

**ANALYZING THE EXPANSIONS ABILITIES OF MID-SIZED
FARMS IN TEXAS SOUTHERN HIGH PLAINS**
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Abstract

Expansion may be a viable alternative to mid-sized farms facing increased uncertainty from the elimination of traditional farm program payments. Financial and production results from 1995-1997 are analyzed for two mid-sized farmers on the Texas Southern High Plains, and each producer's expansion ability is discussed. Results from 1995 and 1996 indicated that Farmer 1 was in a strong financial and efficiency position and could expand, while expansion was not recommended for Farmer 2 due to higher costs and lower revenues. Although both producers expanded efficiently in 1997, Farmer 13 remained in a much more desirable long-run economic condition than Farmer 3.

Introduction

The agricultural industry has undergone many changes over the past 50 years. Industrialization in the 1950s allowed substitution of capital for labor, improved productivity and favored farm consolidation to achieve lower per unit production costs (Jones, 1996). Farm consolidation, increased productivity, and labor substitution has led to larger and more specialized farms. Although these large farms account for only 2.2% of the total number of farms in the United States, they are responsible for 39.6% of sales (Jones, 1996). This trend toward increased concentration of production among fewer farms is expected to continue into the 21st century. Another important change in the agricultural industry is the increased emphasis on a more competitive market environment. Recent legislation will phase out traditional subsidies by the year 2002, leaving farmers relying solely on market forces and increasing competition among individual farmers (Jones, 1996). The following section will provide an explanation of the new legislation and predict its effect on different farm entities.

General Problem

The Federal Agricultural Improvement and Reform (FAIR) Act, passed by Congress in April of 1996, evolved primarily as a result of the desire for a balanced federal budget. Since more money was spent on agriculture than any other industry of similar size, it seemed reasonable to reduce federal cash outlays for this sector (Offutt, 1996). The FAIR Act has significantly changed the government position on farm support, by ending supply controls and traditional subsidies paid to wheat, corn, feed grain, cotton and rice producers (Hagstrom, 1996). The FAIR Act implemented a fixed, but declining, seven-year series of payments. The legislation decreased the value of crop insurance policies and federal loans, in addition to making them more difficult to obtain. The FAIR Act represented a shift away from supporting agricultural programs and toward increasing conservation spending (Hagstrom, 1996).

Although the legislation contained negative components that reduced government assistance to farmers, it did have several positive aspects. For example, the FAIR Act allows producers a greater degree of planting flexibility. The government no longer has the authority to require farmers to set aside some of their land. Also, producers are no longer required to devote a portion of their acreage to the same crop every year. They can now plant a variety of crops without losing their transition payments (Klintberg, 1996). This concept, known as “Freedom to Farm,” allows farmers to increase their production and determine a desired crop mix. Furthermore, U.S. agriculture will have the opportunity to move toward a competitive market orientation and reduce its dependence on government intervention (Jones, 1996).

As farmers become less reliant on the government for support, they are faced with many new questions and challenges. Unlike most businesses, farmers face instability on both the supply and demand side (Klintberg, 1996). Prices are influenced by supply factors such as weather, pests, disease and foreign production, and by demand factors such as income growth. As a result, farm income is highly variable, making agriculture a high risk industry. The FAIR Act eliminated much of the price risk protection the federal government once provided to producers, including traditional government payments (Looker, 1997).

The potential impact of phasing out traditional subsidies on crop producing farms varies with farm size. This idea is supported in a recent study by the USDA Economic Research Service (Young, 1996). From both secondary data and producer surveys, Young found that smaller farms have a greater dependence on off farm income, thus are in a stronger financial position to weather increased market volatility and income swings. Larger farms tend to be more diversified and are in a stronger position to take advantage of production, marketing, and financial strategies to manage market instability. Also, many of these larger farms are not dependent on government payments (Young, 1996).

The mid-sized farms appear to be most affected by the FAIR Act. This assertion is exemplified by the USDA study that identified 34,000 farms that are the most susceptible to U.S. financial restructuring. These farms share similar characteristics. Most were medium sized with average gross cash incomes around \$100,000, had government payments averaging over 30 percent of gross cash income, and a more vulnerable financial position. These mid-sized farms appear to be most in need of timely market information and research programs designed to offer alternative management strategies and increased production levels (Young, 1996).

The Southern Plains, which includes New Mexico, Oklahoma, and Texas, was the focus of this study. Dodson (1995) found that the Southern Plains region had the most number of commercial cotton farms with negative income. As a consequence, negative-income farms on the Southern Plains received a smaller proportion of their income from crop sales and a larger proportion from government payments. In fact, in 1995 Southern Plains cotton producers received 44% of government payments made to commercial cotton farms (Dodson, 1995).

