



# **Agricultural Economics Report**

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## **1993 MICHIGAN LAND VALUES**

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Before 1991 there were three sources of Michigan agricultural land values: the Federal Reserve Bank of Chicago district farmland survey; the USDA-ERS estimate of the value of farmland and service buildings; and the state equalized value (SEV) used for property tax purposes. Both the USDA and Federal Reserve Bank surveys provide useful information regarding aggregate land values in the state. However, in many instances, users of land value information desire a more disaggregated measure of land values. The SEV is set by county assessors at 50 percent of the estimated market value of land using comparative sales studies conducted annually. SEVs are useful in determining representative land values but are handicapped by the historical sales perspective upon which the appraisals are based.

In an effort to measure disaggregated land values, surveys were conducted by Michigan State University in January 1991 and 1992 that collected information on land values for sugar beet land, irrigated land, and different types of corn-soybean-hay land. A similar survey was conducted in January 1993 which asked for information on corn-soybean-hay land, sugar beet land, irrigated land and land rents. The objective of the 1993 survey was to continue to provide information on disaggregated land values in Michigan. The remainder of this paper contains a discussion of the survey, the survey results, and a summary.

### **Survey Method**

The sample consisted of members of the Farm Managers and Rural Appraisers Association, banker participants in the annual Michigan Farm Credit Conference, and county assessors in Michigan. After accounting for overlap between the three groups the total sample consisted of 472 agents: 187 lenders from the Farm Credit Conference, 202 appraisers, and 83 county assessors. A total of 95 questionnaires were returned which had land value information reported. The majority of responses were received from the southern half of the lower peninsula. Eighteen responses were received from the upper peninsula and northern half of the

lower peninsula. This is a reasonable correspondence between the location of respondents and the actual geographic distribution of agricultural production in the state. It should be noted that some respondents may have been reporting as a pool of individuals who received questionnaires, such as a farm credit service branch office or appraisal group. It is also important to recognize that the survey respondents in many cases were experts on land values in their areas. These people often had access to a significant amount of land appraisal and transaction information.

The sampled agents each received a cover letter, encouraging their participation in the study, and a two page questionnaire asking for land value information and comments on land values. Respondents were promised a summary of the results of the survey. Copies of the cover letter and questionnaire used in the survey are included in the Appendix.

Information requested on the questionnaire included: the current average value of land; the current range in value; the percent change in value over the last year; the percent change in value expected over the next year; the percent change in the supply of land on the market during the last year; and the average cash rent value of land. The questionnaire requested the information be reported separately for high quality corn-soybean-hay (C-SB-H), low quality C-SB-H, sugar beet, and irrigated land as appropriate for each respondent's area. Five year average historical yields for corn, soybeans, and hay were provided on the questionnaire to help respondents distinguish between higher and lower quality land. The respondents were asked to indicate the county or counties to which their information corresponds. In addition, space was provided for comments on the impacts of environmental liability and for general comments on land values in Michigan. The questionnaires were mailed in January 1993 and asked for information corresponding to January 1993.

## Survey Results for the Southern Lower Peninsula

Respondents reporting information on sugar beet and irrigated land were primarily concentrated in the southern lower peninsula while those reporting C-SB-H land information were spread across the state. In order to account for the potential large differences in soil characteristics, the C-SB-H responses were split into two groups: (1) the upper peninsula and northern lower peninsula region (Area 1 in figure 1); and (2) the southern lower peninsula region (Areas 2 in figure 1).

Tables 1-4 present the land value information for the southern lower peninsula. Table 1 summarizes the responses regarding the average, high, and low prices for the four land types in the southern lower peninsula. Efforts were made to report only the value of land for use in agricultural production. When information suggested the reported values reflected nonagricultural use, the values were removed from the sample. The higher quality C-SB-H land had an average price of \$949 per acre. Lower quality C-SB-H land had an average price of \$671 per acre, over \$275 per acre less than the high quality land. Sugar beet land averaged \$1267 per acre and irrigated land averaged \$1034 per acre. Clearly the characteristics of land, which determine its production use, has a significant impact on its value.

The range in value (not average value) for high quality C-SB-H land was reported to be \$300 to \$2600 per acre, while low quality C-SB-H land ranged in value from \$200 to \$1400 per acre. The high values reported for both high and low quality C-SB-H land were for land located in the thumb area and clearly reflect the influence of surrounding sugar beet land. Sugar beet land ranged in value from \$200 to \$2300 per acre and irrigated land values ranged from \$500 to \$1750 per acre in value.



