

Cooperative Sector Performance and the DuPont Equation

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The Annual Cooperative Business Survey conducted by the University of Wisconsin Center for Cooperatives explored the financial performance of cooperative businesses. The data provides a good illustration of the DuPont formula. The DuPont approach exploits the inter-relationship of financial ratios. If you multiple the sales margin (net income/sales) times the total asset turnover (sales/assets) you get the return on assets. In other words, $ROA = \text{margin} \times \text{turns}$. If you multiply ROA time the leverage ratio (assets/equity) you get the return on equity. $ROE = ROA \times \text{leverage multiplier}$.

Using the DuPont equations with the survey data illustrates how different types of cooperatives achieve their financial results.

	Sales Margin	Asset Turnover	ROA
Ag Cooperatives	5.2%	1.83	9.5%
REC-Distribution	14.1%	.46	6.5%
Grocery Cooperatives	3.2%	1.77	5.6%

As you compare agricultural cooperative to distribution RECs you can see that the ag cooperatives had a lower profit margin but were able to generate more sales dollars per dollar of assets. (All those electric poles and transformers are costly!). Not surprisingly, grocery cooperatives operated on a relatively low profit margin. Now let's look at the impact of leverage

	ROA	Leverage Multiplier	ROE
Ag Cooperatives	9.5%	2.25	21.3%
REC-Distribution	6.5%	2.76	18.0%
Grocery Cooperatives	5.6%	2.2	12.2%

Because their return on assets was greater than their interest rates, all of the cooperatives increased (levered up) their return on equity relative to the return on assets. The electrical cooperatives had the highest leverage. Bankers like to lend to stable industries like electricity providers. The RECs levered up their ROE to 18% from a 6.5% ROA. Agricultural cooperatives had a little more than twice as much assets as equity or a leverage multiplier of 2.25. That allowed them to achieve a ROE more than double their ROA. The DuPont equation also illustrates how the grocery cooperatives with a sales margin of just 3.2% achieved a ROE of 12.2%. Of course if the interest rate had been above the cooperative's ROA we would have seen the leverage effect operating in reverse, decreasing ROE relative to ROA.

The beauty of the DuPont equation is that it decomposes your ultimate goal (ROE) into your sales margin (pricing and efficiency), asset turnover (the right asset mix and asset utilization) and capital structure. Try it on your own financials and see what it tells you!

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