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Who Benefits from the U.S. Retirement System

This paper is a summary of Peter Brady's book, How America Supports Retirement: Challenging the Conventional Wisdom on Who Benefits, available at www.ici.org/whobenefits.

KEY FINDINGS

- » **When evaluating the U.S. retirement system, it is important to assess both the Social Security system and tax deferral. In combination, the benefits of the two programs are progressive.** Consistent with previous research, this study shows that the benefits of tax deferral are proportionately higher for higher-earning workers. Tax deferral, however, is only one part of the U.S. retirement system. Social Security is the primary component of the U.S. retirement system, and the benefits of the Social Security system are proportionately higher for workers with lower lifetime earnings.
- » **Policy discussions of tax deferral often focus on the reduction in taxes enjoyed by workers and ignore the higher taxes these workers will pay during retirement.** Contributions to retirement plans are tax-deferred, not tax-free. For the higher-paid workers analyzed in this study, tax deferral affects when taxes are paid more than it affects the total amount of taxes paid over a lifetime. For these workers, increased taxes during retirement offset, in present value, more than half of the reduction in taxes enjoyed while working.
- » **Contrary to conventional wisdom, the marginal benefits of tax deferral (the benefits of deferring an additional \$1 of compensation) are higher, on average, for the lower-earning workers analyzed in this study than they are for the higher-earning workers.** Although the lower earners face lower marginal tax rates while working, their marginal benefits are higher because they experience the largest drop in marginal tax rates during retirement.
- » **The benefits of tax deferral increase with lifetime earnings because of the design of the Social Security system, not because of the design of the income tax.** In this study's simulations, higher earners benefit more from tax deferral—not because they benefit more on every dollar they contribute to a retirement plan, but because they contribute more dollars. Because Social Security benefit payments replace a smaller share of their pre-retirement income, higher earners need to save more to ensure they meet the target replacement rate in retirement.

- » **The incentive to save in the current tax code is not “upside down.”** Normal income tax treatment discourages savings by taxing investment returns. Far from providing an “upside-down” incentive to save, tax deferral equalizes the incentive to save by effectively taxing investment returns at a zero rate for all workers.
- » **The focus of policy discussions on *microprogressivity* (the effect of specific tax code provisions on progressivity) is misplaced.** If a comprehensive reform of the federal income tax is undertaken, it is important that policymakers consider how all the changes included in any proposed reform would affect the progressivity of the overall tax system. The effect of specific tax provisions on progressivity should not be a concern. Tax provisions that address legitimate policy goals can be included in a reformed income tax even if they are not, by themselves, progressive.
- » **By essentially allowing workers to “income average” over a lifetime, tax deferral arguably makes the tax system more—not less—fair.** The justification for a progressive tax rate schedule rests largely on the assumption that annual income is a reasonable proxy for a taxpayer’s economic circumstances, but the unevenness of earnings over an individual’s lifetime makes this assumption problematic. Allowing workers to set aside a portion of their compensation until retirement reduces the impact of the life-cycle pattern of earnings (annual earnings typically increase when a worker is young, plateau later in a worker’s career, then fall to zero in retirement) and results in a measure of taxable annual income that is a better indicator of lifetime circumstances.
- » **The most prominent reform proposals for retirement plans would make the tax code less fair.** The current income tax is roughly neutral in its treatment of the different forms of tax deferral—tax deferral through defined benefit (DB) plans and defined contribution (DC) plans; tax deferral for employer contributions and employee contributions; and tax deferral by private-sector workers and government employees. Proposals to further limit or fundamentally change tax deferral would violate this neutrality by targeting only DC plans, or by targeting only tax-deferred contributions made by workers to DC plans and individual retirement accounts (IRAs).
- » **Proposals to limit the up-front benefits of tax deferral would make the tax code more complex.** Tax deferral is fairly simple for workers to understand and for the government to administer. It allows a portion of a worker’s compensation to be set aside for retirement and requires only that the compensation be included in taxable income when it is distributed to the worker. Many proposals to replace tax deferral would make the decision to contribute to a retirement plan more complex and would require the government to track information on individual taxpayers over an extended period of time.

Introduction

This study analyzes the benefits of the U.S. retirement system as a whole, including both tax deferral and the Social Security system, and finds that the benefits of the U.S. retirement system are progressive. That is, as a percentage of their lifetime earnings, lower earners receive more in lifetime benefits from the combination of Social Security and tax deferral than higher earners receive.

The U.S. retirement system as a whole,
including both tax deferral and the Social
Security system, is progressive.

In retirement, Americans rely on a variety of resources. For many, Social Security benefits are the most important resource. Homeownership represents another important resource, as households who own their home do not need to generate as much monthly income as they would if they were renting. In addition, about 80 percent of working households approaching retirement have resources earmarked for retirement that are tax-deferred—retirement benefits accrued in defined benefit (DB) plans, retirement assets in defined contribution (DC) plans or individual retirement accounts (IRAs), or both.¹ What matters for retirement adequacy is the total amount of resources a household has, not the amount of resources provided by any single source.²

Analyzing either the Social Security system or tax deferral in isolation provides an incomplete picture of the U.S. retirement system because the composition of retirement resources varies based on a household's economic circumstances. Households with lower lifetime earnings depend more on Social Security benefits; households with higher lifetime earnings depend more on tax-deferred retirement resources.³ These differences in the composition of retirement resources reflect the design of the system. The Social Security benefit payment formula is progressive, replacing a higher percentage of pay for workers with lower lifetime earnings. Employer-sponsored retirement plans supplement Social Security and are relied on more heavily by workers with higher lifetime earnings.

Analyzing either the Social Security system or tax deferral in isolation provides an incomplete picture of the U.S. retirement system.

Few studies have evaluated the benefits of the U.S. retirement system—that is, estimated the net benefits to individuals of government retirement policies—holistically. Instead, most previous studies of the U.S. retirement system have focused on either the Social Security system or tax deferral alone. In addition, the two lines of research do not measure benefits in the same way, so the results are not easily compared. Studies that analyze who benefits from the Social Security system typically measure individuals' net benefit payments over their lifetimes—that is, the present value of Social Security benefit payments less the present value of Social Security payroll taxes. Studies that analyze who benefits from tax deferral typically estimate, for all taxpayers in a given year, the tax expenditure associated with retirement plan contributions—that is, the difference between the tax liability associated with a contribution to a taxable account and the tax liability associated with a contribution to a tax-deferred retirement plan.

From the time of their first publication, tax expenditure estimates—those related to tax deferral and those related to other tax code provisions—have played an important role in efforts to reform the federal income tax. The focus of contemporary tax reform discussions on tax expenditure estimates has led some to question the tax treatment of

employer-sponsored retirement plans and IRAs, which are estimated to be among the largest tax expenditures. In addition, several recent studies have analyzed who benefits from different tax code provisions by estimating how tax expenditures are distributed across taxpayers by income.⁴ These studies, showing that higher-income taxpayers benefit more from tax deferral, have placed additional scrutiny on the taxation of retirement plans.

Motivated, at least in part, by estimates of the tax expenditure associated with employer-sponsored retirement plans and IRAs, both comprehensive proposals to reform the federal income tax and more narrowly focused tax proposals included in the president's annual budget have targeted tax deferral. For example, in their comprehensive reform proposals, both the Debt Reduction Task Force of the Bipartisan Policy Center (2010) and the National Commission on Fiscal Responsibility and Reform (2010) included provisions to reduce the annual limit on retirement plan contributions by about 60 percent. In addition, both the president's annual budget⁵ and the 2014 tax reform legislation of House Ways and Means Chairman Dave Camp⁶ included proposals to limit the up-front tax benefit associated with retirement plan contributions.

This paper uses the same measures used in previous studies of the benefits of tax deferral alone—that is, tax expenditure estimates—to evaluate the benefits of the U.S. retirement system as a whole. The analysis is intended to provide context for interpreting previous research on the benefits of tax deferral, and to improve understanding of the way in which tax deferral and the Social Security system combine to provide retirement resources to U.S. workers.

Scope of Analysis

The benefits of the U.S. retirement system are measured as the tax expenditure associated with the combination of tax deferral and Social Security. That is, the benefits are measured as the difference in lifetime tax liability between a simulation that eliminates both tax deferral and Social Security and the baseline simulation of current policy. Lifetime tax liability includes both income taxes paid and net Social Security taxes paid.⁷ Because workers pay zero

net Social Security taxes when the Social Security system is eliminated, the tax expenditure associated with the U.S. retirement system can also be expressed as the sum of (1) the reduction in lifetime *income tax* liability associated with the combination of the Social Security system and tax deferral; and (2) net Social Security benefit payments.⁸

This study also dispels two myths about tax deferral. The first myth is that higher-paid workers get more benefits from tax deferral because they face higher marginal tax rates. In fact, it is the Social Security benefit formula that causes workers with higher lifetime earnings to rely more on—and to benefit more from—tax deferral. The second myth is that the current tax system provides an “upside-down” incentive to save. In fact, tax deferral eliminates the disincentive to save inherent in an income tax and equalizes the incentive to save across workers who face different marginal tax rates.

MYTH

Higher-paid workers get more benefits from tax deferral because they face higher marginal tax rates.

FACT

Workers with higher lifetime earnings get more benefits from tax deferral because they save more in response to the fact that Social Security benefit payments replace a lower share of their pre-retirement earnings. As a result, higher-earning workers rely more on distributions from employer-sponsored retirement plans and IRAs to supplement Social Security.

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MYTH

The current tax system provides an “upside-down” incentive to save.

FACT

By taxing investment returns, an income tax discourages savings. By effectively taxing investment returns at a zero rate, tax deferral eliminates this disincentive and equalizes the incentive to save.

The study then examines the limitations of the tax deferral concept in general, and of distributional analysis of tax expenditures specifically. The narrow focus of policy discussions on the effect of specific tax code provisions on progressivity is misplaced. Taken to its logical extreme, the focus on “microprogressivity” (the effect of specific tax code provisions on progressivity) can lead to perverse results: some policy changes would increase microprogressivity but reduce the progressivity of the income tax as a whole.⁹ If comprehensive income tax reform is undertaken, an important consideration would be the effect of any proposed reform on the progressivity of the overall income tax. The impact of a comprehensive reform on the distribution of benefits from specific tax code provisions would not be—and should not be—a concern.

If the income tax were reformed, the focus should instead be on the impact of specific tax code provisions on fairness, economic growth, and simplicity—and on these criteria, tax deferral scores well. Allowing workers to set aside a portion of their compensation until retirement reduces the impact of the life-cycle pattern of earnings, resulting in a measure of taxable annual income that is a better indicator of a worker’s lifetime circumstances. Tax deferral reduces economic distortions by eliminating the disincentive to save that is inherent in any income tax. Tax deferral is also simple for the Internal Revenue Service (IRS) to administer and simple for workers to understand.

Tax deferral reduces economic distortions by eliminating the disincentive to save that is inherent in any income tax.

