

Alternatives for Handling Losses in Cooperatives

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Cooperatives can handle a loss in several ways. This paper evaluates two primary alternatives: retain in the cooperative or allocate to patrons. The cooperative's and patrons' preferences are based on choosing either a tax reduction or redemption reduction. Present value of cash flow is used as the criterion for evaluating choices. The cooperative's and patrons' preferences may be in harmony or conflict depending on the marginal income tax rates and pattern of equity redemption. A simple procedure is presented to determine a cooperative or patron preference.

The size and frequency of cooperative losses at both the regional and local levels have been increasing during the 1980s. Losses are expected to be a common occurrence in both regional and local operations through the remainder of this century because of the current financial condition of cooperatives, the competitive environment in which they operate, and the projected economic climate of agriculture. More specifically these losses will be the result of factors such as: (1) a weak financial condition (high leverage), (2) small gross margins and net income due to a competitive selling environment, relatively high cost of sales, and relatively high cost of production (operating costs), and (3) a very turbulent economic environment including financial stress on production agriculture customers and occasional unexpected events such as the substantial rise or decline in the price or volume of oil or fertilizer.

Cooperatives who incur losses need to determine the best alternatives available to handle the problem. The evaluation can be difficult and the results will vary among cooperatives because of different situations. Both economic and political criteria and conditions are important.

Objectives and Assumptions

This paper evaluates two primary alternatives cooperatives have for handling losses: Retain in the cooperative or distribute to patrons by cancelling allocated equity. The key issue is whether a loss should be retained by the cooperative by distributing it to retained earnings or whether a loss should be allocated to patrons by distributing it to the allocated equity accounts (retained patronage refunds) of individual patron-owners. In either case there is a reduction in or a cancellation of equity.

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This evaluation focuses on the direct economic impacts given generally accepted legal and accounting practices. No attempt is made to measure the political impact of each alternative, which in turn may have a secondary economic impact. For example, cancelling allocated patron equity often upsets patrons and may result in loss of business to cooperative and non-cooperative competitors.

The initial analysis was performed in response to the writedown of local cooperative investment in regional cooperatives and therefore emphasizes that situation. However, the problem of how local cooperatives can best handle regional investment writedowns or, more generally, allocated regional losses is just one aspect of handling losses. Losses from any source that result in an overall net loss can be evaluated in a similar way. Although the analysis focuses on the local cooperative the results are directly applicable to any centralized cooperative, local or regional, since the key relationship is the one between the cooperative and the producer-patron. The general approach applies to any cooperative-patron relationship including a federated regional-local relationship.

Only some very basic cases are investigated. First, only cases where the local experiences a net loss from the combination of all operations, including regional and local, are covered. The net loss is assumed to be an ordinary net operating loss including losses caused by cancellation of a local's investment in a regional when the regional distributes losses to patrons. Second, only participating patron business is considered.¹ Third, retained patronage refunds are assumed to be distributed in qualified form.² Fourth, only one patronage pool and one allocated equity pool are used for income distribution. Separate pools based on business source (regional or local) and product line source (such as grain, fertilizer, or petroleum) are not analyzed. This assumption is compatible with a cooperative that maintains multiple patronage pools but combines them for purposes of allocated income distributions and related equity distributions. Fifth, equity is managed as follows. Investment by patrons is obtained from retained patronage refunds or per unit retains. The cash patronage refund rate and the per unit retain rate are not functions of the loss-handling alternative chosen. The equity redemption plan uses estate settlement or age of patron, the most common methods, resulting in lump sum distributions at specific points in time for each patron based on the patron's life cycle.³ The schedule of redemptions is not a function of the loss-handling alternative chosen. These assumptions imply the cooperative does not adjust the investment or redemption plan differently for each loss handling alternative to maintain working capital and equity capital targets. Sixth, in the event the cooperative prefers to retain the loss, it is assumed that retained earnings is of sufficient size and composition to absorb the loss. If not this will generally require the loss distribution be to allocated equity (i.e., a cancellation of individual patron equity). Seventh, when the cooperative retains the loss it is assumed the loss is carried forward (to be in compliance with current Internal Revenue Service regulations regarding application of Section 277 to non-Section 521 cooperatives) and is utilized as soon as possible. The illustrative examples assume utilization in one year.

