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CASH OPERATING INCOME AND LIQUIDITY MANAGEMENT FOR SWINE FARMS

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Summary

Net cash flow measures the amount of cash remaining after all cash expense obligations are satisfied. This cash is available for additional farm investment, off-farm investment, family living, and additional debt repayment. A 5-year average monthly cash flow statement was used to determine net cash flow for 13 swine farms. Results indicate that excess cash was used primarily to invest in machinery, vehicles, and nonfarm assets and to increase the allocation for family living. Investments in buildings increased moderately over the study period, but investment in land was minimal. Investment in additional swine facilities was small. Expansion of the breeding herd was not visible on these farms until 1992.

(Key Words: Cash Flow, Liquidity, Investment.)

Introduction

Liquidity and cash flow management tools are essential components used in the implementation of financial control. Liquidity refers to the ability of the farm business to meet financial obligations as they come due and typically is measured using a cash flow statement. Monthly cash flow statements provide information necessary to assess seasonal credit requirements. Long-term cash flow projections also can provide information pertaining to a firm's ability to repay intermediate and long-term loans.

The objective of this study was to determine how excess cash profits (if present) were used on several swine farms in Kansas. Monthly sources and uses of funds are presented and discussed.

Procedures

Data on cash transactions, inventories and production information for 13 swine farms was available from the Financial Plus program of the Kansas Farm Management Association. To be included in this analysis, a farm had to have data for 1988, 1989, 1990, 1991, and 1992.

A monthly cash flow statement was used to determine the amount of excess cash available for investment and debt repayment. A cash flow statement summarizes all cash transactions concerning the business or enterprise during a given period. The net cash flow measure included farm and nonfarm sources and uses of cash. Cash operating income, defined as the amount of cash income from the farm business, was used to measure both profitability and liquidity. This cash is used for discretionary purposes such as meeting scheduled principal payments, on and off farm investment, and family living. Net loans were calculated as loans received minus loans repaid and reflect the level of debt repayment. A negative value for net loans indicated that producers were paying down debt. Financial and production variables were analyzed to ascertain where excess cash was invested.

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Results and Discussion

Table 1 presents a 5-year average monthly cash flow statement for the 13 swine farms. The swine farms were profitable during the period, averaging \$40,391 of net farm income (accrual basis) per year and \$56,972 of cash operating income (cash basis) per year. Net cash flow averaged \$217 per month or \$2,604 per year. This cash was available for new or unplanned investments. Using Table 1, we can analyze the seasonality of the various revenue and expense items, as well as the summary variables (lower portion of the table). Cash operating income and net cash flow were, on average, negative in June, September, and December. The largest monthly net cash flows occurred in January and August. The largest monthly principal payment occurred in January. Swine producers took out the most loans in January, September, October, and December. June, July, September, and December were the months when net loans were positive. Net loans were negative in 1989, 1991, and 1992. This indicates that swine producers were paying off debt in those years. On average, these farms paid down loans by \$6,672 per year during the study.

Net cash flow was positive from 1988 through 1991 and negative in 1992. Excess cash was used primarily to finance intermediate assets (Table 2). Table 2 is not a complete balance sheet but does list end-of-year

balances for swine farm assets. Swine producers in this study increased vehicle and equipment inventories, nonfarm assets, and family living expenses. Family living expenses increased from \$9,651 in 1988 to \$34,647 in 1992. Most of the increases in family living occurred because of increases in taxes, medical expenses, and recreational expenses. Equipment inventory increased by \$53,119 (83%) during the period. Nonfarm asset inventory increased from \$7,912 in 1988 to \$29,601 in 1992 or 274%. Investments in buildings grew by 44% over the period. The value of owned land increased by 5.8% during the period.

Fluctuations in the values of current livestock and crop inventories can be misleading and may not indicate a change of production. These fluctuations can be caused by changes in the individual commodity prices. Production numbers, such as average litters per year, suggest that swine production was very steady during the period. In 1992, breeding stock purchases increased. Before 1992, breeding stock purchases averaged five head per year. However, in 1992, an average of 22 head of breeding stock was purchased.

Cash flow management is an essential component of financial control. Anticipating cash needs alleviates last-minute decisions, which can be expensive. In addition, understanding the cyclical need of cash generation will allow producers to make better investment decisions.

