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Results of the Indiana Farm Finance Survey for 1991*

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The 1991 Indiana Farm Finance Survey suggests most Hoosier farmers were in good financial condition going into the 1991 planting season. The deterioration in growing conditions throughout Indiana, however, has increased the probability that Hoosier farmers will experience financial stress in 1991 and 1992. The financial impact of the 1991 drought will not be reflected in the survey results, since the 1991 Indiana Farm Finance Survey was conducted March-April 1991. The current financial condition of many Indiana farmers could be worse than the spring survey indicates.

Key indicators from the Indiana Farm Finance Survey for 1991 suggest financial conditions for many Hoosier farmers improved from 1990 to 1991. In particular, the delinquency rate for real estate loans, debt-asset ratios, percentages of respondents with debt-asset ratios exceeding 40 and 70%, percent-

age of respondents turned down when applying for a loan, and the percentage of debt held by respondents who were technically insolvent all fell to levels lower than those recorded for 1990. The delinquency rate for nonreal estate loans was higher in 1991 than in 1990, but the rate was still much lower than in 1986. Farmers continued to adopt management practices that increase their efficiency, and purchased new/additional machinery in 1990 and early 1991. Respondents indicated they plan to continue this practice during the next 12 months. These intentions, however, may have changed in several areas of Indiana as a result of a poor 1991 harvest.

“Key indicators from the Indiana Farm Finance Survey for 1991 suggest financial conditions for many Hoosier farmers improved from 1990 to 1991.”

Indiana Farm Finance Surveys were conducted in March-May 1985, March-June 1986, March-June 1988, April-June 1990, and March-April 1991, by the Departments of Agricultural Economics and Agricultural Statistics at Purdue University. An abbreviated survey of a smaller sample was conducted in February-March



1989. This article reports on the 1991 survey, compares the 1991 results to the findings for 1990 and to selected findings for 1986, 1988, and 1989, and describes the financial condition of Indiana farmers.

Procedure

In March 1991, a farm finance questionnaire was sent to about 5,000 Indiana farmers by the Department of Agricultural Statistics at Purdue University. Approximately 1,000 farmers who had responded to the 1990 farm finance questionnaire were included in the sample, together with a random sample of an additional 4,000 farmers. Approximately three weeks after the initial mailing, a reminder questionnaire was mailed to farmers who had not yet responded to the mail questionnaire. In April 1991, a telephone survey of about 400 nonrespondents was conducted mainly to determine if the characteristics of the farmers who did not

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respond to the mail questionnaire differed from those who responded. Such an investigation helped to determine if the mail questionnaires produced a representative sample, particularly whether nonrespondents were in worse financial condition than respondents. The respondents to the telephone survey farmed a slightly greater number of acres (402) than respondents to the mail survey (381). The financial measures were, for the most part, better for telephone respondents than for mail respondents; the delinquency rate for nonreal estate loans, debt-asset ratio and percentages with debt-asset ratios exceeding 40 and 70% were lower. The percentage turned down when applying for a loan was higher for telephone respondents (12.8%, 5 of 39 respondents) than for mail respondents (6.4%, 20 of 311 respondents), as was the delinquency rate for real estate loans (3.2% for mail and 4.6% for telephone). No other differences in characteristics could be detected in the responses obtained by telephone. Hence, the results obtained by telephone were included with those obtained by mail questionnaires to produce the summaries appearing in this article. The number of questionnaires containing completely usable or partially usable responses was 1,541 for a response rate of 31%. However, as noted in the summary tables, the number of usable responses varied substantially from question to question.

Many results are reported below as averages for Indiana and for the northern, central, and southern regions of the state. As noted on the map (Figure 1):

- The northern region consists of the counties in the northwestern, north central, and northeastern agricultural statistics districts.
- The central region consists of the counties in the west central, central, and east central agricultural statistics districts.
- The southern region consists of the counties in the southwestern, south central, and southeastern agricultural statistics districts.

Figure 1. Three Geographic Regions Used In the Cross-state Comparisons of the Indiana Farm Finance Survey Data, 1991.

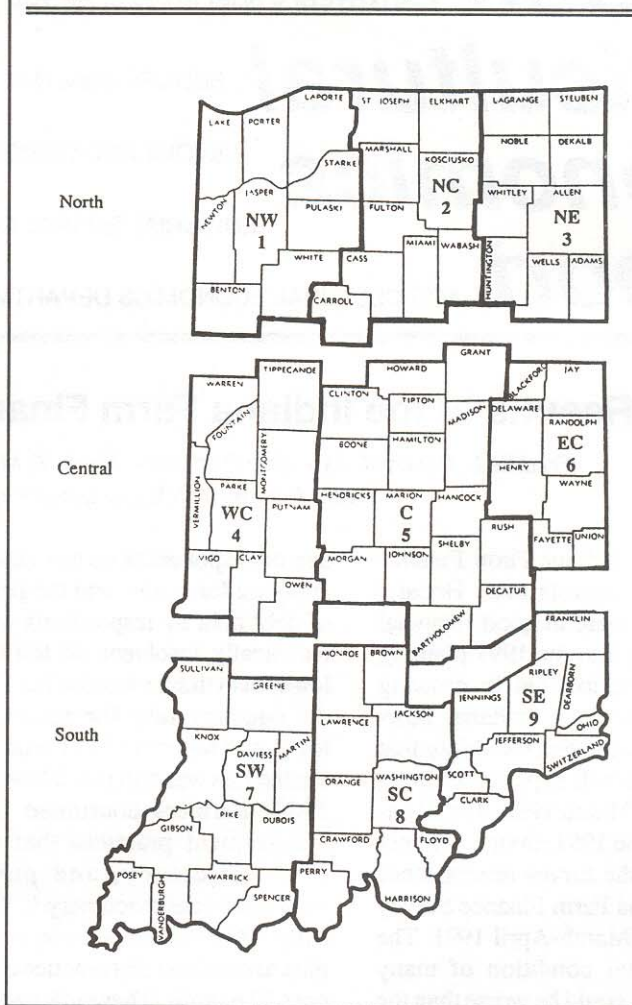


Table 1. Respondents' age, experience as farm operator, and acres farmed 1990 and 1991.

Characteristics of respondents	North	Central	South	State		Number of usable responses in 1991 ^a
	1991	1991	1991	1990	1991	
Age (years)	51.2	51.8	52.5	51.9	51.8	1,541
Years as farm operator	25.3	25.7	25.9	26.1	25.6	1,477
Acres in farming operation						
a. Owned	192.3	184.2	190.3	174.1	188.9	
b. Rented from others	220.8	241.0	127.2	206.6	202.0	
c. Rented to others	7.4	9.4	3.8	8.0	7.1	
Total acres operated (a + b - c)	405.7	415.8	313.7	372.7	383.8	1,304

^a Some responses for items were not usable because of missing numbers and inconsistencies.

The state averages are weighted averages determined by weighting the responses for each region by the percentage of responses for each region.

Background Statistics on Characteristics of Respondents

The background statistics appearing in Table 1 were used for assessing the representativeness of the sample and for making certain cross-tabulations reported later.

The average age and average number of years of experience as a farm operator of respondents were 52 and 26 years, respectively, and did not vary substantially either across the three regions of the state or from the results of the 1990 survey (Table 1). The 415.8 average acres operated by respondents in the central region was about 2% greater than the 405.7 average acres operated in the north and about 33% greater than the 313.7 average acres in the south.

