

Pilot Financial Management Program Economic Analysis: 1998 USCHI Survey (1997 Harvest)

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At the urging of around 25 USCHI members, a pilot Financial Management Program was initiated in January, 1998. The program, conducted by economists at Kansas State University, relies chiefly on results from a participant survey. The purpose of the program is to provide participants with important economic and production information about themselves. Each participating firm will be able to evaluate its production and economic performance relative to the group as a whole, with individual firm information remaining confidential.

The Financial Management Program is designed to be dynamic, so that its accuracy and relevance can improve over time. Besides immediately providing useful information to individual participants, pending sufficient representation in the future, this program could provide custom harvesting industry trend information over time and be instrumental in guiding future lobbying efforts.

Several important issues must be addressed if the pilot Financial Management Program is to continue in the future. First, a formal arrangement must be set up whereby program conductors can get feedback from the participants regarding their informational needs, and whereby informational accuracy can be improved over time. Second, if an economic analysis report is to be prepared for the annual meeting in early March each year, response time may have to be moved to early February – meaning respondents may have to either get their taxes done earlier or become accustomed to completing the survey without the benefit of

their IRS tax returns. The earlier response time is required to allow more time for follow-up phone calls to better understand the data provided. Third, what will the program cost per participant and how will it be funded?

1998 Survey Results

The 1998 survey was mailed in late January to around 650 USCHI harvester members. Respondents 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. As of March 2, thirty-nine surveys were returned, which is a reasonable response rate given the difficulty of the request and given that the program is just beginning. Needless to say, with that sample size it is inappropriate to assert that we have industry representative data. Nonetheless, although 39 responses may be inadequate for industry representation or certain intense statistical analyses, it is adequate to begin garnering an understanding of custom harvesters' economic performance.

In this first survey there was plenty of room for error. Some information requests were ambiguously written and some answers were ambiguously provided. In a number of cases follow-up phone calls were used to clarify information provided. To maximize the number of useable responses in our analysis we often had to exercise judgement 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 financial analysis. Over time, as responses become more thorough and accurate, and as our understanding increases, we expect judgement calls to diminish and data modification and interpolation to become more mechanistic. In addition, data modification rules will be better specified to respondents up front, which should improve accuracy and interpretation.

Unless specified by the context in which they are reported, 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 might be negative even though the typical acre being harvested by the industry is harvested at a profit.

General Information

The average age of the main person in charge was 47.0 years, which is somewhat younger than the average age of U.S. farmers, which is regularly asserted to be in the mid 50's. Firms appear to be generally well established, with an average number of years in business right at 24. A total of ten states were represented with most of the responding firms located in Kansas.

The three forms of business structure, partnership, corporation, and sole

proprietorship, were all well represented in the responses. The leverage position (debt-to-assets) of the custom harvest business averaged 43.5% and ranged from less than 10% to over 90%. Nearly 80% of the firms had side businesses, with farming and/or trucking typically being the stated sideline. The equity in the custom harvest business is 71.5% of the total equity reported indicating that the custom harvest enterprise is the major enterprise for most of the firms. A large majority of operations lodge in mobile homes as opposed to motels and most prepare their meals rather than acquire them at restaurants.

Combine Information

On average, 59% of the operations purchase new combines rather than used combines, and combines are typically run for 2.2 years before being traded. The average market value of machinery was 2.21 times the book value. Thus, balance sheets that base asset values on book value significantly underestimate the value of the assets. The total assets per combine was \$230,735. While there is a certain amount of variability around this number, this figure provides a useful rule-of-thumb for somebody wanting to know the investment required for a custom harvester.

Around 58% of the combines operated are Deere and 37% are Case-IH, with all other brands comprising only 5%. A large majority (95%) of the combines are owned rather than rented or leased. Around half (53%) of the combines operated in 1997 were 1997 models, with the oldest combine being a 1984 model.

The typical combine was used for 585 separator hours in 1997 and had 1,156 hours on the hourmeter at the end of the season. However, usage rates were quite disperse, likely 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. On average, each firm operates 3.5 combines and harvests 5,505 acres per machine. Like separator hours per combine, acres per combine varies widely across firms. The average acres per separator hour was 9.51.

Nearly 95% of all combines have a grain platform, 72% have cornheads, 35% have row heads, 83% have pickup heads, and 10% have draper platforms. Such generally large percentages show that harvesters are routinely equipped to handle a variety of crops. Furthermore, 82% have chaff spreaders, likely indicating a willingness to meet client demand for better residue dispersion – especially those clients interested in no-till farming. Surprisingly, in spite of precision agriculture’s newness, 38% of the combines already have yield monitors and 21% have yield monitors equipped with global positioning systems. These percentages suggest that custom harvesters are willing and able to meet technology needs of their clientele.

General Revenue Information

The survey solicited information regarding the acres and bushels of each crop harvested in each state, as well as the associated revenue coming from those crops. In some cases, several crops and/or states were aggregated within the information provided. However, we did not want to sacrifice the detail offered by the majority of responses. Because insufficient time for analysis precluded a more statistically appropriate data disaggregation, we did the next best thing. We used detailed information where it was provided to provide our best guess for how aggregated information may have actually come about. For example, suppose that those harvesters who had provided dryland

corn and milo information by crop and state showed the following: of the total dryland Nebraska and Kansas corn and milo harvested, 12% was Kansas corn, 10% was Nebraska corn, 72% was Kansas milo, and 6% was Nebraska milo. Then, those responses involving a single line response for dryland corn and milo in Kansas and Nebraska would have their reported acres split along the same percentages.

Besides data disaggregation, other judgement calls were required – as when respondents’ numbers didn’t add up to the sums they provided. In that case, calculated sums were used rather than those provided. Likely, data disaggregation and “corrections” have introduced some error into the analysis. However, we believe not doing so would have been worse. Further, total revenue (unless wrong due to a respondent’s arithmetic) was always kept intact; thus, any introduced errors will only apply to acreage breakdown and not total revenue or profitability.

Crops Harvested and Revenue Generated

Collectively, the survey respondents harvested 751,804 acres, with 629,811 (84%) being dryland crops and 121,993 (16%) being irrigated. We defined small grains as wheat, barley, durum, and oats, which represented 547,131 acres or 73% of the total acres harvested. At 520,805 acres, wheat made up the majority (69%) of all crop acres harvested. It should be interesting to see how this percentage changes over time as new cropping systems are adopted across the Great Plains.

Although wheat acres comprised 69% of total harvested crop acres, the revenue share for wheat, at 62%, 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, milo, and soybeans. But Nebraska had the most corn harvested, Montana the most barley, South Dakota the most sunflowers, and North Dakota the most other crops. Besides the usual crops of wheat, corn, milo, soybeans, barley, and sunflowers, many other crops were harvested as well. For example, canola, pinto beans, millet, alfalfa, oats, cowpeas, grass, triticale, buckwheat, mustard, and popcorn were each listed as being harvested by at least one firm.

Expense Information Difficulties and Modifications

Expenses were generally taken from the partial cash flow page of the survey. However, some modifications were required, especially around labor and lease payments categories, where respondents appeared to have some difficulty providing meaningful values.

The unpaid labor category was often left blank or given a very small number, even though comparisons with other firms suggested it should be higher. Also, because many respondents indicated that they could not separate workmens' comp from other insurance, it was not possible to accurately include workmens' comp in labor totals. Consequently, we chose a small subsample of responses where it appeared paid and unpaid labor were handled the most correctly. For that small sample, total (paid and unpaid) labor per separator hour and per acre suggested the following labor assignments: \$30.12 per separator hour or \$3.86 per acre. Thus, reported separator hours for each firm was multiplied by \$30.12, resulting in a calculated labor series that was used in the analysis. One firm did not report separator hours; for that firm

we used \$3.86 times acres to derive a labor cost.

