Family Tax Planning Forum

By Robert S. Keebler

The Mathematics of Harvesting Losses and Gains

Loss harvesting has long been used to enable taxpayers to offset capital gains with capital losses but, in general, the economics of the strategy and its planning implications have not been well understood. In most years, little thought would be given to gain harvesting because it runs contrary to the general tax principal that gains should be deferred for as long as possible. With the capital gains rate expected to increase from 15 percent in 2012 to 20 percent in 2013, however, gain harvesting has become a hot topic. In this column, I will present a model for deciding when it makes sense to harvest losses and explore its planning implications and quantify the power of gain harvesting in 2012.

Loss Harvesting

Loss harvesting has become a favorite strategy for tax and financial advisors. In the typical situation, an investor has large capital gains from the sale of stock toward the end of a tax year. To avoid gain recognition, he sells enough stock with capital losses to net out the capital gains. Because the investor still believes the loss stock is a good investment and only sold it to reap a tax benefit, he waits 31 days to avoid the wash-sale rules and repurchases the stock. On the surface, it appears that the taxpayer has achieved tax savings equal to the reduction in the capital gains tax payable in the current year with no risk. As a result, many planners recommend loss harvesting for all their clients with little analysis.

Robert S. Keebler, CPA, M.S.T., is a Partner with Keebler and Associates in Green Bay, Wisconsin.

A closer look reveals, however, that the decision about whether to harvest losses is not that easy. Calculation of the tax savings (or tax increase) is more complicated than many planners suppose. Thus, a quantitative analysis that takes into account a number of variables is necessary to determine whether loss harvesting would be beneficial for a particular client.

Computing the Tax Benefit

To calculate the tax effect of loss harvesting, it is necessary to look at the whole transaction and not just the first step. The sale of the loss assets does create current tax savings, but it also reduces the taxpayer's basis in the stock that is sold and reacquired, increasing the gain on a subsequent sale. As a result, loss harvesting produces only a timing benefit.

To illustrate the economics of tax loss harvesting, let's start with a simple example.

Example 1. During 2009, Art recognizes $20,000 of long-term capital gains. He owns 1,000 shares of XYZ stock that he bought for $100,000 in 2007. The stock is now worth $80,000. Art sells the stock, recognizing a long-term capital loss of $20,000. The $20,000 loss offsets the $20,000 gain, saving Art $3,000 in 2009 (0.15 × $20,000).

Table 1.

Year	Savings or loss
2009	+$3,000
Time value of savings	+ 308
Total savings	$3,308
2011	– $3,000
Net	$308

Art believes that the XYZ stock will rebound and after waiting 31 days to avoid the wash sale rules, buys back 1,000 shares of XYZ stock in early 2010. Assume that the price is still $80,000 so that Art takes a basis of $80,000 in the new shares. The value of the XYZ stock increases to $120,000 by the end of 2011. Art then sells the stock, recognizes a long-term capital gain of $40,000 ($120,000 – $80,000 basis) and pays $6,000 of tax (0.15 × $40,000). If Art had not harvested the loss in 2009, he would have had a gain of only $20,000 in 2011 ($120,000 sale proceeds – $100,000 basis) instead of $40,000 and tax payable of $3,000 instead of $6,000. Thus, the loss harvesting strategy saved Art $3,000 in 2009 but cost him $3,000 of extra tax in 2011.

The only benefit of loss harvesting under these facts is a timing benefit. In the loss harvesting alternative, Art had the use of the $3,000 he saved in 2009 for two years. Assuming that he could have invested this $3,000 at a five percent after-tax rate of return, it would have grown to $3,308 by the end of 2010. This would make the net economic benefit of loss harvesting $308, a modest difference given the $100,000 investment.

Improving the Results

It is evident from the calculations in Example 1 that the tax savings (or tax increase) in a given fact situation will depend on the following variables:

- The tax rate on the income the harvested losses offset
- The tax rate when the reacquired assets are later sold
- The taxpayer's opportunity cost of capital
- How long the taxpayer holds the reacquired stock before selling it

Tax Rate on Offset Income

The harvested losses might offset long-term capital gains, currently taxed at 15 percent, or short-term capital gains taxed at the taxpayer's regular ordinary income rate. If losses exceeded gains, up to $3,000 of the excess could also be used against ordinary income. The following example illustrates how using a loss to offset short-term capital gains instead of long-term capital gains dramatically increase the tax benefit of loss harvesting.

Example 2. Assume the same facts as in Example 1 except that the 2009 loss could be used to offset $20,000 of short-term capital gains taxed at 35 percent, producing $7,000

instead of $3,000. The loss harvesting scenario also produces a timing benefit. If we appreciate the $7,000 tax benefit in 2009 at Art's opportunity cost of capital of five percent, it grows to $7,718 after two years, making the total advantage of loss harvesting as of the end of 2009 $4,718.

Table 2.