In contrast, proposals to further restrict or to fundamentally change tax deferral would make the tax code less fair and more complex. Many of the proposals would make the tax code less fair because they target only DC plans, or in some cases only employee contributions to DC plans or IRAs. This would represent a substantial change from the current tax code’s roughly neutral tax treatment of all forms of qualified deferred compensation. Proposals to change the up-front benefits of tax deferral would increase complexity, making it more difficult for workers to decide whether to contribute to a retirement plan and making it more difficult for the IRS to administer and enforce.

The Tax Expenditure Concept

Stanley Surrey, U.S. Department of the Treasury assistant secretary for tax policy from 1961 to 1969, is widely attributed with coining the term *tax expenditure*.¹⁰ Surrey publicly introduced the concept in a November 1967 speech and oversaw the first tax expenditure estimates, which were published just over a year later.¹¹ In 1974, Congress required that estimates of tax expenditures be published as part of the annual budget process. Both the Joint Committee on Taxation (JCT) and Treasury have since published detailed tax expenditure estimates each year.¹²

Although Treasury does not distribute tax expenditures by taxpayer income class and the JCT typically provides such information for only about a dozen individual tax expenditures, several studies in recent years have provided more comprehensive distributional analysis of tax expenditures.¹³ Proposals to eliminate or limit tax expenditures—either as part of an effort to reform the income tax¹⁴ or as stand-alone proposals¹⁵—have regularly cited the results of these studies.

The tax expenditure concept divides the tax code into two parts.¹⁶ The first part is the *normal income tax structure*. This part of the code strictly relates to raising revenue and includes provisions that define income, specify accounting rules, and set tax rate schedules. The second part includes all other tax code provisions, which are classified as *tax expenditures*. Tax expenditures include special preferences—such as exclusions, deductions, deferrals, credits, and special rates—that are not part of the normal income tax structure but instead are related to policy objectives that could otherwise be met with a direct government expenditure program.

What constitutes the normal income tax structure is subject to interpretation.¹⁷ For example, JCT’s definition includes “one personal exemption for each taxpayer and one for each dependent, the standard deduction, the existing tax rate schedule, and deductions for investment and employee business expenses.” Treasury’s definition is more expansive, including a few more features of the current tax code.

The detailed lists of tax expenditure estimates published by JCT and Treasury are independent and static. The estimates are independent, meaning that the tax expenditure estimate related to a specific tax code provision is the difference between tax liability under the existing tax code, and tax liability if the provision were removed but the rest of the code—including all other tax expenditure provisions—were unchanged. In addition, the estimates are static, meaning that—relative to the baseline simulation of current policy—it is assumed that taxpayer behavior would not change if the provision were eliminated.

Why Tax Deferral Differs from Other Tax Expenditures

The benefits of tax deferral are more difficult to estimate than other tax expenditures. Most other tax expenditures are exclusions (such as the exclusion from income of employer-provided health insurance) or deductions (such as the deduction from income of mortgage-interest expense), which reduce taxes in the year they are taken but have no effect on tax liability in any other year. Unlike an exclusion or a deduction, tax deferral changes tax liability over the course of a worker’s lifetime.

Unlike an exclusion or a deduction, which reduce taxes in the year they are taken but have no effect on tax liability in any other year, tax deferral changes tax liability over the course of a worker’s lifetime.

Under current law, qualified deferred compensation is taxed differently from how it would be under the normal income tax structure at three points in time.

- » First, employer contributions to all types of retirement plans and elective employee contributions to 401(k)-type plans are excluded from income subject to tax. Under the normal income tax structure, all compensation would be included in income and subject to tax, and only the after-tax amount would be contributed to a taxable investment account.

- » Second, investment returns earned on contributions to a retirement plan are not included in income when received, with taxes deferred until funds are distributed. Under the normal income tax structure, all investment income earned in a taxable investment account would be included in income and subject to tax when received.
- » Third, all distributions from a retirement plan are included in income and subject to tax. In contrast, under the normal income tax structure, withdrawals from a taxable investment account typically would not be included in income or subject to tax.¹⁸

The official tax expenditure estimates for retirement plans are measured on a cash flow basis. Estimates are derived for each year during the budget period, with the tax expenditure estimate for the full budget period equal to the sum of the annual estimates. For example, the annual cash flow measure of the tax expenditure associated with DC plans combines three separate estimates:

- » the reduction in taxes during the year caused by current contributions to DC plans;
- » the reduction in taxes during the year caused by forgoing taxation on the investment income currently earned on all assets accumulated in DC plans to date; and
- » the increase in taxes during the year caused by current distributions from DC plans.

Distributional Analysis of Tax Deferral

Official tax expenditure estimates typically are not used to examine who benefits from tax deferral. Although the aggregate tax expenditure could be distributed to individual taxpayers, the results of such an exercise would be difficult to interpret. This is because the cash flow measure includes the three effects of tax deferral, but the effects are not attributable to the same taxpayers. The revenue losses on contributions are attributable to one set of taxpayers (workers). The revenue gains on distributions are

attributable to another (largely retirees). And the revenue lost by deferring tax on investment income is attributable to all individuals—either working or retired—who have accrued DB plan benefits or who have accumulated assets in DC plans or IRAs.

As explained in Cronin (1999), Treasury uses a present value tax expenditure measure when it distributes the benefits of retirement plans to individual taxpayers, and most distributional analyses of tax deferral use a similar method.¹⁹ The present value measure estimates the benefits that workers will receive over a lifetime from a single year of retirement plan contributions. For example, suppose a worker contributed \$10,000 to a 401(k) plan. In the year of the contribution, the tax expenditure estimate would be the reduction in taxes in the current year caused by the \$10,000 contribution; plus the present value of the tax that would have been collected during the deferral period on investment income had the \$10,000 in compensation been used to fund a contribution to a taxable investment account; less the present value of the tax collected when the \$10,000 contribution plus investment returns are distributed in retirement.

Measuring the Benefits of the U.S. Retirement System

This paper uses tax expenditure estimates to measure the benefits of the U.S. retirement system. Consistent with the method of estimating tax expenditures, the benefits of the U.S. retirement system are estimated by comparing current policy to an alternative tax and transfer system that would eliminate both tax deferral and the Social Security system, but would otherwise be identical to the current system. In addition, the benefit estimates are static; that is, it is assumed that taxpayer behavior would not change in response to the change in policy.

To illustrate how the benefits vary with workers' lifetime earnings, the lifetime benefits of the U.S. retirement system are estimated for six representative workers. In the baseline simulation of current policy, retirement plan contributions

are calibrated so that, to the extent allowed by law, all workers hit the same target replacement rate. The study then compares lifetime taxes paid in the baseline simulation with lifetime taxes paid in two alternative simulations. For a comparison to other research on the benefits of tax deferral, the first alternative eliminates tax deferral but maintains the Social Security system. To estimate the benefits of the retirement system as a whole, the second alternative eliminates both tax deferral and Social Security.

An advantage of calibrating retirement plan contributions is that the estimated benefits of tax deferral would be roughly the same for any type of retirement plan that provided the same amount of retirement resources. That is, although the simulations assume that tax-deferred compensation takes the form of employer and employee contributions to a 401(k) plan, the benefits of tax-deferred compensation paid through a DB plan funded solely with employer contributions would be roughly equivalent, provided DB plan benefits replaced the same percentage of pre-retirement earnings.

The estimates show that the combination of Social Security and tax deferral results in a U.S. retirement system that is progressive. Although the benefits of tax deferral as a percentage of lifetime earnings are greater for higher earners, the benefits of the Social Security system as a percentage of lifetime earnings are greater for lower earners. Overall, lower earners benefit more from the U.S. retirement system.

Comparison with Previous Estimates of Benefits

This study estimates the *lifetime* benefits of tax deferral for each representative worker. Although it is standard in Social Security research to measure lifetime benefits, most previous research on tax deferral estimates the benefits that a worker derives from a single year of contributions. Annual measures may not reflect the benefits workers receive, on average, over their lifetimes. For example, younger workers who are not currently covered by an employer-sponsored retirement plan but who will participate later in their working careers would be characterized as having received no benefits from tax deferral.

In addition, this study jointly estimates the benefits of tax deferral and the Social Security system. Although policymakers have long recognized the link between Social Security and the use of employer-sponsored retirement plans,²⁰ few studies have measured the progressivity of the U.S. retirement system as a whole by jointly estimating the benefits of the two policies. The most notable exceptions are a series of related studies by Sylvester Schieber.²¹

This study is the first to use the same metric—a tax expenditure estimate—to measure the benefits of both tax deferral and the Social Security system. Previous studies of tax deferral have used tax expenditure estimates to measure its benefits.²² In contrast, previous studies of the Social Security system have used net benefit payments—the present value of Social Security benefit payments less the present value of Social Security payroll taxes collected—to measure its benefits.²³ This study jointly estimates the tax expenditure associated with both tax deferral and Social Security. That is, it compares lifetime tax liability—inclusive of *both* income taxes and net Social Security taxes—under current policy to lifetime tax liability without both tax deferral and the Social Security system. In addition to measuring net Social Security benefit payments, the tax expenditure estimate also includes the effect of the Social Security system on income tax liability.²⁴

The relative benefits of the two programs can only be compared if they are measured using the same metric. Net Social Security benefit payments would represent a tax expenditure measure only if the Social Security system was judged to have no effect on income tax liability relative to the normal income tax structure. The income tax treatment of Social Security, however, is analogous to that of employer-sponsored retirement plans (see callout box on pages 8 and 9). Social Security would be judged to have no effect on income tax liability only if the current tax treatment of employer-sponsored retirement plans were considered to be part of the normal income tax structure. Of course, if this same standard were used to measure the benefits of employer-sponsored retirement plans—that is, if it was assumed that the tax treatment of employer plans under current policy is part of the normal income tax structure—then, by definition, there would be no tax expenditure associated with these plans.

Taxation of Social Security Analogous to Taxation of Retirement Plans

As illustrated in the figure below, the income tax treatment of Social Security mirrors that of employer-sponsored retirement plans.