Our labor expense calculation resulted in some firms being assigned higher labor than they reported while others were lower. On average, reported labor was adjusted downwards by \$769 per firm, which was a small average adjustment given that average reported paid and unpaid labor was \$63,435. However, average labor adjustments were upwards when computed on a per combine, per acre, or per separator hour basis: \$1,085/ combine, \$0.49/acre, and \$2.10/separator hour. While this process undoubtedly masked variability within the labor category that would normally be assigned to differences in management styles or abilities, hopefully it also masked labor variability due to inadequate labor cost reporting. At any rate, our goal was to construct reasonable relative differences in labor between firms, not necessarily to accurately depict actual labor costs.

A second expense category requiring modification was machinery lease and rental payments. Some respondents appeared to put loan payments on this line. Others had large lease payments but valued equipment on the balance sheet as though it were owned. Consequently, we made a judgement call for each firm regarding whether or not to use its reported lease payments. If reported payments were small they were always included (we assumed a tractor or some other equipment had been rented). If reported large lease payments were coupled with balance sheet machinery values that appeared normal for an ownership situation, then the reported lease payments were not included.

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 9.5% of the value of all custom harvesting assets. We also imputed a 9.5% interest charge against one-half of all cash operating expenses (assumes that they occur midway through the year). Subsequently, in all economic analyses, imputed interest expenses were used rather than the interest paid amounts reported in the surveys.

For depreciable assets, economic (or market) depreciation is the loss in value due to usage over time. 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. As evidence of that, based on those responses providing market and tax basis (book) machinery values, the typical market to book ratio was around 2.2.

For this analysis, annual depreciation expense was calculated as: $(18\% \times \text{balance sheet combine value}) + (8\% \times \text{balance sheet truck and other equipment values}) + (5\% \times \text{balance sheet business real estate value})$. The 18% annual loss in value or depreciation for combines is consistent with combines that were valued on the balance sheet about midway through the harvest year. For example, consider a \$150,000 combine that is traded for \$25,000 at the end of the year (implying it had depreciated around \$25,000 during the year). Eighteen percent times the average value of \$137,500 results in a depreciation of \$24,700,

which is about the assumed depreciation.

Reported balance sheet combine values were to be for January 1, 1998. Most respondents appeared to value the machines they had operated during 1997, often at the point when they were about to be traded. But, some may have valued machines they had only recently purchased for the 1998 run. Consequently, depreciation and investment interest were likely understated for the first group but overstated for the latter group. Fortunately, knowing how we calculated investment interest and depreciation, individual firms can easily adjust for any inadequacies in the depreciation and interest expenses that were assigned to them in this analysis.

Other Expenses and Total Cost Calculation

Typically, machinery ownership and operation costs fall into six categories: 1) fuel & lubrication; 2) repair & maintenance; 3) labor; 4) property taxes, insurance, & shelter; 5) interest or opportunity cost on investment; and 6) market depreciation. In the survey responses for the partial cash flow statement, the fuel & lubrication and repair & maintenance categories each appear well reported. Thus, those values were used as reported. Labor, interest, and depreciation categories have already been discussed. Because some difficulties were present in reported equipment & liability insurance values (some respondents could not separate workmens' comp insurance from machinery insurance), we did not isolate that cost for exposition.

Because travel expense appeared well-reported in the survey, it was assigned its own category. All other reported cash expenses were reported as other cash expense. This category was the sum of reported values for

workmens' comp (recall that this was not put with labor because of reporting difficulties); equipment and liability insurance; property taxes; telephone and utilities; tags, permits and fees; consulting, legal, accounting, advertising, etc.; shop &/or office rent, equipment storage, etc.; and machine hire. The final cost formula used in this analysis is:

Fuel & lubrication (reported)
+ repair & maintenance (reported)
+ travel expense (reported)
+ lease payments (reported/adjusted)
+ other cash expenses (reported)
+ labor (calculated)
+ interest on cash oper. expense (calculated)
+ interest on investment (calculated)
+ market depreciation (calculated)
= Total Operating Cost

Revenue and 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 partial cash flow page. Finally, profit is defined as revenue less total operating costs. It should be noted that this is economic profit and it is expected to be zero in the long run. That is, a return to all assets (9.5%) has already been assigned. Thus, profit is the return above 9.5% on assets.

Various costs and profit can be divided by the number of combines operated, the number of acres harvested, or the number of separator hours tallied. For an individual firm this provides important comparison values. Departures from survey average values 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 already have a comparative advantage.

Attached to this report is an example of the type of report provided to survey respondents. The example firm has higher fuel & lubrication costs than the average respondent, but lower repair & maintenance costs. At 8,500 acres harvested and 717 separator hours per combine, this firm covers substantially more ground than the typical survey respondent, who only had 5,505 acres and 581 hours per combine. That may be one reason this firm has significantly greater profits than the typical firm.

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

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. However, the graphs of repairs & maintenance vs. depreciation (on either a per hour or per acre basis) do not depict a strong relationship. Of course, all repairs & maintenance, and depreciation on trucks and supporting equipment are also included in the reported values, which may mask a more substantial relationship for combines alone.

The graph showing cost per acre against total acres harvested suggests that cost per acre may fall somewhat with increased acres harvested. But, the effect is not large beyond about 10,000 acres.

One graph that depicts a strong relationship is the one showing profit per acre vs. cost per

acre. Clearly, firms that have lower costs per acre make more money. However, at a given cost per acre, profit per acre still varies \$7-\$10 indicating that revenue must vary. The graph of revenue per acre vs. cost per acre shows that firms charging higher harvesting rates likely do so because they have higher costs. That is, they probably are harvesting crops that cost more to harvest. But 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 determined much more by the market, whereas costs are determined more by firm management.

A statistical regression analysis of the survey data found that the number of combines operated did not substantially impact firm profitability, positively or negatively. What did appear to impact profit was acres per combine and percent of small grains harvested. In particular, the regression predicted that each additional 100 acres harvested per combine led to a \$0.08 increase in per acre profit. Thus, a harvester that cuts 6,000 acres per combine compared to a harvester who cuts 5,000 acres per combine would expect profit per acre to be \$0.80 higher, all else equal. Given the low profit per acre this is a significant amount. Also, each percentage point increase in small grain's share of the total acres harvested led to a \$0.135 increase in per acre profit. Put another way, a harvester who cuts 10% more acres of small grains compared to another harvester would expect a profit of \$1.35 per acre more than the harvester cutting fewer acres of small grains. Of course, if costs for non-small-grains crops were actually separated from costs for all crops, we may find them to be lower than small grain harvesting costs (if firms tend to cut non-small grain crops close to home). If that is the case, the \$1.35 gain would likely be smaller.

The statistical regression showed that harvesters that stay in motels and eat a high percentage of their meals in restaurants had lower profits relative to harvesters utilizing mobile homes and more home prepared meals. This result may be due to higher costs associated with these factors or some other unmeasured management factors that happen to be related to these traits. Given the small sample size it is important to interpret these results with caution; however, at the same time these results are statistically significant for this group of harvesters and should not be ignored.

Other attached graphs are generally self explanatory and convey interesting features of the sample of harvesters who responded to this first survey. In future years, as the number of responses increases, we will be able to answer questions much more definitively.

