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NET WORTH, CASH FLOWS, AND RATIOS ON TELFARMERS, 1980

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ABSTRACT

NET WORTH, CASH FLOWS, AND RATIOS ON TELFARMERS, 1980

By

Mark Proctor and Sherrill B. Nott¹

This report presents net worth statement averages as of December 31, 1980 on dairy, swine, potato, fruit, and grain farms. Net worth (assets minus debts) ranged from 62 percent of total assets on swine farms to 77 percent on fruit farms. Cash inflows and cash outflows are given for the same sample of Michigan Telfarms. Amount of new principal borrowed per dollar of principal repaid ranges from \$0.94 on potato farms to \$1.98 on fruit farms. Capital and income ratios are compared. The capital turnover ratio ranges from .21 on small cash grain farms to .44 on potato farms. The income statement measures of labor income and percent return to capital are given for the year of 1980. Labor income ranges from \$-6,500 on fruit farms to \$53,000 on Saginaw Valley crop farms.

¹Graduate assistant and professor, respectively.
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INTRODUCTION

Farm accounting projects at land grant universities have traditionally published annual summaries of income, expense, and physical production factors. In recent years, the agricultural sector has put increasing emphasis on financial structure and financial ratios. Several state accounting projects are beginning to publish debt data [4].² In 1978 a paper on cash flow and balance sheet data was developed [5] and discussed with Michigan farm lenders. It appears an ongoing need for comparative financial status exists among credit suppliers and farmers. This paper attempts to meet this need by reporting balance sheet, cash flow, and related financial benchmark data.

SOURCE OF DATA

The farms included in this study came from the Telfarm accounting system, and are referred to hereafter as Telfarmers. Telfarm is a computerized farm record keeping project sponsored by the MSU Cooperative Extension Service. Farmers join voluntarily and pay a fee for the use of the system. When compared to census data, Telfarmers are larger and earn a higher level of income than do the average of all Michigan farms. Table 1 shows the number of farms by type and size. It gives the acreages operated, both owned and rented, plus the average number of person equivalents utilized. The sample

²Numbers in brackets refer to the bibliography ranking.

TABLE 1.

TYPE, NUMBER AND SIZE OF FARMS STUDIED
Michigan Telfarmers During 1980

| Farm Type | No. of Farms Averaged | Tillable Acres | | Person Equivalents* |
|--------------------------|--------------------------|----------------|--------|------------------------|
| | | Owned | Rented | |
| Dairy | | | | |
| Less than 50 cows | 91 | 160 | 77 | 1.7 |
| 50-74.9 cows | 86 | 204 | 103 | 2.3 |
| 75-99.9 cows | 57 | 277 | 159 | 2.8 |
| 100 or more cows | 93 | 384 | 265 | 4.3 |
| Hogs | | | | |
| Farrow to finish | 18 | 304 | 163 | 2.2 |
| Cash Grain | | | | |
| Less than 400 acres | 34 | 199 | 60 | .7 |
| 400-799.9 acres | 22 | 262 | 321 | 1.2 |
| 800+ acres | 5 | 570 | 746 | 2.6 |
| All Potato Farms | 14 | 383 | 137 | 3.9 |
| All Michigan Fruit Farms | 18 | 121 | 30 | 3.3 |
| Saginaw Valley Crops | 26 | 285 | 256 | 1.6 |

* 3000 hours per year of adult labor.

size of each group varies considerably. Only farms with no obvious reporting errors in debt transactions were included in this study. Consequently, the sample sizes are smaller than those reported in the annual Telfarm "type of farm" reports [3].

NET WORTH STATEMENTS, DECEMBER 31, 1980

Tables 2 and 3 give the average net worth statements by type of farm. The format is identical to that used in the Telfarm year-end business analyses. The individual statistics are calculated by adding the item for each farm and then dividing by the number of farms in the sample. For instance, in Table 2 under the dairy farms with less than 50 cows, there is a \$72 entry under other livestock. Most farms probably had no livestock other than dairy, while on a few farms the other livestock category was an important item. This same procedure was used to compile the liabilities section. The average balance sheet shows money borrowed from all possible sources. On any individual farm one usually finds a subset of three or four sources of borrowed money.