FIGURE 1. Designation of State Production Areas.

Table 2 shows the percent change in value during the last 12 months and the expected increase in value during the next 12 months in the southern lower peninsula. High and low quality C-SB-H land increased in value by an average of 2% and 1.4%, respectively, during the last year. Sugar beet land values rose by 1.9% and irrigated land values showed the strongest gains, increasing by 3.6% during the last 12 months. Land values are expected to remain fairly stable during the upcoming year. High quality C-SB-H land is expected to increase by an average of 0.8% over the next year, while low quality C-SB-H land is expected to increase only 0.5%. Sugar beet land values are expected to rise 1.7% over the next year while irrigated land is expected to show an average increase of only 0.3%.

Table 3 shows the percent change in the supply of land on the market during the last 12 months in the southern lower peninsula. High quality and low quality C-SB-H land on the market increased an average of 0.5% and 1.1%, respectively. Sugar beet land on the market increased by 3.9%. On the other hand, the supply of irrigated land on the market declined by 3.3%, possibly contributing to the strong gains in value of irrigated land during the last year. The high quality C-SB-H land showed the most variability in change in supply of land, exhibiting as much as a 50% decrease in the supply of land on the market in some areas and up to a 50% increase in other areas.

Table 4 shows the average cash rent and value to rent multipliers for each type of land. High quality C-SB-H land had an average cash rent of \$62 per acre compared to \$39 per acre for low quality C-SB-H land. Sugar beet land rented for an average of \$98 per acre while irrigated land rented for \$93 per acre on average. The cash rent values are roughly in proportion to the corresponding values of each land type.

A useful tool for making comparisons among the different sets of land values is the "value to rent ratio." Value to rent ratios were calculated by dividing average land values by the

Table 1. Price Per Acre in the Southern Lower Peninsula

<u>LAND TYPE</u>	<u>AVERAGE</u>	<u>HIGH</u>	<u>LOW</u>
Corn-S.B.-Hay (above avg.)	\$ 949	\$2,600	\$300
Corn-S.B.-Hay (below avg.)	671	1,400	200
Sugar Beet	1,267	2,300	200
Irrigated	1,034	1,750	500

Table 2. Percent Change In Value in the Southern Lower Peninsula

<u>LAND TYPE</u>	<u>LAST 12 MONTHS</u>	<u>EXPECTED NEXT 12 MONTHS</u>
Corn-S.B.-Hay (above avg.)	+1.97%	+0.81%
Corn-S.B.-Hay (below avg.)	+1.42	+0.48
Sugar Beet	+1.86	+1.69
Irrigated	+3.55	+0.33

Table 3. Percent Change In Land Supply on the Market in the Southern Lower Peninsula

<u>LAND TYPE</u>	<u>LAST 12 MONTHS</u>
Corn-S.B.-Hay (above avg.)	+0.52%
Corn-S.B.-Hay (below avg.)	+1.14
Sugar Beet	+3.91
Irrigated	-3.29

Table 4. Cash Rent And Value Multiplier in the Southern Lower Peninsula

<u>LAND TYPE</u>	<u>AVERAGE CASH RENT</u>	<u>AVERAGE VALUE/RENT</u>
Corn-S.B.-Hay (above avg.)	\$61.71	16.0
Corn-S.B.-Hay (below avg.)	39.08	19.2
Sugar Beet	98.23	13.5
Irrigated	92.58	11.4

Note: Average value to rent ratios were calculated using only the questionnaires with completed responses to both the average value and average rent per acre questions.

average cash rents and then averaging over each land type. The average value to rent ratio for high and low quality C-SB-H land was 16 and 19.2 respectively. Sugar beet land showed a value to rent ratio of 13.5 while irrigated land had a ratio of 11.4.

Value to rent ratios are a direct function of the future cash flows the land is expected to generate. Higher expected future cash flows are "capitalized" into the value of the land today, increasing its value relative to the current years cash flow. In other words, higher expected future cash flows translate into higher value to rent ratios. The relatively high value to rent ratios for C-SB-H land thus suggest three possible situations: (1) the market actually anticipates that the cash flows for C-SB-H production will grow at a faster rate than sugar beets and irrigated land; (2) the C-SB-H land may be switched to alternative production with higher expected cash flows, e.g. sugar beets, in the future; or (3) non-farm uses of the land in the future may provide higher cash flows than those expected from C-SB-H production.

