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1998 MICHIGAN LAND VALUES

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1998 MICHIGAN LAND VALUES

There are several sources of information on Michigan farmland values. The Federal Reserve Bank of Chicago reports quarterly farmland values for each state in its district based on a survey of lenders. The USDA estimates the value of farmland and service buildings each year for every state in the United States based on a survey of farmers. Both of these surveys provide useful information on aggregate farmland values in the state. However, users of land value information often desire a more disaggregated measure of land values based on land type. The state equalized value (SEV) used to determine property taxes is set by township assessors at an estimated 50 percent of the market value of farmland based on comparative sales studies conducted annually. County equalization directors review the assessment rolls of local township assessors and make adjustments based on sales data. SEVs are useful in determining representative land values but are handicapped by the historical sales perspective upon which the appraisals are based.

Michigan State University (MSU) has also collected data on land values since 1991 using mail surveys. The goal of the MSU study has been to provide information on the value of land based on its production use. The survey asks for information on the value of land used to produce sugar beets, irrigated crops, and field crops. The study also provides information on lease rates and practices in the state. In addition, the study collects information on the non agriculture use value of farmland. The remainder of this paper contains the results of the 1998 survey results for the MSU land value survey.

Survey Method

The survey sample consists of members of the Farm Managers and Rural Appraisers Association, Michigan agricultural lenders, county equalization directors in Michigan, and members of the Farm Bureau Advisory Committees on feed grains, oil seeds and wheat, and dry beans and sugar beets. After accounting for overlap between the different groups, the total sample consisted of 403

potential respondents. A total of 128 questionnaires were returned with useable information reported on farmland. There were 103 responses received from the southern half of the lower peninsula (area 2 in Figure 1). The remaining 25 responses were received from the upper and northern-lower peninsula (area 1 in Figure 1). This is a reasonable correspondence between the location of respondents and the geographic distribution of production in the state. Figure 2 shows the total number of responses by the Agricultural Statistics Districts in the state.

It should be noted that some respondents may have been reporting as a pool of individuals who received the questionnaire, such as a farm credit service branch or an appraisal group. It is also important to recognize 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, transaction, and leasing information.

Each sample member received a cover letter encouraging their participation in the study and a two-page questionnaire asking for information on farmland. Respondents were promised a summary of the survey results. A follow-up letter asking for participation in the survey and a second copy of the questionnaire was sent to non respondents approximately four weeks after the original questionnaire was sent. Copies of the cover letter and questionnaire used in the survey are included in the Appendix.