Research done at Iowa State University by Junge; Ginder; Brase; and Brase and Ginder showed that individual producer-patrons, as a group,

are substantially better off, in terms of cash flow, if the losses are allocated to them in almost all situations. The research also showed cooperatives are seldom much worse off. They conclude that in most situations allocation is preferable on strictly financial grounds. Their analysis is based on actual financial data of local cooperatives and patrons in Iowa.

This paper extends and clarifies the analytical approach necessary to evaluate loss-handling alternatives. A broader range of situations is considered resulting in a variety of conclusions for cooperatives and patrons depending on the situation.

Net Income Distribution Alternatives

The four basic ways to distribute cooperative profits are: (1) a distribution to, and therefore increase in, retained earnings (an unallocated, or undivided account since no equity holders have individual stocks or certificates representing a specific claim on this equity); (2) a distribution to the retained patronage refund accounts of participating patrons (an allocated or divided account); (3) a distribution in the form of cash patronage refunds to participating patrons; and (4) a distribution in the form of cash dividends to equity holders. The first two are noncash distributions that create equity on the balance sheet of the cooperative. The third and fourth are cash distributions.

The loss distribution alternatives are virtually identical from a conceptual point of view except a negative quantity is distributed. Cooperatives are less familiar with the loss distribution alternatives.

The four basic ways to distribute losses are: (1) a distribution to, and therefore decrease in, retained earnings; (2) a distribution to, and therefore a decrease in, the retained patronage refund accounts of participating patrons, which is a writedown or cancellation of these equities; (3) a direct billing for cash payment from participating patrons based on patronage, equivalent to a negative cash patronage refund; and (4) a direct billing for cash payment from owners based on level of equity investment, equivalent to a negative dividend. Laws, regulations, and cooperative bylaws may restrict the use of these alternatives. Cooperatives operating under Subchapter T of the tax code are unlikely to be able to use direct billings based on equity investment since distributions to patrons are based on patronage. Therefore, the fourth loss-handling method is conceptually possible but infeasible.

Cooperatives have two practical alternatives in a loss situation: (1) retain the loss at the cooperative level or (2) allocate or pass the loss to patrons. In both cases the loss is an ordinary net operating loss to the cooperative or the patron as long as the cancelled equity of patrons is in qualified form. Direct billings to patrons to cover losses are not practical in most cases and are seldom used. However, from the standpoint of accounting principles and tax regulations, they are permissible.

Decision Criteria

The cooperative management team, executives and board of directors, is expected to determine which alternative is better. Is it better to retain the

loss or allocate the loss? They must look at all the advantages and disadvantages of each alternative and come to a decision. This is especially difficult because determining which alternative to choose has two important and often conflicting aspects: (1) What is best for the cooperative business? and (2) What is best for the cooperative's patrons?

Whatever preference measures are used, such as cash flow, liquidity, solvency, or profitability, the cooperative's short-run interests as a business entity and the patrons' interests may be opposite. For example, allocating the loss may be best for the patrons but retaining the loss may be best for the cooperative.

In addition, it is difficult to determine the best choice for patrons because all patrons are not identical. Their individual tax, redemption, and opportunity cost factors differ in ways that cause their preferences to differ. Some patrons may be better off if the cooperative retains the loss and others better off if the cooperative allocates the loss.

Present value of the cash flow is the primary decision criterion used in this evaluation. An evaluation is made of the cooperative and the patron cash flow. Their preferences are then compared to see if they are in harmony or conflict. No attempt is made to reconcile conflict situations by using a numerical analysis.

Cash-Flow Tradeoff

A fundamental cash-flow tradeoff exists between the retain and allocate alternatives for both the cooperative and the patrons. If the cooperative retains the loss: (1) the cooperative acquires the opportunity to reduce taxable income and cash outflow for taxes (but simultaneously gives up the opportunity to reduce allocated, revolving equity and the resulting cash outflow for equity redemption) and (2) the patron keeps the opportunity to receive all allocated, revolving equity as a cash inflow through equity redemption (but simultaneously gives up the opportunity to reduce taxable income and cash outflow for taxes). If the cooperative allocates the loss just the opposite occurs.

