready to sell farmland (or when buyers are ready to make an offer), how do they decide where to start the bidding? Both often start with the property's annual tax statement, which contains the assessor's estimate of what it is worth. Under Minnesota law, this estimate is for the full market value, the price the assessor expects the property to fetch if it went onto the market. How did the assessor come up with that estimate? By combining knowledge of local economic conditions with records of previous neighboring land sales, often obtained from University studies such as this one.

But buyers and sellers usually don't stop here. They frequently hire a professional appraiser to evaluate the property in much greater detail than can the assessor, who must assign a value to each of several thousand properties each year. Appraisers combine an examination of local market conditions and the characteristics of the property itself into a professional judgment of what the property might sell for. Many times appraisers will do an income analysis as well—something that assessors are not permitted to do. This method values the property using its long-term earning potential.

So assessors, appraisers, analysts, buyers, and sellers all rely, at least in part, upon previous sales in the vicinity to decide on the value, the anticipated selling price, of a particular property. But these (few) nearby sales were themselves made at prices strongly influenced by the judgments of these same (few) assessors, appraisers, and analysts, based on the evidence of previous sales prices that they themselves were influential in determining in the first place.

The local farm real estate market is small, and it is circular. The market we think we observe from a distance is really one that we "make" ourselves, not a collection of independent decisions made by anonymous buyers and sellers.

The average price for a region that I report is just a compilation of the sales that originated in scores of small "markets." Anecdotal evidence suggests that almost all bidders for farmland in Minnesota are neighbors. Very rarely does a new farmer enter the community by buying a whole farm, and even more rarely do outside investors buy into a community for farming purposes. As a result, a typical farmland property up for sale probably sees at most two or three legitimate offers. This is not a market in the the usual sense: few of the usual features of markets beloved of economists can be expected to hold. (This generality may be becoming a little tenuous. We're hearing of several so-called "1031" sales around the state, sales in which the buyer is looking to invest the proceeds of a farm sale near to the Twin Cities, so as to avoid certain tax consequences. These buyers are looking for much more land than does the typical neighboring farmer looking to expand an existing operation.)

Compilations such as those presented here can be used to infer economic conditions common to all local markets, but we should not fool ourselves into thinking that land is a commodity, that it has a single price, or that there are very many participants and local land markets.

#### And in conclusion...

I hope you're not completely sated with the limited analysis I've put up on this site. I encourage you to

try your own hand at land market analysis. If you need an unadjusted transaction mean or area mean, or if you need some other level of aggregation such as a county, or if you'd like to try some fancier market analysis, go directly to Minnesota Land Economics and roll your own.

#### The Figures

- a. USDA estimates of statewide farm real estate value, 1950-present
- b. Three "independent" estimates of statewide farm real estate value, 1990-present
- c. Farm real estate sales summaries, 1990-present, by region and statewide:

  <u>State North West North Central North East West Central East Central South West South Central South East</u>
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  1990 1991 1992 1993 1994 1995 1996 1997 1998 1999 2000 2001 2002 2003 2004

  1990 compared to 2004
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  <u>State North West West Central Central East Central South West South Central South East</u>
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Back to the **Introduction** 

## Return to Minnesota Farm Real Estate Sales

These are archived copies (pdf format) of annual farm real estate sales studies published in the *Minnesota Agricultural Economist*.

<u>1996</u>

<u>1997</u>

1998

<u>1999</u>

2000

<u>State North West North Central North East West Central East Central South West</u> South Central South East

State					
		_	Pe	er-Acre Sales Price	
	Number of	Acres Sold	Unweighted	Size/Location	Media
	Sales	Acres 30iu	Mean	Weighted Mean	ivieuia
1990	3,158	377,057	777	706	71
1991	2,635	312,855	788	756	69
1992	2,763	309,168	859	797	75
1993	2,688	293,450	905	837	75
1994	2,834	317,186	916	869	76
1995	2,560	267,904	951	886	80
1996	2,818	305,336	1,091	971	91
1997	2,877	328,413	1,134	1,068	96
1998	2,613	287,878	1,245	1,151	1,02
1999	2,327	252,163	1,279	1,233	1,03
2000	2,341	264,576	1,417	1,280	1,18
2001	2,282	255,222	1,609	1,475	1,37
2002	2,321	256,276	1,745	1,624	1,50
2003	2,391	261,490	1,963	1,803	1,51
2004	2,011	225,822	1,964	2,007	1,52
	38,619	4,314,796			

Original data from Department of Revenue compilations of Certificates of Real Estate Value, further adjusted by that agency and by the author, as described on the sales study site linked at the top.

<u>State North West North Central North East West Central East Central South West</u> South Central South East

North Wes	t				
		_	Pe	er-Acre Sales Price	
	Number of	Acres Sold	Unweighted	Size/Location	Media
	Sales	Acres Solu	Mean	Weighted Mean	Media
1990	358	54,878	471	465	38
1991	357	52,716	448	427	35
1992	358	51,108	517	498	42
1993	333	44,112	568	488	43
1994	343	50,368	536	482	40
1995	286	38,593	527	500	37
1996	332	51,312	551	491	39
1997	353	52,315	551	496	43
1998	327	51,442	548	488	40
1999	294	42,627	594	542	43
2000	293	49,398	622	519	47
2001	314	53,187	647	559	44
2002	342	56,492	647	605	55
2003	406	69,240	656	636	55
2004	426	71,207	816	740	67
	5,122	788,995			

Original data from Department of Revenue compilations of Certificates of Real Estate Value, further adjusted by that agency and by the author, as described on the sales study site linked at the top.

<u>State North West North Central North East West Central East Central South West South Central South East</u>

North Cen	tral				
		_	Pe	er-Acre Sales Pric	e
	Number of	Acres Sold	Unweighted	Size/Location	Median
	Sales	Acres Solu	Mean	Weighted Mean	ivieulan
1990	133	18,073	279	225	196
1991	159	19,707	327	257	208
1992	121	15,227	342	294	220
1993	169	21,826	364	292	243
1994	169	21,005	368	307	277
1995	124	16,298	396	314	269
1996	103	12,648	476	414	331
1997	92	12,462	459	408	340
1998	72	10,253	546	415	424
1999	106	13,276	649	523	463
2000	125	15,332	811	698	686
2001	83	11,771	736	632	588
2002	73	8,477	921	777	782
2003	91	8,990	1,147	1,016	955
2004	98	8,319	1,209	1,119	1,030
	1,718	213,664			

Original data from Department of Revenue compilations of Certificates of Real Estate Value, further adjusted by that agency and by the author, as described on the sales study site linked at the top.

<u>State North West North Central North East West Central East Central South West</u> South Central South East

North East					
		_	Pe	er-Acre Sales Price	e
	Number of	Acres Sold	Unweighted	Size/Location	Media
	Sales	Acres Solu	Mean	Weighted Mean	Media
1990	10	1,218	442	303	29
1991	15	1,616	319	272	19
1992	19	1,731	319	289	23
1993	17	1,451	279	278	25
1994	12	1,408	610	370	32
1995	7	770	344	272	22
1996	17	1,686	462	465	39
1997	12	1,171	741	721	56
1998	23	2,191	784	567	56
1999	23	2,038	587	545	42
2000	14	1,393	652	617	51
2001	11	796	1,349	1,120	1,14
2002	14	992	1,073	947	80
2003	14	822	1,140	945	65
2004	14	1,064	1,309	1,093	91
_	222	20,347			

Original data from Department of Revenue compilations of Certificates of Real Estate Value, further adjusted by that agency and by the author, as described on the sales study site linked at the top.

<u>State North West North Central North East West Central East Central South West</u> South Central South East

West Central					
		_	Pe	er-Acre Sales Price	)
	Number of	Acres Sold	Unweighted	Size/Location	Media
	Sales	Acres Solu	Mean	Weighted Mean	Media
1990	405	54,956	590	577	54
1991	373	54,233	609	616	58
1992	408	53,662	664	666	60
1993	327	43,029	648	663	59
1994	330	43,654	721	733	64
1995	297	37,409	677	714	62
1996	379	46,288	784	767	74
1997	455	57,502	846	839	72
1998	440	52,094	852	876	80
1999	374	44,126	973	975	88
2000	376	47,111	1,063	985	93
2001	356	44,741	1,119	1,035	1,01
2002	328	41,092	1,181	1,124	1,07
2003	383	42,363	1,429	1,301	1,24
2004	315	34,513	1,618	1,497	1,46
	5,546	696,773			

Original data from Department of Revenue compilations of Certificates of Real Estate Value, further adjusted by that agency and by the author, as described on the sales study site linked at the top.

<u>State North West North Central North East West Central East Central South West South Central South East</u>

Central					
		_	Pe	er-Acre Sales Price	е
	Number of	Acres Sold	Unweighted	Size/Location	Median
	Sales	Acres Solu	Mean	Weighted Mean	ivieulan
1990	703	71,209	842	794	771
1991	478	50,147	888	851	787
1992	571	55,488	907	870	788
1993	605	55,658	1,043	984	800
1994	613	59,048	971	967	750
1995	572	50,054	1,023	1,067	820
1996	623	59,702	1,092	1,114	861
1997	585	59,608	1,216	1,381	948
1998	537	51,594	1,272	1,357	989
1999	516	49,289	1,365	1,586	1,000
2000	510	50,152	1,707	1,686	1,314
2001	517	43,651	2,020	1,919	1,488
2002	531	45,960	2,061	2,327	1,690
2003	550	46,577	2,474	2,508	1,780
2004	451	41,487	2,650	2,848	2,067
	8,362	789,624			

Original data from Department of Revenue compilations of Certificates of Real Estate Value, further adjusted by that agency and by the author, as described on the sales study site linked at the top.

<u>State North West North Central North East West Central East Central South West South Central South East</u>

East Centr	al				
		_	Pe	er-Acre Sales Pric	e
	Number of	Acres Sold	Unweighted	Size/Location	Median
	Sales	Acres Solu	Mean	Weighted Mean	ivieulan
1990	300	28,493	581	520	409
1991	291	24,886	603	668	400
1992	333	28,457	753	697	438
1993	392	33,467	803	704	496
1994	459	39,813	797	820	500
1995	409	33,721	884	816	594
1996	404	33,323	1,316	1,253	765
1997	339	31,612	1,199	1,194	744
1998	296	22,457	1,400	1,553	924
1999	281	20,216	1,578	1,698	1,000
2000	213	14,784	1,767	1,865	1,178
2001	196	14,025	2,122	2,536	1,542
2002	166	11,288	2,976	2,856	2,124
2003	216	14,510	2,959	3,196	2,031
2004	150	10,001	2,858	2,628	2,181
	4,445	361,053			

Original data from Department of Revenue compilations of Certificates of Real Estate Value, further adjusted by that agency and by the author, as described on the sales study site linked at the top.

<u>State North West North Central North East West Central East Central South West</u> South Central South East

South West					
		_	Pe	er-Acre Sales Price	
	Number of	Acres Sold	Unweighted	Size/Location	Media
	Sales	Acres Solu	Mean	Weighted Mean	Media
1990	408	50,724	942	922	97
1991	341	39,986	1,052	1,003	1,05
1992	271	31,962	1,114	1,073	1,10
1993	252	29,072	1,180	1,085	1,15
1994	274	36,494	1,106	1,086	1,13
1995	238	30,760	1,118	1,122	1,11
1996	332	38,969	1,176	1,108	1,17
1997	366	47,481	1,230	1,181	1,27
1998	296	36,931	1,373	1,344	1,35
1999	236	32,239	1,319	1,276	1,33
2000	285	34,192	1,424	1,358	1,43
2001	281	32,202	1,511	1,501	1,55
2002	298	37,400	1,577	1,585	1,60
2003	250	30,446	1,707	1,703	1,73
2004	158	20,436	1,940	1,967	1,98
	4,286	529,294			

Original data from Department of Revenue compilations of Certificates of Real Estate Value, further adjusted by that agency and by the author, as described on the sales study site linked at the top.

<u>State North West North Central North East West Central East Central South West</u> South Central South East

South Central					
		_	Pe	er-Acre Sales Price	
	Number of	Acres Sold	Unweighted	Size/Location	Media
	Sales	Acres Solu	Mean	Weighted Mean	Media
1990	412	41,337	1,174	1,148	1,15
1991	306	30,448	1,242	1,238	1,25
1992	347	33,951	1,292	1,228	1,28
1993	288	26,554	1,399	1,339	1,40
1994	329	31,959	1,419	1,377	1,38
1995	314	27,643	1,417	1,348	1,36
1996	361	32,081	1,578	1,558	1,56
1997	391	36,950	1,652	1,667	1,66
1998	334	29,929	1,961	1,848	1,86
1999	268	25,646	1,944	1,872	1,84
2000	275	25,244	1,891	1,807	1,82
2001	301	30,925	2,103	2,069	2,04
2002	331	29,634	2,181	2,185	2,04
2003	253	26,362	2,419	2,370	2,21
2004	218	21,815	2,784	2,812	2,54
	4,728	450,478			

Original data from Department of Revenue compilations of Certificates of Real Estate Value, further adjusted by that agency and by the author, as described on the sales study site linked at the top.

<u>State North West North Central North East West Central East Central South West</u> South Central South East

South East	t				
		_	Pe	er-Acre Sales Price	)
	Number of	Acres Sold	Unweighted	Size/Location	Media
	Sales	Acres Solu	Mean	Weighted Mean	Media
1990	429	56,169	863	805	80
1991	315	39,116	933	899	85
1992	335	37,582	1,047	942	96
1993	305	38,281	1,047	1,016	94
1994	305	33,437	1,223	1,120	1,02
1995	313	32,656	1,195	1,111	1,02
1996	267	29,327	1,372	1,240	1,19
1997	284	29,312	1,473	1,413	1,27
1998	288	30,987	1,680	1,601	1,39
1999	229	22,706	1,638	1,663	1,46
2000	250	26,970	1,806	1,798	1,62
2001	223	23,924	2,137	2,236	1,78
2002	238	24,941	2,430	2,293	2,00
2003	228	22,180	2,674	2,714	2,19
2004	181	16,980	3,442	3,072	2,65
_	4,190	464,568			

Original data from Department of Revenue compilations of Certificates of Real Estate Value, further adjusted by that agency and by the author, as described on the sales study site linked at the top.

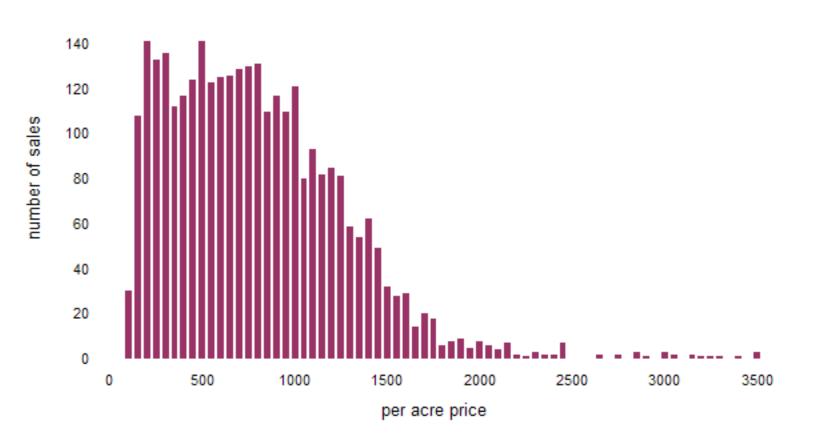
## 2003 Minnesota farm real estate sales



These are histograms of statewide sales prices over the years. They show the number of transactions in each price range. The higher the bar, the more sales were observed in that range. A few over-\$3,500 sales were dropped for consistency.