**Economic Analysis: 1998 USCHI Survey
Individual Firm Report**

Happy Harvesters Inc. Box 999 Wheat Country, KS 99999

Values Used in Calculations

Interest rate	9.50%
Combine depreciation rate	18.0%
Truck & other depreciation rate	8.0%
Average depreciation rate	13.1%

	Firm Value		Survey Avg.	Firm Value	Survey Avg.	Firm Value	Survey Avg.	Firm Value	Survey Avg.
	Reported	Used	of Value Used	Used per Combine	of Value Used per Combine	Used per Acre	of Value Used per Acre	Used per Hour	of Value Used per Hour
Reference Number	99	----	----	----	----	----	----	----	----
Number of Machines Operated	3	3	3.51	----	----	----	----	----	----
Total Acres Harvested	25,500	25,500	19,277	8,500	5,505	1.0	1.0	11.86	9.51
Total Separator Hours in 1997	2,150	2,150	2,092	717	581	0.084	0.115	1.0	1.0
Combine & Truck Revenue	\$532,646	\$532,646	\$399,737	----	----	----	----	----	----
Other Revenue	\$1,550	\$1,550	\$5,231	----	----	----	----	----	----
Total Revenue	\$534,196	\$534,196	\$409,282	\$178,065	\$117,098	\$20.95	\$21.35	\$248.46	\$203.13
Fuel and Lubrication	\$45,590	\$45,590	\$39,926	\$15,197	\$11,323	\$1.79	\$2.05	\$21.20	\$19.28
Repair and Maintenance	\$33,260	\$33,260	\$44,150	\$11,087	\$13,701	\$1.30	\$2.59	\$15.47	\$24.06
Travel Expense	\$36,543	\$36,543	\$18,880	\$12,181	\$5,062	\$1.43	\$0.92	\$17.00	\$9.09
Lease Payments	\$0	\$0	\$7,559	\$0	\$2,412	\$0.00	\$0.44	\$0.00	\$4.31
Other Cash Expense	\$68,058	\$68,058	\$45,088	\$22,686	\$13,387	\$2.67	\$2.40	\$31.65	\$23.41
Labor Expense	\$154,230	\$64,758	\$61,950	\$21,586	\$17,586	\$2.54	\$3.47	\$30.12	\$30.12
Operating Interest	----	\$11,790	\$10,304	\$3,930	\$3,032	\$0.46	\$0.57	\$5.48	\$5.28
Total Cash Operating Expense	----	\$248,209	\$216,926	\$82,736	\$63,827	\$9.73	\$11.96	\$115.45	\$111.10
Value of Combines	\$384,000	\$384,000	\$377,712	\$128,000	\$105,584	\$15.06	\$20.22	\$178.60	\$187.02
Value of Grain Trucks	\$196,000	\$196,000	\$125,881	\$65,333	\$37,832	\$7.69	\$7.08	\$91.16	\$65.03
Value of Other Equipment	\$245,000	\$245,000	\$218,566	\$81,667	\$59,285	\$9.61	\$10.86	\$113.95	\$105.23
Total Machinery & Equipment	\$825,000	\$825,000	\$739,790	\$275,000	\$203,511	\$32.35	\$37.82	\$383.72	\$356.55
Value of Business Real Estate	\$0	\$0	\$32,582	\$0	\$9,973	\$0.00	\$1.80	\$0.00	\$17.51
Market Depreciation	----	\$71,760	\$99,438	\$23,920	\$27,369	\$2.81	\$5.12	\$33.38	\$48.04
Total Custom Harvesting Assets	\$893,025	\$893,025	\$838,352	\$297,675	\$230,735	\$35.02	\$42.67	\$415.36	\$398.80
Interest on Investment	----	\$84,837	\$79,643	\$28,279	\$21,920	\$3.33	\$4.05	\$39.46	\$37.89
Total Operating Expense	----	\$416,596	\$402,405	\$138,865	\$116,022	\$16.34	\$21.67	\$193.77	\$202.38
Total Operating Profit	----	\$117,600	\$312	\$39,200	\$1,303	\$4.61	(\$0.30)	\$54.70	\$1.75

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

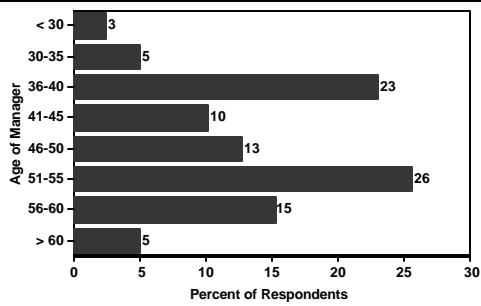
Custom Harvesters Survey Summary and Analysis

Terry Kastens and Kevin Dhuyvetter
Kansas State University

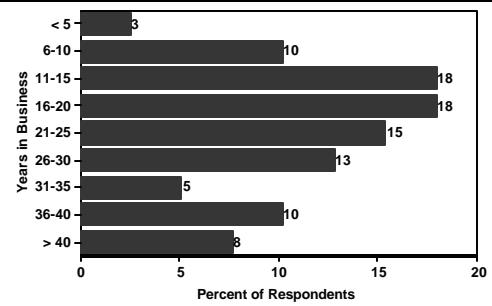
General Information

- ➔ Age
- ➔ Years in business
- ➔ Location of business
- ➔ Structure of operation
- ➔ Housing and meals
- ➔ Debt-to-equity (leverage position)
- ➔ Side business
- ➔ Equity position

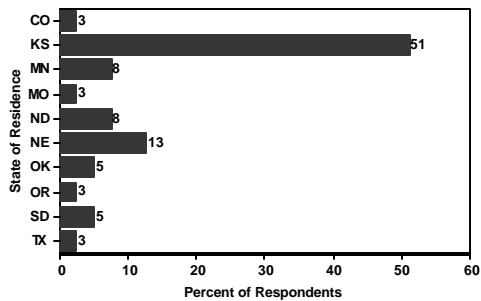
Age of the main person in charge (average = 47.0)



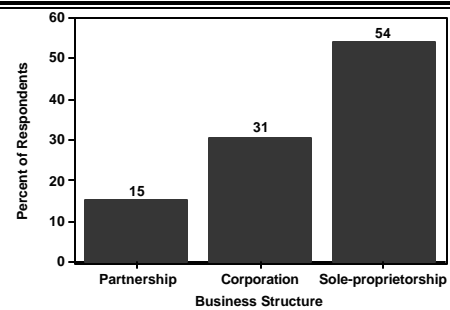
Years in business (average = 23.9)



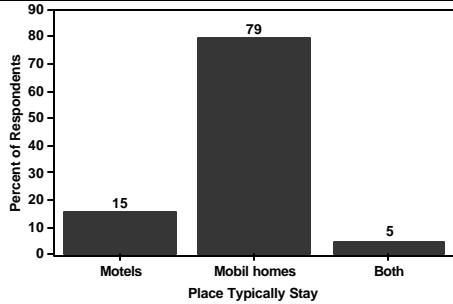
State where business is located



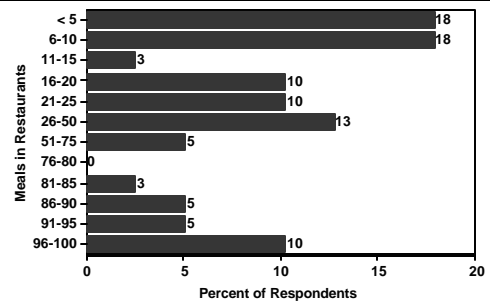
Structure business operates as



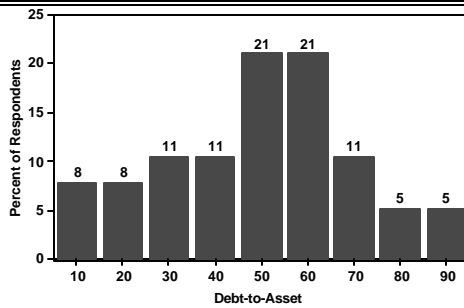
Housing method



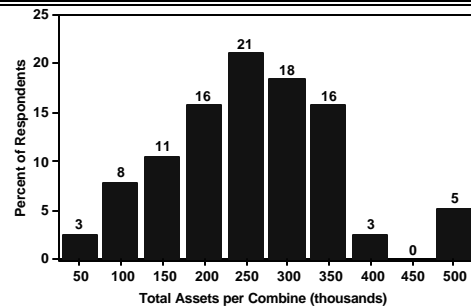
Percent of meals from restaurants (average = 38.4)



Debt-to-asset (average = 43.5%)



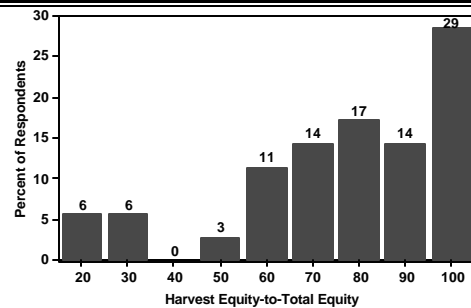
Total assets per combine (average = 230,735)