Measures Describing the Financial Condition of Indiana Farmers

Several statistics from the Farm Finance Survey are used to draw inferences about the financial condition of Indiana farmers. Gross and net farm income, debt-asset ratios, nonfarm income, delinquency rates for loans, loan rejection rates, and principal payments in addition to scheduled payments statistics are used in this section to examine the general financial condition of Indiana farms.

Gross and Net Farm Income. Gross farm income is the income generated by a farm before any expenses are subtracted. A gross farm income value of \$100,000 was selected to differentiate between part-time and full-time farms. About 30% of the respondents had gross farm incomes over \$100,000 and 70% had gross farm incomes under \$100,000 in 1990 (Table 2). The comparable figures for 1989 regarding full-time and part-time farmers were 28% and 72%, respectively. In southern Indiana, 21% of the respondents had gross farm incomes in 1990 greater than \$100,000, compared to 34% and 33% in central Indiana and

in northern Indiana, respectively. This suggests that the central and northern regions of Indiana have a larger share of large-scale operations.

Operators of many small, part-time farms in Indiana obtain large percentages of their incomes from nonfarm sources. Of the respondents to this survey, 60% of the operators for farms with less than \$100,000 of gross farm income work at off-farm employment. Only 24% of the operators of farms with gross farm incomes of \$100,000 and

over work at an off-farm job. Because the financial characteristics of part-time farms differ from those of full-time farms, certain statistics will be presented separately in the article for farmers with gross incomes of \$100,000 and over per year.

Respondents reported net cash farm income and net farm income figures for 1990. For purposes of the survey, net cash farm income was defined as total cash receipts minus total cash operating expenses. Net farm income was defined

Table 2. Percent of all respondents in gross and net farm income categories, 1989 and 1990; and percent of respondents with gross farm income (GFI) \$100,000 and over in gross and net farm income categories, 1990.

Farm income category ^a	North	Central	South	State		Respondents with GFI
	1990	1990	1990	1989	1990	\$100,000 and over State - 1990
-----percent-----						
Gross income categories						
Less than \$10,000	16.7	17.5	34.9	23.8	22.0	0
\$10,000 to \$39,999	26.9	26.4	29.2	26.8	27.3	0
\$40,000 to \$99,999	23.2	22.5	15.4	21.5	20.8	0
\$100,000 to \$249,999	22.8	23.5	13.8	18.4	20.6	68.9
\$250,000 to \$499,999	8.3	5.6	5.7	6.9	6.6	22.2
\$500,000 and over	<u>2.1</u>	<u>4.5</u>	<u>1.0</u>	<u>2.6</u>	<u>2.7</u>	<u>8.9</u>
Totals	100.0	100.0	100.0	100.0	100.0 ^b	100.0 ^c
Net cash farm income categories						
Net Loss	11.7	17.0	23.4	16.9	16.8	4.0
\$0 to \$4,999	21.6	21.4	32.2	23.6	24.5	2.7
\$5,000 to \$9,999	14.5	12.5	14.1	15.1	13.7	4.7
\$10,000 to \$19,999	15.9	13.2	11.4	16.1	13.7	9.9
\$20,000 to \$49,999	23.0	24.2	11.2	18.6	20.1	42.9
\$50,000 and over	<u>13.3</u>	<u>11.7</u>	<u>7.7</u>	<u>9.7</u>	<u>11.2</u>	<u>35.7</u>
Totals	100.0	100.0	100.0	100.0	100.0 ^e	99.9 ^f
Net farm income categories						
Net Loss	18.0	25.2	29.5	24.8	23.8	8.8
\$0 to \$4,999	22.5	21.6	34.4	25.2	25.5	6.8
\$5,000 to \$9,999	16.8	12.9	10.8	14.2	13.8	6.8
\$10,000 to \$19,999	20.9	13.8	10.3	15.3	15.4	19.0
\$20,000 to \$49,999	13.7	19.0	10.8	14.5	14.8	36.8
\$50,000 and over	<u>8.2</u>	<u>7.5</u>	<u>4.1</u>	<u>6.0</u>	<u>6.8</u>	<u>21.8</u>
Totals	100.1	100.0	99.9	100.0	100.1 ^d	100.0 ^g

^a Income categories were defined to include income obtained from government payments. Net cash farm income equals total cash receipts minus total cash expenses. Net farm income equals net cash farm income minus depreciation.

^b 1991 usable responses were 1,390.

^c 1991 usable responses were 1,351.

^d 1991 usable responses were 1,322.

^e 1991 usable responses were 415.

^f 1991 usable responses were 403.

^g 1991 usable responses were 399.

as net cash farm income minus depreciation.

Net farm income is commonly defined as the return to unpaid operator and family labor, management, and equity capital. Net cash farm income represents the amount of money available to farmers to repay the principal on intermediate and long-term debt, purchase capital assets, pay family living expenses, pay income taxes, and retain in the farming operation as a financial reserve.

About 17% of the respondents reported negative net cash farm incomes for 1990; and about 24% of the respondents reported negative net farm incomes (Table 2). The percentage of respondents reporting net losses in 1990 was largest in southern Indiana. The percentage of respondents with \$100,000 gross farm income (GFI) and over reporting net farm incomes in the net loss category is 8.8%.

About 78% of the respondents had net farm incomes of less than \$20,000 in 1990, equal to the comparable number for 1989. The percentage of respondents with \$100,000 GFI and over reporting net farm incomes less than \$20,000 is 41%. Given current levels of family living expenses, many of these farmers probably would have had difficulty making debt payments from 1990 net farm incomes. Of course, some could have made debt payments using depreciation allowances and income obtained from nonfarm sources.

Many Indiana farmers supplement farm income with income from nonfarm sources. Nonfarm income was defined to include the earnings of the farmer and spouse from off-farm jobs, earnings from sales of goods and services (e.g., seed corn, welding services, baked goods, sewing, etc.) and earnings from nonfarm investments. The average gross nonfarm income for all respondents reporting nonfarm income was \$29,287.

The lowest average nonfarm income figure (\$24,568) among the Indiana statistical reporting districts was in the northwestern district (Table 3). This finding may appear unusual since Gary, Hammond, and Michigan City—cities with higher wage off-farm job oppor-

tunities—are located in the northern part of this agricultural statistics district. However, the central and southern parts of this district consist of predominantly rural Benton, Jasper, Newton, Pulaski, Starke, and White counties. Moreover, operators tend not to commute long distances to off-farm work; respondents commuted an average of 17 miles (one-way) to off-farm jobs. Hence, the rural character of the southern two-thirds of the district and the commuting practice of farmers may explain part of the low average nonfarm income of farmers in the northwestern district. The northwestern district also includes many large commercial farms. Operators of these farms cannot allocate time to off-farm activities because of management responsibilities.

The larger incomes obtained by respondents from nonfarm sources in the southwestern, south central and southeastern districts probably reflect the close proximity of those districts to the job markets of Evansville; Louisville, Kentucky; and Cincinnati, Ohio, respectively.

Nonfarm income of the farmers with less than \$100,000 of gross sales exceeded that for the farmers with larger farms (Table 3). This pattern probably reflects the heavy demands placed on the operators of larger farms for on-farm work, the smaller number of cases on larger farms where both the farmer and spouse work off the farm, and higher returns to time allocated to farm activities.

Balance Sheet Information Used to Obtain Measures of Solvency. A balance sheet is a financial picture of an individual or firm at a point in time which shows assets (what is owned), liabilities (what is owed), and owner equity. Respondents were asked to provide an estimate of their nonreal estate and real estate assets and liabilities. A word of caution should be extended about the reliability of the asset values reported. The value of total assets is the average amount reported by each respondent and no mechanism was employed for checking the accuracy of these estimates. Hence, the real estate and farm machinery values which made

up a large portion of each respondent's balance sheet are subject to the possible biases of the individual respondents.