Year	Savings or loss
2009	+$7,000
Time value of savings	+ 718
Total savings	$7,718
2011	– $3,000
Net	+$4,718

Tax Rate When Reacquired Stock Is Sold

Example 1 above assumed a 15-percent long-term capital gains rate when the reacquired stock was sold. Note that this rate is scheduled to increase to 20 percent in 2013, however. If the 20-percent rate goes into effect it will make loss harvesting less desirable. The tax benefit in the year the losses are harvested will stay the same, but the future tax increase resulting from the basis reduction will be greater because the added gain will be subject to a higher tax rate.

Example 3. Assume the same facts as in Example 1 except that the loss harvesting occurs in 2012 and the reacquired stock is sold in 2014 when Art's long-term capital gain rate is 20 percent instead of 15 percent. Art would again save $3,000 in the year of loss harvesting, but the increased tax in the year the reacquired stock was sold would now be $4,000 instead of $3,000.

Table 3.

Year	Savings or loss
2009	+$3,000
Time value of savings	+ 308
Total savings	$3,308
2011	– $1,000
Net	– 692

Unfortunately, taxpayers no longer have any control over this variable. If they harvest losses in 2012 and the rate increases as it is scheduled do, taxpayers will pay tax at a 20-percent rate on sales of reacquired assets for the foreseeable future.

Taxpayer's Opportunity Cost of Capital

The timing benefit of eliminating current capital gains tax is a function of the rate at which the saved money grows and how long the amount of tax saved can grow at that rate. The higher the rate at which the taxpayer could invest the money saved, the greater the amount it would grow to by the time she sold the reacquired stock. This is another variable over which the taxpayer has little control.

Time Between Reacquisition and Subsequent Sale

The longer the taxpayer holds the reacquired stock before selling it, the greater the growth will be. In the previous examples, the taxpayer kept the stock for only two years after repurchasing it. As a result, the timing advantage of the loss harvesting was relatively small. The longer the taxpayer holds the repurchased stock, the larger the timing advantage would be.

Example 4. Assume the same facts as in Example 1 except that Art holds the stock for 20 years before selling it. The advantage of loss harvesting is now $3,000 appreciated at five percent for 20 years ($7,960) minus the added tax of $3,000 in the year of sale, or $4,960.

Stock Price Risk

One last variable should be factored into the analysis. The price of the harvested stock could change significantly during the 31-day period during which the investor is out of the market. If the price drops, the investor will be able to buy back the stock for less than she sold it for at a lower price. If the price increases, she will have to pay more and lose money.

Example 5. Assume the same facts as in Example 1 except that instead of remaining

constant, the value of the ABC stock increased to $81,000 at the end of the 31-day period when Art repurchased it. By being out of the market during the 31-day period, Art has lost $1,000 of appreciation he would have had if he had simply held onto the stock. Because he will take a basis in the stock of $81,000 instead of $80,000, Art's capital gain will be $150 less when he sells the stock in 2010. Thus, his net loss is $850 – $308 = $542.

There are a number of strategies that can be used to hedge against the risk of being out of the market, but they are beyond the scope of the present column.

Gain Harvesting

At first blush, there would appear to be no reason not to harvest gains in 2012. Why wouldn't a taxpayer prefer to pay a 15-percent tax on gains in 2012 rather than a 20-percent tax on gains in 2013? There is a tradeoff, however. While the investor would be paying a higher rate of tax in 2013, she would lose the benefit of tax deferral. Is the lower rate worth it? To address this question, let's create a hypothetical fact situation.

Example 6. Helen owns M Stock with a basis of 10 and a FMV of $110. She can sell the stock in 2012 and pay a tax of $15 (0.15 × $100 gain) or sell it in 2013 and pay a tax of $20 (0.2 × $100). Which is better? The answer depends on Helen's opportunity cost of capital. If she could save the $15 of tax and invest it to produce more than $20 after tax, say $24, one year later she would be better off paying the tax in 2013. She could pay the tax of $20 and have $4 left over. On the other hand, if her investment of the $15 grew to less than $20 in 2013, she would be better off paying the tax currently. Given the difference in the 2012 and 2013 capital gains tax rates, Helen's after tax opportunity cost of capital would have to be greater than 33.33 percent ($15 appreciated for one year at 33.33 percent = $20) for the benefit of deferral to outweigh the disadvantage of the higher rate. Thus, Helen would almost invariably be better off harvesting the gain now.

Example 5 assumed that the taxpayer waited just one year to sell the asset. Note that the longer the deferral period, however, the lower the opportunity cost of capital necessary for the benefit of deferral to outweigh the disadvantage of the higher tax rate. Table 4 shows the after tax hurdle rates for longer deferral periods.

Table 4.

Years	Hurdle Rate (% Growth)
1	33.33
2	15.47
3	10.06
4	7.46
5	5.92
6	4.91
7	4.20
8	3.66
9	3.25
10	2.92

Conclusion

Deciding whether to harvest losses or gains requires quantitative analysis. This column provides a framework for this analysis.