Marital status and state of residence as determinants of the optimal withdrawal strategy

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Abstract

The issue of the optimal withdrawal sequence of retirement funds from a set of multiple accounts with different tax treatment is studied. Marital status and state of residence are identified as the factors that can significantly affect the optimal withdrawal strategy. Given the provision of the step-up in cost basis for a full value of the joint taxable account upon the first spouse's death available for a married couple living in a community property state, the optimal withdrawal strategy may imply holding off from withdrawing funds from the joint taxable account until the event of the step-up. Another reason to withdraw funds from the tax-deferred accounts before the taxable account is to hedge against the projected increase in income tax rates after the first spouse dies. The benefits of the postponement of the withdrawals from the joint taxable account until the event of the step-up remain robust in the presence of the required minimum distribution rules and the fact that real consumption during later years of retirement is expected to be lower than during the early years, however the presence of short-term capital gains distributions that are taxed at higher ordinary income rates reduces and in some circumstances eliminates the advantage of the postponement of the withdrawals from the joint taxable account. Statistical odds of the mortality occurrence also favor the awaiting of the step-up. © 2010 Academy of Financial Services. All rights reserved.

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1. Introduction

The determination and successful implementation of the optimal withdrawal strategy is an important cornerstone of retirement planning. By withdrawing funds in a tax-savvy manner, a retiree is able to extend her portfolio's longevity or raise the after-tax value of her annual retirement income. One of the key aspects of the successful withdrawal strategy is the application of the income-maximizing withdrawal sequence. The optimal withdrawal sequence determines the withdrawal order from a set of accounts with different tax treatment that maximizes the amount of the after-tax retirement income to the retiree or the amount of bequests left to her beneficiaries.

Beginning with Ragsdale, Seila, and Little (1993, 1994) who develop a mathematical programming model that incorporates a myriad of then prevailing tax regulations applied to retirement income, only a handful of works in financial planning have focused on tax-efficient withdrawal strategies. The factors that have been found to significantly affect the optimal withdrawal sequence from the set of accounts include the assets' expected returns and their risk-return profiles (Spitzer and Singh, 2006, 2007), as well as the progressive tax rate regime (Horan, 2006a, 2006b). This paper adds two more such factors: marital status and state of residence.

The existing literature concentrates on the accumulation of the *individual* investor and the withdrawals by the *individual* retiree, yet frequently assumes that the individual's income is taxed according to the rate brackets applied to the married. The analysis could be performed for a married couple instead of the individual investor when both spouses invest in the retirement assets in the same fashion during the accumulation phase and then withdraw funds by following the same strategy during their retirement years. If one of the spouses dies, the surviving spouse is assumed as the beneficiary of the decedent's remaining assets and he or she keeps following the original withdrawal strategy by drawing down funds from his or her accounts that now include the rolled over assets left by the deceased spouse. It is convenient to assume that both spouses are of the same age so that the minimum distribution requirements applied to the funds held in the traditional IRA remain unchanged after the funds are rolled over to the surviving spouse's accounts. Given the assumption that both spouses independently follow the same retirement strategy optimal for an individual, the results and conclusions reached in the studies that focus on the individual retiree could then be implicitly extended to married couples. The matter that has not been thoroughly addressed in the existing literature is whether two individual retirees acting as a married couple can mutually implement a retirement strategy that will prove to be superior to the case when the spouses act rationally, yet independently. In other words, will planning of the tax efficient withdrawal strategy produce different outcome for a married couple than for a couple living together but unmarried?

Suppose a retiree or a retired couple has retirement funds in tax-shielded accounts such as 401(k) and IRA as well as in the taxable account. Is the retiree better off when she withdraws from the taxable account or from the retirement account first? Because the effective tax rate is zero on the after-tax value of funds held in the retirement accounts whereas the effective tax rate is positive on assets held in taxable accounts, Reichenstein (2006a, 2006b, 2008) argues that, as a rule of thumb, retirees should withdraw funds from the taxable accounts first

since returns are taxed more heavily in taxable accounts than in retirement accounts. The rule is subject to several exceptions, however. Spitzer and Singh (2006) claim that the order of withdrawals depends on the expected return of the individual assets held in the two types of accounts but their work ignores risk considerations. According to them, withdrawals should be made first from the account with the lower expected after-tax rate of return. Spitzer and Singh (2007) subsequently incorporate risk into the modeling by focusing on the withdrawal strategy that minimizes the probability of a shortfall during retirement given the amount of regular retirement income. Reichenstein suggests that retirees should deviate from the rule of thumb when they have minimal taxable income to fully use low tax rates or when their major goal is to maximize the value of bequests left after death and they have substantial unrealized capital gains in the taxable account. The latter case is viewed favorably when the heir receives a step-up in cost basis determined by the stocks' market value on the date of the benefactor's death.

Whenever an IRA or a Roth IRA is rolled over to a surviving spouse, he or she pays no estate tax because of the unlimited marital deduction. He or she, however, receives a step-up in cost basis for the assets held in the descendant's taxable account that he or she is a sole beneficiary of. The case of a married couple, therefore, is no longer identical to the one in which the original taxpayer simply lives longer and the results of studies that focus on the optimal withdrawal strategies for an individual investor may not necessarily remain valid here. If a couple holds the assets in a joint taxable account, the surviving spouse will also get the step-up in cost basis. There is a caveat, however. The value of the step-up depends on the couple's state of residence, namely, whether the couple lives in a common law state or a community law state. In the former case, the step-up rises by one half of the amount of the unrealized capital gains on the day of death, whereas in the latter case the cost basis rises to the assets' full market value at the decedent's death. Hence, the couple may want to postpone the withdrawal of funds from the joint taxable account that have assets with a substantial portion of unrealized capital gains until after the step-up in cost basis takes place, that is, until one of them dies. The value of the opportunity of having the after-tax retirement savings increase because of the step-up in cost basis at some point during retirement is not possible to assess if the analysis is performed for an individual retiree but can be estimated if a married couple is considered instead. Hence, it is possible that, if the analysis is performed for the married couple rather than the individual retiree, the optimal withdrawal strategy may imply holding off from withdrawing funds from the joint taxable account until one spouse dies.

This study investigates whether and under what circumstances it is beneficial for a married couple with a share of retirement funds held in the joint taxable account to deviate from the optimal withdrawal strategy of the individual retiree, namely, whether it is optimal to postpone the withdrawal of funds from the taxable account to receive a step-up in cost basis after the first spouse's death. The existence of the required minimum distributions is incorporated into the analysis, as is the number of other relevant factors. The rest of the paper is structured as follows. Section 2 supplies a background on the existing rules governing the step-up in cost basis in the taxable accounts. Section 3 describes the model employed for the analysis while Section 4 provides the results and robustness checks in light of a number of less restrictive model modifications. Section 5 determines the statistical odds of the basis step-up occurrence during the couple's retirement and Section 6 concludes.

2. Background

Under the current law, when taxable assets pass from a decedent to a surviving spouse, the appreciated assets get a step-up in cost basis as of the date of death. This step-up effectively eliminates the capital gains tax. Consider a married couple where the spouse owns $1 million in stocks and stock funds held in a personal account outside of his retirement account and the cost basis of those securities is $200,000. A sale of those securities during the spouse's life would result in an $800,000 capital gain and a $160,000 tax bill, assuming that all the security holdings qualify for the 20% tax rate on long-term capital gains. If the spouse does not sell those securities and instead leaves them to his surviving spouse upon his death, his spouse will receive a step-up in cost basis of the inherited securities equal to their then market value. She could sell those securities for their market value immediately following her spouse's death and owe no capital gains tax.

Meanwhile, property held jointly does not get a full step-up in basis. If the married couple holds stocks as Joint Tenants with Rights of Survivorship (JTWROS), the entire value of the securities will be passed to the surviving spouse upon the first spouse's death, but only a half will get a step-up in cost basis. For example, if the market value of the securities held in the couple's taxable account as JTWROS on the day of the spouse's death is $1 million and the cost basis in those securities was $200,000, the surviving spouse's cost basis becomes $600,000 (the spouse's half of the account, $500,000, gets a full step-up in cost basis plus the original cost basis of the spouse's half of the account, $100,000, which is equal to the half of the account's original cost basis). As a result, an immediate liquidation of the taxable account would produce a $400,000 capital gain ($1 million market value minus the new $600,000 cost basis) and an $80,000 tax bill given the 20% tax rate on accumulated long-term capital gains.

The above examples suggest that to maximize the value of funds left to the surviving spouse, one may strategize to hold the highly appreciated taxable assets in a spouse's sole name rather than jointly to get the full step-up in their cost basis. However, if the other spouse dies first, then the surviving spouse, the one who holds the taxable securities in his or her sole possession, will not receive the step-up in cost basis thus effectively losing the half of step-up in basis that he or she would have received had the securities been owned jointly instead.

Are there any other available options to maximize the value of the step-up in cost basis? Consider the following scenario. The spouse's health is failing, so he and his spouse decide to transfer the securities into his sole possession. If he survives one year and leaves the assets to his spouse, she will then have the benefit of the full step-up in cost basis. There are caveats, however. First, the necessary requirement for the full step-up in cost basis in such a case is for the spouse to live for at least one year after the moment of the assets' transfer to his sole possession. Second, if the spouse dies first, then the spouse loses the half step-up in cost basis that he would have received had the assets remained jointly owned, just like the case described earlier. Once the spouse is the sole owner, he will receive no step-up in cost basis.

