Valuing Roth Conversion and Recharacterization Options

by William Reichenstein, Ph.D., CFA; and William Meyer

William Reichenstein, Ph.D., CFA, is the Pat and Thomas R. Powers Professor of Investments at Baylor University. He is also head of research at the software firms Social Security Solutions Inc., and Retiree Income Inc.

William Meyer is CEO of Social Security Solutions Inc., and Retiree Income Inc., in Overland Park, Kansas. Retiree Income developed Income Solver, software that provides advice on how taxpayers can maximize the longevity of their financial portfolio by tax-efficiently withdrawing funds and using strategic Roth conversions in retirement.

Executive Summary

- This paper explains the options provided by the tax code for Roth conversions and recharacterizations.
- Models are presented of the after-tax value of Roth conversion strategies to the strategy of retaining funds in a TDA and withdrawing these funds in a later year.
- Four reasonable cases illustrate how the Roth conversion and recharacterization options in the tax code could allow a taxpayer to increase the after-tax value of the funds converted to a Roth account by 5.56 percent, compared to the strategy of retaining these same funds in a tax-deferred account until later in retirement.
- One particular case, in which the Roth conversion increased the after-tax value by 62.79 percent, reflects the situation many taxpayers face.
- An example explains what a financial adviser should do to take advantage of the Roth conversion/recharacterization options available in the tax code.

A GROWING BODY OF LITERATURE is addressing the issue of how retirees can coordinate their Social Security claiming decisions with tax-efficient withdrawal strategies from their financial accounts (e.g., taxable accounts, tax-deferred accounts like traditional IRAs, and tax-exempt accounts like Roth IRAs) to make their portfolios last longer. For example, see Cook, Meyer, and Reichenstein (2015); Meyer and Reichenstein (2013b); Geisler and Hulse (2016); and Reichenstein and Meyer (2016, 2017a, 2017b).

Funds withdrawn from tax-deferred accounts (TDAs) or converted from TDAs to tax-exempt Roth accounts are taxed in the year of withdrawal or conversion. A major part of tax-efficient withdrawal strategies is to withdraw or convert funds from TDAs in a way that minimizes the average marginal tax rate paid on funds withdrawn from TDAs or converted from TDAs to Roth accounts. However, due to the taxation of Social Security benefits, a retiree's marginal tax rate may be 185 percent of her tax bracket (e.g., 46.25 percent instead of 25 percent).

This paper explains how many retirees can use Roth conversions and recharacterizations to help them lower the average marginal tax rate on TDA withdrawals/conversions.

First, this paper explains the basics of a Roth conversion and recharacterization. Then it explains why many retirees will have a lower marginal tax rate in their early retirement years than later in retirement, and why this could present a valuable opportunity to convert funds to a Roth IRA in their early retirement years. The next section presents models of the after-tax value of Roth conversion strategies to the strategy of retaining funds in a TDA and withdrawing these funds in a later year. Four cases are then presented that quantify the advantage of a Roth conversion compared to retaining these funds in a TDA. Finally, an example explains what a financial adviser may do to take advantage of the Roth conversion/recharacterization options available in the tax code.

Basics of Roth Conversions and Recharacterizations

In a Roth conversion, a taxpayer converts (moves) funds from a tax-deferred account (e.g., traditional IRA, 401(k), or SEP-IRA) to a Roth account. For example, a taxpayer moves funds from a

traditional IRA to a Roth IRA.

In a Roth recharacterization, the taxpayer undoes part or all of the Roth conversion. For example, the taxpayer may move funds back from the Roth IRA to a traditional IRA. If the funds moved in a Roth conversion are not recharacterized, taxes are due on the converted funds in the conversion year.[1]

One reason for a Roth conversion is to have the funds taxed at the current year's marginal tax rate, which is expected to be lower than the marginal tax rate in a later year when the TDA funds would otherwise be withdrawn.

One reason for a Roth recharacterization is if the value of the converted funds decreases. Suppose the taxpayer converts $25,000 to a Roth IRA at the beginning of 2018, and the value of this Roth IRA decreases to $18,000 by the end of 2018. This taxpayer could recharacterize these funds, which would prevent him from paying taxes on the $25,000 conversion amount that is now only worth $18,000. Later in this paper, other reasons why a taxpayer would consider a complete or partial Roth recharacterization are explained.

Converting funds. Funds can be converted from a TDA into a Roth account. For example, funds may be converted from a traditional IRA into a Roth IRA whenever the taxpayer wants. Furthermore, funds can be converted from a SEP-IRA or SIMPLE IRA into a Roth IRA, but the SEP-IRA or SIMPLE IRA could not accept additional contributions. Moreover, funds in a SIMPLE IRA cannot be converted until the individual has participated in the SIMPLE IRA for at least two years. Finally, although the government allows conversions of funds from a company plan fund such as a 401(k), 403(b), and 457(b) to a Roth IRA, some company plans do not allow these distributions.

As Slott (2012) explains: "The company plan itself has to permit the distribution. Some plans allow 'in-service distributions' that can be converted directly to a Roth IRA. But if in-service distributions are not available, then you must wait until the company plan allows the plan funds to be distributed, which is usually upon reaching retirement age or upon separation of service, as spelled out in the plan agreement" (p. 237).