Taxation of Social Security Modeled After Tax Treatment of Retirement Plans

Tax treatment for individuals filing a single tax return

	Employer-sponsored retirement plans	Social Security
	Contributions	Payroll taxes
Excluded from AGI	<ul style="list-style-type: none"> » Employer contributions » Employee elective deferrals 	<ul style="list-style-type: none"> » Employer share of payroll taxes
Included in AGI	<ul style="list-style-type: none"> » (Non-Roth) after-tax employee contributions » Roth contributions 	<ul style="list-style-type: none"> » Employee share of payroll taxes
	Distributions	Benefit payments
Excluded from AGI	<ul style="list-style-type: none"> » Portion of distributions attributable to (non-Roth) after-tax contributions that represent the return of the amount contributed » 100 percent of distributions attributable to Roth contributions 	<ul style="list-style-type: none"> » At least 15 percent of benefit payments if MAGI > \$34,000 » At least 50 percent of benefit payments if \$25,000 < MAGI ≤ \$34,000 » 100 percent of benefit payments if MAGI ≤ \$25,000
Included in AGI	<ul style="list-style-type: none"> » 100 percent of distributions attributable to employer contributions or employee elective deferrals » Portion of distributions attributable to (non-Roth) after-tax contributions that are in excess of the amount contributed 	<ul style="list-style-type: none"> » Up to 85 percent of benefit payments if MAGI > \$34,000 » Up to 50 percent of benefit payments if \$25,000 < MAGI ≤ \$34,000 » 0 percent of benefit payments if MAGI ≤ \$25,000

Note: The percentage of Social Security benefit payments included in adjusted gross income (AGI) under the federal income tax is based on a taxpayer's modified adjusted gross income (MAGI). MAGI includes half of Social Security benefit payments plus non-Social Security income included in AGI. For single taxpayers, if MAGI is \$25,000 or less, no Social Security benefit payments are included in AGI; if MAGI is between \$25,000 and \$34,000, the lesser of 50 percent of Social Security benefit payments or 50 percent of MAGI in excess of \$25,000 is included in AGI; if MAGI is in excess of \$34,000, the lesser of 85 percent of Social Security benefit payments or 85 percent of MAGI in excess of \$34,000 plus \$4,500 (=50%*($\$34,000 - \$25,000$)) is included in AGI.

Sources: Internal Revenue Service and Investment Company Institute

In an employer-sponsored retirement plan—either a DB plan or a DC plan:

- » Employer contributions and elective employee contributions to 401(k) plans are excluded from a worker's income. Provided they are allowed by the plan, employees may also make (non-Roth) after-tax contributions. These contributions are included in a worker's income and subject to income tax.
- » When distributions are taken, all distributions that are in excess of (non-Roth) after-tax employee contributions are included in income and subject to income tax.

With Social Security:

- » The employer share of payroll taxes is not included in a worker's income, and thus is treated the same as employer contributions to retirement plans. The employee share of payroll taxes is included in a worker's income and subject to tax, and thus is treated the same as (non-Roth) after-tax employee contributions to retirement plans.
- » Higher-income taxpayers include 85 percent of Social Security benefit payments in income. As explained in DeWitt (2001), this rule was based on an estimate that the employee share of payroll taxes represents roughly 15 percent of benefits for workers with high lifetime earnings. To be roughly consistent with the tax treatment of retirement plans, which only includes in income retirement plan distributions that are in excess of (non-Roth) after-tax employee contributions, higher-income workers are allowed to exclude 15 percent of Social Security benefit payments from income when determining tax liability.

Six Representative Workers

The six representative workers were born in 1966, turned 40 in 2006, and will reach their full benefit retirement age under Social Security in 2033, at age 67. All income received by individuals during their lifetime is work-related—wage income, Social Security benefit payments, and 401(k) plan distributions. The representative individuals work continuously from when they turn 32 through age 66—or 35 years, the maximum included in the measure of average indexed monthly earnings (AIME) used to determine Social Security benefit payments.

Figure 1 plots the workers' lifetime earnings paths. The workers' "names" are derived from their inflation-adjusted average wage income from age 32 through age 66, with all dollar amounts expressed in constant 2014 dollars (Figure 2). Among all full-time, full-year workers aged 35 to 44, the six representative workers' earnings at age 40 represent, respectively:

- » **Earn21K**, half the median earnings of high school graduates;

- » **Earn43K**, the median earnings of high school graduates;
- » **Earn69K**, the median earnings of workers with a bachelor's degree;
- » **Earn92K**, the median earnings of workers with a graduate degree;
- » **Earn122K**, earnings one-third higher than the median earnings of workers with a graduate degree; and
- » **Earn234K**, a worker with earnings that are 20 percent higher than the Earn122K worker at age 32, with earnings increasing to be twice as high as the Earn122K worker by age 40, and then remaining twice as high thereafter.

Among all workers aged 35 to 44 with positive earnings, the earnings of the representative workers at age 40 represent the 18th, 46th, 73rd, 85th, 92nd, and 98th percentiles of the earnings distribution, respectively (Figure 2).

Baseline Simulation of Current Policy

All the income generated by the representative workers throughout their lifetimes is work-related. While working, individuals are compensated for their labor. A portion of their compensation is used to pay Social Security payroll taxes and a portion is contributed to a 401(k) plan and set aside for retirement. It is assumed that individuals save nothing outside of their 401(k) plans. In retirement, income comes from two sources: Social Security benefits and 401(k) plan distributions.

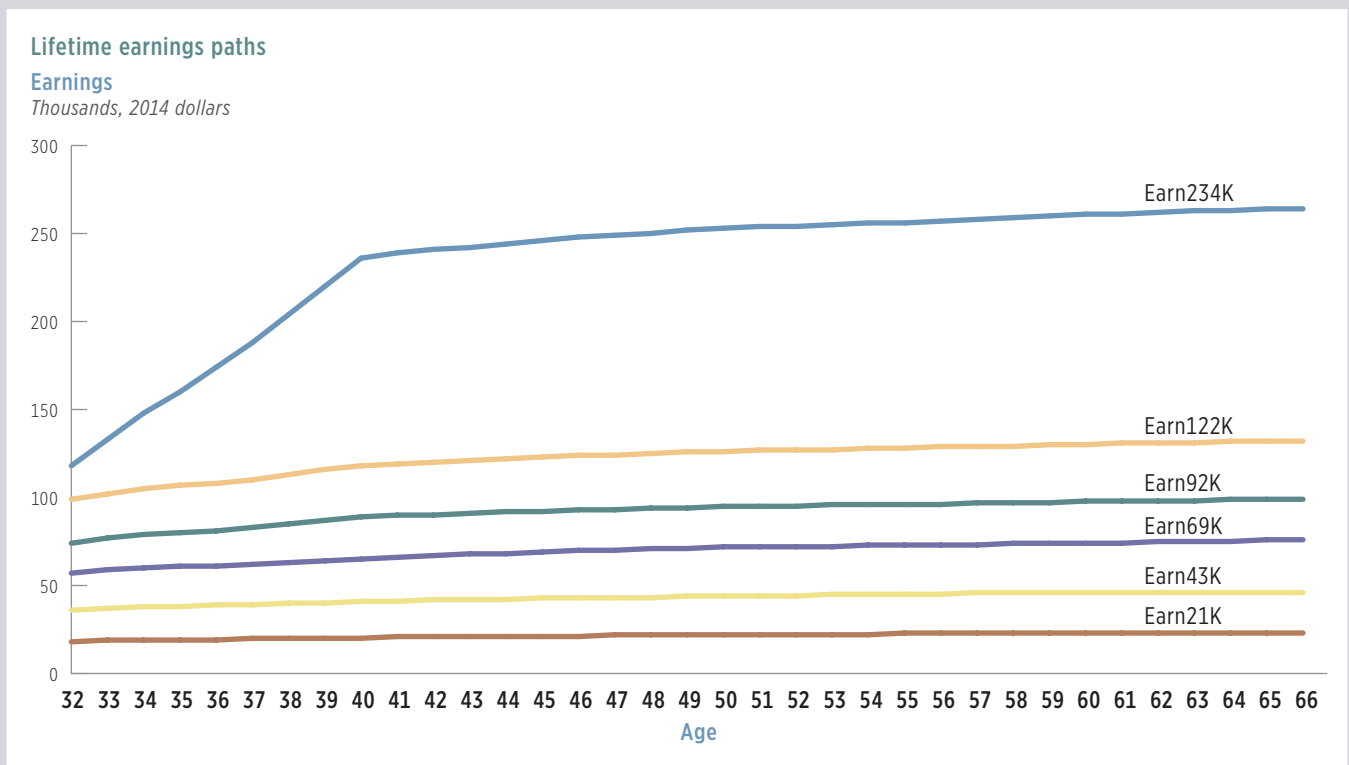
Throughout their lifetimes, the representative workers fund consumption with income left over after contributing to their 401(k) plans and paying taxes. While working, they are subject to both income tax and payroll tax, and also contribute to a 401(k) plan. Retirees continue to be subject to income tax, but no longer pay payroll taxes and no longer make 401(k) plan contributions.

Each worker's 401(k) plan contributions are calibrated so that retirement income hits a target replacement rate. The target is to have net retirement income (Social Security

FIGURE 1

Lifetime Earnings Paths for Six Representative Workers

Individuals born in 1966 and who retire in 2033; all dollar amounts expressed as constant 2014 dollars



Note: The lifetime earnings paths are based on the earnings paths derived in Brady 2010. Lifetime earnings paths are anchored at age 40 with earnings equal to median earnings of full-time, full-year workers aged 35 to 44 in 2006 with a high school degree (Earn43K), a bachelor's degree (Earn69K), and a graduate degree (Earn92K). Other earnings paths have earnings at all ages equal to half of the earnings of the Earn43K worker (Earn21K) and one-third more than the Earn92K worker (Earn122K). The final earnings path (Earn234K) is for a worker with earnings that are 20 percent higher than the Earn122K worker at age 32, with earnings increasing to be twice as high as the Earn122K worker by age 40, and then remaining twice as high thereafter.

Source: ICI simulations

benefits plus 401(k) plan distributions less income tax liability) that replaces 94 percent of average pre-retirement net earnings (wage income less income taxes, payroll taxes, and 401(k) plan contributions).²⁵

Although all workers have the same replacement rate target, they do not all contribute to the 401(k) plan at the same rate (Figure 2). In combination with Social Security benefits, the Earn21K worker is able to hit the target 94 percent net replacement rate with 401(k) contributions, including both employee and employer contributions, of 6.0 percent of

pay beginning at age 52. In contrast, the Earn122K worker requires combined employee and employer contributions of 10.0 percent of pay starting at age 36 to hit the same target replacement rate, and the Earn234K worker is unable to hit the target replacement rate despite contributing the maximum allowed by law and receiving an employer match of 3.0 percent of pay from age 32 to 66.