The rules applied to the step-up in cost basis of taxable assets such as equities held in the taxable accounts and other properties described above are valid for a majority of the U.S. states that are usually referred as the common law states. The respective rules are, however, slightly different in states with community property law, or the so-called community

property states.[1] Currently, there are nine community property states (Arizona, California, Idaho, Louisiana, Nevada, New Mexico, Texas, Washington, and Wisconsin[2]) and additionally, the community property laws are established in Puerto Rico. The community property laws define a property purchased during a marriage as the community property where both spouses have an equal right to possess the property during their marriage. If the community property is left to a surviving spouse, the spouse who inherits receives the full step-up in cost basis. For this reason, it is highly suggested that taxable property titled as joint tenancy in a community property state be changed to community property to provide the full basis step-up. If a married couple living in a community property state jointly owns securities in the taxable account, the surviving spouse, no matter whether it is the spouse or the spouse, will be entitled to the full step-up in cost basis of such assets, effectively eliminating the tax burden on the capital gains accumulated to the time of the first spouse's death. The opportunity to receive the full step-up in cost basis on assets held in a joint taxable account may result in deviation from the generally accepted withdrawal strategy that recommends withdrawing retirement savings from the taxable account first and from the tax preferential retirement accounts such as 401(k) and IRA last.

Reichenstein (2006a) is the only study that considers the impact of a married couple living in a community state on the optimal withdrawal sequence from a set of accounts with different tax treatment. However, Reichenstein does not perform the full scale analysis and in the end, he poses the following question: given a healthy 70-year old couple living in a community state, should they withdraw funds from the retirement accounts and postpone the withdrawal of the appreciated stock fund from the taxable accounts until after the inevitable death of the first spouse? Reichenstein admits that since the individuals' longevities are usually uncertain, the best strategy is not always obvious. This paper's goal is to add clarity to how to approach the solution to the question raised above by presenting a fairly realistic framework and relaxing a number of restrictive assumptions, one at a time.

3. The model

This study assumes that both spouses are the same age and that the couple retires when they reach 70 years of age. The first annual withdrawal from the retirement funds takes place when both spouses turn 70 and each subsequent annual withdrawal is adjusted for inflation. The *projected* length of the retirement period is assumed to be 30 years. Under such assumptions the model leaves only a two percentage chance[3] that the surviving spouse or spouses will run out of funds if at least one of them reaches the century mark, which is comfortably below the standard benchmark of 5% employed in the literature.

The retirement funds are invested in the stock market portfolio by way of purchasing an appropriate exchange traded fund or a mutual fund. The return on the investment is generated via the long-term capital gains.[4] This study assumes a buy-and-hold portfolio where the original contributions and the accumulated capital gains are held until sold by the then retiree(s) for consumption purposes in regular annual intervals during the retirement period. The annual rate of return on the stock market in the form of capital gains is 5% and the annual rate of inflation is set at 2%.

The sole purpose of the accumulated retirement income is to finance the couple's retirement and the funds the couple has accumulated in their 401(k)s and IRAs, as well as their savings in the joint taxable account, represent the only source of such income. The retirement period is 30 years meaning that the withdrawals made over the 30 years are set at such levels that result in the full depletion of the retirement funds at the end of the retirement period. The withdrawals are made annually and the after-tax amount of each subsequent annual withdrawal is adjusted by inflation to preserve the purchasing power of the retirement income. The tax rate on realized long-term capital gains is 20%. The average income tax rate stays constant throughout the retirement, which is equivalent to assuming that the income tax regulations are adjusted annually with the pace of inflation.

Two opposite withdrawal strategies are considered. In the first strategy, the withdrawals from the retirement funds are made sequentially starting with the joint taxable account followed by the tax-shielded accounts after the taxable account is fully depleted. Such withdrawal strategy is referred as TFRL (Taxable account First, Retirement accounts Last) and would be more tax efficient for an individual retiree since the funds in the designated retirement accounts are allowed to stay and grow tax-free for a longer period of time. For a married couple, however, this strategy would leave fewer funds, if any, in the joint taxable account by the time the step-up in cost basis would occur.

The opposite strategy starts withdrawing funds from the tax-shielded accounts and switches to the withdrawals from the joint taxable account as soon as the latter receives the step-up in cost basis, that is, the surviving spouse starts his or her individual withdrawals from what was a joint taxable account. After the taxable account is fully depleted, the withdrawals go on from the tax-shielded accounts if the latter have any funds remaining. This second withdrawal strategy is referred as RFTL (Retirement accounts First, Taxable account Last) as it intends to take full advantage of the step-up in cost basis of the assets held in the couple's joint taxable account by keeping the assets held in the taxable account until either the retirement accounts are fully depleted, or when the step-up takes place, whichever comes first.

Note that the step-up in cost basis would also apply to the withdrawal strategy TFRL as well: if there are any funds left in the joint taxable account by the time of the first spouse's death, their cost basis receives an adjustment up to their then current market values.[5] The surviving spouse spends the amount of funds adjusted by inflation that the couple would be spending together, that is, his or her annual consumption in retirement is equal to what the couple would be spending had the other spouse been still alive. Another way to model the retirement withdrawals after the first spouse's death is to assume that the surviving spouse's income comprises a share of the couple's income adjusted by inflation and to add into consideration the value of bequests to be left to the couple's beneficiaries. The results and conclusion will not be changed materially if the bequest motive is added as long as its role is secondary to the maximization of retirement income.

The major difference between withdrawing funds from the tax-shielded account and the taxable account is that in the latter case, every time a withdrawal is made, a portion of the cost basis and a portion of the accumulated capital gains are withdrawn together but only the portion representing realized capital gains is taxed. The value of the withdrawn cost basis and the value of the withdrawn capital gains are proportional to each other according to a

predetermined relationship. Clearly, if you sell 100 shares of an equity fund in your portfolio, you withdraw the amount of the cost basis assigned to those 100 shares as well as the amount of capital gains that have been accumulated on those shares. Hence, there is a unique relationship between the amount of the withdrawn cost basis and the value of the realized capital gains.

The retirement account ratio denoted by X is the measure of the after-tax value of the retirement accounts over the after-tax value of the taxable account at the start of the retirement period, that is, at the time when the first annual withdrawal from the retirement funds is to take place. The cost basis ratio denoted by Y is the relative measure of the cost basis of the taxable account, that is, the total cost of the assets invested in the account over the after-tax value of the taxable account at the start of the retirement period. Notation-wise, $X = RA(1-t_i)/TA_{AT}$ and $Y = CB/TA_{AT}$, where RA is the accumulated before-tax value of the tax-deferred retirement accounts, t_i is the income tax rate to be applied to the withdrawals from the tax-deferred retirement accounts during retirement, CB is the cost basis of the taxable account, and TA_{AT} is the after-tax value of the taxable account which is equal to $TA_{BT}(1 - t_{cg}) + CB \times t_{cg}$, with TA_{BT} being the before-tax value of the taxable account and t_{cg} being the tax rate on long-term capital gains.

Table 1 shows how much higher the annual inflation-adjusted after-tax retirement income would be if the funds were withdrawn from the taxable account first and from the retirement accounts last than if the opposite withdrawal strategy RFTL was implemented for the case when the step-up in cost basis in the taxable account is not allowed. The results are presented for two retirement periods (20 and 30 years) and for various sets of values for the retirement account ratio X and the cost basis ratio Y. The percentage difference in the annual retirement income is larger for a longer retirement period and for a higher cost basis ratio but is concave with respect to retirement account ratio, reaching its largest value when the retirement account ratio is equal to one. For a low cost basis ratio, the percentage increase is the smallest and this is where the reversal of the withdrawal strategy from TFRL to RFTL is expected to result in the highest increase in the amount of the regular inflation-adjusted after-tax retirement income given the provision of the step-up in cost basis in the taxable account. All else equal, the results in Table 1 would be higher given a larger tax rate on capital gains but they are independent of the income tax rate during retirement. The higher income tax rate, however, would directly reduce the retirement account ratio X.

4. Results

4.1. Case 1: standard model

Fig. 1 presents the dynamics of the percentage difference between the annual after-tax inflation-adjusted retirement incomes for the withdrawal strategy RFTL versus the withdrawal strategy TFRL given the timing of the step-up in cost basis during the retirement period. The results are shown for a subset of values of the retirement account ratio (X = 0.2, 0.5, 1, 2, 5, and 10) and four different values of the cost basis ratio (Y = 0.1, 0.2, 0.4, and 0.6). The percentage of income difference is a concave function of the step-up timing that

Table 1 Percentage difference in the annual inflation-adjusted after-tax income for the withdrawal strategy TFRL vs. the withdrawal strategy RFTL for an individual retiree assuming the constant annual capital gains yield of 5%, annual inflation of 2%, and the tax rate on long-term capital gains of 20%