Side business

- ➔ 79.5% of the respondents indicated they had businesses besides custom harvesting.
 - ◆ Farming (51.3%)
 - ◆ Trucking/grain hauling (33.3%)
 - ◆ Other (25.6%)

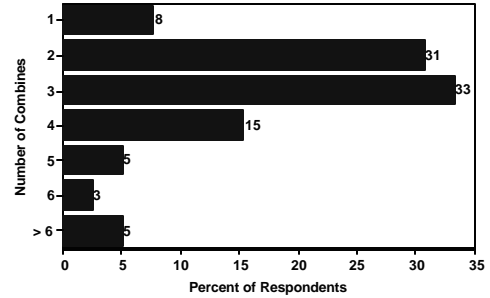
Custom harvest equity/total equity (average = 71.5%)



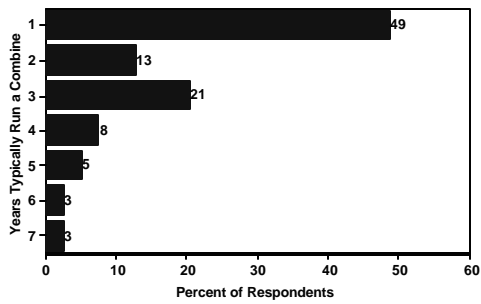
Combine Information

- ➔ Number of combines
- ➔ Years combines typically run
- ➔ Brand of combines
- ➔ Age of combines
- ➔ Combine use
- ➔ Equipment

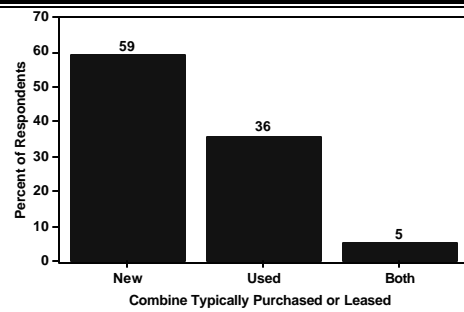
Number of combines (average = 3.5)



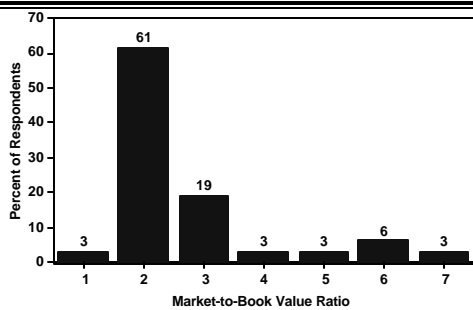
Years combine is typically run (average = 2.2)



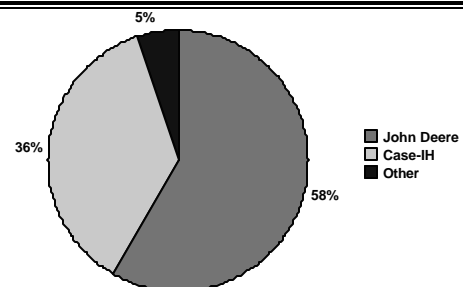
Combines acquired - new vs. used

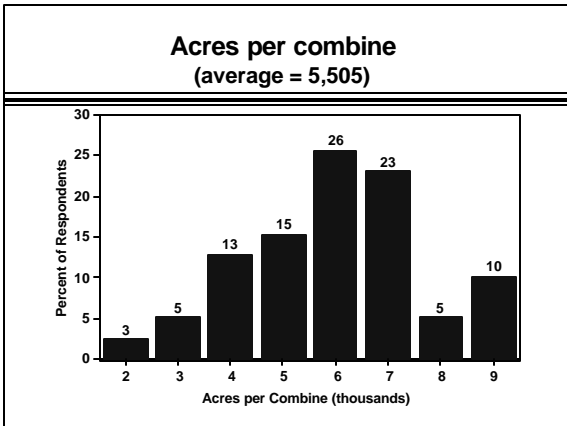
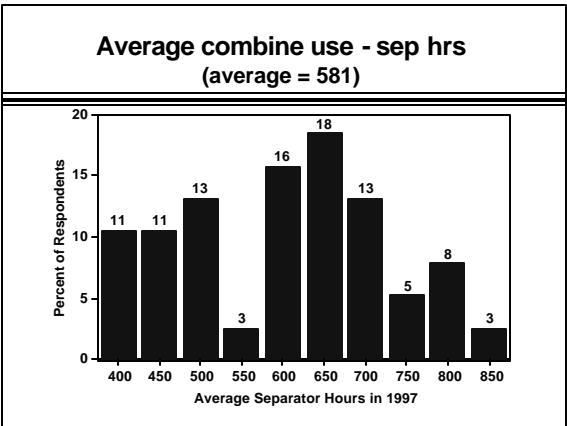
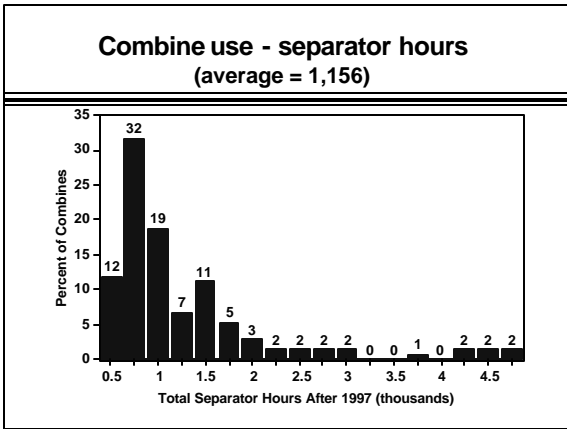
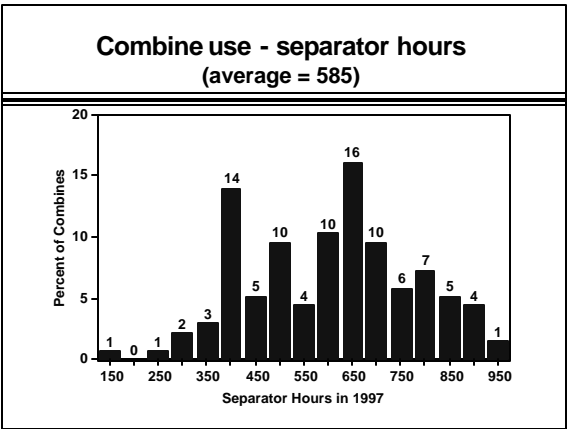
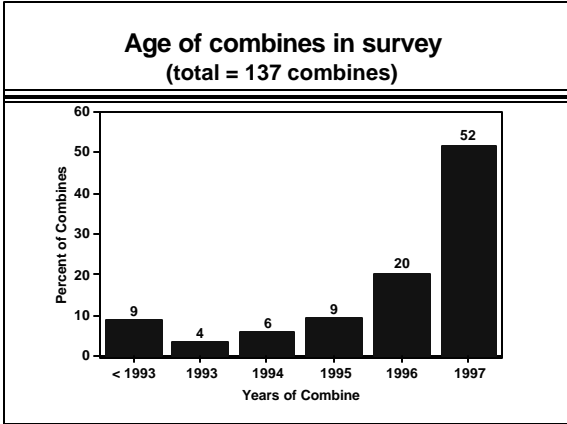
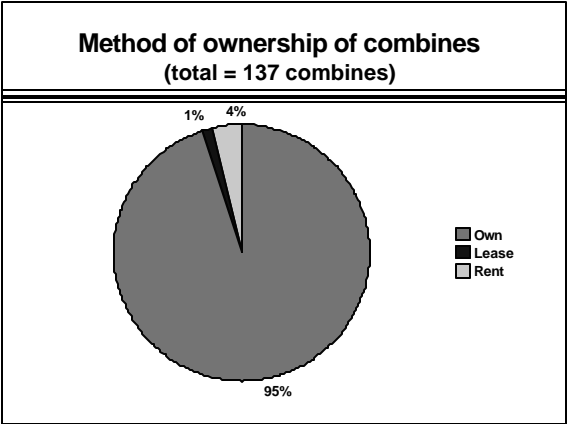