Tables 5-8 show the information reported for C-SB-H land in the upper peninsula and northern lower peninsula. It should be emphasized that the total number of responses reported in these regions was only 18. Table 5 reports the average price per acre. High quality C-SB-H land averaged \$478 per acre while low quality C-SB-H land averaged \$415 per acre. As expected the average values per acre in the upper peninsula and northern lower peninsula are significantly below those reported for the southern lower peninsula. The difference between average value of high and low quality C-SB-H land in the upper peninsula and northern lower peninsula was around \$60 per acre, about one-fourth the difference in the southern lower peninsula.

Table 6 shows high and low quality C-SB-H land in the upper peninsula and northern lower peninsula increased in value 3.7% and 4.67% during the last year, significantly above the values reported for the southern lower peninsula. High quality C-SB-H land is expected to

increase in value by 3.7% during the next 12 months as opposed to a 4.8% expected increase in value for the lower quality C-SB-H land, again significantly above the expected increases for the southern lower peninsula.

Table 7 contains the estimated percentage change in supply of C-SB-H land on the market in the upper peninsula and northern lower peninsula. High quality and low quality land supply increased 2.7% and 2.9%, respectively, during the last 12 months. The expected change in supply of C-SB-H land on the market in the upper peninsula and northern lower peninsula were slightly above values reported for the southern lower peninsula.

Table 8 shows the cash rent and value to rent ratio for high and low quality C-SB-H land in the upper peninsula and northern lower peninsula. High quality C-SB-H had an average cash rent of \$28 per acre while the average cash rent for low quality C-SB-H land was \$19 per acre, significantly below the values reported for the southern lower peninsula. The value to rent ratios for high and low quality C-SB-H land were 21.7 and 25.2, respectively. These values were even higher than those reported for the southern lower peninsula, suggesting relatively high growth rates in expected cash flows for C-SB-H production or the anticipation of some more profitable future use of the land.

### **Environmental Liability**

Liability issues surrounding environmental hazards such as chemical runoff, animal wastes and underground storage tanks are causing increasing concern in the agricultural sector. Survey respondents were asked what impact environmental liability is having on land values. The responses varied widely across the state ranging from no impact to serious impacts. Livestock waste and underground storage tanks are the major environmental concerns impacting land values in a number of areas. Land with building sites are generally more of a concern than

Table 5. Price Per Acre in the Upper Peninsula and Northern Lower Peninsula

<u>LAND TYPE</u>	<u>AVERAGE</u>	<u>HIGH</u>	<u>LOW</u>
Corn-S.B.-Hay (above avg.)	\$ 478	\$1,000	\$ 100
Corn-S.B.-Hay (below avg.)	415	900	125

Table 6. Percent Change In Value in the Upper Peninsula and Northern Lower Peninsula

<u>LAND TYPE</u>	<u>LAST 12 MONTHS</u>	<u>EXPECTED NEXT 12 MONTHS</u>
Corn-S.B.-Hay (above avg.)	+3.67%	+3.67%
Corn-S.B.-Hay (below avg.)	+4.67	+4.78

Table 7. Percent Change In Land Supply on the Market in the Upper Peninsula and Northern Lower Peninsula

<u>LAND TYPE</u>	<u>LAST 12 MONTHS</u>
Corn-S.B.-Hay (above avg.)	+2.70%
Corn-S.B.-Hay (below avg.)	+2.92

Table 8. Cash Rent And Value Multiplier in the Upper Peninsula and Northern Lower Peninsula

<u>LAND TYPE</u>	<u>AVERAGE CASH RENT</u>	<u>AVERAGE VALUE/RENT</u>
Corn-S.B.-Hay (above avg.)	\$27.86	21.69
Corn-S.B.-Hay (below avg.)	18.64	25.15

bare crop land. In some cases lenders are requiring environmental inspections, adding as much as \$2,000 to the cost of a borrower's loan application. In the absence of a known problem, crop land values are receiving little impact as a result of environmental concerns, although buyer and lender awareness of environmental liability issues is increasing. In cases where potential environmental problems exist, both the number of buyers and the value of the land are significantly impacted. One respondent estimated that when a possibility of clean up exists, the market value of the land is decreased by at least 15 percent.