The average value of farm real estate assets reported by respondents as of January 1, 1991 was \$303,187, ranging from \$273,799 in southern Indiana to \$334,916 in northern Indiana (Table 4). The average value of farm real estate assets reported by respondents with gross farm income (GFI) \$100,000 and over was \$605,506. Farm nonreal estate assets averaged \$134,298 in value for the state, exhibiting their lowest value (\$113,141) in southern Indiana and their highest value (\$148,180) in northern Indiana. Farm nonreal estate assets averaged \$264,061 for farmers with GFI \$100,000 and over.

Table 3. Average gross nonfarm income of respondents and spouses by agricultural statistics district and gross farm income category, 1990.

Location and income category	Gross nonfarm income ^a
Agricultural statistics district	
Northwest	\$24,568
North central	27,768
Northeast	29,631
West central	27,075
Central	28,105
East central	30,784
Southwest	32,279
South central	31,213
Southeast	<u>32,538</u>
Average for state (1,307 usable responses)	\$29,287
Gross farm income category	
\$0 to \$10,000	37,718
\$10,000 to \$39,999	34,939
\$40,000 to \$99,999	27,693
\$100,000 to \$249,999	18,317
\$250,000 to \$499,999	22,315
\$500,000 and over	<u>21,878</u>
Average for state (1,205 usable responses)	\$29,259

^a Includes wages from off-farm jobs, earnings from sales and services, e.g., seed corn, welding service, baked goods, sewing, etc., and earnings from nonfarm investments.

For all respondents, the average amount of real estate debt was \$62,863, ranging from \$50,073 in southern Indiana to \$74,704 in central Indiana. The average amount of real estate debt for farmers with GFI \$100,000 and over was \$132,544. The nonreal estate debt (state average) was \$29,674, varying from \$17,196 in southern Indiana to \$37,936 in central Indiana. The average amount of nonreal estate debt for farmers with GFI \$100,000 and over was \$73,543.

The owner equity (total assets minus total liabilities) of respondents averaged \$344,948 for the state. It was highest in northern Indiana (\$392,194) and lowest in central Indiana (\$312,902) (Table 4). The average owner equity of respondents with GFI \$100,000 and over was \$663,480.

The percentage of all respondents carrying real estate and nonreal estate debt in 1991 and the average interest rates paid by the respondents on the debt are listed in Table 4. Note that about 37% of all respondents reported zero debt in 1991. This zero debt figure is about two percentage points lower than the comparable number for 1990. About 45% of the respondents in southern Indiana reported they had no debt on January 1, 1991. About 15% of the respondents with \$100,000 and over of gross farm income had zero debt in 1991, which is considerably lower than the percentage of all respondents.

Nearly 40% of the respondents made principal payments on real estate loans in addition to scheduled payments during the past year. The comparable figure was 49% for nonreal estate loans.

Respondents with GFI \$100,000 and over also paid ahead; about 41% and 48% made principal payments in addition to scheduled payments on real estate and nonreal estate loans, respectively.

For Indiana, respondents reported they paid interest rates on real estate and nonreal estate debt in 1991 which averaged 9.9% and 11.4%, respectively.

Solvency measures describe the amount of money a farmer would have remaining after all assets are converted to cash and debts retired. Solvency ratios measure the relationship between claims on the business (liabilities) and either total assets or owner equity. Interpretation of the debt-asset ratios obtained in this survey as an indicator of the financial condition of Indiana farmers requires caution. The total debt

Table 4. Balance sheet, debt, loan repayment, interest rate, delinquency rate, and loan rejection rate information for all respondents, 1990 and 1991; and for respondents with gross farm income (GFI) \$100,000 and over, 1991.

Item	Average value of characteristics for all respondents					For respondents with
	North 1991	Central 1991	South 1991	State		State 1991
				1990	1991	
Balance sheet information:						
Real estate assets (\$)	\$334,916	\$290,698	\$273,799	\$256,597	\$303,187	\$605,506
Nonreal estate assets (\$)	148,180	134,844	113,141	131,248	134,298	264,061
Real estate liabilities (\$)	60,476	74,704	50,073	60,470	62,863	132,544
Nonreal estate liabilities (\$)	30,426	37,936	17,196	29,775	29,674	73,543
Owner Equity (\$)	392,194	312,902	319,671	297,600	344,948	663,480
Debt (liability)/asset ratio (%)	18.8	26.5	17.4	24.3	21.2	23.7
Percentage of respondents with:						
Real estate debt	52.5	53.2	46.6	49.4	51.1	70.3
Nonreal estate debt	45.4	48.3	34.0	43.0	43.3	70.0
No real estate or nonreal estate debt	35.4	33.7	44.5	39.1	37.3	14.5
Percentage of respondents who made principal payments in addition to scheduled payments in the past year on:						
Real estate loans	37.3	42.0	39.6	41.9	39.6	40.7
Nonreal estate loans	50.5	50.2	43.2	55.2	48.9	47.5
Interest rate paid on:						
Real estate debt (%)	9.7	10.2	9.8	10.2	9.9	9.8
Nonreal estate debt (%)	11.0	11.9	11.3	11.7	11.4	11.2
Percentage of respondents delinquent on principal and/or interest payments for:						
Real estate loans	3.3	3.2	4.0	4.9	3.4	2.2
Nonreal estate loans	11.0	6.1	9.4	7.9	8.7	5.3
Percentage of respondents turned down when applying for a loan						
	7.3	4.4	11.5	11.6	7.1	4.1

component of the ratio (liabilities) does not take into account how the debt is structured. Debt structure impacts farmers' ability to service debt, and consequently, their financial condition.

Problems discussed earlier about the difficulty of establishing farm asset values also impact the reliability of the debt-asset ratio. Calculations of change in owner equity can be the result of a profit or loss in a previous year and/or the result of an increase or decrease in the asset values. Such a change also influences the ratio. Without an income statement and the knowledge of asset values on the previous balance sheet, it is difficult to identify the reasons for the change in owner equity for an individual operation.

The statewide average debt-asset ratio of 21.2% as of January 1, 1991 (Table 4) was more than three percentage points lower than in 1990. The ratio was highest in central Indiana (26.5%) and lowest in southern Indiana (17.4%). The average debt-asset ratio for full-time farmers was 23.7%.

Harrington [2] and other authors of USDA publications have used debt-asset ratios to describe the amount of financial stress facing farmers, as follows:

Debt-asset ratio	Status of farmer
Under 40%	No apparent financial problems
40% - 70%	Serious financial problems
70% - 100%	Extreme financial problems
Over 100%	Technically insolvent

About 24% of those responding to the Indiana survey had debt-asset ratios exceeding 40% in 1991. This is down from the 25% found in 1990 and 32% in 1985. About 6.5% had debt-asset ratios exceeding 70% in 1991, down from 8% in 1990 and 13% in 1985. The guidelines in the USDA classification suggest that about 6.5% of all Indiana respondents face extreme financial problems or technical insolvency; however, this tends to oversimplify the problem. For example, some skilled managers who carry a relatively small

proportion of their debt in the form of land debt may be in satisfactory financial condition despite having a debt-asset ratio exceeding 40%. Additional analyses involving subsets of respondents and cross-tabulations will be reported later in the article to assess more fully the meaning of the debt-asset ratio figures.

About 31% of respondents reporting gross farm incomes of \$100,000 or more had debt-asset ratios exceeding 40% in 1991, which is down from 33% in 1990. About 7.3% had debt-asset ratios exceeding 70% in 1991, down from 9.8% in 1990 and 12.6% in 1989. The USDA guidelines suggest that about 7% of Indiana respondents with \$100,000 gross farm income and over could face extreme financial difficulties.