Machinery market value/book value (average = 2.21)

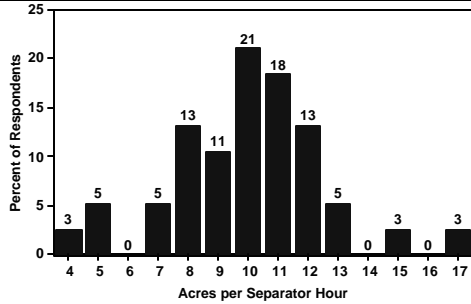


Brand of combines in survey (total = 137 combines)





**Acres per separator hour
(average = 9.51)**



**Header and equipment information
(total = 137 combines)**

➔ Grain platform	94.9 %	28.4 ft
➔ Corn head	72.3 %	8.3 rows
➔ Row crop head	35.0 %	7.8 rows
➔ Pickup	83.2 %	12.8 ft
➔ Draper	10.2 %	32.6 ft
➔ Chaff spreader	81.8 %	
➔ Yield monitor	38.0 %	
➔ GPS equipped	21.2 %	

Revenue Information

- ➔ Acres harvested
 - ◆ Irrigated vs. non-irrigated
- ➔ Crops harvested
 - ◆ Small grains vs. other
- ➔ Harvest states

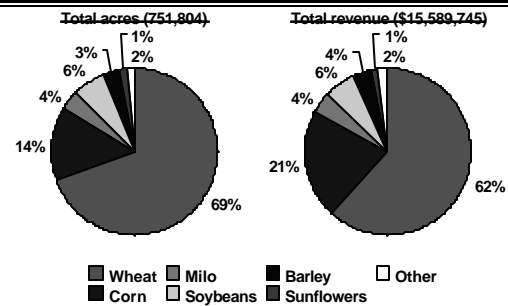
Acreage Information

- ➔ Non-irrigated - 629,811 acres (83.8%)
- ➔ Irrigated - 121,993 acres (16.2%)

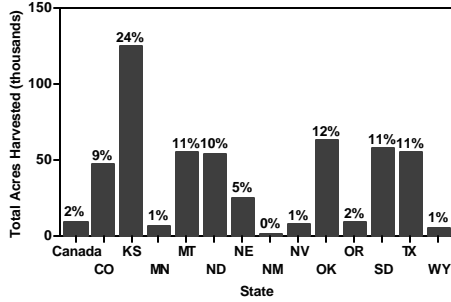
Acreage Information

- ➔ Small grains - 547,131 acres (72.8%)
 - ◆ Wheat, durum, barley, oats
- ➔ Other - 204,673 acres (27.2%)
 - ◆ Corn, soybeans, milo, sunflowers, canola, cow peas, millet, edible beans, alfalfa, grass, buckwheat, mustard, popcorn, bluegrass, fescue

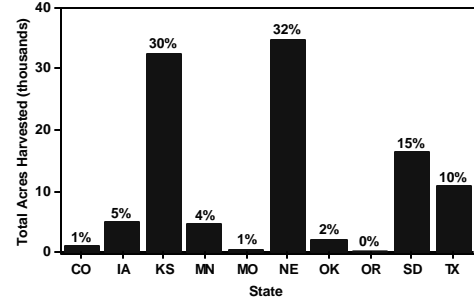
Distribution of acres and revenue by crop



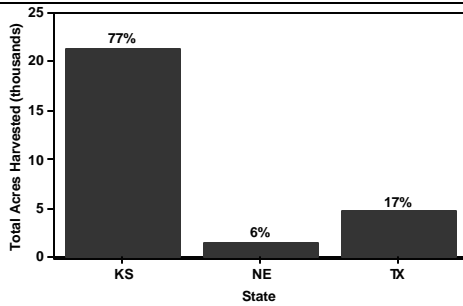
Acres of wheat cut by state
(total = 520,805)



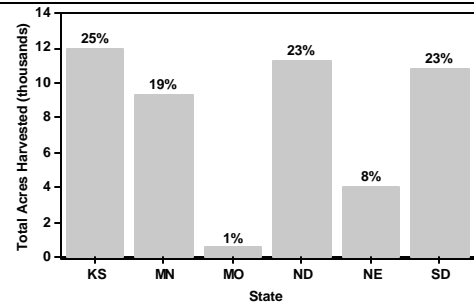
Acres of corn cut by state
(total = 108,408)



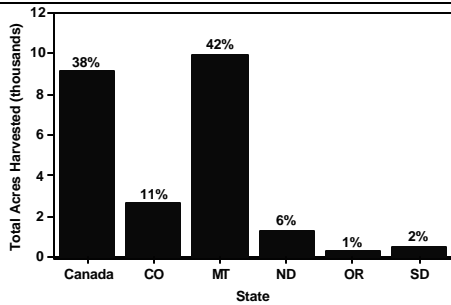
Acres of milo cut by state
(total = 27,643)



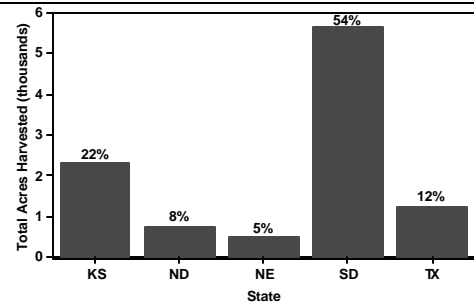
Acres of soybeans cut by state
(total = 48,104)



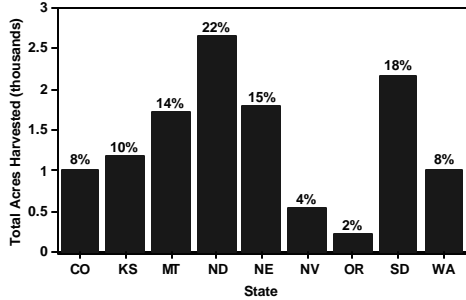
Acres of barley cut by state
(total = 24,025)



Acres of sunflowers cut by state
(total = 10,496)



**Acres of other crops cut by state
(total = 12,321)**



Operating Expense Information

- ➔ Fuel and lubrication (reported)
- ➔ Repair and maintenance (reported)
- ➔ Travel (reported)
- ➔ Lease payments (reported/adjusted)
- ➔ "Other" (reported)

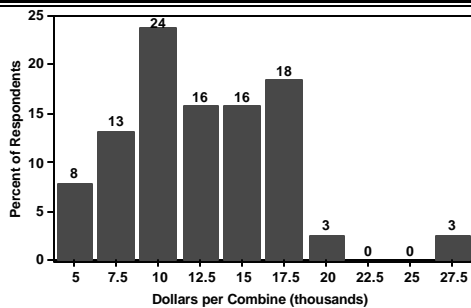
Operating Expense Information (con't)

- ➔ Labor (reported/calculated)
- ➔ Interest on operating costs (calculated)
- ➔ Interest on assets (calculated)
- ➔ Market depreciation (calculated)

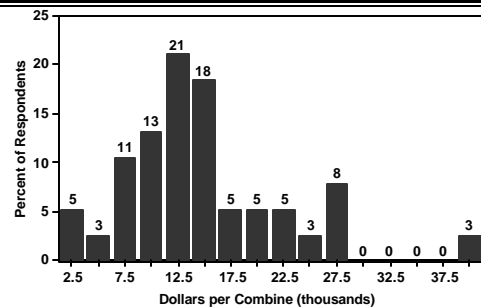
Calculated Profit

Combine and trucking revenue (reported)
 + Other income (reported)
 = Total Revenue
 - Total operating costs (calculated)
 = Profit