The bottom line is that, in general, now or later, a taxpayer can move funds from a TDA into a Roth IRA. One exception worth noting is that a non-spouse IRA beneficiary cannot convert an inherited IRA into a Roth IRA.

Separately, upon reaching retirement or upon separation of service from a company, an employee may wish to roll funds from a Roth 401(k), Roth 403(b), or Roth 457(b) plan into a Roth IRA. The Roth IRA has no required minimum distributions, while the other Roth accounts do.

One reason for a Roth conversion is to have the funds taxed at the current year's marginal tax rate.

Timing of conversions. A Roth conversion for 2018 must occur between January 1, 2018 and December 31, 2018. Although a client can contribute to a Roth IRA for 2018 through April 15, 2019 (subject to income limitations), the client must convert funds to a Roth IRA in calendar year 2018.

In contrast, Roth recharacterizations—either partial or complete—for the 2018 tax year can occur anytime through the alternative tax filing date, which is generally October 15 of the next year. Furthermore, a client could file his taxes for 2018 by April 15, 2019, but still recharacterize the Roth IRA in early October 2019. In this case, the client would have to file an amended tax return by October 15, 2019, and then the recharacterized amount would not count as taxable income for 2018.

For example, suppose George has a traditional IRA worth $50,000. He converts $20,000 of this traditional IRA into a Roth IRA in January 2018 and invests these funds in an emerging markets stock fund. In April 2019, the account is worth $22,000, and George files his 2018 returns by April 15, 2019, which includes the $20,000 conversion amount as 2018 income. By early October 2019, the emerging markets fund falls in value to $16,000. He doesn't want to pay taxes on $20,000 that is now only worth $16,000. So, George could recharacterize this Roth IRA by October 15, 2019 and file an amended 2018 tax return by that alternative filing date.

Continuing the above example, suppose George converts $20,000 of a traditional IRA worth $50,000 to a Roth IRA in January 2018 and then recharacterizes these funds from a Roth IRA back to a traditional IRA on September 1, 2018. *These funds* cannot be converted back into a Roth IRA until January 2019—the next tax year. However, George could convert the *other* funds in his traditional IRA that were not previously converted to a Roth IRA in 2018.

Instead, suppose the funds were converted from a traditional IRA to a Roth IRA in January 2018 and then recharacterized from a Roth IRA back to a traditional IRA on April 1, 2019. *These funds* could not be converted back into a Roth IRA until May 1, 2019—30 days later. As before, George could convert the other traditional IRA funds to a Roth IRA during this 30-day period.

In summary, funds converted to a Roth IRA in Year 1 that are recharacterized cannot be converted back to a Roth IRA until the later of the beginning of Year 2, or 30 days after the recharacterization date.

Notifying information. In a Roth recharacterization, you generally have to notify both the trustee of the Roth IRA

(e.g., Vanguard, Charles Schwab, etc.) and the trustee of the traditional IRA to which the funds are being moved of certain information. The data required and the process to complete a Roth recharacterization varies across trustees, however this information generally includes: (1) the conversion amount to the Roth IRA; (2) the date on which the conversion to the Roth IRA was made; (3) a directive to the Roth IRA trustee to transfer in a trustee-to-trustee transfer the amount of the recharacterization and any net income (or loss) allocable to the recharacterization to the trustee of the traditional IRA; and (4) the names of both trustees (unless it is the same trustee on both accounts).

Understanding Why Tax Rates Are Lower in Early Retirement Years

In a Roth conversion, the amount of funds converted from a TDA to a Roth IRA is treated as taxable income in the conversion year. Recall that one reason for a Roth conversion is to have the funds taxed at this year's marginal tax rate, which is expected to be lower than the marginal tax rate in a later year when the TDA funds would otherwise be withdrawn.

Consider Pam and Peter. They are a recently retired married couple, both age 66, living in an income tax-free state. Like many couples, their financial portfolio consists mainly of funds in taxable accounts and TDAs with most of these funds in TDAs. They will likely have a lower marginal tax rate in their early retirement years than after age 70½ when required minimum distributions (RMDs) begin for four reasons:

First, in their early retirement years, they may follow the conventional wisdom and withdraw funds primarily from their taxable accounts to meet their spending needs. Liquidations from taxable accounts are usually largely tax-free withdrawals of principal. For example, if they withdraw $30,000 from a savings account held in their taxable account, it will provide $30,000 to live on, but none of it is taxable.

Second, once RMDs begin at age 70½, Pam and Peter may be forced into a higher tax bracket.

Third, as explained in Meyer and Reichenstein (2013c), the taxation of Social Security benefits may cause Pam and Peter to pay a 46.25 percent federal marginal tax rate on their TDA withdrawals even though they are in the 25 percent tax bracket. After RMDs begin at age 70½—which would raise their provisional income used to calculate the taxable portion of Social Security benefits—there may be a wide range of income where each additional $1 withdrawn from their TDA causes an extra $0.85 of Social Security benefit to be taxed. Thus, each additional $1 withdrawn from their TDA causes taxable income to rise by $1.85. Even though they are in the 25 percent tax bracket, each additional $1 withdrawn from their TDA would cause their federal taxes to rise by $0.4625, (25 percent of $1.85). Their federal marginal tax rate is 46.25 percent.