Delinquency Rates. A second measure of financial condition is the rate of delinquency of loan payments. Those respondents having real estate loans (51.1% of all respondents) were asked if their principal and interest payments were current. For all respondents, 3.4% said "no" (Table 4). This is 1.5 percentage points lower than the 4.9% reported in 1990 and nearly 5.4 percentage points lower than the 8.8% reported in 1986. This figure underscores the lessening of problems with real estate debt. Also, about 38% of those who were delinquent on their real estate loans were current on the interest payments and delinquent only on principal payments. The same question was asked about nonreal estate loans. About 8.7% of the respondents having nonreal estate loans indicated that their principal and interest payments were not current (Table 4), nearly a percentage point higher than in 1990. However, the 1991 rate is five percentage points lower than the figure reported in 1989, 13.7%. Comparable figures for 1985 and 1986 were 22% and 14%, respectively. About 60% of those who were delinquent on their nonreal estate loans were current on the interest payments and delinquent only on principal payments.

The delinquency rates for respondents with gross farm incomes \$100,000 and over were lower than the

delinquency rates for all respondents. The delinquency rate for real estate loans was only 2.2% and the delinquency rate for nonreal estate loans was only 5.3%.

Loan Requests Rejected. A third indicator of the financial condition of farmers is the percentage of loan applications turned down by the lender. Respondents were asked if they were turned down for a 1991 farm loan and, if so, why the loan request was rejected. Only results for respondents who actually applied for a loan were considered. Of the 362 respondents indicating they applied for a loan (25% of all respondents), about 7.1% indicated they were turned down, which is down from 11.6% in 1990 (Table 4), and down considerably from the more than 16% reported in 1986.

Respondents were asked to indicate the reasons their loan applications were rejected. Their responses ranked by frequency appear in the following schedule:

Reason loan request was rejected	Percentage of total reasons
Low farm income	29%
Insufficient equity	26
Previous loan repayment problems	18
Lender not interested in making agricultural loans	9
Other	18
Total	100%

The percentage of respondents who indicated they were turned down because the lender is not interested in making agricultural loans, 9%, is seven percentage points lower than the percentage found in 1990, 16%.

Respondents whose loan requests were rejected were asked if they eventually obtained loan funds for the 1991 crop year. Sixty-three percent of these respondents said "yes." Thus, about 2.5% of those who applied for loans for the 1991 crop year were unable to get loan funds, which is essentially the same as the 3% in 1990. This is less than 1% of all respondents. The sources of

loan funds for the 63% who eventually received loans are ranked by frequency:

Source of loan funds	Percentage of total sources
Lenders other than FmHA	26%
Relatives	21
Farm suppliers	16
FmHA	16
Machinery dealers	5
All other sources	<u>16</u>
Total	100%

The 16% of the respondents who received loans from FmHA is equal to the 16% reported in 1990 and is lower than the 20% reported in 1988. This finding probably reflects the trend in FmHA lending, which is to decrease the amount of direct loans and to increase the amount of guaranteed loans.

The percentage of respondents with GFI \$100,000 and over who indicated they were turned down when applying for a 1991 farm loan was only 4.1%. None of those turned down indicated they were turned down because the lender was not interested in making farm loans.

During the past 12 months, Indiana farmers have expressed concerns to the authors about the availability of loan funds. The concerns are that some lenders in Indiana have stopped making loans to farmers and this has resulted in a shortage of loan funds for farmers. No evidence was found in this study to support the position that there is a shortage of loan funds for farmers.

Additional Information on the Incidence of Farm Financial Stress

In this section, statistics are presented which show debt-asset ratios for all farms and those with gross incomes of \$100,000 and over. Other statistics relate debt-asset ratios to debt owed by farm operators with different levels of gross income.

Debt-Asset Ratios for Different Size Farms. Table 5 shows the percentage of all farmers and the percentage of farmers with gross incomes exceeding \$100,000 per year that fell in the different debt-asset ratio categories in 1991. About one-fourth of all respondents had debt-asset ratios of 40% or more compared to about 30% of those with gross incomes of \$100,000 and over. The percentage of respondents in

this higher debt category declined about one percentage point for all farmers and about 2.5 percentage points for those with higher gross incomes (Table 5).

Amount of Debt Owed by Respondents in Different Debt-Asset and Gross Farm Income Categories. Debt is becoming less concentrated in the hands of respondents in the higher debt-asset ratio categories. As noted in the figures for 1991, about 17% of the debt was owed by respondents with debt-asset ratios of 70% or higher and about 3% of the debt was owed by respondents who were technically insolvent. The 3% is down from 6% in 1990 and from 9.9% reported in 1988. The nearly 2% of the respondents who are technically insolvent and some respondents in the 70.0% to 99.9% debt-asset ratio category presumably are vulnerable to any future financial adversities encountered.

Debt-asset ratio category	Percent of respondents	Percent of debt
Under 40.0%	76.0	42.6%
40.0% - 69.9%	17.4	40.5
70.0% - 99.9%	4.9	13.7
100.0% and over	<u>1.7</u>	<u>3.2</u>
Total	100.0%	100.0%

Table 5. Distribution of farms according to debt-asset ratio for all farmers in surveys and farmers in surveys with gross farm incomes \$100,000 and over per year.

Year and debt-asset ratio category	Percent of respondents in category based on figures for	
	All farms	Farms with gross incomes \$100,000 and over
1990 debt-asset ratio:		
Under 40%	75.1%	67.0%
40.0% - 69.9%	16.6	23.2
70.0% - 99.9%	6.2	7.8
100.0% and over	<u>2.1</u>	<u>2.0</u>
Totals	100.0%	100.0%
1991 debt-asset ratio:		
Under 40.0%	76.0%	69.4%
40.0% - 69.9%	17.4	23.3
70.0% - 99.9%	4.9	7.0
100.0% and over	<u>1.7</u>	<u>0.3</u>
Totals	100.0%	100.0%

Farm Adjustments

Farmers were asked to identify the adjustments they had made during the past 12 months and those they expected to make during the next 12 months. The adjustments checked by respondents, ranked according to frequency of mention using the state figures, appear in Table 6. Each adjustment made or expected to be made, which accounted for less than 5% of the total, was lumped together in the "other adjustments" item in Table 6.

Past 12 Months. The adjustments made during the previous 12 months that were most frequently mentioned by respondents were "reduced debt," "purchased new/additional machinery," "increased off-farm work," "kept more complete records," and four other adjustments (Table 6). Several of the adjustments made during the past 12

months can be categorized as changes which helped them to reduce costs (e.g., those relating to reducing debt and hiring others to do custom work), to diversify and reduce risks (e.g., used my machinery to do custom work for others, adding or expanding livestock enterprises, increasing off-farm work and buying crop insurance), and to more accurately measure farm costs and returns (e.g., keeping more complete records).

Next 12 Months. Many of the adjustments planned for the next 12 months by the respondents are similar to those made during the previous 12 months and to those reported on previous surveys.

"Reducing debt" topped the list followed by "purchasing new/additional machinery," "increasing or adding a livestock enterprise," "keeping more complete records," "increasing off-farm work," and "hiring others to do custom work with their machinery." Several of the adjustments planned for the next 12 months can be categorized as changes which will help them reduce costs (e.g., reducing debt, hiring others to do custom work with their machinery and reducing living expenses), more accurately measure farm costs and returns (e.g., keeping more complete records), diversify (e.g., increasing off-farm work and increasing or adding a livestock enterprise) and upgrade capital (e.g., purchasing new/additional machinery).