In addition to relying more on government payments, Dodson found that farms in the Southern Plains had a lower level of profitability and efficiency. For example, the returns on assets achieved by Southern Plains producers in 1995 were 4% lower than in other regions. The study also determined that the majority of these negative income farms on the Southern Plains were considered mid-sized, with an average gross cash income of \$50,000 to \$100,000 per year. Since these mid-sized farms of the Southern Plains have historically relied heavily on

government payments and have lower levels of profitability and efficiency, they may be significantly impacted by the FAIR Act, and may need to consider marketing and production alternatives to remain competitive (Dodson, 1995). One alternative that the USDA recommended to medium-sized farmers faced with increased price variability and loss of government payments was expansion of their operations (Young, 1996).

Specific Problem

This recommendation raises the question of how expansion affects the economic viability of mid-sized farms, especially cotton farms, of the Texas Southern High Plains. This region is significant because about one-half of Texas cotton was produced within a 17 county area surrounding the city of Lubbock (Dodson, 1995). There has been no research conducted in the Texas Southern High Plains to determine if expansion is a viable alternative to mid-sized farmers in this region. There is a need for this information to assist farmers in evaluating alternative management strategies.

Objectives

The general objective of this study was to determine the impacts of the reductions of government payments on mid-sized farmers in the Texas Southern High Plains, and analyze the feasibility of expansion given their production, financial and leveraging constraints.

The specific objectives of this study were to:

1. Analyze the production and financial structure of mid-sized cotton farms in the Texas High Plains with regard to profitability, debt structure, and significance of government payments.
2. Determine the feasibility of and benefits from expansion of these farm operations.

Methods and Procedures

The Standardized Performance Analysis (SPA) method was chosen as the vehicle for this research. This method provides producers with information necessary to make management decisions relative to their total farm operations. SPA uses production, financial, and marketing information that the farmer has readily available, and then consolidates this information for an integrated production and financial performance analysis of the total farming operation.

The SPA database was used to identify specific mid-sized cotton farms in the Texas Southern High Plains (Clark and Johnson, 1996). The first objective was to analyze the production and financial structure of the selected mid-sized farms with regard to profitability, debt structure, and significance of government payments. This objective was accomplished by using calculations from the income statement and balance sheets to derive ratios for liquidity, solvency, profitability, repayment capacity, and financial efficiency. Ratio analysis gave the farmer an in-depth look at the financial situation of his operation. The second objective of this study was to determine the feasibility and benefits of expansion for each mid-sized farm. This objective was fulfilled by using ratio and income analysis to determine the financial situation of each farm, and then comparing the derived ratios to industry norms. The industry numbers came from the SPA database of results from the Texas Southern High Plains and Weighing the Variable: A Guide to Ag Credit Management (Kohl, 1992).

The results of this study discussed the expansion capabilities of two mid-sized cotton farmers on the Texas Southern High Plains by examining their production results, income statement information, and ratio analysis for 1995 and 1996. Recommendations concerning expansion were then made based on each farmer's financial position. Both producers expanded in 1997 by leasing additional land. Each producer's financial position was then evaluated with regard to profitability, debt structure and significance of government payments after additional acres were added. Finally, it determined the accuracy of earlier expansion recommendations made for each producer based on 1995 and 1996 information.

Results

After evaluating the SPA database of 20 producers, two participants were selected for this study and are referred to as Farmer 1 and Farmer 2. These producers were chosen based on the size of their operations and their interest in expansion. They are considered to be mid-sized, having average gross cash incomes of approximately \$100,000 per year. Both producers began farming in 1995 and lease land. In addition to owning sole proprietorships, they also jointly manage a farming corporation. During 1995, each deducted \$17,500 from the corporation in

salary. In 1996, each received \$66,686 in the form of salary and dividends. In 1997, they received an average salary of \$13,301. Other than the money distributed from the corporation, the producers have no other non-farm income. The production and financial structure of each farmer was analyzed with regard to profitability, debt structure, and significance of government payments. As shown in Table 1, in 1995 Farmer 1 planted a total of 546 acres that included 255 acres of irrigated cotton, 191 acres of irrigated milo, and 90 acres of irrigated wheat. Farmer 2 planted 441 acres consisting of 348 acres of irrigated cotton, 54 acres of irrigated milo, and 39 acres of dry wheat. Both Farmer 1 and Farmer 2 were most profitable on their cotton enterprises and shared similar total farm revenues of \$119,346 and \$104,527, respectively.

