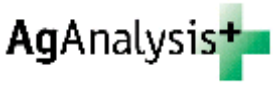
2001 Harvest Year Report

for USCHI's

Custom Harvester Analysis and Management Program (CHAMP)

Terry Kastens and Kevin Dhuyvetter
AgAnalysis+
and
Department of Agricultural Economics
Kansas State University

tkastens@aganalysisplus.com
kdhuyvet@aganalysisplus.com
www.aganalysisplus.com



2001 Harvest Year Report
for USCHI's
Custom Harvester Analysis and Management Program (CHAMP)

Background and Structure

At the urging of a number of USCHI (U.S. Custom Harvesters, Inc.) members, a pilot financial management program was initiated in January, 1998. The program was soon coined CHAMP, for Custom Harvester Analysis and Management Program. CHAMP, conducted by two economists at Kansas State University (K-State), Kevin Dhuyvetter and Terry Kastens, relies chiefly on results from a participant mail-in survey. The primary purpose of the program is to provide participants (CHAMP members) with important economic and production information about themselves. In this program, each participating firm is able to evaluate its production and economic performance relative to the CHAMP group as a whole, with individual firm information remaining confidential.

CHAMP is designed to be dynamic, so that it's accuracy and relevance can improve over time. Besides immediately providing useful information to individual participants, this program provides custom harvesting industry benchmarks and trend information over time and is instrumental in guiding future government lobbying efforts.

Each year, following compilation of the survey information in late February, each CHAMP member receives a report showing how it stands relative to group benchmarks or averages. In that report, individual cost categories are reported so participants can see where best to focus their management efforts to increase profits. Additionally, this written report, which depicts only aggregate values of interest (not values for individual members) is made publicly available each year. At USCHI's annual spring meeting, Dhuyvetter and Kastens present survey results to CHAMP and USCHI members and conduct short one-on-one consultations with individual CHAMP members. Historical CHAMP harvest reports and participation information are available by clicking on the CHAMP logo at www.aganalysisplus.com.

A formal CHAMP guidance or advisory committee was established by USCHI in 1998. The advisory committee's main role is to serve as a liaison between CHAMP members and the K-State economists conducting the program – ensuring that members' economic analyses needs are being met over time. The committee also serves as an important link between CHAMP membership and the overall USCHI membership in general, and USCHI's governing committee in particular. More specifically, the CHAMP committee helps 1) devise the questions asked in the annual mail-in survey, 2) determine arrangements for funding the CHAMP program, and 3) describe and promote the program to other custom harvesters.

USCHI members initiated CHAMP and USCHI strongly supports it. For the 1997 - 1999 harvest years, K-State charged $150 per CHAMP member annually. However, only $75 was paid directly by the CHAMP member, with the balance ($75) covered by USCHI. Starting with the 2000 harvest year, through payment of $8,700, John Deere has underwritten the fixed costs associated with the

CHAMP program. For 2001, CHAMP member fees were $225 each. USCHI covered $75 of the $225 – for CHAMP members who are also USCHI members. Although Deere and USCHI financially support CHAMP, to ensure confidentiality, completed surveys are only viewed by Dhuyvetter and Kastens.

Survey Results

CHAMP members were asked to provide detailed production and financial information, some which has not typically been compiled by custom harvesting firms. Additionally, they were asked to prorate financial information between the custom harvesting business and any side business. For 2001, 20 surveys were returned (2000: 22; 1999: 25; 1998: 25; 1997: 43). Although 20 responses may be inadequate for industry representation or certain intense statistical analyses, that sample is adequate to garner some understanding of custom harvesters' economic performance.

As with the previous CHAMP surveys and mail-in surveys in general, in this now-web-based survey there was plenty of room for error. Most surveys required one or more follow-up phone calls to clarify information provided. To maximize the number of useable responses in this analysis, some judgement had to be exercised in modifying and interpolating survey responses. In all such cases, the judgement was a joint effort of both Kevin Dhuyvetter and Terry Kastens – individuals who have extensive experience in working with farm and custom harvester financial analyses. However, because of CHAMP advisory committee efforts to improve previous years' surveys, and because many surveys are completed by repeat members (18 2001, 19 2000, 18 1999, and 21 1998 members were program participants in the preceding year; 13 members participated in all 5 years), the judgement required of the analysts continues to diminish. Surveys from repeat members indicate there is a "learning curve" associated with filling out the forms, and that a better understanding of the economic principles of the business results, which should mean improved management abilities as well.

Throughout this report, references to a particular year mean that harvest year and are associated with the survey completed early in the calendar year following harvest. Unless specified otherwise, averages reported here are firm averages. That is, some values require first averaging within a firm and then across firms. For example, reported average profit per acre is calculated by first computing profit per acre within each firm, then averaging each firm's profit per acre across all responding firms. This answers the question, Randomly choosing a firm, what would I expect its profit per acre to be? Caution must be used in interpreting such results. For example, if large firms (those harvesting many acres) are profitable but small firms are not, the average profit per acre reported here could be negative even though the typical acre being harvested by the industry is harvested at a profit.

General Information

The first page of the 2001 survey, the Information Page, requests general information of interest to custom harvesters. Information ranged from demographics and business structure to questions designed to uncover how important custom harvesting was to a member's overall business, as well as questions about family involvement.

CHAMP members in 2001 were located in 6

states (2000, 6; 1999, 6; 1998, 7; 1997, 10), with most (11) in Kansas. The average age of the "main persons in charge" was 45.9 years, which was an average of 35 people (because some of the 20 CHAMP members listed more than one person to be in charge). This average age compares to 43.8, 44.9, 45.4, and 47.0 in 2000, 1999, 1998, and 1997, respectively. These ages are somewhat lower than the average age of U.S. farmers, which is regularly asserted to be in the mid 50's.

Of the 20 2001 members, 1 operated as a partnership, 3 as an LLC, 6 as a corporation, and 10 as a sole-proprietorship. Generally, firms appear well established, with an average number of years in business of 26.7 (2000 25.4, 1999 26.3, 1998 24.9, 1997 23.9).

Most (13 of 20) members indicated they typically run their combines one or two years. Nine members indicated they typically run new combines, 10 run used combines, and 1 runs either or both of new and used.

In addition to custom harvesting, a majority of members (13 of 20) have sideline businesses. Farming/ranching was a sideline for 10 of the members, 8 were involved in trucking, and 3 had some other sideline business.

Nineteen of 20 (95%) members typically pull mobile homes rather than stay in motels (2000 95%, 1999, 96%, 1998 84%, 1997,79%). On average, 27.5% of the meals are from a restaurant rather than home-prepared (2000 29.1% 1999 34.0%, 1998 43.4%, 1997 38.4%).

On average, across the 35 "main persons in charge," managers indicate they allocate 69.7% of their time to the custom harvesting business (2000 70.8% 1999 69.0%, 1998 73.1%). Although 23% of the managers indicated they spent more than 80% of their time in their harvesting businesses, 29% were so-employed less than half time.

In 2001, harvesting firms spent 6.1 months in actual harvesting on average, with one firm spending 7.5 months. The number of customers serviced by a CHAMP member ranged from 11 to 94, and averaged 37.4 (2000 38.8, 1999 39.1, 1998 33.4).

At the harvest season peak, member harvesters employ 8.8 individuals on average (2000 9.8, 1999 11.4, 1998 8.5), with the most common number indicated to be between 6-7 people. Of the total season-peak individuals, 34.6% (2000 34.1%, 1999 36.2%, 1998 31.3%) were family members. On average, the typical non-family employee stays with a harvester for 1.8 (2000 1.7, 1999 1.9, 1998 2.0) seasons, with the most frequent response being 1-2 seasons.

Twelve of 20 (2000 11 of 22, 1999 10 of 25; 1998 13 of 25) members split their machines up when harvesting. Fourteen (70%) finance their combines through the dealer or manufacturer. With a minimum of 5.0% and a maximum of 10.5%, the average reported interest rate on loans in 2001 was 7.66% (2000 9.32%, 1999 8.94%, 1998 8.9%).

Combine Information

The second page of the 2001 survey, the Combine Page, reports details about the combines used by CHAMP members – such as brand, model year, hours of use, and other descriptive features. In addition, start-of-year, purchase, sale, and end-of-year values of combines were also reported on this page. Information from those values provides an

estimate of annual market depreciation, which averaged 14.7% across the 67 owned combines used in 2001 (2000 15.1%, 1999 16.1%).

John Deere made up 61.3% (2000 77.6%, 1999 63.2%, 1998 67.4%, 1997 58%) of the 73 combines used for harvest in 2001, with 37.3% (2000 22.4%, 1999 34.6%, 1998 27.2%, 1997 37%) for Case-IH, and 1.3% for all other brands. More than half (58.0%) of the combines were of model year 2000 or newer. A large majority (89.3%; 2000 89%, 1999 91%, 1998 90%, 1997 95%) of combines were owned rather than rented (8.0%) or leased (2.7%).

Of the 75 combines used in 2001, 93.3 % (2000 84.7%, 1999 84.2%, 1998 82.6%, 1997 82.0%) had chaff spreaders, 60.0% (2000 55.3%, 1999 54.9%, 1998 37.0%, 1997 38.0%) had yield monitors, and 37.3% (2000 27.1%, 1999 25.6%, 1998 15.2%, 1997 21.0%) had GPS-equipped yield monitors. Based on this small sample of combines, it appears that chaff spreaders are virtually a standard, and that GPS-equipped yield monitor inclusion is still increasing.

The typical combine was used for 502 separator hours (2000 559, 1999 524, 1998 577, 1997 585) and had 1263 (2000 1146, 1999 975, 1998 1106, 1997 1156) hours on the separator hourmeter at the end of 2001 or when it was traded if traded during the year. However, usage rates were quite disperse, reflecting that firms differ in the amount of time spent on the harvest run, are subjected to different weather-related harvest delays, have different amounts of downtime, and have different management styles. For example, some harvesters might use rented combines for short periods of peak harvesting activity.

Comparing individual and average usage rates and end of season hours across years is not straightforward, as combine trading patterns can affect the numbers. For example, if combines are traded during the season, low average hours per combine will result – along with numbers of combines per harvester that may be much larger than the typical number of combines simultaneously operated by that harvester.

In 2001, on average across the 20 CHAMP members, the number of combines simultaneously operated was 3.3 (2000 3.6, 1999 4.2, 1998 3.2, 1997 3.5). Using the total combine separator hours accumulated during 2001 for each member, divided by the number of machines simultaneously operated by that member, provides a better picture of harvest intensity. The average of this value (across the 20 members) in 2001 was 551 separator hours (2000 577, 1999 603, 1998 641, 1997 581), and ranged from 350 to 860.

Average acres harvested per combine in 2001 was 5821, about the same as in 1997 and 1998 (2000 5969, 1999 5311, 1998 5852, 1997 5852)). Closely related to hours per combine and acres per combine is acres per hour, which was a record 10.68 in 2001 (2000 10.45, 1999 8.83, 1998 9.23, 1997 9.51). Likely, ever larger combines and favorable harvesting weather resulted in this increase in harvest "efficiency" over previous years. As always, wide variability across members prevails, with 2 averaging between 7 and 8 acres per hour and 4 in the 12-13 range. Of course, these differences are also partly due to the types of crops harvested – some crops naturally require slower travel speeds.

Platform Information

The third page of the CHAMP survey sought information on the "additional" combine headers/platforms used by harvesters (one standard grain platform was included with each combine on the Combine Page). Average annual depreciation on 168 platforms was 5.1% (2000 7.4%, 1999 9.1%).

Of the 75 combines that tallied more than zero hours, 72.0% had flex heads (2000 50.6%, 1999 51.7%, 1998 40.2%), 62.7% (2000 67.1%, 1999 61.7%, 1998 70.7%) had cornheads, 6.7% (2000 0%, 1999 13.3%, 1998 15.7%) had draper platforms, 20.0% (2000 28.2%, 1999 25.0%, 1998 30.4%) had row crop heads, and 60.0% (2000 68.2%, 1999 55.8%, 1998 70.7%) had pickup heads.

Because the total number of operations involved in CHAMP is not great, coupled with the fact that operators are probably consistent across years in the machines they operate, the effective sample size appropriate for making reliable inferences may be closer to the number of operations than the number of combines. Thus, caution should be observed in making too much of observed differences across years.

Trucks and Supporting Equipment

The fourth page of the 2001 survey, the Non-combine Harvesting Equipment Page, reports details about grain trucks, trailers, tractors, grain carts, service vehicles, and other supporting equipment used by CHAMP members. At an average model year of 1989.2 (1989.7 in 2000; 1988.4 in 1999; and 1987.4 in 1998), the 91 grain trucks reported by members were much older than the combines – and 1.5 years older than trucks reported in 2000. Tandem-axle trucks made up 46% (2000 61%, 1999 50%, 1998 59%) of the 91, triple-axle trucks were 0%, and semis were 54% (2000 39%, 1999 42%, 1998 41%). Members owned 89% (2000 89%, 1999 93%, 1998 91%) of their grain trucks as opposed to leasing or renting. On average, 12,692 miles (2000 19,589; 1999 17,766; 1998 16,308) were put on each truck during the 2001 harvest season. At the end of 2001 the average odometer reading was 558,707, which was above 2000's 513,162 and 1999's 443,883. Ending mileage values suggest that many of the trucks had been at one time or are currently being used for over-the-road hauling.

Reported grain truck values were used to estimate market depreciation, which averaged 11.0% (2000 12.1%, 1999 5.9%, 1998 5.2%) across the 81 trucks where those values were reported. Although trucks (11.0%) apparently depreciate more slowly than do combines (14.7%), in 2001, they continued the 2000 trend of sharp devaluations relative to earlier years. This sharp drop in truck value may be due in part to an excessive supply of trucks on the market – especially semis – wrought by the higher fuel prices in 2000.

Crops Harvested and Revenue Generated

The annual survey solicits information on the number of fields, acres, and bushels of each crop harvested in each state, the associated revenue coming from those crops and how it was split between combining and trucking, as well as the portion of harvested crops that was also hauled by the harvester. Typically, this information was included on the Revenue Page of the survey.

Collectively, 2001 CHAMP members harvested 402,918 acres (2000 498,490; 1999 576,597; 1998 493,038; 1997 751,804). Small grains, defined as wheat, barley, durum, oats, and rye, represented 265,413 acres

(2000 350,340; 1999 387,280; 1998 364,654; 1997 547,131), or 65.9% (2000 70%, 1999 67.2%, 1998 74.0%, 1997 72.8%) of the total acres harvested. At 258,308 acres, wheat & durum made up the majority (64.1%; 2000 67.2%; 1999 63.4%; 1998 68.9%; 1997 68.9%) of all crop acres harvested. Although wheat acres comprised 64.1% of total harvested crop acres, the revenue share for wheat, at 57.7% (2000 58.3%, 1999 57.0%, 1998 59.7%), was somewhat smaller. That is because other crops often garner more revenue per acre than wheat – likely because they are more expensive to harvest.

Across the states, Kansas had the most acres harvested for wheat, corn, milo, sunflowers, and other crops. But North Dakota had the most barley and canola, and South Dakota had the most soybeans. The strong Kansas showing for fall crops is likely partly due to the large number of CHAMP members located in Kansas in 2001. Besides the usual crops of wheat, corn, milo, soybeans, barley, sunflowers, and canola, many other crops were harvested as well. For example, pinto beans, peas, edible beans, alfalfa seed, popcorn, food corn, millet, rice, and crambe each were listed as being harvested by at least one firm.

Within 2001, or across 2001 and previous years, acres per field by crop did not reveal any obviously explainable differences. Acres per field by state is a little more interesting, with Montana standing out as having the largest fields at 194 acres. Across all member reports the average field size was 111.9 acres (2000 111.3, 1999 113.3, 1998 94.3).