| | Retirement period—20 years | | | | | | | Retirement period—30 years | | | | | |
| | Y | | | | | | | Y | | | | | |
X	0.1	0.2	0.4	0.6	0.8	1.0	X	0.1	0.2	0.4	0.6	0.8	1.0
0.1	0.1	0.2	0.4	0.7	1.0	1.2	0.1	0.1	0.3	0.6	0.9	1.2	1.5
0.2	0.2	0.3	0.7	1.1	1.6	2.0	0.2	0.2	0.4	1.0	1.4	2.0	2.5
0.5	0.3	0.6	1.2	1.8	2.5	3.2	0.5	0.4	0.7	1.5	2.3	3.1	4.0
1.0	0.3	0.7	1.3	2.0	2.7	3.5	1.0	0.4	0.8	1.6	2.5	3.4	4.4
1.5	0.3	0.6	1.3	1.9	2.6	3.3	1.5	0.4	0.7	1.6	2.3	3.2	4.1
2.0	0.3	0.6	1.2	1.8	2.4	3.0	2.0	0.3	0.7	1.4	2.2	3.0	3.8
2.5	0.3	0.5	1.1	1.6	2.1	2.7	2.5	0.3	0.6	1.3	2.0	2.7	3.4
3.0	0.2	0.5	1.0	1.5	2.0	2.5	3.0	0.3	0.6	1.2	1.8	2.5	3.1
3.5	0.2	0.4	0.9	1.4	1.8	2.3	3.5	0.3	0.5	1.1	1.7	2.3	2.9
4.0	0.2	0.4	0.8	1.2	1.7	2.1	4.0	0.3	0.5	1.0	1.6	2.1	2.6
4.5	0.2	0.4	0.8	1.2	1.6	2.0	4.5	0.2	0.5	1.0	1.4	1.9	2.4
5.0	0.2	0.3	0.7	1.1	1.4	1.8	5.0	0.2	0.4	0.9	1.3	1.8	2.3
5.5	0.2	0.3	0.7	1.0	1.4	1.7	5.5	0.2	0.4	0.8	1.3	1.7	2.1
6.0	0.2	0.3	0.6	0.9	1.3	1.6	6.0	0.2	0.4	0.8	1.2	1.6	2.0
6.5	0.1	0.3	0.6	0.9	1.2	1.5	6.5	0.2	0.4	0.7	1.1	1.5	1.9
7.0	0.1	0.3	0.6	0.8	1.1	1.4	7.0	0.2	0.3	0.7	1.1	1.4	1.8
7.5	0.1	0.3	0.5	0.8	1.1	1.4	7.5	0.2	0.3	0.7	1.0	1.3	1.7
8.0	0.1	0.3	0.5	0.8	1.0	1.3	8.0	0.2	0.3	0.6	0.9	1.3	1.6
8.5	0.1	0.2	0.5	0.7	1.0	1.2	8.5	0.2	0.3	0.6	0.9	1.2	1.5
9.0	0.1	0.2	0.5	0.7	0.9	1.2	9.0	0.1	0.3	0.6	0.9	1.2	1.5
9.5	0.1	0.2	0.4	0.7	0.9	1.1	9.5	0.1	0.3	0.6	0.8	1.1	1.4
10.0	0.1	0.2	0.4	0.6	0.9	1.1	10.0	0.1	0.3	0.5	0.8	1.1	1.3

increases with a lower cost basis ratio and is also concave with regard to the retirement account ratio. For $Y = 0.1$, the difference takes on negative values only when the step-up does not take place during the retirement period or instead occurs at the very end of it when the retirement funds are fully depleted.

The income difference reaches its peak of 7.1% when the retirement account ratio is equal to one and the step-up happens at the end of the 12th year of the retirement period. For X below one, the highest percentage difference in the retirement income is achieved for the case when the step-up takes place later in retirement; for X above one, the peak in the income difference is reached when the step-up happens earlier than year 12. The mean value of the income percentage difference for the case when $Y = 0.1$ is 1.5% when $X = 0.2$, 2.7% when $X = 0.5$, 3.5% when $X = 1$ or $X = 2$, 2.6% when $X = 5$, and 1.7% when $X = 10$. These findings suggest that it is beneficial for a married couple with a joint taxable account living in a community property state to postpone the withdrawal of funds from such an account in favor of taking the retirement funds from the retirement accounts first to achieve a greater amount of the annual after-tax inflation-adjusted income when the accumulated capital gains represent a significant portion of the joint taxable account's value.

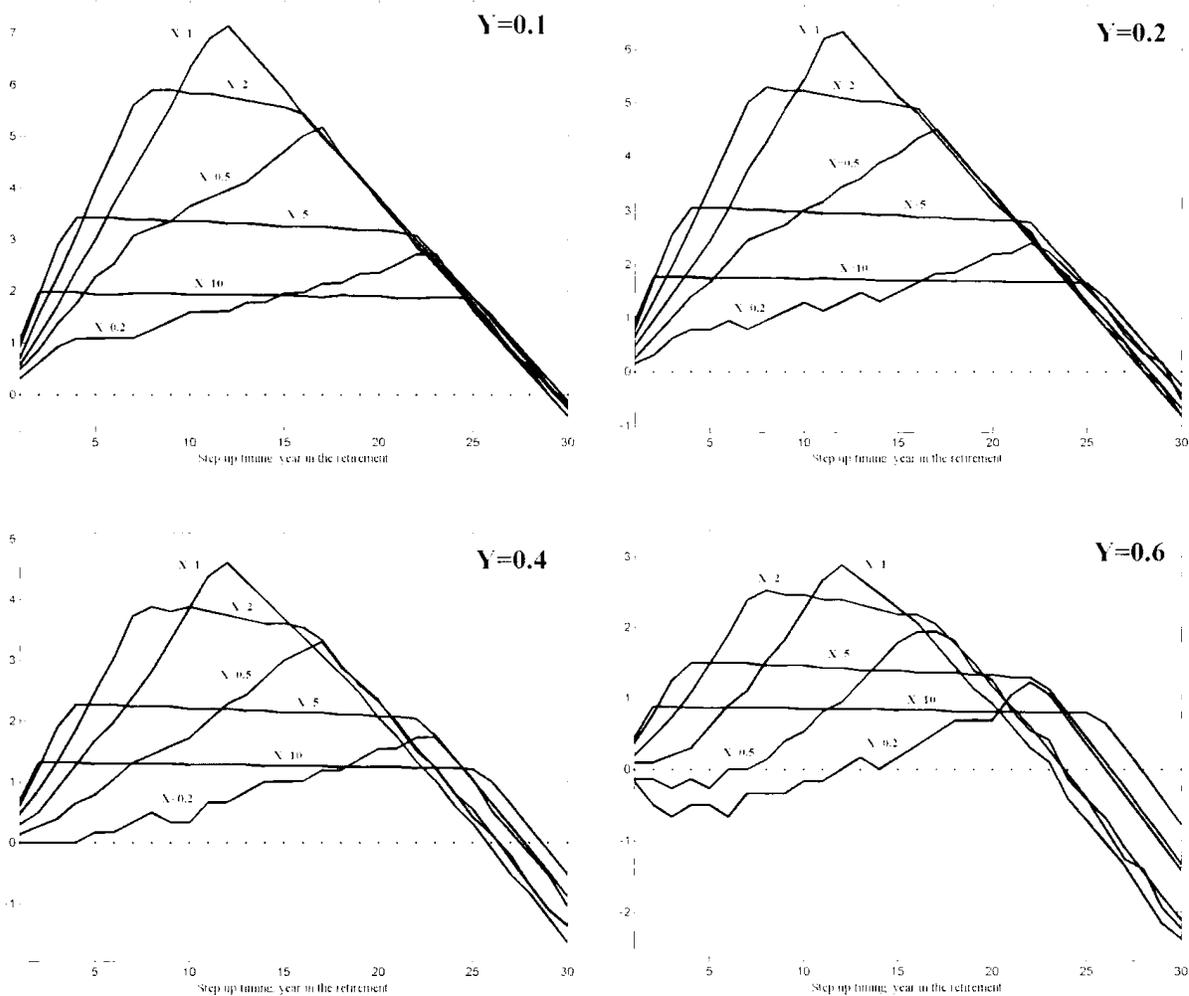When a higher cost basis ratio is considered, that is, when the accumulated unrealized

Fig. 1. Percentage income difference for the withdrawal strategy RFTL over the withdrawal strategy TFRL: Case 1.

capital gains constitute a smaller share of the joint taxable account value, the advantage of the postponement of withdrawals from the funds held at the joint taxable account until the step-up in cost basis diminishes as can be seen from Fig. 1. For the case when Y = 0.2, the picture still largely favors the withdrawal strategy RFTL: the percentage difference in income remains positive until the step-up timing at the end of the 29th year in retirement. The mean values of the percentage difference are lower than for the case when Y = 0.1 but are still significantly above zero (1.2% when X = 0.2, 2.2% when X = 0.5, 2.9% when X = 1, 3.1% when X = 2, 2.3% when X = 5, and 1.5% when X=10). When the cost basis is 0.6, the advantage of the postponement is almost entirely eliminated: the percentage difference in income takes on negative values more frequently and is barely compensated by a set of lower positive values of the income difference when the step-up takes place during the first half of the retirement period. The mean values of the percentage difference do not exceed 1.1% for any value of X. In summary, the switch to the withdrawal strategy RFTL in the presence of the step-up in cost basis is justified for low values of the cost basis ratio given

a wide range of the step-up timing occurrence during the 30-year retirement period with the exception of the few years at the very end of the period.

The computational analysis of the advantage of the postponement of the withdrawals from the joint taxable account for a married couple living in a community property state until after the basis step-up can be further extended by incorporating several features commonly present or faced by retirees: difference in the income tax burden levied on single taxpayers and married couples, existence of the required minimum distributions from the tax-deferred accounts, difference in consumption needs during early and late phases of retirement, and income taxation of a portion of annual return on the assets held in the taxable account.

4.2. Case 2: case 1 plus hedging against projected increase in tax rates

Apart from the possible occurrence of the basis step-up, there is yet another reason why the optimal withdrawal strategy may switch from TFRL to RFTL when the analysis is performed for a married couple: hedging against the projected increase in income tax rates when a first spouse dies. Keebler and Bigge (2007) consider this, among other reasons, for converting to a Roth IRA. The funds located in a tax-deferred account such as an IRA or a 401(k) are taxed upon the withdrawal at the applied ordinary income tax rates. The likelihood of higher income tax rates after the first spouse dies arises because the surviving spouse will subsequently file an income tax return with a single status. Assuming that the surviving spouse will have the same taxable income the couple had before and assuming both inflation-adjusted income tax brackets and unchanged marginal tax rates, the surviving spouse will likely have to pay more income tax because of the new filing status: a single taxpayer is subject to a higher income tax burden than a married couple given the same level of income. Hence, by withdrawing funds from the tax-deferred accounts first, the married couple can benefit from the subsequent step-up in cost basis of their joint taxable account as well as a lower income tax burden levied on the withdrawals taken by the surviving spouse from the tax-deferred accounts.