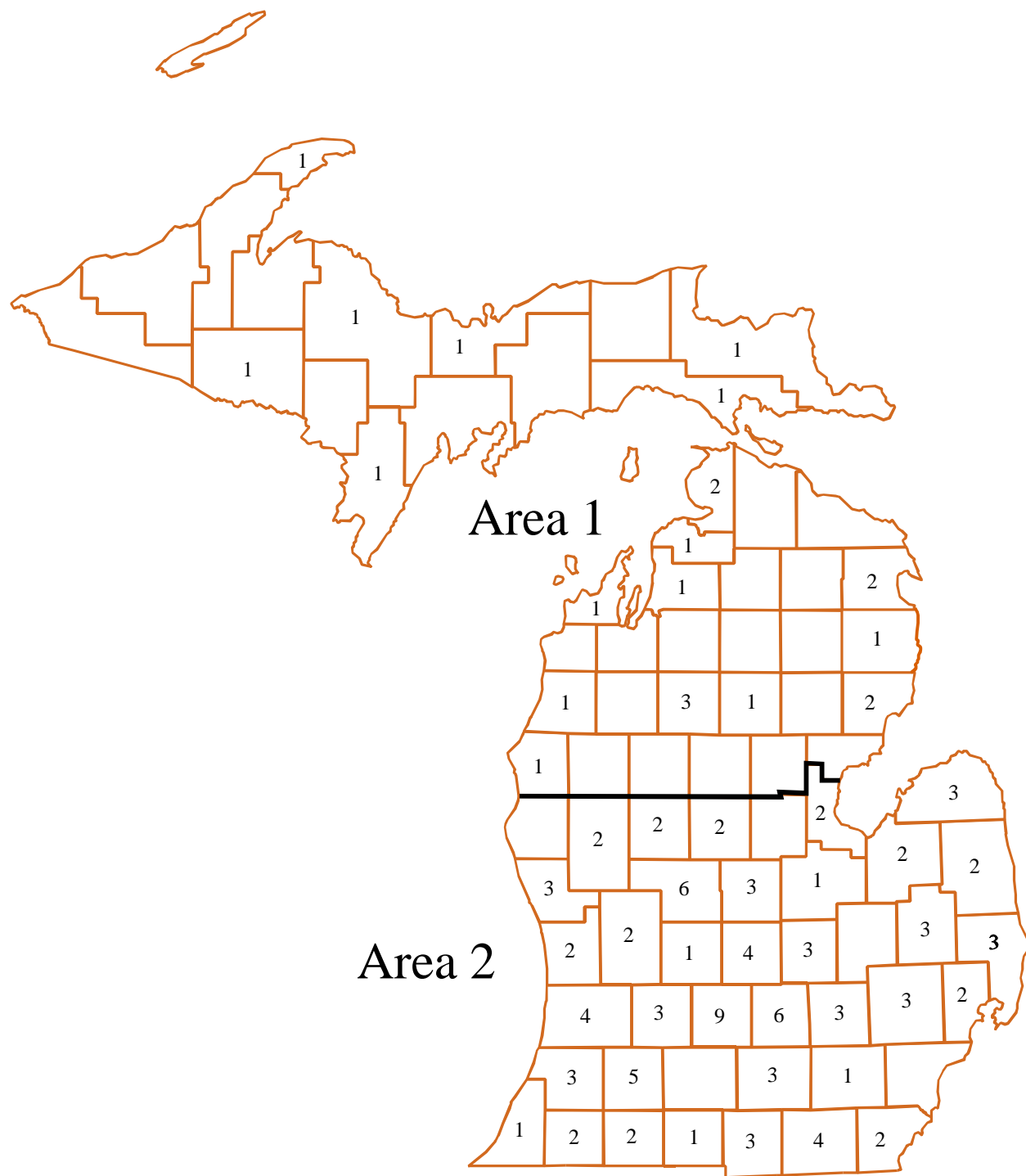


Figure 1. Farmland Value Questionnaire Responses

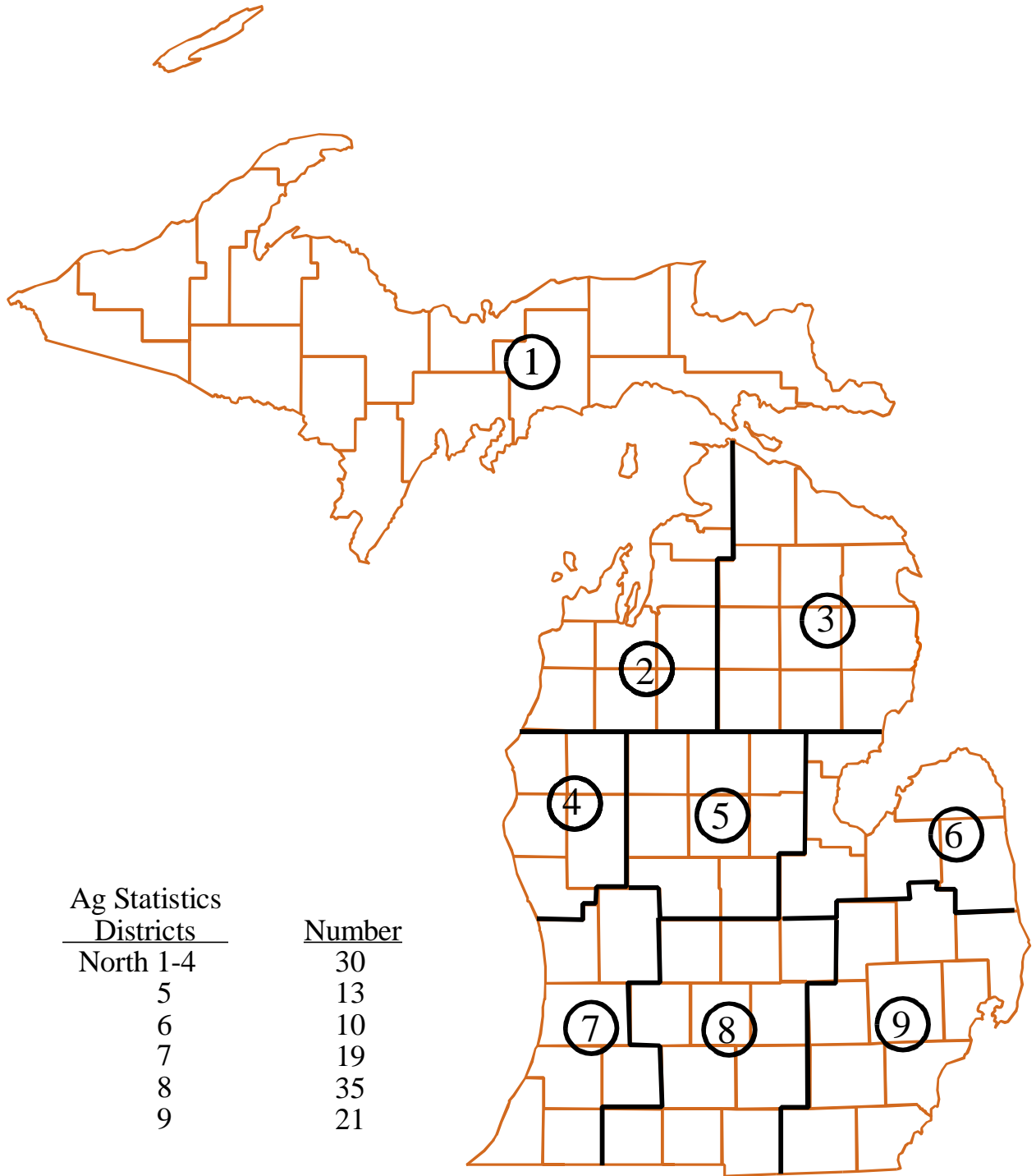


Figure 2. Agricultural Statistics Districts and Number of Respondents

Data Reporting

Information requested on the questionnaire included: the current agriculture-use value of the farmland; the change in value during the last year; the expected change in value during the next year; the change in supply of land on the market during the last year; the cash lease rate; and information on share arrangements. In addition, the questionnaire asked for information on the non agriculture-use value of farmland. The questionnaire requested that information on agriculture-use be reported separately for tilled (non-irrigated) field crop, untilled field, crop, sugar beet, and irrigated land. Information on non agriculture-use land values was collected for residential, commercial, and recreational development. The respondents were also asked to indicate the county or counties to which their information corresponds. In addition, space was provided for comments on the major factors influencing land values and rental rates in each respondent's area. The questionnaire was mailed in March of 1998.

In order to account for potentially large differences in soil and climate characteristics, information is reported separately for different regions of the state. Results are reported for two halves of the state, the southern-lower peninsula and the upper and northern-lower peninsula, which are split at a line running from Oceana across to Bay county as shown in Figure 1. Results are also reported for the nine crop reporting districts across the state. The results for Districts 1 through 4 are combined because of lower number of responses in that region. In addition, results are only reported when at least five responses were received for an area. This results in a number of unreported results in some areas for some types of information.

Efforts were made to report only the value of land in its agricultural production use. However, it is difficult to remove all non agriculture influences on values in many areas and so the agriculture-use values will certainly display some impacts of non agricultural use factors. The magnitude of these influences will vary across local regions in state. The influence of non-agricultural factors on farmland values are addressed in more detail later in the report.

Agricultural-Use Farmland Values

Average Farmland Values

Average farmland values are reported in Table 1 for different regions in the state. In the southern lower peninsula, the average value of tilled field crop land was \$1,520 per acre while non tilled field crop land averaged \$1,275 per acre. In the upper and northern-lower peninsula field crop land averaged \$686 and \$777 per acre for tilled and non tilled, respectively.