Liquidations from taxable accounts are usually largely tax-free withdrawals of principal.

Fourth, after the death of the first spouse, the surviving spouse may be forced into a higher tax bracket because: (1) the survivor will be subject to the tax brackets facing a single individual; (2) the survivor will have the lower standard deduction facing a single; and (3) the survivor will only have one personal exemption. In a typical marriage, the husband is a few years older than the wife, and men have shorter life expectancies. Therefore, most surviving spouses will live several years as a single retiree.[2]

Models of Roth Conversions versus Retaining Funds in TDAs

This section presents models of the ending after-tax wealth from three strategies. In each strategy, the funds were eventually withdrawn and spent in Year $n+2$. Because n can be zero, one, 25, or any number of years, the models apply to all investors. All three models assume the retiree withdraws or converts the Roth IRA funds in a way to avoid the 10 percent penalty tax for early withdrawals.

Strategy 1. In Strategy 1, the investor retains the funds in the TDA and withdraws these funds at the beginning of Year $n+2$. The beginning pre-tax value, V, grows at the pre-tax rate of return of r_1 the first year, and then grows at the geometric average annual pre-tax rate of return for the next n years of r. Its pre-tax value at the end of Year $n+1$ is $V(1+r_1)(1+r)^n$. After withdrawal at the beginning of Year $n+2$, its after-tax value is $V(1+r_1)(1+r)^n(1 - t_{n+2})$, where t_{n+2} is the marginal tax rate $n+2$ years hence.

Strategy 2. In Strategy 2, the funds are converted to a Roth IRA at the beginning of Year 1 and the taxes are paid with funds from the Roth IRA at the end of the year. Its after-tax value at the end of Year 1 is $V(1+r_1) - Vt_1$, where t_1 is Year 1's marginal tax rate. After growing at the pre-tax rate of return of r for n years, its after-tax value at the end of Year $n+1$ is $[V(1+r_1) - Vt_1](1+r)^n$. At the beginning of Year $n+2$, this amount can be withdrawn tax-free from the Roth IRA.

Strategy 3. In Strategy 3, the funds are converted to a Roth IRA at the beginning of Year 1 and the taxes are paid from a taxable account at the end of the year. Its after-tax value at the end

of Year 1 is $V(1+r_1)$, while the taxes paid from the taxable account total tV. Combined, the after-tax value of the Roth and the taxes paid is $V(1+r_1) - tV$. The Roth grows at the pre-tax return of r for n years. So, its after-tax value is $V(1+r_1)(1+r)^n$ at the end of Year $n+1$. The taxes paid of tV has an opportunity cost of R, which is an after-tax rate of return, because taxes would have been paid on this taxable account's returns. Thus, at the end of Year $n+1$, the after-tax value of the taxes paid is $tV(1+R)^n$. At the beginning of Year $n+2$, the combined after-tax value of this Roth and taxes paid is $V(1+r_1)(1+r)^n - tV(1+R)^n$.

Comparing Strategies 1 and 2, this Roth conversion beats retaining funds in the TDA when the conversion year tax rate is less than the withdrawal year tax rate, (i.e., $t_1 < t_n$).[3]

Comparing Strategies 2 and 3, the Roth conversion with taxes paid from a taxable account is more valuable than the Roth conversion with taxes paid from the Roth if future returns are positive, and thus, the pre-tax rate of return is higher than the after-tax rate of return, (i.e., $r > R$). And returns are always expected to be positive.

At the end of Year 1, Strategy 3 has tV more dollars growing at the pre-tax return of r in the Roth IRA and tV less dollars growing at the after-tax return of R in the taxable account compared to Strategy 2. The longer the horizon between conversion and withdrawal, n, and the larger the difference between the pre-tax and after-tax rate of return, $r–R$, the larger is the advantage of paying taxes on the Roth conversion out of the taxable account.

Comparing Strategies 1 and 3, after the Roth conversion at the beginning of Year 1, Strategy 3 has V of after-tax funds growing tax-free in a Roth (ignoring the tax liability), while Strategy 1 has V of pre-tax funds growing tax-deferred in a TDA. As explained in Reichenstein, Jennings, and Horan (2012); Meyer and Reichenstein (2013a); and Reichenstein (2007), it is useful to view a TDA as a partnership. Recall that the investor will pay t_{n+2} of each dollar withdrawn from the TDA in taxes. As explained in the prior literature, pre-tax funds in the TDA are like a partnership with the investor owning $(1–t_{n+2})$ of the current value of this TDA and the government effectively owning the remaining t_{n+2} of the TDA. The investor's after-tax value of this TDA grows from Vt_{n+2} today to $Vt_{n+2}(1+r)^n$ in n years. That is, the investor's after-tax portion grows tax exempt at the pre-tax rate of return, r. Therefore, with Strategy 3 the investor has V of funds growing tax exempt in the Roth (ignoring the tax liability), while in Strategy 1 the investor effectively has $(1–t_n)V$ growing tax exempt in the TDA. That is, Strategy 3 effectively allows more funds to grow tax exempt than Strategy 1. Thus, Strategy 3 can be preferable to Strategy 1 even if the conversion year tax rate exceeds the withdrawal year tax rate, (i.e., $t_1 > t_n$).