Except for machinery and buildings, the asset values are market value estimates provided by individual farmers. The machinery and equipment plus the buildings and improvements categories were valued using the historical cost less accumulated depreciation method. This may understate the market

TABLE 2. AVERAGE BALANCE SHEETS ON LIVESTOCK AND POTATO FARMS
Telfarmers, December 31, 1980

| Farm Type | D A I R Y | | | | Swine Farrow To Finish | Potato |
|-----------------------------------|-------------------------|------------------|------------------|------------------------|---------------------------------|------------------|
| | Less Than 50 Cows | 50-74.9 Cows | 75-99.9 Cows | 100 Or More Cows | | |
| ASSETS: | | | | | | |
| Cash on hand | \$ 875 | \$ 2,727 | \$ 5,076 | \$ 2,310 | \$ 9,686 | \$ 9,938 |
| Accounts receivable | 1,599 | 4,505 | 7,005 | 26,152 | 7,237 | 5,780 |
| Crops, feed, supplies | 29,889 | 46,280 | 70,354 | 125,630 | 100,911 | 210,607 |
| Dairy cattle | 65,710 | 111,236 | 146,448 | 252,406 | --- | 650 |
| Hogs | --- | --- | 6 | 2 | 118,344 | --- |
| Other livestock | 72 | --- | 19 | 206 | --- | --- |
| Machinery & equipment | 43,349 | 65,884 | 95,568 | 149,462 | 105,080 | 127,452 |
| Nonfarm business & household | 819 | 1,563 | 89 | 2,760 | 3,268 | 6,437 |
| Buildings & improvements | 29,842 | 62,521 | 95,257 | 144,130 | 141,807 | 71,598 |
| Real estate | 136,981 | 165,544 | 238,432 | 313,319 | 261,216 | 355,454 |
| Total Assets | <u>\$309,136</u> | <u>\$460,260</u> | <u>\$658,254</u> | <u>\$1,016,377</u> | <u>\$747,549</u> | <u>\$787,916</u> |
| LIABILITIES AND NET WORTH: | | | | | | |
| Revolving accounts | \$ 159 | \$ 2,004 | \$ 8,539 | \$ 11,222 | \$ 651 | \$ --- |
| Merchants or dealers | 1,982 | 1,212 | 7,174 | 4,757 | 2,119 | 465 |
| Production Credit Association | 9,374 | 20,507 | 24,584 | 31,222 | 23,157 | 59,038 |
| Banks | 13,630 | 23,535 | 28,474 | 47,898 | 23,526 | 20,719 |
| Individuals | 17,462 | 22,280 | 28,964 | 64,156 | 34,188 | 53,909 |
| Federal Land Banks | 15,608 | 35,843 | 61,988 | 96,989 | 104,340 | 84,329 |
| Insurance companies | 100 | 296 | 430 | 1,662 | 803 | 370 |
| Farmers Home Administration | 26,820 | 38,620 | 35,864 | 55,022 | 58,937 | 17,912 |
| Other | 7,546 | 5,939 | 9,707 | 11,619 | 36,412 | 37,816 |
| Total Liabilities | <u>\$ 92,681</u> | <u>\$150,236</u> | <u>\$205,724</u> | <u>\$ 324,547</u> | <u>\$284,133</u> | <u>\$274,558</u> |
| Net Worth | \$216,455 | \$310,024 | \$452,530 | \$ 691,830 | \$463,416 | \$513,358 |
| TOTAL LIABILITIES & NET WORTH | \$309,136 | \$460,260 | \$658,254 | \$1,016,377 | \$747,549 | \$787,916 |
| Net Worth as % of Assets | 70% | 67% | 68% | 68% | 62% | 65% |

TABLE 3.

AVERAGE BALANCE SHEETS FOR CROP AND FRUIT FARMS
Telfarmers, December 31, 1980

| Farm Type | C A S H G R A I N | | | Saginaw Valley Crops | All Michigan Fruit |
|-----------------------------------|------------------------|--------------------|--------------------|----------------------------|--------------------------|
| | Less Than 400 Acres | 400-799.9 Acres | 800+ Acres | | |
| ASSETS: | | | | | |
| Cash on hand | \$ 5,881 | \$ 4,698 | \$ 1,791 | \$ 2,980 | \$ 873 |
| Accounts receivable | 6,485 | 7,319 | 56,085 | 2,435 | 16,199 |
| Crops, feed, supplies | 46,569 | 102,127 | 262,623 | 136,886 | 37,782 |
| Dairy cattle | 94 | --- | --- | --- | --- |
| Hogs | 17 | 642 | --- | 1,500 | --- |
| Other livestock | 3,232 | --- | --- | --- | --- |
| Machinery & equipment | 36,916 | 72,466 | 196,606 | 77,287 | 32,154 |
| Nonfarm business & household | 6,728 | 2,613 | 46,118 | 1,634 | 2,806 |
| Buildings & improvements | 21,831 | 32,521 | 75,917 | 50,873 | 40,891 |
| Real estate | <u>204,069</u> | <u>321,636</u> | <u>750,723</u> | <u>460,834</u> | <u>206,719</u> |
| Total Assets | <u>\$331,822</u> | <u>\$544,022</u> | <u>\$1,289,863</u> | <u>\$734,429</u> | <u>\$337,424</u> |
| LIABILITIES AND NET WORTH: | | | | | |
| Revolving accounts | \$ 1,090 | --- | \$ 43,687 | \$ 11,761 | \$ 10,239 |
| Merchants or dealers | 8,350 | 6,839 | 33,914 | 4,007 | 1,715 |
| Production Credit Association | 6,535 | 23,455 | 33,694 | 16,399 | 3,492 |
| Banks | 13,762 | 18,807 | 73,709 | 25,568 | 8,667 |
| Individuals | 14,741 | 36,798 | 93,981 | 45,541 | 26,389 |
| Federal Land Banks | 19,500 | 52,054 | 110,500 | 43,818 | 10,108 |
| Insurance companies | 6,979 | 979 | --- | 3,564 | 1,985 |
| Farmers Home Administration | 7,073 | 1,224 | --- | 6,743 | 10,136 |
| Other | 8,840 | 22,982 | 12,973 | 21,506 | 2,807 |
| Total Liabilities | <u>\$ 86,870</u> | <u>\$163,138</u> | <u>\$ 402,458</u> | <u>\$178,907</u> | <u>\$ 75,538</u> |
| Net Worth | \$244,952 | \$380,884 | \$ 987,405 | \$555,522 | \$261,886 |
| TOTAL LIABILITIES & NET WORTH | \$331,822 | \$544,022 | \$1,289,863 | \$734,429 | \$337,424 |
| Net Worth as % of Assets | 74% | 70% | 71% | 75% | 77% |

