
Financial Characteristics of Top Performing Cooperatives

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Introduction

- Cooperatives are facing opportunities and challenges as their customer base evolves
 - Four major demographic trends that are creating these opportunities and challenges include:
 - 1) An aging customer base
 - 2) Larger farms wielding greater bargaining power
 - 3) Increasing numbers of part-time and small acreage farmers that are becoming a significant revenue source
 - 4) Increasing competition from investor owned firms specializing in farm input supplies and grain marketing
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Introduction

- In addition, local cooperatives face the challenge of losing the business as their member patrons get larger, because their volume is large enough to buy direct from the manufacturer
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Introduction

- Adapting and thriving in such a changing economic climate requires cooperative management and boards to identify factors that are key to their success
 - One obvious factor is the measurement of the cooperative's financial performance
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The Question

- What appropriate financial benchmarks can be developed that would help all cooperative management teams and boards make operational and strategic investment decisions that would enhance their overall return to local equity (ROLE)

Posing the Question:

- Posing benchmarks is a great way to consider how the cooperative is doing so where do we improve first?
 - Estimating marginal contribution is a step in this process.

Objective of this Study

- To do this we need to identify key financial characteristics associated with the greatest rates of return to local equity (ROLE) for agricultural cooperatives
 - Ranking cooperatives according to their ROLE, categorizing the ranked cooperatives by
 - Calculating meaningful financial performance measures that all firms could potentially use
 - Comparing the measures across cooperatives by estimating their marginal contribution to ROLE

First Task: Ranking Cooperatives According to Their ROLE

- This study seeks to benchmark the highest performing cooperatives relative to others so that cooperative boards, management, members, and extension professionals might formulate better and more informed business strategies
- For this reason, a financial ratio analysis is used rather than other procedures
 - Such as stochastic frontier efficiency analysis

- This research also complements a USDA-RD-RBS report (2005) that provides financial statements and ratios for 437 cooperatives categorized into five size groups
- Rather than focusing on size, however, the current research attempts to improve upon this process by measuring the relationship between financial measures and overall performance of selected cooperatives

Financial Performance Measures

Performance Measure	Abbreviation	Calculated from
Rate of Return on Local Equity	ROLE	Local Savings divided by Local Equity
Rate of Return on Assets	ROA	Net Income divided by Total Assets
Asset Turnover Ratio	ATR	Sales divided by Total Assets
Operating Profit Margin	OPM	Operating Profit divided by Sales
Weighted Average Cost of Capital	WACC	Weighted Avg. Debt & Equity Financing
Debt to Equity (Leverage) Ratio	D to E	Total Debt divided by Tangible Net Worth

Data

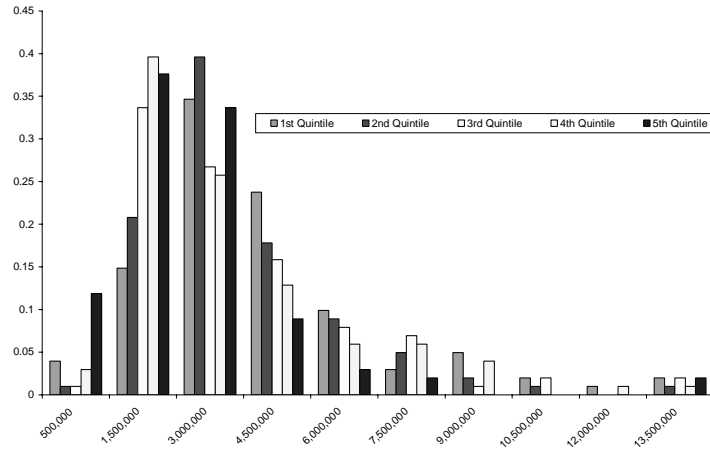
- Data is drawn from qualified financial statements provided by CoBank
- The sampled financial statements are for both farm supply and marketing cooperatives in thirty-four states. Ratios are calculated from statements ranging in years from 1995-2003 and are then averaged over the time period, using 505 cooperatives
- Firms are sorted in descending order from the highest average rate of return on local equity (ROLE) to the lowest and categorized into quintiles, 101 firms are in each quintile

Average Financial Performance Indicators Ranked by ROLE from the Highest (1st) to Lowest (5th) quintile