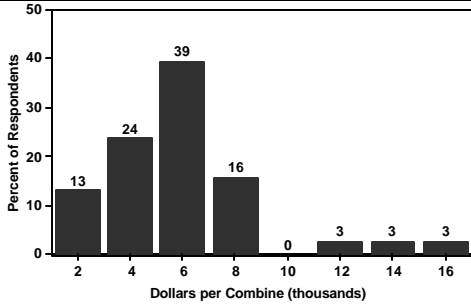
**Fuel and lubrication per combine
(average = 11,323)**



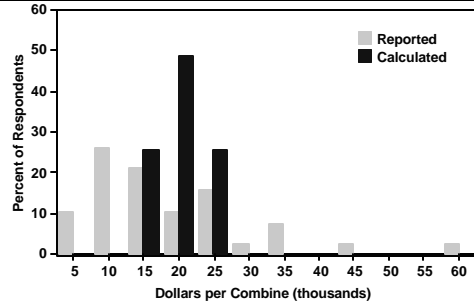
**Repair & maintenance per combine
(average = 13,701)**



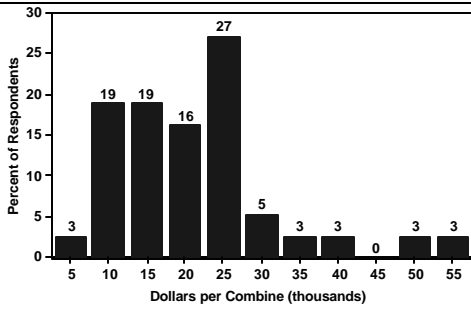
Travel expense per combine
(average = 5,062)



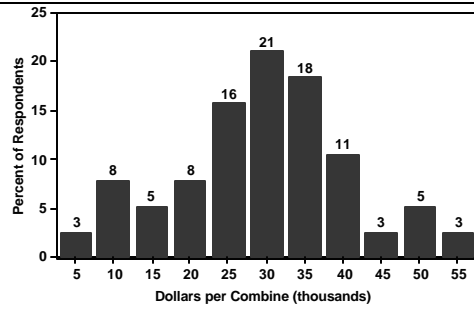
Labor per combine
(average = 16,501 / 17,586)



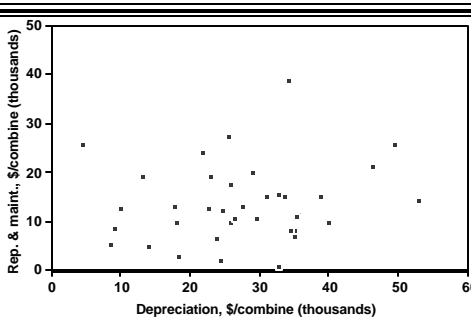
“Other” expenses per combine
(average = 18,897)



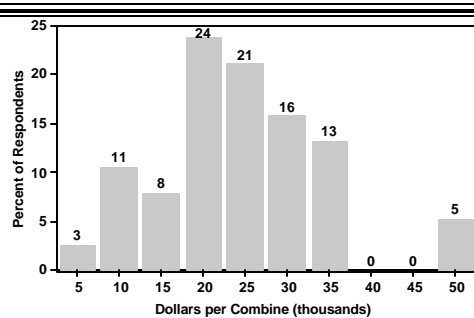
Depreciation per combine
(average = 27,369)



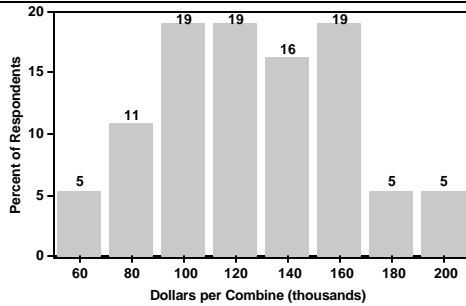
Repairs & maintenance vs. depreciation per combine



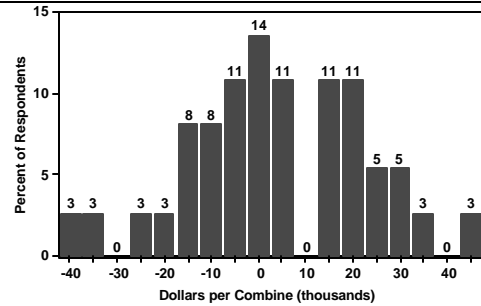
Interest on assets per combine
(average = 21,920)



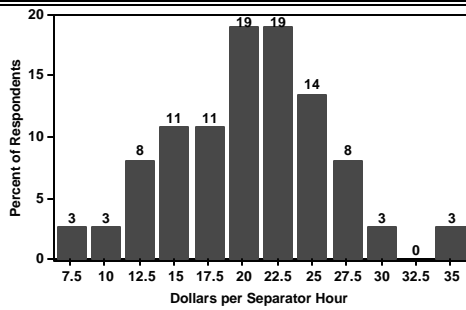
Total cost per combine
(average = 116,022)



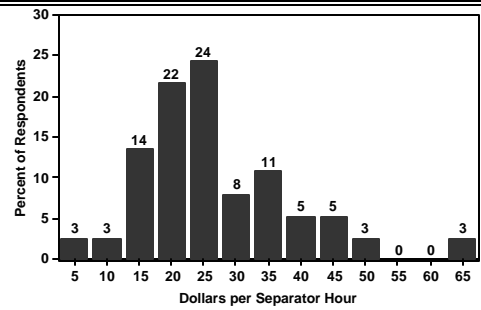
Profit per combine
(average = 1,303)



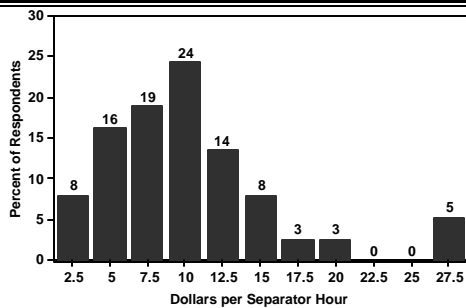
Fuel and lubrication per separator hour
(average = 19.28)



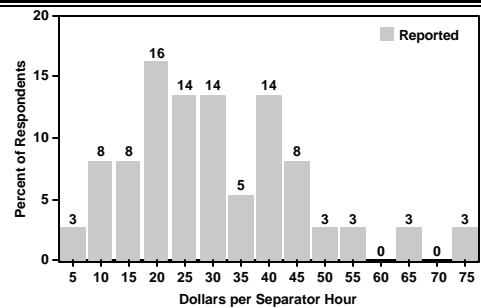
Repair & maintenance per separator hour
(average = 24.06)



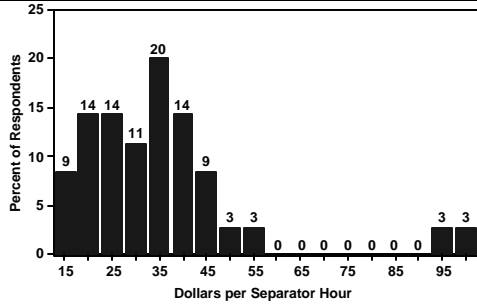
Travel expense per separator hour
(average = 9.09)



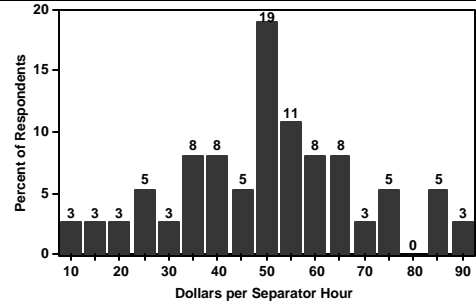
Labor per separator hour
(average = 28.02 / 30.12)



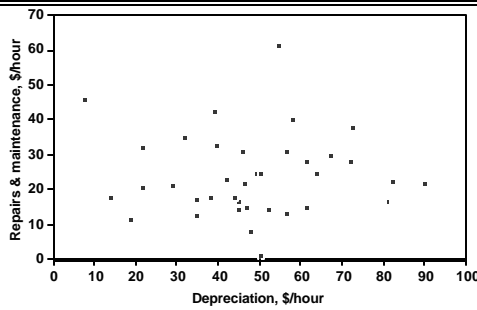
“Other” expenses per separator hour
(average = 33.12)



