SAVING FOR RETIREMENT: TAXES MATTER

By James M. Poterba*

an issue in brief
center for retirement research at boston college

may 2004, number 17

inside

Introduction

To encourage individuals to save for retirement, federal tax policy provides various tax advantages for investments in self-directed accounts, such as traditional and Roth IRAs, and 401(k) plans. However, the differential tax treatment of these accounts and traditional taxable accounts can make it difficult for individuals to choose where to put their money and, once they have begun to accumulate assets, to evaluate how much they will have available in retirement.

This Issue in Brief begins with a brief description of the types of accounts that individuals may consider for retirement saving. It then analyzes two separate issues that are relevant to different stages of the investment process: 1) where to invest; and 2) how to value existing investments. The first issue involves what type of account individuals should choose in order to maximize their after-tax rate of return, assuming that each account offers the same pre-tax return. The analysis of this fundamental saving decision considers both taxes that are paid "up front" on contributions and taxes that are paid when funds are withdrawn. The second issue involves how to determine the after-tax value of existing assets in order to assess progress toward meeting a retirement saving target. Since, once the investments are made, "up-front" taxes are no longer relevant, this analysis looks only at taxes that are paid when funds are withdrawn or, in the case of taxable accounts, taxes that are due along the way.

Background

The tax treatment of different tax-advantaged accounts and taxable accounts varies. Table 1 summarizes the current rules. For example, contributions to traditional IRAs and 401(k)s and their associated investment earnings are not taxed until withdrawal, while contributions to Roth IRAs are taxed up front and the earnings are never taxed. For taxable accounts, contributions are subject to tax, as are interest and dividend earnings. Capital gains are not taxed until they are realized and are then subject to tax rates that are generally lower than individual income tax rates on ordinary income. In contrast, all withdrawals from traditional IRAs and 401(k)s are taxed at ordinary individual income tax rates. Due to these differing tax treatments, the after-tax rate of return for a given investment can vary significantly depending on the type of account in which it is invested.

* James M. Poterba is the Mitsui Professor of Economics at the Massachusetts Institute of Technology.

Table 1. Characteristics of Tax-Advantaged and Taxable Accounts

Type of Account	Contributions	Current Returns	Withdrawals
Roth IRA	Tax	No Tax	No Tax
IRA	No Tax	No Tax	Tax
401(k)	No Tax	No Tax	Tax
Taxable Accounts			
Bonds	Tax	Tax	No Tax
Zero-Dividend Stocks	Tax	No Tax	Tax at Capital Gains Tax Rate
Dividend-Paying Stocks	Tax	Tax on Dividend Return	Tax on Accumulated Capital Gains

Note: Unless otherwise indicated, items subject to tax are taxed at ordinary personal income tax rates.

The return differentials between assets held inside and outside tax-advantaged accounts may change as a result of tax reform. Recent tax changes illustrate this principle. The Job Growth and Taxpayer Relief Reconciliation Act of 2003 (JGTRRA) reduced both the dividend tax rate and the capital gains tax rate. These changes raise the after-tax rate of return that investors can earn on equities held outside their retirement accounts. The 2003 reform therefore increases both the after-tax rate of return and the amount of retirement wealth that can be generated by a given equity investment held in a taxable account, relative to the same asset in a tax-deferred account.

Where to Invest: Comparing After-Tax Returns

This section examines how the implicit after-tax rate of return on retirement saving differs depending on the type of account in which it is invested. The implicit after-tax return is defined as the compound annual return that the individual would need to earn on a given amount of pre-tax earnings to achieve a given after-tax balance at the time of withdrawal. Differences in the implicit after-tax rate of return thus depend on whether the contribution is taxed up front or upon withdrawal, the treatment of investment earnings during the accumulation period, the applicable rate when taxes are due, and the time horizon. Each scenario assumes an individual has $100 of pre-tax earnings to allocate to an investment that earns a constant 5 percent pre-tax rate of return. This section begins with a set of calculations that apply to investments in fixed-income assets, such as bonds, and then considers investments in corporate stock.[1] Since the focus is on preparing for retirement, it is useful to consider a long time horizon, such as ten, thirty, or perhaps even fifty years.