Cases Illustrating the Value of Roth Conversions

This section presents four cases that calculate the tax advantage of the Roth conversion with taxes paid from the Roth account (Strategy 2) compared to retaining the funds in the TDA (Strategy 1). For simplicity, the cases assume funds are converted from a traditional IRA to a Roth IRA. In either strategy, the funds are eventually withdrawn and spent at the beginning of Year $n+2$.

As previously noted, Strategy 3, where taxes are paid out of a taxable account, is generally preferable to Strategy 2, where taxes are paid out of the Roth IRA. However, this section compares the tax advantage of Strategy 2 to Strategy 1, because it can be quantified. For example, in Case 1, presented next, this advantage was 5.56 percent. In contrast, in Case 1 the tax advantage of Strategy 3 compared to Strategy 1 varied with each investor based on the length of the investment horizon, n, and the size of the spread, $(r – R)$.

Case 1. The investor will either: (1) convert $10,000 from a traditional IRA to a Roth IRA at the beginning of Year 1, but withdraw and spend these funds at the beginning of Year $n+2$ (Strategy 2); or (2) withdraw and spend these funds from a traditional IRA at the beginning of Year $n+2$, (Strategy 1).

Key assumptions: marginal tax rate in Year 1 of 25 percent, (i.e., $t_1 = 25$ percent), marginal tax rate in Year $n+2$ of 25 percent, (i.e., $t_{n+2} = 25$ percent), and Year 1 return on assets of 20 percent, (i.e., $r_1 = 20$ percent).

It is helpful to first explain the reason for the seemingly high return of 20 percent for Year 1. The tax code allows someone to make multiple Roth conversions in a year and then to recharacterize none, some, or all of the conversion amounts through the alternative filing date (usually October 15) of the next year, or Year 2. To illustrate the value of this conversion/recharacterization option, assume the taxpayer makes three separate Roth conversions of $10,000 each on January 2 of Year 1 *and places each conversion in a separate Roth IRA*; and then recharacterizes the two Roth IRAs with the lowest values on December 31 of Year 1, while retaining the highest-valued Roth IRA.

Table 1 presents the results from making three separate Roth IRA conversions and investing them in, respectively, Vanguard's Total (U.S.) Stock Market Index Fund (VTSMX), Emerging Markets Stock Index Fund (VEIEX), and Short-Term Bond Fund (VBISX). On December 31, the investor recharacterizes the two lowest-valued Roth IRAs and retains the highest-valued Roth IRA.

The far right column of Table 1 shows the results of this strategy for calendar years 2002 through 2016. For example, in 2016 the taxpayer keeps the Roth IRA holding the U.S. stock

Table 1: Case 1 Example

Results from making three separate Roth IRA conversions and investing them in Vanguard's Total (U.S.) Stock Market Index Fund, Emerging Markets Stock Index Fund, and Short-Term Bond Fund. On December 31, the investor recharacterizes the two lowest-valued Roth IRAs and retains the highest-valued Roth IRA.

Year	U.S. Stocks	Emerging Markets Stocks	Short-Term Bonds	Highest Return
2016	12.53%	11.50%	1.41%	12.53%
2015	0.29%	–15.47%	0.85%	0.85%
2014	12.43%	0.42%	1.16%	12.43%
2013	33.35%	–5.19%	0.07%	33.35%
2012	16.25%	18.64%	1.95%	18.64%
2011	0.96%	–18.78%	2.96%	2.96%
2010	17.09%	18.86%	3.92%	18.86%
2009	28.70%	75.98%	4.28%	75.98%
2008	–37.04%	–52.81%	5.43%	5.43%
2007	5.49%	38.90%	7.22%	38.90%
2006	15.51%	29.39%	4.09%	29.39%
2005	5.98%	32.05%	1.31%	32.05%
2004	12.52%	26.12%	1.70%	26.12%
2003	31.35%	57.65%	3.37%	57.65%
2002	–20.96%	–7.43%	6.10%	6.10%
				25.62%

Note: The ticker symbols for these Vanguard mutual funds are VTSMX, VEIEX, and VBISX.

fund, which earned 12.53 percent, and recharacterizes the other two Roth IRAs. Notice that the three conversion amounts at the beginning of the year should be held in separate Roth IRAs, so the taxpayer can recharacterize the two Roth IRAs with the lowest values. If the taxpayer followed this strategy from 2002 through 2016, the retained (that is, non-recharacterized) Roth IRA would have had an average return of 25.62 percent.[4] Therefore, cases assuming a 20 percent return in the conversion year are reasonable.[5]

Case 1 also assumes the taxpayer would either pay a 25 percent marginal tax rate on the conversion of funds from the traditional IRA to the Roth IRA in Year 1, or pay a 25 percent marginal tax rate on the withdrawal of funds from the traditional IRA at the beginning of Year n+2. The key difference is whether funds are converted to the Roth IRA at the beginning of Year 1 or withdrawn from the traditional IRA at the beginning of Year n+2.[6]

If converted to a Roth IRA at the beginning of Year 1, the after-tax value of the account at the end of Year 1 or the start of Year 2 would be $9,500. The pre-tax value at the end of Year 1 would be $12,000 after the 20-percent return, but taxes of $2,500 would be due (25 percent of the $10,000 conversion value at the beginning of Year 1). The $9,500 grows tax exempt at r for n years and its after-tax value would be $\$9{,}500(1+r)^n$ at the end of Year n+1. This would also be the after-tax value after withdrawal at the beginning of Year n+2.