In other areas it is felt that land owners, bankers, and appraisers are still not dealing with the potential impacts of environmental liability. In general, the feeling is that the impacts of environmental liability are just beginning to be felt and it is likely to become an increasingly large concern in the sales process.

#### **General Comments**

Respondents were also asked to provide general comments on land values in their area and the state of Michigan. The main thrust of the comments seemed to be that land prices for agricultural use are generally steady with some areas realizing moderate value increases and others absorbing decreases in the values of land used for agricultural production. Rural residential and recreational influences are having increasingly strong impacts on land values in many areas. As expected, land values in the heavily populated southeast part of the state generally are hardest hit by these urban influences. Much of the land capable of agricultural production in counties such as Oakland, Livingston, Lapeer, Macomb, and Genessee has a higher value for nonagricultural uses. In these areas it is not uncommon for the nonagricultural value of land to exceed \$10,000 or more. In one instance, a small tract of land in a strategic location is estimated to be worth about \$225,000 per acre.

A number of other general themes persisted in the respondents' comments. The poor 1992 commodity prices and farm returns are expected to soften demand for land and perhaps force some producers out of business, thus increasing supply. PA 116 continues to hold down land values in a number of areas by limiting the land to agricultural uses. In many areas, the number of tillable acres transferred was low. However, the non-tillable and recreation land markets were generally active. Larger contracts available to sugar beet growers has helped maintain prices for sugar beet land. Irrigated land was in low supply which has led to a strong market for irrigated land.

### **Conclusions**

The Michigan land value survey was conducted for a third consecutive year. The primary purpose of the study is to provide information on disaggregated agricultural land values in Michigan. Land values remained generally steady during 1992, increasing at less than the rate of inflation. Low farm incomes last year are expected to contribute to even weaker land values during the upcoming year with little to no increase expected in values. Nonagricultural pressures from residential and recreational influences are having an increasing impact on the value and use of agricultural land in the state. These pressures, along with increased concerns surrounding environmental liability, are likely to continue to increase in the future.

**APPENDIX**

January 1993

Dear:

Enclosed is the annual land value survey for Michigan farmland. Land values are an important indicator of the economic strength of the economy. To help provide this information, we are asking you to take a few minutes and give us your estimates on the value and rental rates of farmland used to grow corn, soybeans, hay, and/or sugarbeets in your area. We will send a survey summary to all those who respond to the questionnaire.

While your participation in the survey is purely voluntary, we do value your opinion and would appreciate a prompt response. Your participation will be strictly confidential and you will remain anonymous on the report of the survey findings. You indicate your voluntary agreement to participate by completing and returning the questionnaire. Thanks for your help. If you have any questions, please call Kelsey (517) 353-4520 or Hanson (517) 353-1870.

Sincerely,

Mike Kelsey,  
Professor

Steve Hanson,  
Assistant Professor

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Enclosure

**FARM LAND VALUE QUESTIONNAIRE  
January 1993**

Make the best estimates you can for your area.

Indicate which county or counties you are reporting on. \_\_\_\_\_

Above Average and Below Average refers to land you expect to produce yields above or below the state average respectively. Five year averages (1987-91) for corn, soybeans and hay in Michigan are:

	<u>Average Yield/Acre</u>
Corn	101 bu.
Soybeans	35.4 bu.
Hay	3.16 tons

Type of Land	Current Average Value	Current Range in Value		Percent Change in Value (Indicate + or -)		Percent Change in the Supply of Land on the Market in Last 12 Months Indicate + or -	Average Cash Rent
		High	Low	Last 12 Months	Expected in Next 12 Months		
	\$/acre	\$/acre	\$/acre	% Change	% Change	% Change	\$/acre
A. Corn-S.B.-Hay							
Above Average							
Below Average							
B. Sugar Beet (if applicable)							
C. Irrigated (if applicable)							

(over)

Please comment on the impact that environmental liability is having on the land market in your area and Michigan:

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General Comments on Land Values in your area and Michigan:

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Would you like a summary of the survey results?

Yes   
No

If you are interested in a copy of the survey results, please provide your correct address and phone number.

Address:

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Phone: \_\_\_\_\_