Tables 2a and 2b present the results of the analysis. The tables consider four possible time paths for the taxpayer's ordinary federal income tax

Table 2a. After-Tax Implicit Rate of Return for $100 of Earnings in Various Formats, Assuming Pre-Tax Return of 5 Percent Per Year (Constant Tax Rates)

Retirement Horizon	Marginal Income Tax Rate Trajectory	Taxable Account - Bonds [a]	Roth IRA	Traditional IRA or 401(k) without Match	401(k) with 50 Percent Match	Taxable Account - Stocks [b]
10 Years	25 Percent	0.87%	2.12%	2.12%	6.18%	1.51%
	35 Percent	-1.06	0.69	0.69	4.75	0.08
30 Years	25 Percent	2.79	4.04	4.04	5.39	3.63
	35 Percent	1.81	3.56	3.56	4.92	3.15
50 Years	25 Percent	3.17	4.42	4.42	5.24	4.13
	35 Percent	2.39	4.14	4.14	4.95	3.84

Source: Author's calculations. Formula for the first column is $(1/T)*\ln(1-\tau)+0.05*(1-\tau)$. For the second and third columns, the formula is $(1/T)*\ln(1-\tau)+0.05$. Entries in column four equal the entries in column three plus $(1/T)*\ln(1.50)$. Formula for the fifth column is $(1/T)*\ln[(1-\tau_i)\exp(0.05*T)(1-\tau_g)+\tau_g[(1-\tau_i)]$, where τ_i is income tax and τ_g is tax on capital gain.

[a] The bond example assumes no capital gains, therefore all returns are fully taxed upon accrual.

[b] The equity example assumes that all returns are in the form of capital gains, and the gains are taxed at a 15 percent rate upon realization.

[1] The calculations presented in this brief are based on a framework developed in Poterba (2004 forthcoming). Sibley (2002) and Reichenstein and Jennings (2003) explore related issues.

rates, and they assume that the taxpayer faces no state income tax. The four federal tax paths correspond to a constant tax rate of 25 percent, a constant tax rate of 35 percent, a tax rate of 25 percent while accumulating assets but 35 percent when taking distributions, and a tax rate of 35 percent while accumulating but 25 percent while taking distributions.[2] The constant rate examples are in Table 2a, and the varying rate examples are in Table 2b.

After-Tax Returns for Bonds

For someone with a 25 percent marginal income tax rate, earning $100 leads to after-tax earnings of $75. If this amount is invested in bonds that are held in a taxable account for thirty years, with a pre-tax interest rate of 5 percent, the implicit after-tax rate of return on the $100 of pre-tax earnings is 2.8 percent. That is, investing $100 at 2.8 percent for thirty years will generate the same amount as the investment in the taxable account. This return is substantially lower than the 5 percent return that the investor would earn in a world with no income taxes at all, because the individual has to pay taxes of $25 up front and 25 percent of the interest earnings each year.

Saving through tax-deferred accounts generally offers a higher rate of return than saving in a taxable account. Consider the case of a tax-deductible traditional IRA. If the individual earns $100 and satisfies the income-related eligibility requirements, then the entire $100 can be placed in a traditional IRA. Assume that this investment earns a 5 percent return each year for the next thirty years, at which time the individual withdraws the accumulated balance and pays a 25 percent tax. In this case, the implicit after-tax rate of return is 4 percent. Thus, channeling $100 of earnings to a traditional IRA offers a higher rate of return than channeling the same earnings to a taxable account. Precisely the same calculation would apply for an investment in a 401(k) plan without an employer match. The implicit return would again be 4 percent after tax.

Investing through a Roth IRA also offers an implicit return of 4 percent; even though income tax is paid up front, the interest earnings are never taxed. In fact, Roth IRAs and traditional IRAs will always have the same after-tax return for a given pre-tax return as long as an individual's tax rate remains the same before and after retirement.