If retained in the traditional IRA, it would be worth $12,000 before taxes at the end of Year 1 after the 20-percent return. Its pre-tax value would be $\$12{,}000(1+r)^n$ at the end of Year n+1. After withdrawal at the beginning of Year n+2, its after-tax value would be $\$12{,}000(1+r)^n(1-0.25)$ or $\$9{,}000(1+r)^n$.

As first illustrated in Stowe, Fodor, and Stowe (2013), the additional $500 from the Roth conversion strategy is due to the tax-free status of the $2,000 return in the Roth IRA in Year 1. This advantage is $500 or $2,000(0.25). In contrast, this $2,000 is eventually taxed at 25 percent if the funds are retained in the traditional IRA. As summarized in Table 2, this Roth conversion of the original $10,000 in the TDA produced a 5.56 percent higher after-tax value, ($500/$9,000). Thus, the Roth conversion increased the investor's purchasing power for these traditional IRA funds by 5.56 percent. Case 1 demonstrated that one advantage of a beginning-of-year Roth conversion (i.e., Strategy 2) is that it makes the conversion year's returns on the underlying assets tax free.

Cases 2 through 4 change one or more of the following: (1) the marginal tax rate in the conversion year, t_1; (2) the marginal tax rate in the withdrawal year if the funds are retained in the traditional IRA, t_{n+2}; or (3) the assumed Year 1 return on investment, r_1.

Case 2. The investor will either: (1) convert $10,000 from a traditional IRA to a Roth IRA in Year 1; or (2) withdraw these funds from a traditional IRA at the start of Year n+2.

Key assumptions: t_1 = 15 percent, t_{n+2} = 25 percent, and r_1 = 0 percent.

There are two differences between Case 2 and Case 1. First, the tax rate in Case 2 in Year 1 is 15 percent instead of 25 percent. As explained earlier, the investor may be subject to a relatively low tax rate early in retirement, but be subject to a higher tax rate later in retirement. Second, the Year 1 return in Case 2 is 0 percent. In 2008 and 2015, U.S. and emerging market stocks had negative returns, while short-term bonds produced their usual low but positive return.

If converted to a Roth at the beginning of Year 1, the after-tax value of the account at the end of Year 1 would be $8,500; that is, $10,000 less $1,500 in taxes. At withdrawal at the start of Year n+2, the after-tax value would be $\$8{,}500(1+r)^n$.

If retained in the traditional IRA until

the end of Year n+1, the pre-tax value of the account would be $\$10{,}000(1+r)^n$. After withdrawal at the start of Year n+2, the after-tax value would be $\$10{,}000(1+r)^n$ (1–0.25) or $\$7{,}500((1+r)^n$.

This Roth conversion produced a 13.33 percent higher after-tax value, ($1,000/$7,500 = 13.33 percent). Case 2 demonstrated the return advantage from making a Roth conversion in a year with a relatively low tax rate and that the Roth conversion added value if t_1 was less than t_{n+2}, even if the underlying asset's return was zero.

Case 3. The investor will either: (1) convert $10,000 from a traditional IRA to a Roth IRA in Year 1; or (2) withdraw these funds from a traditional IRA at the start of Year n+2.

Key assumptions: t_1 = 15 percent, t_{n+2} = 25 percent, and r_1 = 20 percent.

The difference between Case 3 and Case 2 is that the Year 1 return in Case 3 is 20 percent. If converted to a Roth IRA at the beginning of Year 1, its after-tax value at the end of Year 1 would be $10,500, ($12,000 – $1,500 in taxes). At the end of Year n+1 or start of Year n+2, the after-tax value would be $\$10{,}500(1+r)^n$.

If retained in the traditional IRA until the end of Year n+1, the pre-tax value of the account would be $\$12{,}000(1+r)^n$. After withdrawal at the start of Year n+2, the after-tax value would be $\$12{,}000(1+r)^n$ (1 – 0.25) or $\$9{,}000((1+r)^n$.

This Roth conversion produced a 16.67 percent higher after-tax value, ($1,500/$9,000 = 16.67 percent). This return advantage can be separated into two parts. For simplicity, suppose the money would be spent in Year 2. The Roth conversion would be worth $10,500 after taxes, while the withdrawal of the traditional IRA at the beginning of Year 2 would be worth $9,000 after taxes. This $1,500 advantage consists of a $1,000 advantage due to the lower tax rate, (15 percent versus 25 percent), and the tax savings on the Year 1 return of $500. That is, the taxpayer using the Roth conversion would save $500 in taxes on this $2,000 return. Case 3 demonstrated that the Roth conversion added even more value when (1) $t_1 < t_{n+2}$; and (2) the underlying asset's Year 1 return was positive.