value of individual tractors and self-propelled harvesting equipment after several years of inflation. The real estate total is estimated by asking the farmers for the current market value of all the real estate owned including land, buildings, improvements, and residences. Telfarm then subtracts the amount assigned to buildings and improvements through the cost less depreciation method. The remainder is the real estate value in Tables 2 and 3. The nonfarm business and household assets are probably understated because only a few Telfarmers report these types of assets. Tables 2 and 3 list the average net worth for the particular farm types and show the relative percentage of net worth to assets. This ratio indicates the amount of capital the farmers actually own.

The accounts receivable category needs special consideration. Across all types of farms, it is a noticeable amount of money. Among all the categories in Tables 2 and 3, it is probably the least consistently reported. On many farms, accounts receivable are actually personal nonfarm loans made to family members. This reporting technique is followed due to an idiosyncrasy of the Telfarm software. It avoids unaccounted for cash in the monthly Telfarm report, but it is not a farm business asset. At the end of the month, most dairy farmers have shipped a half month's milk production for which payment has not yet been received. Few, if any, dairy Telfarmers report this item. Some assets listed under crops,

feed, and supplies more closely fit the definition of accounts receivable. Current discussions about marketing systems raise questions about who effectively owns and controls commodities once they leave the farm. Detailed supporting schedules behind farm balance sheets will probably tend, in the future, to separate grain held on the farm from grain stored under other arrangements at nonfarm locations. The accounts receivable category in Tables 2 and 3 are probably understated.

Crops, Feed, and Supplies

The crops, feed, and supplies item in the asset list vary considerably with type of farm. Table 4 presents a more detailed breakdown of what is contained in this category for a subset of the farms in Tables 2 and 3. Careful analysis of these items should be considered. Corn silage and hay equivalent are not commonly bought or sold in a well-developed market making prices hard to establish. The quantity on hand of these items will vary with the time of year; many of the feed crops could be reduced to near zero levels by early summer on livestock farms. If a net worth statement was made in early summer, these reductions would be offset to some degree by growing crops. In late fall the crops, feed, and accounts receivable reach their highest amounts. In the "other items" category of Table 4, growing wheat, which was planted in September, would be the single largest item.

TABLE 4.

COMPOSITION OF FEED, CROPS, AND SUPPLIES BY FARM TYPE

Subset Of Farms Studied
December 31, 1980

| Item | Dairy 50-74.9 Cows | Farrow To Finish | Potato | Cash Grain 400-799.9 Acres | Saginaw Valley Crops | Fruit Farms |
|----------------|--------------------------|------------------------|------------------|----------------------------------|----------------------------|-----------------|
| Corn grain | \$19,739 | \$ 80,564 | \$ 33,855 | \$ 62,297 | \$ 39,368 | \$ --- |
| Corn silage | 7,250 | --- | 126 | 398 | 115 | --- |
| Oats for grain | 885 | 738 | 229 | 1,202 | 533 | --- |
| Hay equivalent | 14,027 | 1,040 | 114 | 328 | 260 | --- |
| Wheat | 388 | 1,681 | 1,939 | 464 | 8,283 | --- |
| Sugar beets | --- | --- | 459 | --- | 24,349 | --- |
| Edible beans | --- | --- | 784 | 992 | 27,324 | --- |
| Soybeans | 195 | 2,000 | 571 | 20,969 | 14,316 | --- |
| Apples | 384 | --- | --- | --- | --- | 17,876 |
| Cherries | --- | --- | --- | --- | --- | 13,818 |
| Potatoes | --- | --- | 158,993 | --- | 42 | --- |
| Feed purchased | 177 | 4,597 | --- | --- | --- | --- |
| Other items | 3,235 | 10,291 | 13,537 | 15,477 | 22,296 | 6,088 |
| Total | <u>\$46,280</u> | <u>\$100,911</u> | <u>\$210,607</u> | <u>\$102,127</u> | <u>\$136,886</u> | <u>\$37,782</u> |