If the individual has access to a 401(k) plan with an employer match feature, the rate of return compared to a taxable account is even greater. Consider a plan with a 50 percent match rate and the individual earns $100. The full $100 is then

Table 2b. After-Tax Implicit Rate of Return for $100 of Earnings in Various Formats, Assuming Pre-Tax Return of 5 Percent Per Year (Different Tax Rates)

Retirement Horizon	Marginal Income Tax Rate Trajectory	Taxable Account - Bonds [a]	Roth IRA	Traditional IRA or 401(k) without Match	401(k) with 50 Percent Match	Taxable Account - Stocks [b]
10 Years	25/35 Percent [c]	0.87%	2.12%	0.69%	4.75%	1.51%
	35/25 Percent	-1.06	0.69	2.12	6.18	0.08
30 Years	25/35 Percent	2.79	4.04	3.56	4.92	3.63
	35/25 Percent	1.81	3.56	4.04	5.39	3.15
50 Years	25/35 Percent	3.17	4.42	4.14	4.95	4.13
	35/25 Percent	2.39	4.14	4.42	5.24	3.84

Source: Author's calculations. Formula for the first column is $(1/T)*\ln(1-\tau_a)+0.05*(1-\tau_g)$ where τ_a denotes the tax rate during the accumulation period. For the second, the formula is $(1/T)*\ln(1-\tau_a)+0.05$. For the third column, the formula is $(1/T)*\ln(1-\tau_w)+0.05$, where τ_w denotes the tax rate on withdrawal. Entries in column four equal the entries in column three plus $(1/T)*\ln(1.50)$. Formula for the fifth column is $(1/T)*\ln[(1-\tau_a)\exp(0.05*T)(1-\tau_g)+\tau_g(1-\tau_a)]$, where τ_g is tax on capital gain.

[a] The bond example assumes no capital gains, therefore all returns are fully taxed upon accrual.

[b] The equity example assumes that all returns are in the form of capital gains, and the gains are taxed at a 15 percent rate upon realization.

[c] For rates expressed in the following format "25/35 percent," the first number refers to the marginal income tax rate during the accumulation phase while the second number refers to the rate during the withdrawal phase.

[2] For calendar year 2003, the 25 percent tax bracket applied to single individuals with taxable incomes between $28,400 and $68,800, and to married joint filers with taxable incomes between $56,800 and $114,650. The 35 percent bracket applied to single individuals and married joint filers with taxable incomes of $311,950 and above.

contributed to the 401(k) and the employer contributes another $50. The contributed balance of $150 then compounds at 5 percent for thirty years. Assuming that this balance is taxed at 25 percent when it is withdrawn, the implicit rate of return on the individual's initial $100 of pre-tax earnings is 5.4 percent. So, when 401(k) contributions are matched, which is typically the case, the implicit after-tax rate of return can exceed even the pre-tax return earned on an equivalent contribution to either type of IRA. The extent to which an employer match raises the rate of return depends on the horizon over which 401(k) assets are invested. The increment is largest when the horizon is very short. In the extreme, consider someone who receives a 50 percent matching contribution and holds assets in a 401(k) plan for only one year. The match rate would boost the effective after-tax rate of return by roughly 50 percentage points in this setting.

Several recent studies, for example Kotlikoff and Burns (2004), have called into question the wisdom of contributing to tax-deferred saving plans for taxpayers whose tax rates may be higher in retirement than while working. It is not clear how many individuals are affected by substantially higher tax rates at retirement than before.[3] Perhaps more importantly, however, the arguments involving potentially higher marginal tax rates at retirement are unlikely to offset the benefits of accumulation at the pre-tax rate of return for taxpayers with long retirement saving horizons, or for those who receive substantial employer matching contributions when they contribute to tax-deferred accounts.

