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**FINANCIAL PERFORMANCE MEASURES FOR
KANSAS SWINE FARMS, 1983-1992**

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Summary

Financial performance measures assist managers in making strategic plans and in tracking progress in relationship to a firm's goals. Kansas Farm Management Association data were used to compute benchmark financial performance measures for swine farms from 1983 to 1992. Annual average net farm income during the study period was \$36,370 and ranged from a loss of \$6,808 in 1983 to a profit of \$69,418 in 1990. Return on investment ranged from -9.36% to 12.09% and averaged 3.71% over the period. The average debt to asset ratio was above 40% in every year except 1989, 1990, and 1992. The average debt to asset ratio was lower in 1992 (29%) than in any other year of the study period.

(Key Words: Profitability, Liquidity, Solvency.)

Introduction

Financial performance measures can be used to assess the profitability, liquidity, solvency, and financial efficiency of a business. These measures provide information about the financial position and health of a business. Financial performance measures typically are used as warning signals and to track a firm's progress towards specific goals.

The objective of this study was to provide benchmark financial performance measures for swine farms in Kansas. This information

can be used by swine farm managers and farm financial analysts for comparative purposes.

Procedures

Kansas Farm Management Association data from 1983 to 1992 were used in this study. Enterprise gross farm income was used to classify farms by type. For a farm to be classified as a swine farm, more than 50% of gross farm income had to come from swine sales.

Recommendations of the Farm Financial Standards Task Force were used to define profitability, liquidity, solvency, and financial efficiency measures. Specific definitions of the measures used in this analysis are available from the authors.

Profitability measures explain the efficiency with which a firm uses its resources to produce profits. Profitability measures used in this analysis included net farm income, return on investment, return on equity, and the profit margin ratio. Net farm income was calculated by subtracting cash operating expenses and depreciation from gross farm income. Return on investment represented the return to both debt and equity capital invested in the business. Return on equity measured the residual return to equity capital. The profit margin ratio expressed profit as a percent of total revenue. Rate of return measures were adjusted for capital gains and losses on land and for operator labor and management charges.

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Liquidity measures were used as an indicator of a firm's ability to meet financial obligations as they come due without disrupting the normal operations of the business. Liquidity measures used in this analysis included the current ratio (current assets divided by current liabilities) and working capital (current assets minus current liabilities).

A firm's ability to cover all debt obligations can be depicted with solvency measures such as percent intermediate debt, percent long-term debt, debt to asset ratio, and net worth. The debt to asset ratio is the most commonly used solvency measure. This ratio is calculated by dividing total liabilities by total assets.

Financial efficiency measures show the intensity with which a business uses its assets to generate gross revenues and the effectiveness of production, purchasing, pricing, and financing decisions. The asset turnover ratio, the operating expense ratio, the depreciation expense ratio, the interest expense ratio, and the net farm income ratio were used to analyze financial efficiency. The asset turnover ratio was calculated by dividing gross farm income by total assets. This measure shows how efficiently capital is being used in the business. The expense and net farm income ratios were calculated by dividing the expense category or net farm income by gross farm income.

Results and Discussion

Table 1 presents annual profitability, liquidity, solvency, and financial efficiency measures for swine farms from 1983 to 1992. The average number of litters far-

rowed per farm was 228. Profits varied substantially from year to year. Net farm income over the period averaged \$36,370 and ranged from a loss of \$6,808 in 1983 to a profit of \$69,418 in 1990. Return on investment for these farms was greater than 10% in 1987 and 1990, but averaged only 3.71% over the period. Because of capital losses on land and low net farm income, returns on investment were negative in 1983, 1984, and 1985.

On average, liquidity was not a problem on these farms. About 42% of the debt on these farms was long-term. Though not presented here, this percent was higher than the amount found on crop, beef, and dairy farms. The average debt to asset ratio over the period was about 41%. The debt to asset ratio peaked in 1986 and was lowest in 1992.

On average, about 70% of gross farm income was used for operating expenses. Another 19% was used for interest and depreciation. The remaining 11% represented net farm income or profit. About 29% of gross farm income was used for interest and depreciation expenses in 1983 and 1984. In contrast, in 1992, only 11% of gross farm income was used for depreciation and interest. The net farm income ratio was greater than 15% in 1986, 1987, 1988, 1990, and 1992.

To assess a farm's financial progress, financial performance measures should be computed and compared with the farm's goals and industry averages. If a farm's performance is below the industry average, corrective action may be needed.

Table 1. Annual Farm Financial Measures for Kansas Swine Farms, 1983-1992

Item	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992
Number of farms	109	109	84	95	72	71	88	90	101	73
Profitability measures:										
Gross farm income	\$191,543	\$226,488	\$201,109	\$249,492	\$287,923	\$286,252	\$256,255	\$299,476	\$268,129	\$327,290
Net farm income	(\$6,808)	\$1,429	\$15,371	\$50,190	\$58,714	\$46,222	\$31,238	\$69,418	\$40,077	\$57,849
Return on investment	-1.02%	-9.36%	-4.74%	4.47%	12.09%	6.65%	6.47%	11.38%	4.90%	6.25%
Return on equity	-15.04%	-25.60%	-15.22%	1.33%	10.07%	13.29%	3.80%	8.82%	-0.11%	5.32%
Profit margin ratio	-7.30%	-6.99%	-1.27%	11.52%	8.63%	5.68%	3.25%	12.59%	5.57%	6.82%
Liquidity measures:										
Current ratio	1.06	1.18	1.46	1.64	2.33	2.09	2.52	2.71	1.55	2.01
Working capital	\$29,135	\$28,434	\$70,905	\$82,287	\$109,592	\$108,484	\$113,983	\$131,676	\$103,668	\$126,135
Solvency measures:										
Percent intermediate debt	20.15%	19.92%	34.62%	33.71%	22.19%	21.79%	28.65%	33.39%	23.26%	23.23%
Percent long-term debt	39.76%	38.24%	40.11%	51.69%	50.70%	50.53%	43.00%	39.47%	41.71%	23.92%
Debt to asset ratio	44.27%	45.60%	44.00%	48.20%	43.30%	41.57%	37.26%	35.93%	40.14%	28.74%
Total assets	\$540,374	\$569,027	\$456,044	\$427,299	\$432,799	\$449,210	\$483,398	\$504,605	\$604,687	\$646,944
Net worth	\$312,549	\$311,502	\$284,719	\$236,793	\$260,534	\$284,842	\$335,875	\$345,547	\$419,747	\$475,714
Financial efficiency measures:										
Asset turnover ratio	40.01%	44.91%	52.81%	61.22%	66.52%	65.23%	61.75%	69.74%	52.46%	55.22%
Operating expense ratio	77.79%	76.46%	71.86%	62.51%	65.34%	69.70%	72.40%	65.02%	71.14%	69.27%
Depreciation expense ratio	14.38%	15.09%	13.24%	10.47%	10.04%	9.23%	8.38%	7.46%	7.33%	6.34%
Interest expense ratio	14.61%	13.46%	11.16%	10.13%	6.66%	5.82%	6.45%	6.59%	7.22%	4.91%
Net farm income ratio	-6.79%	-5.02%	3.72%	16.87%	17.94%	15.22%	12.74%	20.91%	14.27%	17.81%

Source: Kansas Farm Management Associations.