Table 2: Increases in After-Tax Wealth from Roth Conversions

Case 1	Case 2	Case 3	Case 4
t_1 = 25%	t_1 = 15%	t_1 = 15%	t_1 = 15%
t_{n+2} = 25%	t_{n+2} = 25%	t_{n+2} = 25%	t_{n+2} = 46.25%
r_1 = 20%	r_1 = 0%	r_1 = 20%	r_1 = 20%
Advantage = 5.56%	Advantage = 13.33%	Advantage = 16.67%	Advantage = 62.79%

Notes: t_1 denotes the marginal tax rate in Year 1, the conversion year, while t_{n+2} denotes the marginal tax rate in Year n+2 when the funds would otherwise have been withdrawn from the TDA. r_1 denotes the return on the underlying asset in Year 1, the conversion year. **Advantage** denotes the after-tax wealth advantage of the Roth conversion with taxes paid from the Roth IRA compared to the after-tax wealth from retaining the funds in the TDA and withdrawing them in a later year.

Case 4. The investor will either: (1) convert $10,000 from a traditional IRA to a Roth IRA in Year 1; or (2) withdraw these funds from a traditional IRA at the start of Year n+2.

Key assumptions: t_1 = 15 percent, t_{n+2} = 46.25 percent, and r_1 = 20 percent.

The difference between Case 4 and Case 3 is that in Case 4, the marginal tax rate in Year n+2 is 46.25 percent. Recall that many taxpayers with below-average to somewhat above-average incomes will pay a federal marginal tax rate of 46.25 percent on much of their TDA withdrawals after age 70½. In Case 4, the taxpayer's marginal tax bracket in Year 1 is 15 percent. However, the taxpayer's marginal tax rate is 46.25 percent in Year n+2, despite the taxpayer being in the 25 percent tax bracket.

If converted to a Roth IRA at the beginning of Year 1, the after-tax value of the account at the end of Year 1 would be $10,500, ($12,000 – $1,500 in taxes). At the end of Year n+1 or start of Year n+2, the after-tax value would be $\$10{,}500(1+r)^n$.

If retained in the traditional IRA until the end of Year n+1, the pre-tax value of the account would be $\$12{,}000(1+r)^n$. After withdrawal at the start of Year n+2, the after-tax value would be $\$12{,}000(1+r)^n$ (1 – 0.4625) or $\$6{,}450(1+r)^n$.

This Roth conversion produced a 62.79 percent higher after-tax value, ($4,050/$6,450 = 62.79 percent). This return advantage can be separated into two parts. For simplicity, suppose the money would be withdrawn and spent in Year 2. The Roth conversion would be worth $10,500 after taxes, while the withdrawal of the IRA at the beginning of Year 2 would be worth $6,450 after taxes. This $4,050 advantage consists of a $3,125 advantage due to the lower marginal tax rate, (15 percent versus 46.25 percent), and the tax savings on the Year 1 return of $925. That is, the taxpayer using the Roth conversion would save $925 in taxes on the $2,000 return, (46.25 percent of $2,000).

Case 4 demonstrated the huge potential increase in purchasing power of a Roth conversion this year compared to retaining the funds in the TDA if the taxation of Social Security benefits causes the marginal tax rate in the withdrawal years to be 46.25 percent.

Consider single individuals or married couples who will have a marginal tax rate of 46.25 percent once RMDs begin in four years, but in the absence of a Roth conversion would have a marginal tax rate of 15 percent before RMDs begin. In these four years,

they may decide to not only convert sufficient funds to a Roth IRA to fill the 15 percent tax bracket, but to also convert additional funds to fill the 25 percent tax bracket. It would be better to convert funds to a Roth IRA before age 70½ and pay 15 percent on some of these conversions and 25 percent on additional conversions than to retain these funds in the TDA and have them eventually taxed at 46.25 percent.

The Roth conversion strategy has another important advantage that these cases did not illustrate. Consider Case 2. This taxpayer has a lower tax rate in Year 1 than she expects to have when the funds would otherwise be withdrawn from the traditional IRA and spent, (i.e., t_1 of 15 percent < t_{n+2} of 25 percent). She wants to convert sufficient funds to a Roth IRA at the beginning of Year 1 to fill her 15 percent tax bracket. On January 2 of Year 1, she converts three separate $10,000 amounts and places them in three separate Roth IRAs. At the end of Year 1, she recharacterizes all of the funds in the two lowest-valued Roth IRAs. Case 2 assumed she retained all of the funds in the third Roth IRA. However, on January 2 of Year 1—indeed, even on December 31 of Year 1—she would not know precisely how much to convert to take her taxable income to the top of the 15 percent bracket. The Roth conversion/recharacterization option solves this problem.

On January 2 of Year 1, she only needs to convert at least enough to fill the 15 percent tax bracket. In Case 2, she made three separate $10,000 Roth conversions on January 2 of Year 1 and fully recharacterized two of these Roth IRAs. Suppose she learns in early April of Year 2 that the remaining $10,000 Roth conversion raised her Year 1 taxable income $555 above the top of the 15 percent tax bracket. At that time, she could select one of two strategies.

First, she could recharacterize $555 (5.55 percent) of the original $10,000 conversion amount. If the Roth IRA's value in early April of Year 2 was $10,200 then she would recharacterize $566.10 (5.55 percent percent of $10,200) from her Roth IRA back to a traditional IRA. This would take her taxable income precisely to the top of the 15 percent tax bracket. Second, she could decide not to recharacterize any of this Roth IRA, in which case she would pay taxes at 25 percent on the $555. If the Year 1 return is high enough, the second strategy would be preferred.

