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Determining Your Cooperative's Cost of Equity

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CORNHUSKER ECONOMICS

University of Nebraska–Lincoln Extension

Determining Your Cooperative's Cost of Equity

Market Report	Yr Ago	4 Wks Ago	2/14/14
<u>Livestock and Products,</u>			
<u>Weekly Average</u>			
Nebraska Slaughter Steers, 35-65% Choice, Live Weight.....	\$122.94	\$142.75	\$142.19
Nebraska Feeder Steers, Med. & Large Frame, 550-600 lb.....	169.11	216.01	213.01
Nebraska Feeder Steers, Med. & Large Frame 750-800 lb.....	140.77	170.40	173.81
Choice Boxed Beef, 600-750 lb. Carcass.....	183.07	224.62	208.83
Western Corn Belt Base Hog Price Carcass, Negotiated.....	82.29	78.06	85.18
Pork Carcass Cutout, 185 lb. Carcass, 51-52% Lean.....	80.88	85.53	92.69
Slaughter Lambs, Ch. & Pr., Heavy, Wooled, South Dakota, Direct.....	104.13	158.00	155.00
National Carcass Lamb Cutout, FOB.....	285.82	368.87	369.68
<u>Crops,</u>			
<u>Daily Spot Prices</u>			
Wheat, No. 1, H.W. Imperial, bu.....	7.28	5.93	6.44
Corn, No. 2, Yellow Nebraska City, bu.....	7.16	4.11	4.28
Soybeans, No. 1, Yellow Nebraska City, bu.....	14.25	12.96	13.06
Grain Sorghum, No. 2, Yellow Dorchester, cwt.....	11.95	7.14	7.50
Oats, No. 2, Heavy Minneapolis, MN, bu.....	4.08	4.34	4.41
<u>Feed</u>			
Alfalfa, Large Square Bales, Good to Premium, RFV 160-185 Northeast Nebraska, ton.....	+	+	+
Alfalfa, Large Rounds, Good Platte Valley, ton.....	227.50	130.00	125.00
Grass Hay, Large Rounds, Good Nebraska, ton.....	212.50	107.50	107.50
Dried Distillers Grains, 10% Moisture, Nebraska Average.....	288.25	192.00	196.00
Wet Distillers Grains, 65-70% Moisture, Nebraska Average.....	108.00	60.00	61.50
+ No Market			

It is important for a cooperative to assign an appropriate cost to the equity capital its members provide. Because cooperatives usually do not issue publicly traded capital stock, there is no market value on which they can base the cost of equity. In addition, cooperatives generally do not pay dividends on equity certificates representing retained patronage refunds. Consequently, it is easy for them to undervalue the cost of equity, which can cause them to rely too much on equity capital and underestimate overall capital costs. That can result in capital costs that are higher than necessary and overinvestment in assets. A cooperative that undervalues the cost of equity is also less likely to retire member equity in a timely manner so an unfair share of the costs of financing the organization is borne by individuals who no longer benefit from its services.

Here are three methods cooperatives can use to determine the cost of equity capital.

Opportunity Cost of Funds (OCF) Method: Under this method, the cost of equity capital is determined by the opportunity cost of the funds in alternative uses, either at the cooperative or member level. For example, a cooperative might set the cost of its equity to the rate of return members would earn if the funds were available for their farming operations. However, this information may not be readily available and may vary considerably from one operation to another. Because most farm operators have short-term debt and retained patronage refunds could have been used by farmers to reduce their debt if received in cash, setting the cost of equity to the interest rate on short-term debt represents an alternative approach. A dis-

advantage of the OCF method is that it may be difficult to choose from among the many financial alternatives available to the cooperative and its members given the degree to which they vary with respect to returns and the level of risk.

Discounted Cash Flow (DCF) Method: For investor-owned corporations using this method, the cost of equity can be defined as the sum of the anticipated dividend yield and growth rate in dividends per share. Because cooperatives do not pay dividends on capital stock, this method must be modified for their use by focusing on the cash payments members receive (i.e., cash patronage refunds and cash redemptions of equity) instead of dividends.¹ With this modification, k_e , the cost of cooperative equity, is determined by:

$$k_e = \frac{CPR_1 + ER_1}{E_0} + g_s$$

where CPR_1 and ER_1 are respectively the cash patronage refunds and equity redemption received by members at the end of the year, E_0 is current equity, and g_s is the sustainable rate of equity growth.

Return on Equity (ROE) Method: This method is frequently used by rural electric cooperatives. A cooperative simply sets the cost of equity to its rate of return on equity. The method is easy to apply and based on information that should be readily available. In addition, it is appealing because the rate of return can be related to the organization's goals with respect to cash patronage refunds, equity retirement, and growth through this equation:

$$r_e = \frac{g}{(1-c)[1-(1+g)^{-T}]} \text{ for } g > 0$$

where r_e is the rate of return on equity required to meet the cooperative's goals, c is the proportion of patronage refunds paid in cash, g is the rate of growth, and T is the length of the revolving period.² Thus, the rate of return represents the cooperative's opportunity cost of equity.

The relationship between the required rate of return and the cooperative's goals is represented in Table 1 for a cooperative that pays 45 percent cash patronage refunds. If the cooperative earns an 18.5 percent rate of return on equity, it could maintain a growth rate of

eight percent while retiring equity on a 20-year revolving cycle. If it were to shorten its revolving period to 15 years, it would need to increase its rate of return to 21.2 percent. In general, more ambitious goals increase the required rate of return—and the corresponding cost of equity capital.

The table also can be used to illustrate the concept of the sustainable growth rate used in the DCF method. If a cooperative earns an 18.5 percent rate of return, it would be able to maintain an eight percent rate of growth while paying 45 percent cash patronage refunds and revolving equity on a 20-year cycle. However, if its rate of return were lower, an eight percent growth rate would not be sustainable unless it lowered the proportion of patronage refunds it paid in cash or increased its revolving period.

¹ Glenn Pederson, *Cost of Capital for Agricultural Cooperatives*, RBS Research Report 163 (Washington, D.C.: U.S. Department of Agriculture, 1998), p. 17.

² Jeffrey S. Royer, "Patronage Refunds, Equity Retirement, and Growth in Farmer Cooperatives," *Agricultural Finance Review* 53 (1993), p. 45.

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Table 1. Required Rate of Return on Equity for a Cooperative that Pays 45 Percent Cash Patronage Refunds

Growth Rate	Revolving Period (Yrs.)				
	5	10	15	20	25
	<i>Percent</i>				
0	36.4	18.2	12.1	9.1	7.3
1	37.5	19.2	13.1	10.1	8.3
2	38.6	20.2	14.2	11.1	9.3
3	39.7	21.3	15.2	12.2	10.4
4	40.8	22.4	16.4	13.4	11.6
5	42.0	23.5	17.5	14.6	12.9
6	43.2	24.7	18.7	15.9	14.2
7	44.3	25.9	20.0	17.2	15.6
8	45.5	27.1	21.2	18.5	17.0
9	46.7	28.3	22.6	19.9	18.5
10	48.0	29.6	23.9	21.4	20.0
15	54.2	36.2	31.1	29.0	28.1
20	60.8	43.4	38.9	37.3	36.7