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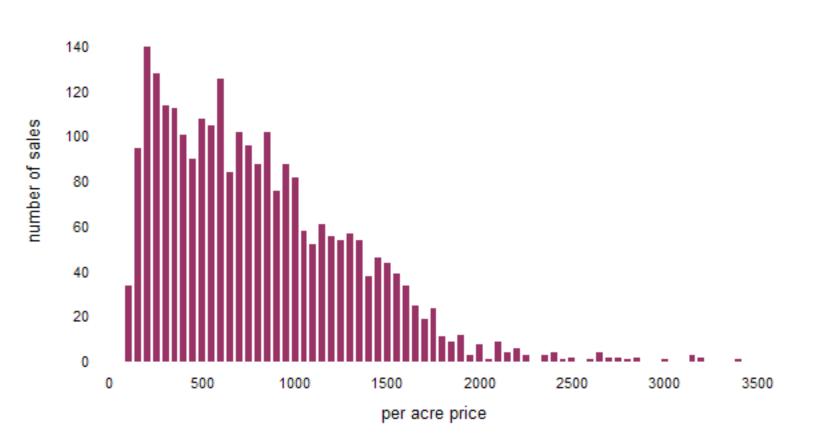
#### 1990 Minnesota farm real estate sales



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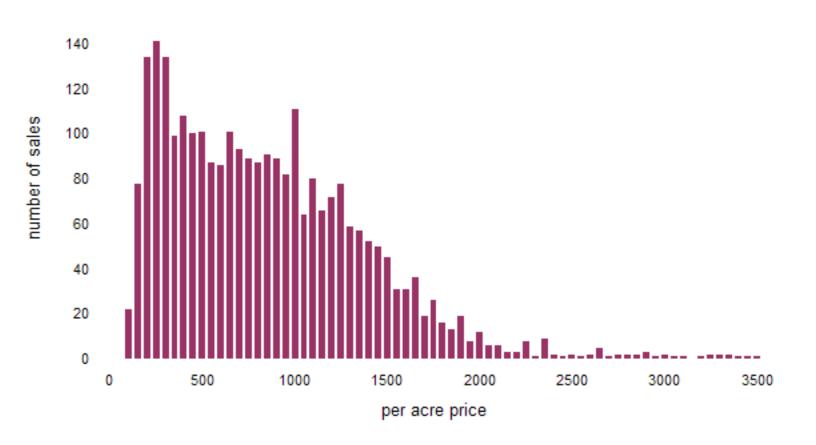
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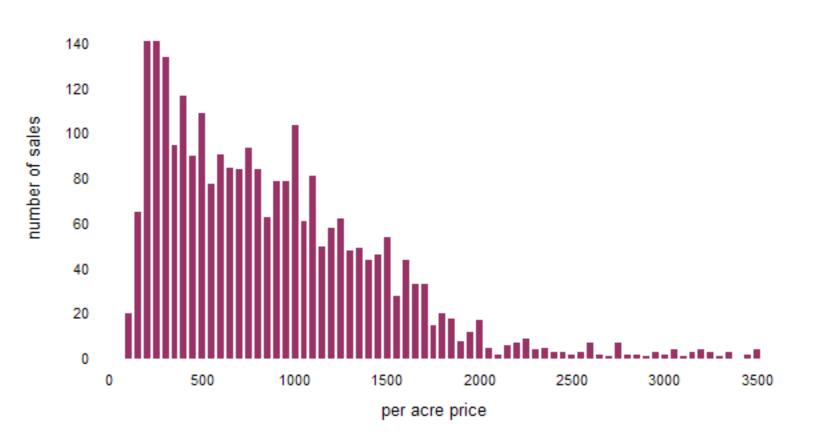
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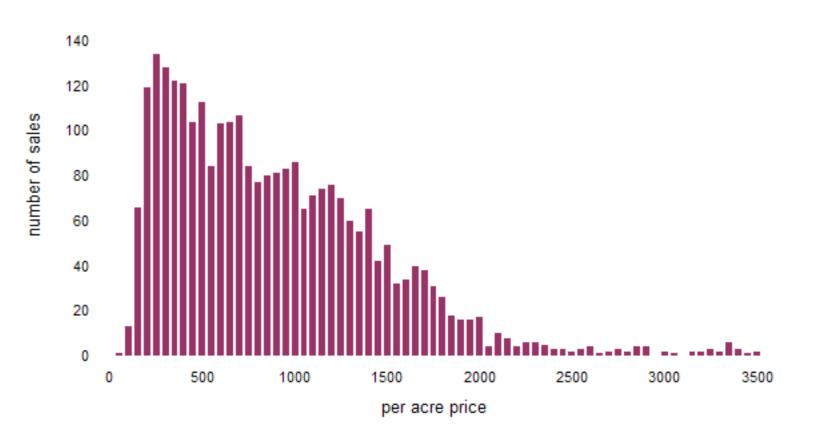
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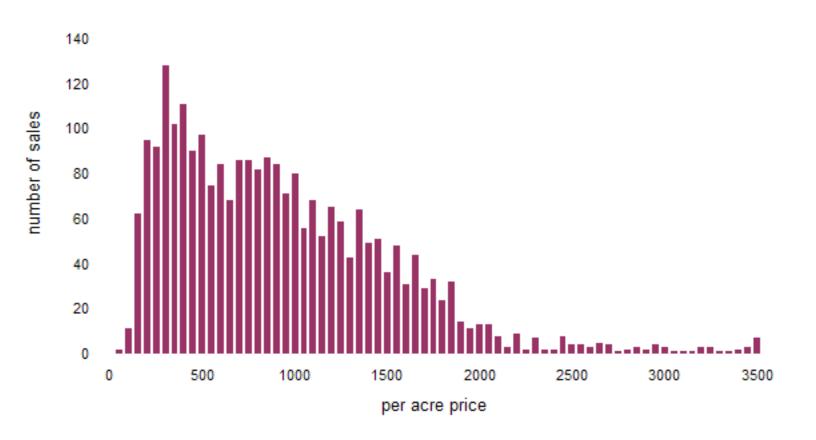
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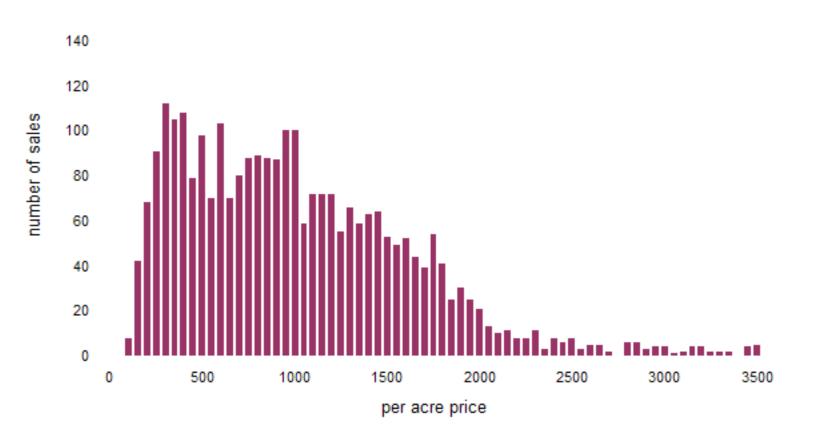
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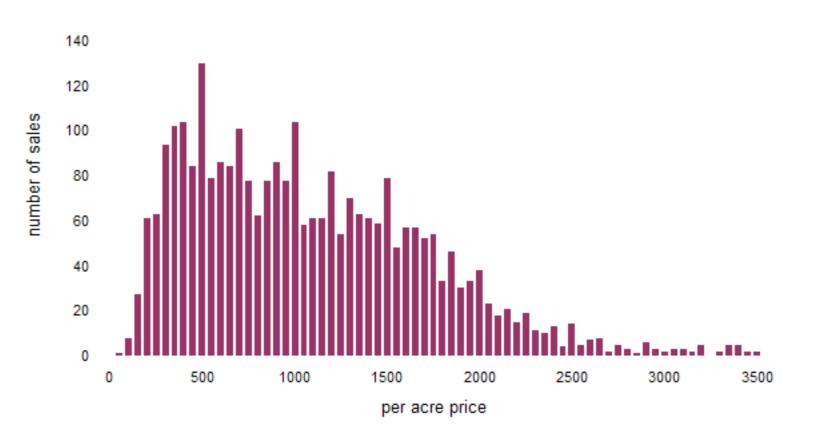
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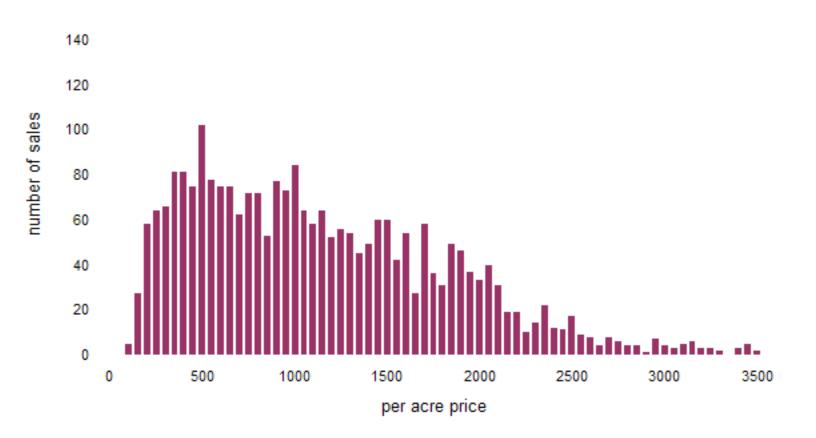
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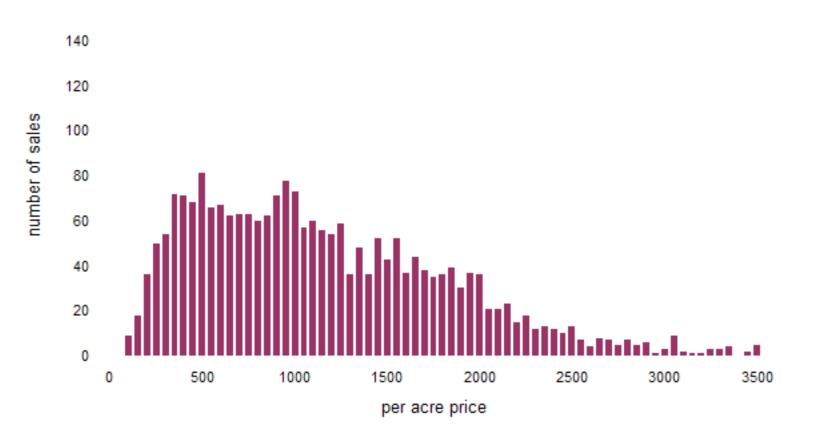
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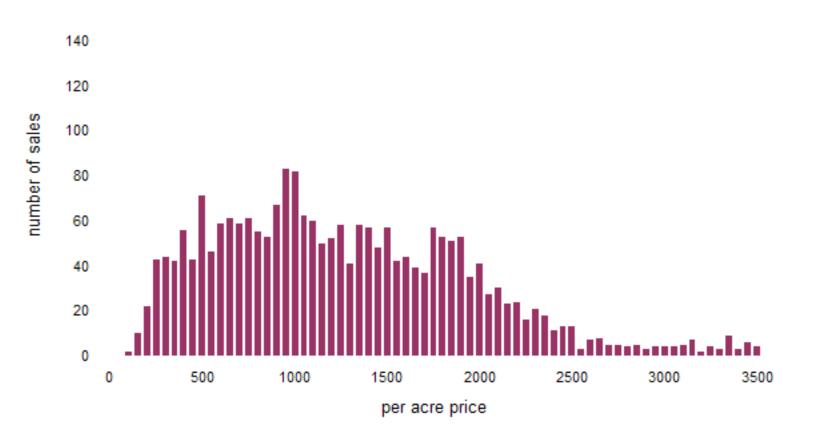
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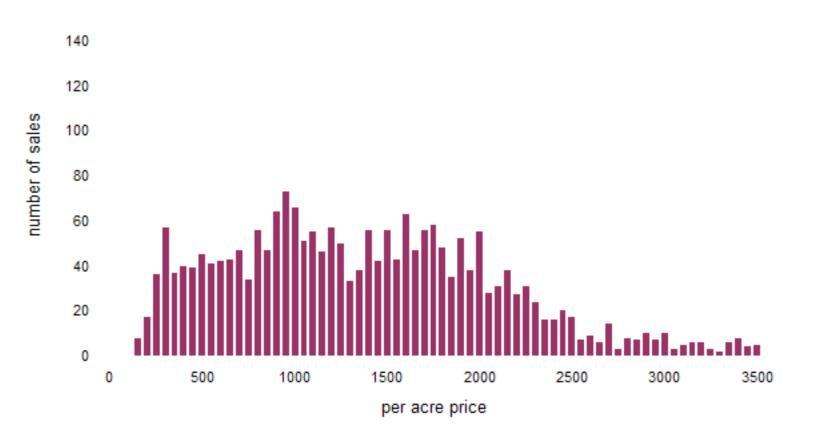
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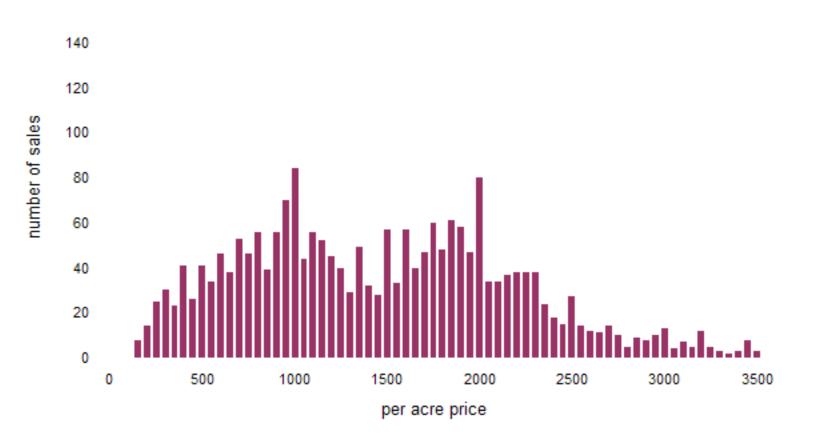
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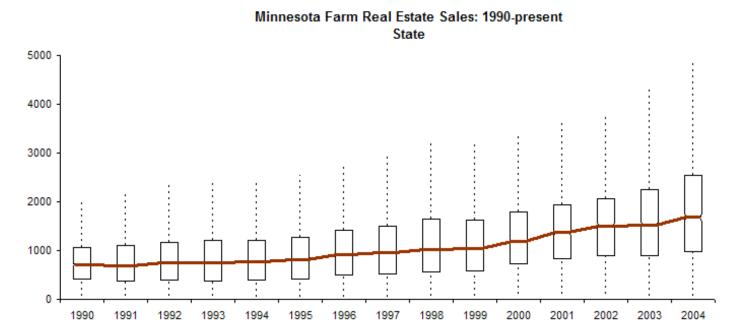
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#### 2004 Minnesota farm real estate sales



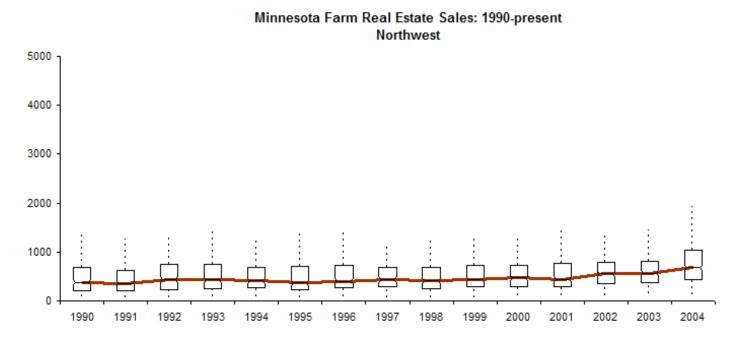
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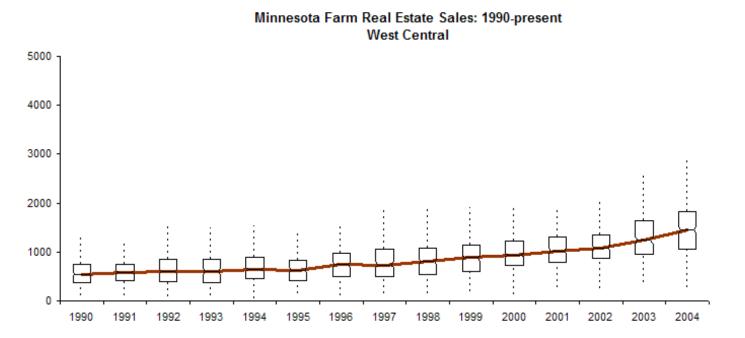
These are called box-and-whisker plots. They show far more information about the price distribution than can a single number like the average price. The median price, the price at which half the sales were higher and half were lower, is shown by the horizontal bar within each box. Movement of the median is shown by the connecting line. The box shows the interquartile range, within which half of the sales prices fell. The upper and lower dotted whiskers span essentially the entire price distribution, except for a few extreme observations. While many lower price sales still are seen, there has been a rise in the size of the higher price sales and a general upward shifting of the mass of the price distribution. (There were too few farmland sales in the North East and North Central districts for meaningful analysis.)