Table 2b shows that a ten-year horizon, a marginal tax rate of 25 percent during accumulation, and a marginal rate of 35 percent at withdrawal make the implicit after-tax return on contributions to an unmatched 401(k) or traditional IRA lower than the after-tax return earned in a taxable account. With a thirty-year horizon, however, the power of accumulating at the before-tax rate of return swamps the cost of a higher tax burden at withdrawal, and the implicit after-tax rate of return in a traditional tax-deferred account is greater than the 2.8 percent return in a taxable account.

After-Tax Returns for Equities

The preceding section applies to individuals who plan to invest in fixed-income instruments, such as government or corporate bonds. In practice, however, nearly half of the assets in tax-deferred retirement saving accounts are invested in equities, either as directly-held stock or as an investment in an equity mutual fund.

While both bonds and stocks can generate gains and losses, a larger share of the expected return for stocks typically takes the form of capital appreciation. The tax rates on capital gains have historically been lower than those on ordinary income. Since the passage of JGTRRA in 2003, the maximum tax rate on capital gains on corporate stock has been 15 percent.[4] Given the lower capital gains rates and the fact that capital gains are taxed only at realization rather than as they accrue, the disparity between the returns generated by an equity investment in an IRA and a similar investment in a taxable account is smaller than that for bonds.

Tables 2a and 2b presented implicit after-tax return calculations for bond investments with a 5 percent interest rate. The entries for Roth and traditional IRAs and for 401(k) plans would be the same for a stock with a 5 percent expected return, all in the form of capital gains. For the taxable account investment, however, the implicit after-tax return is different, as the last columns in Tables 2a and 2b demonstrate. Taxpayers who face the ordinary income tax rates described in Tables 2a and 2b would almost certainly face the 15 percent capital gains tax rate under JGTRRA. A key question is how long this law will remain in force, but to fix ideas, assume that the reduction in capital gains rates is permanent. As before, an individual with $100 in earnings and a 25 percent marginal income tax rate will have $75 available after taxes to invest. With capital gains of 5 percent per year and a 15 percent tax upon realization, the implicit after-tax return to investing in a taxable account holding corporate stocks for ten years is 1.5 percent. For a horizon of thirty years this implicit return rises to 3.6 percent and, at fifty years, the implicit return is 4.1 percent. The low implicit rate of return at the ten-year horizon, 1.5 percent, illustrates the powerful impact of the tax treatment of earnings in this setting. If an individual earned $100, paid $25 in taxes, and invested for one year at a 5 percent return with no taxes on the return, she would have $78.75 after one year. The implicit rate of return in this case would be -21.3 percent.

The implicit after-tax return is increasing in the deferral horizon since capital gains are taxed on realization, and between the time of accrual and the

[3] One reason that retirees could face a higher marginal rate is that Social Security benefits are rendered partially taxable when non-Social Security retirement income crosses an income-related threshold. For some individuals, the marginal tax rate on withdrawals could be more than 10 percent higher than their ordinary income tax rate.

[4] This rate applies to single taxpayers with taxable income of more than $28,400, and married joint filers with taxable income above $56,800. For taxpayers with taxable income below these thresholds, the capital gains tax rate is capped at 5 percent.

time of realization, the government is providing the investor with an interest-free loan in the amount of the accrued tax liability. The longer the horizon, the greater the value of this loan. At very long horizons, such as fifty years, the implicit after-tax return on a stock that generates only capital gains approaches that of the same stock held in a tax-deferred account. In fact, for the case in which an individual faces a 25 percent tax rate during the accumulation period and a 35 percent tax rate in retirement, the after-tax return on the taxable account is identical to the return on a traditional IRA or unmatched 401(k).

Overall, regardless of whether an investment is in bonds or equities, tax-deferred accounts almost always deliver a higher rate of return than taxable accounts, particularly over long time horizons. Next, this brief turns to the issue of how to value existing assets in different retirement saving accounts.

How to Value Investments: Comparing Assets in Different Accounts

Once investors have begun to build a portfolio of retirement assets, they may want to periodically evaluate their progress toward a savings target. To make such an evaluation, it is again necessary to take taxes into consideration.