Assuming she selected the first strategy, the final result is that, after the partial recharacterization, she converted $9,445 on January 2 of Year 1, which took her Year 1 income precisely to the top of the 15 percent tax bracket. It was

as if she knew on January 2 of Year 1 that the highest returning asset class for this 15-month period and the precise amount to convert to fill the 15 percent tax bracket was $9,445.

A Final Example for Financial Advisers

This final example explains what financial advisers can do to help their clients take advantage of the Roth conversion/recharacterization options available in the tax code.

Assume Peggy will have a marginal tax rate of 15 percent in 2018, and she expects to have a 25 percent marginal tax rate in all later years. Peggy should do the following:

First, in early January 2018, she should convert at least enough from a TDA to a Roth IRA to fill the 15 percent tax bracket. If she converts too much so that some of the conversion amount would be taxed at the 25 percent tax rate, she can recharacterize the excess conversion amount in early April 2019.

Second, if sufficient funds are available in her TDA, Peggy should convert more than one amount to a Roth IRA in January 2018. For example, she may convert three separate amounts and place each amount in a separate Roth IRA. It is important that each conversion is placed in its own Roth IRA. The three Roth IRAs might contain, respectively: (1) a U.S. stock fund; (2) an emerging markets stock fund; and (3) a high-grade, short-term bond fund.

Third, in the four cases shared earlier, it was assumed the taxpayer recharacterized the two lowest valued Roth IRAs on December 31, 2018 and retained the highest-valued Roth. However, in practice, Peggy should wait until early April of 2019 to decide which two Roth IRA conversions should be fully recharacterized and which Roth conversion might be partially recharacterized to fill the top of the 15 percent tax bracket in 2018. This 15-month lookback period is more valuable than the 12-month lookback period modeled in the four cases. Thus, in reality, the Roth conversion/recharacterization options provided by the tax code are more valuable than the cases illustrated.

Fourth, after early April 2019, Peggy could move the funds in the Roth IRA formed in January 2018 that was either not recharacterized or partially recharacterized into her permanent Roth IRA. Forming three separate Roth IRAs in January 2018 has two goals: first, to retain at least part of one Roth conversion to fill the 15 percent tax bracket and, second, to keep or partially keep the Roth IRA with the largest return since January 2018. By early April 2019, these goals will have been achieved. It is simpler to keep one Roth IRA than to keep multiple Roth IRAs.[7]

It is important that each conversion is placed in its own Roth IRA.

In short, in early January each year, Peggy could make three separate Roth conversions and place one conversion amount in each of the following: U.S. stock fund, emerging markets stock fund, and a high-grade, short-term bond fund. In early April of the next year, Peggy could recharacterize all of the funds in the two lowest-valued Roth IRAs and, if needed, partially recharacterize funds from the highest-valued Roth IRA to fill the top of a low tax bracket. At that time, the remaining funds in the Roth IRA could be moved to Peggy's permanent Roth IRA. She could repeat these steps each January.

Summary

This paper demonstrated and explained how the Roth conversion/recharacterization options available in the tax code provide important advantages that can enhance a taxpayer's after-tax wealth. For financial advisers, the key points presented here are:

A Roth conversion makes sense whenever a taxpayer would pay a lower marginal tax rate on the conversion than she would eventually pay if she did not make the Roth conversion, but later withdrew these funds from the tax-deferred account like a traditional IRA.

The tax code's conversion/recharacterization rules allows the taxpayer to, in essence, select before the fact the best-performing asset class to place in the Roth IRA. And, the conversion year's returns are tax-free if retained in the Roth IRA (that is, not recharacterized). In contrast, this conversion year's returns would eventually be taxed if retained in the tax-deferred account.

The Roth conversion/recharacterization options allow the taxpayer to effectively convert after a partial recharacterization the precise amount in the conversion year to take the taxpayer's income to the top of the desired tax bracket. It is as if the taxpayer knew in early January of the conversion year the precise amount to convert to fill a relatively low tax bracket in the conversion year, and the highest-returning asset class in the conversion year.

In the four cases presented, the Roth conversion/recharacterization options available in the tax code would allow a taxpayer to increase the after-tax value of the funds converted to a Roth account by up to 62.79 percent compared to the strategy of retaining these same funds in a tax-deferred account until later in retirement.