Table 2 shows production information for the 1996 crop year. Farmer 1 initially planted 247 acres of irrigated cotton, 100 acres of irrigated milo, and 48 acres of irrigated wheat. However, 120 acres of cotton and 24 acres of wheat were destroyed by hail. The failed cotton was replanted to milo. The failed wheat was not replanted. Farmer 2 initially planted 233 acres of irrigated cotton, 35 acres of irrigated milo, and 34 acres of dry wheat. Hail destroyed 122 acres of cotton which were replanted to milo. Again, both producers were the most profitable on their cotton production. However, Farmer 1 was more profitable, receiving \$20,926 additional cotton income than Farmer 2. Farmer 1 also received \$18,765 additional milo income and \$2,217 additional wheat income. Consequently, Farmer 1 had a higher total revenue of \$150,558 compared to \$109,456 for Farmer 2.

Both Farmer 1 and Farmer 2 expanded their operations in 1997 through a 25% crop share lease agreement. As shown in Table 3, in 1997 Farmer 1 planted a total of 784 acres that included 580 acres of irrigated cotton, 121 acres of irrigated milo, and 83 acres of irrigated wheat. Farmer 2 planted 745 acres consisting of 514 acres of irrigated cotton, 148 acres of irrigated milo, and 82 acres of irrigated wheat. Overall, Farmer 1 increased the size of his operation by 389 acres in 1997. Farmer 2 expanded by 443 acres. Both producers were most profitable on their cotton enterprises and shared similar total farm revenues of \$175,270 and \$159,824, respectively.

Income Statement Analysis

Two facts need to be considered when analyzing the income measures of Farmer 1 and Farmer 2. Net income from wheat for both producers may be slightly distorted due to the difficulty in allocation of expenses. Most of the farm operating expenses were allocated on a per acre basis. Since wheat typically does not require as many inputs as cotton and milo, the expense numbers for this particular crop may be overstated, causing net income for wheat to be understated. Secondly, unlike most financial analysis, SPA includes family living withdrawals as an operating expense and subtracts this number from gross accrual revenue when deriving total net farm income. This action helps to standardize the program. For example, SPA can compare sole proprietorships to corporations because family living expenses are taken out of the sole proprietorships similar to the way salaries are taken out of corporations.

Tables 4 and 5 summarize income measures for the two individual operations used in this study. One factor of importance is average government payments received. For both producers, average government payments comprised 2% of gross accrual revenue in 1995 and 6% of gross accrual revenue in 1996. The 1995 payment was unusually low because farmers had to repay the previous year's over-allocation of deficiency payments out of 1995 deficiency payments. In 1996, the producers were able to keep their entire payments (Clark and Johnson 1996). Although both producers increased their amount of payments in 1997 due to the acquisition of additional acres, they remained at 6% of gross accrual revenue.

A 1995 income analysis indicated that both producers had an unprofitable year. Farmer 1 had a positive cotton income of \$41.46/acre, yet he had losses in milo and wheat incomes of \$60.24/acre and \$100.22/acre. Farmer 2 also indicated a poor level of profitability, having losses from cotton, milo, and wheat incomes of \$42.87/acre, \$159.17/acre, and \$198.13/acre, respectively. Overall, Farmer 2's average loss was \$70.80/acre compared to a loss of \$19.64/acre for Farmer 1. Although the two producers shared similar revenues of \$271.44/acre and \$299.78/acre, Farmer 2 had much higher costs. Farmer 2's total operating costs were \$350.77/acre compared to \$282.85/acre for Farmer 1. Depreciation represented the most

significant difference in operating costs between farmers, as indicated by an expense of \$101.70 for Farmer 2 compared to \$38.41/acre for Farmer 1. However, much of this depreciation expense was due to the fact that Farmer 3 had \$198,553 worth of equipment in 1995 compared to \$10,058 for Farmer 13. When depreciation is not considered, Farmer 2 has a net income of \$30.90/acre compared to a net income of \$18.77/acre for Farmer 1. In 1996, Farmer 1 purchased additional equipment, which eliminated this distortion.

A 1996 income analysis indicated that Farmer 1 was moderately profitable while Farmer 2 was unprofitable. Farmer 1 had positive cotton and milo incomes of \$115.67/acre and \$30.84/acre. He had losses from wheat and failed crop incomes of \$64.05/acre and \$34.68/acre. The revenue from failed crops came in the form of insurance proceeds. Farmer 2 had losses from cotton, milo, wheat, and failed crop incomes of \$60.34/acre, \$37.81/acre, \$127.65/acre, and \$99.93/acre, respectively. Overall, Farmer 1 was significantly more profitable in 1996, as indicated by a total net farm income of \$41.17/acre compared to a loss of -\$66.55/acre for Farmer 2. Farmer 1 had a higher gross accrual revenue of \$302.96/acre compared to \$271.89/acre for Farmer 2. Farmer 1 also had lower costs, with operating expenses \$60.20/acre lower than that of Farmer 2.