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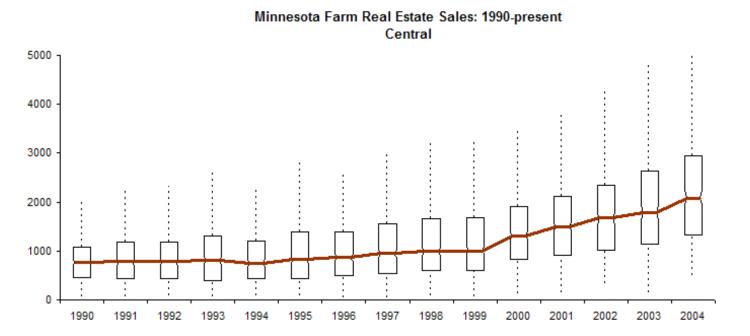
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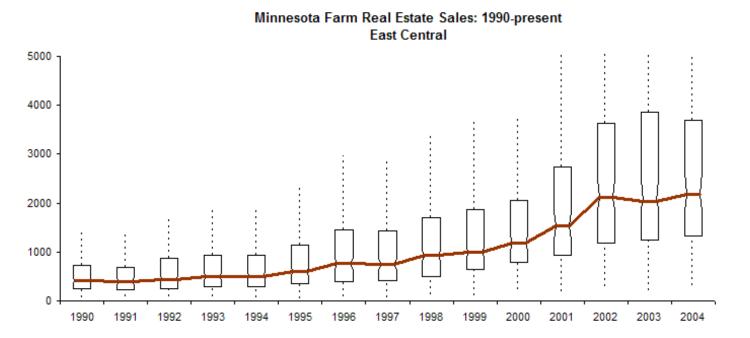
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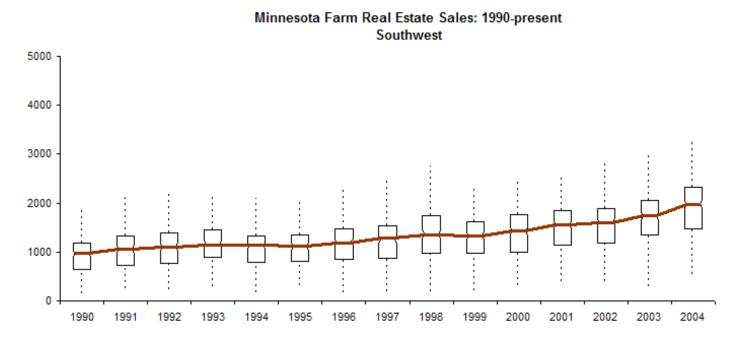
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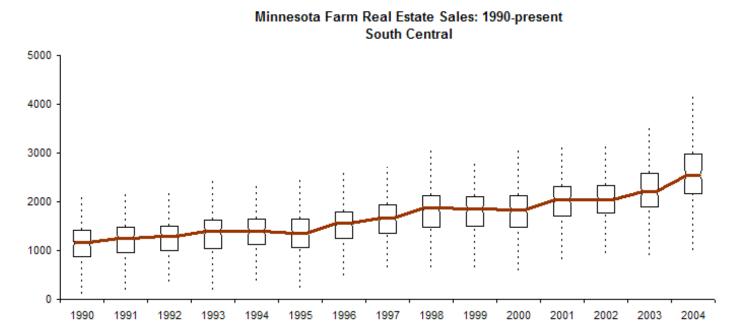
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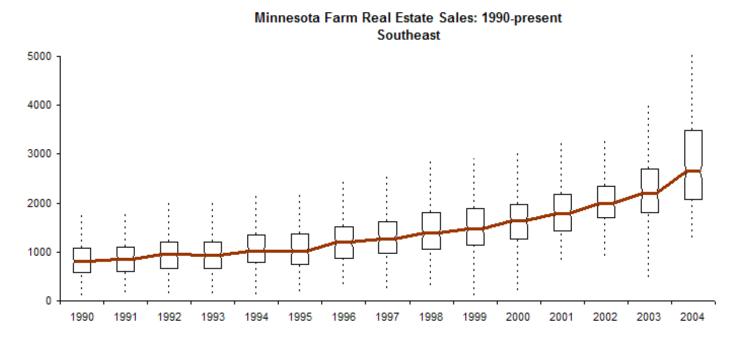
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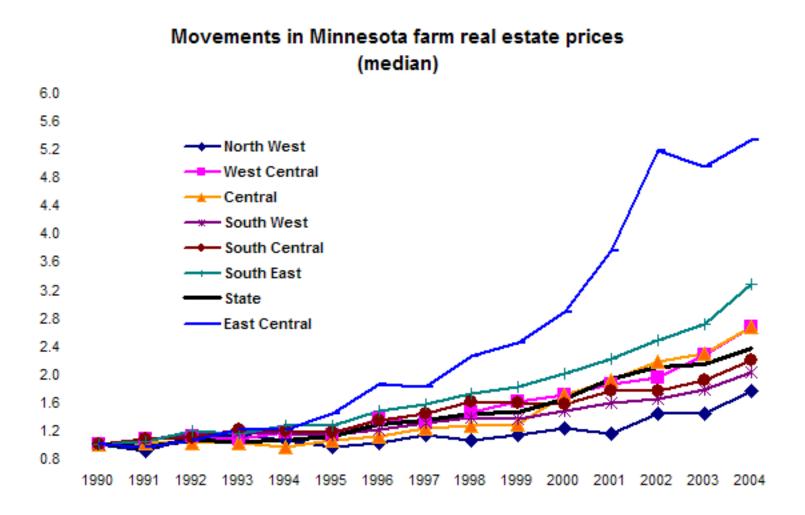
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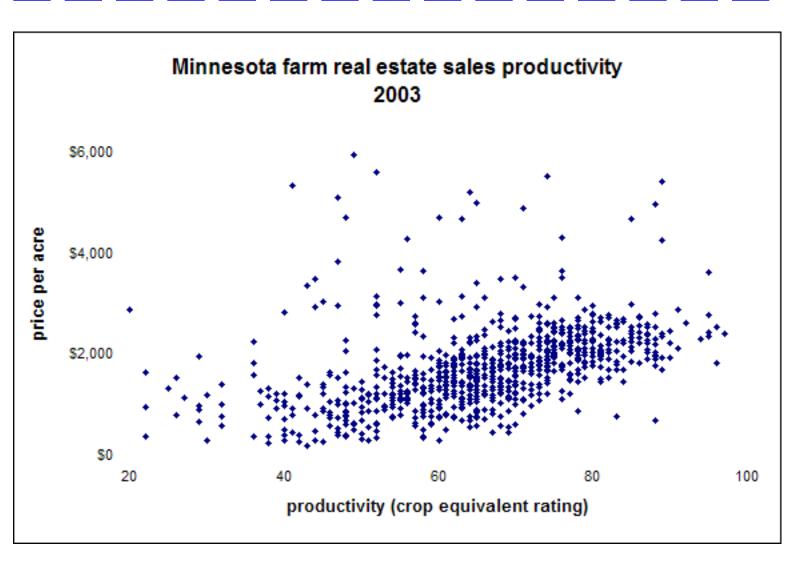
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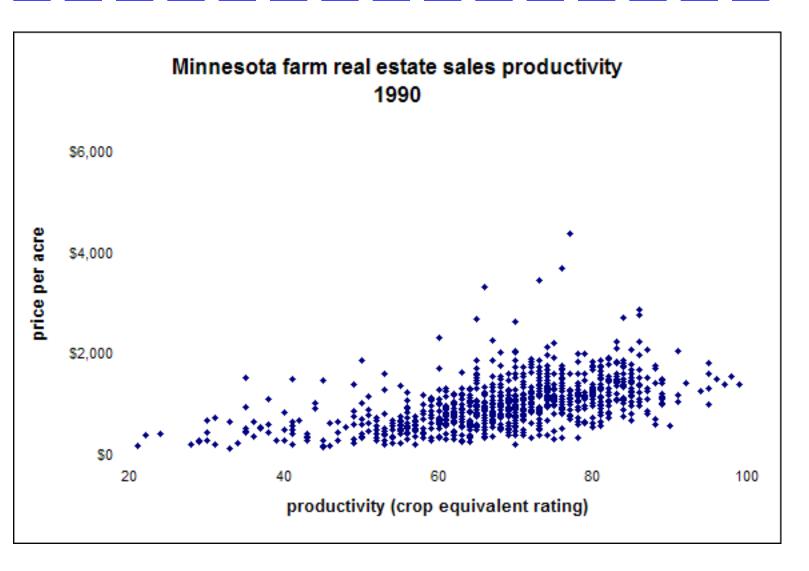


This chart shows each region's median annual price divided by its 1990 median price. This permits us to examine relative price movements without being distracted by differing price levels. So, for example, the West Central median price increased to 2.8 times its 1990 level by 2004.