Table 2 shows the 2010 Federal individual income tax brackets for married couples and single taxpayers. Given the same level of income available to either a couple or a single individual, the single individual pays a higher portion of his taxable income to federal taxes compared to what the couple pays. In addition, the majority of American taxpayers take the standard deduction rather than itemize deductions for expenditures such as mortgage interest, charitable contributions, state and local taxes, and the size of the standard deduction differs for single taxpayers and married couples. In 2009, the standard deduction increased to $11,400 from $10,900 (up $500) for married couples filing a joint tax return and it remained unchanged in 2010. The standard deduction for singles and married individuals filing separately increased to $5,700 from $5,450 (up $250) in 2009 and remained at that level in 2010. The standard deduction for heads of household increased to $8,350 from $8,000 (up $350) in 2009 and then increased by $50 to $8,400 in 2010. Fig. 2 depicts the average tax rate as a function of total income, which includes the amount of the standard deduction for single taxpayers and married couples as well as the difference between those rates.[66] The difference in the average tax rates is substantial for a moderately high income, but dissipates for the ultra high income earners.

Table 2 Federal income tax brackets for 2010

Marginal tax rate	Married couples filing jointly		Most single filers	
	Taxable income		Taxable income	
	Above	Below	Above	Below
10	0	16,750	0	8,375
15	16,750	68,000	8,375	34,000
25	68,000	137,300	34,000	82,400
28	137,300	209,250	82,400	171,850
33	209,250	373,650	171,850	373,650
35	373,650	—	373,650	—

The following computations are based on the assumption that the average tax rate in retirement is 15% for a married couple and 20% for a single taxpayer, which is the equivalent of assuming that the couple's annual before-tax retirement income is around $100,000 in terms of 2010 dollars. After the first spouse's death, the surviving spouse keeps spending the amount of after-tax dollars that the couple would have spent together. The surviving spouse will file his or her return as a single taxpayer and, as a result, his or her retirement income will be subject to the 20% average tax rate.

Fig. 3 provides the resulting percentage differences in the annual after-tax inflation-adjusted retirement income between the two opposite withdrawal strategies. The incremental value of the postponement of withdrawals from the joint taxable account until the timing of the step-up occurrence increases compared to the respective results for the standard case illustrated in Fig. 1 for all considered retirement account ratios and cost basis ratios. The income difference reaches its peak of 10.3% for the case when the cost basis ratio is 0.1, the retirement account ratio is equal to one, and the step-up occurs at the end of the 12th year during the retirement period. The mean value of the income percentage difference for the case when Y = 0.1 is 2.3% when X = 0.2, 4.0% when X = 0.5, 5.0% when X = 1 or X = 2, 3.6% when X = 5, and 2.3% when X = 10. Even when the cost basis is 0.6, the advantage of the postponement is still fairly visible: the average income percentage difference takes on values of 0.8, 1.6, 2.2, 2.4, 1.8, and 1.2%, respectively. These findings demonstrate that the postponement of the withdrawals from the joint taxable account in favor of the withdrawals from the retirement accounts is largely beneficial for a married couple living in a community state for at least two reasons: (1) the step-up in cost basis in the joint taxable account after the first spouse's death eliminates a substantial portion of the tax burden represented by capital gains taxes; (2) a higher income tax burden levied on the surviving spouse because of his or her new and costlier filing status is also significantly mitigated.

The resulting increase in the annual after-tax inflation-adjusted retirement income is a function of the step-up timing, the proportion of the accumulated unrealized capital gains in the joint taxable account, the relative value of the after-tax value of the spouses' retirement accounts versus the after-tax value of the joint taxable account at the beginning of retirement, the realized rate of return on the retirement assets, and the projected longevity of the retirement period. The achieved results, however, are still subject to several deficiencies that can be largely ignored on a larger scale but may be of major importance in the context of this
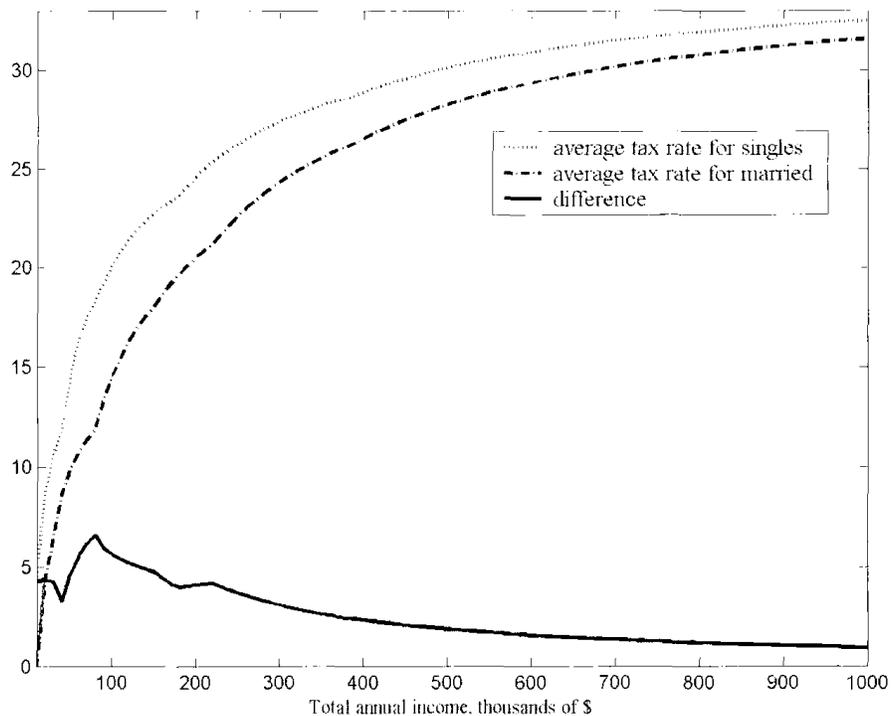
Fig. 2. Average tax rates for single taxpayers and married couples and their difference as a function of the household income.

study's analysis since the incorporation of such factors may have a direct impact on the preferred order of the withdrawals. The factors that influence the withdrawal patterns can further affect the value of the postponement strategy and they are considered below. One of such factors is the existence of the required minimum distributions from the tax-deferred accounts when a retiree reaches a certain age.

4.3. Case 3: case 2 plus required minimum distributions

Under the required minimum distribution (RMD) rules, participants in "qualified plans" and individual retirement accounts are generally required to begin taking distributions no later than April 1 of the year after they reach age 70.5. The amount of the RMD each year is measured by dividing the account balance as of the end of the prior year by a distribution factor. The distribution factor is generally equal to a life expectancy from the uniform lifetime table published by the IRS. Failure to make an RMD triggers an onerous 50% excise tax, payable by the individual or the individual's beneficiary. In this study, the RMD rules are assumed to be those effective in 2010 and can be found on the IRS Website.[7]

If an individual dies, the beneficiaries of the individual's retirement plans and IRAs are also required to take minimum distributions. The distribution period is generally equal to the remaining years of the beneficiary's life expectancy. If the beneficiary is the spouse of the original holder of the account, then the decedent's retirement savings can be rolled over into the spouse's designated retirement accounts, allowing the surviving spouse to draw down the
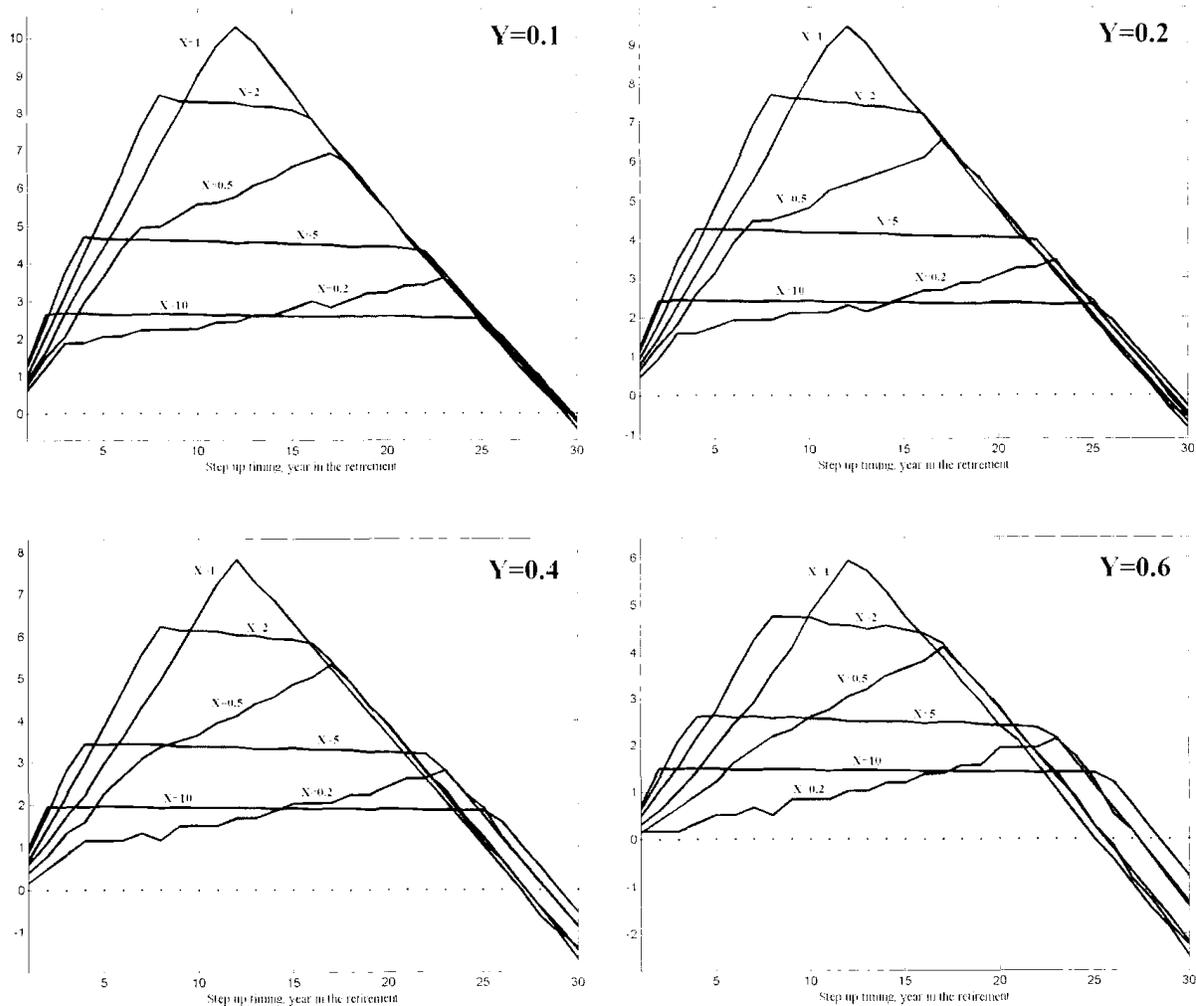
Fig. 3. Percentage income difference for the withdrawal strategy RFTL over the withdrawal strategy TFRL: Case 2.

combined assets from his or her retirement accounts according to the general rules that govern distributions based on his or her age. In addition, for the case when the designated beneficiary is the surviving spouse, the commencement of distributions can be delayed until December 31 of the calendar year in which the deceased individual would have attained age 70.5. If the beneficiary is substantially younger than the benefactor, holds a job and contributes funds toward his or her own retirement, then it can imply a very low rate of the initial withdrawals, thereby allowing the rolled over assets to continue growing at a before-tax rate after the death of the original investor for many more years.