A simple example will illustrate the tradeoffs and possible conflicts. We make the following assumptions. A local cooperative has \$200 in ordinary net operating losses of which \$100 is attributed to the patronage business of each of two farmer-patrons, A and B. Equity redemptions are made to patrons when they turn age 65. Patron A is age 60 and is scheduled to receive an equity redemption of all equity in 5 years. Patron B is age 40 and is scheduled to receive an equity redemption of all equity in 25 years. The weighted average redemption period for the cooperative is 15 years. If the loss is retained we assume the cooperative can gain a tax reduction within one year by using a carryforward.⁴ The cooperative's marginal tax rate is assumed to be 20 percent on the carryforward, (15 percent federal and 5 percent state rate) and the appropriate discount rate is 10 percent.

The present value to the cooperative of retaining the loss is the value of the tax reduction received by a carryforward of one year, \$36.36 (\$200 times 20 percent times .9091). The present value of allocating the loss by cancelling allocated equity is \$71.32, the sum of the value of cancelling (not

redeeming) Patron A's equity due to be redeemed in 5 years, \$62.09, and Patron B's equity due to be redeemed in 25 years, \$9.23. In this situation the cooperative would prefer allocation. However, the longer the redemption periods of each patron the more likely it is the cooperative would prefer retention. For example, an average redemption period of 20 years results in a present value of \$29.73 for the allocation alternative. The point at which the present values of the two alternatives are equal and the cooperative is indifferent is an average redemption period of 16.89 years.

Using an average redemption period is an accurate measure only in situations where there is a large number of patrons and redemptions are uniformly distributed across patrons and years. It is not an accurate measure in our simple example. The average of 15 years gives a present value of \$47.88 instead of the true value, \$71.32, which is based on the actual pattern or distribution of redemptions.

Assume further that Patron A and Patron B have an appropriate discount rate of 12 percent and that a cancellation of patron equity is treated as a net operating loss. Also assume Patron A had a loss year overall, cannot utilize a carryback because of previous loss years, and is not expected to earn sufficient profits in the future to use a loss carryforward. Therefore, Patron A's marginal tax rate is zero. Assume Patron B is in a relatively high marginal tax bracket of 34 percent and can utilize the loss immediately.

The present value to Patron A of the cooperative choosing to retain the loss and therefore making a corresponding future redemption of \$100 is \$56.74. To Patron B it is \$5.88. Patron A can't use the ordinary loss of the allocation to reduce taxes. The marginal tax rate is zero and the present value of a tax reduction due to a loss is zero. Therefore, Patron A prefers the cooperative retain the loss since it will mean \$100 is redeemed in 5 years at a present value of \$56.74 versus a zero value if the loss is allocated.

Patron B prefers the cooperative allocate the loss by cancelling equity since the tax benefit of the resulting loss in the present year of \$34 (\$100 times 34 percent) is greater than the present value of the equity that would otherwise be redeemed in 25 years of \$5.88. This implies a preference for the cooperative to allocate if the marginal tax rate is greater than 5.88 percent. By comparison, a marginal tax rate lower than 30 percent would be very unusual for most individuals. The minimum federal income tax rate is 15 percent for individuals and corporations. If a modest state income tax of 4 percent and the 1989 FICA self-employment tax of 13.02 percent is applied, the marginal tax rate for the lowest bracket of taxable income equals at least 32 percent. Although the FICA tax applies only up to a maximum of \$48,000 of income in 1989 dollars, it will generally be offset by the next higher federal income tax bracket, which adds 13 percent for individuals (at over \$29,750 for married, filing jointly) and 10 percent for corporations (at over \$50,000). Even a lower discount rate will not change Patron B's preferences until the discount rate is lower than 4.41 percent, causing the present value of the \$100 redemption to be greater than \$34, the value of the tax benefit.

A cooperative will have a difficult time determining the preferences of its patrons, especially those who are farmers. Estimating the marginal tax rates and appropriate discount rates of patrons and the overall cash-flow effects on patrons, individually and as a group, is a demanding task.

As the example demonstrated, patrons' preferences will tend to be split. The higher income patrons and patrons expecting a long period until redemption are likely to prefer allocation, and the lower income patrons and patrons expecting a redemption in the near future are likely to prefer retention. The policy choice for the cooperative could easily be between money and people. If a "vote" were taken, does the cooperative count dollars or people in measuring the preferences of patrons?

As the example also demonstrated, the preference of the cooperative and at least some of its patrons will likely be in conflict. The cooperative preferred allocation while Patron A preferred retention.