The 1997 income statement analysis (Table 6) indicated that both Farmer 1 and Farmer 2 had an unprofitable year, due primarily to low prices. Farmer 1 had a small cotton income of \$2.56 per acre, yet had losses in milo and wheat incomes of \$76.49/acre and \$32.03/acre, respectively. Farmer 2 also indicated a poor level of profitability, having losses in cotton, milo, and wheat of \$45.45/acre, \$101.79/acre, and \$12.69/acre, respectively. Overall, Farmer 2's average loss was \$53.05/acre compared to a loss of \$13.10/acre for Farmer 1. Although the two producers shared similar revenues of \$301.51/acre and \$315.61/acre, Farmer 2 again had much higher costs. Farmer 2's total operating costs were \$346.46/acre compared to \$299.03/acre for Farmer 1. Budgets indicated that chemicals, irrigation, depreciation, and interest represented the most significant difference in operating costs between Farmer 2 and Farmer 1. Farmer 2 also had higher family living withdrawals.

Ratio Analysis

Table 7 provides benchmark financial indicators for the agricultural industry. This information was acquired from Weighing the Variable: A Guide to Ag Credit Management (Kohl,1992). Kohl provides a basis for evaluating the financial situation of a farm by categorizing financial ratios in terms of liquidity, solvency, profitability, repayment capacity and financial efficiency. He then provides benchmark values that were determined in the industry to indicate a strong, minimum and weak financial position for each ratio. A producer can determine his financial situation by comparing the financial ratios for his operation to Kohl's benchmark values.

Liquidity

Tables 8 and 9 summarize farm financial measures for Farmer 1 and Farmer 2 for 1995 and 1996. Table 10 exhibits the 1997 measures. A liquidity analysis for 1995 showed that Farmer 1 had a strong level of liquidity. On the ending balance sheet, Farmer 1 had a current ratio of 19.07, indicating that he had \$19.07 in current assets for every \$1 in current liabilities. There was no current ratio value for Farmer 1 on the 1995 beginning balance sheet due to the fact that he had no current liabilities. Farmer 1 also had a desirable level of liquidity in 1996, with beginning and ending current ratios of 19.07 and 37.35. Although this current ratio decreased in 1997 to 6.10, it remained well above the acceptable range of 1.0 to 1.5.

In 1995, Farmer 2 had a relatively strong level of liquidity on the beginning balance sheet, yet his level decreased significantly on the ending balance sheet. This fact is indicated by an ending current ratio of 0.34, which is far below the minimum industry standard of 1. The decrease can be explained by a decrease in current assets due to a negative net income. Farmer 2 improved his liquidity in 1996 by increasing his current ratio to 1.5. This increase was due to an increase in savings from a salary he received from the farming corporation.

Farmer 2's liquidity decreased again in 1997. This fact is indicated by an ending current ratio of -0.20, which is well below the industry minimum. His significant decline in liquidity from the beginning balance sheet was due primarily to a decrease in cash from \$41,699 to -\$7,889. Since

Farmer 2 was able to meet all his current debt obligations even though 1997 was an unprofitable year, it appears that he sacrificed his liquidity in order to pay off operating notes. Although this allowed Farmer 2 to keep an acceptable debt position in 1997, it makes him very vulnerable going into the 1998 crop year.

Solvency

Solvency analysis for 1995 showed that Farmer 1 had a desirable debt position. This assertion is indicated by the fact that both his ending debt/asset ratio of 7% and ending debt/equity ratio of 8% are significantly below the industry standards of <50% and <45%. Farmer 1 increased his debt levels in 1996 due to the purchase of new equipment, but still maintained a very strong debt position with ending debt/asset and debt/equity ratios of 24.06% and 31.68%, respectively.

Farmer 2 had poor solvency ratios in 1995. His ending debt/asset ratio of 77.93% and ending debt/equity ratio of 353.04% exceeded the minimum desirable industry levels of 75% and 200%, respectively. His debt/equity ratio increased significantly in 1995 due to a decrease in equity from \$89,967 on the beginning balance sheet to \$39,932 on the ending balance sheet. This decrease resulted from negative retained earnings of \$50,034 in 1995. Farmer 2 also had a decreasing asset level in 1995, resulting in an increasing debt/asset ratio. Although Farmer 2 did reduce his amount of debt in 1996 due to the sale of equipment, his solvency ratios were still somewhat high and indicated an unstable debt position.

Solvency analysis for 1997 showed that Farmer 1 maintained a desirable debt position. This assertion is indicated by the fact that both his ending debt/asset ratio of 29.95% and ending debt/equity ratio of 42.76% were significantly below industry standards. Farmer 2's ending debt/asset ratio of 50.69% and debt/equity ratio of 102.82% were also within the acceptable range for the industry. However, it should be noted that the difference in solvency ratios between the two producers is not due to a difference in debt, but a difference in assets and equity. Farmer 1 had total assets of \$325,234 in compared to \$184,832 for Farmer 2. In addition, Farmer 1's total equity was \$226,824 compared to Farmer 2's total equity of \$93,163. Therefore,

although both farmers shared a similar level of debt, Farmer 1 had a more desirable solvency position.

