

## Comparative Analysis: Guidelines for Liquidity and Solvency Measures

by Dr. Paul Ellinger

Comparative analysis is a valuable tool in assessing financial performance of operations. Evaluating financial measures across time provides explanations for historical trends in performance as well as signals for future performance. Another type of comparative analysis involves comparing financial performance measures to a peer group or industry norm.

**Financial performance measures vary across different types of farms.** We often categorize all agricultural producers without consideration of type, size or other unique characteristic. Ratio standards, hurdles and credit scoring models are often applied similarly to all types and sizes of producers.

Producer Characteristics	Upper Quartile	Median	Lower Quartile
All Producers	4.00	1.82	1.12
Farm Revenue (value of farm production (\$000))			
\$40 to \$75	7.32	2.39	1.03
\$76 to \$150	4.57	1.89	1.08
\$151 to \$225	3.61	1.68	1.08
\$226 to \$300	3.72	1.82	1.14
> than \$300	3.78	1.86	1.23
Farm Type			
Hog farms	4.92	2.03	1.33
Grain farms	3.89	1.81	1.11
Dairy farms	3.43	1.33	0.86
Beef farms	2.74	1.57	1.14
Tenure (acres owned/acres operated)			
< than 10%	3.26	1.61	1.04
11% to 25%	4.33	1.89	1.18
26% to 50%	4.99	2.14	1.24
51% to 75%	5.32	2.43	1.12
> than 75%	6.95	2.43	1.25

Producer characteristics	Upper Quartile	Median	Lower Quartile
All Producers	0.45	0.30	0.15
Farm Revenue (value of farm production (\$000))			
\$40 to \$75	0.38	0.20	0.05
\$76 to \$150	0.45	0.27	0.13
\$151 to \$225	0.46	0.30	0.17
\$226 to \$300	0.45	0.31	0.16
> than \$300	0.47	0.33	0.18
Farm Type			
Hog farms	0.44	0.30	0.16
Grain farms	0.46	0.29	0.15
Dairy farms	0.52	0.31	0.17
Beef farms	0.50	0.36	0.23
Tenure (acres owned/acres operated)			
< than 10%	0.52	0.36	0.20
11% to 25%	0.43	0.29	0.16
26% to 50%	0.38	0.23	0.10
51% to 75%	0.33	0.20	0.07
> than 75%	0.33	0.20	0.08

Data reported below come from 2,166 records in the Illinois Farm Business Farm Management (FBFM) program. The current ratio and debt-to-asset ratio measures for year-end 1996 records are summarized below. Assets are valued at market value and deferred taxes are excluded from the ratio calculations.

For each characteristic, the measures at the quartile breaks are reported. For example, the upper quartile break for all producers is 4.00. This indicates that 25% of the sample in the database have current ratios greater than 4.00. The median value of 1.82 indicates one-half of the operations have values greater than 1.82.

**Liquidity tends to be highest for smaller farms,** farms that own a high percentage of land operated and hog farms. Dairy farms tend to have the lowest liquidity. Solvency measures also vary by producer characteristic. Larger farms, beef farms, dairy farm and operators who lease a high percentage of the land they operate tend to have higher debt-to-asset ratios.

**There are strong indications that performance measures vary across producer characteristics** and we should not categorize all agricultural producers by a single norm or ratio level. Furthermore, we need to be aware that credit scoring models may favor specific farm types or sizes. Understanding the relationships among financial performance measures and farm characteristics gives the lender a wider basis to interpret credit scores and financial ratios across a cross section of farm characteristics.

**When performing comparative analysis,** be sure to consider the accounting procedures and timing of the measures that are used to calculate the norms. Balance sheets prepared at different times of the year may differ substantially from the norm. Moreover, the valuation of assets (cost vs. market) and the accounting for deferred taxes should be considered. When used appropriately, comparative analysis of firms to peer groups can be an outstanding indicator of financial performance of farm operations.

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