Table 1. Monthly Cash Flow Statement for Swine Farms, 1988-1992

Item	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Total
Sources													
Livestock	27,990	19,356	20,874	18,114	20,874	16,823	17,403	22,429	17,320	20,187	18,694	13,891	233,956
Breeding stock	1,020	1,058	1,305	1,494	1,646	982	1,142	1,633	1,113	1,642	1,723	1,171	15,928
Crops	11,771	4,520	5,981	5,981	2,911	2,081	6,941	3,403	3,219	10,934	8,415	10,576	76,732
Miscellaneous ^a	1,065	570	352	437	777	734	863	682	600	505	700	2,840	10,124
Vehicles	0	0	33	0	59	0	46	59	77	0	100	15	390
Equipment	52	51	22	91	22	34	18	1	0	0	11	226	527
Buildings	0	0	0	0	0	27	0	0	0	0	0	9	36
Land	0	0	0	369	0	0	0	0	0	0	0	0	369
Total farm sources	41,897	25,555	28,567	26,486	26,289	20,680	26,414	28,207	22,329	33,268	29,643	28,728	338,062
Nonfarm	1,103	1,567	1,041	4,003	2,061	1,319	1,726	1,128	825	2,527	2,062	4,928	24,290
Total sources	43,000	27,122	29,608	30,489	28,350	21,999	28,140	29,335	23,154	35,795	31,705	33,656	362,352
Uses													
Livestock purchases	614	178	1,358	924	356	160	214	674	739	1,703	2,226	1,214	10,360
Feed	7,493	7,486	8,055	8,703	8,202	8,905	8,749	8,871	10,673	13,407	10,306	14,847	115,698
Veterinary	430	501	463	546	608	472	426	482	484	485	454	661	6,011
Livestock & crop mktg	260	100	378	226	306	352	372	207	198	369	229	184	3,181
Fert., seed & chem.	647	1,007	1,137	1,993	3,218	2,837	3,414	1,902	1,461	2,215	2,244	1,944	24,020
Machine hire & labor	1,780	1,526	1,830	1,907	1,674	2,099	2,197	2,075	1,787	2,102	1,764	2,399	23,140
Fuel and repairs	2,294	2,763	2,667	2,744	3,184	2,909	3,532	3,412	3,054	3,423	3,290	4,095	37,365
Grn pur. for resale	1,706	1,063	1,019	720	774	(24)	1,334	512	86	548	161	266	8,164
Farm utilities	813	909	875	937	759	688	754	727	799	827	742	764	9,594
Vehicles	841	798	361	571	595	247	734	743	994	3,028	246	(320)	8,838
Equipment	762	788	846	604	1,056	428	1,072	635	1,171	1,048	1,073	695	10,178
Buildings	326	271	289	1,917	132	302	321	338	392	128	220	328	4,963
Land	0	0	0	0	733	963	164	77	0	477	382	45	2,841
Prop tax & farm ins.	586	293	365	211	412	1,406	307	268	610	304	202	2,059	7,022
Interest paid	2,972	1,008	870	1,229	658	1,042	1,629	775	507	1,266	3,424	6,010	21,390
Cash rent	817	279	374	1,381	435	657	444	240	494	886	686	2,816	9,510
Miscellaneous	689	342	256	580	122	407	141	483	411	291	328	262	4,312
Total farm uses	23,029	19,313	21,143	25,193	23,224	23,849	25,804	22,422	23,861	32,505	27,976	38,269	306,588
Nonfarm	787	2,942	1,522	1,683	468	560	463	373	403	398	423	710	12,733
Family living	1,063	980	1,169	1,146	1,595	1,325	1,045	1,307	1,101	998	1,166	1,518	14,414
Nondeductible	1,124	1,827	1,767	1,039	675	421	529	471	497	1,288	818	3,194	13,650
Deductible	1,558	381	534	503	263	273	349	416	472	321	293	339	5,702
Total nonfarm uses	6,533	6,130	4,992	4,371	3,001	2,580	2,386	2,567	2,473	3,006	2,700	5,760	46,499
Total uses	29,563	25,443	26,135	29,564	26,225	26,429	28,189	24,989	26,334	35,511	30,676	44,029	353,087
Loans received	9,890	7,274	6,379	8,668	7,544	7,495	8,672	6,925	10,441	12,645	7,020	14,997	107,950
Loan payments	20,056	8,790	8,592	8,713	8,385	5,590	8,582	8,613	8,001	12,944	7,791	8,559	114,616
Net loans	(10,167)	(1,515)	(2,213)	(45)	(842)	1,904	90	(1,688)	2,440	(299)	(771)	6,439	(6,666)
Cash operating income	20745	8048	8865	3925	5500	-1290	2837	7518	948	5444	3477	-9043	56972
Net cash flow ^b	3,271	163	1,260	880	1,283	(2,526)	40	2,658	(740)	(15)	258	(3,934)	2,598
Debt service ratio (%) ^c	53.55	36.12	31.96	32.61	31.90	30.15	36.29	32.00	36.75	39.70	35.37	43.29	37.53

^aMiscellaneous income includes custom hire income, acct rec, and other income.

^bTotal Sources - Total Expenses + Net Loans.

^cDebt service ratio is principal and interest payment divided by total cash sources and then multiplied by 100.

Table 2. Swine Farm Assets, Liabilities, and Family Living Expenses, 1988 to 1992

Item	1988	1989	1990	1991	1992	% Change
Current assets						
Cash and accounts receivable	39,548	39,217	43,338	32,945	29,156	-26.28%
Feeder hogs	60,767	60,415	70,160	62,191	51,854	-14.67%
Other feeder livestock	12,335	10,295	13,743	9,572	13,681	10.91%
Stored grains	71,326	33,775	48,979	51,043	59,626	-16.40%
Supplies	2,579	785	1,455	1,372	2,811	8.96%
Intermediate assets						
Swine breeding stock	23,746	27,510	30,316	22,861	28,044	18.10%
Other breeding stock	10,569	10,170	10,038	9,944	10,002	-5.36%
Vehicles and equipment	63,970	55,490	55,833	111,376	117,089	83.04%
Longterm assets						
Land	233,294	241,833	250,314	246,853	246,853	5.81%
Buildings	24,512	22,335	17,766	33,242	35,314	44.07%
Liabilities						
Current loans	122,328	112,152	114,817	127,332	92,406	-24.46%
Intermediate loans	24,672	20,169	25,832	29,321	47,242	91.48%
Longterm loans	105,456	110,706	102,952	98,072	93,517	-11.32%
Nonfarm						
Family living expense	9,651	11,719	13,499	21,908	34,647	259.00%
Nonfarm assets	7,912	12,044	10,298	20,019	29,601	274.14%
Nonfarm loans	3,923	3,654	3,385	1,885	1,769	-54.90%