Profitability

A 1995 profitability analysis showed that both Farmer 1 and Farmer 2 did not utilize debt profitably. This assertion is exemplified by the fact that their return on equity was lower than their return on assets, meaning that the interest expense paid on their leveraged assets was greater than the return received from those leveraged assets. Their operating profit margins were also negative in 1995. For example, Farmer 1 had an operating profit margin of -3.43%. This number means that, on average, for every dollar of revenue there was a 3.43 cent loss after paying the operating expense necessary to generate that dollar. Farmer 2 also had a negative operating profit margin of 16.92%. Farmer 1 and Farmer 2 showed adjusted net incomes of -\$10,009 and -\$31,150. The net income was adjusted to account for family living withdrawals in order to standardize the numbers and allow for comparison against previous tables.

A 1996 profitability analysis indicated that Farmer 1 greatly improved his debt utilization. His return on equity was higher than his return on assets and he had a positive operating profit margin of 16.53% and a positive adjusted net income of \$27,275. In contrast, Farmer 2 still had a poor level of profitability. His return on equity was lower than his return on assets and he had a negative operating profit margin of 15.73% and a negative adjusted net income of \$36,525.

A 1997 profitability analysis showed that both Farmer 1 and Farmer 2 were again unprofitable. This is indicated by the fact that they did not utilize debt effectively and had weak operating profit margins. For example, Farmer 1 had an operating profit margin of 1.04%. This number is below the acceptable industry standard of 10%. Farmer 2's operating profit margin of -8.57% was also undesirable. This number means that, on average, for every dollar of revenue there was a 8.57 cent loss after paying the operating expense necessary that dollar.

Repayment Capacity

A 1995 and 1996 repayment capacity analysis showed that Farmer 1 was in a strong financial position. His 1996 term debt and capital lease coverage ratio of 4.7 was significantly above the industry acceptable range of 1.0 to 1.5. Farmer 2 was in a weak financial position. His coverage ratio of -0.1 in 1995 and 0.43 in 1996 was below the industry standard. A coverage ratio of 0.43 means that with his current funds, he cannot meet his current debt obligations out of his operating revenues. A 1997 repayment analysis showed that Farmer 1 continued to be in an acceptable financial position. His term debt and capital lease coverage ratio of 1.20 means that with his current operating funds, he could meet his current debt obligations 1.20 times. This number is also above the industry minimum of 1. Farmer 2 had a weak repayment capacity in 1997 and again could not meet current debt obligations out of operating revenues.

Financial Efficiency

A 1995, 1996, and 1997 financial efficiency analysis indicated that both Farmer 1 and Farmer 2 were very efficient. Their asset turnover ratios of 137% and 69.20% in 1995, 70.74% and 94.85% in 1996, and 96.01% and 163.97% in 1997 were significantly above the industry standard of 40%.

Summary and Conclusion

This study determined the impact of reductions of government payments on specific mid-sized farmers in the Southern High Plains, then analyzed the feasibility of expansion given their production, financial, and leveraging constraints. The study found that Farmer 1 received \$3,824 in government payments in 1995 and that Farmer 2 received \$2,692. In 1996, Farmer 1 received \$12,443 in government payments and Farmer 2 received \$12,304. For both producers, government payments comprised approximately 2% of gross accrual revenue in 1995 and 6% of gross accrual revenue in 1996. As Farmer 1 and Farmer 2 become less reliant on the government for support, they may need to consider marketing and production alternatives to remain profitable. One alternative that the USDA recommended to medium sized farmers faced with increased price variability and loss of government payments was expansion of their operations

This study evaluated each producer's expansion ability by analyzing their production, financial, and leveraging constraints. Overall, Farmer 1 was in a strong financial and efficiency position. His ending current ratios of 19.07 in 1995 and 37.35 in 1996 were well above the industry minimum. Furthermore, Farmer 1's strong 1996 debt/equity ratio of 24.06% and debt/asset ratio of 31.68% were well below the industry minimum of <75% and <200%. Farmer 1 also had a strong 1996 term debt and average lease coverage ratio of 4.7. His liquidity, solvency, and repayment capacity ratios indicated that Farmer 1 could potentially acquire additional liabilities and still remain profitable, therefore making expansion possible.

Farmer 2 appeared to be in an improving financial position in 1996, as indicated by an increasing level of liquidity and decreasing level of debt. However, his increase in liquidity was due to an increase in savings from a salary he received from his corporation, and did not result from his individual farming operation. Farmer 2 faces a twofold problem. His 1996 gross accrual revenue was \$31.07/acre lower than that of Farmer 1, due in part to lower yields, yet his operating costs were \$60.70/acre higher.