The reason that higher-earning workers begin saving earlier and often save a higher percentage of their pay is that Social Security benefits replace a lower share of average

FIGURE 2

Selected Statistics for Six Representative Workers

Individuals born in 1966 and who retire in 2033; all dollar amounts expressed as constant 2014 dollars

	Representative workers ¹					
	Earn21K	Earn43K	Earn69K	Earn92K	Earn122K	Earn234K
Earnings						
Average inflation-indexed annual wages, age 32 to 66	\$21,497	\$42,994	\$69,299	\$91,818	\$122,424	\$234,046
Annual wages at age 40	\$20,472	\$40,944	\$65,433	\$88,648	\$118,197	\$236,394
Age 40 wages equal to median earnings of full-time, full-year workers aged 35 to 44	0.5 x high school	High school diploma	Bachelor's degree	Graduate degree	1.33 x grad degree	2.66 x grad degree
Wage income rank at age 40 among all workers aged 35 to 44	18th	46th	73rd	85th	92nd	98th
401(k) plan contribution behavior²						
Age at which 401(k) contributions begin	52 years	47 years	43 years	37 years	36 years	32 years
Total contribution rate (employee plus employer)	6.0%	9.0%	9.0%	9.0%	10.0%	11.5%
Account balance at age 66 (thousands)	\$26.0	\$111.0	\$227.3	\$404.6	\$625.7	\$1,566.6

¹ The lifetime earnings paths are based on the earnings paths derived in Brady 2010. Lifetime earnings paths are anchored at age 40 with earnings equal to median earnings of full-time, full-year workers aged 35 to 44 in 2006 with a high school degree (Earn43K), a bachelor's degree (Earn69K), and a graduate degree (Earn92K). Other earnings paths have earnings at all ages equal to half of the earnings of the Earn43K worker (Earn21K) and one-third more than the Earn92K worker (Earn122K). The final earnings path (Earn234K) is for a worker with earnings that are 20 percent higher than the Earn122K worker at age 32, with earnings increasing to be twice as high as the Earn122K worker by age 40, and then remaining twice as high thereafter. Earnings at age 40 represent, approximately, the 18th, 46th, 73rd, 85th, 92nd, and 98th percentile of the earnings distribution among working individuals with positive lifetime earnings aged 35 to 44 in 2006 based on the March 2007 Current Population Survey.

² In this simulation, 401(k) plan contributions are assumed to be invested in bonds paying interest equal to 3.0 percent plus inflation. All investment returns are in the form of interest payments that are paid annually.

Source: ICI simulations

earnings for workers with higher lifetime earnings than for workers with lower lifetime earnings. In this case, the share of average gross wages replaced by Social Security benefits ranges from a high of 67 percent for the Earn21K worker to a low of 17 percent for the Earn234K worker (Figure 3, blue portion of bars). In contrast, the share of earnings replaced by 401(k) plan distributions increases with lifetime earnings. The share of average gross wages replaced by 401(k) plan distributions ranges from 9 percent for the Earn21K worker to 51 percent for the Earn234K worker (yellow portion of bars). This allows all but the Earn234K worker to reach the 94 percent net replacement rate target (green bars).

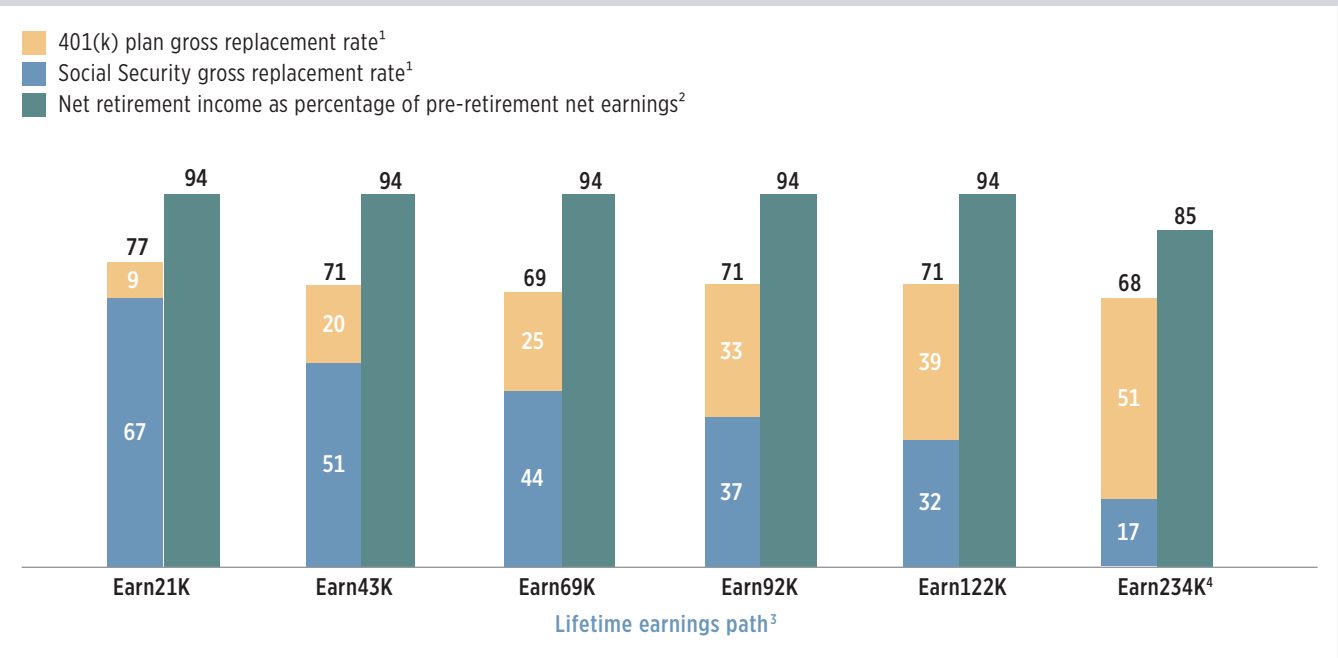
The Benefits of Tax Deferral

Before jointly estimating the benefits of tax deferral and the Social Security system, the benefits of tax deferral are estimated separately. To illustrate how the benefits vary with lifetime earnings, a second simulation is run, which assumes that tax deferral is disallowed and the results are compared with the baseline simulation of current policy. For each worker, the lifetime benefits of tax deferral are measured as the present value of taxes paid in the second simulation less the present value of taxes paid in the baseline simulation.²⁶

FIGURE 3

Representative Workers' Retirement Savings Calibrated to Hit Replacement Rate Target

Inflation-adjusted retirement income as a percentage of inflation-adjusted average gross and net earnings



¹ The gross replacement rate is the survival-weighted average (ages 67 and older) inflation-adjusted total retirement income divided by average (from age 32 to age 66) inflation-adjusted wage income.

² The net replacement rate is the survival-weighted average (ages 67 and older) inflation-adjusted net retirement income divided by average (from age 32 to age 67) inflation-adjusted net earnings.

³ The lifetime earnings paths of the representative workers are based on the earnings paths derived in Brady 2010. See Figure 2 for additional detail.

⁴ The Earn234K worker is unable to hit the target replacement rate despite contributing the maximum amount allowed by law and receiving employer matching contributions of 3 percent.

Note: Components may not add to the total because of rounding.

Source: ICI simulations

To model the change in tax treatment, it is assumed that 401(k) plans would continue to exist, but would be treated as taxable individual investment accounts. That is, both (1) 401(k) plan contributions and (2) investment income generated by the 401(k) plan would be included in an individual's income and subject to tax. In retirement, however, only the portion of 401(k) plan distributions that represent unrealized gains would be included in income and subject to tax because all interest and dividend income would have already been subject to tax. No changes are made to other tax code provisions and it is assumed that there are no changes in taxpayer behavior relative to the baseline simulation of current policy.

To assist in comparing the benefits of tax deferral across workers, lifetime benefits are expressed as a percentage of the present value of lifetime total compensation. The lifetime benefits of tax deferral also are broken down into two components: the income tax benefits accrued while working (i.e., the reduction in income taxes paid while working, which is expressed as a positive benefit) and the income tax benefits accrued during retirement (i.e., the increase in income taxes paid during retirement, which is expressed as a negative benefit).

Estimation Results

While working, the representative workers with higher lifetime earnings benefit more (in the form of lower income tax liability) from tax deferral (Figure 4, first set of bars). As a percentage of lifetime total compensation, reductions in income taxes range from 0.5 percent for the Earn21K worker to 6.4 percent for the Earn234K worker.

While working, the representative workers with higher lifetime earnings benefit more (in the form of lower income tax liability) from tax deferral.

During retirement, workers with higher lifetime earnings accrue more negative income tax benefits (in the form of higher income tax liability) from tax deferral (Figure 4, second set of bars). There is no effect on income taxes

paid during retirement for the Earn21K worker, because the worker pays no income tax during retirement either with or without tax deferral. For other workers, tax increases (or equivalently, benefit reductions) range from 0.1 percent of lifetime total compensation for the Earn43K worker to 3.3 percent for the Earn234K worker.

During retirement, workers with higher lifetime earnings accrue more negative income tax benefits (in the form of higher income tax liability) from tax deferral.

The lifetime benefits of tax deferral (Figure 4, third set of bars) are the sum of the benefits accrued while working (first set of bars) and the (negative) benefits accrued while retired (second set of bars). The lifetime benefits range from 0.5 percent of lifetime total compensation for the Earn21K worker to 3.0 percent for the Earn234K worker. For other workers, the lifetime benefits of tax deferral vary little, ranging from 1.3 percent to 1.6 percent of lifetime total compensation.

The causes for this pattern of benefits by lifetime earnings are complex.²⁷ The intuition behind the result is that the lifetime benefits of tax deferral depend on both the amount of compensation deferred and the benefits associated with each dollar of compensation deferred. Because the share of compensation that is deferred increases with lifetime earnings, lifetime benefits tend to increase with lifetime earnings. The benefits associated with each dollar of compensation deferred, however, are not a simple function of lifetime earnings.²⁸ For the middle four wage earners (Earn43K, Earn69K, Earn92K, and Earn122K), the lifetime benefits of tax deferral increase only modestly because the benefits per dollar actually decline as earnings increase. In contrast, the Earn69K worker not only defers the highest share of compensation, but also receives benefits similar to the Earn43K worker on every dollar of compensation deferred. As a result, the lifetime benefits for the Earn234K worker are substantially higher than the other workers.

The lifetime benefits of tax deferral vary less across workers than either the benefits accrued while working or the (negative) benefits accrued during retirement because workers whose taxes are reduced the most while working also experience the largest increases in taxes during retirement. Higher income taxes during retirement offset, in present value, more than half of the reduction in income taxes while working for the three highest-earning workers, and offset about 40 percent of the pre-retirement reduction in income tax for the fourth highest-earning worker.