Liabilities

To perform ratio analysis, it is desirable to have liabilities divided among the categories of short, intermediate, and long-term debt. Because farmers do not report their debts to Telfarm in these categories, it was necessary to assume which portion of each loan should be allocated to which category. We examined references [2,6,7, and 8] which indicated how the major credit suppliers have made their loans by length of repayment terms. From these, we arrived at the percentage distributions in Table 5. Given our understanding of Michigan agriculture, it seemed reasonable to differentiate between crops and livestock farms. We believe the allocation between short and intermediate term debts from PCA's and banks differs as indicated in Table 5 for this sample of farms. If feeder livestock (either hogs or beef) had been included, they would have had to have their own allocation. If more accuracy in the aggregate sample is desired in the future, Telfarmers will have to be motivated to report more details about their debt structure.

When the assumptions in Table 5 are applied to the debts reported in Tables 2 and 3, then the results are Tables 6 and 7. The total dollars in long-term liabilities are primarily a result of farmer reporting. The proportions in short and intermediate liabilities are mostly a function of our Table 5 assumptions. The assets are free of this bias as the farmer reporting categories clearly show which items belong in current, intermediate, or long-term categories.

TABLE 5. PERCENTAGE DISTRIBUTION ASSUMED AMONG LOAN TYPES
1980 Telfarm Sample

| Source Of Debt | LOAN Short | REPAYMENT Intermediate | TERMS Long |
|-------------------------------|---------------|---------------------------|---------------|
| <u>CROP FARMS:</u> | | | |
| Revolving accounts | 100 | --- | --- |
| Merchants or dealers | --- | 100 | --- |
| Production Credit Association | 80 | 20 | --- |
| Banks | 55 | 15 | 30 |
| Individuals | --- | --- | 100 |
| Federal Land Banks | --- | --- | 100 |
| Insurance companies | --- | --- | 100 |
| Farmers Home Administration | 12 | 38 | 50 |
| Other | --- | 100 | --- |
| <u>LIVESTOCK FARMS:</u> | | | |
| Revolving accounts | 100 | --- | --- |
| Merchants or dealers | --- | 100 | --- |
| Production Credit Association | 20 | 80 | --- |
| Banks | 15 | 55 | 30 |
| Individuals | --- | --- | 100 |
| Federal Land Banks | --- | --- | 100 |
| Insurance companies | --- | --- | 100 |
| Farmers Home Administration | 12 | 38 | 50 |
| Other | --- | 100 | --- |

Sources: [2, 6, 7, 8]

TABLE 6.

ASSETS AND DEBTS GROUPED BY LOAN LIFE

Livestock And Potato Farms

December 31, 1980

| Item | D A I R Y | | | | Swine Farrow To Finish | Potato |
|---------------------|-------------------------|------------------|------------------|------------------------|---------------------------------|------------------|
| | Less Than 50 Cows | 50-74.9 Cows | 75-99.9 Cows | 100 Or More Cows | | |
| ASSETS: | | | | | | |
| Current | \$ 32,363 | \$ 53,512 | \$ 82,435 | \$ 154,092 | \$117,834 | \$226,381 |
| Intermediate | 109,950 | 178,684 | 242,131 | 404,836 | 226,692 | 134,539 |
| Long term | <u>166,823</u> | <u>228,064</u> | <u>333,688</u> | <u>457,449</u> | <u>403,023</u> | <u>426,996</u> |
| Total Assets | <u>\$309,136</u> | <u>\$460,260</u> | <u>\$658,254</u> | <u>\$1,016,377</u> | <u>\$747,549</u> | <u>\$787,916</u> |
| LIABILITIES: | | | | | | |
| Current | \$ 7,297 | \$ 14,270 | \$ 22,031 | \$ 31,254 | \$ 15,885 | \$ 60,775 |
| Intermediate | 34,715 | 51,177 | 65,837 | 89,403 | 92,392 | 60,003 |
| Long term | <u>50,669</u> | <u>84,789</u> | <u>117,856</u> | <u>203,890</u> | <u>175,856</u> | <u>153,780</u> |
| Total Liabilities | <u>\$ 92,681</u> | <u>\$150,236</u> | <u>\$205,724</u> | <u>\$ 324,547</u> | <u>\$284,133</u> | <u>\$274,558</u> |

TABLE 7.