Farmer 2's financial ratios further indicated that he had a profitability and cost problem. He also held a higher level of debt, having a 1996 debt/asset ratio of 50.49% and a debt/equity ratio 101.99%. Farmer 2's 1996 term debt and average lease coverage ratio of 0.43 indicated that he could not meet his current debt obligations out of operating revenues. Until Farmer 2 can correct his current difficulty in meeting term debt requirements and increase his revenue, expansion is not recommended.

After evaluating 1995 and 1996 production, financial, and leveraging constraints for both producers, this study predicted that expansion was possible for Farmer 1 and was not possible for Farmer 2. However, 1997 figures indicated that both producers were able to expand in an efficient manner. This successful expansion was due primarily to leasing additional land rather than purchasing it. Through a 25% crop share lease agreement, the two producers were able to obtain more acres without increasing their levels of debt.

USDA classifications of financial position for commercial cotton farms were used to assess the overall situation of each producer. The USDA considers commercial cotton farms to be favorable with debt to asset ratios of less than or equal to 0.40 and a positive net farm income. Marginal income farms are farms with debt to asset ratios less than or equal to 0.40 and negative net farm income. Marginal solvency farms have debt to asset ratios greater than 0.40 and positive net farm income. USDA classifies vulnerable farms as those with debt to asset ratios greater than 0.40 and negative net farm income (Dodson, 1992).

Farmer 1 was classified as a marginal income farm in 1995 and 1997 and a favorable farm in 1996. In other words, Farmer 1 has consistently exhibited a desirable debt position with fluctuating profitability. Farmer 2 was considered a vulnerable farm in 1995, 1996, and 1997. This trend is unacceptable. Farmer 2 has consistently exhibited higher operating costs than Farmer 1. In addition, his 1997 current ratio of -0.20, profitability ratio of -8.57%, and term debt and capital lease coverage ratio of 0.12 are well below the acceptable range for the industry. Farmer 2's poor level of liquidity was due primarily to a decrease in cash. Although he was able to meet all his current debt obligations in the unprofitable year of 1997, he sacrificed liquidity in order to pay off his operating notes. This action makes him very vulnerable going into the 1998 crop year. In order to assure long run survival, Farmer 2 must reduce costs and increase profitability.

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Table 1. 1995 Production information

Crop	Farmer 1				Farmer 2			
	Cotton	Milo	Wheat	Total Farm	Cotton	Milo	Wheat	Total Farm
Acres	255	191	90	536	348	54	39	441
Yield/Acre	354 lbs	43 cwt	22 bu	NA	354 lbs	41 cwt	11 bu	NA
Price/Unit	\$0.73/lb	\$5.43/cwt	\$4.16/bu	NA	\$0.75/lb	\$5.57/cwt	\$4.24/bu	NA
Revenue	\$66,389	\$44,604	\$8,353	\$119,346	\$90,301	\$12,342	\$1,884	\$104,527
Rev/Acre	\$260	\$234	\$93	\$223	\$264	\$194	\$54	\$237

Table 2. 1996 Production information

Crop	Farmer 1					Farmer 2				
	Cotton	Milo	Wheat	Failed Crops*	Total Farm	Cotton	Milo	Wheat	Failed Crops*	Total Farm
Actual Acres	247	100	48	0	395	233	35	34	0	302
Adj Acre***	127	220	24	144	659	111	157	34	122	546
Yield/Acre	503 lbs	46 cwt	14 bu	NA	NA	382	43	3	NA	NA
Price/Unit	\$0.62/lb	\$5.27/cwt	\$4.06/bu	NA	NA	\$0.63	\$5.27	\$4.00	NA	NA
Revenue**	\$76,999	\$53,877	\$2,660	\$17,022	\$150,558	\$56,073	\$35,113	\$443	\$17,827	\$109,456
Rev/Acre	\$457	\$402	\$107	\$118	\$228	\$322	\$326	\$17	\$146	\$200

*Failed crops include cotton and wheat and were calculated using weighted averages

**Revenue for failed crops is in the form of crop insurance proceeds

***Adjusted acres are overstated due to a replant of the failed cotton and wheat to milo

Table 3. 1997 Production Information

Crop	Farmer 1				Farmer 2			
	Cotton	Milo	Wheat	Total Farm	Cotton	Milo	Wheat	Total Farm
Acres	580	121	83	784	514	148	82	745
Yield/Acre	152 lbs	50 cwt	19 bu	NA	523 lbs	47 cwt	25 bu	NA
Price/Unit	\$0.55/lb	\$4.06/cwt	\$2.99/bu	NA	\$0.54/lb	\$4.05/cwt	\$2.96/bu	NA
Revenue	\$145,949	\$24,681	\$4,640	\$175,270	\$144,511	\$9,111	\$6,202	\$159,824
Rev/Acre	\$283	\$204	\$56	\$224	\$281	\$192	\$76	\$215