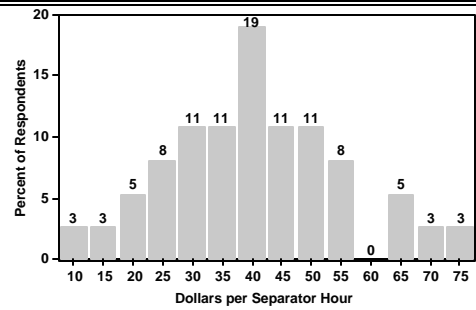
Depreciation per separator hour
(average = 48.04)



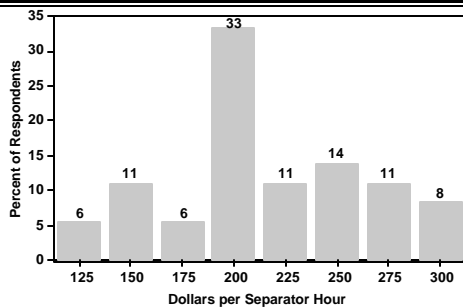
Repairs & maintenance vs. depreciation per separator hour



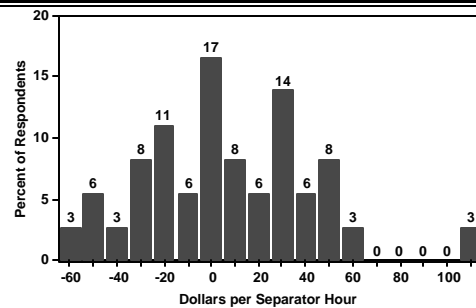
Interest on assets per separator hour
(average = 37.89)

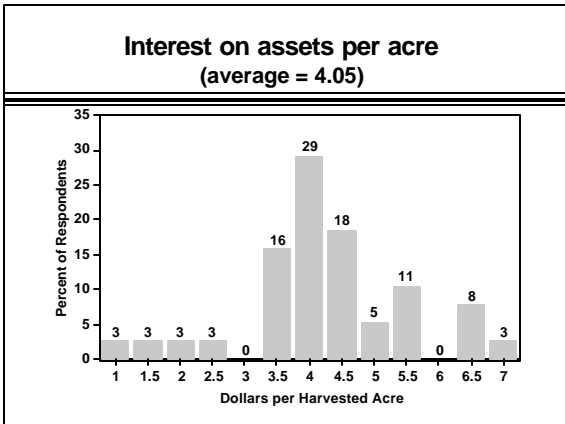
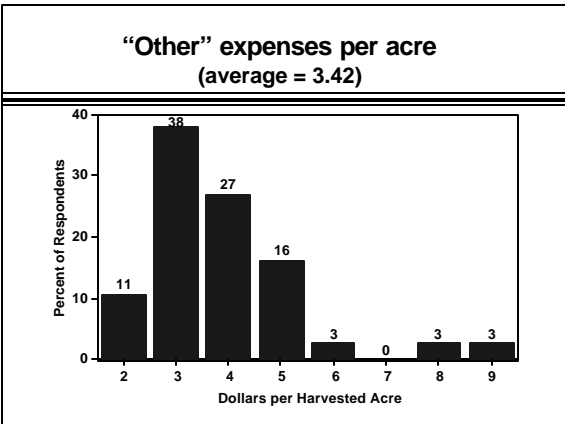
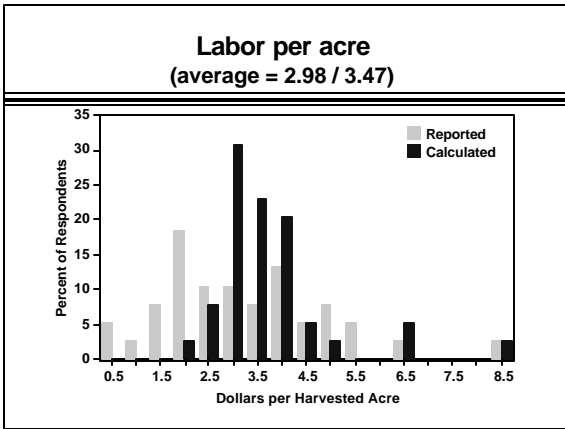
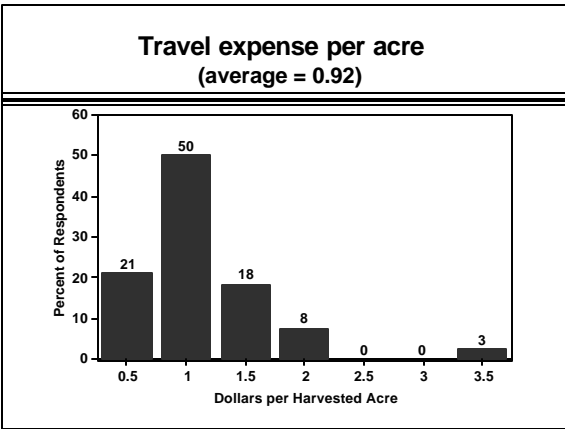
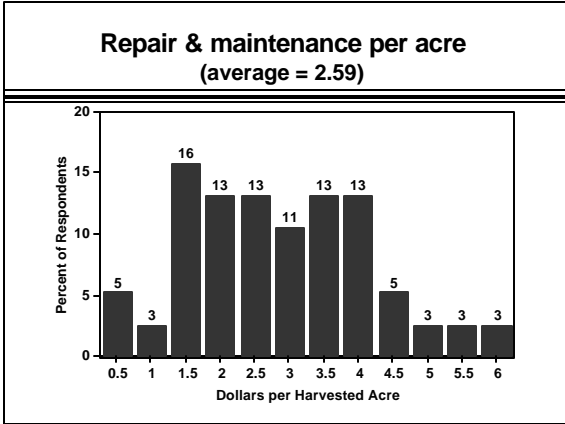
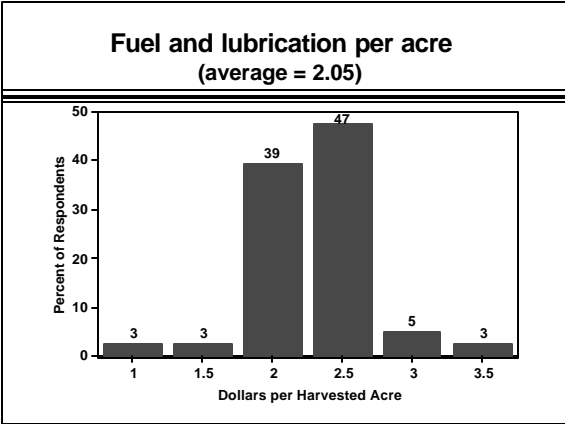


Total cost per separator hour
(average = 202.38)

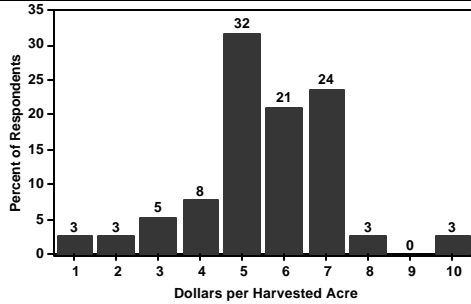


Profit per separator hour
(average = 1.75)

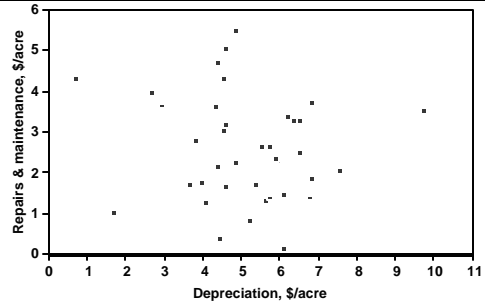




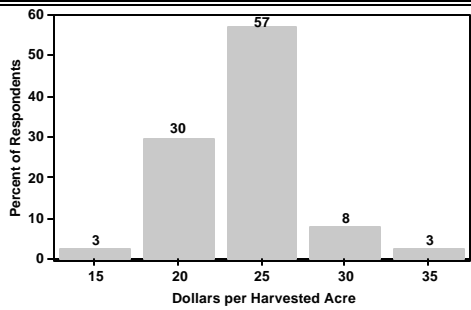
Depreciation per acre
(average = 5.12)