ASSETS AND DEBTS GROUPED BY LOAN LIFE

Crop And Fruit Farms
December 31, 1980

| Item | C A S H G R A I N | | | Saginaw Valley Crops | All Michigan Fruit |
|---------------------|------------------------|--------------------|--------------------|----------------------------|--------------------------|
| | Less Than 400 Acres | 400-799.9 Acres | 800+ Acres | | |
| ASSETS: | | | | | |
| Current | \$ 58,936 | \$114,144 | \$ 320,499 | \$142,299 | \$ 54,853 |
| Intermediate | 46,986 | 75,722 | 242,725 | 80,421 | 34,960 |
| Long term | <u>225,900</u> | <u>354,156</u> | <u>826,639</u> | <u>511,709</u> | <u>247,611</u> |
| Total Assets | <u>\$331,822</u> | <u>\$544,022</u> | <u>\$1,389,863</u> | <u>\$734,429</u> | <u>\$337,424</u> |
| LIABILITIES: | | | | | |
| Current | \$ 14,736 | \$ 29,255 | \$ 111,182 | \$ 39,752 | \$ 19,016 |
| Intermediate | 23,249 | 37,798 | 64,682 | 35,190 | 10,372 |
| Long term | <u>48,885</u> | <u>96,085</u> | <u>226,594</u> | <u>103,965</u> | <u>46,150</u> |
| Total Liabilities | <u>\$ 86,870</u> | <u>\$163,138</u> | <u>\$ 402,458</u> | <u>\$178,907</u> | <u>\$ 75,538</u> |

CASH FLOW STATEMENTS

Tables 8 and 9 provide the summarized cash flows. A reporting problem noted was that some Telfarmers fail to report any new money borrowed. Furthermore, many Telfarmers do not report family living withdrawals. As a result, there is a noticeable amount of unreconciled cash which was labeled "unaccounted for cash." Family living and income taxes would be major components of this category. Normally, operating expenses include interest, but a breakdown was provided to show the interest incurred by the particular size and type of farm.

The last category in Tables 8 and 9 is an attempt to measure the movement of borrowed principal in and out of the business during the year. The data source did not identify whether it was short, intermediate, or long-term debt. If there is a reduction in the debts owed at the end of the year compared to the debts owed at the beginning of the year, the new money borrowed per dollar of principal paid should be less than 1. On these farms, only the potato farms, with .94, achieved this stature. The remaining values ranged from 1.06 on large dairy farms to 1.98 on fruit farms. The lack of beginning of the year balance sheets on the exact same sample of farms precluded us from verifying this apparent change in debt balance.

TABLE 8.

CASH FLOW ITEMS ON LIVESTOCK AND POTATO FARMS
Telfarmers For The Year 1980

| Item | D A I R Y | | | | Swine Farrow To Finish | Potato |
|---|-------------------------|------------------|------------------|------------------------|---------------------------------|------------------|
| | Less Than 50 Cows | 50-74.9 Cows | 75-99.9 Cows | 100 Or More Cows | | |
| CASH COMING IN: | | | | | | |
| Beginning cash balance | \$ 1,146 | \$ 3,323 | \$ 3,090 | \$ 3,539 | \$ 2,090 | \$ 9,328 |
| Crops sold | 8,248 | 11,790 | 17,891 | 29,357 | 40,776 | 307,580 |
| Livestock & products sold | 77,635 | 134,006 | 184,110 | 334,337 | 207,933 | 451 |
| Other cash income | 1,796 | 2,392 | 3,937 | 6,991 | 5,363 | 15,075 |
| Resale items sold | 77 | 1,477 | --- | 5,130 | 3,588 | 6,638 |
| Capital sales | 4,169 | 3,090 | 1,587 | 3,596 | 1,942 | 4,145 |
| Nonfarm income | 1,746 | 2,660 | 2,601 | 9,878 | 3,746 | 5,146 |
| New money borrowed | 32,642 | 39,392 | 73,076 | 92,286 | 147,723 | 106,130 |
| Decrease in receivables | 240 | 262 | 1,283 | 18,010 | 2,010 | 12,208 |
| Total Cash In | <u>\$127,699</u> | <u>\$198,392</u> | <u>\$287,575</u> | <u>\$503,124</u> | <u>\$415,171</u> | <u>\$466,701</u> |
| CASH GOING OUT: | | | | | | |
| Operating expenses | \$ 39,335 | \$ 63,742 | \$ 97,665 | \$178,848 | \$107,586 | \$233,713 |
| Interest | 6,518 | 11,922 | 17,675 | 30,213 | 25,526 | 26,407 |
| Resale items purchased | 58 | 1,479 | 58 | 995 | 2,013 | 10,586 |
| Livestock purchased | 4,752 | 7,047 | 7,475 | 14,415 | 6,957 | --- |
| Feed purchased | 12,719 | 19,984 | 27,680 | 55,965 | 85,297 | 36 |
| Capital purchases | 24,428 | 43,057 | 57,664 | 92,712 | 75,140 | 48,699 |
| Nonfarm expenses | 23 | 568 | 26 | 4,025 | 568 | 5,363 |
| Principal paid | 18,568 | 27,313 | 55,526 | 87,147 | 92,728 | 113,332 |
| Increase in receivables | 794 | 1,708 | 2,194 | 21,928 | 3,020 | 353 |
| Cash unaccounted for | 19,629 | 18,845 | 16,536 | 14,566 | 6,650 | 18,274 |
| Ending cash balance | 875 | 2,727 | 5,076 | 2,310 | 9,686 | 9,938 |
| Total Cash Out | <u>\$127,699</u> | <u>\$198,392</u> | <u>\$287,575</u> | <u>\$503,124</u> | <u>\$415,171</u> | <u>\$466,701</u> |
| New money borrowed/\$1.00 principal paid | \$1.76 | \$1.44 | \$1.32 | \$1.06 | \$1.59 | \$.94 |

