

# Kansas Agricultural Experiment Station Research Reports

---

Volume 0  
Issue 10 *Swine Day (1968-2014)*

Article 589

---

1994

## Cash operating income and liquidity management for swine farms (1994)

B D. Elliott

Michael R. Langemeier

Allen M. Featherstone

Follow this and additional works at: <https://newprairiepress.org/kaesrr>



Part of the [Other Animal Sciences Commons](#)

---

### Recommended Citation

Elliott, B D.; Langemeier, Michael R.; and Featherstone, Allen M. (1994) "Cash operating income and liquidity management for swine farms (1994)," *Kansas Agricultural Experiment Station Research Reports*: Vol. 0: Iss. 10. <https://doi.org/10.4148/2378-5977.6429>

This report is brought to you for free and open access by New Prairie Press. It has been accepted for inclusion in Kansas Agricultural Experiment Station Research Reports by an authorized administrator of New Prairie Press. Copyright 1994 the Author(s). Contents of this publication may be freely reproduced for educational purposes. All other rights reserved. Brand names appearing in this publication are for product identification purposes only. No endorsement is intended, nor is criticism implied of similar products not mentioned. K-State Research and Extension is an equal opportunity provider and employer.



**K**

**S**

**U**

## CASH OPERATING INCOME AND LIQUIDITY MANAGEMENT FOR SWINE FARMS

*B. D. Elliott<sup>1</sup>, M. R. Langemeier<sup>1</sup>,  
and A. M. Featherstone<sup>1</sup>*

---

### 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.

---

<sup>1</sup>Department of Agricultural Economics.

## 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 <sup>a</sup>          | 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  |
| Grm 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 <sup>b</sup>          | 3,271    | 163     | 1,260   | 880    | 1,283  | (2,526) | 40     | 2,658   | (740)  | (15)   | 258    | (3,934) | 2,598   |
| Debt service ratio (%) <sup>c</sup> | 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   |

<sup>a</sup>Miscellaneous income includes custom hire income, acct rec, and other income.

<sup>b</sup>Total Sources - Total Expenses + Net Loans.

<sup>c</sup>Debt 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 |
|------------------------------|---------|---------|---------|---------|---------|----------|
| <b>Current assets</b>        |         |         |         |         |         |          |
| 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%    |
| <b>Intermediate assets</b>   |         |         |         |         |         |          |
| 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%   |
| <b>Longterm assets</b>       |         |         |         |         |         |          |
| 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%   |
| <b>Liabilities</b>           |         |         |         |         |         |          |
| 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%  |
| <b>Nonfarm</b>               |         |         |         |         |         |          |
| 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%  |