Table 1. Agricultural-Use Value

Region	Land Use			
	Field Crop Tilled	Field Crop Untilled	Sugar Beet	Irrigated
Michigan	\$1,519	\$1,263	\$2,031	\$1,698
Southern Lower Peninsula	1,520	1,275	2,031	1,712
Upper and Northern Lower Peninsula	686	777	n/a	n/a
District 1-4	820	819	n/a	n/a
District 5	1,114	1,030	n/a	1,550
District 6	1,711	1,239	2,025	n/a
District 7	1,408	1,321	n/a	1,839
District 8	1,364	1,159	n/a	1,608
District 9	2,556	2073	n/a	n/a

Note: Results were only reported when a minimum of five responses were received.

As expected crop reporting districts 1-4 which contain the Upper Peninsula (1), Northwest (2), Northeast (3), and West Central (4) Districts have lower average farmland values than the remaining Districts with field crop farmland averaging around \$820 per acre. The Southeast District (9) had the highest average values for field crop land at \$2,556 and \$2,073 per acre for tilled and non tilled land,

respectively. Values in this area appear significantly higher than the rest the state and clearly reflect non agricultural-use influences. The Central (5), East Central (6), Southwest (7), and South Central (8) Districts had some what similar average values for field crop land ranging from \$1,030 per acre for non tilled land in the Central District to \$1,711 per acre for tilled land in East Central District.

Sugar beet land averaged \$2,031 per acre with most of the sugar beet production being concentrated in the East Central District. Irrigated land averaged \$1,712 per acre in the state. Irrigated land is primarily found in three districts: Central, Southwest, and South Central. Irrigated land in the Central District, typically used for potato production, averaged \$1,550 per acre. Irrigated land in the Southwest and South Central Districts, typically used for seed corn production, averaged \$1,839 and \$1,608 per acre, respectively.

Change in Farmland Values

The change in farmland values during the last 12 months and the expected change during the next 12 months is shown in Table 2. In the southern-lower peninsula field crop land values increased around 10% during the year. In the upper peninsula and northern-lower peninsula field land values for field crops increased about 7% and 10% during the year for tilled and non tilled land, respectively. The East Central District was reported to have the lowest growth rate in price for field crop land at around 4% for the year. Non tilled land in the Central District showed the strongest gains during the year, rising over 17%.

Table 2. Change in Farmland Value

Region	Type of Land Use							
	Field Crop Tiled		Field Crop Untiled		Sugar Beet		Irrigated	
	Last Year	Expected Next Year	Last Year	Expected Next Year	Last Year	Expected Next Year	Last Year	Expected Next Year
Michigan	9.8%	5.2%	10.1%	5.7%	5.9%	3.1%	12.4%	5.4%
Southern Lower Peninsula	10.2	5.2	10.2	5.5	5.9	3.1	12.7	5.8
Upper and Northern Lower Peninsula	6.9	5.6	10.0	6.9	n/a	n/a	n/a	n/a
District 1-4	9.0	6.9	10.3	8.0	n/a	n/a	n/a	n/a
District 5	15.5	5.4	17.4	4.0	n/a	n/a	24.2	n/a
District 6	4.6	1.9	4.1	1.5	5.4	2.5	n/a	n/a
District 7	9.4	5.5	8.5	6.6	n/a	n/a	7.4	5.6
District 8	10.0	4.5	11.1	4.6	n/a	n/a	9.2	n/a
District 9	9.8	6.2	9.2	6.6	n/a	n/a	n/a	n/a

Note: Results were only reported when a minimum of five responses were received.

Field crop land values are expected to rise around 5% during the next year in the southern-lower peninsula and 6-7% in the upper and northern-lower peninsula. The weakest gains are expected in the East Central District where values are expected to rise only 1-2%. The strongest gains are expected in district's 1-4 where field crop land is expected to show a 7-8% increase in value during the upcoming year.

Sugar beet land values rose around 6% during the year and are expected to rise in value by around 3% during the upcoming year. Irrigated land values showed the strongest gains in the state, up over 12% from the previous years values. The strong performance of irrigated land can be attributed in

part to the dramatic 24% increase in irrigated land values in the Central District. Irrigated land values are expected to continue to rise during the upcoming year, increasing in value by over 5%.