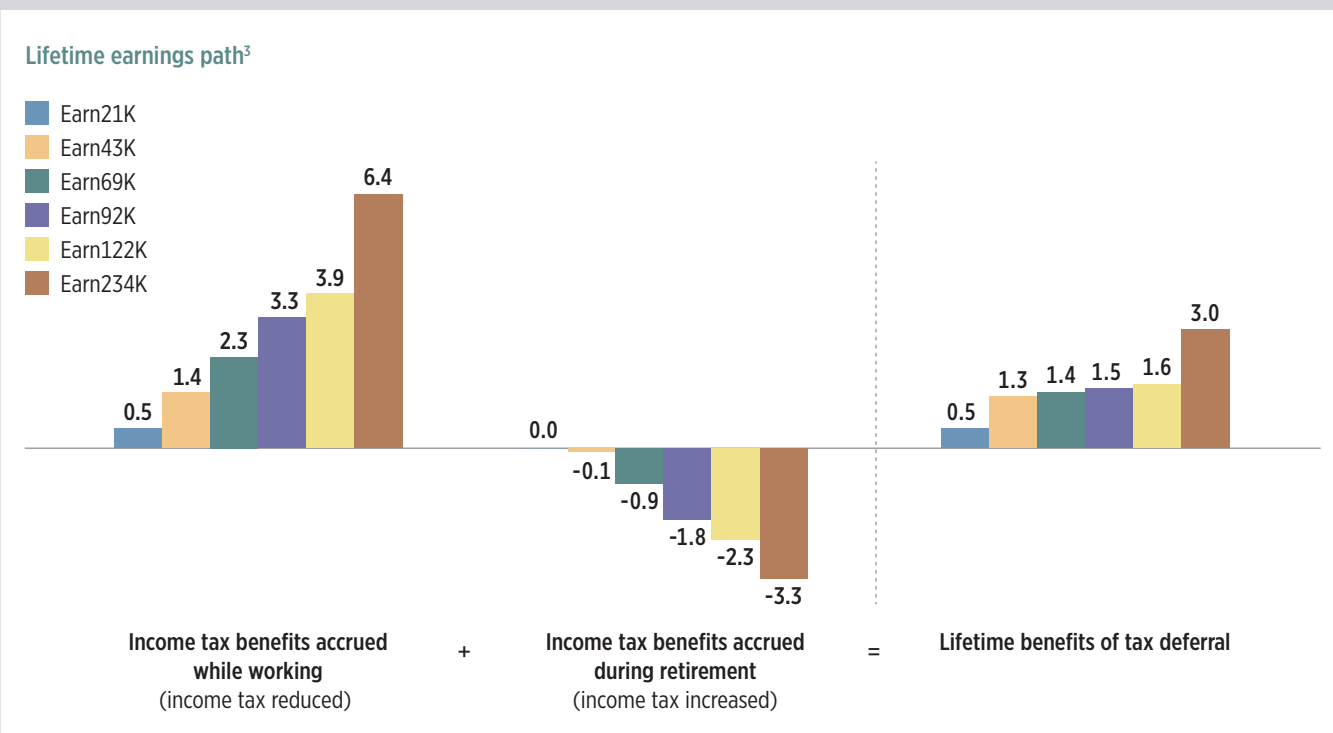
The Benefits of the U.S. Retirement System

To measure the benefits of the U.S. retirement system, a third simulation is run in which both tax deferral and the Social Security system are eliminated, and the results are compared with the baseline simulation of current policy. For each worker, the lifetime benefits of the U.S. retirement system are calculated by subtracting the present value of taxes paid in the baseline simulation from the present value of taxes paid in the third simulation.²⁹ The difference in overall tax liability can be decomposed into the difference

FIGURE 4

Present Value of the Benefits of Tax Deferral by Lifetime Earnings

Benefits of tax deferral expressed as the present value of the net reductions in taxes paid because of tax deferral¹ as a percentage of the present value of total compensation² earned from age 32 to 66 for representative individuals with various levels of lifetime earnings



¹ In the absence of tax deferral, it is assumed that 401(k) plans would continue to exist but would be treated as taxable investment accounts. For assumed contribution behavior, see Figure 2. Contributions to 401(k) accounts are assumed to be invested in bonds earning 3.0 percent plus inflation, with accumulated assets used to purchase an actuarially fair, inflation-indexed, immediate life annuity upon retirement.

² Total compensation is the sum of wage and salary earnings, the employer share of payroll taxes (both old age, survivor, and disability insurance [OASDI] and hospital insurance [HI]), and employer matching contributions to 401(k) plans.

³ The lifetime earnings paths of the representative workers are based on the earnings paths derived in Brady 2010. See Figure 2 for additional detail.

Source: ICI simulations

in income taxes *plus* the difference in net Social Security taxes.³⁰ Because workers pay zero net Social Security taxes in the third simulation, the difference in net Social Security taxes paid is equal to the negative value of net Social Security taxes paid in the baseline simulation. Thus, lifetime benefits of the U.S. retirement system can be expressed as the difference in income taxes *minus* net Social Security taxes in the baseline simulation or, equivalently, as the difference in income taxes *plus* net Social Security benefit payments in the baseline simulation.³¹

In addition to assuming that 401(k) plans would be treated as taxable individual investment accounts, the third simulation assumes that the Social Security system would continue to exist, but that Social Security taxes would be contributed on the worker's behalf to a taxable individual investment account. That is, while working, both (1) compensation used to contribute to the account and (2) investment income earned by the account would be included in income and subject to tax. In addition, the portion of distributions from the account that represent unrecognized gains would be included in income and subject to tax. No changes are made to other tax code provisions and it is assumed that there are no changes in taxpayer behavior.

The lifetime benefits of the U.S. retirement system are presented as a percentage of lifetime total compensation and are broken down into three components. As with the analysis of tax deferral (Figure 4), the income tax benefits accrued while working (i.e., the reduction in income taxes paid while working, which is expressed as a positive benefit) and the income tax benefits accrued during retirement (i.e., the increase in income taxes paid during retirement, which

is expressed as a negative benefit) are reported. In addition, net Social Security benefit payments from the baseline simulation (i.e., the present value of Social Security benefit payments less the present value of Social Security taxes paid) are broken out as a separate category.

Estimation Results

The Social Security system provides positive net Social Security benefit payments (i.e., Social Security benefit payments received are greater, in present value, than Social Security taxes collected) to the Earn21K worker and provides negative net benefit payments (i.e., Social Security benefit payments received are less, in present value, than Social Security taxes collected) to the other five representative workers (Figure 5, first set of bars). Net Social Security benefit payments as a percentage of lifetime total compensation decline from positive 2.3 percent for the Earn21K worker to negative 4.8 percent for the Earn122K worker, before increasing to negative 2.8 percent for the Earn234K worker.³²

While individuals are working, the U.S. retirement system reduces income taxes paid substantially, with reductions in taxes ranging from 3.7 percent of total compensation for the Earn21K worker to 9.3 percent for the Earn234K worker (Figure 5, second set of bars). These benefits can be divided into the benefits of tax deferral presented in Figure 4 (Figure 5, the solid portion of the bars) and the benefits of the Social Security system (the screened portion of the bars).³³ By reducing income tax liability, the Social Security system provides substantial benefits to all six representative workers.

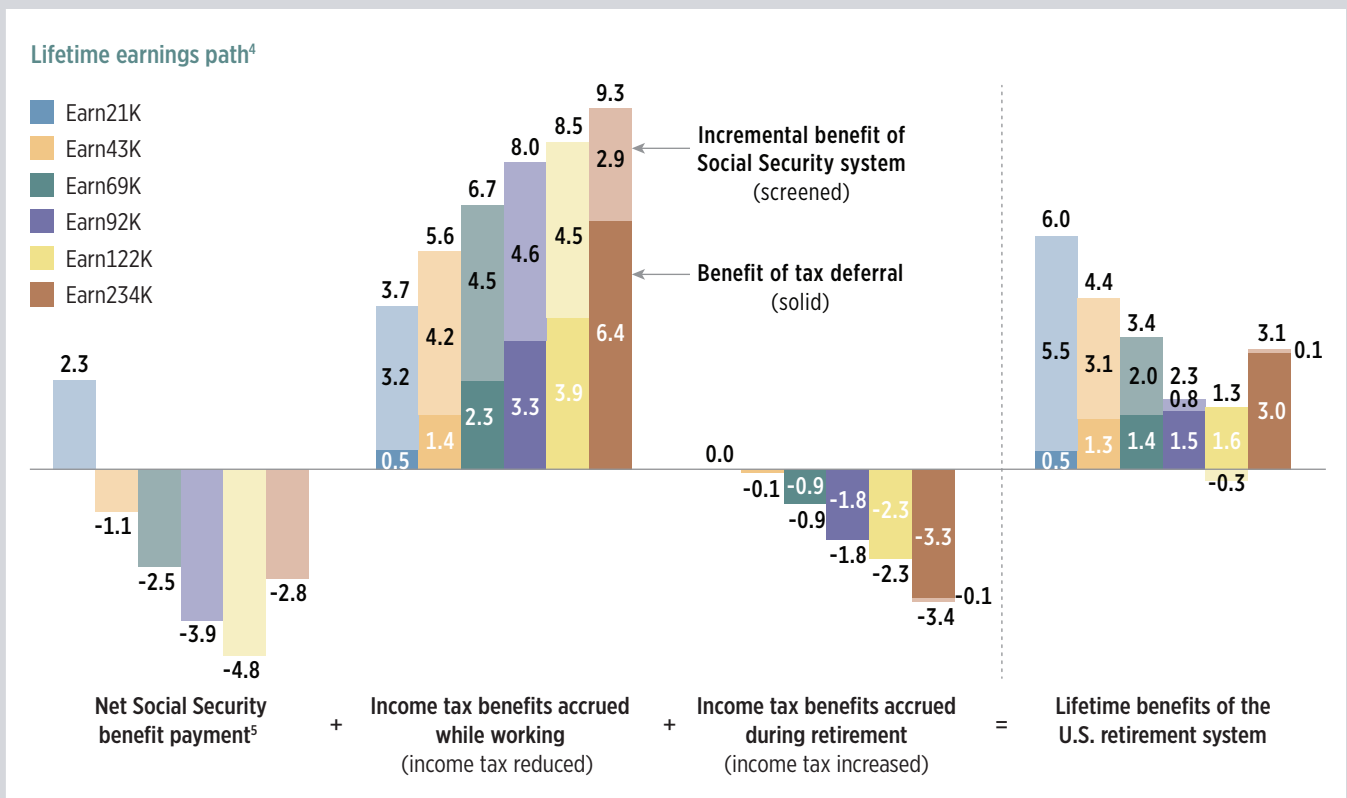
While individuals are in retirement, the U.S. retirement system increases income taxes paid for five of the six representative workers, with increases ranging from 0.1 percent of lifetime total compensation for the Earn43K worker to 3.4 percent for the Earn234K worker (Figure 5, third set of bars). Social Security has a modest effect on income taxes paid during retirement (the screened portion of the bars).

Evaluated as a whole, the U.S. retirement system is progressive. Combining net Social Security benefit payments and the reduction in income tax liability, lifetime benefits represent a larger share of lifetime total compensation for workers with lower lifetime earnings (Figure 5, fourth set of bars). The present value of the lifetime benefits of the U.S. retirement system in these simulations declines from 6.0 percent of lifetime total compensation for the worker

FIGURE 5

Present Value of the Tax Benefits of the U.S. Retirement System by Lifetime Earnings

Tax benefits expressed as the present value of the net reductions in taxes paid because of tax deferral¹ and the current Social Security system² as a percentage of the present value of total compensation³ earned from age 32 to 66 for representative individuals with various levels of lifetime earnings



¹ In the absence of tax deferral, it is assumed that 401(k) plans would continue to exist but would be treated as taxable investment accounts. For assumed contribution behavior, see Figure 2. Contributions to 401(k) accounts are assumed to be invested in bonds earning 3.0 percent plus inflation, with accumulated assets used to purchase an actuarially fair, inflation-indexed, immediate life annuity upon retirement.

