Roth Conversions–Take Advantage of the Government's Free Option

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T his article analyzes a specific, simple investment strategy to take advantage of the recharacterization election available with a Roth conversion. It aims for a high single-digit after-tax return, although the before-tax return is subzero. While the strategy will not appeal to everyone, the investment analysis itself is interesting.

Overview of Investment Strategy

A simple illustration provides an overview of the approach. Assume $200,000 in a traditional individual retirement account (IRA). This is converted into two $100,000 Roth IRAs. The Roths are invested so that one will go to $150,000 and the other to $50,000. The $50,000 Roth is recharacterized back to a traditional IRA—it's as if that $50,000 were never touched (see table 1).

The taxpayer owes tax only on the $100,000 in the Roth that wasn't recharacterized, not the $150,000. It is as though $50,000 were taken out of the traditional IRA and put into a Roth tax-free. At a 35-percent rate, that's a $17,500 tax savings, which is an 8.75-percent return on a $200,000 investment. This is not a risk-free/sure thing. The results may be better or worse than those above. But as I will demonstrate, there's a good probability of success (about 60-percent probability of a positive return and 54-percent probability of at least 8.75 percent return). This example illustrates the potential value of converting a traditional IRA into two "antithetical" Roth IRAs.

Methodology

Split the traditional IRA evenly into two Roth IRAs. One is invested in the ProShares[1] UltraPro S&P 500 (ticker: UPRO), which seeks daily results before fees and expenses equal to three times (3x) the daily return of the S&P 500. The other is the UltraPro Short ETF (ticker: SPXU), which is designed to return negative three times (−3x) the daily return of the S&P 500. When either portfolio reaches a threshold value (e.g., $150,000), both positions are closed out. The smaller portfolio is recharacterized to a traditional IRA. These two funds were analyzed because of the 3x nature of their investment strategy, their liquidity (UPRO and SPXU had average daily trading volumes of 1.1 million shares and 4.6 million shares, respectively, as of March 9, 2010),[2] and the simplicity of implementation. These funds have an expense ratio of 0.95 percent. Given the offsetting nature of the two funds one would expect a pre-tax return equal to the negative of the expense ratio.

Analysis of Strategy

How likely is the success of this strategy? What might be practical threshold values at which to terminate the strategy?

To analyze this strategy, we used Monte Carlo simulations. We assumed a log-normal distribution, the same as used in the Black-Scholes option pricing model, with a 7-percent annual return and a 20-percent annual standard deviation.[3] In the base case, 3,000 trials were run, each with up to 252 days of returns to approximate one calendar year. To reflect expenses, 0.0095/252 was subtracted from the daily return of both exchange-traded funds (ETFs). A 35-percent tax rate was used. In practice, taxpayers have until October of the year

TABLE 1: ILLUSTRATION OF INVESTMENT STRATEGY
Before Conversion
$200,000 in traditional IRA subject to eventual tax
After Conversion
$50,000 in traditional IRA subject to eventual tax
$150,000 in Roth of which only $100,000 is subject to immediate taxation
$50,000 free of taxes (past and future)

following the conversion to recharacterize. Thus, if one converts in June 2010, one has until October 2011 to recharacterize. The program was terminated if one of the Roth IRAs reached $165,000. This termination threshold was set to avoid the possibility of having one portfolio achieve a desired value and then fall back. It also tends to reduce the time in the program. The $165,000 was chosen because it's close to the median that the larger value of the 3x and −3x portfolios will reach over a year.