Valuing Bonds

To illustrate how to value bonds within a retirement portfolio, consider an individual who owns a $100 bond with an interest rate of 5 percent for the next thirty years. Assume that this bond is owned in a Roth IRA, so that no taxes will be due when the bond matures and the accumulated value is withdrawn from the IRA. Further assume that interest proceeds on the bond can be invested at 5 percent for the life of the bond, and that interest compounds continuously. In this case, after thirty years, Table 3 shows that the Roth IRA will have a value of $448.17. No taxes are due, so the individual can count the full value of this IRA as retirement wealth.

Now consider a setting in which the same bond is owned in a taxable investment account. Assume that the individual investor faces a 25 percent marginal federal income tax rate. In this case, with the same continuous compounding assumption as above, the after-tax value of the bond after thirty years, as shown in Table 3, would be $308.02. Holding the $100 bond in a Roth IRA rather than a taxable account would therefore result in a 45 percent increase in retirement wealth from this investment.

Table 3. Future Retirement Resources Generated by $100 Held in Bonds at 5 Percent Pre-Tax Rate of Return

Retirement Horizon	Marginal Ordinary Income Tax Rate	Taxable Account	Traditional IRA or 401(k)	Roth IRA
10 Years	15	152.96	140.14	164.87
	25	145.50	123.65	164.87
	35	138.40	107.17	164.87
30 Years	15	357.87	380.94	448.17
	25	308.02	336.13	448.17
	35	265.12	291.31	448.17
50 Years	15	837.29	1035.51	1218.25
	25	652.08	913.69	1218.25
	35	507.84	791.86	1218.25

Source: Author's calculations.

Note: Entries in the first column equal $100*\exp[(1-\tau_a)*r*T]$, where τ_a denotes the marginal income tax rate while accumulating assets, r is the interest yield, and T is the number of years until retirement. Entries in the second column equal $(1-\tau_a)*100*\exp[r*T]$. Note that this calculation assumes that the same tax rate applies to accumulations and distributions from the tax-deferred account. Entries in the third column are $100*\exp[r*T]$.

The disparity between the retirement resources that are generated by a given bond held in a Roth IRA and in a taxable account raises a problem for individuals who are trying to evaluate their retirement preparedness. Should a bond held in a tax-deferred account be valued more highly than the same bond held outside such an account? If the objective is to evaluate the after-tax wealth that an individual will have at a fixed retirement date, the two should be treated differently. The valuation differential should depend on current and future tax rates as well as on the bond's interest rate.

A given asset in a traditional IRA or 401(k) plan will generate less retirement wealth than the same asset would if it were held in a Roth IRA because the former assets are taxed on withdrawal and the latter are not. To quantify this effect, consider the $100 bond in the example above, but assume that it is held in a traditional IRA. Assume further that the individual's ordinary income tax rate is 25 percent both while the IRA is accumulating and when the balance in the account is withdrawn. In thirty years, the value of the bond inside the IRA will be $448.17. Withdrawing this balance will

trigger a 25 percent income tax, so the after-tax value of the IRA will therefore be $336.13 (= .75*$448.17).

From the perspective of retirement wealth, a $100 bond with a 5 percent yield will be worth $308.02 if it is held in a taxable account, but it will be worth 9 percent more if it is held in a traditional IRA and 45 percent more in a Roth IRA. Even though an individual with a traditional IRA owes deferred income tax on the principal in the account, over long time periods the benefits of accumulating assets at the before-tax rather than the after-tax rate of return permits the IRA to deliver more retirement wealth than the taxable account.

Table 3 also shows how the future retirement wealth value of a $100 bond depends on the individual investor's tax rate and the number of years until retirement. When the horizon is short or the individual's marginal income tax rate is high, a bond held in a tax-deferred account may produce less retirement income than the same bond held in a taxable account. However, at longer horizons the value of tax-deferred accumulation outweighs the deferred tax liability, and the bond will produce more retirement income if it is held in a traditional IRA.