² In the absence of the current Social Security system, it is assumed that Social Security would establish a system of taxable individual investment accounts. Social Security taxes (both employer and employee share of old age, survivor, and disability insurance [OASDI] taxes) are contributed to the investment accounts. Investments are assumed to be the same as with 401(k) accounts (see note 1).

³ Total compensation is the sum of wage and salary earnings, the employer share of payroll taxes (both OASDI and hospital insurance [HI]), and employer matching contributions to 401(k) plans.

⁴ The lifetime earnings paths of the representative workers are based on the earnings paths derived in Brady 2010. See Figure 2 for additional detail.

⁵ Net Social Security benefit payments are calculated as the net present value of Social Security benefit payments received less the net present value of taxes paid (both employer and employee OASDI taxes).

Note: Components may not add to the total because of rounding.

Source: ICI simulations

with the lowest lifetime earnings (the Earn21K worker) to 1.3 percent for the Earn122K worker. The lifetime benefits increase to 3.1 percent of total compensation for the Earn234K worker, but remain below the percentage for the three lowest-earning workers. Including its effect on income tax liability, Social Security provides substantial benefits for the three lowest-earning workers, but has a more modest effect on the lifetime benefits of the three highest-earning workers (screened portion of the fourth set of bars).

Among the three highest-earning workers, the pattern of lifetime benefits is driven primarily by the benefits they receive from tax deferral. As noted earlier, the Earn92K and the Earn122K workers defer a higher share of their compensation than lower-earning workers, but benefit less on every dollar they defer. The Earn234K worker both defers the highest percentage of compensation and receives benefits similar to the Earn69K worker on every dollar of compensation deferred. As a result, the lifetime benefits of deferral are higher for the Earn234K worker.

Evaluated as a whole, the U.S. retirement system is progressive, with lifetime benefits representing a larger share of lifetime total compensation for workers with lower lifetime earnings.

Dispelling Popular Misconceptions About Tax Deferral

In addition to illustrating who benefits from the U.S. retirement system, the simulation results can be used to illustrate that two widely held beliefs about tax deferral are incorrect.

Myth 1

Myth: Workers with higher earnings get more benefits from tax deferral because they face higher marginal tax rates.

Fact: The design of the Social Security system, not the design of the income tax, is the primary reason that benefits of tax deferral increase with lifetime earnings.

A common criticism of tax deferral is that, because they face higher marginal tax rates, workers with higher lifetime earnings get more tax benefits for every dollar of compensation they defer. For example, this was the explanation that was used in a recent report to explain why workers with higher earnings get more benefits from tax deferral:

The benefit from the deferral on retirement contributions is tied to a taxpayer's marginal tax rate and thus rises as household income increases. For example, someone making \$40,000 and in the 10 percent tax bracket receives an up-front tax subsidy of 10 cents per dollar of deductible retirement contributions, whereas someone who makes \$450,000 and is in the 35 percent bracket receives an up-front subsidy of 35 cents on the dollar. As a result, the benefits from retirement savings tax expenditures 'tilt heavily toward the top,' as a recent CBO report explains. (Marr, Frentz, and Huang 2013, page 3)

The widespread belief that higher-earning workers get more benefits from every dollar they defer has led to proposals to remedy the supposed problem by reducing the up-front benefits of tax deferral for workers with high marginal tax rates.

This belief, however, is based on a basic misunderstanding of the benefits of tax deferral. Unlike an exclusion or a deduction, the marginal benefits of tax deferral do not increase proportionately with an individual's marginal tax rate. The up-front tax savings associated with a retirement plan contribution is only one aspect of tax deferral. The marginal benefits of tax deferral are determined by many factors, including the length of deferral, the marginal tax rate at the time of the contribution, and the marginal tax rate at the time of distribution.

Unlike an exclusion or a deduction, the marginal benefits of tax deferral do not increase proportionately with an individual's marginal tax rate. The marginal benefits of tax deferral are determined by many factors.

In this study, the workers with higher lifetime earnings do benefit more from tax deferral, but it is not because they get higher marginal benefits from tax deferral. In fact, the three representative workers with the lowest earnings would benefit more, on average, from contributing an additional \$1 of compensation to a 401(k) plan.

It is the design of the Social Security system—not the design of the income tax—that causes the benefits of tax deferral to increase with lifetime earnings. That is, the reason the representative workers with higher lifetime earnings benefit more from tax deferral is not that their marginal benefits are higher, but because they start contributing to their 401(k)

plans earlier in their careers, and often contribute a higher percentage of their pay. And, the reason that they defer more of their compensation is that Social Security benefit payments replace a smaller share of their pre-retirement earnings.

It is the design of the Social Security system—not the design of the income tax—that causes the benefits of tax deferral to increase with lifetime earnings.

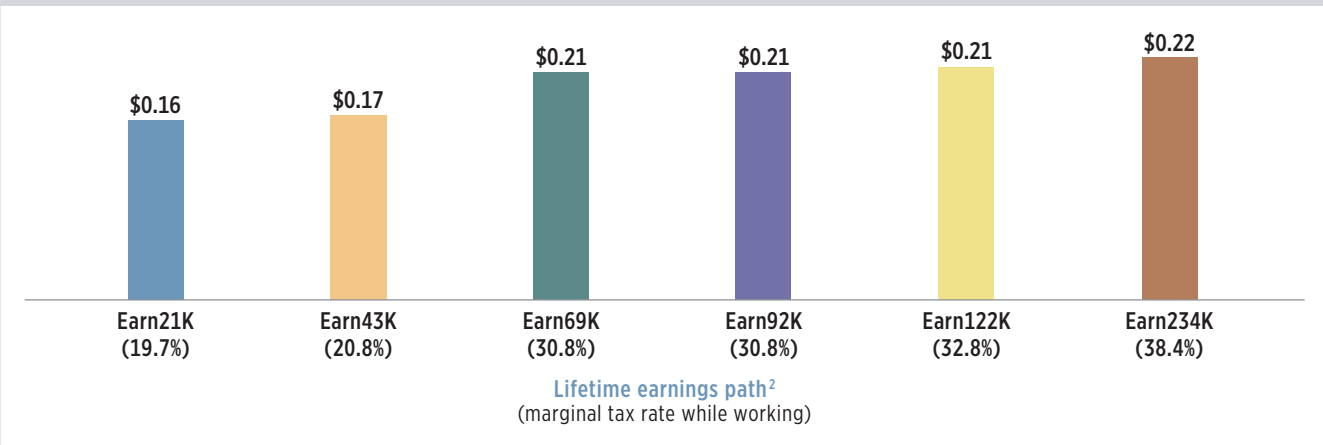
The Marginal Benefits of Tax Deferral with No Change in a Worker's Marginal Tax Rates over Time

The marginal benefits of tax deferral increase with marginal tax rates if tax rates are the same at the time of contribution and the time of distribution, but the increase in benefits is not proportional to the increase in tax rates. For example, suppose that, relative to the baseline simulation of current policy, the six representative workers contributed an additional \$1 to the 401(k) plan at age 50 and distributed all the assets associated with the contribution at age 71 (Figure 6). Suppose further that each worker's marginal tax rate was unchanged over this period and was equal to the average rate they faced while working. Average (from age 32 to 66) marginal tax rates range from 19.7 percent for the Earn21K worker to 38.4 percent for the Earn234K worker. An additional \$1 of tax-deferred compensation would produce a tax benefit equal to \$0.16, in present value, for the Earn21K worker. Despite having a marginal tax rate nearly twice as high, the marginal benefit for the Earn234K would be \$0.22, or about one-third higher. In fact, despite having marginal tax rates that range from 30.8 percent to 38.4 percent, the four highest earners get about the same marginal benefits from tax deferral.

FIGURE 6

Even If Marginal Tax Rates Are Constant, Marginal Benefits of Deferral Are Not Proportional to Marginal Tax Rates

Calculated present value of marginal benefits of an additional \$1 contribution to a 401(k) plan at age 50, assuming marginal tax rate in retirement is the same as when working, by lifetime earnings¹



¹ Calculations assume additional contributions are invested in bonds earning 5.8 percent nominal interest and that assets are distributed at age 71.

² The lifetime earnings paths are based on the earnings paths derived in Brady 2010. See Figure 2 for additional detail. Reported marginal tax rates are average marginal tax rates from age 32 to 66 from baseline simulation (see Figure 7).

Source: ICI calculations

Assuming a worker's marginal tax rate does not change over time, the benefits of tax deferral are equivalent to facing a zero rate of tax on investment income.³⁴ Recall that tax deferral has three separate effects on tax liability: it reduces taxes when contributions are made; it reduces taxes during the deferral period; and it increases taxes when distributions are taken. When marginal tax rates do not change, the taxes paid upon distribution are equal, in present value, to tax savings associated with the contribution. Because these two effects exactly offset each other, the tax benefit is the one remaining effect: the reduction in taxes paid during the deferral period. Specifically, the tax benefit of deferral is equivalent to facing a zero rate of tax on the investment income that would have been generated if compensation

was first subject to income tax and the net-of-tax amount was then contributed to an investment account.

Once this equivalence is understood, it is easier to explain why the marginal benefits of deferral do not increase proportionally with a worker's marginal tax rate. Workers with higher marginal tax rates benefit more on every dollar of *investment income* to which the zero rate applies. The amount of investment income that would be generated by an after-tax contribution, however, is lower for workers with higher marginal tax rates. The result is that the marginal benefits of tax deferral increase with marginal tax rates, but the rate of increase slows as the marginal tax rate increases.³⁵

The Marginal Benefits of Tax Deferral When Accounting for Changes in a Worker’s Marginal Tax Rates over Time

The marginal benefit estimates in Figure 6, however, understate the benefits of deferring an additional \$1 of compensation because all six representative workers face lower marginal income tax rates in retirement in the baseline simulations of current policy (Figure 7). If marginal tax rates were lower in retirement, then the income tax paid upon distribution would then be less, in present value, than the tax savings associated with the contribution. With tax rates lower in retirement, the benefits of deferral are equivalent to a worker paying a zero rate of tax on the investment income they would have earned in a taxable account, plus a bonus equal to the difference, in present value, between the tax savings associated with the contribution and the taxes