On average the "rate of return" was 7.3 percent, although the median was significantly higher at 17.6 percent. Table 2 shows the results of the base case. The row labeled "Highest 0%" shows the largest value of the 3,000 trials. The average is shown as well. For each column, the "% Success" row shows the percentage of trials with values that exceeded the "Goal" value. The "Long" and "Short" columns are the ending values for the Roths that contain the +3x and −3x ETFs, respectively. The "Max L/S" column shows the distribution of maximum values achieved in either the Long or Short portfolio over the entire 252-day period. This is

TABLE 2: BASE CASE										
		Long	Short	Max L/S	Total	Larger	Larger	Days	Tax Rate	RoR
Highest	0%	182,422	180,215	985,109	231.323	182,422	182,422	252	35.0%	29.7%
	5%	171,819	168,968	320,799	224,446	172,610	172,610	252	33.5%	24.6%
	25%	166,691	102,873	209,989	219,610	167,766	167,766	252	27.0%	21.7%
Median	50%	112,888	63,561	169,344	211,737	165,313	165,313	228	21.1%	17.6%
	75%	70,271	51,872	145,329	175,221	108,176	108,176	111	20.8%	−11.0%
	95%	48,378	45,201	127,897	169,369	89,413	89,413	48	20.2%	−15.3%
Lowest	100%	41,059	39,649	111,019	163,713	82,764	82,764	16	19.2%	−18.6%
	Average	116,190	83,456	189,349	199,647	141,416	141,416	184	23.8%	7.3%
	Goal	165,000	165,000	165,000	200,000	165,000	100,000	251	25.0%	0.0%
	% Success	39%	15%	54%	55%	54%	83%	47%	25%	60%

valuable for setting a threshold value at which to stop because it allows one to estimate the probability of success for various thresholds. For example, a threshold for stopping when either portfolio reaches $145,000 would be triggered about 75 percent of the time. The "Total" is the sum of the ending values of the two portfolios. The next two "Larger" columns show the ending value of the larger of the Long and the Short. Two columns display the probability of achieving the target $165,000 and the threshold $100,000. The "Days" are how many days until the $165,000 is reached or 250 if it isn't reached. The "Tax Rate" is calculated when either portfolio terminates with more than $100,000. If both are under $100,000, it is assumed that both IRAs will be recharacterized and no immediate tax will be paid. In the simulations this occurred in about 17 percent of the trials (since the "Larger" column exceeds $100,000 83 percent of the time, we can infer that both are below $100,000 17 percent of the time). The "Tax Rate" is $35,000 (the tax on one $100,000 portfolio) divided by the value of the Larger portfolio. The "RoR" column is the rate of return calculated as profit/200,000 with profit calculated as the tax savings plus the Total value less the $200,000 investment. The tax savings are 35 percent of the value of the larger portfolio in excess of $100,000. That represents the assets that are being converted essentially tax-free.

In a trial in which the larger portfolio ended at $165,000 and the smaller at $30,000, the profit would have been 0.35 x 65,000 + (195,000 − 200,000) = 22,750 − 5,000 = 17,750. This would be divided by 200,000 to arrive at a RoR of 11.4 percent. Thus the RoR figures reflect profit and loss and tax savings. Because the randomly generated returns were adjusted for expenses of the funds, these RoR values are net of fund expenses.

median of the total is $212,000. The extremes of the Long and Short are similar, but the median of the Short is much worse than the Long. The explanation for this is accurate but not satisfying. Even if leveraged ETFs produce +/−3x of daily returns, they do not produce +/−3x of returns for longer periods if there is volatility due to the effects of compounding. If the market moves up 10 percent then down 10 percent, an investor loses 1 percent.

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From table 2 we can see the average and median rates of return are 7.3 percent and 17.6 percent, respectively. The success rate of RoR column indicates a 60-percent chance of a positive rate of return. The success rate of the Total column indicates that in 45% (100%−55%) of the trials, we ended with less than $200,000. Because of tax savings, you can end with less than $200,000 and have a positive RoR. In 53% (100%−47%) of the trials the positions are maintained for the entire 252-trading-day year.

There are some strange results. For example, while the medians of the Long and Short sum to about $175,000, the

With 3x leverage, +30 percent followed by −30 percent, the investor loses 9 percent. The nightmare for this strategy is a volatile market that ends up where it started.