Over all member reports for all crops, the average revenue received per harvested acre was $21.72 (2000 $21.65, 1999 $23.03, 1998 $25.65). Because of the higher yields associated with corn, especially irrigated corn, that crop generates the highest revenue per acre ($34.27; 2000 $29.97; 1999 $31.32; 1998 $39.79). The corn results are somewhat reversed when revenue is depicted on a per bushel basis. Corn, at only 30¢/bu (2000 26¢, 1999 27¢, 1998 28¢/bu), is the lowest revenue crop, whereas all other crops but milo each generate revenue above 55¢/bu. The average revenue across all crops was 55.8¢/bu.

Averaged across the crops, and adjusted to hauling 100% of the crop if something other than 100% had been hauled by the harvester, trucking revenue made up 24.9% (2000 22.9%, 1999 28.1%, 1998 24.6%) of total harvesting revenue. At 37%, the trucking part was highest for corn – which should not be too surprising given that corn is a relatively high-yielding crop. Most harvested grain is also hauled away from the fields by the harvesters. Across all member reports, the average percent of harvested grain hauled by the harvester was 87.4% (2000 90.7%, 1999 90.3%, 1998 91.7%).

Where hauling destination percent was indicated, among all bushels of all crops, 19.4% (2000 28.1%, 1999 24.0%, 1998 23.7%) of hauled grain was hauled to the farm. Thus, most of the grain was likely hauled to commercial elevators instead. When destination of hauling was segregated by crop, barley, canola/flax/crambe, and oats involved the greatest portions hauled to the farm. When segregated by state, northern states typically have greater portions hauled to the farm than do states such as Kansas and Oklahoma. That seems reasonable in that northern states rely more on on-farm storage than do states closer to export terminals (75% of grain storage capacity in ND is on-farm versus 33% in KS).

It should be noted that some crops and some states did not involve many harvesters. Thus, the observed "hauled to farm" percentages may merely be due to particular customer traits rather than to reliable generalizations.

Members vary substantially in the crops they choose to harvest. The percent of harvested acres that are small grains is one indication of that choice. Although, on average, members harvest 68.3% (2000 72.9%, 1999 69.9%, 1998 73.1%) small grains, for 1 firm, more than half of the acres harvested involve crops that tend to be fall crops (not small grains), while 3 firms harvest over 80% small grains.

General Financial Information

For the most part, financial information was taken from the Cash Flow Page and Balance Sheet, but asset values on equipment pages were used as well. Expense categories that could be meaningfully extracted include labor (paid and unpaid), travel, fuel and lubrication, repair and maintenance, insurance, telephone and utilities, other expenses, and market depreciation.

In 2000 and 2001, the value of unpaid labor was much better reported than in previous years. A few follow-up phone calls rounded out that series so that, as in 2000, no analyst judgement calls were required for that category. Clearly, the economic concept that operator labor, even when not directly compensated by salary, has an opportunity cost is much better understood than at CHAMP's onset.

Interest and Depreciation

In an economic analysis, interest and depreciation demand special treatment and explanation. Even if a firm operates with zero debt there is an opportunity cost on investment capital. After all, the money tied up in such a firm's assets could be invested elsewhere. Further, there is little reason to believe that the opportunity cost-of-money rate for a zero-debt firm is any higher or lower than the interest charged against actual loans for borrowers. Thus, we used an imputed investment interest expense equal to 7.66% (2000 9.32%, 1999 8.94%) of the value of all custom harvesting assets. This was the average interest rate reported by members. As in 1998-2000, we did not impute an interest charge on operating expenses because it seems reasonable that harvesting revenue generally comes in regularly during the harvest season – implying that expenses are likely paid from revenue as they are incurred.

For depreciable assets, economic (or market) depreciation is the loss in value over time due to usage. Although not a cash expense, depreciation is a true cost because it reflects a loss in net worth. However, economic depreciation is often much less than tax depreciation. For example, based on 1997 responses providing market and tax basis (book) machinery values, the typical market to book ratio was 2.2 (would be 1.0 if economic and tax depreciation were equal).

For this analysis, annual market depreciation was taken to be the change in combine, platforms, and supporting equipment values from the appropriate pages of the survey. For each equipment item, the end-of-year value (or when it was sold or traded) was subtracted from the beginning-of-year (or when purchased) value to derive its depreciation value. Significant value-enhancing improvements (such as adding a rear-wheel drive to a combine) were treated as purchases

to an existing combine.

Total Expense Calculation

Total expense was calculated as:

Labor (paid and unpaid)
+ travel
+ fuel and lubrication
+ repair and maintenance
+ insurance (includes workmen's comp)
+ telephone and utilities
+ other expenses
+ market depreciation
+ interest on assets (assigned)
= Total Expense

Revenue and Operating Profit

Except for arithmetic and data entry errors, revenue is the straightforward sum of reported combine and trucking revenue from the Revenue Page and other revenue from the Cash Flow Page. Total Operating Profit is then defined as revenue less total expense. It should be noted that this is economic profit and it is expected to be zero, on average, in the long run. That is, a return to all assets (7.66%) has already been assigned. Thus, profit is the return above "all costs plus the 7.66% return on assets."

To enhance understanding, various financial measures can be divided by the number of combines operated, the number of acres harvested, or the number of separator hours tallied. This provides important comparison values for an individual member. Departures from survey averages can show a firm where it's management may be weak (if categorical costs are substantially higher than survey averages) as well as areas where it may have a comparative advantage.

Financial Ratios

Financial ratios can provide useful measures for comparing a member's financial situation with that of the group. Financial ratios rely mostly on information taken from the balance sheet, which is a statement of assets and liabilities for the business.

The debt-to-asset (D/A) ratio is a straightforward calculation of total liabilities divided by total assets. It is a poor indicator of profitability but a good indicator of risk. That is, profitable firms can increase net worth rapidly with the higher leverage implied by a high D/A. However, firms with high D/A may not be able to withstand prolonged periods of losses.

Return on assets (ROA) is calculated as {profit + interest} divided by some measure of total assets. The interest that is added back in the numerator of ROA is the amount that had been assigned in the first place, which was 7.66% times average value of assets. Interest is added back to profits because it is a return to invested capital – whether that investment is made by the equity holder or the lender. Because of adding back interest, ROA can be used to compare firms with different debt loads. Here, the assets are average annual assets, including asset value information during the year (from the Combine, Platform, and Non-combine Pages). That is, formulas were developed to properly handle equipment owned only part of the year.

Return on equity from the income statement (ROE – IS) is calculated as {profit + interest on equity, not on total assets} divided by some measure of equity or net worth, usually beginning equity and sometimes average equity (here, we use average equity because that is

what we work with for imputing interest). Only interest on equity is added back to our measure of profit – which had considered interest on all assets – because interest actually has to be paid on borrowed capital. As used here, the measure of equity or net worth is the average of beginning and ending custom harvesting net worth, taken from the Balance Sheet Page.

Return on equity can also be calculated from the balance sheet (ROE – BS), as the change in harvesting equity over the year divided by some measure of harvesting equity or net worth, usually beginning equity. Because, ignoring income taxes, the change in equity should equal the {profit + interest on equity} measure used in computing ROE – IS, the two ROE measures should be approximately equal (also unless different denominators are used across the two ROE measures, whereupon small differences might be expected).

As used here, the change in equity over the year required in ROE – BS calculations would normally be taken as the change in custom harvesting net worth from the Balance Sheet Page. However, it is not unusual to find that a portion of expenses are often ignored or unaccounted for, making the {profit + interest on equity} measure used in ROE – IS greater than the {change in harvesting equity over the year} measure intended for ROE – BS, ultimately causing ROE – IS to overstate actual ROE. Second, a portion of profits may actually be taken out of the harvesting business, causing the {change in *harvesting* equity over the year} to be less than the {profit + interest on equity} measure used in ROE – IS, ultimately causing ROE – BS, thus measured, to understate actual ROE. Without largely ad hoc adjustments, the first problem is difficult to deal with. However, we at least partially dealt with the latter problem by using {change in *overall* equity} from the Balance Sheet Page as the numerator in our ROE – BS measure, and {beginning *overall* equity} from the Balance Sheet Page as the denominator in ROE – BS (where outside business equity was not reported we used only harvesting equity).

One measure of financial efficiency is the expense ratio (ER), which is simply calculated as expenses divided by revenue. It shows the expense required to generate each dollar of revenue.

Individual Firm Report

Attached to this report is an example of the type of report provided to each CHAMP member. The example firm (Happy Harvester) has less total assets per combine operated than the average CHAMP member ($253,000 vs. $264,118), and commensurately lower depreciation. Additionally, its repair and maintenance cost per combine was much lower than that of the average member ($5,850 vs. $14,557), ultimately helping the firm have a much larger profit per combine than the average member ($8,126 vs. $1,361). At 4,833 acres harvested and 474 separator hours per combine, this firm covers less ground in less time than the average member, which had 5,821 acres and 551 hours per combine. Also, at 10.20 acres per hour, it was less efficient by that measure than the average firm at 10.68. Overall, at $1.68/acre, this firm had higher than average profit, which was -$0.27/acre.

The higher profit earned by the example firm is reflected in the Return on Assets and Return on Equity measures, which are each somewhat higher than the same measures for the average member.

On average, members have $112,411 invested

in each combine they operate, $27,167 in additional platforms, and $97,367 in supporting equipment for each combine they operate. On average, supporting equipment is valued at 67.8% of the combined value of combines and platforms, or 39.5% of all equipment.

A number of graphs or figures that show member distributions of various revenue, cost, and/or profit categories are attached to this report. Most show substantial variability among firms. Given the distributions, it is easy to see why some firms might make large profits while others lose ground financially.

The average profit per acre was -$0.27 in 2001. This compares with -$2.11 in 2000, -$1.51 in 1999, $1.63 in 1998, and -$0.30 in 1997. A five year average per acre profit of -$0.51 is implied by these values. In the long run, the average is expected to be $0, implying either a relatively bad group of 5 years for harvesters, or perhaps that the custom harvesting industry is still downsizing in an attempt to match up supply of custom harvesting with demand for it.

It is important to note that small differences in annual averages tend to reflect large differences in how particular years were perceived by harvesters. For example, 1999 (-$1.51) and 2000 (-$2.11) were perceived to be quite tough years for many harvesters, whereas 1998 ($1.63) was perceived to be a very good year for many harvesters.

A number of cost categories saw substantial decreases in 2001 over 2000. For example, fuel and lubrication ($1.41/hour drop), market depreciation ($2.48 drop), and interest ($2.27). On the other hand, repairs and maintenance went up by $3.29/hour. Fortunately, at At $238.60, total costs per hour were lower in 2001 than they were in 2000 ($241.24). A $0.66/acre increase in revenue brightened the situation even more.

Overall, 2001 will probably go down as a reasonable year, and certainly better than the two years preceding it. Following two "bad" years, which had eroded harvesters' equity and thus increased their debt-to-assets ratios to 45.1% in 2000, the return to normalcy in 2001 saw debt-to-assets ratios decline to 42.1%.

Other Analyses

A tradeoff between repairs & maintenance and market depreciation would be expected among harvesters. That is, firms that run older lower-valued combines, leading to lower depreciation, would be expected to have higher repairs & maintenance. Indeed, harvesters appeared to be running older machines in 2001 compared to 2000, resulting in lower depreciation but higher repairs. On the other hand, comparing repair & maintenance per separator hour with depreciation per separator hour across firms, we find a near-0 linear correlation of 0.09, implying little relationship between the two measures. In earlier years, this relationship was more distinct and somewhat closer to what was expected (2000 -0.31, 1999 -0.12, 1998 -0.41). Of course, if firms tend to be consistently high or low-cost operators across several cost categories, then finding a positive correlation should not be that unusual.

Another notable relationship is that between cost per acre and profit per acre, which displays a correlation of -0.79 (2000 -0.76, 1999 -0.69, 1998 -0.55). Clearly, lower costs lead to higher profits in a competitive business such as custom harvesting. However, at a given cost per acre, profit per acre still varies as much as $7, indicating that revenue must

vary. The graph of revenue vs. cost per acre shows that firms charging higher custom rates likely do so because they have higher costs. That is, they probably are harvesting crops that cost more to harvest. More importantly, revenue varies far less than cost, which suggests firms may be able to do much more about their costs. That is, revenue is probably more market determined, whereas costs are determined more by firm management.

Another relationships of note is the positive relationship (correlation is 0.49 and was 0.30 in 2000) between profit and intensity of combine use (acres/combine). Another relationship that had been found to be interesting in previous years was that between small grains harvesting and profitability. In prior years, this relationship had been substantially negative or positive. In 2001, that correlation was only -0.04. Might it be that, with more experience harvesting fall crops, harvesters are gradually adjusting their related custom charges to better reflect their costs associated with those crops?

Summary

Following the two "bad" years of 1999 and 2000, 2001 appeared to be a return to normalcy for CHAMP members. However, as always, there was considerable variability in the profitability of harvesters and plenty of places where firms might improve their operations. As in 2000, CHAMP members are displaying an increased willingness to consider innovative ways to enhance profitability – especially regarding machinery efficiency. For example, in 2001, 5 of 20 (4 of 22 in 2000) members rented combine(s) out to other individuals. On average, each of these 4 firms collected rent on 396 separator hours of combine time.

Much of the opportunity for individual firms to increase profitability is in the area of cost control. However, to reduce costs it is imperative to know what the strengths and weaknesses of each business are so that management focuses in the right areas.

Participants in the CHAMP program receive information comparing their individual cost categories with the average of others. This helps them identify their comparative advantages. Based on the members that participated in the CHAMP program in multiple years, harvesters' understanding of the economic principles of their businesses has improved through filling out the forms. This increased understanding can improve management efforts, which ultimately will make the individual harvester more competitive and profitable in the future.

Questions about the CHAMP program may be directed to:

Terry Kastens or Kevin Dhuyvetter
Department of Agricultural Economics
Kansas State University
Manhattan, KS 66506
(785) 532-5866, Kastens
(785) 532-3527, Dhuyvetter
tkastens@aganalysisplus.com
kdhuyvet@aganalysisplus.com

Custom Harvester Analysis and Management Program (CHAMP)
2001 Harvest Year
Individual Firm Report

Happy Harvesters Inc.
Box 999
Wheat Country, KS 99999

	Firm Value	Survey Average Value	Firm Value per Combine	Survey Avg. of Value per Combine	Firm Value per per Acre	Survey Avg. of Value per per Acre	Firm Value per per Hour	Survey Avg. of Value per per Hour
Number of Machines Operated	3.0	3.32	-----	-----	-----	-----	-----	-----
Value of Combines	$340,000	$369,200	$113,333	$112,411	$23.45	$20.80	$239.27	$227.20
Value of Platforms	$64,000	$95,266	$21,333	$27,167	$4.41	$4.44	$45.04	$48.23
Value of Other Equipment	$245,000	$324,099	$81,667	$97,367	$16.90	$16.78	$172.41	$183.34
Value of Other Assets	$110,000	$98,846	$36,667	$27,174	$7.59	$4.52	$77.41	$50.19
Total Assets	$759,000	$887,410	$253,000	$264,118	$52.34	$46.53	$534.13	$508.97
Total Acres Harvested	14,500	20,146	4,833	5,821	1.0	1.0	10.20	10.68
Small Grains Percent	63.0	68.3	-----	-----	-----	-----	-----	-----
Total Fields Harvested	248	180	82.7	57.9	58.5	111.9	-----	-----
Total Separator Hours in 2001	1,421	1,881	474	551	0.098	0.096	1.0	1.0
INCOME AND EXPENSE								
Combine &Truck Revenue	$330,150	$428,696	-----	-----	-----	-----	-----	-----
Other Revenue	$500	$18,435	-----	-----	-----	-----	-----	-----
Total Revenue	$330,650	$447,131	$110,217	$130,027	$22.80	$22.04	$232.69	$236.32
Labor (paid and unpaid)	$77,500	$92,997	$25,833	$26,884	$5.34	$4.69	$54.54	$49.75
Travel	$13,000	$19,994	$4,333	$6,019	$0.90	$1.06	$9.15	$11.08
Fuel and Lubrication	$35,780	$52,018	$11,927	$15,392	$2.47	$2.61	$25.18	$27.98
Repair and Maintenance	$17,550	$46,482	$5,850	$14,557	$1.21	$2.48	$12.35	$26.22
Insurance	$22,340	$20,759	$7,447	$6,426	$1.54	$1.15	$15.72	$12.32
Telephone and Utilities	$3,890	$8,808	$1,297	$2,532	$0.27	$0.41	$2.74	$4.41
Other Expenses	$16,750	$35,251	$5,583	$9,827	$1.16	$1.66	$11.79	$17.75
Market Depreciation	$61,300	$92,574	$20,433	$26,789	$4.23	$4.68	$43.14	$50.08
Interest on Assets (assigned)	$58,163	$68,004	$19,388	$20,240	$4.01	$3.57	$40.93	$39.00
Total Expense	$306,273	$436,887	$102,091	$128,666	$21.12	$22.31	$215.53	$238.60
Total Operating Profit	$24,377	$10,244	$8,126	$1,361	$1.68	($0.27)	$17.15	($2.27)

Debt-to-Asset Ratio (end of year)	45.0%	42.1%	
Return on Assets	10.9%	7.7%	
Return on Equity (based on IS)	13.5%	7.9%	<=== Calculated as the operating profit + interest charged on equity divided by average equity.
Return on Equity (based on BS)	8.7%	4.8%	<=== Calculated as the change in balance sheet equity divided by the beginning of year equity.
Expense/$100 Revenue	$92.63	$101.17	

* Value used per acre for Total Fields Harvested represents the average field size in acres.