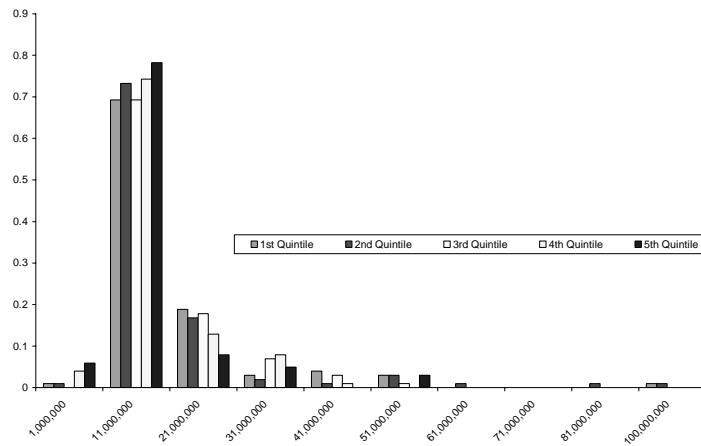
^a Denotes statistically significant difference at the 5% level when compared to the 1st Quintile

	1 st Quintile	2 nd Quintile	3 rd Quintile	4 th Quintile	5 th Quintile
ROLE	16.44	9.88 ^a	6.68 ^a	3.51 ^a	-3.36 ^a
ROA	7.46	5.27 ^a	4.05 ^a	2.90 ^a	0.84 ^a
ATR	2.35	2.23	2.19	2.35	2.18
OPM	3.18	2.09 ^a	1.48 ^a	0.82 ^a	-0.23 ^a
WACC	7.48	5.28 ^a	4.06 ^a	2.92 ^a	0.86 ^a
DtoE	0.86	0.83	0.84	0.79	0.81
Local Equity (mill \$)	3.56	3.48	3.68	2.80	2.15 ^a
Assets (mill. \$)	10.95	10.56	11.47	7.91	7.29 ^a

Local Equity Histogram for the Quintiles



Total Asset Histogram for the Quintiles



Snapshot of Cooperative Competitiveness 1995-2003 as Measured by Financial Performance

- Cooperatives compete against one another to
 - capture equity and business from producer-members
 - to garner the inputs and services from regional cooperatives
 - to secure cooperative specific financing
- The most competitive firms are those in the first quintile where the rate of return to local equity is 7% higher than the next quintile and substantially higher than the remaining quintiles
- A statistical difference is noted in cost efficiency as measured by the operating profit margin (OPM) between the highest performing quintiles and the remaining quintiles, but not in the size or efficiency with which assets are deployed in the firm
- For firms in the lower quintile, improving cost efficiency would improve its competitiveness vis a vis other cooperatives

Second Task: Comparing the Measures Across Cooperatives

- The conceptual framework follows a DuPont profitability model, in which important determinants of ROLE include
 - Operational efficiency (proxied by ATR), cost efficiency (OPM)
 - The relative proportion of debt to equity (D2E)
 - The cost of financing (WACC)

- In addition, the profitability of farm service and marketing cooperatives may depend importantly on regional specific demographics, and/or whether the firms focus exclusively on providing inputs, marketing services, or both
- Consequently, a rate of return on local equity (ROLE) system is written as:

A Rate of Return on Local Equity (ROLE) System

$$ROLE_i = \alpha_1 * ATR_i + \alpha_2 * OPM_i + \alpha_3 * WACC_i + \alpha_4 * D2E_i + \alpha_5 * FS_DUM + \sum_{j=6}^{11} \alpha_j * REGDUM$$

- Where REGDUM is an array of
 - regional dummy variables indicating location (i.e., South, East, Great Plains, Upper Great Plains, Midwest, Upper Midwest)
- FS_DUM is a dummy variable indicating that the cooperative exclusively focuses on farm inputs
- Parameters for five equations are estimated using an iterated seemingly unrelated regression procedure (SUR)