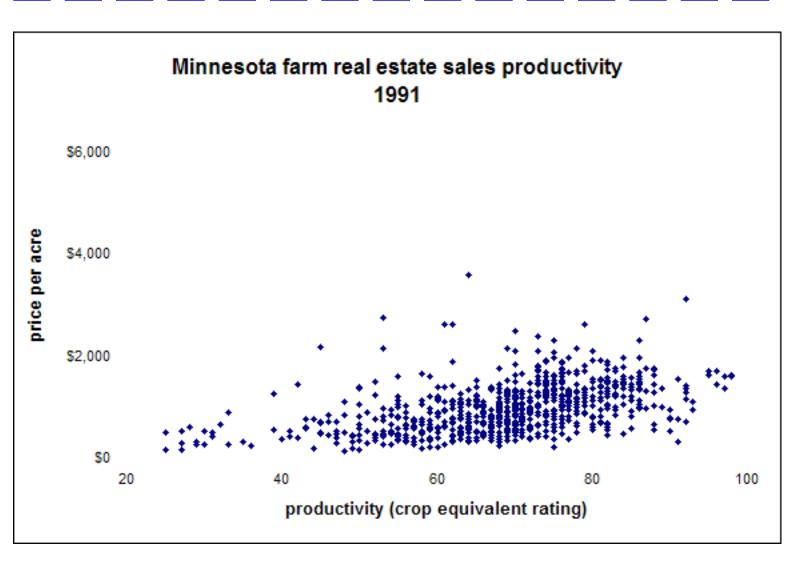
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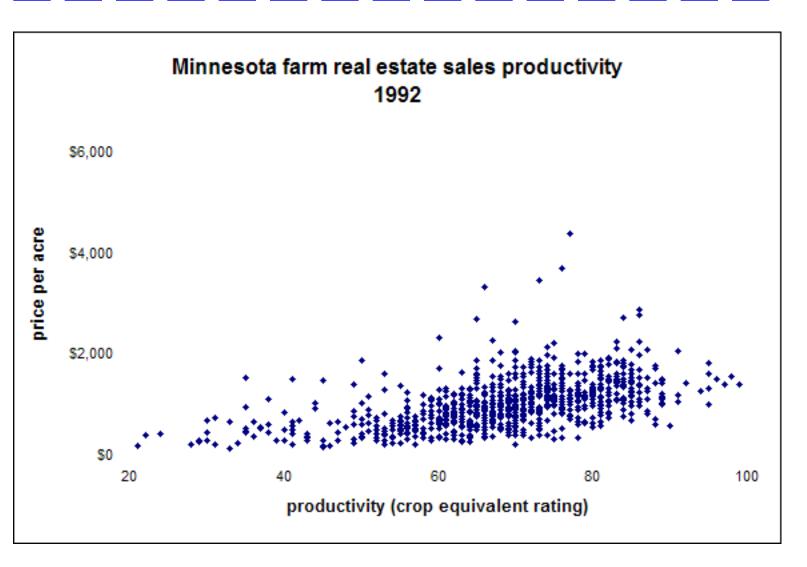
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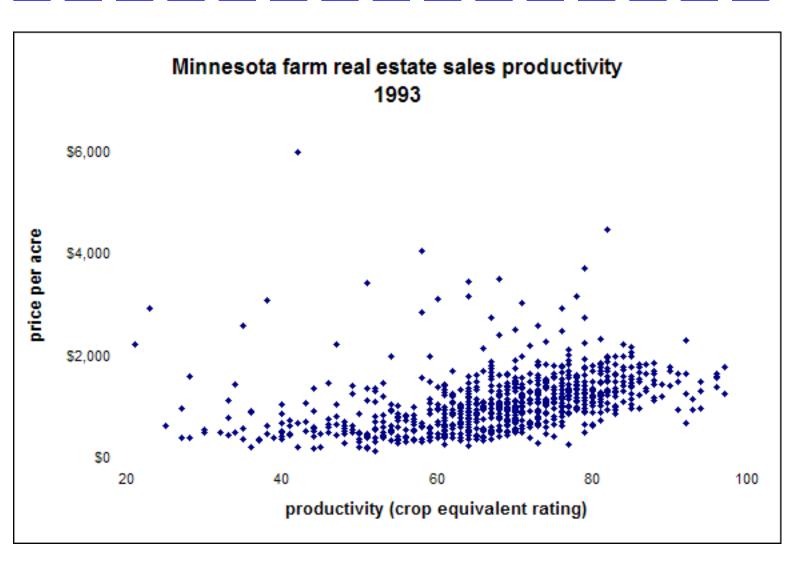
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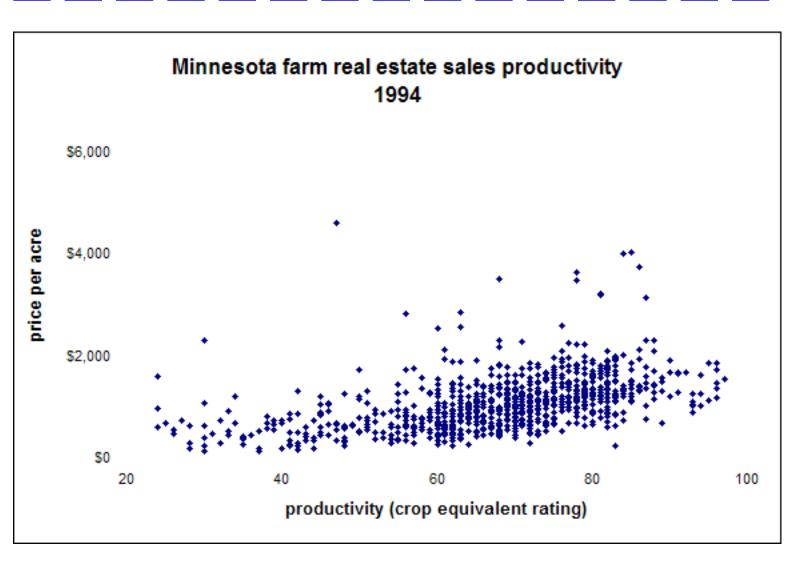
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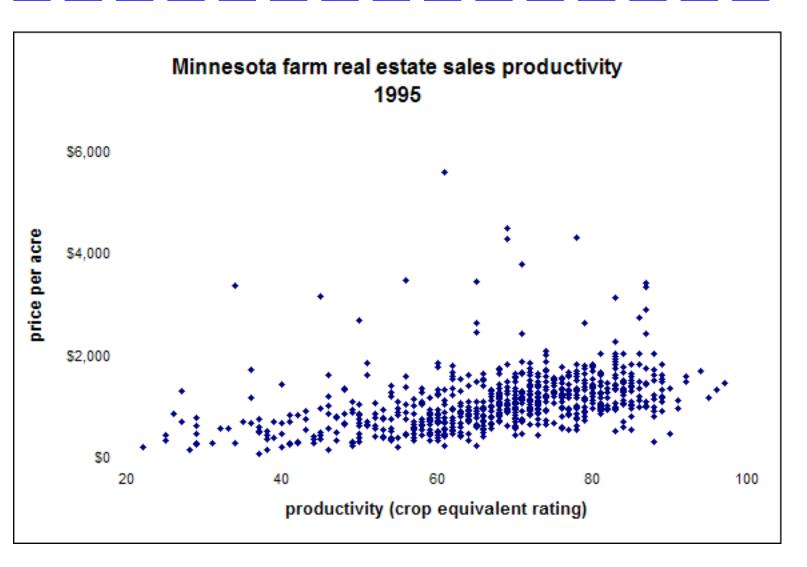
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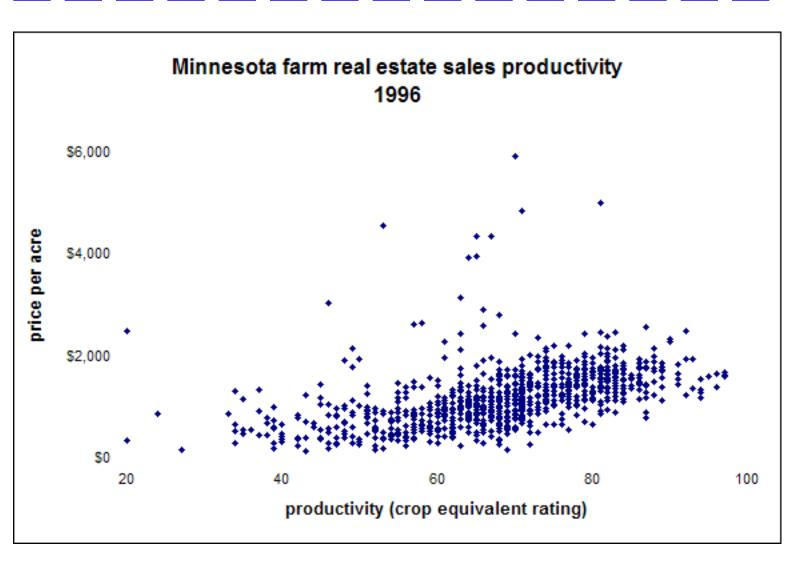
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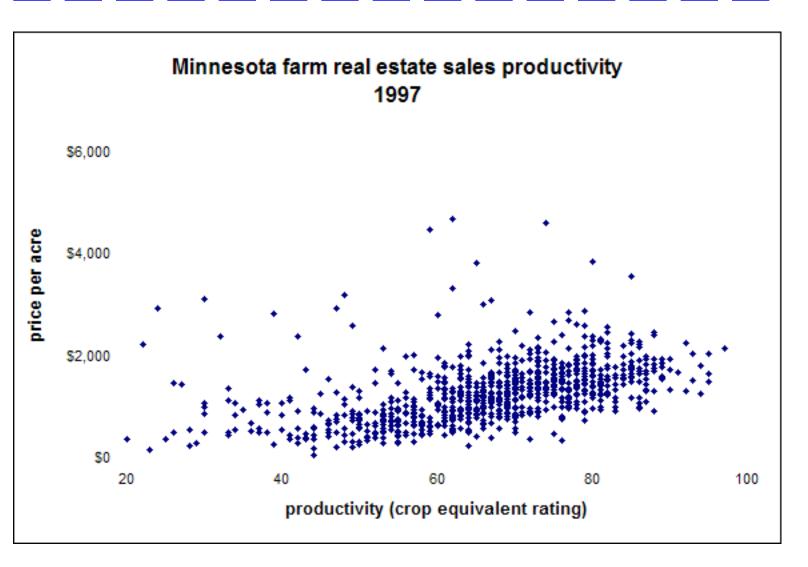
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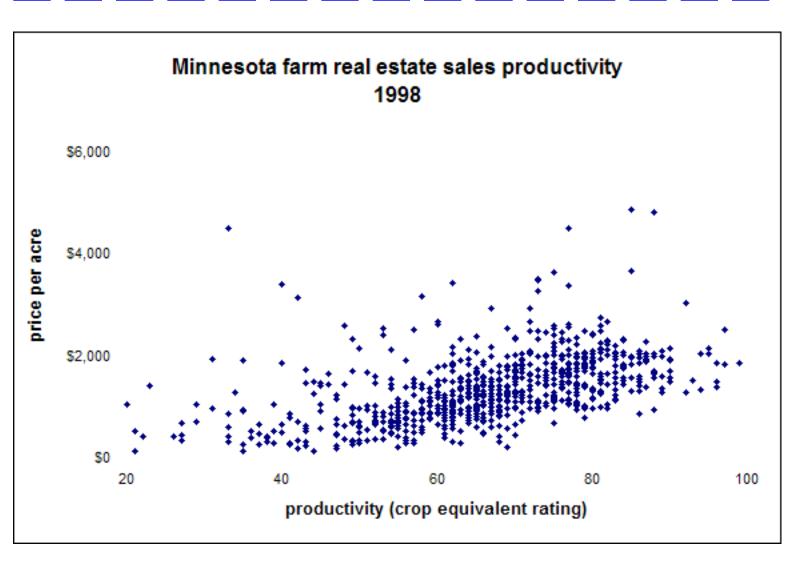
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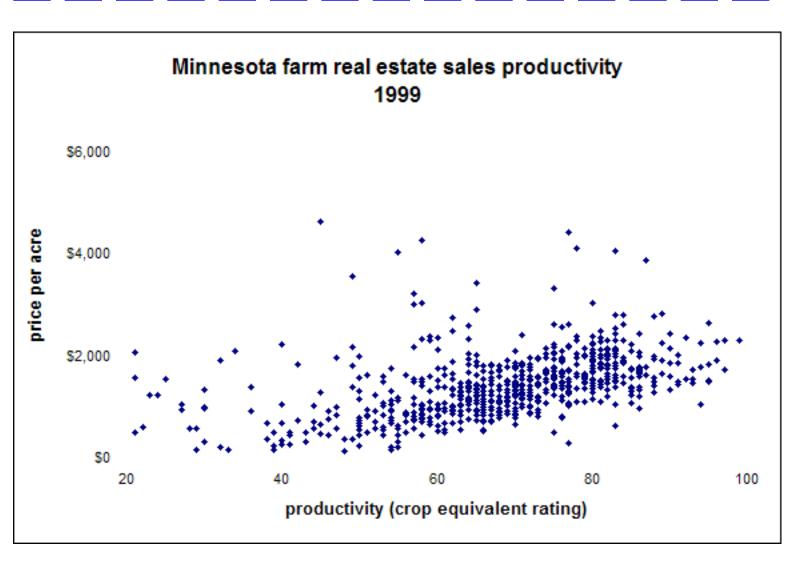
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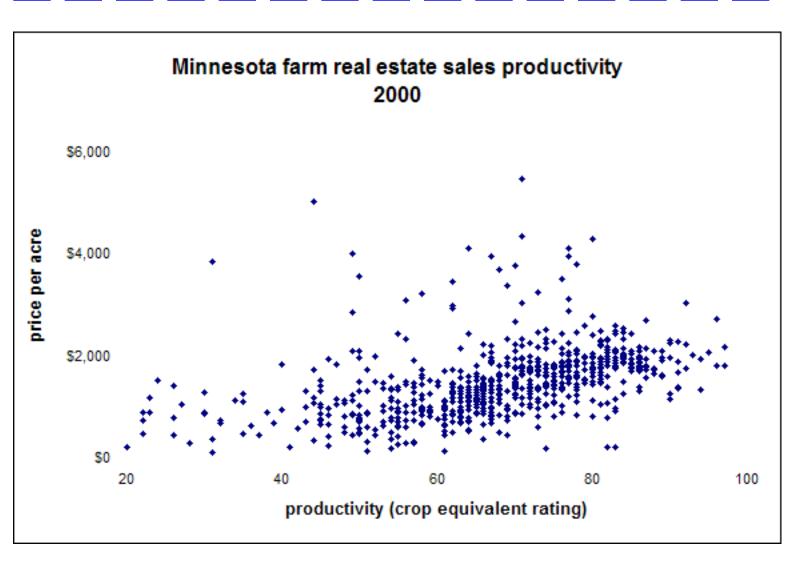
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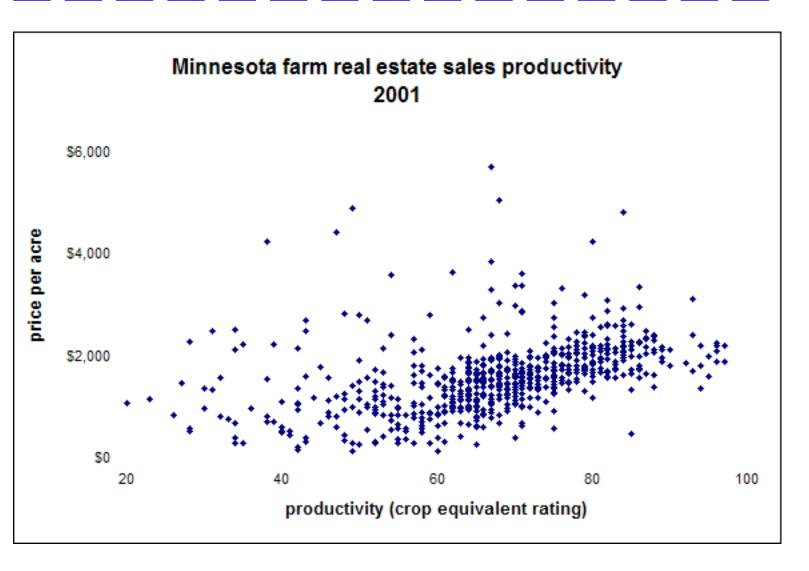
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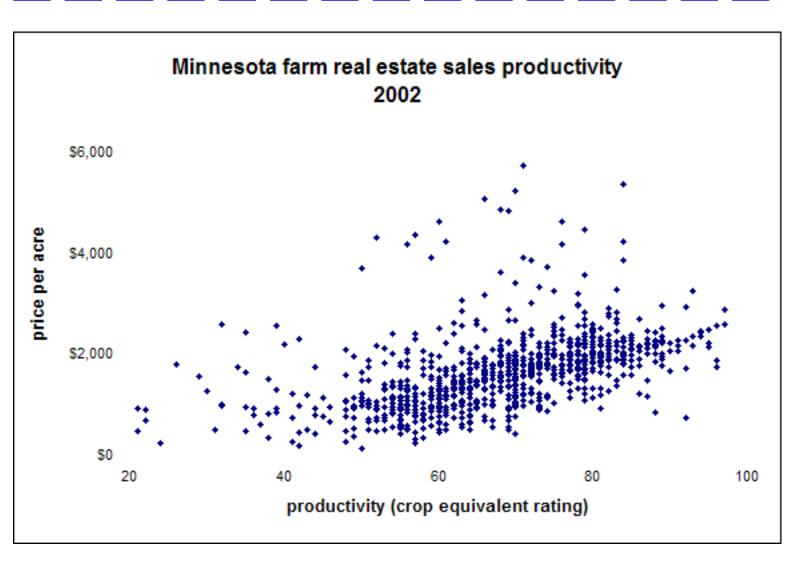
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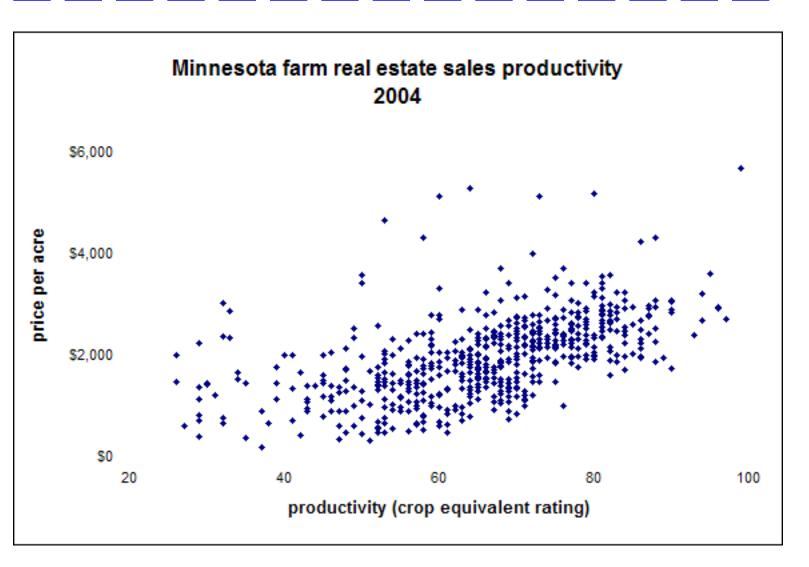
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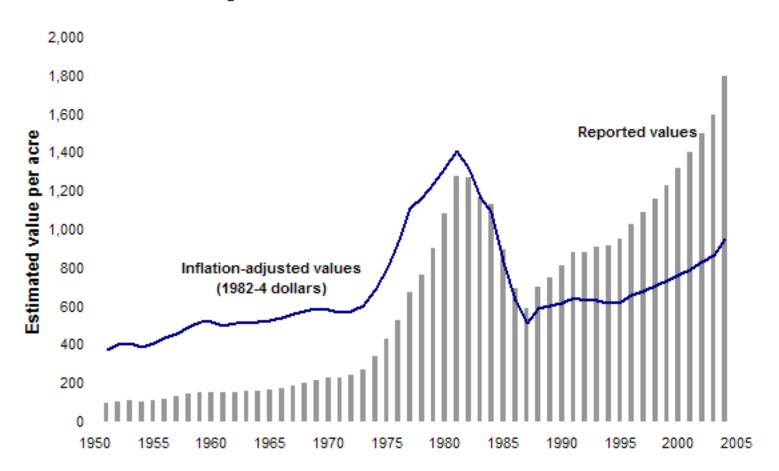
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## Back to Minnesota Farm Real Estate Sales

## Minnesota farmland values

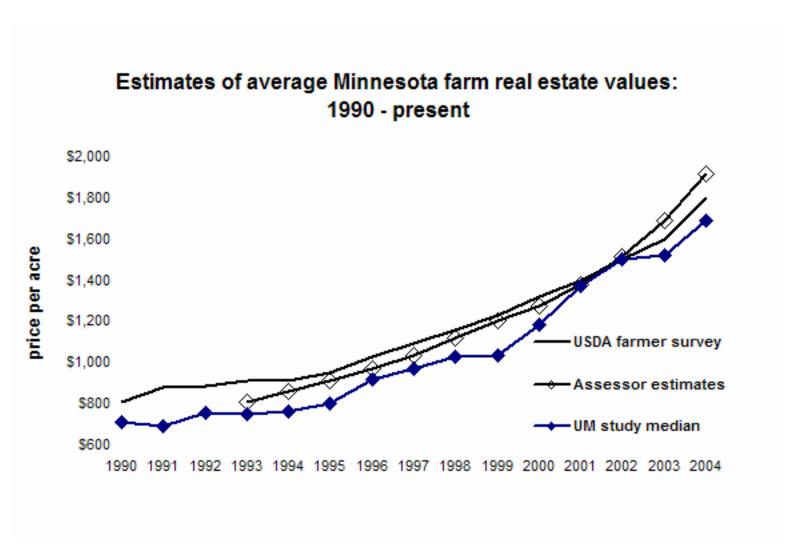
This chart is based on a series maintained by the Minnesota Agricultural Statistics Service office. Each summer the USDA reports an estimated average price of farmland plus buildings for each state, as of January 1 of that year. The data come from a sample of land parcels throughout the country, conducted earlier in the year. Owners of land within each sampled parcel are asked what they think their land is worth (its expected sales price, or value in our terms). Their responses are aggregated to give a statistically valid average for the entire state. The USDA approach can ensure that the state average is a valid summary of the individual owners' valuations, but it cannot, of course, ensure that individual owners really know what their land is worth in the first place.

## Average USDA estimated Minnesota farm real estate values

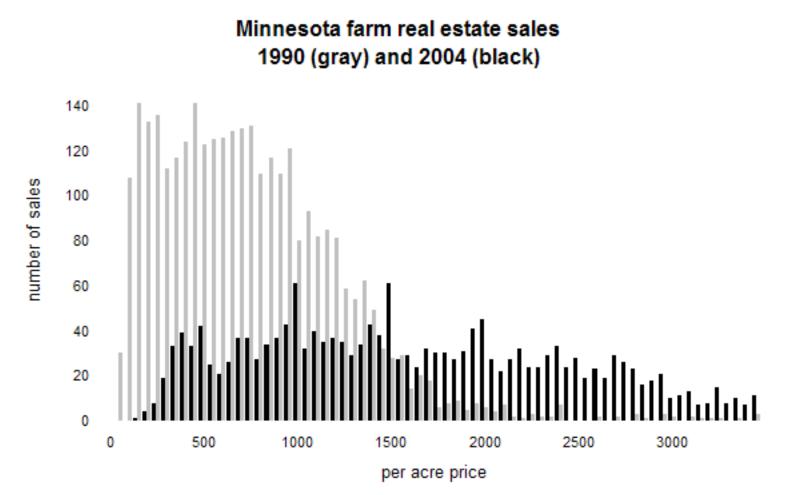


## Back to Minnesota Farm Real Estate Sales

Here are three estimates of average farm real estate value, drawn from three different sources of data. One line shows price according to an annual USDA survey of property owners; another is the location-and size-adjusted average of local property tax assessors' assignment of property values for tax purposes; the third is the median sales price. On average, the assessors' EMV is a pretty good predictor of price, even though the value estimates preceded the actual sale by as many as two years. Preliminary EMVs are available at Minnesota Land Economics in July of the noted year, USDA state-level estimates are reported in August, and the University's final sales report is published in the Spring of the next year.