Note: Some reported values were modified from those reported on the survey due to arithmetic and other data entry errors.

BALANCE SHEETS PAGE (schedule D)

Balance sheet for custom harvesting business only, 2001 (read the footnotes)

Happy Harvesters Inc.
Box 999
Wheat Country, KS 99999

JOHN DEERE

ASSETS (market value)	beginning 01/01/01	end 12/31/01
Current Assets	$	$
Cash on hand & in checking	7,500	4,600
Savings, bonds, stocks, etc.	12,000	14,300
Accounts receivable	2,300	2,800
Supply inventories	5,000	3,600
Other current assets (specify)	0	0
D1. TOTAL CURRENT ASSETS	26,800	25,300
Non-current Assets		
Combines (from A1, A2)	382,500	325,125
Non-combine equipment (from B1, B2)	336,000	309,120
Market value of business real estate (i.e., office, storage bldgs., etc.)	40,000	40,000
D2. TOTAL NON-CURRENT ASSETS	758,500	674,245
D3. TOTAL CUST. HARV. ASSETS (D1+D2)	785,300	699,545

LIABILITIES & OWNER EQUITY	beginning 01/01/01	end 12/31/01
Current Liabilities	$	$
Accounts payable	3,000	1,200
Short term loans (due within 1 yr.)		
principal outstanding	18,000	15,300
accrued interest	533	453
Other current liabilities (specify)	0	0
D4. TOTAL CURRENT LIABILITIES	21,533	16,953
Non-current Liabilities		
Long term loans (due beyond 1 yr.)		
principal outstanding	362,150	288,360
accrued interest	4,018	3,200
Other non-current liabilities (specify)	0	0
D5. TOTAL NON-CURRENT LIABILITIES	366,168	291,560
D6. TOTAL CUST. HARV. LIABILITIES (D4+D5)	387,701	308,512
D7. TOTAL CUST. HARV. NET WORTH (D3-D6)	397,599	391,033
Change in equity =====>		(6,566)

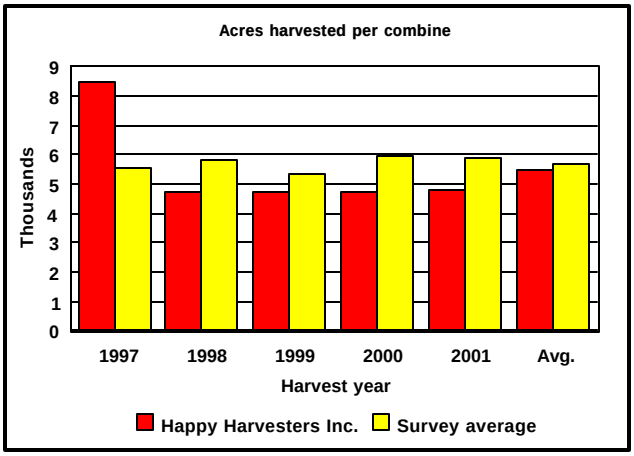
TOTAL EQUITY (custom harvesting and outside businesses)

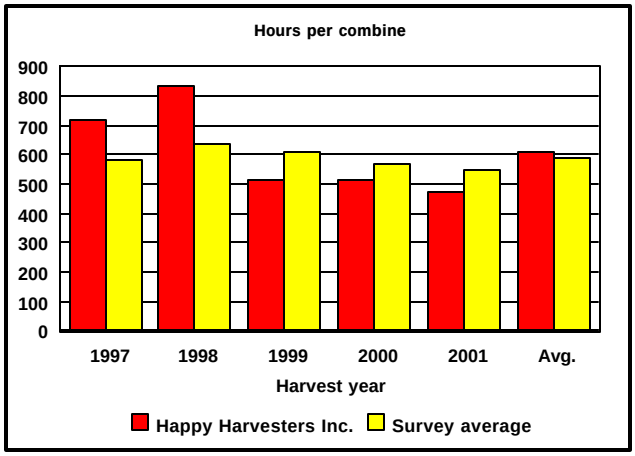
		01/01/01	12/31/01
Investments in other businesses (such as a farm) and non-business investments (such as your residence). Report only the NET investment, which is assets less liabilities (net worth), for these investments:	D8.	120,000	130,000
Overall equity or net worth for whole business (D7+D8)	D9.	517,599	521,033
Change in equity =====>			3,434

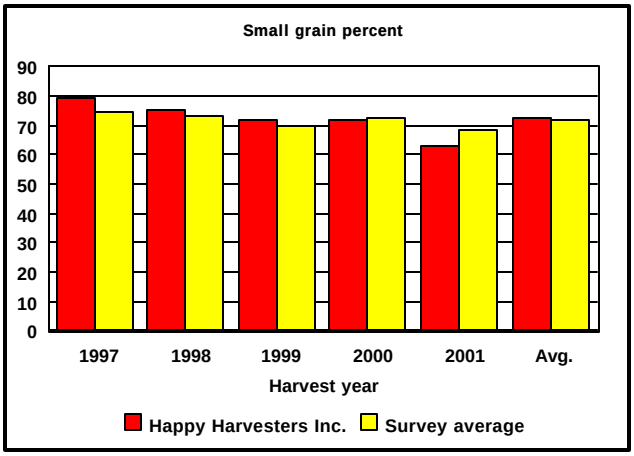
In balance sheet above, except for D8 and D9, values are those assigned to ONLY the CUSTOM HARVESTING BUSINESS. If you run multiple businesses within your overall business, without tracking assets and liabilities accordingly, you will need to prorate proper values to the custom harvesting business. All values are market values, not income tax basis values.

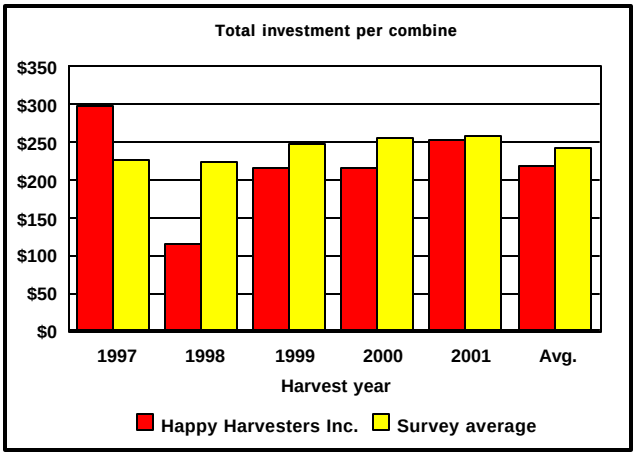
AgAnalysis+
www.aganalysisplus.com

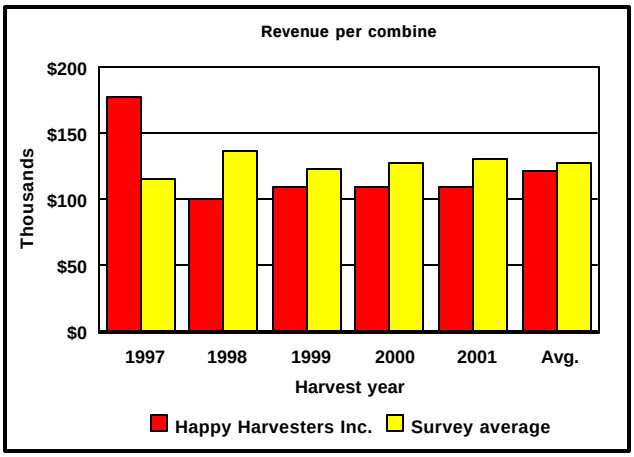
Historical Trends of Key Variables -- Individual harvester vs survey average

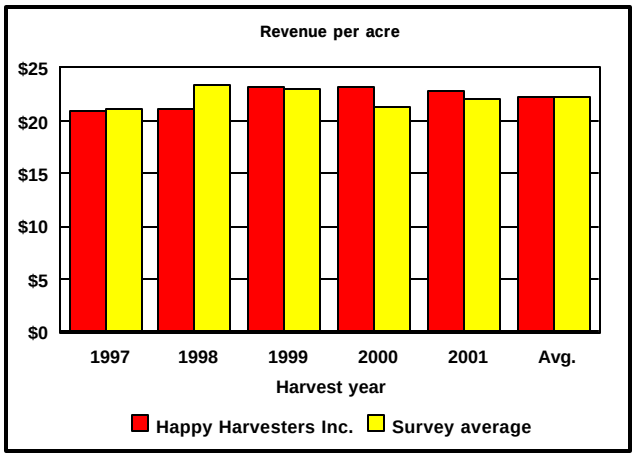


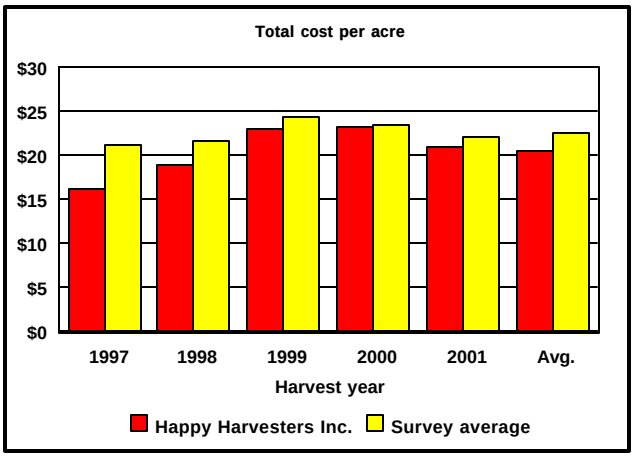


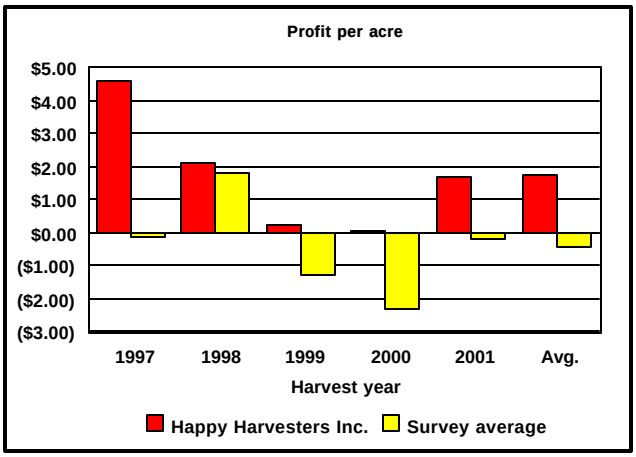












2001 Harvest Year Report for USCHI's Custom Harvester Analysis and Management Program (CHAMP)

Kevin Dhuyvetter and Terry Kastens
Agricultural Economists
AgAnalysis+ and
Kansas State University

email: kdhuyvet@aganalysisplus.com
tkastens@aganalysisplus.com

CHAMP: Over the years . . .

- Participation 97-01: 43, 25, 25, 23, 20
- Repeat members
  - 18 of 20 2001 members were in in 2000
  - 13 members have participated all 5 years
- Improved quality of returned surveys
  - Learning curve associated with filling out forms
  - Better understanding of economic principles

Custom Harvester Analysis and Management Program (CHAMP)
2001 Harvest Year
Individual Firm Report

HappyHarvestersInc.
Box 999
Wheat Country, KS 99999

	Firm Value	Survey Average Value	Firm Value per Combine	Survey Avg. Value per Combine	Firm Value per Acre	Survey Avg. Value per Acre	Firm Value per Hour	Survey Avg. Value per Hour
Number of Machines Operated	3.0	3.52	-----	-----	-----	-----	-----	-----
Value of Combines	$340,000	$369,200	$113,333	$112,411	$23.45	$20.80	$239.27	$227.20
Value of Platforms	$64,000	$95,266	$21,333	$27,167	$4.41	$4.44	$45.04	$48.23
Value of Other Equipment	$245,000	$324,099	$81,667	$97,367	$16.90	$16.78	$172.41	$183.34
Value of Other Assets	$110,000	$98,846	$36,667	$27,174	$7.59	$4.52	$77.41	$50.19
Total Assets	$759,000	$887,410	$253,000	$264,118	$52.34	$46.53	$534.13	$508.97
Total Acres Harvested	14,500	20,146	4,833	5,821	1.0	1.0	10.20	1088
Small Grains Percent	63.0	68.3	-----	-----	-----	-----	-----	-----
Total Fields Harvested	248	180	82.7	57.9	58.5	111.9	-----	-----
Total Separator Hours in 2001	1,421	1,881	474	551	0.098	0.096	1.0	1.0
INCOME AND EXPENSE								
Combine &Truck Revenue	$330,150	$428,696	-----	-----	-----	-----	-----	-----
Other Revenue	$500	$18,435	-----	-----	-----	-----	-----	-----
Total Revenue	$330,650	$447,131	$110,217	$130,027	$22.80	$22.04	$232.69	$236.32
Labor (paid and unpaid)	$77,500	$92,997	$25,833	$26,884	$5.34	$4.69	$54.54	$49.75
Travel	$13,000	$19,994	$4,333	$6,019	$0.90	$1.06	$9.15	$11.08
Fuel and Lubrication	$35,780	$52,018	$11,927	$15,392	$2.47	$2.61	$25.18	$27.98
Repair and Maintenance	$17,550	$46,482	$5,850	$14,557	$1.21	$2.48	$12.35	$26.22
Insurance	$22,340	$20,759	$7,447	$6,426	$1.54	$1.15	$15.72	$12.32
Telephone and Utilities	$1,890	$8,808	$1,297	$2,532	$0.27	$0.41	$2.74	$4.61
Other Expenses	$16,750	$35,251	$5,583	$9,827	$1.16	$1.66	$11.79	$17.75
Market Depreciation	$61,300	$92,574	$20,433	$26,789	$4.23	$4.68	$43.14	$50.08
Interest on Assets (assigned)	$58,163	$68,004	$19,388	$20,240	$4.01	$3.57	$40.93	$39.00
Total Expense	$306,273	$436,887	$102,091	$128,666	$21.12	$22.31	$215.53	$238.60
Total Operating Profit	$24,377	$10,244	$8,126	$1,361	$1.68	($0.27)	$17.15	($2.27)
Debt-to-Asset Ratio (end of year)	45.8%	42.1%						
Return on Assets	10.9%	7.7%						
Return on Equity (based on 1S)	13.5%	7.9%	<=== Calculated as the operating profit + interest charged on equity divided by average equity.					
Return on Equity (based on BS)	8.7%	4.8%	<=== Calculated as the change in balance sheet equity divided by the beginning of year equity.					
Expense/$100 Revenue	$92.63	$101.17						

* Value used per acre for Total Fields Harvested represents the average field size in acres.

Note: Some reported values were modified from those reported on the survey due to arithmetic and other data entry errors.