Parameter Estimates from Quintile System Using Iterated SUR

^a Indicates statistical significance at the 95% confidence level

	1 st Quintile	2 nd Quintile	3 rd Quintile	4 th Quintile	5 th Quintile
Constant	0.669	-0.338 ^a	-0.236 ^a	-0.181	0.106
ATR	3.668 ^a	1.407 ^a	0.754 ^a	0.578 ^a	-0.681 ^a
OPM	1.822 ^a	1.199 ^a	0.852 ^a	0.797 ^a	2.296 ^a
D2E	1.463 ^a	1.499 ^a	1.117 ^a	0.166 ^a	-1.913 ^a
WACC	0.048	0.546 ^a	0.674 ^a	0.430 ^a	0.634 ^a

What it Means

- The Dupont variables (ATR, OPM, D2E and WACC) are statistically different than zero across all quintiles, with the exception of the WACC for the first quintile
- The Dupont variables are all positively associated with ROLE for the first four quintiles
 - an increase in the performance measure (e.g. cost efficiency) is associated with greater ROLE

What it Means

- Increased asset turnover (ATR) is associated with lower ROLE in the fifth quintile (a negative and statistically significant relationship), perhaps suggesting that cooperative assets are too heavily utilized increasing maintenance costs
- A high cost structure may also be why the OPM parameter for the fifth quintile is substantially larger than the OPM parameters for the other quintiles
 - In other words, as already stated, a higher OPM (all else equal) equates with a higher ROLE, and firms in the fifth quintile should be able to increase their ROLE by *over 2%* simply by lowering their costs

What it Means

- Additionally, unlike the other quintiles, increases in the debt to equity position of the fifth quintile are associated with a lower ROLE.
 - Again, this could be related to the high cost structure
 - These firms are most likely not in a position to be able to absorb more debt in an effort to increase profitability
 - As already discussed, costs are an issue and efficiency should be an important concern for cooperatives in this quintile

Explaining Profitability—The Dupont Model

- For those firms in quintile 1, a one percent increase in ATR is associated with a more than 3.6 percent increase in ROLE
 - This is twice the contribution of a one percent increase in cost efficiency (OPM)
 - These firms would have already achieved strong cost efficiencies
 - thus their OPM, although higher than the OPM of three other quintiles, in a *relative sense*, is not as important a factor as ATR

Explaining Profitability—The Dupont Model

- Parameter estimates for both the 2nd and 3rd quintiles, however, indicate that the *relative debt to equity position* (D2E) has the greatest impact on ROLE although in the second quintile the ATR and D2E have very similar impacts
- Within the 4th and 5th quintiles, OPM, or *cost efficiency*, distinguishes the firms with the highest relative ROLE from the others so it would appear that in the poorest performing quintiles, controlling costs would generate the greatest benefits to ROLE
- Thus, when profits are high, the managerial emphasis is being placed on generating additional sales from existing assets, however, when profits are low, a greater emphasis should be placed on controlling costs.

Explaining Profitability—The Dupont Model

- A positive and significant relationship exists between the firm's debt to equity (D2E) position and ROLE for all quintiles
 - A general perception is that increased debt limits the firm's ability to borrow, and, therefore, the cooperative misses opportunities to obtain short term financing to take advantage of market opportunities
 - However, the parameter estimates in Table 2 suggest that, historically, cooperatives have captured growth opportunities with debt financing and are reaping the benefits

Competitiveness Within and Between Quintiles—a Summary

- Results found offer two different perspectives on the relative financial standing of cooperatives.
- When comparing the relative financial performance of cooperatives between quintiles after firms have been ranked according to ROLE:
 - The averages indicate little statistical difference in the asset turnover ratio between the quintiles
 - suggesting that improving asset turnover ratio will do little to move a cooperative from a lower ROLE quintile to the highest ROLE quintile
 - However, improved asset turnover is a strategy for improving ROLE when measured against other firms within the quintile

Competitiveness Within and Between Quintiles—a Summary

- Increasing cost efficiency (OPM) is a means of improving competitiveness across quintiles as well as within a quintile
- Finally, as already discussed, ATR has greater marginal impact on ROLE than OPM for the first and second quintiles, but the opposite is true for the 3rd, 4th and 5th quintiles

Conclusion

- As is the case with all generalizations, the user must take care to look at specific cases to be sure that the general rule applies
- It is still hoped that educators and extension specialists will use this information to help determine where cooperatives in their local regions fall
- Perhaps armed with this information, they can better instruct their cooperative managers and boards as to how they can increase local returns