

Post Merger Financial Performance of Oklahoma Cooperatives

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Background

- U.S. cooperatives are actively pursuing mergers and consolidations
- 367 mergers and consolidations during 1993-97
- The majority occurred between two cooperatives
- Potential rationale include operating and labor efficiencies, enhanced market power and other economies of scale and scope
- Previous studies have found that mergers lead to growth, but not necessarily increased profitability

USDA 1998

Objectives

- Identify financial characteristics that lead to mergers
- Determine the success of the merger for the surviving cooperatives
- Determine the overall success of the merger
- Analyze the difference between the cooperatives studied and their peer groups

The Data

- Audited Financial Statements 22 Oklahoma grain, farm supply and cotton ginning cooperatives
- Merged between 1992 and 2001
- At least 4 years of pre-merger data
- At least 3 years of post-merger data
- Two categories

“surviving” and “non-surviving” Research Design

- Audited Financial Statements from 25 Oklahoma Cooperatives
- Years prior and 4 years after merger
- Four sets of paired difference tests on financial ratios:
 - Pre-merger: difference between survivor and non-survivor
 - Surviving cooperative: pre-merger to post-merger period
 - Combined pre-merger financial data to the post-merger data
 - Combined pre-merger and post merger to peer group

Financial Ratios Analyzed

- Liquidity: Current Ratio
- Leverage: Total Debt to Total Asset Ratio
- Efficiency: Personnel Expense/Gross Margin and Total expenses/Gross Margin, Total Asset Turnover, Days Accounts Receivables
- Profitability: ROA, ROE, Gross Margin/Sales
- Sales: Total Sales and Sales Growth

Paired Difference Tests

- Difference Tests
- Difference: $d_c = x_{c1} - x_{c2}$
- Null Hypothesis: $H_0: \mu_d = \mu_0$
- Alternative Hypothesis: $H_a: \mu_d \neq \mu_0$
- Tested differences in means of matched pairs of cooperatives
- Reject H_0 if $t > t_{\alpha/2, v/2}$

Results

#1: Difference Prior to Merger

- Surviving cooperatives are larger than non-surviving cooperatives
- Little difference between balance sheet ratios
- Surviving cooperatives more efficient
- Profitability and Sales growth were also better, but not significantly so

	Non-Survivors	Survivors	Post Merger	Standard	P-value of test for difference in means	
Personnel Expense	52.15%	43.15%	40.17%	45.00%	.0008	**
Total Expense	115.07%	86.67%	73.37%	90.00%	.0001	**
Sales to Total Assets	1.89	2.80	2.31	2.00	.0035	**
Accounts Receivable	19.5	10.94	19.34		.0001	**
Sales	6.22	7.80	10.84		.0142	**

Results: Continued

#2: Impact on Surviving Firms

- Sales Volume Increased
- Decreased Expense Ratios
- Increase Profitability
- Increased Rate of Sales Growth

	Survivors Pre-Merger	Survivors Post-Merger	P-value of test for difference in means	
ROA	4.51%	6.83%	.0095	**
ROE	6.35%	9.20%	.0258	*
Sales Growth	6.13%	12.22%	.1506	
Accounts Receivable	10.94	19.34	.0001	**
Sales	7.80	10.84	.0008	**

#4: Peer Group Comparison

- Separates effects of merger from market and business environment differences over the period of time
- Cooperatives of similar size and function
- Three size categories
 - \$0 - \$5 million
 - \$5 - \$15 million
 - Greater than \$15 million
- Provided by CoBank Region 3 Database

	Pre-Merger Synthetically Combined Data	Post-Merger Surviving Firm	P-value of test for difference in means	
Personnel Expense	1.76%	-2.23%	.0349	*
Total Expense	10.72%	2.17%	.0042	**
Return on Equity	-5.12%	-1.27%	.0074	**
Sales Growth	-1.20	10.82	.0991	

#3: Combined Pre-merger with Post Merger Financial Statements

- Financial Statements were “synthetically combined” prior to the merger to gauge the success of the merger
- No significant difference in sales between combined pre-merger firms and corresponding surviving firm
- Increased efficiency and member’s return on equity

	Pre-Merger Synthetically Combined Data	Post-Merger Surviving Firm	P-value of test for difference in means	
Personnel Expense	43.76%	39.51%	.0244	*
Total Expense	95.12%	86.75%	.0039	*
Return on Equity	5.04%	8.94%	.0060	*
Accounts Receivable	14.06	16.22	.0510	*
Sales	14.69	14.96	.8003	

Conclusions

- In contrast to previous studies, mergers were generally successful in increasing profitability and efficiency
- Overall performance for both merging firms were improved upon joining
- Peer group analysis suggest performance gain was not related to business environment



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