BALANCE SHEETS PAGE (schedule D)

HappyHarvestersInc.
Box 999
Wheat Country, KS 99999

Balance sheet for custom harvesting business only, 2001 (read the footnotes)

ASSETS (market value)	beginning 01/01/01 $	end 12/31/01 $
Current Assets		
Cash on hand & in checking	7,500	4,488
Savings, bonds, stocks, etc.	12,000	14,300
Accounts receivable	2,500	2,800
Supply inventories	5,000	3,600
Other current assets (specify)	0	0
D1. TOTAL CURRENT ASSETS	26,800	25,300
Non-current Assets		
Combines (from A1, A2)	382,500	325,125
Non-combine equipment (from B1, B2)	336,000	309,120
Market value of business real estate (i.e., office, storage bldgs., etc.)	40,000	40,000
D2. TOTAL NON-CURRENT ASSETS	758,500	674,245
D3. TOTAL CUST. HARV. ASSETS (D1+D2)	785,300	699,545

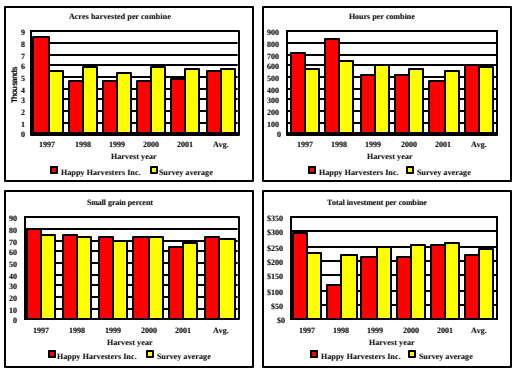
LIABILITIES & OWNER EQUITY		beginning 01/01/01 $	end 12/31/01 $
Current Liabilities			
Accounts payable		3,000	1,200
Short term loans (due within 1 yr.)	principal outstanding	18,000	15,300
	accrued interest	533	453
Other current liabilities (specify)		0	0
D4. TOTAL CURRENT LIABILITIES		21,533	16,953
Non-current Liabilities			
Long term loans (due beyond 1 yr.)	principal outstanding	392,150	288,360
	accrued interest	4,018	3,200
Other non-current liabilities (specify)		0	0
D5. TOTAL NON-CURRENT LIABILITIES		396,168	291,560
D6. TOTAL CUST. HARV. LIABILITIES (D4+D5)		417,701	308,512
D7. TOTAL CUST. HARV. NET WORTH (D3-D6)		367,599	391,033
	Change in equity =====>		48,5661

TOTAL EQUITY (custom harvesting and outside businesses)

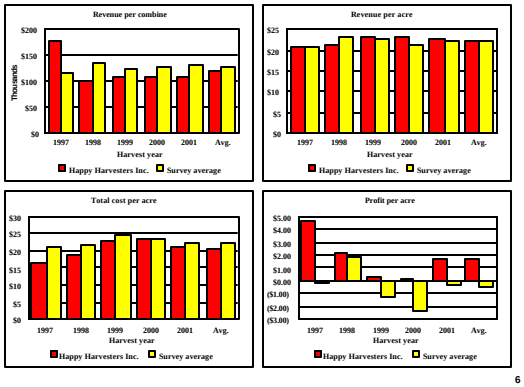
	01/01/01	12/31/01
Investments in other businesses (such as a farm) and non-business investments (such as your residence). Report only the NET investment, which is assets less liabilities (net worth), for these investments:		
D8	139,999	139,999
Overall equity or net worth for whole business (D7+D8)		
D9	517,599	531,032
Change in equity =====>		3,434

In balance sheet above, except for D8 and D9, values are those assigned to ONLY the CUSTOM HARVESTING BUSINESS. If you run multiple businesses within your overall business, without tracking assets and liabilities accordingly, you will need to prorate proper values to the custom harvesting business. All values are market values, not income tax basis values.

Historical Trends of Key Variables -- Individual harvester vs survey average



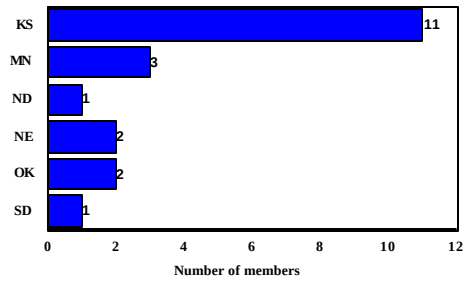
Historical Trends of Key Variables -- Individual harvester vs survey average



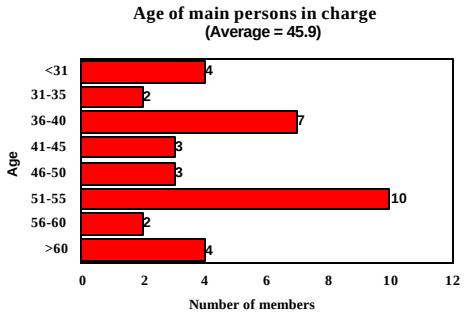
General Information

- Location
- Age of manager
- Business structure
- Years in business
- Age and number of combines
- Relative importance of business
- Housing and meals
- People involved in business
- Number of customers

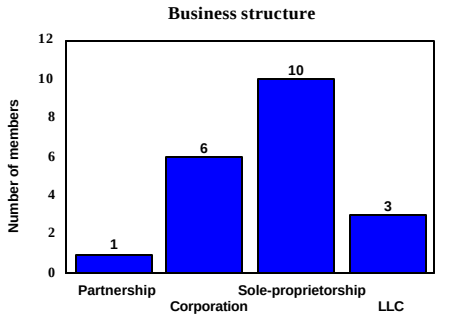
7



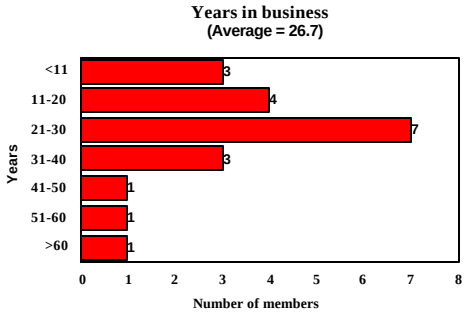
8



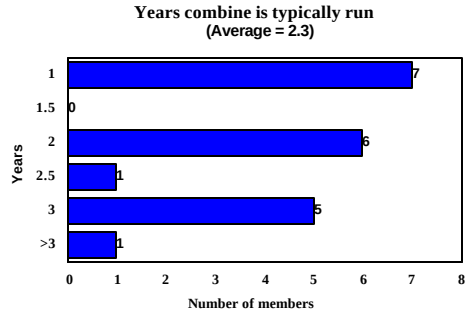
9



10



11



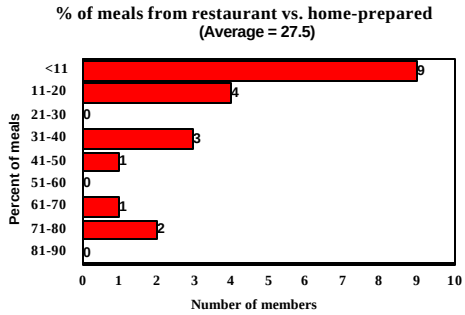
12

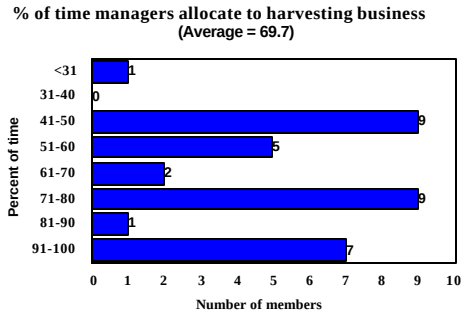
Miscellaneous Information

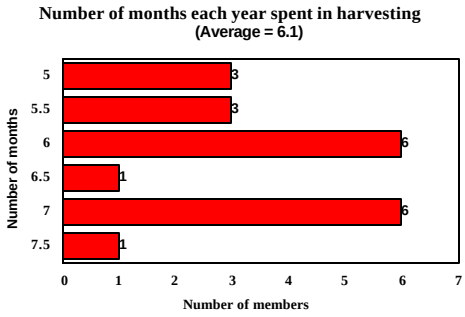
- 9 run new combines
- 10 run used combines
- 1 runs new or used

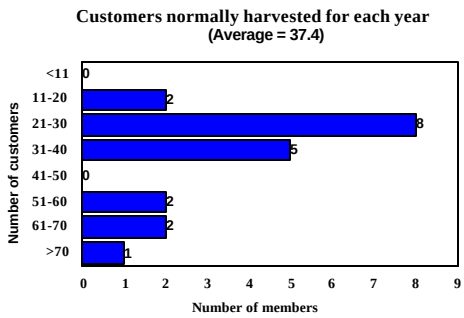
- 13 of 20 had sideline businesses
  - 10 involved in farming/ranching
  - 8 involved in trucking
  - 3 involved in other businesses

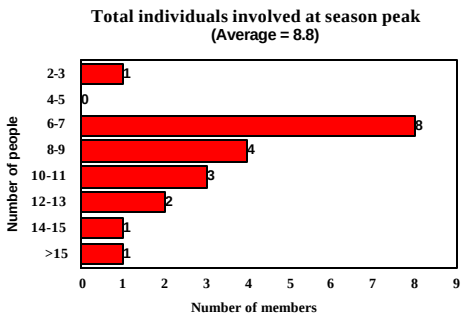
- 95% pull mobile homes (vs. stay in motels)

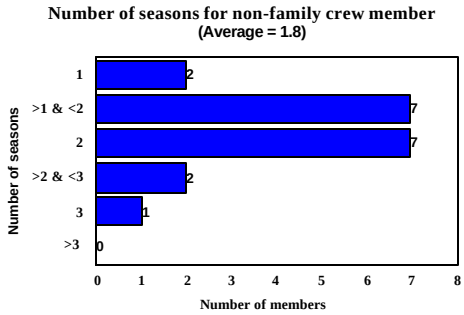










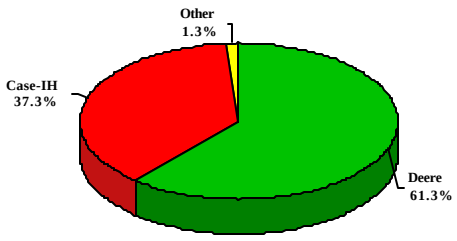


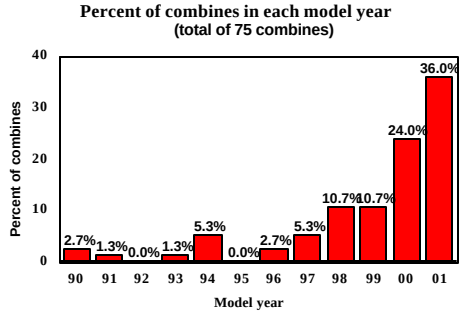
More Miscellaneous Information

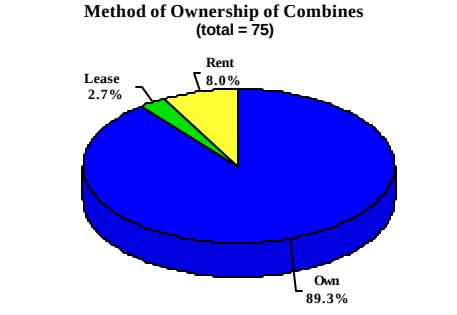
- 12 of 20 split their machines
- 34.6% of season-peak employees are family
- 14 of 20 finance their combines through dealers/manufacturers
- Average interest rate was 7.66% ('00, 9.32%)
  - minimum = 5.0%
  - maximum = 10.5%

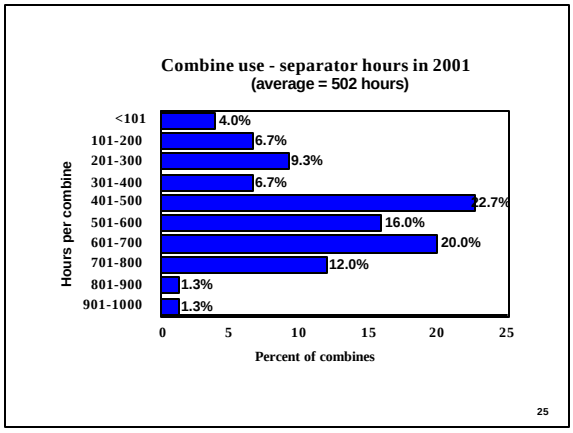
Combine Information

- Brand
- Model year
- Own, lease, or rent
- Headers
- Hours used
- Auxiliary equipment
- Beginning and end-of-season values
- Average depreciation 14.7% (of 67 owned)
  - 2000 = 15.1%; 1999 = 16.1%

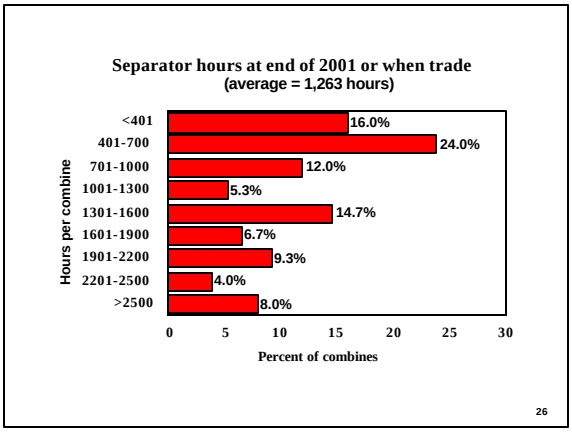




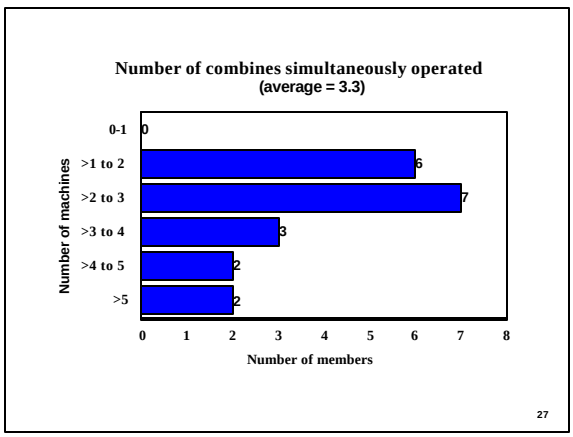




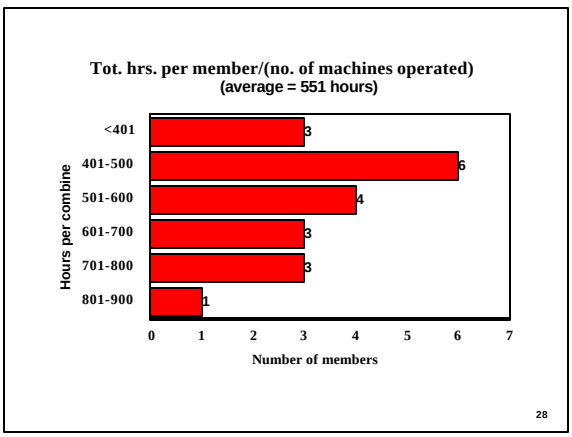
25



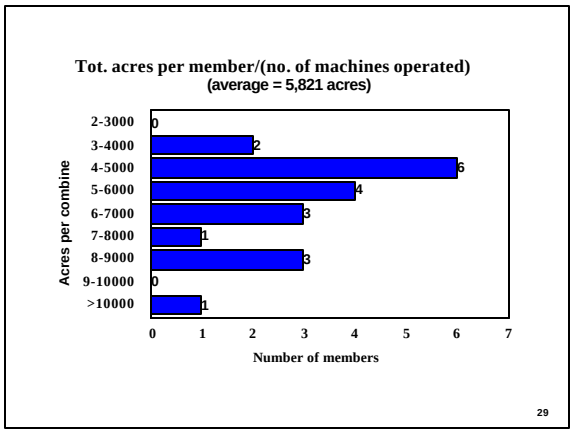
26



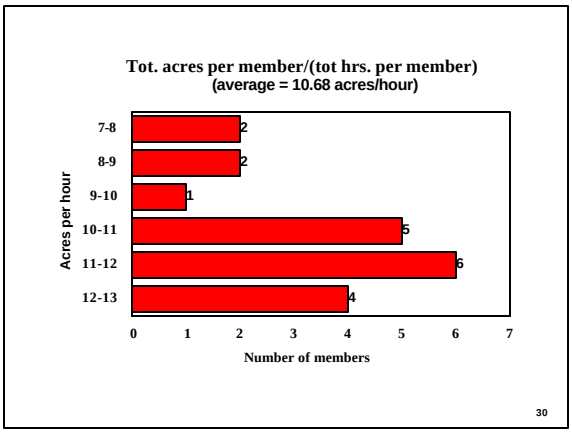
27



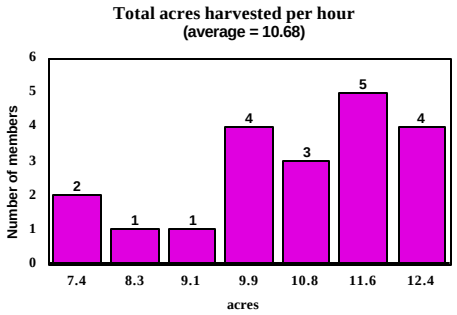
28



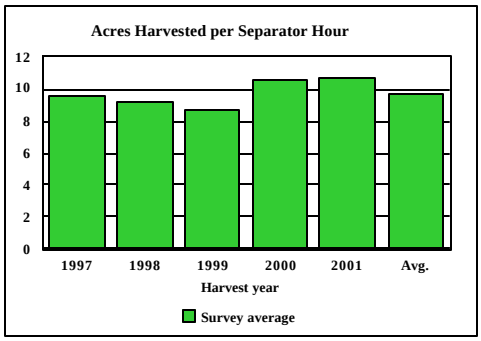
29



30



31



32

Combine Headers & Equipment
(75 combines)