Change in Land Supply on the Market

Table 3 shows the change in the supply of farmland on the market during the last 12 months. Field crop land in the southern-lower peninsula increased in value around 1% last year. In the upper and northern-lower peninsula the supply of tilled field crop land fell by 2% during the year; while the supply the non tilled field crop land increase by over 4%. The largest increase in the supply of land on the market occurred in the Central District where supply of field crop land increased 5-7% during the year. Sugar beet land on the market increased by around 4%; while the supply of irrigated land on the market fell by over 1%.

Table 3. Change in Land Supply on Market During Last 12 Months

Region	Type of Land Use			
	Field Crop Tiled	Field Crop Untitled	Sugar Beet	Irrigated
Michigan	+0.9%	+1.2%	+4.2%	-1.4%
Southern Lower Peninsula	+1.1	+0.8	+4.2	-1.4
Upper and Northern Lower Peninsula	-2.0	+4.3	n/a	n/a
District 1-4	-2.0	+2.3	n/a	n/a
District 5	+5.5	+7.0	n/a	n/a
District 6	+1.9	+5.0	+6.6	n/a
District 7	-1.5	-1.3	n/a	-1.4
District 8	-0.3	+0.4	n/a	-2.0
District 9	+2.1	-0.5	n/a	n/a

Note: Results were only reported when a minimum of five responses were received.

Farmland Leasing

A significant portion of Michigan's farmland is controlled by leasing arrangements. Table 4 provides information on the characteristics of leasing arrangements used Michigan.

Table 4. Characteristics of Leased Farmland

Region	Crop Acres Leased	Leased Land Under Cash Lease	Landlord: Tenant Output Share		
			1/4 : 3/4	1/3 : 2/3	1/2 : 1/2
Michigan	43.4%	70.5%	23%	59%	18%
Southern Lower Peninsula	46	70	23	60	17
Upper and Northern Lower Peninsula	26	74	n/a	n/a	n/a
Districts 1-4	26	68	n/a	n/a	n/a
District 5	46	68	13	64	n/a
District 6	47	51	8	86	7
District 7	42	83	n/a	63	n/a
District 8	45	65	37	47	16
District 9	55	80	16	73	11

Note: Results were only reported when a minimum of five responses were received. The output shares were normalized to 100% when necessary to account for non responses to some questions.

Crop Acres Leased

In the southern Lower Peninsula 46% of crop acres were controlled by leases; while only 26% of the crop land in the upper and northern-lower peninsula is leased. The highest amount of leasing occurs in the Southeast District where 55% of the crop land is leased. The leased crop land is most often cash rented with 70% and 74% controlled by cash lease arrangements in the southern-lower peninsula and the upper and northern-lower peninsula, respectively. The lowest proportion of cash leasing occurs in the Central District where on 51% of the leased land is controlled by cash lease arrangements.

Share Leasing Arrangements

For land that was share leased in the southern-lower peninsula a variety of output share arrangements were used. The most common split is for the landlord to receive 1/3 of the output and the tenant to receive 2/3 of the output which is used for approximately 60% of the share leases. Around 23% of the share leases use a 1/4:3/4 output split between the landlord and tenant; while around 17% use a 1/2:1/2 split.

An important determinant of the share split is the amount of inputs supplied by the landlord and tenant. Typically in a share lease the landowner will supply the land resources and the tenant the labor and machinery. The responsibility for the remaining inputs is often negotiated between the landlord and the tenant and may impact the resulting output share split. A higher landlord output share is typically associated with a larger amount of purchased inputs (fertilizer, seed, and pesticides) and machinery services supplied by the landlord. In the 1/4:3/4 split, the landlord rarely shares variable inputs as the purchased inputs are shared in only 5% of the leases and machinery services are shared only 16% of the time. Variable inputs are shared more often in the 1/3:2/3 arrangement where purchased inputs and machinery services are shared 24% and 22% of the time respectively. It is typical for variable inputs to be shared in a 1/2:1/2 arrangement where purchased inputs are shared in 89% of the share leases and machinery services are shared 36% of the time.