Table 4. 1995 Income Measures

	Farmer 1				Farmer 2			
	\$/Acre				\$/Acre			
	Cotton	Milo	Wheat	Total**	Cotton	Milo	Wheat	Total**
Gross Accrual Rev	359.21	241.31	100.83	271.44	338.22	222.84	64.91	299.78
Primary Product Sales	260.35	233.53	92.81	220.81	264.31	194.36	53.68	236.96
Government Payments	10.80	1.92	7.86	7.16	6.48	4.69	4.86	6.12
Crop Ins Proceeds	87.91	0.00	0.00	41.32	0.00	0.00	0.00	0.00
Other Revenue*	0.15	5.86	0.15	2.15	67.43	23.79	6.38	56.70
Total Operating Cost	309.27	293.07	194.01	282.85	361.27	362.53	242.88	350.77
Total Cash Expenses	187.76	201.53	153.72	186.45	205.57	222.85	128.39	200.7
Depreciation	38.76	38.79	36.76	38.41	101.75	100.02	103.55	101.7
Interest Expense	8.47	8.48	8.04	8.40	19.82	19.48	20.15	19.81
Family Living W/D	82.76	52.75	3.52	57.99	53.94	39.66	10.95	48.36
Net Income	41.46	-60.24	-100.22	-19.64	-42.87	-159.17	-198.13	-70.80

*Other income includes cooperative distributions, custom hire earnings, and miscellaneous income

**Total numbers were calculated using weighted averages

Table 5. 1996 Income Measures

	Farmer 1					Farmer 2				
	\$/Acre					\$/Acre				
	Cotton	Milo	Wheat	Failed*	Total***	Cotton	Milo	Wheat	Failed*	Total***
Gross Accrual Rev	439.65	314.00	108.50	117.87	302.96	350.16	232.37	39.03	234.52	271.89
Primary Product Sales	311.88	245.24	55.40	0.00	202.66	252.36	207.42	17.03	0.00	169.69
Government Payments	39.48	4.33	35.72	0.00	18.58	25.60	0.00	20.35	24.22	17.56
Crop Ins Proceeds	0.00	0.00	0.00	117.87	25.93	0.00	0.00	0.00	145.88	32.09
Other Revenue**	88.2	64.35	17.36	0.00	55.73	72.2	24.96	1.65	64.41	52.55
Total Operating Cost	313.20	274.84	170.40	148.22	253.87	380.90	244.80	162.77	316.00	314.07
Total Cash Expenses	162.55	157.04	103.50	86.95	139.91	208.25	137.53	107.00	157.38	170.47
Depreciation	48.40	58.81	46.40	20.15	45.58	92.22	38.29	45.18	108.5	77.34
Interest Expense	10.78	109.83	2.15	4.34	42.44	29.6	25.39	3.91	18.45	24.38
Family Living W/D	102.25	78.99	20.50	41.13	75.17	80.44	68.97	10.59	50.11	66.25
Net Income	115.67	30.84	-64.05	-34.68	41.17	-60.34	-37.81	-127.65	-99.93	-66.55

*Failed crops include cotton and wheat and were calculated using weighted averages

**Other income includes cooperative distributions, custom hire earnings, and miscellaneous income

***Total number were calculated using weighted averages

Table 6. 1997 Income Measures

	Farmer 1				Farmer 2			
	\$/Acre				\$/Acre			
	Cotton	Milo	Wheat	Total**	Cotton	Milo	Wheat	Total**
Gross Accrual Rev	344.44	242.13	93.67	301.51	360.17	232.35	96.33	315.61
Primary Product Sales	283.06	203.97	55.90	246.21	281.15	192.13	75.64	240.80
Government Payments	36.07	13.59	11.37	29.99	31.52	0.26	10.48	22.98
Crop Ins Proceeds	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Other Revenue*	25.31	24.58	26.4	25.31	47.5	39.96	10.21	51.83
Total Operating Cost	324.76	304.39	118.66	299.03	379.61	315.59	104.15	346.46
Total Cash Expenses	215.76	227.34	76.49	205.24	240.21	225.78	77.22	229.31
Depreciation	36.30	32.61	25.28	34.53	46.75	37.50	7.31	40.56
Interest Expense	17.11	14.23	7.31	15.60	26.01	18.54	4.87	22.19
Family Living W/D	64.22	43.44	15.87	55.89	86.99	52.31	19.62	72.67
Net Income	2.56	-76.49	-32.03	-13.10	-45.45	-101.79	-12.69	-53.05

*Other income includes cooperative distributions, custom hire earnings, and miscellaneous income