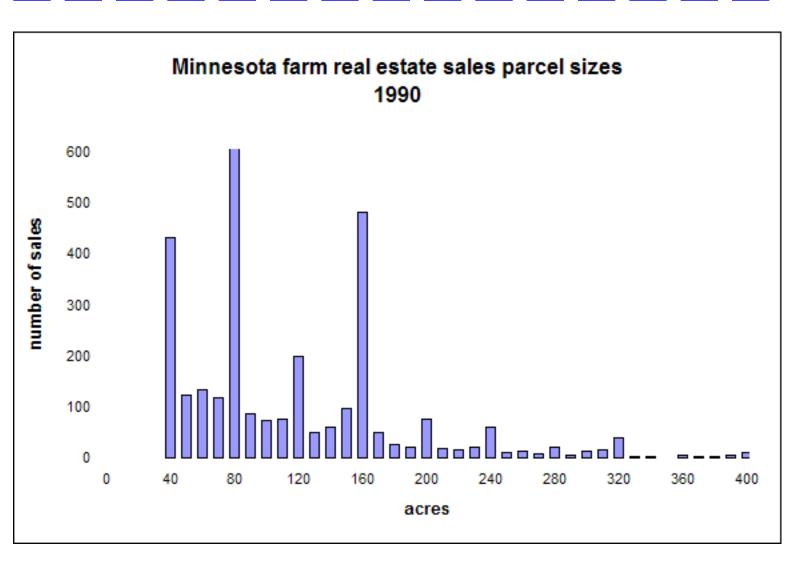


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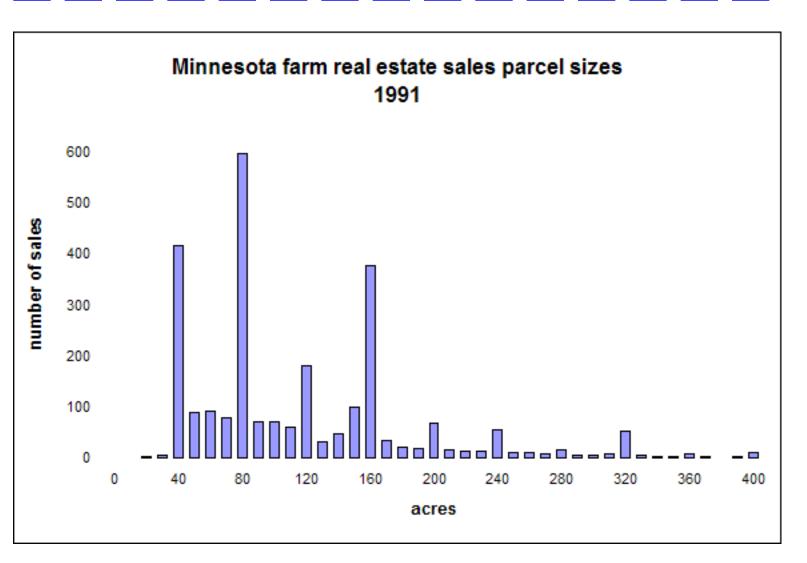
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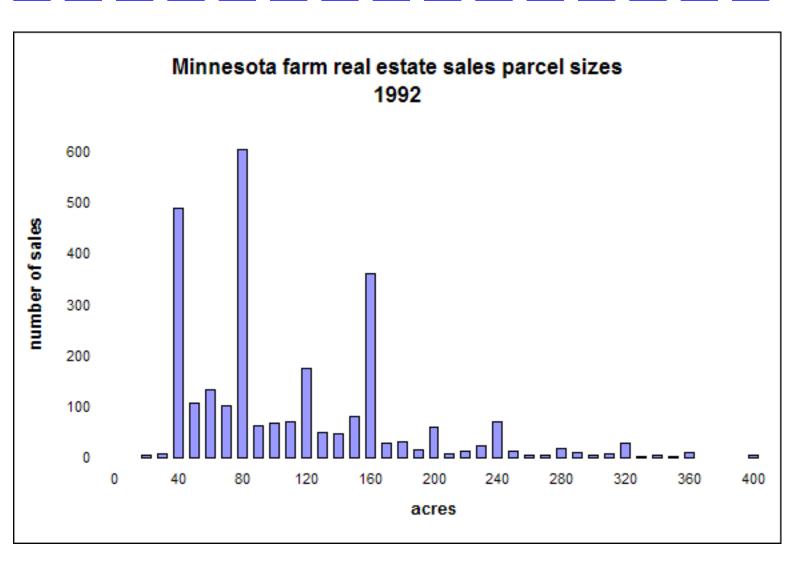
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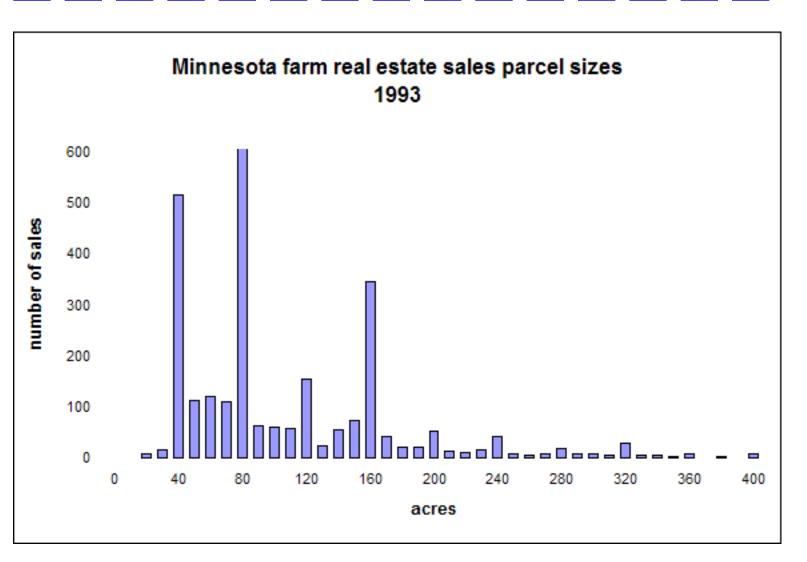
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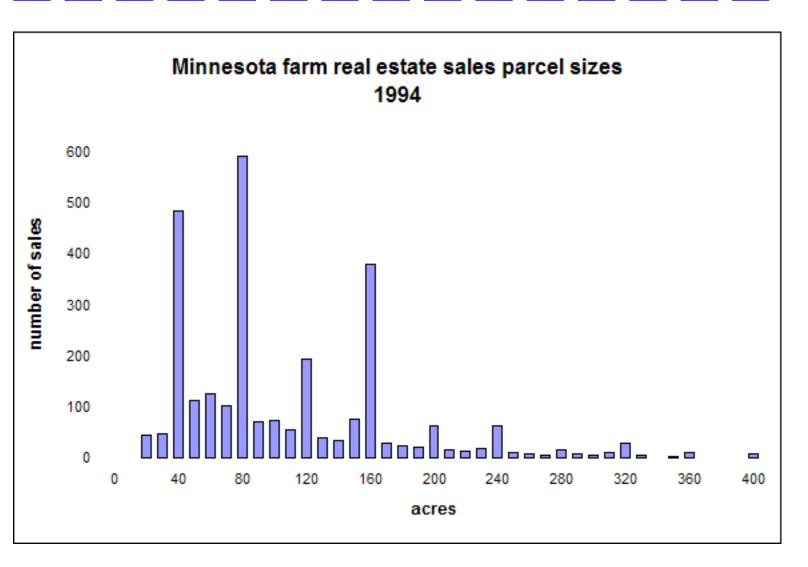
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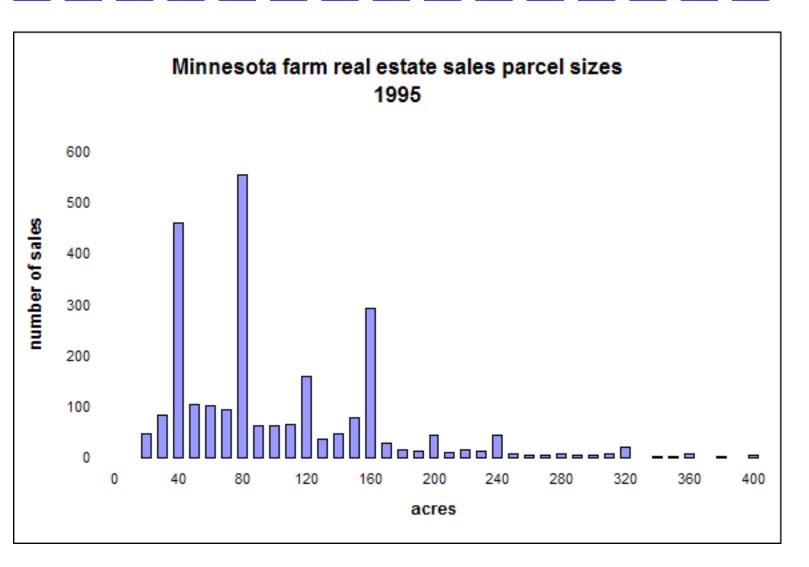
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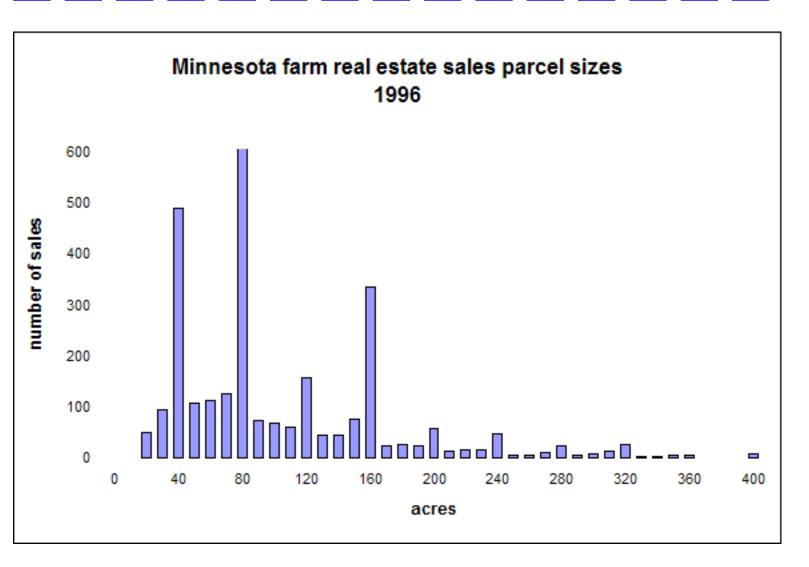
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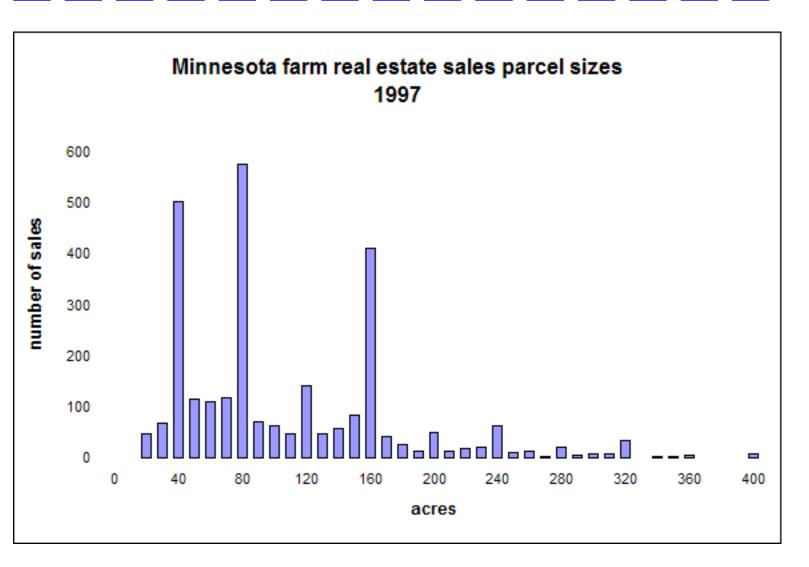
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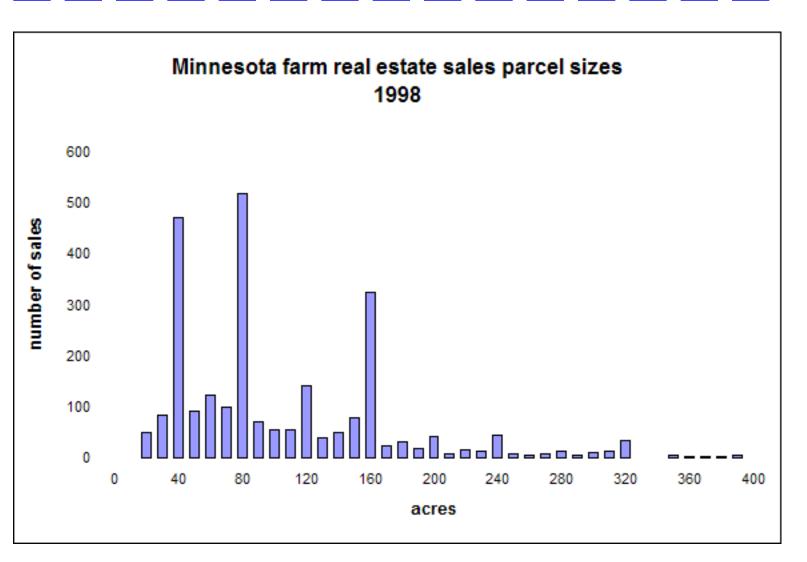