TABLE 9.

CASH FLOW ITEMS ON CROP AND FRUIT FARMS
Telfarmers For The Year 1980

| Item | C A S H G R A I N | | | Saginaw Valley Crops | All Michigan Fruit |
|---|------------------------|--------------------|-------------------|----------------------------|--------------------------|
| | Less Than 400 Acres | 400-799.9 Acres | 800+ Acres | | |
| CASH COMING IN: | | | | | |
| Beginning cash balance | \$ 3,624 | \$ 2,957 | \$ 4,520 | \$ 5,360 | \$ 2,854 |
| Crops sold | 57,341 | 114,258 | 355,047 | 190,471 | 98,269 |
| Livestock & products sold | 2,140 | 3,855 | 325 | 3,273 | --- |
| Other cash income | 3,540 | 6,770 | 10,023 | 8,025 | 5,940 |
| Resale items sold | 2,039 | 1,675 | 1,197 | 3,393 | 374 |
| Capital sales | 2,501 | 569 | 5,770 | 2,370 | 1,018 |
| Nonfarm income | 5,133 | 8,910 | 72,912 | 4,331 | 5,135 |
| New money borrowed | 35,616 | 88,424 | 125,948 | 70,646 | 35,107 |
| Decrease in receivables | 2,864 | 4,274 | 26,274 | 1,398 | 12,931 |
| Total Cash In | <u>\$114,798</u> | <u>\$231,892</u> | <u>\$ 602,016</u> | <u>\$289,267</u> | <u>\$161,628</u> |
| CASH GOING OUT: | | | | | |
| Operating expenses | \$ 38,896 | \$ 89,395 | \$ 228,389 | \$115,913 | \$ 82,318 |
| Interest | 7,532 | 16,083 | 36,199 | 18,894 | 4,781 |
| Resale items purchased | 3,979 | 1,947 | 15,677 | 1,281 | 1,007 |
| Livestock purchased | 215 | --- | 200 | 3,673 | --- |
| Feed purchased | 49 | 13 | 252 | 15 | --- |
| Capital purchases | 20,940 | 37,731 | 96,668 | 52,475 | 17,687 |
| Nonfarm expenses | 295 | 2,564 | 13,646 | 90 | 200 |
| Principal paid | 31,074 | 71,080 | 96,659 | 52,711 | 17,734 |
| Increase in receivables | 339 | 7,035 | 33,059 | 20 | 13,261 |
| Cash unaccounted for | 5,598 | 1,346 | 79,476 | 41,215 | 23,767 |
| Ending cash balance | 5,881 | 4,698 | 1,791 | 2,980 | 873 |
| Total Cash Out | <u>\$114,798</u> | <u>\$231,892</u> | <u>\$ 602,016</u> | <u>\$289,251</u> | <u>\$160,514</u> |
| New money borrowed/\$1.00 principal paid | \$1.15 | \$1.24 | \$1.30 | \$1.34 | \$1.98 |

RATIO ANALYSIS

Tables 10 and 11 provide a series of ratios described in [1] which may be used for a comparative business analysis. The ratios all indicate the sample farms were in a strong financial position. The first series of ratios were calculated with data from Tables 2, 3, 6, and 7. To some degree all ratios calculated from the net worth statement give an indication of the farms' solvency position. The current ratio reflects the ability of the farm to cover current debts by the liquidation of current assets. A value greater than one indicates that the business is able to cover current debt through the liquidation of current assets. The intermediate ratio is very similar in concept to the current ratio. In calculating the intermediate ratio, the group of assets has been expanded to include both current and intermediate assets, as has the liabilities. Both the current and intermediate ratios were markedly influenced by the assumptions in Table 5 and its associated discussion.