Valuing Equities

As with the implicit rate of return analysis, the lower tax burden on capital gains than on interest income also makes the value of stock investments in a taxable account higher than a similar investment in bonds. To illustrate, consider a $100 investment in a stock that is assumed to appreciate at a 5 percent annual rate and all of the income is taxed as capital gains. Compare the retirement wealth associated with this stock held in a taxable account with $100 of this stock held in a Roth IRA or a traditional IRA. As discussed above, the Roth IRA will have an after-tax value in thirty years of $448.17, and the traditional IRA will be worth $336.13 after the 25 percent tax rate on the withdrawal has been paid.

The key distinction between the retirement wealth calculation for bonds and for stocks comes in the analysis of the taxable account. After thirty years, the value of the stock in the taxable account will be $448.17. Since the purchase price was $100, the taxpayer would have a $348.17 capital gain when the asset was sold. The after-tax value of the $100 stock investment in the taxable account, for an individual facing the 15 percent marginal capital gains tax rate, is therefore $448.17 - .15*($348.17) = $395.94. This amount is greater than the after-tax value of the traditional IRA, but not as great as the value of the Roth IRA. The key differences between this calculation and the one for a bond are the lower marginal tax rate that applies to the taxable income, 15 percent versus 25 percent, and the taxation of capital gains at realization rather than as they accrue.

Table 4 presents summary calculations for the value of retirement wealth from stock investments for individuals facing both the 5 and the 15 percent marginal tax rates on realized capital gains. It also

Table 4. Future Retirement Resources Generated by $100 Held in Stock

Retirement Horizon	Appreciation Rate	Capital Gains Tax Rate / Ordinary Income Tax Rate	Taxable Account	Traditional IRA or 401(k) Plan	Roth IRA
10 Years	.05	5 / 15	161.63	140.14	164.87
		15 / 25	155.14	123.65	164.87
	.07	5 / 15	196.31	171.17	201.38
		15 / 25	186.17	151.03	201.38
30 Years	.05	5 / 15	430.76	380.94	448.17
		15 / 25	395.94	336.13	448.17
	.07	5 / 15	780.79	694.12	816.62
		15 / 25	709.12	612.46	816.62
50 Years	.05	5 / 15	1162.34	1035.51	1218.25
		15 / 25	1050.51	913.69	1218.25
	.07	5 / 15	3150.97	2814.81	3311.55
		15 / 25	2829.81	2483.66	3311.55

Source: Author's calculations. Taxable account entry equals $100*\{e^{rT} - \tau_c*[e^{rT} - 1]\}$ where τ_c denotes the statutory tax rate on long-term capital gains. The penultimate column shows $(1 - \tau_{ord})*100*e^{rT}$, where τ_{ord} denotes the statutory tax rate on ordinary income. The last column shows e^{rT}, since no future taxes are due on the Roth IRA.

considers two different appreciation rates — 5 and 7 percent. The first rate corresponds to the interest rate assumed in the earlier calculations for bonds, and makes it possible to focus on just the differential tax treatment of bonds and stocks in taxable accounts as a source of differences in retirement wealth values. Table 4 also includes calculations for an assumed appreciation rate of 7 percent, which may be closer to the return that equity investors expect to earn. The results show that, particularly at long horizons, equities held in taxable accounts can contribute more to retirement income than the same equities held in a traditional IRA. Because all of the capital appreciation on equities held in a Roth IRA is untaxed, while that on equities held in a taxable account is ultimately taxed at 15 percent, the retirement wealth value of a stock held in a Roth IRA remains greater than that of the same stock held in a taxable account.

Conclusions and Further Issues

The calculations presented here provide some insight on how taxes affect both the rate of return and the value of assets in various accounts. With respect to the rate of return comparison, a 401(k) contribution with an employer match, whether it is invested in bonds or in stocks, consistently has a higher after-tax return than the same contribution to any other type of account considered here, although its advantage diminishes over time. In comparing traditional and Roth IRAs, for individuals with constant tax rates the two vehicles have identical after-tax returns for any given pre-tax return. However, if an individual has a higher marginal rate in retirement, the Roth IRA has a higher return. Conversely, if an individual faces a lower tax rate in retirement, the traditional IRA has a higher return. In virtually all cases, $100 of earnings generates a higher return if it is invested in some form of tax-deferred account rather than a taxable account.