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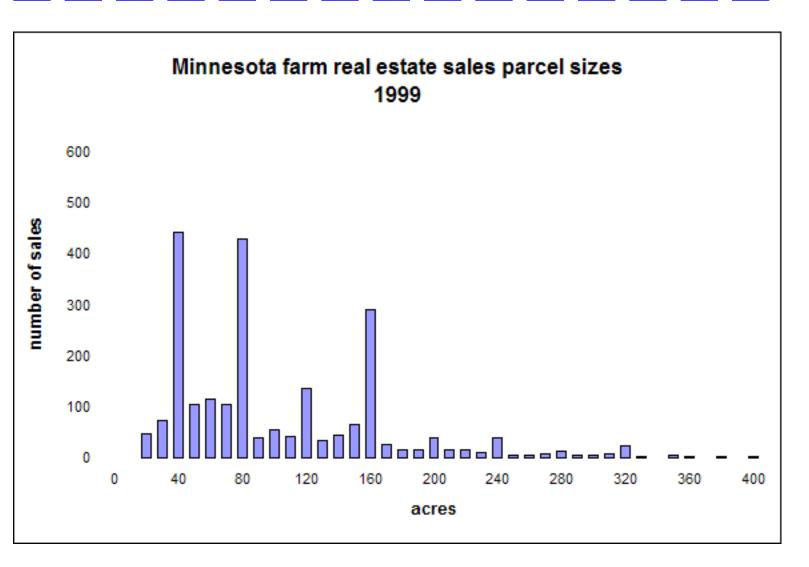
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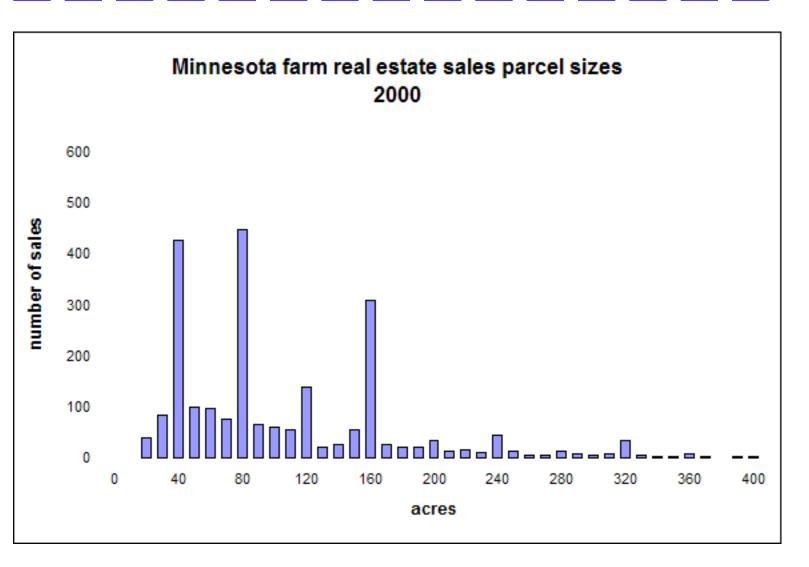
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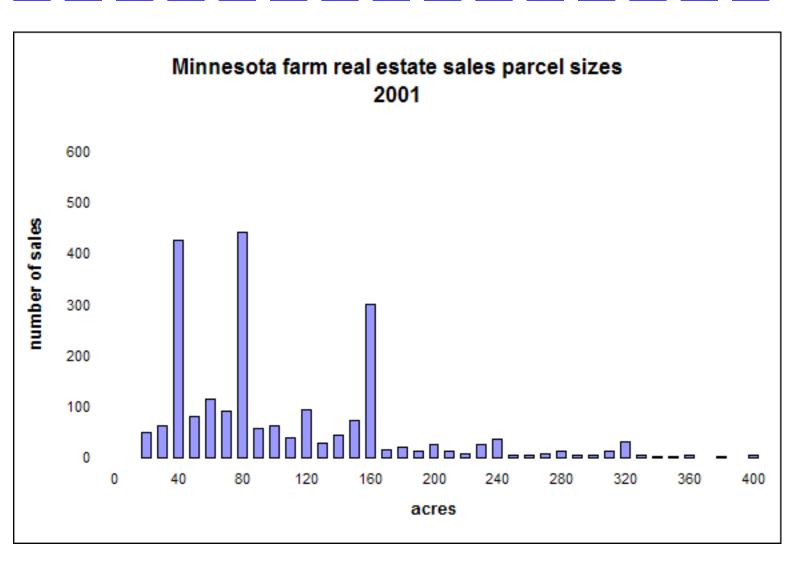
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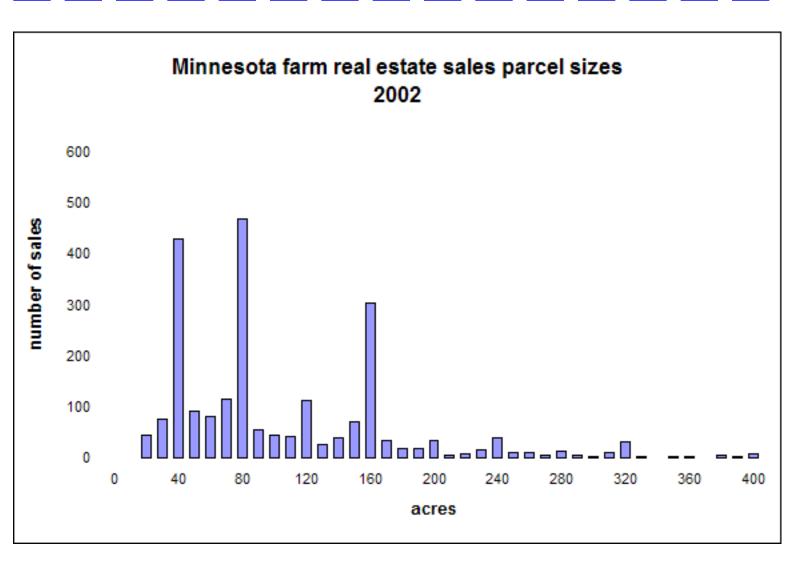
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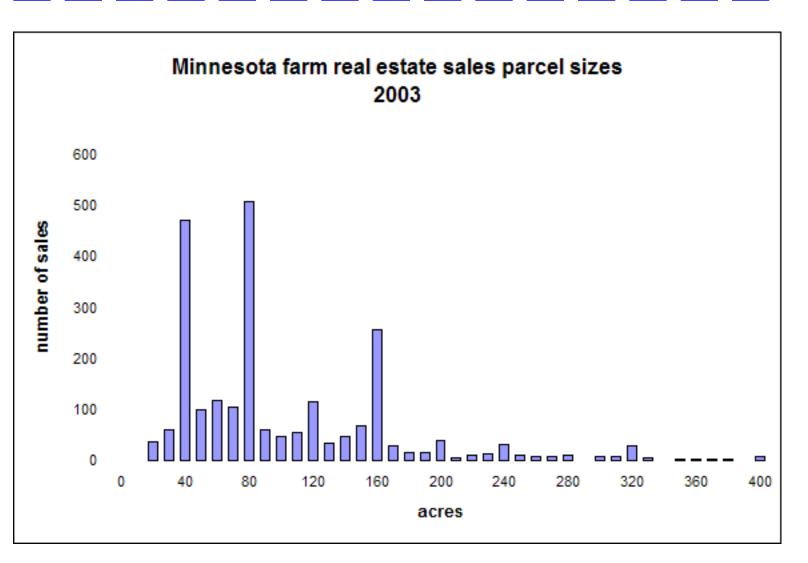
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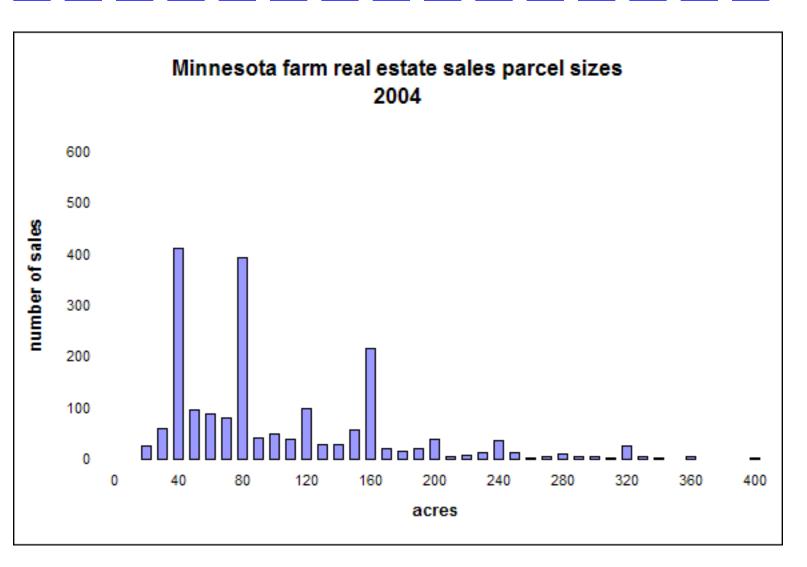
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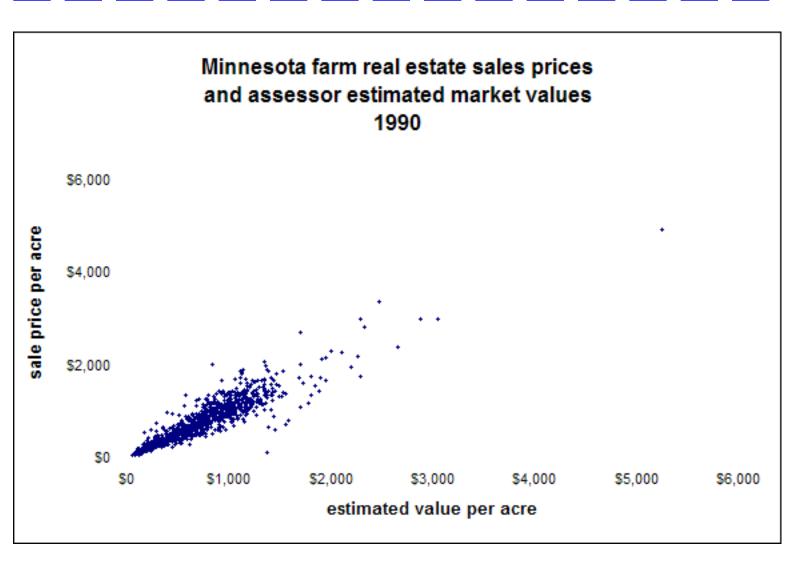
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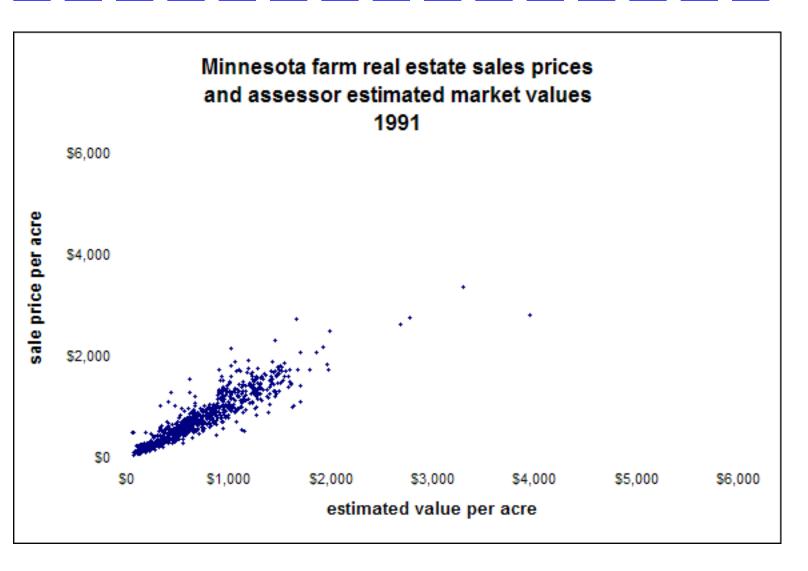