The net capital ratio, debt/equity ratio, and the equity/value ratio are indicators of long-term solvency of a business. These ratios indicate a manager's willingness to use borrowed capital in the operation of his business [1]. For example, the lower the net capital ratio for a given farm, the more that business is using outside capital in relation to equity capital. There are various rules of thumb lending

TABLE 10.

RATIO ANALYSIS ON LIVESTOCK AND POTATO FARMS
Telfarmers, 1980

| Ratio | D A I R Y | | | | Swine Farrow To Finish | Potato |
|------------------------------------|-------------------------|-----------------|-----------------|------------------------|---------------------------------|--------|
| | Less Than 50 Cows | 50-74.9 Cows | 75-99.9 Cows | 100 Or More Cows | | |
| <u>FROM NET WORTH:</u> | | | | | | |
| Current ratio | 4.43 | 3.75 | 3.74 | 4.93 | 7.42 | 3.72 |
| Intermediate ratio | 4.56 | 3.55 | 3.69 | 4.63 | 3.18 | 2.99 |
| Net capital ratio | 3.33 | 3.06 | 3.19 | 3.13 | 2.63 | 2.87 |
| Debt:equity | .43 | .48 | .45 | .47 | .61 | .53 |
| Equity:value | .70 | .67 | .69 | .68 | .62 | .65 |
| <u>FROM INCOME STATEMENT:</u> | | | | | | |
| Operating ratio | .39 | .49 | .43 | .47 | .44 | .61 |
| Fixed ratio | .29 | .36 | .30 | .29 | .40 | .22 |
| Gross ratio | .68 | .85 | .73 | .76 | .84 | .83 |
| <u>NET WORTH/INCOME STATEMENT:</u> | | | | | | |
| Capital turnover | .31 | .33 | .34 | .39 | .38 | .44 |

TABLE 11.

RATIO ANALYSIS ON CROP AND FRUIT FARMS
Telfarmers, 1980

| Ratio | C A S H G R A I N | | | Saginaw Valley Crops | All Michigan Fruit |
|------------------------------------|------------------------|--------------------|------------|----------------------------|--------------------------|
| | Less Than 400 Acres | 400-799.9 Acres | 800+ Acres | | |
| <u>FROM NET WORTH:</u> | | | | | |
| Current ratio | 4.00 | 3.90 | 2.88 | 3.56 | 2.88 |
| Intermediate ratio | 2.79 | 2.83 | 3.20 | 2.97 | 3.05 |
| Net capital ratio | 3.82 | 3.33 | 3.45 | 4.10 | 4.47 |
| Debt:equity | .35 | .43 | .41 | .32 | .28 |
| Equity:value | .74 | .70 | .71 | .76 | .78 |
| <u>FROM INCOME STATEMENT:</u> | | | | | |
| Operating ratio | .47 | .46 | .48 | .41 | .69 |
| Fixed ratio | .33 | .30 | .34 | .24 | .21 |
| Gross ratio | .80 | .76 | .82 | .65 | .90 |
| <u>NET WORTH/INCOME STATEMENT:</u> | | | | | |
| Capital turnover | .21 | .30 | .27 | .32 | .32 |

institutions tend to go by when analyzing these ratios. For example, a farm business with relatively stable expense and income situations, such as dairy enterprises, may be able to get by with a 1.4 net capital ratio. On farm types where income and expenses fluctuate greatly, an individual may need a net capital ratio as high as 2 or 3 to be considered a good risk.

Ratios calculated from the income statement give an indication of the relative profitability of a business and the degree of flexibility the farm has in meeting expenses. In establishing these ratios total expenses were broken up into operating and fixed. The fixed expenses are insurance, building and land leases, taxes, intermediate and long-term interest (only), and depreciation. Perhaps the most important of these three ratios is the gross ratio, which is the proportion of total expenses to gross farm income. Income and expenses include inventory changes in this report. If the gross ratio is greater than 1, the business is not covering the total expenses of operation. Values less than 1 indicate the business is generating a positive net farm income.

The primary analysis factor using both the net worth and income statement is the capital turnover ratio. This ratio compares the velocity or use of invested capital in the business in relationship to the income generated. The higher the ratio the more efficient the business is in its use of invested capital.

INCOME MEASUREMENTS

Tables 12 and 13 provide the average annual income measures for 1980 for the farms in the study. These factors were used in some of the previously mentioned ratios. The net farm income is the starting point for calculating the various profit and return measures. Net farm income is a return to unpaid family labor plus owner's labor, management, and equity capital. Cash interest paid was an expense item in the net farm income calculation. Taking net farm income and deducting the average charge for unpaid family labor hours which were reported by the Telfarmers gives the return on operator's labor, capital, and management (ROLCM).