With respect to the valuation comparison, the retirement wealth generated by assets in traditional IRAs and in 401(k)s is reduced by the presence of deferred tax liabilities, but this effect is mitigated by the prospect of earning the pre-tax rate of return on these assets in the years leading up to retirement. The precise configuration of tax rates and rates of return on financial assets determines whether a given asset held in a traditional tax-deferred account will generate more, or less, retirement wealth than the same asset in a taxable account. For one class of tax-deferred accounts, Roth IRAs, the comparison is unambiguous. Since no future taxes are due on assets held in these accounts, such assets are more valuable as a source of retirement wealth than similar assets held in other settings.

The calculations developed here over-simplify a number of features of the tax and saving problem. Three issues seem particularly important. First, the calculations do not consider the detailed tax circumstances that individuals may confront. Factors such as the presence of the alternative minimum tax during the accumulation period and the interplay between the phase-out of Social Security benefits and ordinary income taxation during the withdrawal period may complicate the tax circumstances for retirement savers. Second, the analysis has over-simplified the nature of returns, which are assumed to arise with certainty and to take the form of only interest (on bonds) and only capital gains (on equities). Bonds can generate capital gains and losses, and equities also generate dividends. Introducing these possibilities does not complicate the conceptual analysis, but it makes it more difficult to explain the calculations in a non-technical format.

Finally, the analysis has taken the tax system as a constant, and assumed that current tax rates remain in force for the entire period when assets are being accumulated and withdrawn. In fact, as recent experience clearly suggests, the tax system is subject to frequent reforms and modifications. The tax rules that apply at the time of withdrawal are particularly important in determining the after-tax return on tax-deferred accounts, so individuals with assets in tax-deferred accounts bear some risk of future changes in the tax code. All three of these considerations suggest that it would be natural to extend the current analysis to a setting with some uncertainty about tax policy as well as returns.

References

Kotlikoff, Laurence J. and Scott Burns. 2004. The Coming Generational Storm. MIT Press.

Poterba, James. 2004 forthcoming. “Valuing Assets in Retirement Saving Accounts.” National Tax Journal 57.

Reichenstein, William and William Jennings. 2003. Integrating Investments and the Tax Code. John Wiley and Sons.

Sibley, Mike. 2002. “On the Valuation of Tax-Advantaged Retirement Accounts.” Financial Services Review 11: 233-251.

center for
retirement
research
at boston college

About the Center

The Center for Retirement Research at Boston College, part of a consortium that includes parallel centers at the University of Michigan and the National Bureau of Economic Research, was established in 1998 through a grant from the Social Security Administration. The goals of the Center are to promote research on retirement issues, to transmit new findings to the policy community and the public, to help train new scholars, and to broaden access to valuable data sources. Through these initiatives, the Center hopes to forge a strong link between the academic and policy communities around an issue of critical importance to the nation's future.

Affiliated Institutions

American Enterprise Institute
Massachusetts Institute of Technology
Syracuse University
The Brookings Institution
Urban Institute

Contact Information

Center for Retirement Research
Boston College
Fulton Hall 550
Chestnut Hill, MA 02467-3808
Phone: (617) 552-1762
Fax: (617) 552-1750
E-mail: crr@bc.edu
Website: http://www.bc.edu/crr

All of our publications are available on our website:

www.bc.edu/crr

The research reported herein was supported by the Center for Retirement Research at Boston College pursuant to a grant from the U.S. Social Security Administration funded as part of the Retirement Research Consortium. The opinions and conclusions are solely those of the author and should not be construed as representing the opinions or policy of the Social Security Administration or any agency of the Federal Government, or the Center for Retirement Research at Boston College.