- Flex head 72.0% 28.5 ft.
- Corn head 62.7% 8.7 rows
- Row crop head 20.0% 7.9 rows
- Pickup 56.0%
- Draper/extra pltfrm 6.7% 31.2 ft.
- Average depreciation in 2001 5.1%
  - 2000 7.4%; 1999 9.1%

33

Combine Auxiliary Equipment
(75 combines)

- Chaff spreader 93.3% ('00 84.7%)
- Yield monitor 60.0% ('00 55.3%)
- GPS equipped 37.3% ('00 27.1%)

34

Grain Truck Information (91 total)

- Average year 1989.2 ('00 1989.7)
- % Tandems 46%
- % Semis 54%
- % owned 89%
- Avg mi. in 2001 (73 total) 12,692 ('00 19,589)
- Avg. miles on truck at end of year
  - (51 total): 558,707 ('00 513,162)
- Average depreciation in 2001 11.0%
  - 2000 12.1%; 1999 5.9%

35

Revenue Information

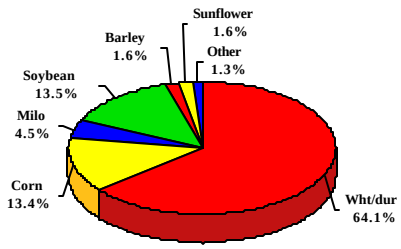
- Acres harvested
- Crops harvested
  - small grains vs. other
- Harvest states
- Number of fields
- Percent hauled to farm
- Combine vs. trucking revenue

36

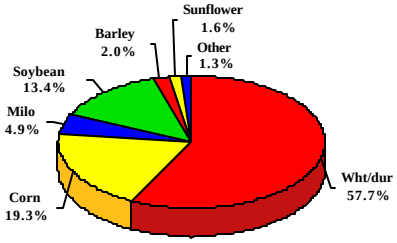
Acreage Information

- **Total – 402,918 acres**
- **Small grains -- 265,413 acres (65.9%)**
  - Wheat, durum, barley, oats, rye
- **Other – 137,505 acres (34.1%)**
  - Corn, soybeans, milo, sunflowers, canola, flax, crambe, peas, pinto beans, other edible beans, alfalfa seed, millet, popcorn, food corn, rice

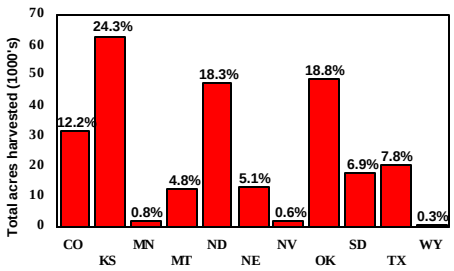
Distribution of acres by crop
(total = 402,918 acres)



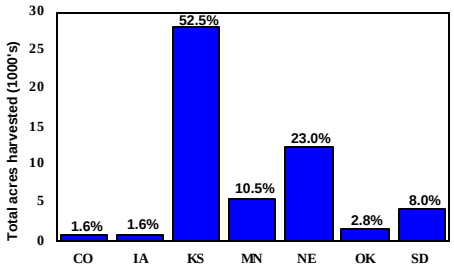
Distribution of revenue by crop
(total revenue = $8,574,577)



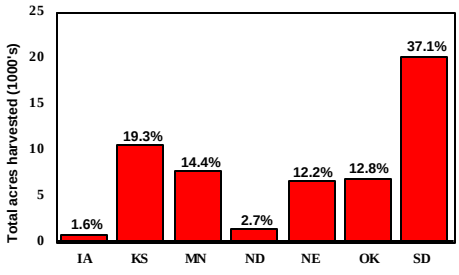
Acres of wheat by state
(total = 258,308 acres)

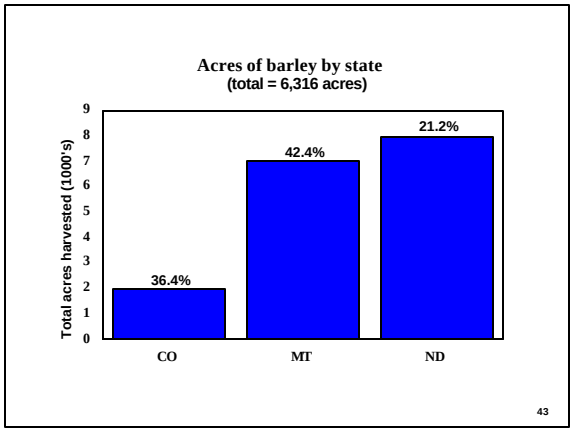


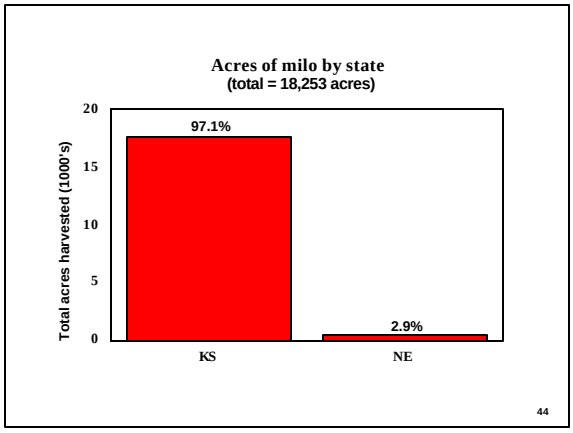
Acres of corn by state
(total = 53,809 acres)

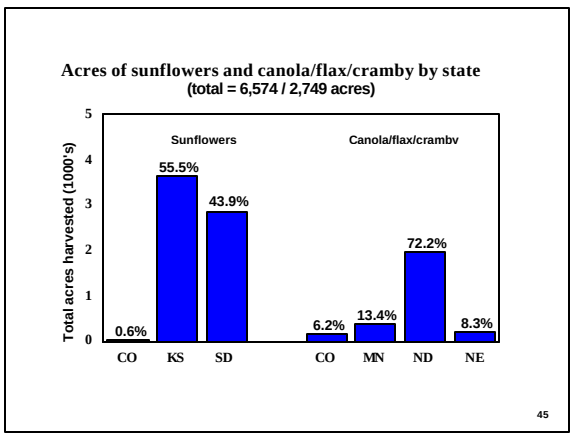


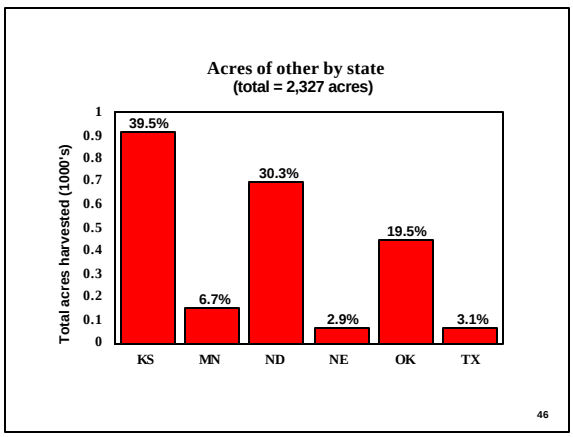
Acres of soybeans by state
(total = 54,584 acres)







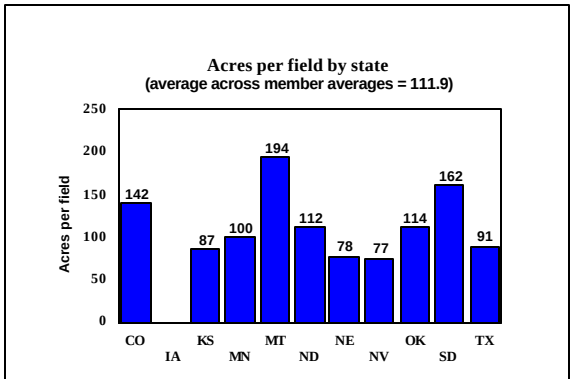


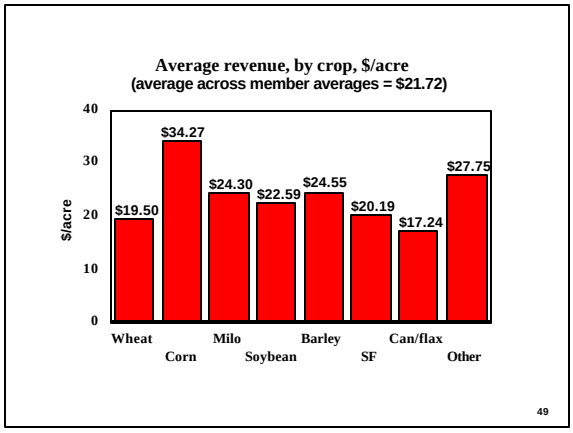


Acres per Field

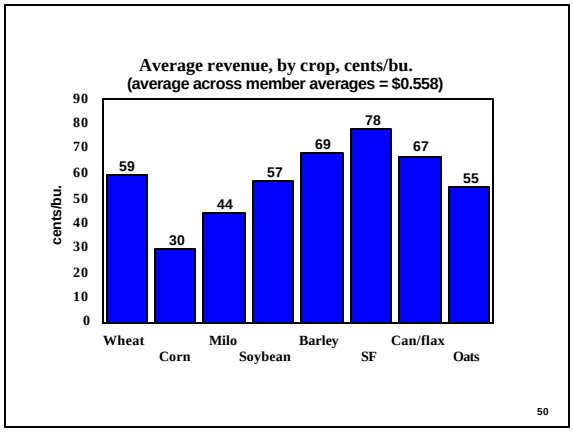
- Wheat 124.0
- Corn 85.7
- Soybeans 87.3
- Barley 102.9
- Milo 82.4
- Sunflowers 103.5
- Canola/flax 84.4
- Other 73.6

- Average across all member reports = 111.9

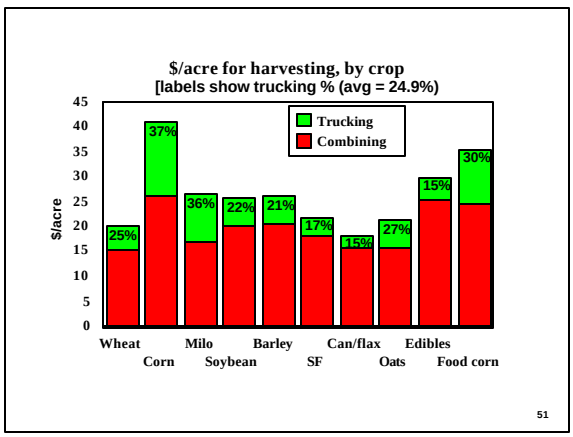




49



50



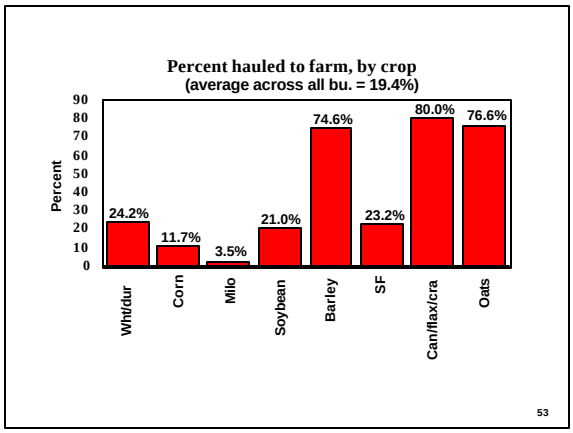
51

Percent of Grain Hauled by Harvester

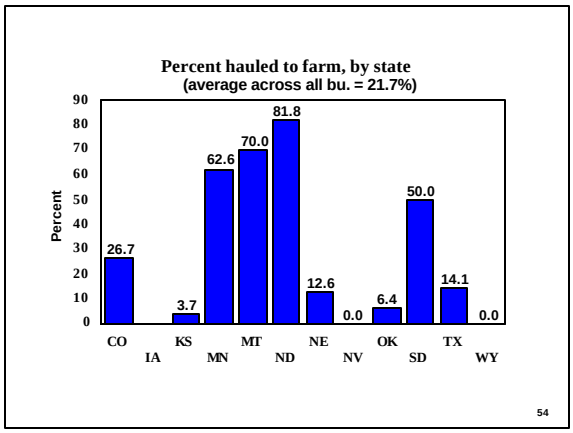
- Wheat 92.8%
- Corn 74.6%
- Soybeans 82.1%
- Barley 87.5%
- Milo 80.0%
- Sunflowers 70.0%
- Canola/flax 65.0%

- Average across all member reports = 87.4%

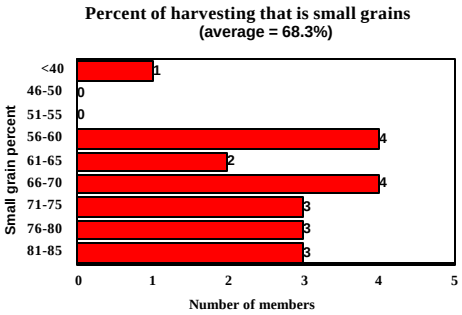
52



53



54

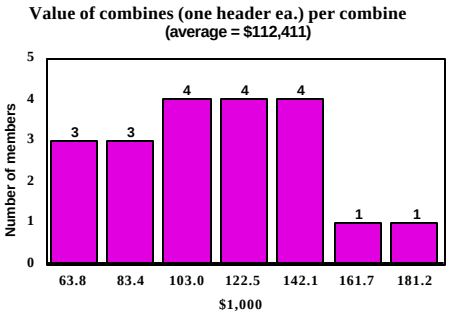


55

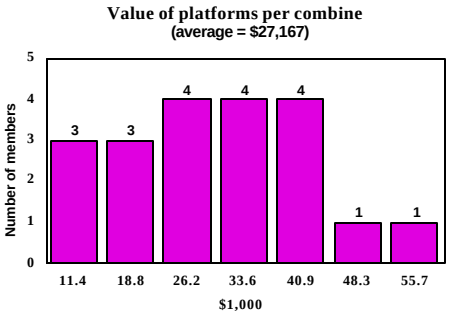
Operating Expense Information

- Labor (paid and unpaid)
- Travel
- Fuel and Lubrication
- Repair and Maintenance
- Insurance
- Telephone and Utilities
- Other Expenses
- Market Depreciation
- Interest on Assets (assigned)