Fig. 4 shows the percentage difference between the annual after-tax inflation-adjusted income in the retirement period when the withdrawals from the joint taxable account are postponed until the step-up in cost basis (withdrawal strategy RFTL) against the withdrawal strategy TFRL that depletes the taxable account first as a function of the step-up timing when the existing required minimum distribution rules are taken into account. The required distributions start taking place when the couple reaches the age of 71, that is, their second
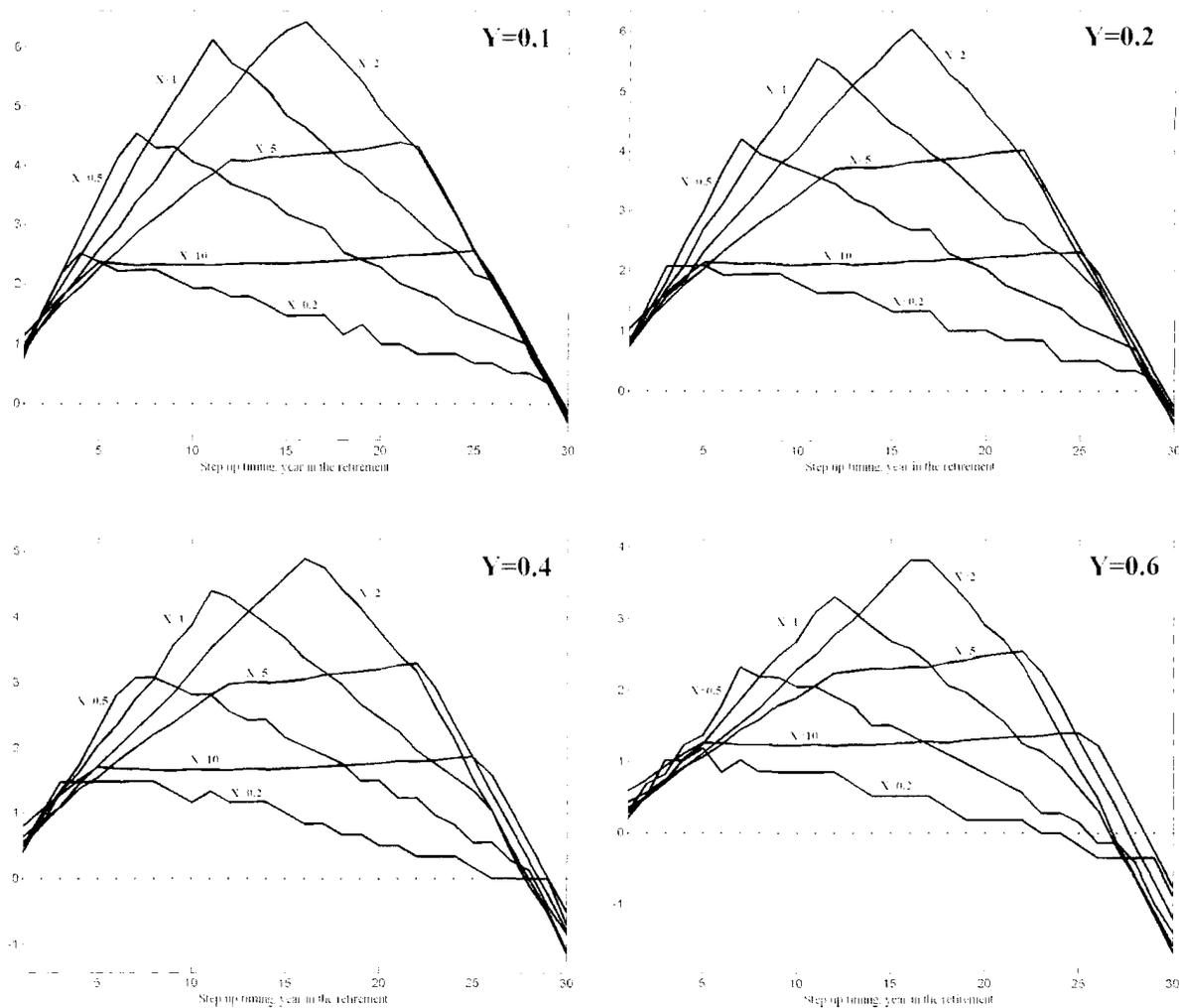
Fig. 4. Percentage income difference for the withdrawal strategy RFTL over the withdrawal strategy TFRL: Case 3.

consecutive annual withdrawal in retirement and all subsequent annual inflation-adjusted withdrawals are subject to such requirements. The percentage differences are lower than those shown in Fig. 3 and the impact of the RMD is felt the most by the retirement portfolios with low retirement account ratios. The step-up timing when the income percentage difference reaches its peak is much shorter in the presence of the RMD for retirement portfolios with a retirement account ratio below one, but it takes longer to reach the highest level of the income difference for the portfolios where the after-tax value of the tax-deferred portion of funds is twice as much as the after-tax value of the taxable account. The presence of the RMD does not significantly affect results for the retirement portfolios with high values of the retirement account ratio (X = 5 and X = 10 in Fig. 4).

The required minimum distribution rules prevent the couple from exercising the withdrawal strategy TFRL in its pure form. The couple is forced to withdraw a portion of money from their tax-deferred accounts every year after they reach 71, thus effectively keeping more funds in the taxable account, which may eventually enjoy the step-up in cost basis. Such

"forcing" is an ultimate blessing in disguise as it allows the couple that is unaware of the attractiveness of the postponement of withdrawals from the joint taxable account to receive at least a partial advantage by possibly having sufficient funds in the joint taxable account by the time the step-up in cost basis takes place and to effectively reduce the tax rate on the withdrawals of the remaining tax-deferred funds when the surviving spouse acquires the costlier tax filing status. The presence of the RMD also has a negative effect that reduces retirement income. If the step-up takes place too early in retirement, the surviving spouse will be unable to fully implement the now optimal "taxable account first, retirement account last" withdrawal strategy as the required distributions from the tax-deferred accounts are still in place. The relative impact of this effect is contingent upon the assumptions of the age when retirement starts, the longevity of the retirement period (recall that in this study those are 70 and 30, respectively), and the step-up timing.

The results presented in Fig. 4 reflect the combined impact of the higher tax burden on single taxpayers relative to married couples and the existence of the RMD. As was shown in Fig. 2 and Fig. 3 earlier, it is still largely beneficial to postpone the withdrawals from the joint taxable account and wait for the step-up in cost basis to afford a larger value of the after-tax inflation-adjusted retirement income. The mean value of the income percentage difference for the case when $Y = 0.1$ is 1.4% when $X = 0.2$, 2.5% when $X = 0.5$, 3.3% when $X = 1$, 3.6% when $X = 2$, 2.9% when $X = 5$, and 2.1% when $X = 10$. When the cost basis is 0.6, the advantage of the postponement becomes less visible: the average income percentage difference takes on values of 0.4, 0.9, 1.4, 1.7, 1.5, and 1.0%, respectively.

Traditional retirement planning assumes that as retirees age, they will continue having the same spending needs in real terms. Incorporating into retirement planning the fact that real consumption during later phases of retirement is expected to be lower than during the early phases may further impact the considerations of the optimal withdrawal strategy from a multiple set of accounts with different tax treatment for a married couple living in a community state.

4.4. Case 4: case 3 plus differentiated income during retirement

Up to this point, all the computations were based on the assumptions that the couple wants to have a constant annual after-tax inflation-adjusted level of the retirement income and that upon the death of the first spouse, the surviving spouse will have the same after-tax inflation-adjusted level of consumption as the couple had both spouses been alive. Such a combination of assumptions is subject to a caveat that the older surviving spouse would have the same level of the annual consumption as the younger married couple, essentially implying that the surviving spouse would spend twice as much as he or she spent when he or she was younger and still married. Spitzer (2008) argues that many retirees would like to spend larger amounts of their retirement funds early in their retirement when they are in relatively good health and that expected consumption needs for entertainment, education and travel are likely to be much less as aging progresses. It can be argued further that the younger married couple of retirees will have more need and desire for higher consumption in the form of entertainment, travel, and so forth than the older surviving spouse. Hence, the premise is that the married couple will anticipate needing more money in real terms early in retirement

and less money later in retirement. In addition, the surviving spouse will likely need less money after loosing his or her spouse compared to what the couple used to spend together.