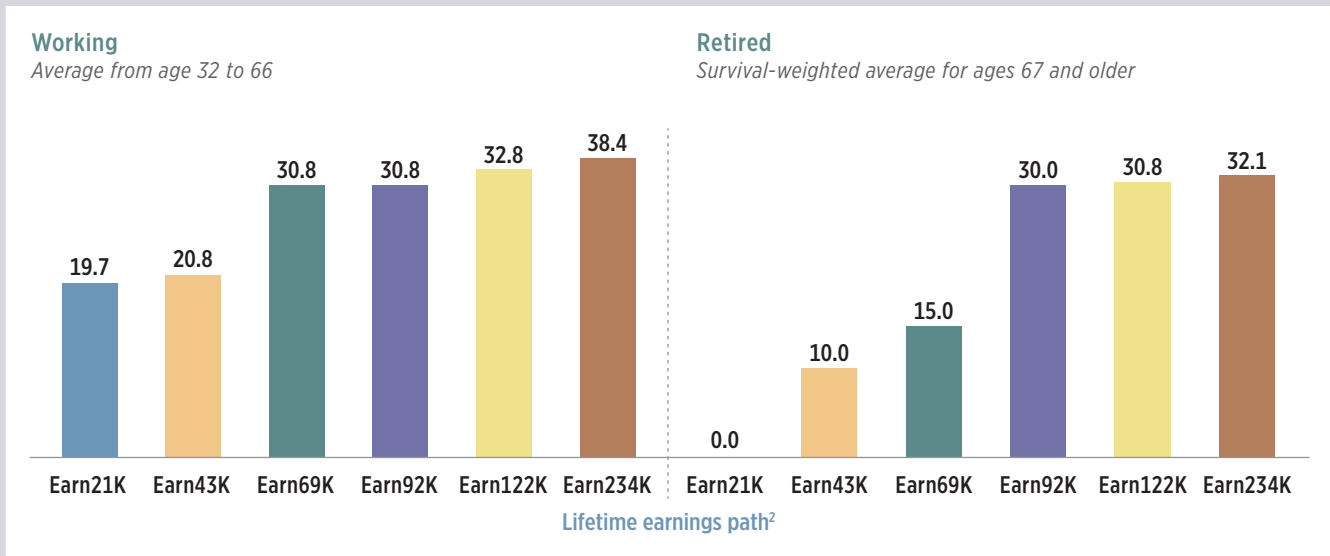
paid upon distribution. For example, if a worker’s marginal tax rate is 25 percent when making a contribution but falls to 15 percent when taking a distribution, then the benefits of deferring \$1,000 of compensation would be equal to getting a zero percent tax rate on the investment income that would be generated by a \$750 contribution to a taxable account, plus a \$100 bonus (in present value).

Although marginal tax rates decline during retirement for all workers in the baseline simulation of current policy, the rates fall more sharply for workers with lower lifetime earnings (Figure 7). For example, combined federal and state marginal income tax rates are 6.3 percentage points lower in retirement for the Earn234K worker (32.1 percent compared with 38.4 percent) and 2.0 percentage points

FIGURE 7

Representative Workers’ Marginal Tax Rates Are Lower in Retirement

Marginal tax rates¹ for representative individuals under current policy baseline by lifetime earnings,² percent



¹ Marginal tax rates are calculated using statutory tax rates, but the federal statutory rates are adjusted for interactions with the limitation on itemized deductions, the alternative minimum tax (AMT), and the phaseout of the AMT standard deduction. For taxpayers who are not subject to the AMT and who itemize deductions, combined federal and state marginal tax rates are adjusted to account for the deductibility of state income taxes. For taxpayers who are subject to the AMT (which does not allow for the deduction of state income taxes) or who do not itemize deductions, the combined marginal rate is simply the sum of federal and state marginal tax rates. Rates plotted are the representative workers’ average marginal tax rates during the period covered (age 32 to 66; or ages 67 and older).

² The lifetime earnings paths of the representative workers are based on the earnings paths derived in Brady 2010. See Figure 2 for additional detail.

Source: ICI simulations

lower for the Earn122K worker (30.8 percent compared with 32.8 percent). In contrast, marginal tax rates are 15.8 percentage points lower in retirement for the Earn69K worker (15.0 percent compared with 30.8 percent), and 19.7 percentage points lower for the Earn21K worker, who pays no income tax during retirement.

Accounting for changes in marginal tax rates, it can be seen that the representative workers with lower lifetime earnings typically would get more benefits from deferring an additional \$1 of compensation (Figure 8). For example, the marginal benefits of a \$1 retirement plan contribution at age 50 are \$0.33 for the Earn21K worker and \$0.34 for the Earn69K worker. In comparison, the marginal benefits of a \$1 retirement plan contribution at age 50 are \$0.28 for the Earn234K worker and \$0.23 for the Earn122K worker.

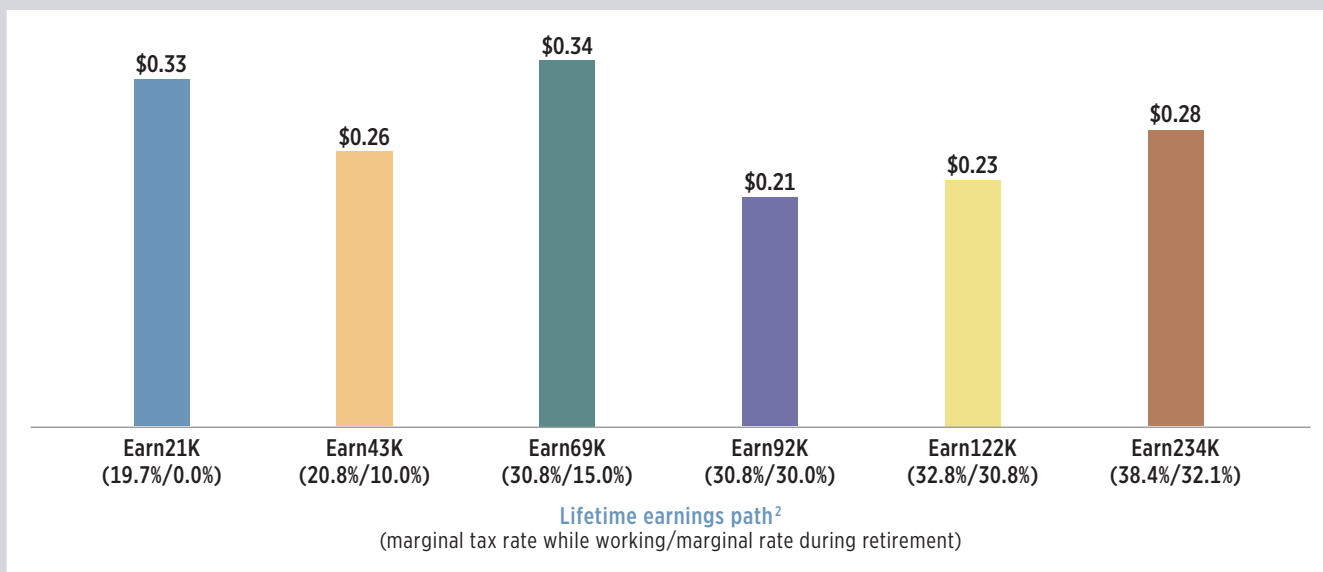
Accounting for changes in marginal tax rates, representative workers with lower lifetime earnings typically would get more benefits from deferring an additional \$1 of compensation.

Contrary to conventional wisdom, the marginal benefits of tax deferral are not closely linked to the worker’s marginal tax rate. Although the representative workers with lower lifetime earnings face lower marginal tax rates while working, their marginal tax rates decline more sharply when they retire. The result is that, controlling for the length of deferral, workers with lower lifetime earnings typically would benefit more from deferring an additional \$1 of compensation.

FIGURE 8

Accounting for Change in Marginal Tax Rates, Workers with Lower Lifetime Earnings Typically Get Higher Marginal Benefits

Calculated present value of marginal benefits of an additional \$1 contribution to a 401(k) plan at age 50, accounting for change in marginal tax rates during retirement, by lifetime earnings¹



¹ Calculations assume additional contributions are invested in bonds earning 5.8 percent nominal interest and that assets are distributed at age 71.

² The lifetime earnings paths of the representative workers are based on the earnings paths derived in Brady 2010. See Figure 2 for additional detail. Reported marginal tax rates are average marginal tax rates during the period covered (age 32 to 66; or ages 67 and older) from baseline simulation (see Figure 7).

Source: ICI calculations

Myth 2

Myth: *Because of tax deferral, the current income tax system provides an “upside-down” incentive to save.*

Fact: *Far from providing an “upside-down” incentive, tax deferral equalizes the incentive to save. Normal income tax treatment reduces the incentive to save by taking a share of the return earned on investments. By effectively taxing investment returns at a zero rate, tax deferral removes this disincentive.*

An accusation often leveled against tax deferral is that it provides an “upside down” incentive to save.³⁶ It has been argued that the presence of tax deferral results in higher-income workers having a greater incentive to save than lower-income workers. For example, the following quote is a typical characterization of the incentive to save for lower-income workers with no federal income tax liability:

While the current tax system ensures that they are not unfairly taxed, it also leaves them with *no incentive to save*—even though savings could potentially increase their economic security.
(Valenti and Weller 2014, page 7; emphasis added)

Far from providing an “upside-down” incentive, tax deferral equalizes the incentive to save. The incentive to save is provided by the return on investments available in the capital and credit markets, not by the income tax. By taking a share of the return on investments, an income tax reduces the rate of return received by investors and discourages saving. In a taxable investment account, workers with high marginal tax rates have the lowest incentive to save. Tax

deferral removes the disincentive to save inherent in an income tax and effectively taxes investment returns at a zero rate. This allows all workers, regardless of marginal tax rate, to receive the full market rate of return on their savings.³⁷

Tax deferral equalizes the incentive to save by effectively taxing investment returns at a zero rate.

The Incentive to Save

The incentive to save is the rate of return earned on investments after accounting for taxation. Because savings is defined as current income less current spending, increasing savings requires an individual to reduce current spending. The reward for reducing spending today is that spending can be increased in the future. The tradeoff between current and future spending represents the incentive to save: If I reduce my spending by \$1 today, how much can I increase my spending in the future? It is the after-tax rate of return earned on investments that determines the terms of this trade-off.

Normal Income Tax Treatment

The normal income tax structure discourages saving and results in workers with higher marginal tax rates having less of an incentive to save. This can be illustrated by comparing the tax treatment of compensation used to fund savings for workers with different marginal tax rates. For example, consider workers who wish to set aside \$1,000 of current pretax compensation in a taxable investment account for 20 years, who invest in bonds paying 6 percent

interest annually, and who have the same marginal tax rates throughout the 20-year period (Figure 9).

- » For a worker with a zero marginal tax rate, \$1,000 of pretax compensation would not generate income tax liability and could fund \$1,000 of current consumption (column 1). Alternatively, the \$1,000 of after-tax income could be saved in a taxable investment account. After 20 years of interest payments, the worker would have \$3,207 available to fund consumption (column 2).
- » For a worker with a 25 percent marginal tax rate, \$1,000 of pretax compensation could fund \$750 of current consumption, after income taxes of \$250 ($1,000 \times 25\%$) were paid (column 1). Alternatively, the \$750 of after-tax income could be saved in a taxable investment account. After 20 years of earning

interest and paying income tax on the interest income, the worker would have \$1,809 available to fund consumption (column 2).

The normal income tax structure discourages saving, especially for workers with higher marginal tax rates.

As illustrated in this example, workers with higher marginal tax rates have less of an incentive to save under a normal income tax structure (Figure 9, column 3). For the worker with a zero marginal tax rate, every \$1 of consumption given up today would generate about \$3.21 ($\$3,207 / \$1,000$) to fund consumption in 20 years. For the worker with a 25 percent marginal tax rate, every \$1 of consumption given up today yields about \$2.41 ($\$1,809 / \750) of consumption in 20 years.