The columns, other than the Totals, in table 3 are taken from the prospectuses of the two ETFs. The Totals are the values of $100,000 invested in each fund. Table 3 shows that extreme index returns are favorable for these ETFs. The comparison of the Total columns indicates that high volatility is unfavorable.

Within the +/−20-percent return of the markets, the results are relatively insensitive to the return due to

TABLE 3: PERFORMANCE OF +/–3X ETFS VARYING INDEX RETURN ASSUMING 25% AND 50% VOLATILITY

	Assuming 25% Volatility			Assuming 50% Volatility		
Index	UPRO	SPXU	Total	UPRO	SPXU	Total
–60%	–94.7	973.9	1,079,200	–97.0	248.6	351,600
–50%	–89.6	449.8	560,200	–94.1	78.5	184,400
–40%	–82.1	218.2	336,100	–89.8	3.3	113,500
–30%	–71.6	100.4	228,800	–83.8	–34.9	81,300
–20%	–57.6	34.2	176,600	–75.8	–56.4	67,800
–10%	–39.6	–5.7	154,700	–65.6	–69.4	65,000
0%	–17.1	–31.3	151,600	–52.8	–77.7	69,500
10%	10.3	–48.4	161,900	–37.1	–83.2	79,700
20%	43.3	–60.2	183,100	–18.4	–87.1	94,500
30%	82.1	–68.7	213,400	3.8	–89.8	114,000
40%	127.5	–75.0	252,500	29.6	–91.9	137,700
50%	179.8	–79.6	300,200	59.4	–93.4	166,000
60%	239.6	–83.2	356,400	93.5	–94.6	198,900

TABLE 4: EFFECTS OF THRESHOLD AND TIME

	T165K / D252	T150K / D252	T150K / D150
Median RoR	17.6%	12.6%	11.7%
Average RoR	7.3%	6.6%	5.4%
% RoR>0%	60.0%	71.5%	59.0%
% Larger>Thresh.	54%	69%	51%

the +3x/–3x pairing of the funds. It is interesting that a severe bear market is better than a bull market. Thus this strategy is something of a hedge for investors who have equity exposure elsewhere. We emphasize that this strategy is sensitive to the realized standard deviation.

The strategy with a 252-day horizon and $165,000 termination threshold (results in table 2) offers an interesting distribution of returns. The next question we address is the effect of changing the termination threshold and time horizon.

Table 4 provides some insight into these questions. The first column is data from table 2. The T165K / D250 (the 'T' is for threshold; the 'D' is for days) indicates a threshold stopping point when the larger portfolio reaches $165,000 and that a maximum period of 250 trading days was permitted.

The second column represents reducing the threshold values. In this scenario the investor stops earlier at a less attractive threshold. Not surprisingly, the RoR are lower on average and at the median. However, the success rate goes up. There is a higher probability that a positive return is achieved. The last column reduces the threshold and the duration. As one would expect, less time offers less chance for success so the results are less attractive.

Conclusion

The government has provided an option to "unconvert" converted Roths. In addition, one has considerable flexibility in choosing the securities that underlie the option. Option theory tells us that the more volatile the investment, the more valuable its options. Others have proposed that several Roths be created, each with individual asset classes (e.g., bonds, U.S. stocks, emerging stocks) matching the allocation of the investor. With a focus on after-tax returns and an understanding of the optionality involved in the Roth conversion, I suggest that more-volatile investments be used.

This article has examined this strategy strictly from an investment standpoint. Non-investment issues may exist as well (e.g., tax questions relating to economic substance). The author is not offering tax advice or a specific recommendation. He encourages consultation with tax counsel before implementing this strategy. I&W

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Endnotes

[1] The author is not associated with ProShares.
[2] Source: http://proshares.com/funds/upro.html.
[3] The 7-percent return and 20-percent standard deviation reflect a scenario the author views as reasonable. The 20 percent is a rounded near-historical average. Results of the 3x/–3x strategy are insensitive to the return assumption.