Impact of Dry Growing Conditions in 1991 on the Financial Condition

The full impact of the dry growing conditions in 1991 on the financial condition of Indiana farmers obviously will not be known until crops are harvested and other factors affecting future farm costs and returns are assessed. Crop forecast suggests high variability in corn and soybean yields by reporting district. However, certain positive and negative developments effecting the farm financial situations of individual farmers can be identified. Positive factors include the following:

- Many Indiana farmers have reduced debt, diversified, increased the use of risk-reducing strategies, and adopted other management practices during 1989-1991, which will help them to better withstand the impact of low farm earnings in 1991.
- Many agricultural lenders in Indiana gained experience in working with loan repayment problems during the "Farm Crisis" of the mid 1980s and the drought of 1988, which will help them to better deal with the impact of low farm earnings in 1991.
- Farmers have increased off-farm work. Depending on improvements in the general economy, off-farm employment opportunities may improve during the next year.
- Farmland prices have stabilized, maintaining the value of farm real estate assets. From June 1990 to June 1991, the average price of bare till-

Table 6. Adjustments made by respondents in farming operations to deal with the farm financial situation.

Adjustment item and period	Percentage of total adjustments accounted for by item			
	North	Central	South	State
Past 12 months				
Reduced debt	14.8	12.3	12.5	13.3
Purchased machinery	12.8	10.9	10.0	11.4
Increased off-farm work	8.1	7.6	8.4	8.0
Kept more complete records	7.7	7.1	6.6	7.2
Hired others to do custom work with their machinery	6.8	6.9	7.8	7.1
Increased or added a livestock enterprise	4.8	7.3	7.6	6.5
Used my machinery to do custom work for others	6.2	6.7	5.9	6.3
Bought crop insurance	5.1	6.8	3.7	5.4
Other adjustments ^a	<u>33.7</u>	<u>34.4</u>	<u>37.6</u>	<u>34.9</u>
Totals ^b	100.0	100.0	100.1	100.1
Next 12 months				
Reduce debt	16.6	15.1	13.5	15.2
Purchase machinery	10.5	8.8	9.5	9.6
Increase or add a livestock enterprise	8.4	7.6	9.9	8.5
Keep more complete records	9.0	8.3	7.6	8.4
Increase off-farm work	6.5	7.1	6.1	6.6
Hire others to do custom work with their machinery	5.9	6.6	6.6	6.3
Use my machinery to do custom work	4.8	6.1	6.3	5.7
Reduce living expenses	5.5	5.5	5.4	5.5
Operate more land	5.9	5.0	5.5	5.5
Other adjustments ^a	<u>26.9</u>	<u>29.9</u>	<u>29.6</u>	<u>28.7</u>
Totals ^c	100.0	100.0	100.0	100.0

a Adjustments, each of which accounted for less than 5% of the state total.

b In 1991 usable responses were 928.

c In 1991 usable responses were 836.

able land in Indiana increased by about 2% [1].

- Much debt restructuring and/or writeoff of debt by farm lenders occurred during the late 1980s and early 1990s. Only about 3% of the farm debt is owed by farmers who were technically insolvent on January 1, 1991, compared to 10% on January 1, 1988.
- Interest rates on farm loans reported by respondents in 1991 are lower than reported in 1990, and at some lenders interest rates are currently lower than what is reported in the article.
- FmHA has eased the emergency loan requirements for farmers. Farmers no longer have to suffer a qualifying loss on all crops to be eligible for an emergency loan. A substantial loss — normally 30% of normal production — of a single crop in a disaster is sufficient.

Negative factors include the following:

- Some producers will experience below-average crop yields. Increases in crop prices may not be sufficient to maintain earnings at a profitable level.
- Livestock producers may face higher than expected prices for feed.
- Lower hog prices are in prospect. Some analysts forecast prices for barrows and gilts in the mid-\$40 range throughout the next 12 months.
- Farm production costs will likely increase for the 1992 crop year, led by increases in prices of purchased feeds.
- Cattle feeders have had substantial losses since June, which will reduce the abilities of cattle feeders to absorb increased feed costs this winter unless feeder cattle prices decline sharply.

Clearly, the net impact of these factors will vary from farm to farm, depending on how much damage is sustained from dry growing conditions, farmer's financial reserves, how much nonfarm income the family earns, and a host of other factors. However, most Hoosier farmers are in a better position to withstand the problems created from the dry growing conditions in 1991 than they would have been in 1985, 1986, or even 1988.

Summary and Implications

Key findings and implications of the 1991 farm finance survey are that:

- The distribution of net farm incomes for respondents in 1990 is similar to the distribution found in 1989. About 22% of the respondents in 1990 had net farm incomes greater than \$20,000, up slightly from the figure reported for 1989. The percentage of respondents in 1990 with a net loss, 23.8%, is slightly lower than the percentage with a net loss in 1989. The percentage of full-time farmers reporting a net loss in 1990 is 8.8%.
- The economic condition of farmers will be influenced strongly by conditions in the nonfarm sector, because many part-time farmers in this group depend heavily on off-farm work for income. The average total gross nonfarm income for respondents in 1990 was about \$29,287.
- The average debt-asset ratio for respondents in 1991 is lower than the average ratio for respondents in 1990. The debt-asset ratio in 1991 is 21.2%, down from the 24.3% reported in 1990. The debt-asset ratio in 1991 for respondents with GFI of \$100,000 and over is 23.7%.
- The delinquency rate on farm real estate debt in 1991, 3.4%, is down from the 4.9% reported in 1990. The 8.7% delinquency rate on farm non-real estate debt in 1991 is up from 7.9% reported in 1990, but down from the 13.9% in 1986 and the

13.7% in 1989. The delinquency rates on farm real estate and nonreal estate debt in 1990 for respondents with GFI of \$100,000 and over are 2.2% and 5.3%, respectively.

- The percentage of Hoosier farmers who applied for a new loan or additions to existing farm loans for the 1991 crop year and were turned down, 7.1%, is down from 11.6% reported in 1990, and from 16.3% in 1986. The percentage of full-time farmers who applied for a loan in 1991 and were turned down is 4.1%. This figure is less than 1% of all respondents.
- The percentage of all respondents in 1991 with debt-asset ratios less than 40%, 76.0%, is slightly higher than the percentage for 1990. The percentage of farmers in 1991 with gross farm incomes exceeding \$100,000 and debt-asset ratios less than 40%, 69%, also was slightly higher than for 1990.
- The percentage of all respondents in 1991 with debt-asset ratios greater than 70%, 6.6%, is lower than the 8.3% reported in 1990. The percentage of farmers in 1990 with gross farm incomes \$100,000 and over and with debt-asset ratios greater than 70%, 7.3%, is down from 9.8% in 1990 and 12.6% in 1989.
- The percent of debt held by all respondents in 1991 with 100% or higher debt-asset ratios, 3.2%, is down from 6.1% reported in 1990 and 9.9% in 1988.
- During the past year, "purchasing additional machinery" was the second most frequently mentioned adjustment for respondents.
- There are no data to support the claim that there is a significant increase in the number of lenders in Indiana who have stopped making loans to farmers or that there is a shortage of loan funds available to farmers. The percentage of applicants in 1991 who applied for a

loan but were turned down because the lender was not interested in making agricultural loans, 9%, is down from 16% in 1990. The percentage of respondents unable to get a loan for the 1991 crop, 2.5% of those who applied, is down slightly from the percentage in 1990.