Indeed, based on the results of the U.S. Bureau of Labor's 2002 Consumer Expenditure Survey, Bernicke (2005) demonstrates that the retirees total spending decreases with age and that this reduction in spending is voluntary. Basu (2005) finds that retirees tend to spend more on leisure immediately after retirement than at more advanced ages but that older people generally spend more on healthcare related costs. Also a significant change in basic living expenses may occur when a residential mortgage or other debts are paid off. The 2002 U.S. Bureau of Labor's Consumer Expenditure Survey (United States Department of Labor, 2008) shows that healthcare expenditures tend to increase over the working age but stabilize between the 65–74 and 75+ age groups. For comparison, the 2007 Consumer Expenditure Survey released in November 2008 shows that the average annual expenditures for the 75+ age group drop by 28% compared to the 65–74 age group. The expenditures on entertainment tumble by 52% and the healthcare expenses also decrease by 14%. The only three items that experience growth in the amount of the expenditures for the 75+ age group are household operations, cash contributions outside the consumer unit[8] and, surprisingly, education. The 2008 Consumer Expenditure Survey (United States Department of Labor, 2009) released in October 2009 shows that the average annual expenditures for the 75+ age group are 24% lower compared to the 65–74 age group, with the expenditures on entertainment dropping a steep 44% and the healthcare expenses decreasing by 8%. The only two items that show growth in the amount of consumption for the 75+ age group are household operations and cash contributions. It is worth noting that the results of the Consumer Expenditure Survey are subject to several caveats. As Bernicke (2005) points out, one of such limitations is the potential absence of long-term care costs. For example, the healthcare expenditures are likely to be undervalued because a person in a nursing home is unlikely to participate in the Survey.

In the context of this study, the premise of differentiated retirement income is incorporated in the withdrawal modeling in the following way: during the first 10 years of the expected 30-year retirement period the married couple or the surviving spouse spends 50% more after taxes and annual inflation adjustments than during the remaining part of retirement whether they are both still alive or not.[9] In other words, the after-tax level of consumption in real terms remains constant over the first 10 years and it will remain constant thereafter but it will be 33.33% less[10] than the level of real consumption during the first 10 years.[11] The resulting findings are presented in Fig. 5 and they also take into account a higher tax burden on single taxpayers,[12] as well as the existence of the minimum distribution requirements on the balances in the tax-deferred accounts.

The plots of the income percentage difference for retirement account ratio equal to or above one have shifted slightly up and to the left compared to the respective plots in Fig. 4. As the couple withdraws a larger amount of money during the first 10 years in retirement, the required distributions from the tax-deferred accounts represent a smaller portion of the total amounts of the respective withdrawals compared to the case of the constant annual after-tax inflation-adjusted income over the entire retirement period. Hence, if the withdrawal strategy TFRL is chosen from the beginning and the step-up in cost basis occurs later, the taxable account would be exhausted to a larger degree leaving fewer funds left to receive the
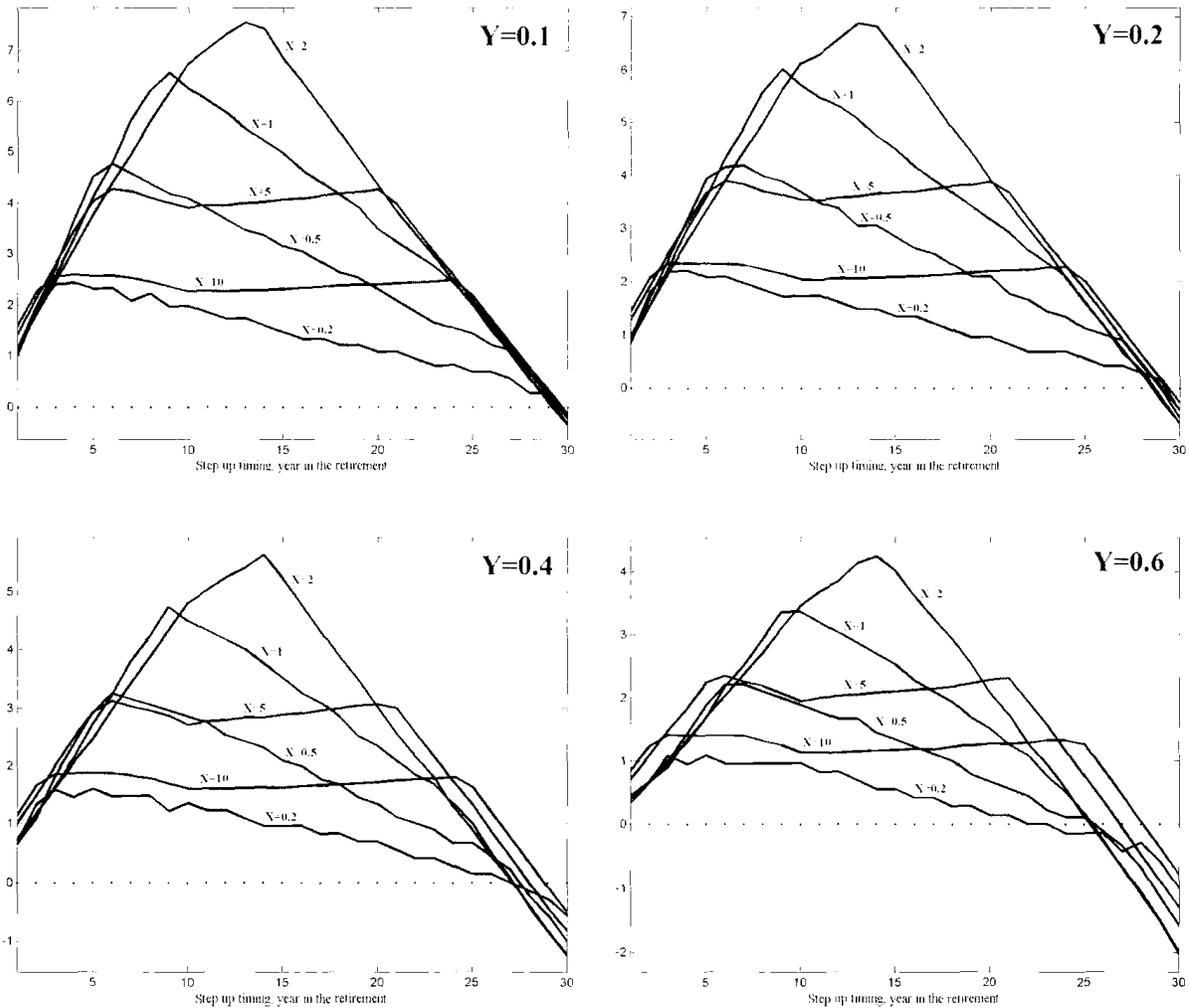
Fig. 5. Percentage income difference for the withdrawal strategy RFTL over the withdrawal strategy TFRL: Case 4.

step-up in cost basis. This weakens the RMD effect described earlier that tends to increase the couple's retirement income when they follow the withdrawal strategy TFRL.

At the same time, the amount of the inflation-adjusted withdrawal is smaller during the second phase of the retirement period whereas the required minimum distribution as a proportion of the tax-deferred account balance increases with the retiree's age, therefore making the amount of the required minimum withdrawal more likely to exceed the amount of the constant after-tax inflation-adjusted retirement income and thus forcing the couple or the surviving spouse to withdraw more money from the tax-deferred account than the couple or the surviving spouse needs. The difference between the required amount of the withdrawal and the necessary amount to achieve the desired level of consumption is then placed in the taxable account where it becomes subject to the capital gains tax and will not reap the benefits of the step-up in cost basis unless both spouses are still alive. Cumulatively, these two effects produce a more favorable outcome for the postponement of the withdrawals from the taxable account for the majority of the possible step-up timing occurrences compared to

the case of the constant annual after-tax inflation-adjusted consumption throughout the entire retirement period. The mean value of the income percentage difference for the case when Y = 0.1 is 1.4% when X = 0.2, 2.6% when X = 0.5, 3.6% when X = 1, 4.0% when X = 2, 3.1% when X = 5, and 2.1% when X = 10. When the cost basis is 0.6, the average advantage of the postponement does not differ significantly from the case of the constant income and the average income percentage difference takes on almost identical values for the entire set of X's.

All the results obtained so far have been based on the assumption that the entire return on the retirement assets comes in the form of long-term capital gains that are taxed at a reduced tax rate at the time of their withdrawal from the taxable account. In practice, however, at least a part of the annual return on equity funds is distributed to the shareholders in the form of short-term capital gains and such distributions on the assets held in the taxable accounts are taxed at higher ordinary income rates. Given the higher tax burden, does it still pay off to wait for the possible step-up and hold off from selling assets held at the taxable account?

4.5. Case 5: case 4 plus capital gains distributions

The presence of equity funds in the joint taxable account whose returns are divided between short-term and long-term capital gains will negatively affect the likelihood of postponing withdrawals from the taxable account until the likely event of the step-up in cost basis. The presence of short-term capital gain distributions implies an increased tax burden that would reduce the value of the accumulated long-term capital gains that await the step-up thus reducing the attractiveness of deviating from the withdrawal strategy TFRL. For the next series of computations, it is assumed that the total annual return on the retirement funds is still 5% but 40% of annual capital gains are distributed at the end of each year and are taxed at the respective ordinary income rate. The after-tax value of the distributed gains is put toward the married couple's or the surviving spouse's consumption that year.

Fig. 6 shows the difference in the annual after-tax inflation-adjusted retirement income when the capital gains rate is 5%, the distribution ratio of annual capital gains is the constant 40% and the marginal income tax rate that applies to such distributions is 30%. The married couple's withdrawals from the tax-deferred accounts are taxed at a 15% average tax rate, whereas the surviving spouse's retirement income is taxed at the average rate of 20%. The required minimum withdrawal rules have also been incorporated in the modeling. The after-tax inflation-adjusted retirement income is constant over the first 10 years in retirement, after which it drops by one-third and remains constant thereafter.