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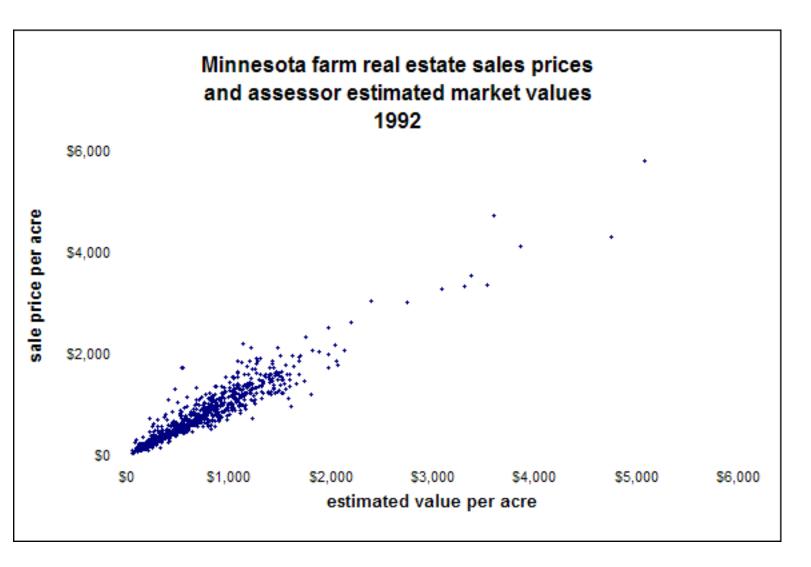
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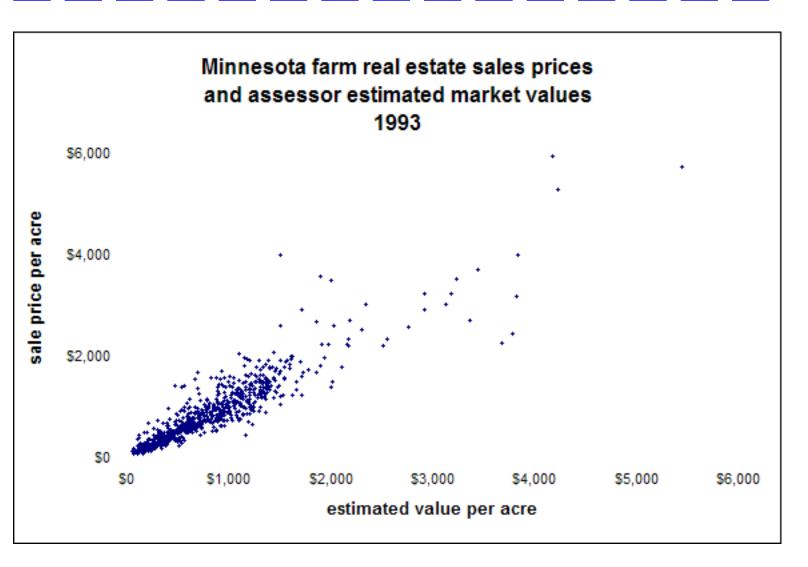
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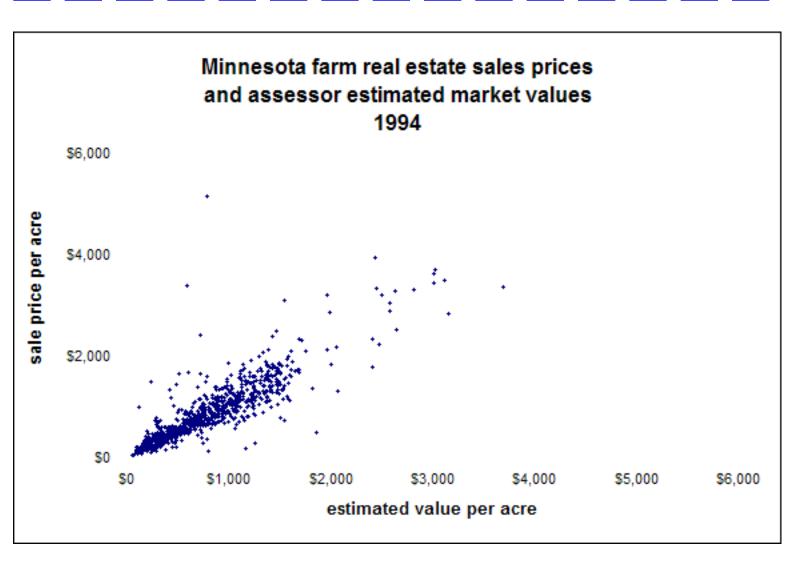
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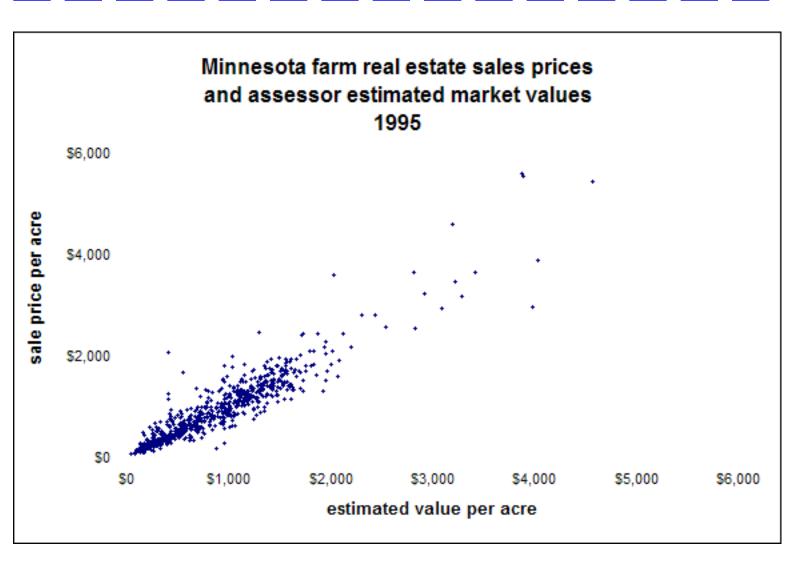
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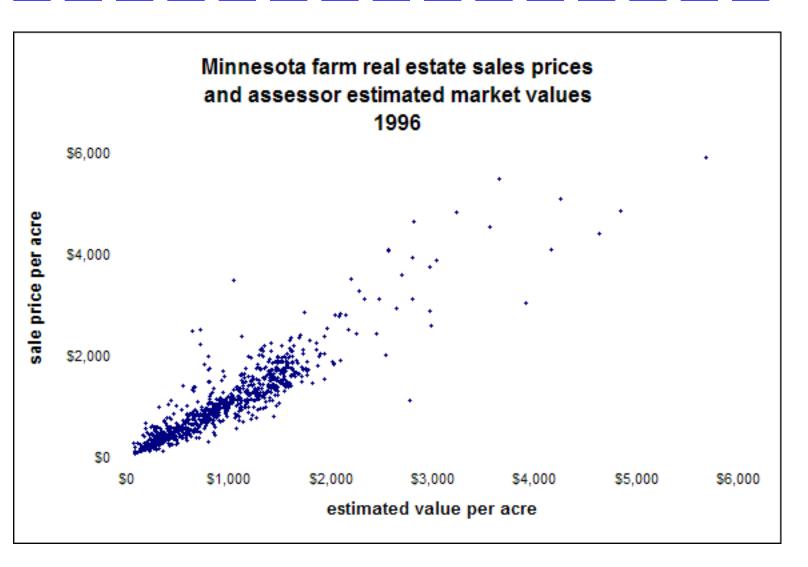
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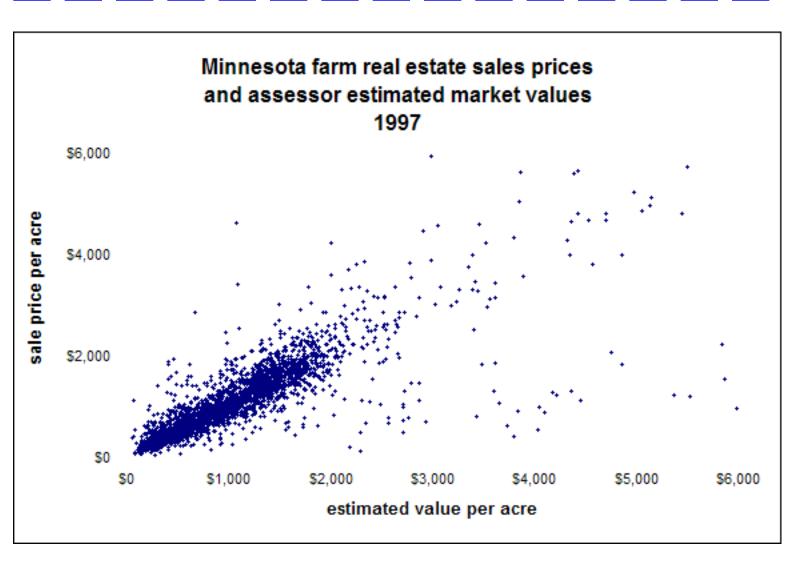
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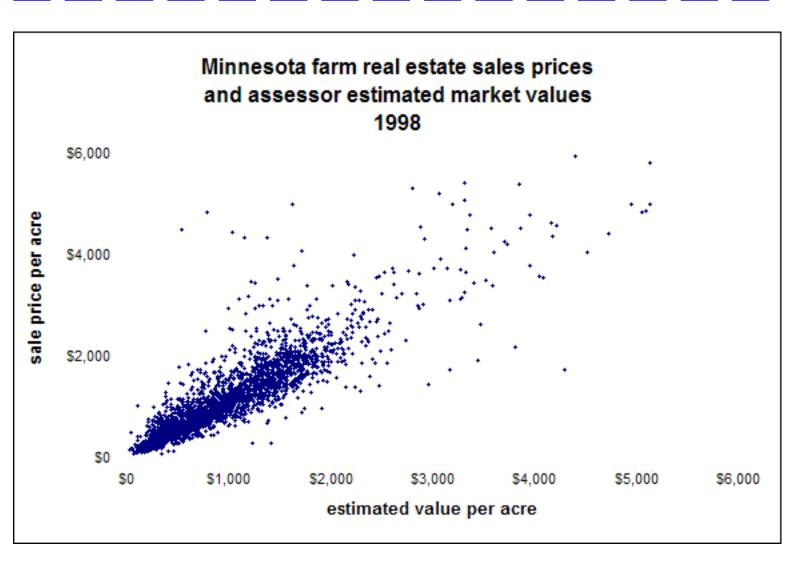
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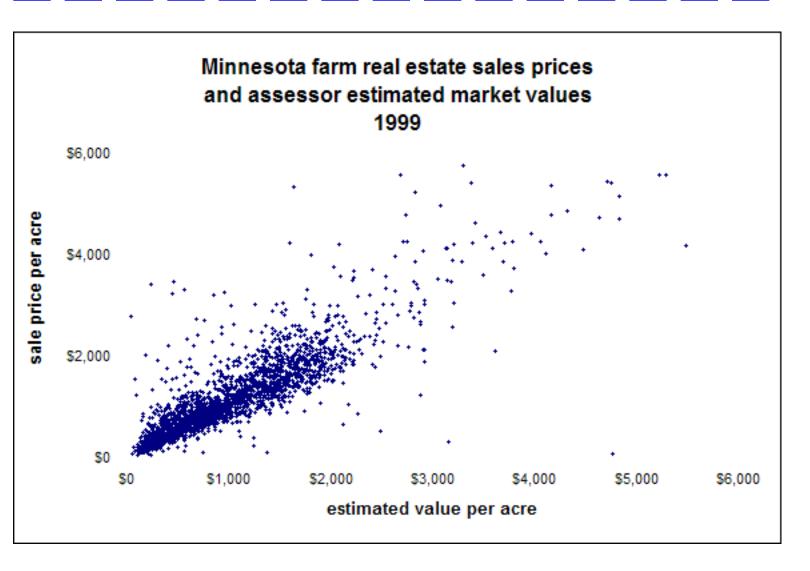
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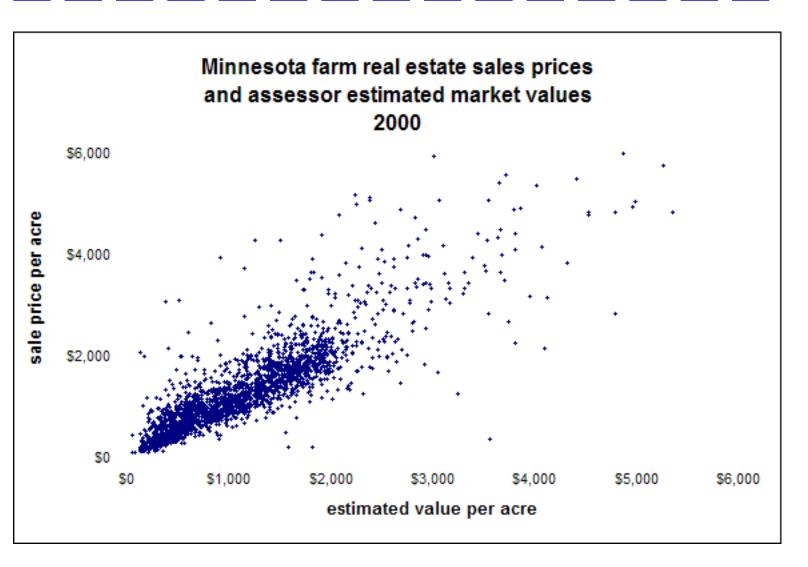
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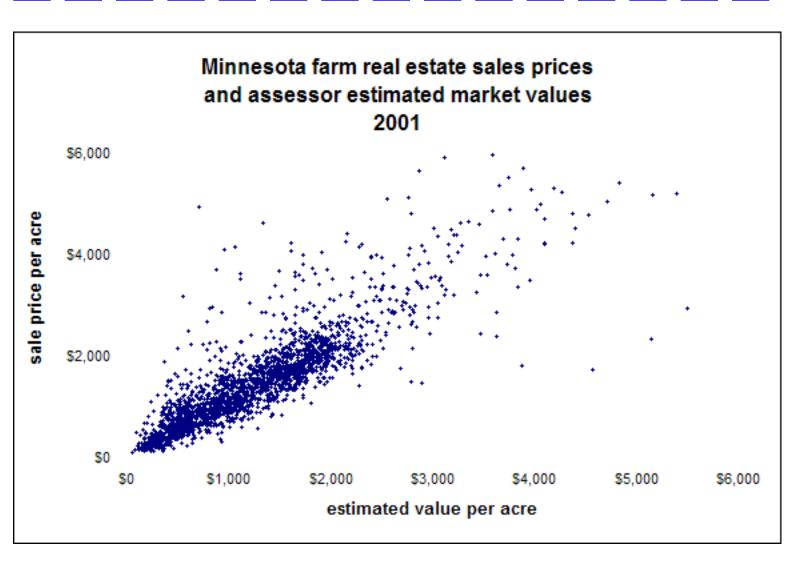
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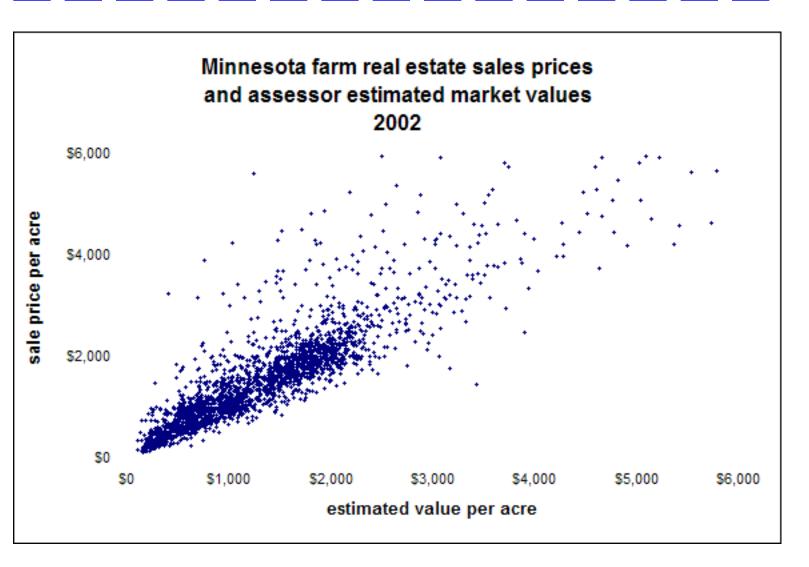
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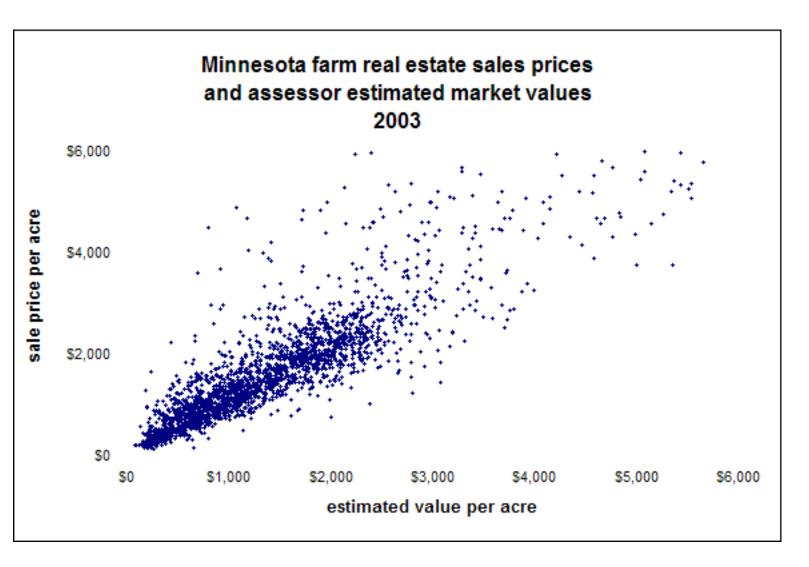
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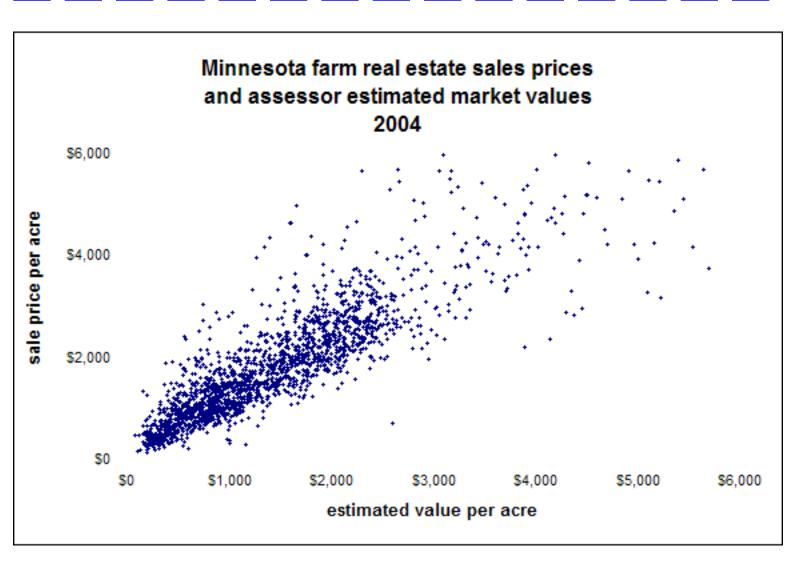
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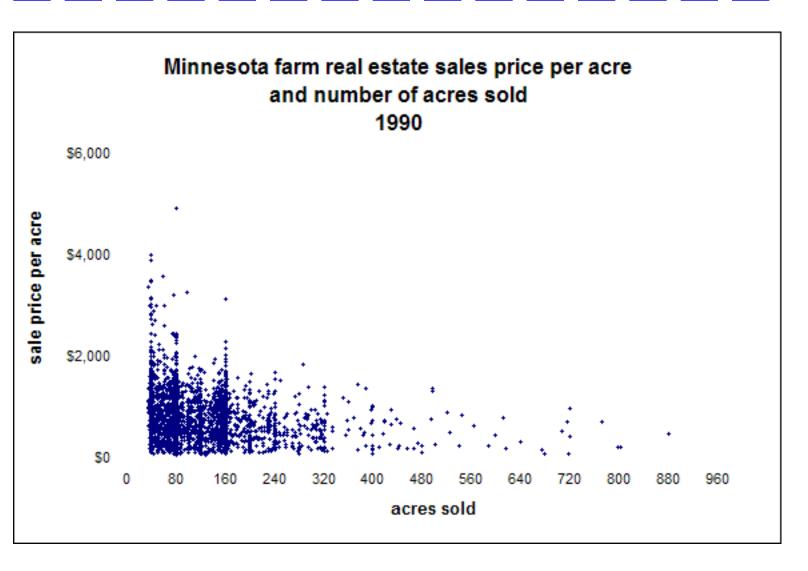