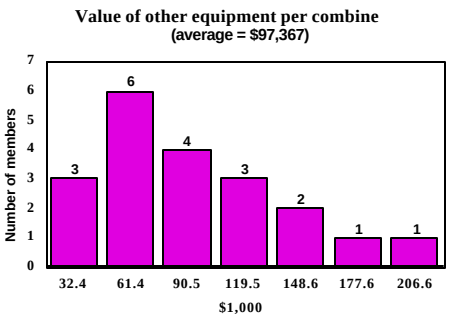
56



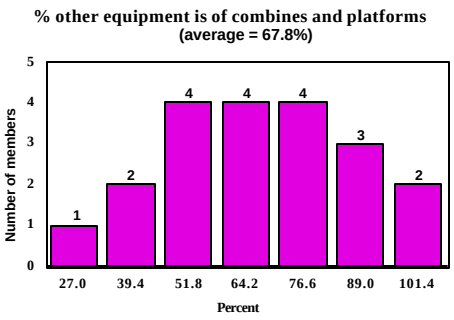
57



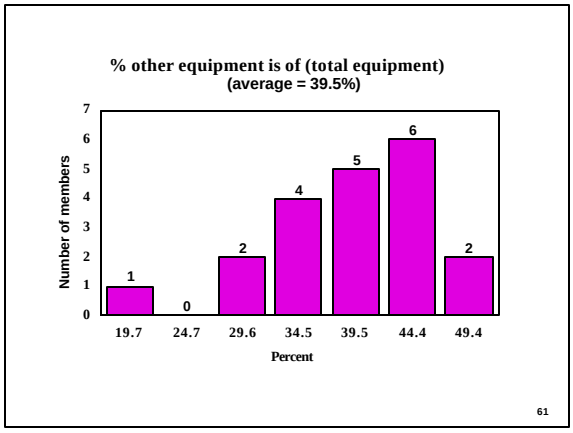
58

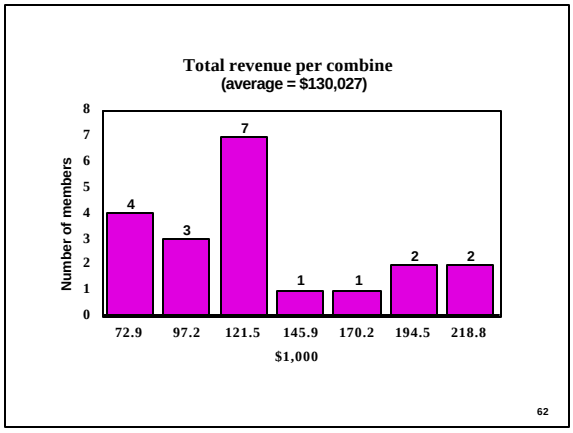


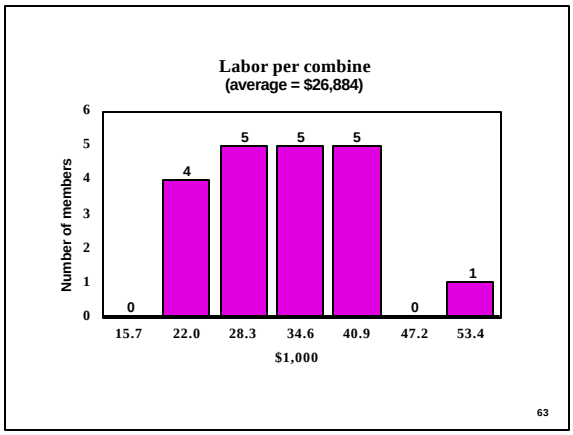
59

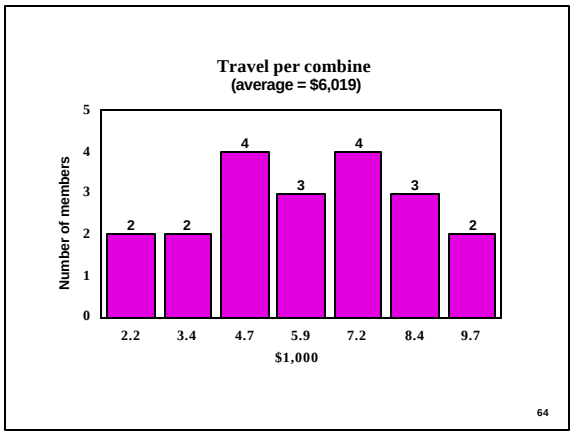


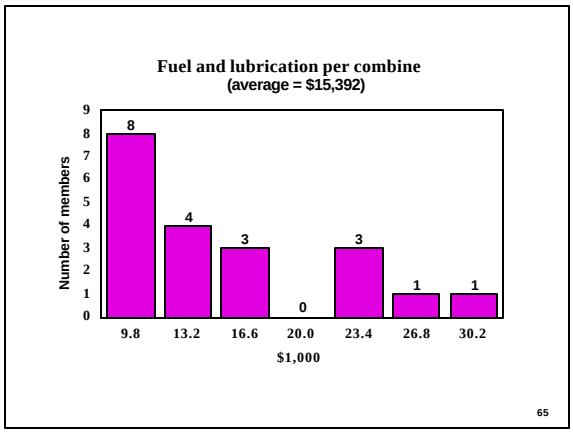
60

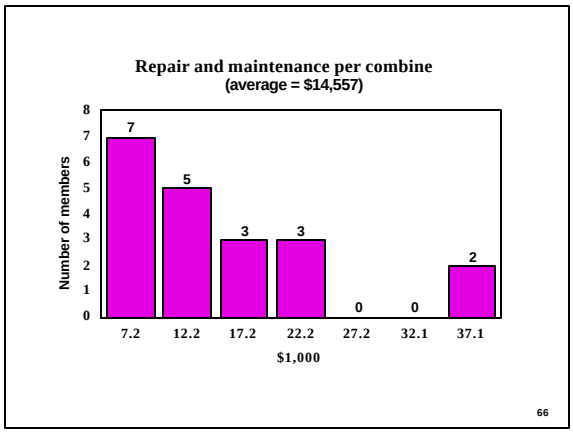

% other equipment is of (total equipment)
(average = 39.5%)
Number of members
0 1 2 3 4 5 6 7
1 0 2 4 5 6 2
19.7 24.7 29.6 34.5 39.5 44.4 49.4
Percent
61

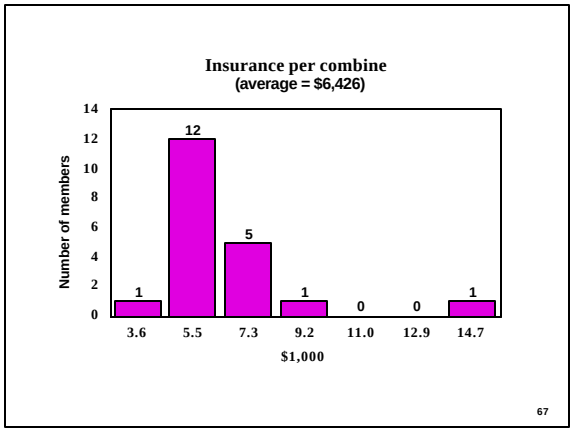

Total revenue per combine
(average = $130,027)
Number of members
0 1 2 3 4 5 6 7 8
4 3 7 1 1 2 2
72.9 97.2 121.5 145.9 170.2 194.5 218.8
$1,000
62

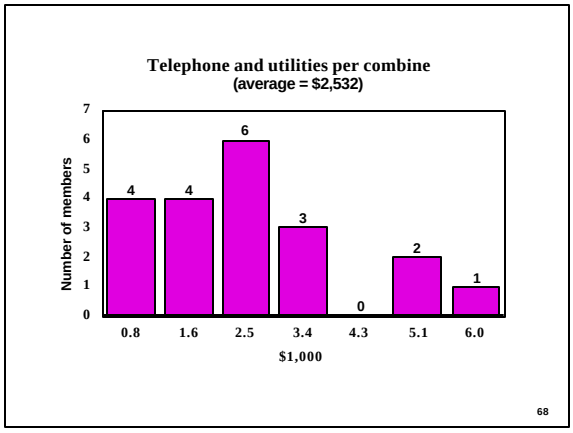

Labor per combine
(average = $26,884)
Number of members
0 1 2 3 4 5 6
0 4 5 5 5 0 1
15.7 22.0 28.3 34.6 40.9 47.2 53.4
$1,000
63

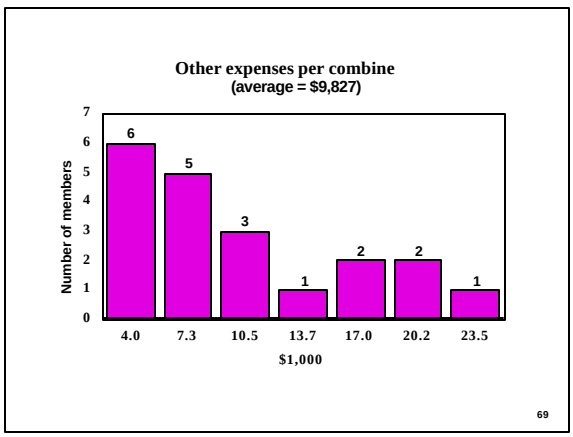

Travel per combine
(average = $6,019)
Number of members
0 1 2 3 4 5
2 2 4 3 4 3 2
2.2 3.4 4.7 5.9 7.2 8.4 9.7
$1,000
64

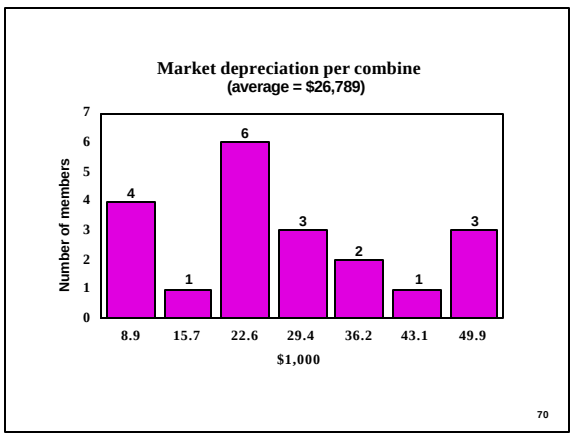

Fuel and lubrication per combine
(average = $15,392)
Number of members
0 1 2 3 4 5 6 7 8 9
8 4 3 0 3 1 1
9.8 13.2 16.6 20.0 23.4 26.8 30.2
$1,000
65

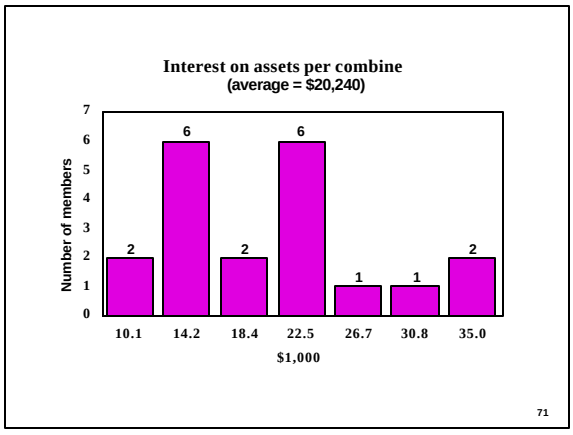

Repair and maintenance per combine
(average = $14,557)
Number of members
0 1 2 3 4 5 6 7 8
7 5 3 3 0 0 2
7.2 12.2 17.2 22.2 27.2 32.1 37.1
$1,000
66

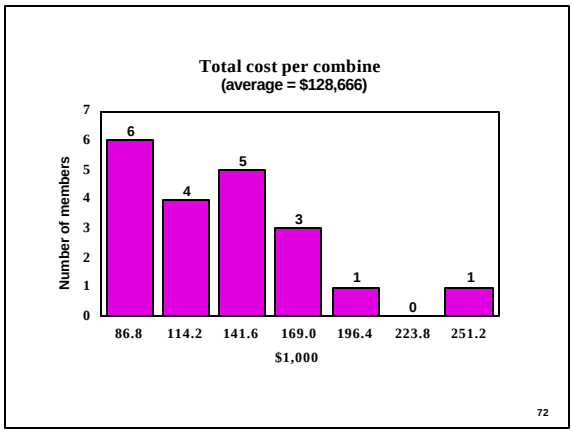

Insurance per combine
(average = $6,426)
Number of members
14
12
10
8
6
4
2
0
1
12
5
1
0
0
1
3.6
5.5
7.3
9.2
11.0
12.9
14.7
$1,000
67

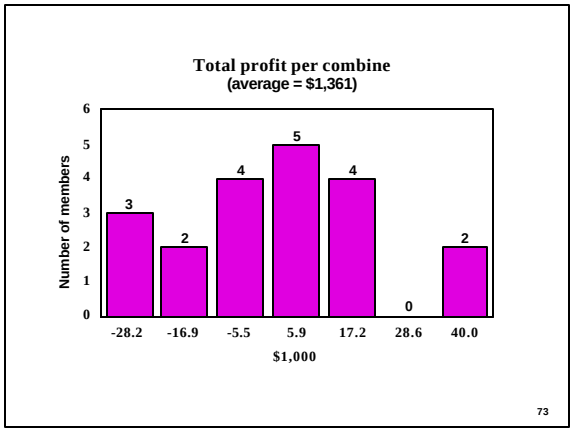

Telephone and utilities per combine
(average = $2,532)
Number of members
7
6
5
4
3
2
1
0
4
4
6
3
0
2
1
0.8
1.6
2.5
3.4
4.3
5.1
6.0
$1,000
68

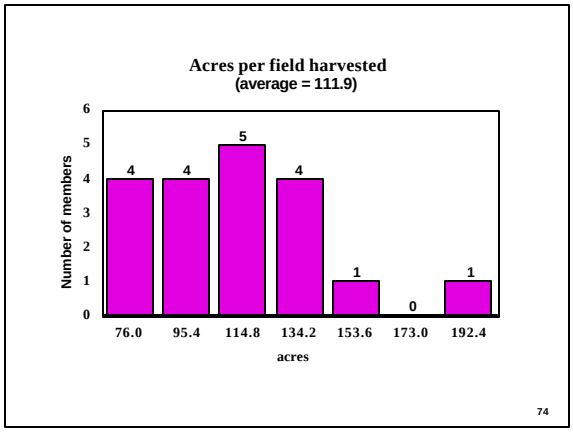

Other expenses per combine
(average = $9,827)
Number of members
7
6
5
4
3
2
1
0
6
5
3
1
2
2
1
4.0
7.3
10.5
13.7
17.0
20.2
23.5
$1,000
69

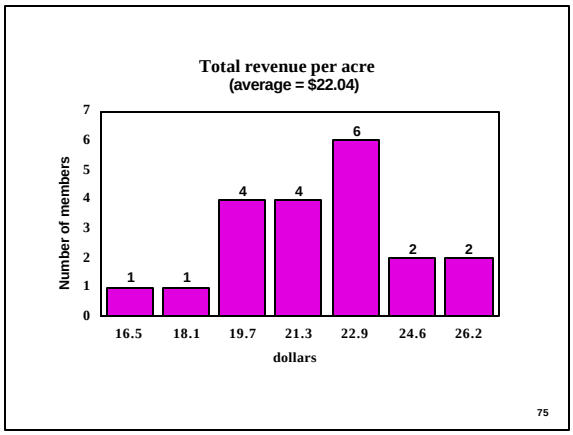

Market depreciation per combine
(average = $26,789)
Number of members
7
6
5
4
3
2
1
0
4
1
6
3
2
1
3
8.9
15.7
22.6
29.4
36.2
43.1
49.9
$1,000
70