As expected, the presence of capital gains distributions on the assets held in the taxable account that are taxed at the higher marginal tax rate represents a disadvantage for the postponement of the withdrawals from the joint taxable account until the step-up in cost basis because it reduces the income percentage difference between the withdrawal strategy RFTL and the withdrawal strategy TFRL if compared to the respective plots in Fig. 5. The advantage of keeping funds in the joint taxable account in favor of early withdrawals from the retirement accounts, although not as significant, is still evident given low cost basis ratios and medium to high values of the retirement account ratio, however it is no longer advantageous for the case when Y = 0.6. The mean value of the income percentage
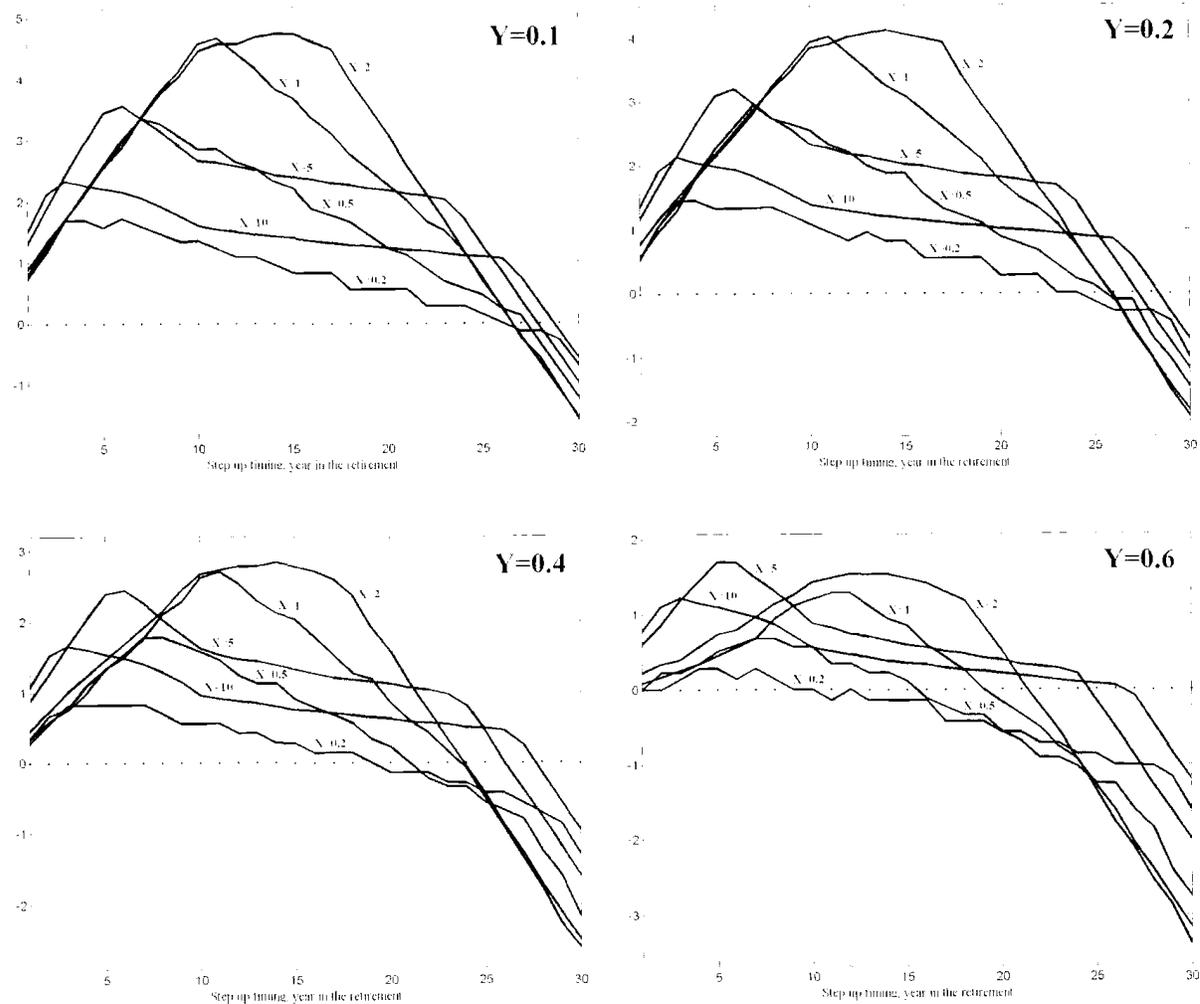
Fig. 6. Percentage income difference for the withdrawal strategy RFTL over the withdrawal strategy TFRL: Case 5.

difference for the case when Y = 0.1 is 0.8% when X = 0.2, 1.5% when X = 0.5, 2.2% when X = 1, 2.5% when X = 2, 2.0% when X = 5, and 1.4% when X = 10. For the case when the cost basis is 0.6, the average income percentage difference takes on values of −0.4, −0.4, −0.1, 0.2, 0.4, and 0.4%, respectively.

5. When is the step-up more likely to happen?

For a particular individual, the age of death is unknown but it can be described by the probability distribution of potential dates of death conditional on reaching a certain age. Using the data on the mortality statistics for men and women drawn from the 2005 period life table published by Social Security Office of the Actuary, it can be shown that for a married couple where both spouses are 65 years old, there is a 65% probability that at least one of the spouses will reach the age of 85, a 36% chance that at least one of the them will

reach the age of 90, and a 12% likelihood that at least one of the spouses will reach the age of 95; for a married couple where both spouses are 70 years old, there is a 39% probability that at least one of the spouses will reach the age of 90, a 13% chance that at least one of them will reach the age of 95, and a 2% likelihood that at least one of the spouses will reach the age of 100.[13] The life expectancy after reaching the age of 65 is 16.73 for men and 19.49 for women; after reaching the age of 70, the respective numbers are 13.3 and 15.69.

Based on the assumption of a married couple where both spouses are 70 years of age, the chance of the step-up in cost basis taking place in the joint taxable account during the 30-year long retirement is 98%. However, when is the step-up more likely to occur and does the statistical distribution of its occurrence also favor the postponement of the withdrawals from the joint taxable account for a married couple living in a community state?

The concave shape of plots of the income difference depicted in Fig. 2 through Fig. 6 reveals that the postponement of the withdrawals from the joint taxable account until the step-up in cost basis will yield a more substantial increase in the annual after-tax inflation-adjusted retirement income over the withdrawal strategy TFRL if the step-up takes place during the second third of the retirement period, namely, between the age of 78 and 90, and it will be much less beneficial, if at all, to wait for the step-up if it occurs when the couple is in their 90s. Table 3 employs the mortality data from the 2005 mortality tables published by the IRS to derive the probabilities of the step-up occurrence during the 30-year retirement stretch, assuming that both spouses are of the same age and they both have just reached 70 years of age. Fig. 7 shows the probability of the step-up occurrence as the function of the couple's age. The obtained picture presents yet another piece of evidence in favor of the postponement of the withdrawals from the joint taxable account for a married couple living in a community state. The step-up is more likely to occur during the first half of the 30-year retirement period: the probability that it will take place before the couple reaches 85 years old is 75%, the likelihood that it will happen between the ages of 90 and 100 is 5.5%, whereas the chance of it happening between 95 and 100 is 0.5%.[14] These findings allow for the conclusion that the statistical odds based on population life expectancies heavily favor the awaiting of the step-up for a married couple living in a community state. The respective odds could be estimated for a particular couple by approximating the individuals' life expectancies, adjusting for their current health and medical history.

6. Conclusions

The existing literature on the determination and implementation of optimal withdrawal strategies during retirement considers an individual retiree and suggests that the retiree starts consuming funds held at the taxable account first and withdraws funds from the designated tax-shielded retirement accounts only after the taxable account has been fully depleted. Such a withdrawal strategy allows for the extension of the tax-free growth in the retirement accounts for as long as possible, resulting in a higher value of retirement income, or a longer period of the fully financed retirement, or both.

This paper, instead of the individual retiree, considers a married couple, a more common case in retirement. The married couple residing in a community property state will have a

Table 3 Derivation of the probability of the step-up in cost basis in retirement, percentages

Age, years	Male Probability of death	Female Probability of death	Married couple Both survive	One dies	Both die	Both alive by this age	Probability of the step-up
70	2.73	1.82	95.50	4.45	0.05	100.00	4.45
71	3.00	2.01	95.05	4.89	0.06	95.50	4.67
72	3.29	2.21	94.57	5.35	0.07	90.78	4.86
73	3.59	2.42	94.08	5.84	0.09	85.85	5.01
74	3.92	2.64	93.54	6.35	0.10	80.76	5.13
75	4.29	2.90	92.93	6.95	0.12	75.55	5.25
76	4.72	3.21	92.23	7.62	0.15	70.21	5.35
77	5.17	3.54	91.47	8.35	0.18	64.75	5.40
78	5.67	3.90	90.66	9.12	0.22	59.23	5.40
79	6.21	4.30	89.76	9.97	0.27	53.69	5.36
80	6.82	4.77	88.74	10.94	0.33	48.20	5.27
81	7.52	5.31	87.57	12.03	0.40	42.77	5.15
82	8.30	5.92	86.27	13.24	0.49	37.45	4.96
83	9.16	6.62	84.82	14.57	0.61	32.31	4.71
84	10.12	7.40	83.23	16.02	0.75	27.41	4.39
85	11.18	8.29	81.46	17.62	0.93	22.81	4.02
86	12.37	9.27	79.51	19.35	1.15	18.58	3.59
87	13.68	10.37	77.37	21.21	1.42	14.77	3.13
88	15.12	11.57	75.05	23.20	1.75	11.43	2.65
89	16.70	12.90	72.55	25.29	2.15	8.58	2.17
90	18.41	14.34	69.88	27.48	2.64	6.22	1.71
91	20.26	15.91	67.06	29.72	3.22	4.35	1.29
92	22.22	17.59	64.09	32.00	3.91	2.92	0.93
93	24.31	19.39	61.01	34.28	4.72	1.87	0.64
94	26.52	21.31	57.82	36.53	5.65	1.14	0.42
95	28.71	23.25	54.71	38.61	6.68	0.66	0.25
96	30.85	25.19	51.73	40.50	7.77	0.36	0.15
97	32.89	27.10	48.92	42.16	8.91	0.19	0.08
98	34.80	28.93	46.33	43.60	10.07	0.09	0.04
99	36.54	30.67	43.99	44.80	11.21	0.04	0.02