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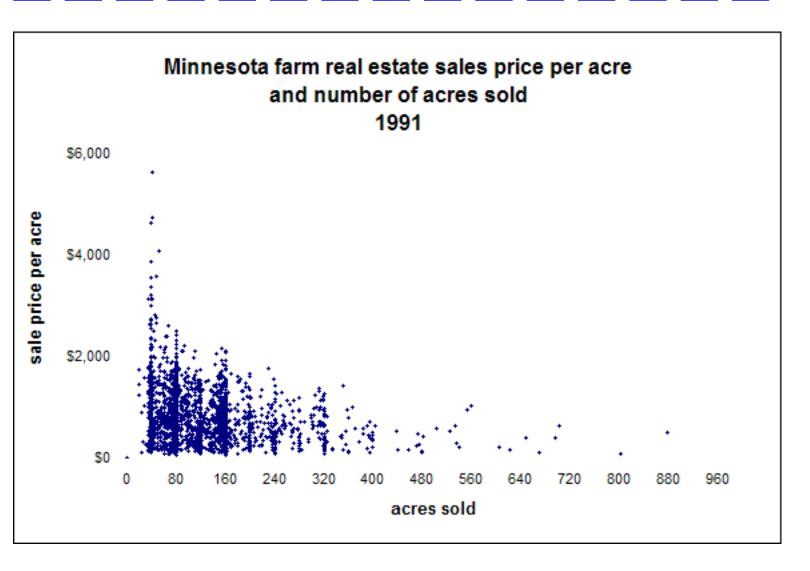
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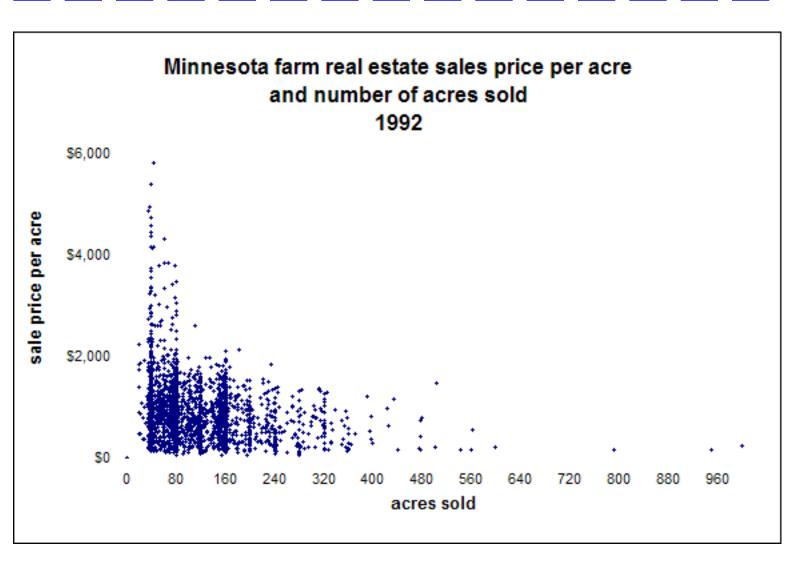
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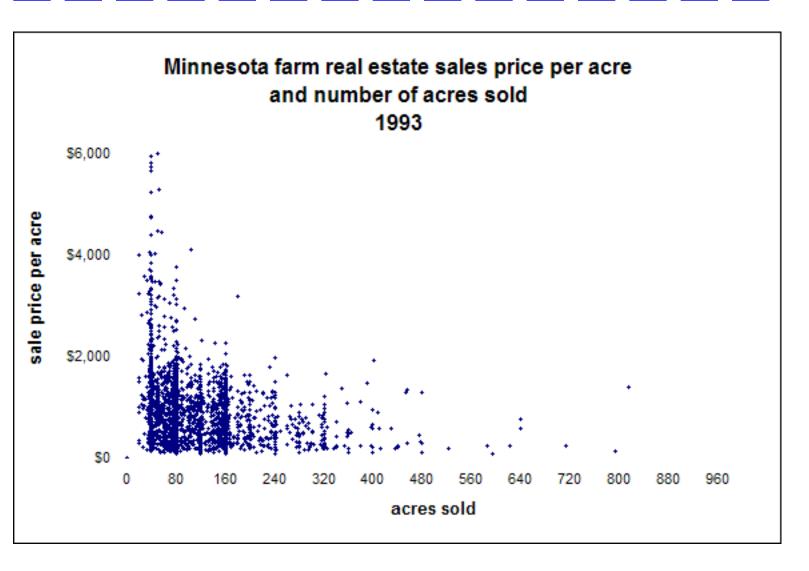
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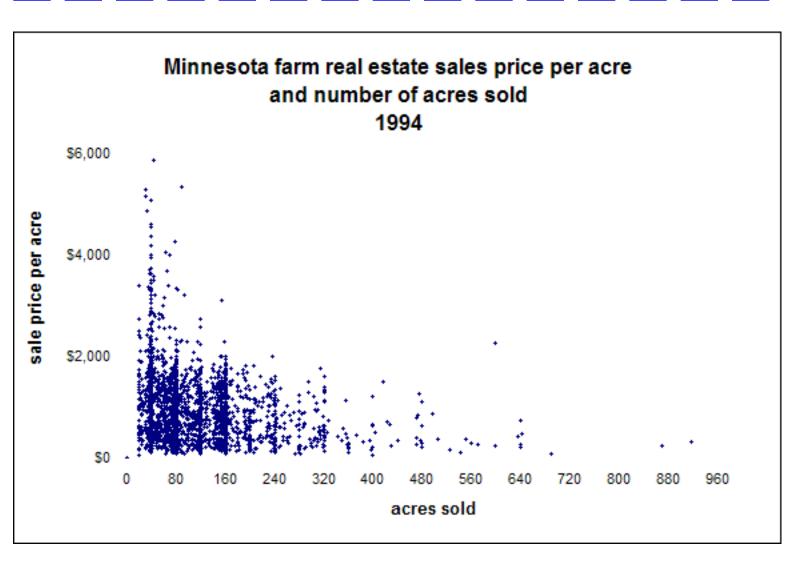
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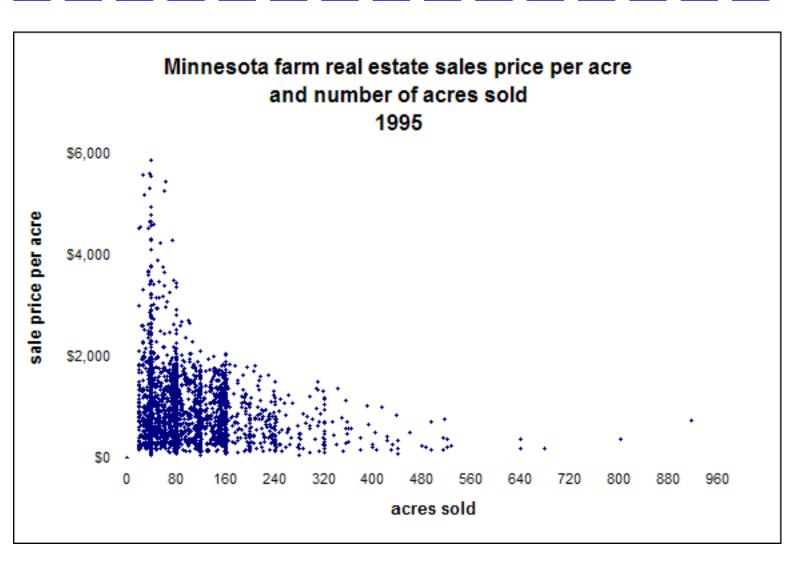
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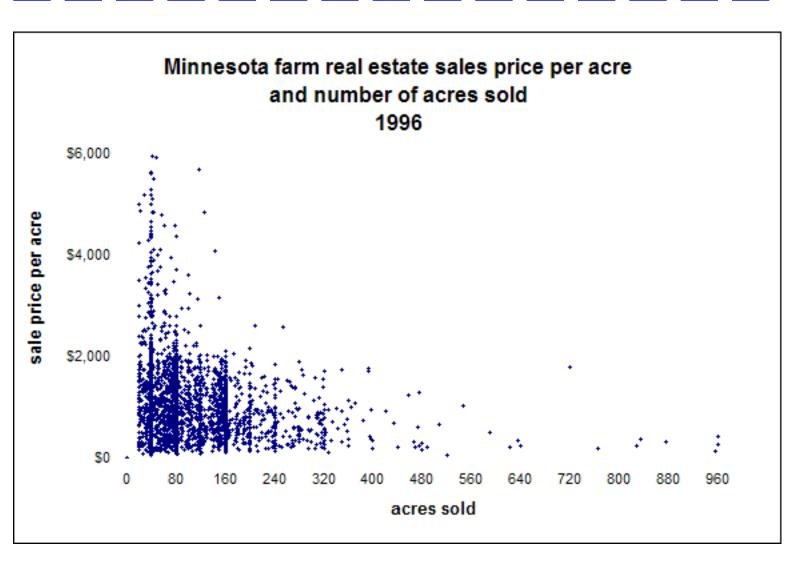
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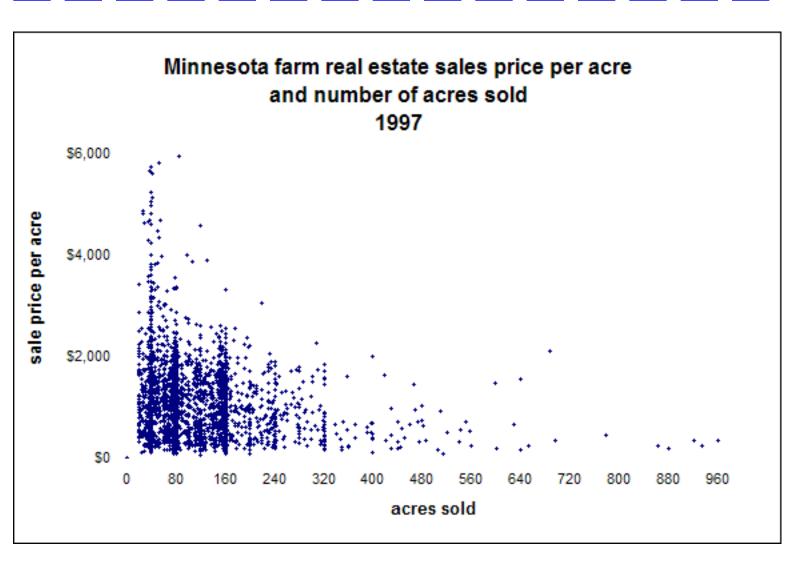
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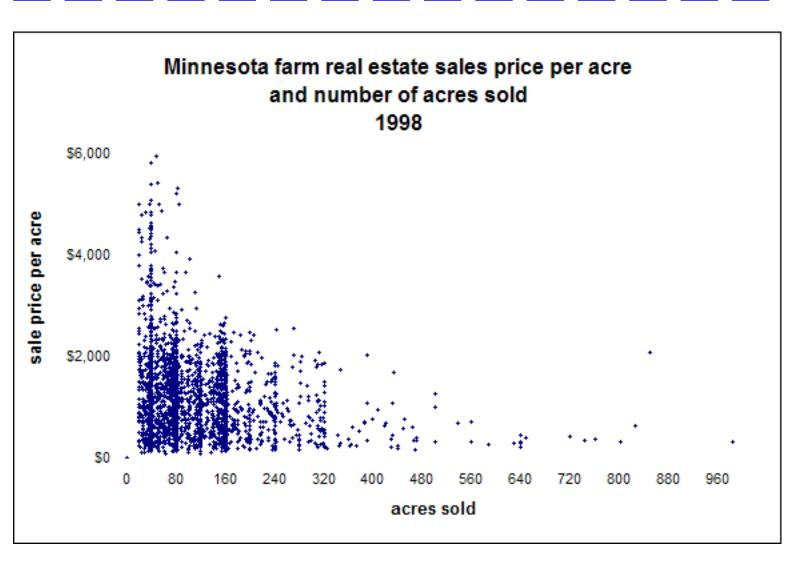
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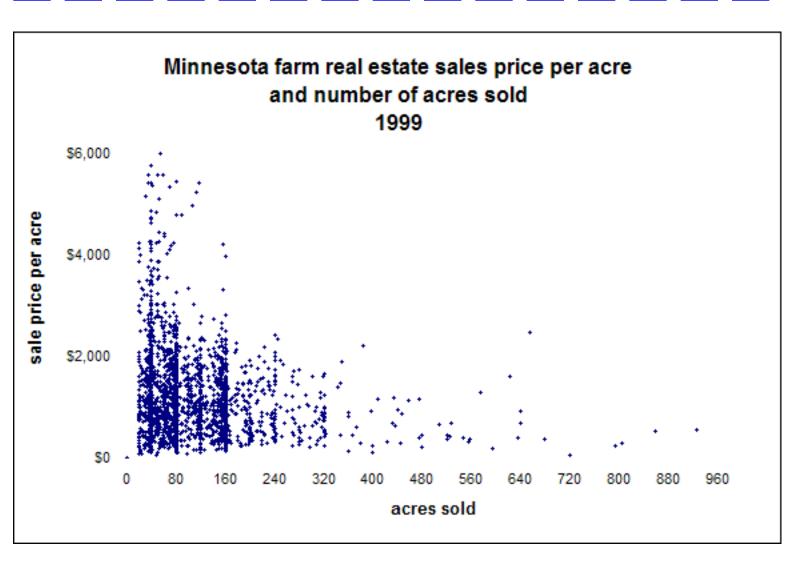
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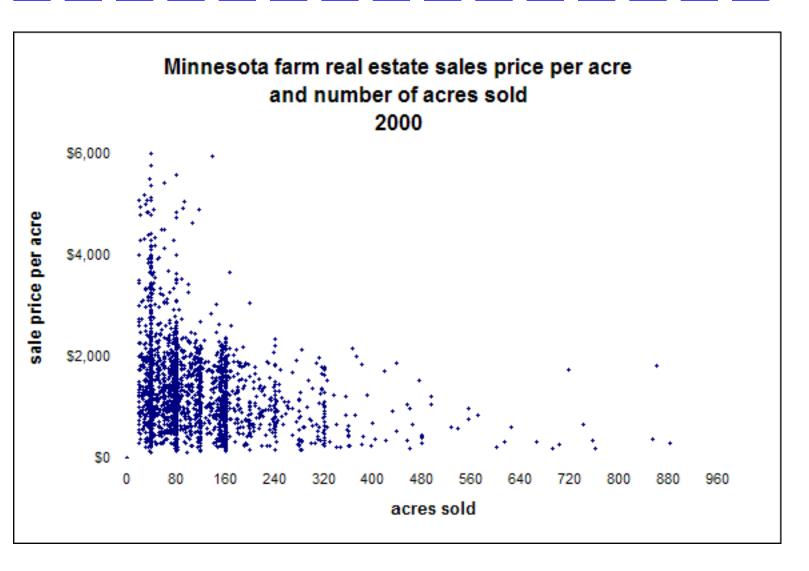
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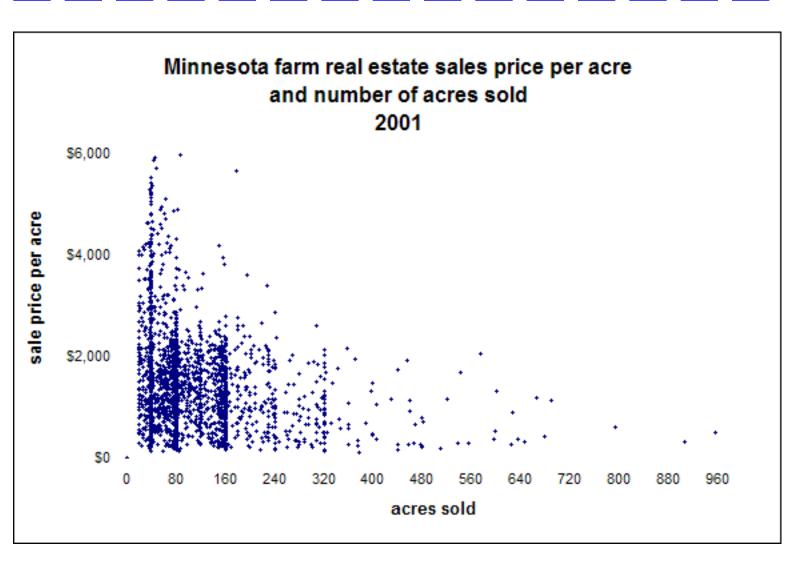
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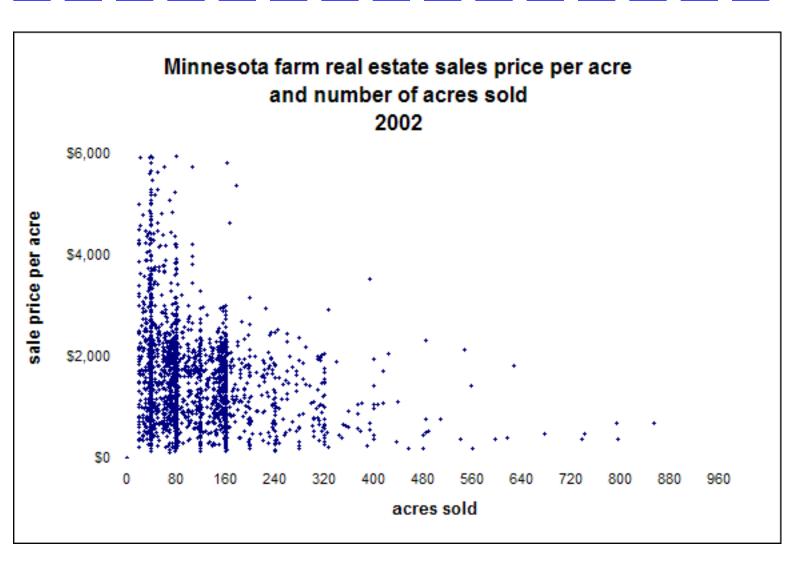
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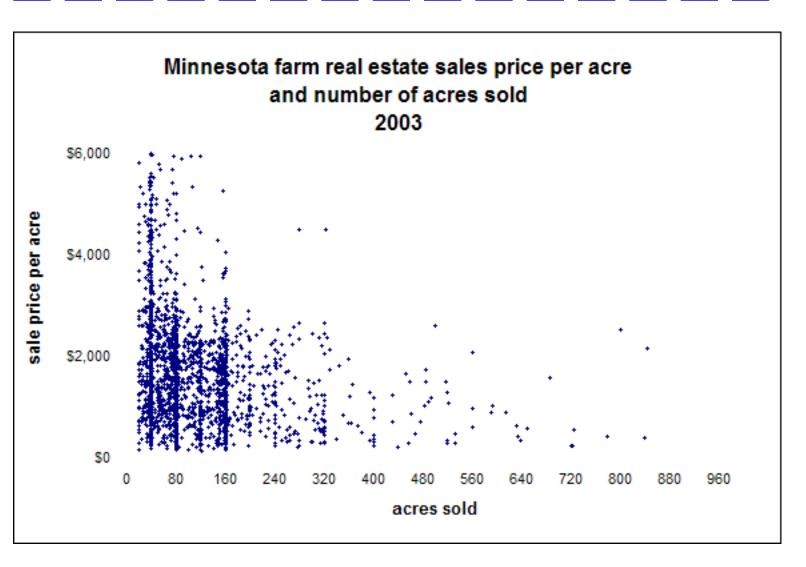
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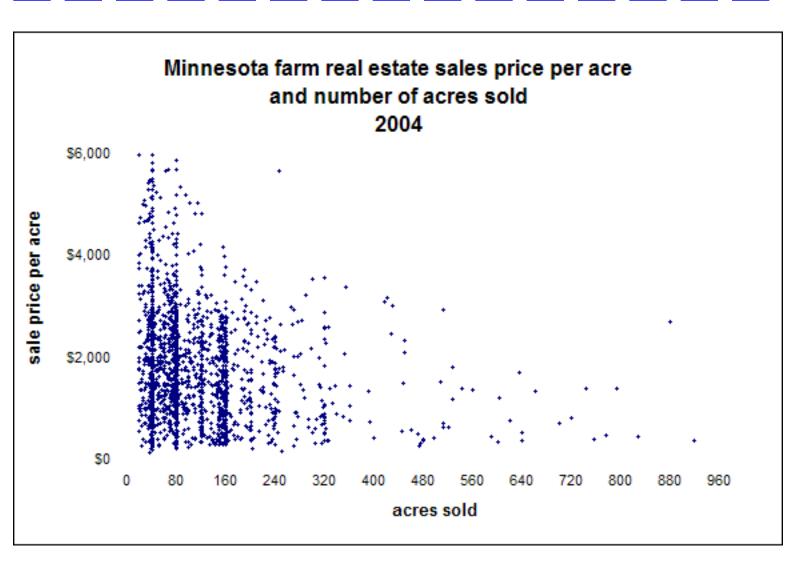
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