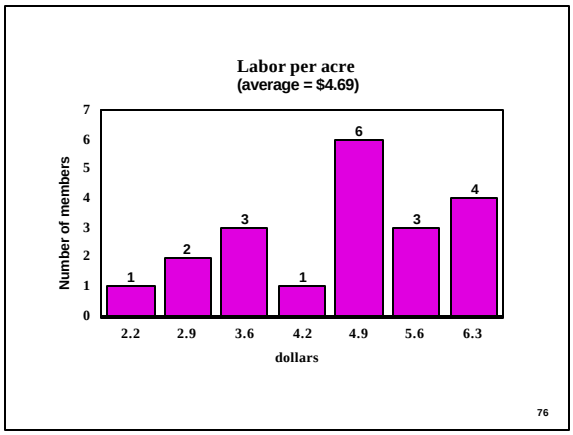

Interest on assets per combine
(average = $20,240)
Number of members
7
6
5
4
3
2
1
0
2
6
2
6
1
1
2
10.1
14.2
18.4
22.5
26.7
30.8
35.0
$1,000
71

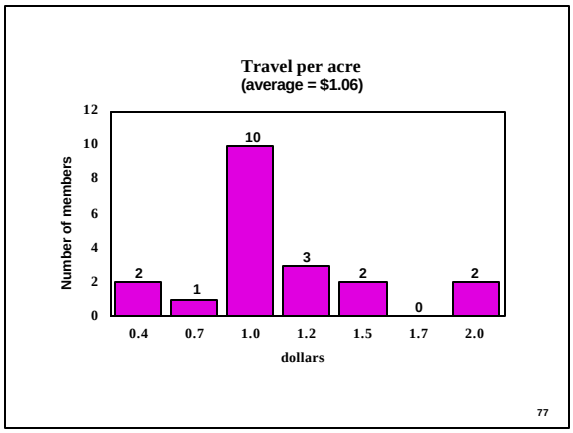

Total cost per combine
(average = $128,666)
Number of members
7
6
5
4
3
2
1
0
6
4
5
3
1
0
1
86.8
114.2
141.6
169.0
196.4
223.8
251.2
$1,000
72

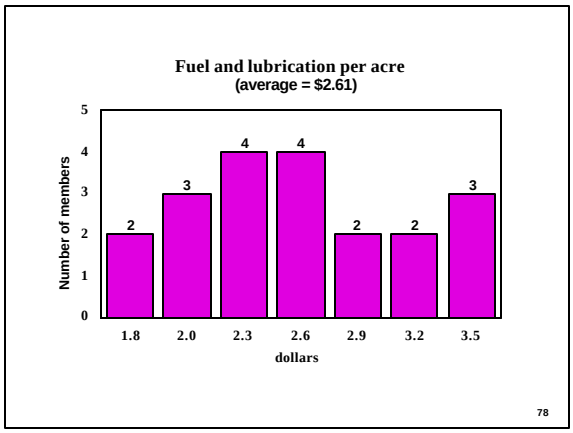

Total profit per combine
(average = $1,361)
Number of members
0
1
2
3
4
5
6
3
2
4
5
4
0
2
-28.2
-16.9
-5.5
5.9
17.2
28.6
40.0
$1,000
73

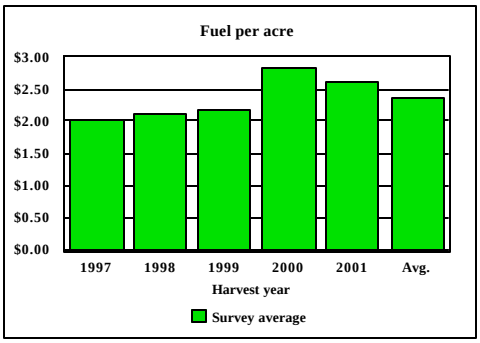

Acres per field harvested
(average = 111.9)
Number of members
0
1
2
3
4
5
6
4
4
5
4
1
0
1
76.0
95.4
114.8
134.2
153.6
173.0
192.4
acres
74


Total revenue per acre
(average = $22.04)
Number of members
0
1
2
3
4
5
6
7
1
1
4
4
6
2
2
16.5
18.1
19.7
21.3
22.9
24.6
26.2
dollars
75

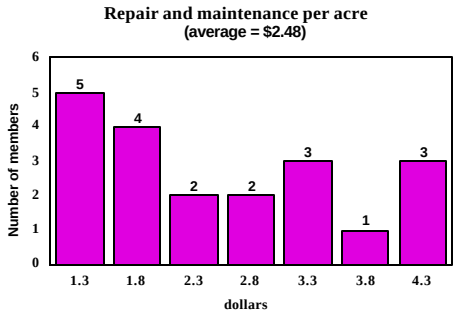

Labor per acre
(average = $4.69)
Number of members
0
1
2
3
4
5
6
7
1
2
3
1
6
3
4
2.2
2.9
3.6
4.2
4.9
5.6
6.3
dollars
76


Travel per acre
(average = $1.06)
Number of members
0
2
4
6
8
10
12
2
1
10
3
2
0
2
0.4
0.7
1.0
1.2
1.5
1.7
2.0
dollars
77

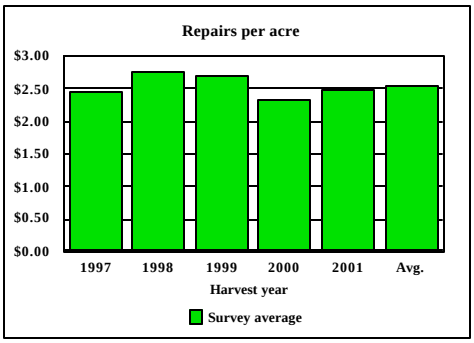

Fuel and lubrication per acre
(average = $2.61)
Number of members
0
1
2
3
4
5
2
3
4
4
2
2
3
1.8
2.0
2.3
2.6
2.9
3.2
3.5
dollars
78