In summary, several findings noted above are interpreted as signaling general improvement in the financial condition of Hoosier farmers, but survey data were collected prior to the

deterioration in growing conditions. However, two qualifications should be mentioned. First, farmers in the higher debt-asset ratio categories could experience major financial problems in the future if they encounter any substantial adversity, such as low earnings from reduced yields. Second, a group of Hoosier farmers continue to experience financial problems and will likely require additional debt restructuring and/or writeoff. Thus, all Hoosier farmers should continue efforts to reduce costs, improve efficiency, and

reduce risks. Such adjustments will enable them to better withstand financial problems that may occur in 1991 and 1992.

References

[1] Atkinson, J. H. and Kim Cook, "Indiana Farmland Values Edge Upward," *Purdue Agricultural Economics Report*, August 1991.
[2] Harrington, David H., "A Summary Report on the Financial Condition of Family-Size Commercial Farms," ERS-USDA, Ag. Info. Bul. No. 492, March 1985.

New Agricultural Economics Faculty Members

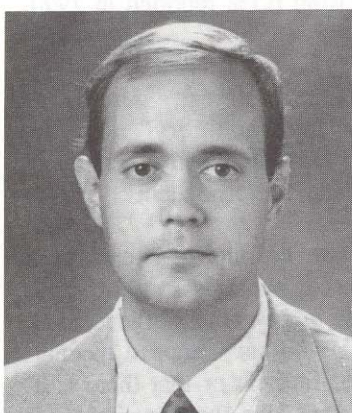
Catherine A. Durham joined the faculty this fall as an assistant professor to conduct a research and extension program in the areas of agricultural marketing and demand analysis. She did her Ph.D. work on measuring competition in the processing tomato market at the University of California at Davis, where she received her doctorate in 1991. Durham's research interests include marketing, microeconomic theory, and natural resources.

Before coming to Purdue, she served as a postdoctoral fellow at the Food Marketing Policy Center at the University of Connecticut, where her research focused on prices in the grocery sector and on markets for farm inputs to processing. Durham received her master's degree in agricultural economics from the University of Arizona in 1985. She spent two years working for the California Energy Commission after completing her bachelor's degree in environmental policy analysis and planning at the University of California at Davis in 1981.

Durham was born in Andover, Massachusetts.



Catherine A. Durham



William A. Schiek

William A. Schiek joined the Agricultural Economics faculty this fall as an assistant professor to do research, teaching, and extension work in the areas of agricultural marketing and agribusiness management. He focuses on issues related to improving the efficiency of food processing and distribution. Schiek's current research areas include the impact of technology on regional farm structure, interregional price relationships, and food marketing efficiency.

Schiek completed his Ph.D. degree in food and resource economics at the University of Florida in 1991, where he also received his master's degree in 1988. Prior to finishing his master's, he worked for the New York/New Jersey Milk Market Administrator's Office as an ag economist/cooperative relations specialist. Schiek received his bachelor's degree in applied economics and business management from Cornell in 1982.

Schiek is originally from Moravia, New York, near Ithaca in the Finger Lakes region.

Farm Management Day for High School Students

*Saturday, December 7, 1991
11:00 a.m.-4:00 p.m.*

The Agricultural Economics Department will host the second Purdue Farm Management Day on Saturday, December 7, 1991 from 11:00 a.m.-4:00 p.m. The program's theme is "Why Farm? Why Purdue? Why Purdue Farm Management?"

If your family farms and you are considering farming as a career option, bring your parents and come to this program. Spend a day learning how a college education in farm management can help you become a more successful farmer.

Farming is a business. Success in business requires good management skills as well as knowledge of finance, marketing, and labor relations. Purdue's farm management program is designed to give you the skills you need to succeed in today's competitive farm economy.

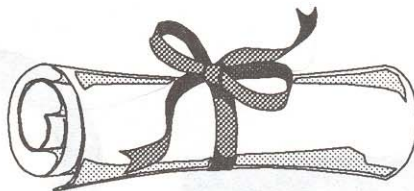
Why Farm? Why Purdue? Why Purdue Farm Management?

Should you go to college? Should you become a farmer? What college should you attend? What should your major be? Learn what you need to have, to know, and to do to create a successful career and lifestyle as a Hoosier farmer. Spend a day with five Purdue farm management professors: Larry Bohl, Howard Doster, Chris Hurt, John Kadlec, and Bob Taylor.

Someone will manage and operate all of Indiana's farms — do you want to be a part of this challenging business? How well can **you** meet the challenges and have a successful career and rewarding lifestyle? Realistically, is farming the best future for you?

As farm management teachers, these five professors will help you answer these questions. As faculty members in the Ag Econ Department in the School of Agriculture, they'll also describe other educational opportunities at Purdue. Please accept their invitation and attend this special program.

*For more information, contact Howard Doster,
coordinator of the program,
at (317) 494-4250.*



Machinery Replacement: Tax Implications of Trading vs. Sale-Purchase Options*

George F. Patrick, Extension Economist

Many farmers replace machinery and equipment by trading in their old machinery. The gains or losses realized on these trades are not recognized for tax purposes. However, selling the old asset and purchasing the new machinery may minimize after-tax machinery costs for some farmers because of self-employment (SE) tax considerations. This article develops guidelines for the least cost alternative of machinery replacement versus trading in. Farmers must be in a sole proprietorship or partnership to benefit from the sale-purchase option, and benefits are larger for lower income individuals.

“Selling the old asset and purchasing the new machinery may minimize after-tax machinery costs for some farmers because of self-employment (SE) tax considerations.”

Tax Treatment of Trade-ins and Sale-Purchase of Machinery

The tax consequences of trade-ins and sale-purchase options for machinery replacement may be quite different. This difference arises, in part, because income for income tax purposes is not necessarily the same as earnings for self-employment tax purposes. There may also be differences in the timing of when income is reported and expenses are deducted.

It is assumed that the assets are property used in a trade or business to avoid unnecessary complications. For the trade-in option, it is also assumed that the transaction involves “like kind” assets and unrelated parties. Assets are of like kind if they are of the same nature or character. Sales in the sale-purchase option are assumed to be to a third party to avoid any implications that the sale and purchase transactions are linked.

Trade-ins of Machinery

If a trade consists solely of one property for another of like kind, such as machinery for machinery, no gain or loss is recognized. The new asset acquired is treated as a continuation of the old property and takes over the basis of the old. If boot is paid, the basis for depreciation of the acquired property is the basis of the old property plus the boot paid. There is no distinction as to whether the acquired property is new or used.

For example, a farmer trades a used tractor with an adjusted basis of \$8,000 for a new tractor. The dealer gives a trade-in allowance of \$20,000 for the old tractor and the farmer pays \$30,000 boot. The \$12,000 gain on disposition of the old tractor is not recognized. However, the basis for depreciation of the new tractor is only \$38,000. Under the MACRS 150% declining balance method for farm machinery, \$4,070 of depreciation would be allowed with the

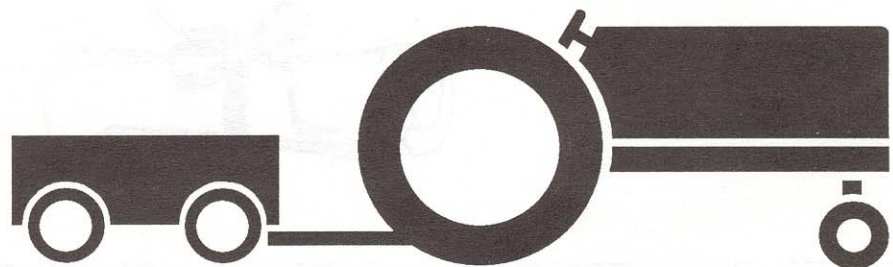
half-year convention in the year of trade. Depreciation in future years would be calculated on the \$38,000 basis. The depreciation allowed would reduce both income for income tax purposes and earnings for self-employment tax purposes each year.