The primary method of equity redemption used by the cooperative has a major impact on the analysis. If the primary method of redemption is age of patron or estate settlement, each patron's expected time of redemption will depend on the age of the patron. A wide distribution of times and quantities will exist. A study of U.S. cooperatives by Brown and Volkin, based on 1974 conditions, found that 68 percent of cooperatives have no plan (29 percent) or redeem using special methods including estate settlement and age of patron (39 percent). A recent study of Kansas cooperatives by Barton, based on 1987 conditions, determined that 81 percent of those cooperatives don't redeem equity (3 percent) or redeem based on estate settlements (27 percent) or age of patron (51 percent).

The example just described and the general process outlined in the next section assume the redemptions are special lump-sum distributions with the time of redemption generally tied to the age of the patron (including expected age of death for estate settlements). The less common but generally more desirable systematic redemption methods—revolving fund, percentage pool, and base capital—are not evaluated. The principles of evaluation are the same but the impact on the pattern of redemptions varies, depending on the assumptions made about equity management.

Process: Analytical and Empirical

Cooperatives need an analytically accurate but empirically efficient procedure to evaluate the impact of the alternatives on the business and the patrons. A four-step process is recommended.

First step. The first step is to determine what happens to the cooperative business's immediate financial condition when it retains the loss as compared with when it allocates the loss. The key financial statements of interest are the operating statement, balance sheet, and changes in financial position. A *pro forma* financial analysis shows the initial impact on the financial structure of the cooperative is identical regardless of which alternative is chosen (Brase). This conclusion holds true for any situation where there is a total net loss.

This suggests the financial impact of most importance in these situations is not the immediate impact on the balance sheet and operating statement but the cash-flow impacts on taxes versus equity redemption. These impacts occur over one or more years for taxes, depending on how carryover is used, and over one or more years for equity redemption, depending on the expected redemption program and the equity selected for cancellation.

Table 1.—Comparison of Present Values of Tax Reduction and Redemption Reduction for Selected Marginal Tax, Redemption Period, and Discount Rate Parameters per \$100 Loss for Cooperatives Able to Utilize Carryforward One Year Later

Present Value of \$100 Loss		Present Value of \$100 Redemption: Selected Years						
Marginal Tax Rate	PVTR ^a	Years: PVRR ^b (\$):	5	10	15	20	25	30
			62.09	38.55	23.94	14.86	9.23	5.73
<i>Percent</i>	<i>Dollars</i>	----- <i>Comparison: PVTR minus PVRR</i> -----						
15	13.64	-	-	-	-	+	+	+
20	18.18	-	-	-	+	+	+	+
25	22.73	-	-	-	+	+	+	+
30	27.27	-	-	+	+	+	+	+
35	31.82	-	-	+	+	+	+	+
40	36.36	-	-	+	+	+	+	+
45	40.91	-	+	+	+	+	+	+
50	45.45	-	+	+	+	+	+	+

^aPVTR: Present value of tax reduction assuming $n=1$ and $FV=\$100$ times marginal tax rate.

^bPVRR: Present value of redemption reduction assuming $n=\text{years}$, $i=10\%$, and $FV=\$100$.

Second step. The second step is to determine whether the cooperative is better off to retain or allocate the loss. This is accomplished by estimating the cash-flow impact on the cooperative for the two alternatives. The cash flows must be converted to a net present value (given the amounts, timing, and discount rate) to make comparisons between alternatives. A discount rate equal to the opportunity cost of capital should be used in these calculations.

The cooperative is better off to retain the loss if the present value of the reduction in taxes caused by the corresponding ordinary loss exceeds the present value of the reduction in equity redemption payments caused by the corresponding cancellation of equity due to allocating the loss to patrons. If the present value of the reduction in taxes is less than the present value of the reduction in equity redemption payments, the cooperative is better off to allocate the loss.

Four factors are required to calculate these present values: (1) the cooperative's expected marginal tax rate, (2) the expected pattern of applying losses to past and future income to achieve the tax reduction benefit, (3) the expected pattern (quantities and timing) of applying losses to cancel allocated equity to achieve the equity redemption reduction benefit, and (4) the discount rate. The present values of a tax reduction for selected marginal tax rates are compared with the present values of an equity redemption reduction for selected timings of redemption reductions given the pattern of applying losses to reduce income and the discount rate (table 1). An ordinary loss of \$100 is used for illustrative purposes.

If a cooperative's marginal tax rate is 15 percent, as shown in table 1, the present value of the tax reduction is less than the present value of the equity redemption reduction for selected redemption periods of 5, 10, 15, and 20