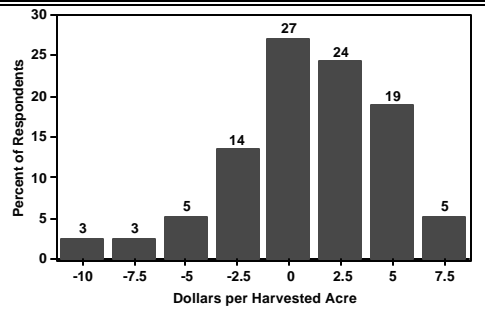
Repairs & maintenance vs. depreciation per acre



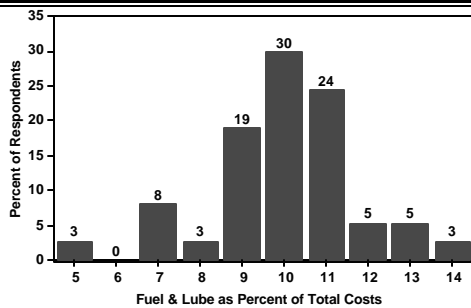
Total cost per acre
(average = 21.67)



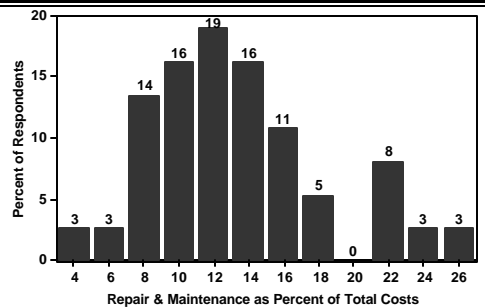
Profit per acre
(average = -0.30)



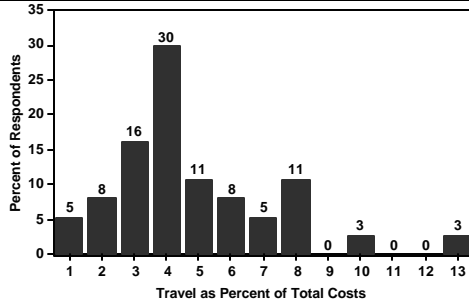
Fuel and lubrication as % of total
(average = 9.5%)



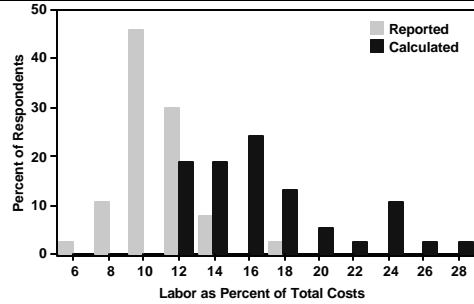
Repair & maintenance as % of total
(average = 12.1%)



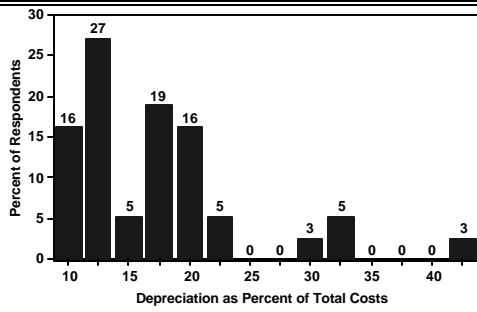
Travel expense as % of total
(average = 4.3%)



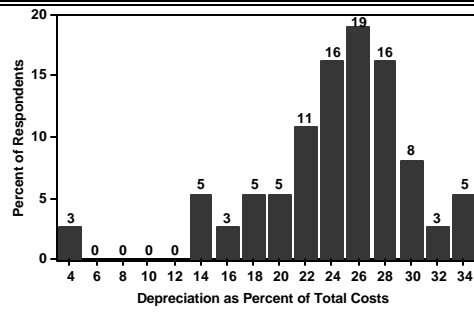
Labor as % of total
(average = 9.7% / 16.1%)



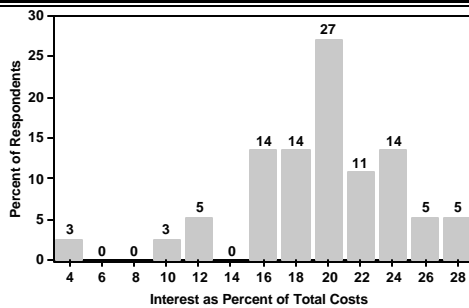
“Other” costs as % of total
(average = 16.0%)



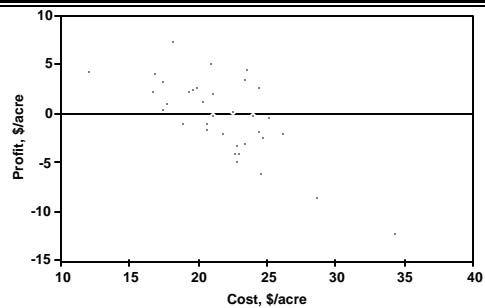
Depreciation as % of total
(average = 23.3%)



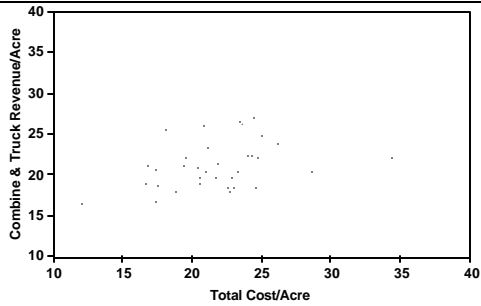
Interest on assets as % of total
(average = 18.6%)



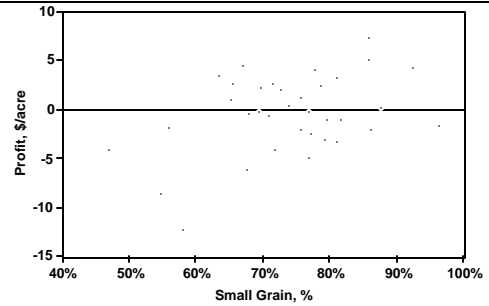
Profit/acre vs. cost per acre



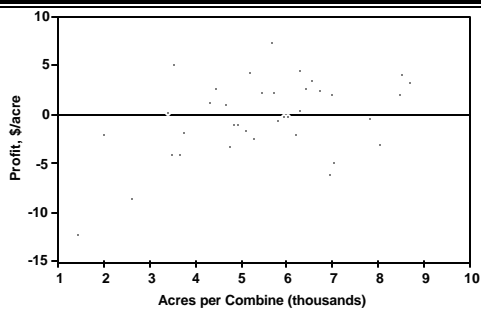
Combine and truck revenue/acre vs. total cost/acre



Profit/acre vs. % of acres small grains



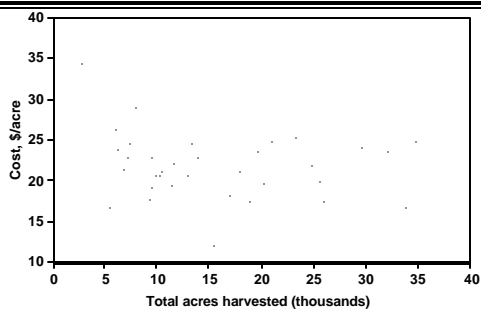
Profit/acre vs. acres/combine



Factors affecting profit per acre

- ➔ Small grain acre % +0.135
- ➔ 100 acres/combine +0.080
- ➔ % meals in restaurant -0.064
- ➔ Stay in motel -6.97

Cost/acre vs. total acres harvested



Cost/hour vs. total separator hours