Sale and Purchase of Machinery

The sale of used farm machinery may involve a gain or loss. If the property is sold for more than its adjusted basis, there is a gain. This gain is treated as ordinary income to the extent of depreciation allowed or allowable on the property. Any gain in excess of the recomputed basis is capital gain income and subject to a maximum federal income tax rate of 28%. Although the depreciation recapture and capital gain income are reported as income for income tax purposes, they are not earnings for self-employment tax purposes.

For example, if the old tractor from above is sold for \$20,000, there is a gain of \$12,000 for income tax purposes in the year of sale. If the depreciation allowed or allowable were equal to or exceeded \$12,000, the entire gain would be ordinary income because of the depreciation recapture. If the depreciation allowed or allowable had been \$9,000, then \$3,000 of the gain would be reported as capital gain income. Neither the depreciation recapture nor the capital gain income would be included as earnings from self-employment.

* The spreadsheet used for this analysis is available from the author. Please specify size and density of diskette requested and enclose a check for \$5.00 to reimburse reproduction and handling expenses. Please make check payable to Purdue University. Address envelope to: Dr. George Patrick, Dept. of Agricultural Economics, Purdue University, 1145 Krannert Building, West Lafayette, IN 47907-1145.



Section 179 Expensing

A farmer may elect to treat all or part of the cost of qualifying property acquired by trade or purchase as an expense rather than a capital expenditure. Farm machinery and equipment is qualifying property. The Section 179 expensing is limited to a maximum of \$10,000 per taxpayer. The deduction is phased out if qualifying property in excess of \$200,000 is placed in service in a tax year. The deduction is also limited to the taxable income from the conduct of an active trade or business during the year. In the case of a trade-in of machinery, the Section 179 expensing cannot exceed the boot paid.

After-tax Cost of Options

The trade-in versus sale-purchase options of machinery replacement can be compared in terms of their after-tax cost. This after-tax cost can be represented as the capital investment minus the discounted income tax savings and minus the discounted self-employment tax savings. The preferred machinery replacement strategy would generally be the option with lower after-tax cost.

Capital investment in the sale-purchase option is the purchase price of the replacement machine. The purchase price, minus any Section 179 expensing, is the basis for computing depreciation. For the trade-in option, the capital investment is represented by the boot paid plus the net sales price which could have been realized if the old machine had been sold. However, the basis for depreciation of the new asset is the boot paid plus the adjusted basis of the trade-in, minus any Section 179 expensing. If Section 179 expensing is elected, the amount is assumed to be the same for both options.

Depreciation for each option is computed using the MACRS 150% declining balance method for seven-year property. The self-employment and income tax savings are computed by multiplying the relevant marginal tax rates by the depreciation deduction each year and any Section 179 expensing. One-half of the self-employment tax savings multiplied by the marginal income tax rate is subtracted from the income tax savings to account for the

deductibility of self-employment taxes in computing taxable income.

For the sale-purchase option, the additional income tax due from the sale of the old machine is computed. This is the net sale price minus the tax basis of the old machine multiplied by the marginal income tax rate. The net sale price is defined as the gross sale price received minus the expenses of sale. If the basis exceeds the net sale price, the loss generates an income tax credit in the computation.

The self-employment tax savings and income tax savings are discounted to the current time period to determine their net present value. Subtracting the net present value of the tax savings from the capital investment gives the after-tax cost of each replacement option. The present value of any change in social security pension benefits is not considered.

“The results suggest that farmers who face the 15.3% self-employment tax rate should consider the sale-purchase option carefully in their tax planning.”

Tax Management Guidelines

For this example, it is initially assumed that the purchase price of the new machine is \$50,000 whether trading or buying outright. The trade-in allowance and net sale price of the old machine are the same, \$20,000, and the time discount rate is 10%. The marginal income tax rates and marginal self-employment rates are assumed constant for the eight years in the period being analyzed. Under these assumptions, the after-tax costs of replacing a machine by the trade-in and sale-purchase option are the same, if the basis of the trade-in is the same as the trade-in allowance.

Five income and self-employment tax situations are assumed to analyze the effect of tax rates on the two options. Situation one assumes a 0% marginal income tax rate and a 15.3% self-employment tax rate. This represents a farmer who has positive earnings for self-employment taxes, but whose

federal taxable income is not greater than zero. (A family of four could have an adjusted gross income [AGI] of \$14,300 in 1991 and a federal taxable income of \$0.) Situation two assumes a combined federal, Indiana, and county marginal income tax rate of 19.4% and self-employment tax rate of 15.3% (an AGI of \$14,300 to \$48,300 for a family of four in 1991). Situation three assumes a combined marginal income tax rate of 32.4% (AGI over \$48,300) and a self-employment tax rate of 15.3% (self-employment earnings of less than \$53,400). This situation could be common for farm families in which the spouse has an off-farm job. Situation four assumes marginal tax rates of 32.4% for income taxes and 2.9% for self-employment taxes. This represents a situation in which self-employment earnings exceed \$53,400 but are less than \$125,000 and AGI is from \$48,300 to \$98,450. Situation five represents self-employment earnings of over \$125,000 and an AGI of over \$98,450 with combined marginal tax rate of 35.4%.

The minimum after-tax costs of replacing a \$50,000 machine and the dollar advantage to trading for a variety of tax situations are summarized in Table 1. Three situations of tax basis were considered. The old machinery could be fully depreciated, zero basis; have a basis equal to 50% of the trade-in/sale value; or have a basis which was 110% of the trade-in/sale value. Three major conclusions can be drawn from this example:

- The sale-purchase option of replacing machinery decreases after-tax costs for farmers whose earnings from self-employment face the 15.3% rate, if the basis in the old machine is less than its net sale value. The lower the basis, the greater the advantage to the sale-purchase option.
- The trade-in option decreases after-tax cost for farmers whose earnings from self-employment exceed \$53,400 in 1991, unless the basis of the trade-in is greater than its net sale value.

- Section 179 expensing does not affect the trade-in versus sale-purchase option decision.

Section 179 expensing only slightly reduces the after-tax cost of replacing machinery. These effects are larger at higher levels of total tax rates.

Changes in the discount rate, which are not considered in Table 1, can affect the strategy which results in the lowest after-tax costs of machinery replacement. Considering only those cases in which the basis of the old machine is less than or equal to its net sale value, the effects of changes in the discount rate were analyzed. For tax situation two, the 19.4% marginal income tax rate and 15.3% SE tax rate, the sale-purchase option had the lower after-tax cost for all discount rates of 22% or less. In contrast, for tax situation four, the 32.4% marginal income tax rate and 2.9% SE tax rate, the trade-in replacement option has the lower after-tax cost for all discount rates of 3% or more. For tax situation four, a marginal income tax rate of 32.4% and the 15.3% SE tax rate, the break-even discount rate was about 12.3%. Lower after-tax costs occurred with the trade-in option for discount rates above 12.3% and with the sale-purchase option for discount rates below 12.3%.

Some "imperfections" may characterize the trade-in and sale-purchase options of replacing machinery, even if the economic bottom line is the same. The "true" trade-in allowance given by a dealer may not equal the net sale value of the old machine for the farmer. The purchase price of a replacement machine may be different if a trade-in is involved. These imperfections may create additional difficulties assessing replacement via the trade-in versus sale-purchase option.