The next step is to reflect the noncompensated operator's inputs. Taking ROLCM and deducting the opportunity cost of equity capital (the average farm net worth times a selected interest rate) yields labor income. This is the amount left over to reward the owner for management and labor. This return was negative on small grain and on fruit farms in 1980. A \$4.75 per hour charge for average operator's labor is subtracted from labor income to get management income. Management income is the residual left from net farm income after all family labor, owner's labor, and opportunity cost of capital have been deducted. Management income ranged from \$-16,955 on fruit farms to \$41,932 on Saginaw Valley crop farms. Five of the 11 average farm types earned negative management incomes in 1980.

TABLE 12.

PROFIT OR RETURN ANALYSIS FACTOR
Livestock And Potato Telfarmers, 1980

| Item | D A I R Y | | | | Swine Farrow To Finish | Potato |
|--------------------------------------|-------------------------|-----------------|-----------------|------------------------|---------------------------------|-----------|
| | Less Than 50 Cows | 50-74.9 Cows | 75-99.9 Cows | 100 Or More Cows | | |
| Net farm income before taxes | \$ 26,860 | \$ 40,389 | \$ 53,827 | \$ 81,163 | \$ 32,076 | \$ 57,426 |
| ROLCM* | 20,732 | 30,860 | 42,408 | 66,476 | 24,946 | 46,572 |
| Labor income | 7,225 | 10,545 | 15,651 | 24,137 | 911 | 25,359 |
| Management income | - 7,148 | - 4,199 | 1,097 | 9,474 | - 8,684 | 15,032 |
| ROCM** | 6,358 | 16,116 | 27,854 | 51,813 | 15,351 | 36,245 |
| Percent return to total capital | 4% | 6% | 7% | 8% | 5% | 8% |
| Percent return to operator's capital | 3% | 5% | 6% | 7% | 3% | 7% |

* ROLCM = return on operator's labor, capital, and management.

** ROCM = return on operator's capital and management.

TABLE 13.

PROFIT OR RETURN ANALYSIS FACTORS
Crop And Fruit Telfarmers, 1980

| Item | C A S H G R A I N | | | Saginaw Valley Crops | All Michigan Fruit |
|---|------------------------|--------------------|------------|----------------------------|--------------------------|
| | Less Than 400 Acres | 400-799.9 Acres | 800+ Acres | | |
| Net farm income before taxes | \$ 14,033 | \$ 38,087 | \$ 66,048 | \$ 82,871 | \$ 10,042 |
| ROLCM* | 12,608 | 35,517 | 57,769 | 77,836 | 4,332 |
| Labor income | - 532 | 21,742 | 31,856 | 53,038 | - 6,472 |
| Management income | - 7,776 | 13,296 | 23,724 | 41,932 | -16,955 |
| ROCM** | 5,364 | 27,071 | 49,637 | 66,730 | - 6,151 |
| Percent return to total capital | 4% | 8% | 6% | 12% | 0% |
| Percent return to operator's capital | 2% | 7% | 5% | 12% | -2% |

* ROLCM = return on operator's labor, capital, and management.

** ROCM = return on operator's capital and management.

The next measure is return on operator's labor and management (ROCM). It is the ROLCM minus the \$4.75 per hour charge for unpaid operator's labor. This item can be used to determine percent return on total capital and percent return on operator's capital. To calculate the percentage return on total capital invested in the business, add the cash interest paid on borrowed capital back into ROCM. This is divided by average total assets invested in the business resulting in a rate of return to total capital. This figure can be compared with the rate of return in other types of businesses to determine the relative efficiency of capital utilization by the farm being studied.

The percentage return to operator's capital is calculated by using ROCM and dividing by the average operator's net worth. This percent return should be compared to the operator's expected return on capital in the next best alternative. Over several years it is assumed manager's want to earn a percentage return greater than the average percentage paid on low risk bonds. Only Saginaw Valley crop farms managed, on the average, to do so in 1980. When calculating these last two ratios, the beginning total asset values and beginning net worth figures for 1980 were not available, so the ratios were calculated on ending 1980 data. This bias may have slightly reduced the calculated returns. It is customary to use an average of beginning and ending values when calculating these ratios.

SUMMARY

This report presents average net worth statements, cash flows, ratios, and profit measures for selected Michigan Telfarmers having complete debt records. These are average figures taken directly from the numbers reported by the Telfarmers. These statistics provide guidelines which enable managers with farms of the same type and size to do a comparative financial analysis of their own business.

The percent that net worth is of total assets on the Michigan Telfarms studied is comparable to data on all the farms in the United States. Variation existed in financial ratios among size and types of farms. Profits, however, varied considerably among farm groups. Five of the 11 size and types of farms had negative returns to management. Most had percentage returns to capital below alternative low risk investments. All but one of the farm types finished the year owing more money than they did at the start of the year.

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