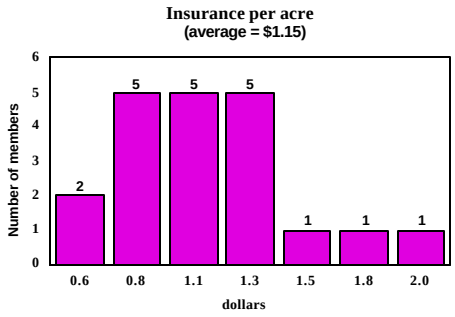
79



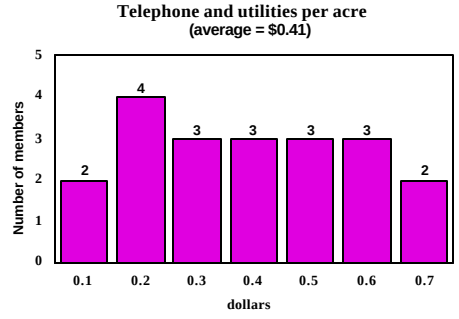
80



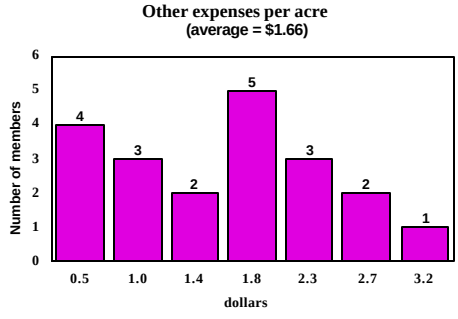
81



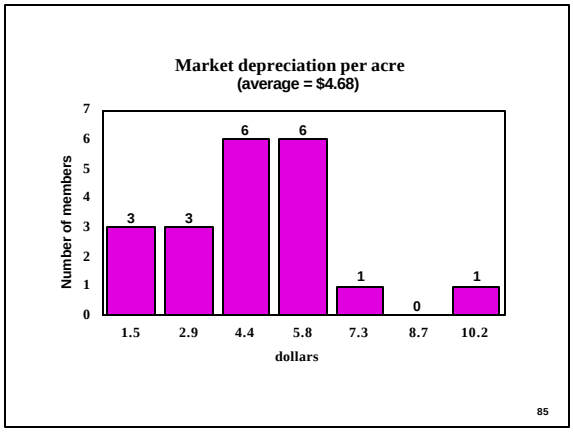
82



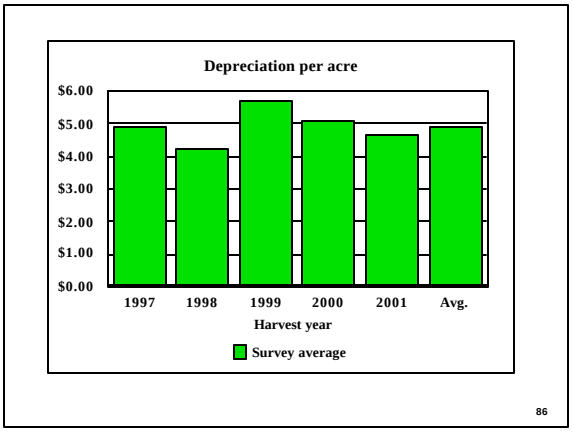
83



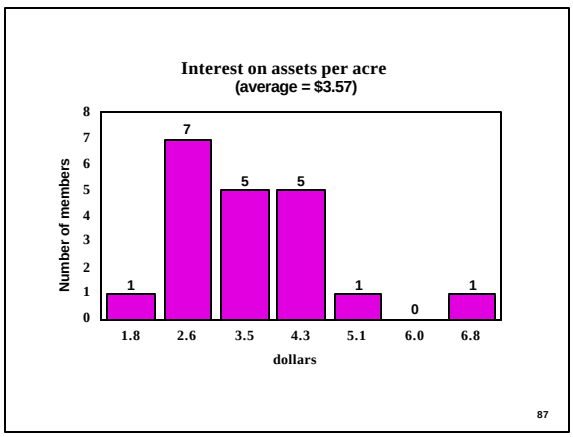
84



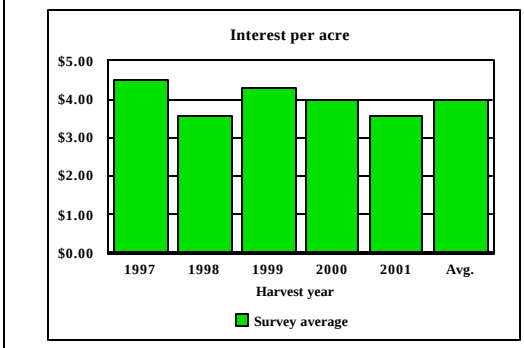
85



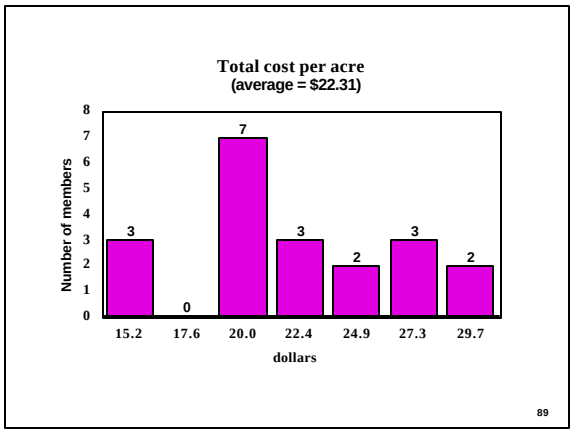
86



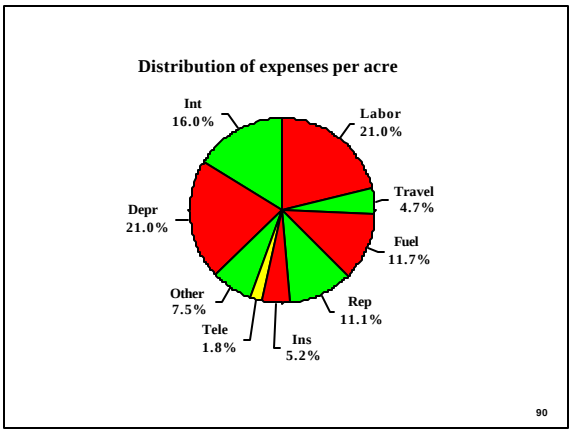
87



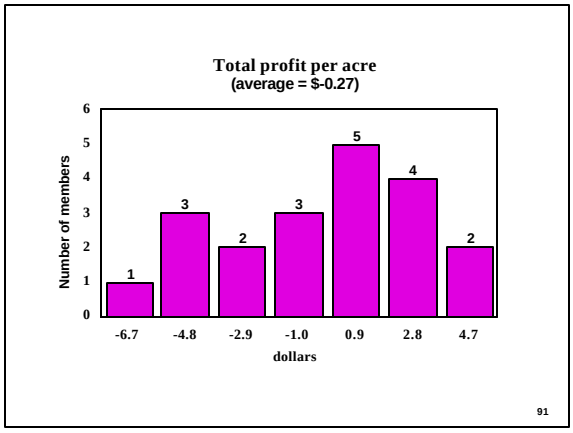
88



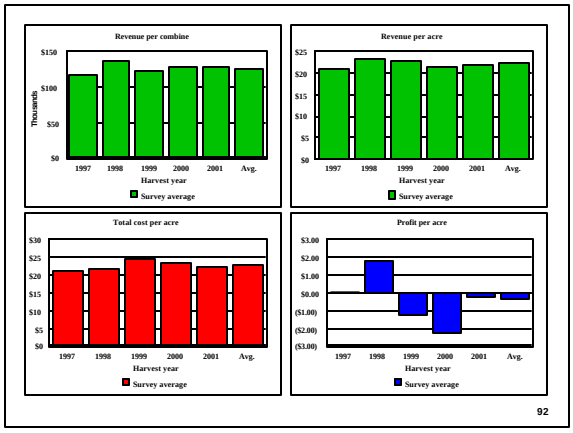
89



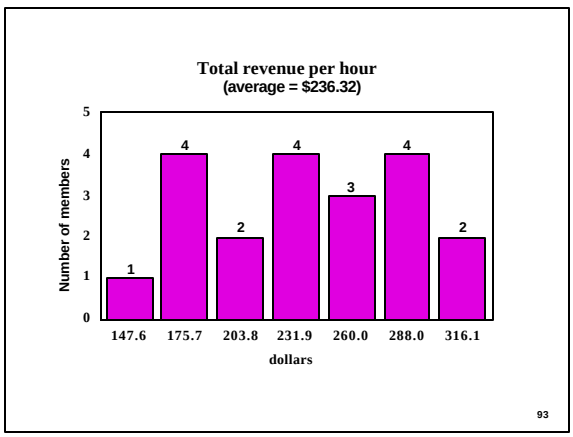
90



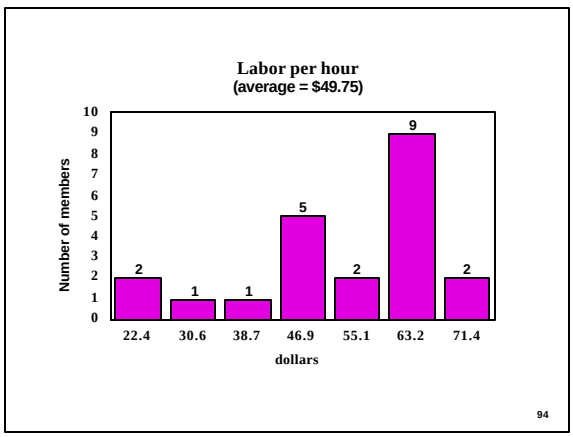
91



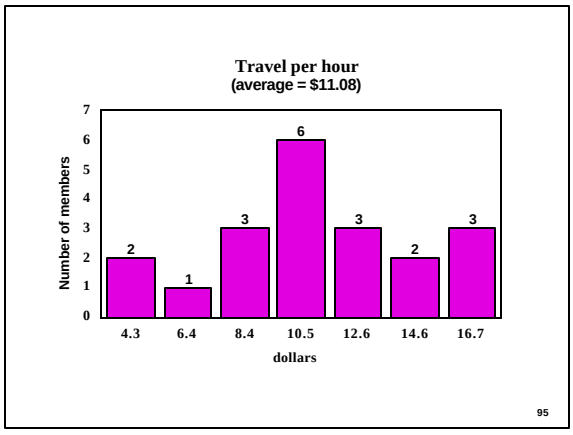
92



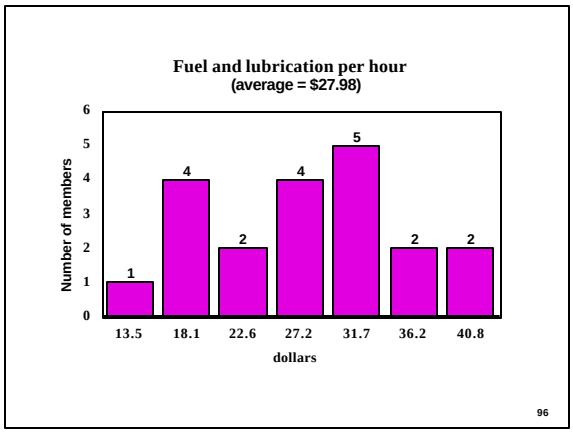
93



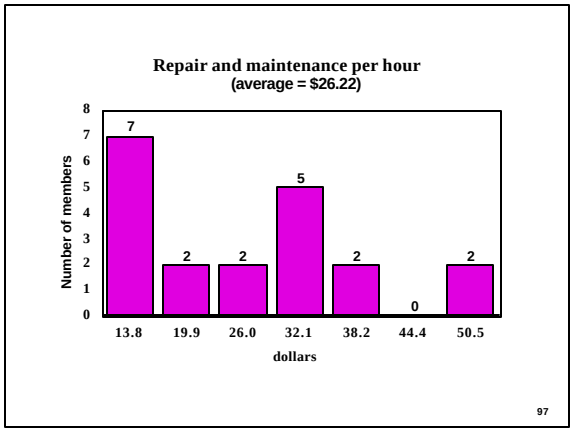
94



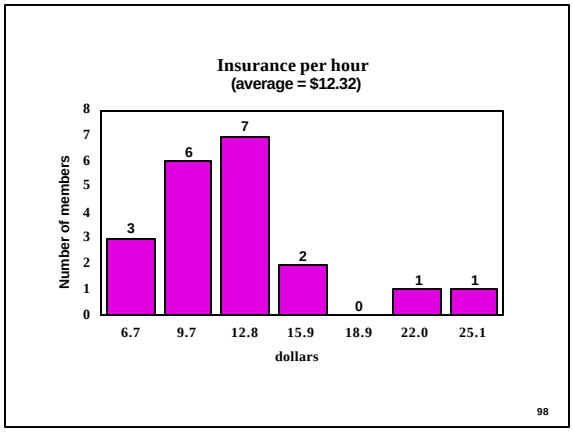
95



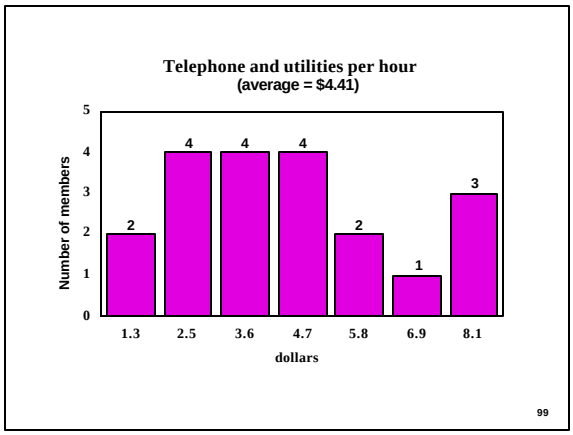
96



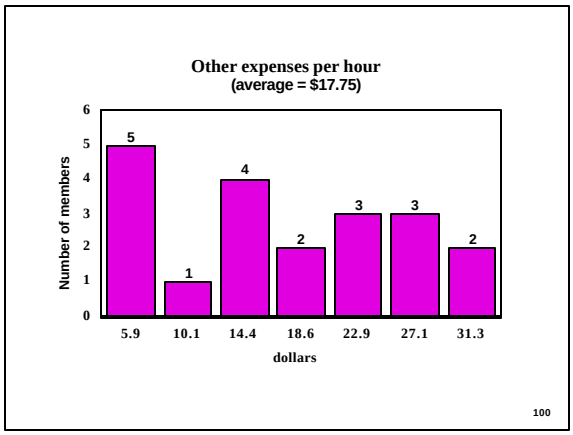
97



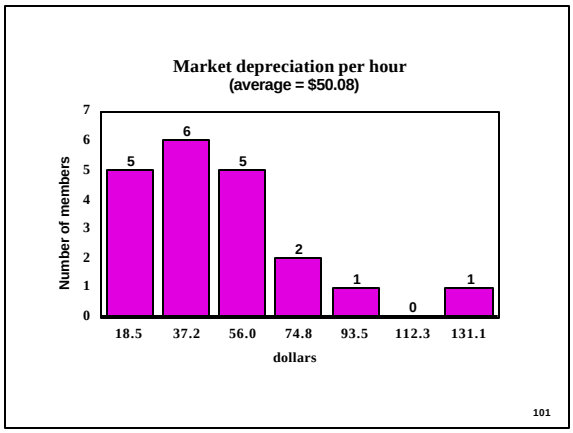
98



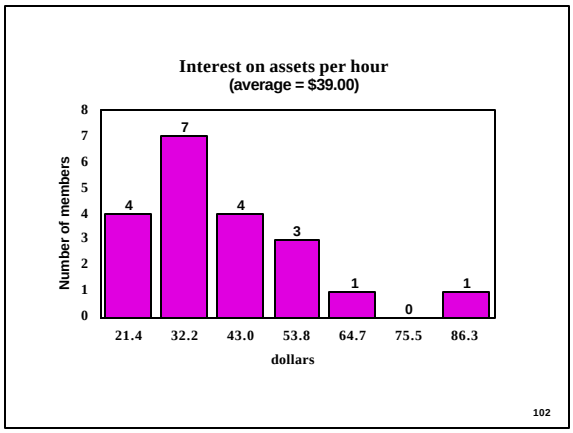
99



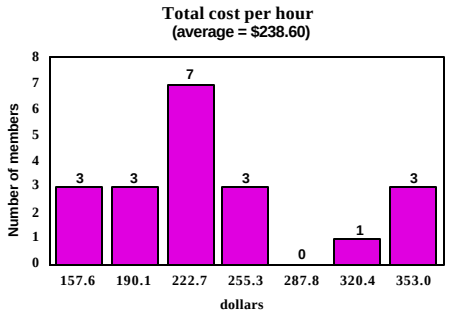
100

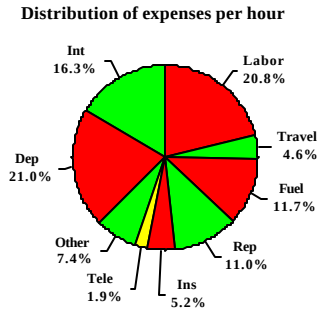


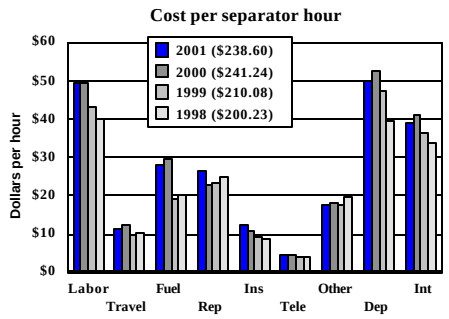
101

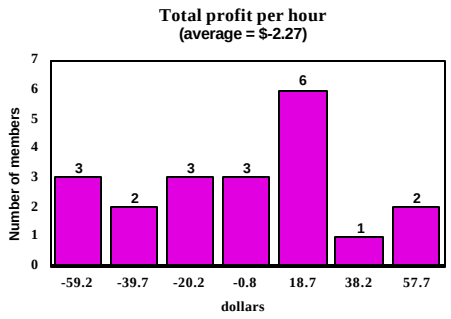


102









Profit and Financial Ratios

- Profit = revenue - expense
- Debt-to-assets (D/A) =

$$\frac{\text{total liabilities}}{\text{total assets}}$$

- Return on Assets (ROA) =

$$\frac{\text{profit + interest}}{\text{average assets}}$$

Financial Ratios

- Return on Equity from income statement (ROE --- IS) =

$$\frac{\text{profit + interest on equity}}{\text{average equity}}$$

- Return on Equity from balance sheet (ROE --- BS) =

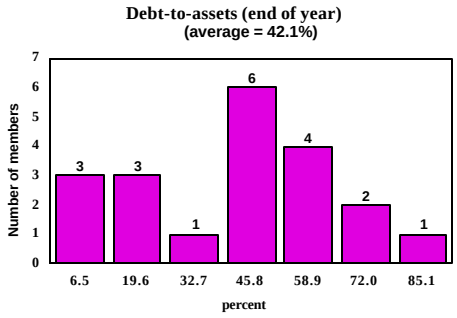
$$\frac{\text{change in equity}}{\text{beginning equity}}$$

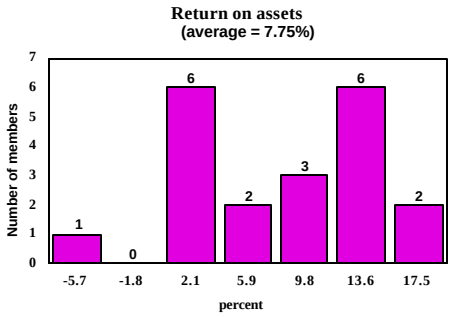
Expense Ratio

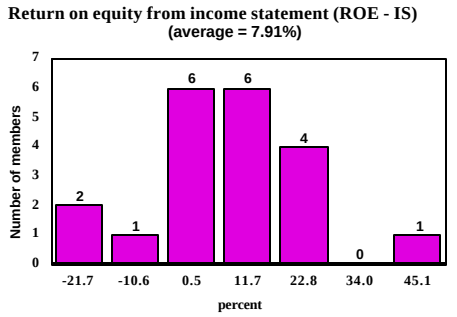
a measure of financial efficiency

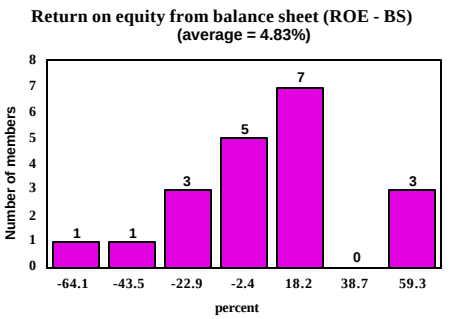
- Expense Ratio (ER) =

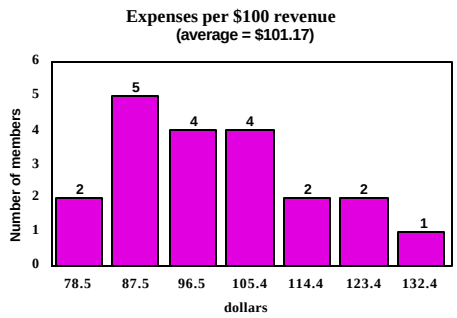
$$\frac{\text{total expense}}{\text{total revenue}}$$

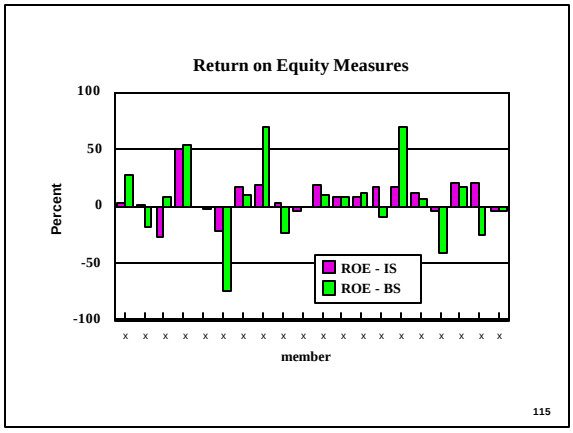




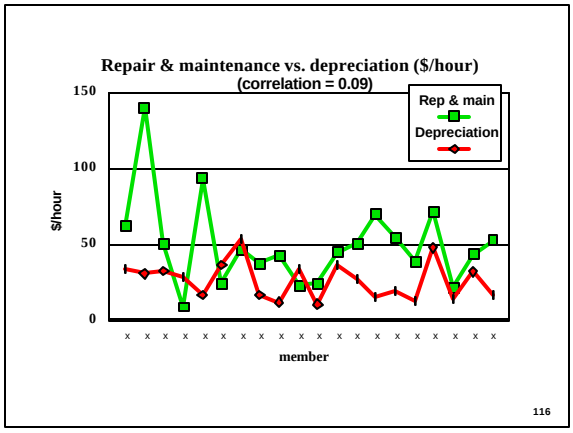




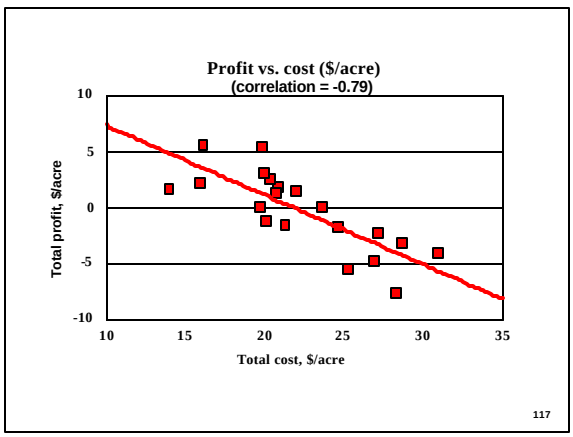




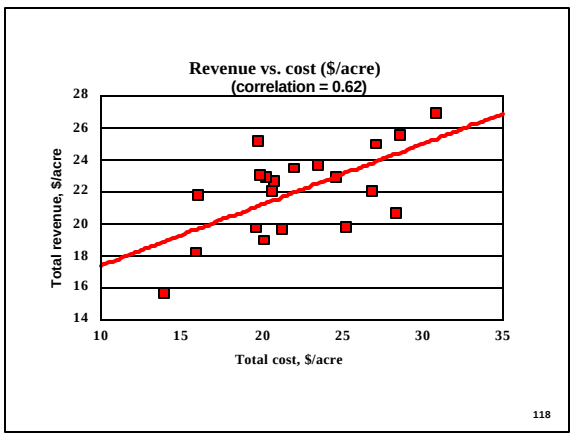
115



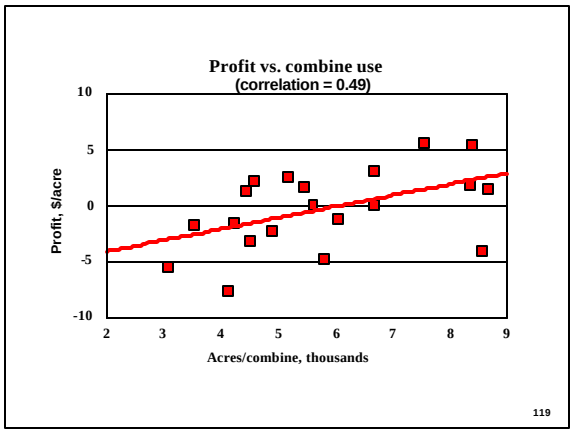
116



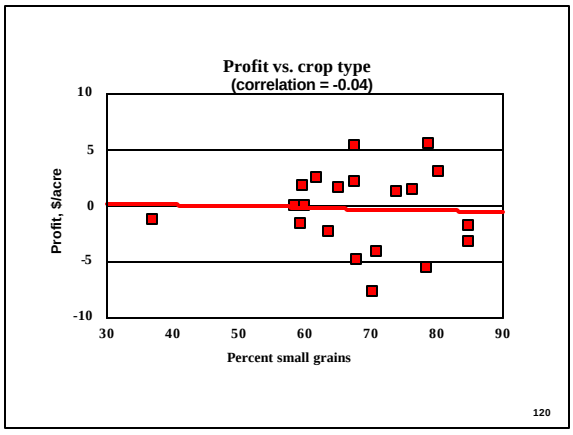
117



118



119



120

Summary

- Considerable variability between firms
  - 11 of 20 firms were profitable in 2001 (9 of 22 in 2000)
- CHAMP members are innovative
  - 5 of 20 rented out machines in 2001 (396 hrs./member)
    - 4 of 22 in 2000 (537 hrs./member)
- Cost control is important
- Identify strengths & weaknesses of business
- Improvement over the years