Finally, if taxes on the Roth conversion are paid with funds from the taxable account instead of the Roth IRA, then the advantages of the Roth conversion are even larger than calculated in these four cases. ■

Endnotes

1. Relatively few investors have made non-deductible contribution(s) to a traditional IRA or otherwise have a positive cost basis in a tax-deferred account. If any part of a traditional IRA with a market value of $20,000 but a cost basis of $2,000 is converted to a Roth IRA, then 90 percent of the conversion amount is taxable. The rest of this paper assumed the tax-deferred account contained only pre-tax dollars.
2. Cook, Meyer, and Reichenstein (2015) discussed withdrawal strategies to fill up low tax brackets. However, that study did not discuss the jump in marginal tax rates due to the taxation of Social Security benefits. This study notes that many modest-income retirees will have a federal marginal tax rate of 46.25 percent, despite being in the 25 percent tax bracket. It also notes that the surviving spouse could easily be forced into a higher tax bracket after the death of the first spouse. This is another reason why marginal tax rates may be lower in the early retirement years than in later retirement years.
3. In practice, the return, r_1, is likely to be positive as will be explained later. If not, the Roth will likely be recharacterized. Although Strategy 2 can beat Strategy 1 even if t_1 exceeds t_{n+2}, the most important factor is the relative sizes of these two marginal tax rates.
4. The Roth conversion could not occur until the end of the first day of trading, while Table 1 reports full-year returns. So, these results are approximate.
5. U.S. stocks, emerging markets stocks, and short-term bonds are three asset classes that should be part of most investors' portfolios. So, too, are international developed markets stocks. At least for the years analyzed here (2002 through 2016), Vanguard's Developed Markets Index Fund (VTMGX) never produced the highest return. Stochastically simulated returns on U.S. stocks, emerging markets stocks, and short-term bonds using reasonable return, standard deviation, and correlation coefficient assumptions would produce similarly strong returns on the best-performing asset class.
6. Suppose the $10,000 converted from the traditional IRA to the Roth IRA at the beginning of Year 1 is invested in U.S. stocks that earn 20 percent, while the rest of the traditional IRA earns x percent that year. To hold everything else constant, these cases compare this Roth conversion at the beginning of Year 1 to a withdrawal of $12,000 from the traditional IRA at the beginning of Year $n+2$. In either case, the remaining traditional IRA assets earned x percent in Year 1, and assets in both the Roth IRA and the traditional IRA earn r percent in Years 2 through $n+1$.
7. Withdrawals from a Roth IRA are tax free if the investor has had a Roth IRA (not necessarily this one) for at least five years, and she is at least age 59½. As explained in Anderson and Hulse (2007), Roth IRA distributions are deemed to be made in the following order: (1) regular annual contributions; (2) conversion contributions on a first-in, first-out basis; and (3) earnings (i.e., returns). Suppose Peggy, a retiree who is at least age 59½, made a $10,000 Roth conversion in 2018 and this was her only Roth IRA. Then she would be able to withdraw up to $10,000 tax free before January 1, 2023 due to the five-year rule. If she withdraws $10,500 before January 1, 2023 then she would owe taxes on the $500 of earnings. Instead, suppose she already has a Roth IRA begun in 2013 or before. In this case, she could withdraw all funds tax free from both her prior Roth IRA and the Roth IRA from her 2018 conversion at any time since she would have satisfied both the five-year rule and she is at least age 59½.

References

Anderson, Kenneth E., and David S. Hulse. 2007. "Converting to a Roth IRA under New Tax Law: A Decision Framework." *Journal of Financial Service Professionals* 61 (4): 41–50.

Cook, Kirsten A., William Meyer, and William Reichenstein. 2015. "Tax-Efficient Withdrawal Strategies." *Financial Analysts Journal* 71 (2): 16–29.

Geisler, Greg, and David S. Hulse. 2016. "The Taxation of Social Security Benefits and Planning Implications." *Journal of Financial Planning* 29 (5): 52–63.

Meyer, William, and William Reichenstein. 2013a. "Asset Location Decision Revisited." *Journal of Financial Planning* 26 (10): 48–55.

Meyer, William, and William Reichenstein. 2013b. "Adding Longevity through Tax-Efficient Withdrawal Strategies." *Journal of Wealth Management* 16 (1): 5–64.

Meyer, William, and William Reichenstein. 2013c. "The Tax Torpedo: Coordinating Social Security with a Withdrawal Strategy to Minimize Taxes." *Retirement Management Journal* 3 (1): 25–32.

Reichenstein, William. 2007. "Calculating After-Tax Asset Allocation Is Key to Determining Risk, Returns, and Asset Location." *Journal of Financial Planning* 20 (7): 44–53.

Reichenstein, William, William W. Jennings, and Stephen M. Horan. 2012. "Two Key Concepts for Wealth Management and Beyond." *Financial Analysts Journal* 68 (1): 14–22.

Reichenstein, William, and William Meyer. 2016. "Retirement Income Planning: Why the Conventional Wisdom Is Never the Optimal Withdrawal Strategy." *Journal of Investment Consulting* September/October: 9–11, 22.

Reichenstein, William, and William Meyer. 2017a. "How to Beat the Conventional Wisdom: Part 1." *Financial Advisor*, April: 25–27, 90.

Reichenstein, William, and William Meyer. 2017b. "Beating Conventional Wisdom Using Roth IRAs." *Financial Advisor*, May: 65–67.

Slott, Ed. 2012. *The Retirement Savings Bomb … and How to Defuse It*. Westminster, London, England: Penguin Books.

Stowe, David L., Andy Fodor, and John D. Stowe. 2013. "The Value and Use of the IRA Recharacterization Option." *Financial Analysts Journal* 69 (5): 61–75.

Citation

Reichenstein, William, and William Meyer. 2017. "Valuing Roth Conversion and Recharacterization Options." *Journal of Financial Planning* 30 (11): 48–56.