Cash Rent Levels

Cash rent values and value/rent ratios are shown in Table 5. Cash rents in the southern-lower peninsula average \$77 and \$58 per acre for tilled and non tilled field crops, respectively. In the upper and northern-lower peninsula tilled field crop land rented for an average of \$28 per acre; while non tilled land rented for \$20 per acre. The highest rent levels for field crop land were found in the East Central

District where tilled land commanded an average cash rent of \$106 per acre. Sugar beet land rented for an average of \$129 per acre and irrigated land rented for \$132 per acre.

Table 5. Average Cash Rent and Value Multipliers

Region	Type of Land Use							
	Field Crop Tiled		Field Crop Untiled		Sugar Beet		Irrigated	
	Rent	Value/ Rent	Rent	Value/ Rent	Rent	Value/ Rent	Rent	Value/ Rent
Michigan	\$75	23	\$55	27	\$129	16	\$132	14
Southern Lower Peninsula	77	23	58	25	129	16	132	14
Upper and Northern Lower Peninsula	28	26	20	41	n/a	n/a	n/a	n/a
Districts 1-4	52	24	37	37	n/a	n/a	n/a	n/a
District 5	65	18	48	22	n/a	n/a	n/a	n/a
District 6	106	17	64	19	126	16	n/a	n/a
District 7	74	27	56	30	n/a	n/a	140	18
District 8	76	18	60	20	n/a	n/a	130	13
District 9	74	43	54	43	n/a	n/a	n/a	n/a

Note: Results were only reported when a minimum of five responses were received.

The value-to-rent ratios shown in Table 5 were calculated by dividing the average land value reported by each respondent by the corresponding cash rent value reported by the same respondent. The value-to-rent ratio for field crops was 23 in the southern-lower peninsula. In the upper and northern-lower peninsula the value-to-rent ratio was 26. The highest value-to-rent ratios were found in the Southeast District where land values were 43 times cash rent levels. Sugar beet land had value-to-rent ratios of 16; while irrigated land values were 14 times cash rent levels.

Value-to-rent ratios are a direct function of the future cash flows expected to be generated by the land. Higher expected future cash flows are "capitalized" into the value of the land today, increasing its value relative to the current year's cash flow. In other words, higher expected future cash flows translate into higher value-to-rent ratios. Relatively high value-to-rent ratios thus suggest four possible situations: 1) the market actually anticipates that the cash flows will grow at a faster rate than for alternative land uses; 2) the land may be switched to alternative production with higher expected cash flows in the future; 3) non farm uses of the land in the future may provide higher cash flows than those expected from current land use; or 4) the market views the future cash flows to be less risky than the cash flows from alternative land uses and is therefore willing to pay a higher price.

Non Agriculture-Use Values of Farmland

The value of farmland for development purpose is summarized in Table 6. These values, in most cases, are significantly above the agriculture-use value of the land and therefore tend to exert upward pressure on surrounding farmland values. The average value of farmland converted to residential development is \$4,890 per acre in the southern lower peninsula and \$1,240 per acre in the upper and northern-lower peninsula. The highest residential development values are found in the Southeast District where the average value is \$8,846 per acre.

The value of farmland converted to commercial use was \$22,347 in the southern-lower peninsula and \$3,072 in the upper and northern-lower peninsula. The highest commercial development values were found in the South Central District where the average development value was \$32,600 per acre. Recreational development values for farmland were closer to the agricultural-use value of farmland in many areas. The recreational development value of farmland was \$1,679 per acre in the southern lower peninsula and \$951 per acre in the upper and northern-lower peninsula. The highest average value for recreational development land was in the Southwest District where land for recreational development averaged \$2,933 per acre.

Table 6. Non Agricultural-Use Value of Undeveloped Land

Region	Type of Land Use		
	Residential	Commercial/Industrial	Recreational
Southern Lower Peninsula	\$4,890	\$22,347	\$1,679
Upper and Northern Lower Peninsula	1,240	3,072	951
Districts 1-4	1,168	7,059	909
District 5	3,400	n/a	1,232
District 6	2,850	n/a	1,056
District 7	4,185	13,202	2,933
District 8	4,125	32,600	1,483
District 9	8,846	21,731	2,260

Note: Results were only reported when a minimum of five responses were received.