Additional analyses were performed for a variety of situations. Neither the low income nor very high income situations were affected by minor imperfections. Imperfections tended to reduce the differences between the sale-purchase and trade-in options for the other three tax situations.

Table 1. Effects of Basis, Section 179 Expensing and Tax Rate Situations on the Minimum After-Tax Cost of \$50,000 Machinery Replacement and Advantage of Trading^a

Basis ^b	No Section 179 Expensing		\$10,000 Section 179 Expensing	
	Minimum After-tax Cost	Advantage to Trading	Minimum After-tax Cost	Advantage to Trading
Tax Situation 1 - 0% Marginal Income and 15.3% SE Tax Rates				
0	\$44,731	-\$2,108	\$44,394	-\$2,108
50	44,731	-1,054	44,394	-1,054
110	44,530	211	44,521	211
Tax Situation 2 - 19.4% Marginal Income and 15.3% SE Tax Rates				
0	\$42,089	-\$1,048	\$41,357	-\$1,048
50	40,325	-524	39,539	-524
110	38,104	105	37,372	105
Tax Situation 3 - 32.4% Marginal Income and 15.3% SE Tax Rates				
0	\$40,318	-\$338	\$39,322	-\$338
50	37,373	-169	36,376	-169
110	33,805	34	32,842	34
Tax Situation 4 - 32.4% Marginal Income and 2.9% SE Tax Rates				
0	\$42,803	\$1,093	\$42,035	\$1,093
50	40,404	547	39,637	573
110	37,416	-109	36,649	-109
Tax Situation 5 - 35.4% Marginal Income and 0% SE Tax Rates				
0	\$42,686	\$1,560	\$41,906	\$1,560
50	40,248	780	39,468	780
110	37,166	-156	36,386	-156

^a If basis of the trade-in, net sale price, and trade-in allowance are equal, the after-tax cost of the trade-in and sale-purchase options are equal for all tax situations.

Conclusions

The results suggest that farmers who face the 15.3% self-employment tax rate should consider the sale-purchase option carefully in their tax planning. The sale-purchase option is more attractive in situations in which the tax basis of the old machine is lower. Lower time discount rates also favor the sale-purchase option. Farmers in many

circumstances will find that consideration of both the self-employment and income taxes will lead them away from routinely trading in when replacing machinery. However, the "hassle and inconvenience" of selling their used machinery, as well as finding a buyer with money, may more than offset a small penalty associated with trading machinery for some farmers.

Upcoming Events

**Purdue Ag Forum
Jan. 21-24, 1992**

1992		JANUARY			1992
Monday	Tuesday	Wednesday	Thursday	Friday	
20	21 Sustainable Ag Day	22 Indiana Ag 2000	23 Ridge-Till and No-Till Workshops	24 Ag Science Forecast and the Famous Ag Fish Fry	

Sustainable Agriculture Workshop

*9:00 am - 3:00 pm
Jan. 21, 1992*

The Center for Alternative Agricultural Systems and the Indiana Sustainable Agriculture Association are the co-sponsors for this workshop. The program focuses on the experiences of Hoosier farmers in implementing and utilizing alternative production systems, and includes research results from Indiana and other nearby states. Producers who have tried to implement alternative production systems or practices and those who have been curious whether such systems might work in their operation are encouraged to attend.

The Indiana Sustainable Agriculture Association will hold its annual business meeting after the workshop beginning at 3:30 pm. For more information, contact Steve Lovejoy, Coordinator of the Center for Alternative Agricultural Systems, at (317) 494-4244.

Indiana Agriculture 2000: A Strategic Perspective

*10:00 am - 3:00 pm
Jan. 22, 1992*

A look ahead to the shape of Indiana agriculture in 2000. A review of the factors that will determine the role of Indiana's agricultural businesses is underway by Purdue Ag staff. Hear the results of their analysis. Selected outside experts will also give their views on the prospects for agriculture and the competitive position of Indiana agriculture.

The books won't be closed on the Purdue study, so come prepared to enter the discussion.

Winter Crop Workshop

*4:00 pm - 9:00 pm
Jan. 22, 1992*

*By Appointment
Jan. 23, 1992*

Use the new microcomputer LP
to test ways to improve your crop

rotation, tillage system, machinery size, and/or farm size. Because this is a new version of our 24-year "Top Farmer" computer program, we will concentrate on helping you test your alternatives and not schedule any subject matter lectures. Early pre-registration is preferred so we can send you homework. Enrollment is limited to 12. Reserve the dates July 19-22, 1992 for the 25th Annual Top Farmer Crop Workshop at Purdue.

Ridge-Till and No-Till Workshops

Thursday, Jan. 23, 1992

This troubleshooting clinic allows first-time and experienced ridge-tillers and no-tillers to share ideas and problems.

Ag Science Forecast and the Famous Ag Fish Fry

Friday, Jan. 24, 1992

Livestock Breeders' Banquet

*Friday evening
Jan. 24, 1992*

*More detailed information, including registration forms, will be available
in county Extension offices by mid-December.*

Indiana Land Values and Ag Enrollment

The Indiana agricultural economy experienced massive economic adjustments during the 1980s. These dramatic transitions were reflected in Indiana land values, which declined from 1981 to 1987 after the steep rise from the early 1970s. From their low value of \$913 per acre in 1987, land values have risen 36% to \$1,245 per acre in Purdue's 1991 survey.

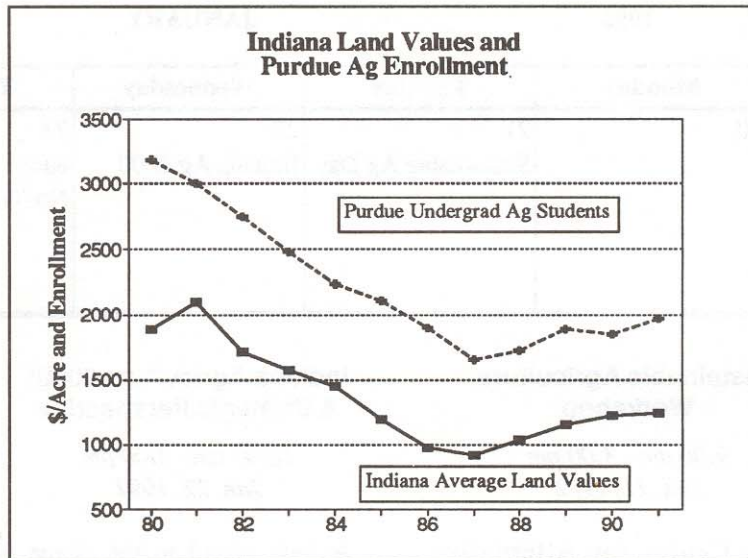
In a similar manner, the Purdue School of Agriculture was not spared the heartbreak of the 1980s. Undergraduate enrollment dropped throughout the decade to a low of 1,655 students. The lowest enrollment was in 1987, the same year land values hit bottom. Since that time, Purdue ag enrollment has recovered 19%.

Currently, there are good employment opportunities for ag graduates, and projected needs through 1995 look favorable. With these encouraging prospects, continued recruiting efforts by Purdue staff, alumni, and friends will

be needed to keep young people aware of the opportunities.

The interesting parallel of these two items shows the impact of the broader

macroeconomic condition of agriculture, a condition which has stabilized greatly from the trauma experienced in the 1980s.



IN THIS ISSUE

Results of the Indiana Farm Finance Survey for 1991 Freddie L. Barnard, Kevin T. McNamara, and Jeurene Falck

Machinery Replacement: Tax Implications of Trading vs. Sale-Purchase Options George F. Patrick

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