**Total number were calculated using weighted averages

Table 7. Kohl's Benchmark Financial Indicators

	Strong	Acceptable	Weak
Liquidity	>1.5	1.5 to 1.0	<1.0
Current Ratio		25% of	
Working Capital		Expenses	
Solvency			
Debt/Asset Ratio	<50%	50% to 75%	>75%
Equity/Asset Ratio	>70%	30% to 70%	<30%
Debt/Equity Ratio	<45%	45% to 200%	>200%
Profitability			
Rate of Return on Farm Assets	>12%	12% to 3%	<3%
Rate of Return on Farm Equity	>25%	25% to 10%	<10%
Operating Profit Margin	>20%	20% to 10%	<10%
Repayment Capacity			
Term Debt Coverage Ratio	>1.5	1.5 to 1.0	<1.0
Financial Efficiency			
Asset Turnover Ratio	>40%	40% to 25%	<25%

Table 8. Summary of Farm Financial Measures 1995

	Farmer 1		Farmer 2	
	Beginning	Ending	Beginning	Ending
Liquidity				
Current Ratio	NA	19.07	2.37	0.34
Working Capital	\$102,956	\$64,141	\$24,714	-\$11,542
Solvency				
Debt/Asset Ratio	0.00%	7.34%	58.65%	77.93%
Equity/Asset Ratio	100.00%	92.66%	41.35%	22.07%
Debt/Equity Ratio	0.00%	7.92%	141.86%	353.04%
Profitability				
Rate of Return on Farm Assets		-4.71%		-11.71%
Rate of Return on Farm Equity		-9.57%		-43.02%
Operating Profit Margin		-3.43%		-16.92%
Net Farm Income		\$21,491		-\$9,850
Family Living Withdrawals*		\$31,500		-\$21,300
Adjusted Net Farm Income		-\$10,009		-\$31,150
Repayment Capacity				
Term Debt Coverage Ratio		NA		-0.10
Term Debt Repayment Capacity		\$22,580		-\$5,276
Term Debt Repayment Margin		\$22,580		-\$23,316
Financial Efficiency				
Asset Turnover Ratio		137.53%		69.20%

*Family Living Withdrawals are not adjusted for non-farm income

Table 9. Summary of Farm Financial Measures 1996

	Farmer 1		Farmer 2	
	Beginning	Ending	Beginning	Ending
Liquidity				
Current Ratio	19.07	37.35	0.34	1.50
Working Capital	\$64,141	\$129,026	-\$11,542	\$13,910
Solvency				
Debt/Asset Ratio	7.34%	24.06%	77.93%	50.49%
Equity/Asset Ratio	92.66%	75.94%	22.07%	49.51%
Debt/Equity Ratio	7.92%	31.68%	353.04%	101.99%
Profitability				
Rate of Return on Farm Assets		11.69%		-14.92%
Rate of Return on Farm Equity		12.05%		-62.39%
Operating Profit Margin		16.53%		-15.73%
Net Farm Income		\$76,858		-\$499
Family Living Withdrawals		-\$49,583		-\$36,026
Adjusted Net Farm Income		\$27,275		-\$36,525
Repayment Capacity				
Term Debt Coverage Ratio		4.70		0.43
Term Debt Repayment Capacity		\$34,494		\$3,666
Term Debt Repayment Margin		\$30,944		-\$13,723
Financial Efficiency				
Asset Turnover Ratio		70.74%		94.85%

*Family Living Withdrawals are not adjusted for non-farm income

Table 10. Summary of Farm Financial Measures 1997

	Farmer 1		Farmer 2	
	Beginning	Ending	Beginning	Ending
Liquidity				
Current Ratio	37.35	6.10	1.50	-0.20
Working Capital	\$129,026	\$86,200	\$13,910	-\$46,980
Solvency				
Debt/Asset Ratio	24.06%	29.95%	50.49%	50.69%
Equity/Asset Ratio	75.94%	70.05%	49.51%	49.31%
Debt/Equity Ratio	31.68%	42.76%	101.99%	102.82%
Profitability				
Rate of Return on Farm Assets		1.00%		-14.05%
Rate of Return on Farm Equity		-4.90%		-49.63%
Operating Profit Margin		1.04%		-8.57%
Net Farm Income		\$33,331		\$14,807
Family Living Withdrawals		\$43,810		\$53,916
Adjusted Net Farm Income		-\$10,479		-\$39,109
Repayment Capacity				
Term Debt Coverage Ratio		1.20		0.12
Term Debt Repayment Capacity		\$2,565		-\$4,628
Term Debt Repayment Margin		-\$12,583		-\$33,062
Financial Efficiency				
Asset Turnover Ratio		96.01%		163.97%

*Family living withdrawals are not adjusted for non-farm income