Major Factors Influencing Land Values and Rents in Michigan

The final portion of the survey was made available for open-ended comments about agricultural and non-agricultural factors that influence land values and rents in the local area of respondent. Although the variety of responses did not permit categorization for statistical analysis and tabular presentation, there were sufficient common responses that conveyed a strong message.

Michigan's economy has a diversified structure being led by industry with tourism and the agriculture/food system vying closely for the number two rank in contribution to the economy. The diversity in economic base and the continued strong performance of Michigan's economy have both positive and negative impacts upon the future of agriculture in Michigan. From a land valuation vantage,

industry, tourism (recreation) and urban growth are having significant impacts upon land values throughout the state of Michigan.

The open-ended comments regarding agricultural factors influencing land values were most consistent in citing farm expansion as a cause of increased land values. Fifty-six (56) respondents (almost 44% of total responses) indicated that farm expansion was a factor contributing to increased land values. Farm types most often mentioned as contributing to increased land values were speciality crops often grown under contract; e.g. beans, potatoes, seed corn, and sugar beets. Less frequently mentioned was expansion by dairy and swine farms. Much less frequently mentioned and much less consistent factors were profitability and prices in the agricultural sector. In fact, of the twenty-five (25) responses (20% of respondents) that referred to financial performance, there was an almost even split between high prices and profitability contributing to increased agricultural land values and the converse situation of low prices and profits contributing to lower land values.

The most often cited and consistent non-agricultural factors contributing to increased land values were comments that could be related to urban sprawl. Eighty (80) respondents or 62.5 percent of the total respondents provided such unsolicited remarks as represented by "strong demand for rural housing sites and recreational (hunting) parcels. Low home mortgage rates and high local employment

are fueling the demand." Remarks specifically addressed to recreational demand as a contributor to increased land values was mentioned by forty (40) respondents — 31.5 percent of the total.

Conclusions

Farmland values in Michigan continued to exhibit a very strong upward trend based on the results of the 1998 land value survey. In southern lower peninsula, land values showed gains of 10.2 percent for both tilled ground and for untilled ground. Sugar beet land values rose 5.9 percent while irrigated land values were up a very strong 12.7 percent. Rental rates in the southern lower peninsula averaged \$75 per acre for tilled ground and \$55 per acre for untilled ground. Sugar beet acreage rented for \$129 per acre while irrigated land averaged \$132 per acre.

Land values related to cash rent were highest in Agricultural Statistics District #9, southeastern Michigan. For both tilled and untilled ground, their value to rent ratio was 43 while the average for most other districts in the state is closer to the 20 value to cash rent ratio. The 20 value to cash rent ratio implies a gross return to investment of 5 percent per year. A higher value to rent ratio suggests a lower annual gross return to investment. Apparently as demand drives land prices up, the new owners are willing to accept in the short run a cash rent return that more closely approaches an agricultural value.

Land values in Michigan have exhibited strong growth rates over the last five years. Table 7 shows the percentage change in land values for the 1991-98 time period in the southern lower peninsula. Farmland values have increased each year with accelerating increases since 1996. Since 1994, the simple average annual percentage increase in land values has been 7.1, 6.5, 6.1, and 7.6 for tilled, untilled, sugar beet, and irrigated crop land in Southern Michigan. Concern for 1999 and beyond is whether the financial performance from agriculture can continue to support increased valuations and cash rates that are often buoyed up by non-agricultural demand.

Table 7. Percentage Change in Land Value from 1991-98 in the Southern-lower Peninsula

Year	Land Type			
	Field Crop Tiled ¹	Field Crop Untitled	Sugar Beet	Irrigated
1991	5.0%	3.0%	9.0%	-
1992	2.5	1.6	3.0	3.4%
1993	2.0	1.4	1.9	3.6
1994	4.6	4.1	4.8	5.4
1995	4.3	3.3	6.2	2.8
1996	8.1	6.8	8.4	7.3
1997	8.4	8.1	5.3	10.0
1998	10.2	10.2	5.9	12.7

¹ For the 1998 Survey, the question on agriculture land values and cash rents referred to "Field-crop tilled and untilled." Previously the similar categories were referred to as Corn-Soybean-Cropland – about above average and below average.