Column 4 = (1-column 2) × (1-column 3); column 5 = column 2 × (1-column 3) + column 3 × (1-column 2); column 6 = column 2 × column 3; column 7, row N + 1 = column 7, row N × column 4, row N for N ≥ 1; column 8 = column 5 × column 7.

significant incentive to hold off the withdrawals from their joint taxable account. The community property states offer a more favorable treatment for retirement funds accumulated in the couple's jointly held taxable account: upon the death of the first spouse, the surviving one receives a step-up in cost basis for the full value of the joint taxable account. This paper shows that the opportunity to eliminate the capital gains tax burden on a substantial amount of the unrealized capital gains on the assets held at the taxable account will have a significant impact on the decision about the optimal withdrawal sequence from a set of accounts with different tax treatments for the retired married couple living in a community state. As the surviving spouse receives a substantial increase in his or her remaining retirement income because of the step-up in cost basis in the joint taxable account, the optimal withdrawal strategy switches to holding off withdrawing from the joint taxable
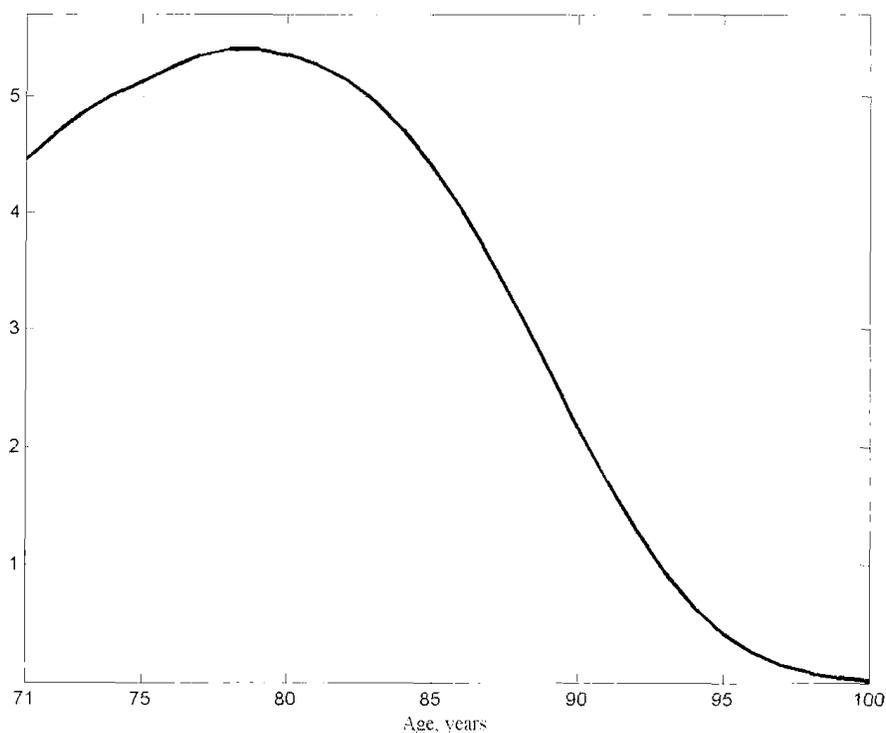
Fig. 7. Probability of the step-up occurrence in retirement given both spouses reaching the age of 70, percent (based on the 2005 period life table for the Social Security area population).

account until the event of the step-up, using funds from the designated retirement accounts to fund retirement spending until then.

There is yet another reason why the optimal withdrawal strategy may switch from the taxable account first (TFRL) to the taxable account last (RFTL) when a married couple is considered: hedging against the projected increase in income tax rates after the first spouse dies. The likelihood of higher income tax rates arises because the surviving spouse will file the income tax return with a single status and a single taxpayer is subject to a higher income tax burden than a married couple given the same level of income. By withdrawing funds from the tax-deferred accounts first, the married couple not only is likely to benefit from the possible step-up in cost basis in their joint taxable account but also will be subject to a lower income tax burden on the funds withdrawn from the tax-deferred accounts such as a 401(k) and an IRA as long as they are still together compared to the case when the surviving spouse withdraws the same amount from the tax-deferred accounts.

The reached evidence about the attractiveness of the postponement of withdrawals from the joint taxable account until the death of the first spouse for a married couple living in a community state is not altered substantially after accounting for the required minimum distribution rules and the fact that the retirees opt to spend more money early in retirement than later. The statistical odds based on the population life expectancies also favor heavily the strategy that holds off the withdrawals from the joint taxable account until the event of the step-up. However, if a substantial share of the returns generated by the assets held in the joint taxable account is in the form of short-term capital gains that are annually distributed

to the shareholders and subject to taxation at higher income rates, the advantage of the postponement of the withdrawals from the joint taxable account will be significantly reduced or even entirely eliminated.

The retired married couples often accumulate funds in the joint taxable account by investing in different stocks or equity funds. Different investments are likely to have different cost bases: the ones that were added recently are more likely to have high cost bases, whereas the contribution made long ago have likely appreciated substantially and now have low cost bases. In such circumstances it is advisable to withhold from selling investments with low cost bases up until the possible step-up event, whereas the investments with high cost bases can be withdrawn early. The optimal withdrawal strategy will imply withdrawing investments from the joint taxable account that have relatively high cost bases first, followed by withdrawing from the tax-shielded retirement accounts while holding off from selling the investments at the joint taxable account that have low cost bases. As soon as the step-up in cost bases takes place, the withdrawals are taken from the taxable account until it has been fully depleted, after which retirement is financed by the remaining portion of the funds left in the retirement accounts.

Notes

1. The tax rules for community property states are included in the IRS Restructuring and Revision Act of 1998 that revised the treatment of the spousal liability.
2. The "Marital Property Act" defines Wisconsin as a community property state, but individual circumstances will dictate how this act is interpreted.
3. Based on mortality statistics drawn from the 2005 period life table of the Social Security Office of the Actuary.
4. Distributions of short-term capital gains are added to the model later in the paper.
5. The model assumes that the married couple lives in a community property state.
6. State income tax is assumed to be zero. Three out of nine community states have no individual state income tax.
7. Special rules apply to those IRA holders whose beneficiary is a spouse who is more than 10 years younger than the account holder. Such rules are not considered in this study.
8. Cash contributions include cash contributed to persons or organizations outside the consumer unit, including alimony and child support payments, care of students away from home, and contributions to religious, educational, charitable, or political organizations.
9. Another way to tackle this issue is to assume that the retired couple and subsequently the surviving spouse go through a lifestyle change every number of years like Basu (2005) suggests.
10. $(1.5X-X)/1.5X=0.3333$, where X is the after-tax inflation-adjusted consumption in year 11 during the retirement and thereafter.
11. Making a different assumption that the one-time downward shift in the level of the constant after-tax inflation-adjusted retirement income happens right after the death of

the first spouse is less feasible since on a number of occasions, when the step-up in cost basis is assumed to take place late in the retirement, the still married couple or a surviving spouse will run out of the funds after the sufficiently long period of elevated spending.

12. Lower level of spending during the last 20 years in the retirement implies that lower average tax rates will likely be applied to the couple's and/or the surviving spouse's income.

13. It was mentioned earlier that based on this study's assumptions and the IRS mortality statistics, the probability of at least one spouse outliving the couple's retirement savings is about two percent.

14. Recall that the probability of the step-up not happening at all during the 30-year retirement period for a 70-year old couple is two percent.

References

Basu, S. (2005). Age banding: a model for planning retirement needs. *Financial Counseling and Planning, 16,* 29–36.

Bernicke, T. (2005). Reality retirement planning: a new paradigm for an old science. *Journal of Financial Planning, 18,* 56–61.

Horan, S. M. (2006a). Optimal withdrawal strategies for retirees with multiple savings accounts. *Journal of Financial Planning, 19,* 62–75.

Horan, S. M. (2006b). Withdrawal location with progressive tax rates. *Financial Analysts Journal, 62,* 77–87.

Keebler, R. S., & Bigge, S. J. (2007). To convert or not to convert, that is the question. *Journal of Retirement Planning, 10,* 37–46.

Ragsdale, C. T., Seila, A. F., & Little, P. L. (1993). Optimizing distributions from tax-deferred retirement accounts. *Personal Financial Planning, 5,* 20–28.

Ragsdale, C. T., Seila, A. F., & Little, P. L. (1994). An optimization model for scheduling withdrawals from tax-deferred retirement accounts. *Financial Services Review, 3,* 93–108.

Reichenstein, W. (2006a). Tax-efficient sequencing of accounts to tap in retirement. *TIAA-CREF Institute's Trends and Issues, October,* 1–21.

Reichenstein, W. (2006b). Withdrawal strategies to make your nest egg last longer. *AAII Journal, November,* 5–11.

Reichenstein, W. (2008). One concept and some of its applications. *Journal of Wealth Management, 11,* 82–91.

Spitzer, J. J. (2008). Retirement withdrawals: an analysis of the benefits of periodic "midcourse" adjustments. *Financial Services Review, 17,* 17–29.

Spitzer, J. J., & Singh, S. (2006). Extending retirement payouts by optimizing the sequence of withdrawals. *Journal of Financial Planning, 19,* 52–61.

Spitzer, J. J., & Singh, S. (2007). Is rebalancing a portfolio during retirement necessary? *Journal of Financial Planning, 20,* 46–57.

United States Department of Labor. (2008). *2007 Consumer Expenditure Survey.* Bureau of Labor Statistics.

United States Department of Labor. (2009). *2008 Consumer Expenditure Survey.* Bureau of Labor Statistics.