FIGURE 9

Normal Income Tax Reduces the Incentive to Save

Amount of after-tax income generated by \$1,000 of compensation in current year and in 20 years under normal income tax treatment, by worker's marginal tax rate

Assumptions				
	Initial compensation			\$1,000
	Rate of return (annual interest payments)			6%
	Length of time invested			20 years
Marginal tax rate	After-tax income available to fund consumption in current year (1)	Amount available in 20 years to fund consumption, after income taxes are paid (2)	Amount of future consumption funded for every \$1 of consumption given up today (2) / (1)	
0%	\$1,000	\$3,207	\$3.21	
15%	850	2,299	2.70	
25%	750	1,809	2.41	
35%	650	1,397	2.15	

Note: Marginal tax rates are assumed to remain the same throughout the 20-year period.

Source: ICI calculations

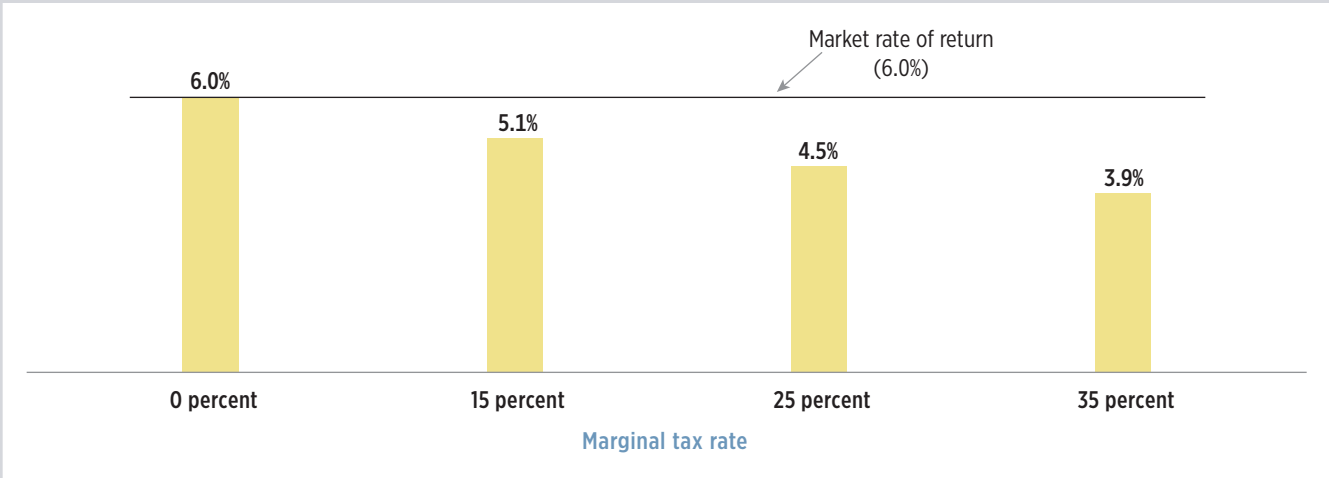
The incentive to save can also be expressed as the effective annual rate of return earned on forgone consumption (Figure 10). The worker with a zero marginal tax rate pays no tax on investment returns and earns the full 6.0 percent market rate of return on the worker's forgone consumption, whereas the worker with a 25 percent marginal tax rate earns an effective 4.5 percent annual rate of return.³⁸ The worker with the 25 percent marginal tax rate earns a lower return because the worker must pay income tax each year

equal to 25 percent of interest income, or 1.5 percent of assets ($6\% \times 0.25$). Without an income tax, the tradeoff between current and future spending would be determined by the rate of return on investments set in the markets. An income tax introduces a wedge between the market rate of return earned on investments and the after-tax rate of return received by taxpayers. And, the size of this wedge increases with a worker's marginal tax rate.

FIGURE 10

An Income Tax Reduces the Effective Annual Rate of Return Earned on Investments

Effective rate of return earned on forgone consumption assuming a 20-year investment and normal income tax treatment, by worker's marginal tax rate



Note: Marginal tax rates are assumed to remain the same throughout the 20-year period.
Source: ICI calculations

Tax Deferral

Tax deferral removes the disincentive to save that is inherent in an income tax, which can be illustrated by calculating the same tradeoffs between current and future consumption when compensation is tax deferred (Figure 11).

- » For a worker with a zero marginal tax rate, \$1,000 of pretax compensation could be used to fund \$1,000 of current consumption (column 1). Alternatively, the entire \$1,000 could be contributed to a 401(k) plan. After 20 years earning 6.0 percent interest, the 401(k) plan account would have a balance of \$3,207. Because the worker is assumed to still face a zero percent marginal tax rate when taking the distribution, the entire account balance of \$3,207 would be available to fund consumption in 20 years (column 2).
- » For a worker with a 25 percent marginal tax rate, \$1,000 of pretax compensation could fund \$750 of current consumption, after income taxes of \$250 ($1,000 \times 25\%$) were paid (column 1). Alternatively, the entire \$1,000 could be contributed to a 401(k) plan.

After 20 years earning 6.0 percent interest, the 401(k) plan would have a balance of \$3,207. Upon withdrawal, income tax of \$802 ($\$3,207 \times 25\%$) would be incurred, resulting in \$2,405 ($\$3,207 - \802) available to fund consumption in 20 years (column 2).

As illustrated in this example, assuming marginal tax rates do not change over time, all workers face the same incentive to save with tax deferral, regardless of the marginal tax rate that they face (Figure 11, column 3). For the worker with a zero marginal tax rate, the incentive to save is the same with tax deferral as it was under the normal income tax structure: every \$1 of consumption given up today would generate about \$3.21 ($\$3,207 / \$1,000$) to fund consumption in 20 years. The incentive to save would increase for the worker with a 25 percent marginal tax rate, however, who would face the same tradeoff as the worker with a zero marginal tax rate: every \$1 of consumption given up today yields about \$3.21 ($\$2,405 / \750) to fund consumption in 20 years. In fact, the worker with a 15 percent marginal tax rate and the worker with a 35 percent tax rate also would face the same tradeoff.

FIGURE 11

Tax Deferral Removes the Disincentive to Save

Amount of after-tax income generated by \$1,000 of compensation in current year and in 20 years with tax deferral, by worker's marginal tax rate

Assumptions				
	Initial compensation			\$1,000
	Rate of return (annual interest payments)			6%
	Length of time invested			20 years
Marginal tax rate	After-tax income available to fund consumption in current year	Amount available in 20 years to fund consumption, after income taxes are paid	Amount of future consumption funded for every \$1 of consumption given up today	
	(1)	(2)	(2) / (1)	
0%	\$1,000	\$3,207	\$3.21	
15%	850	2,726	3.21	
25%	750	2,405	3.21	
35%	650	2,085	3.21	

Note: Marginal tax rates are assumed to remain the same throughout the 20-year period.

Source: ICI calculations

All workers face the same incentive to save with tax deferral, regardless of the marginal tax rate that they face.

Expressed as an effective annual rate of return, assuming no change in a worker's marginal tax rate, all workers earn a 6.0 percent return on forgone consumption with tax deferral (Figure 12).³⁹ In effect, all workers face a zero marginal tax rate on investment income with tax deferral. In this way, tax deferral removes the wedge between the rate of return paid by the market and the after-tax rate of return received by investors, and equalizes the incentive to save.

Is Distributional Analysis of Tax Expenditures Relevant?

The motivation for the analysis in this study was that distributional analyses of tax expenditures have often been invoked in the context of tax reform, and that distributional analysis of tax deferral alone gives an incomplete picture of

the benefits of the U.S. retirement system. Using the same standard by which tax deferral has been judged in previous research, this study illustrates that the combination of Social Security and tax deferral results in a U.S. retirement system that is progressive.

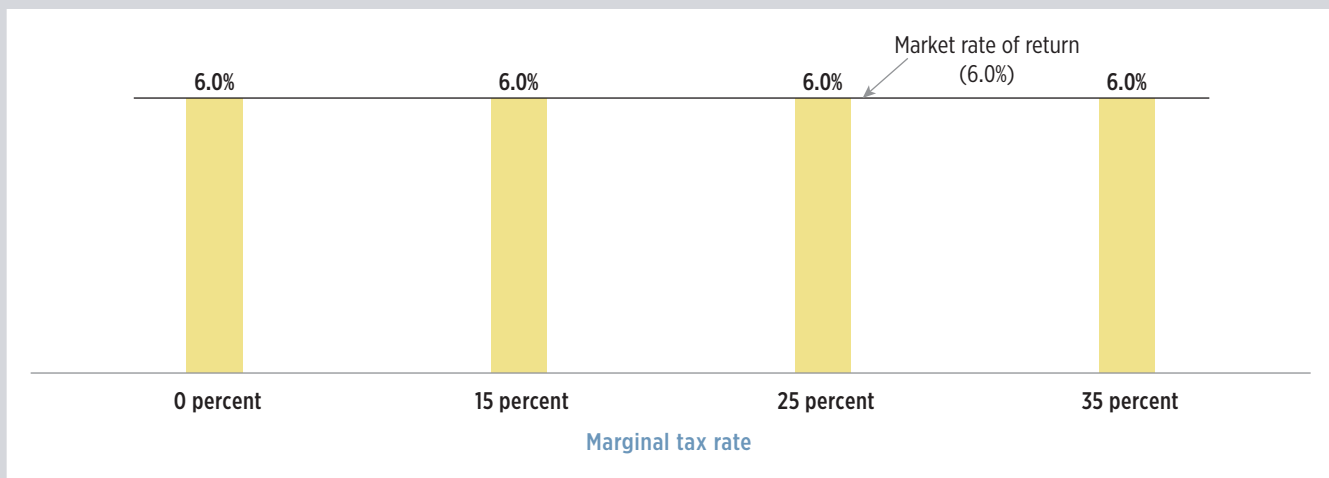
Using the same standard by which tax deferral has been judged in previous research, this study illustrates that the combination of Social Security and tax deferral results in a U.S. retirement system that is progressive.

A more fundamental question is whether this distributional analysis, or any other distributional analysis of tax expenditures, should play a large role in any future tax reform effort. The belief of this author is that they should not. Although aggregate tax expenditure estimates have some, albeit limited, analytical value, it is not clear that distributional analysis of tax expenditures have any analytical value. Allocating tax expenditures to individual taxpayers does not accurately measure the impact of a

FIGURE 12

Tax Deferral Equalizes the Incentive to Save

Effective rate of return earned on foregone consumption assuming a 20-year investment and tax deferral, by worker's marginal tax rate



Note: Marginal tax rates are assumed to remain the same throughout the 20-year period.

Source: ICI calculations

particular tax code provision on the overall progressivity of the tax code. In fact, taken to its logical extreme, the focus on microprogressivity can lead to perverse results. If a comprehensive reform of the federal income tax is undertaken, an important consideration would be the effect of the complete tax reform package on the progressivity of the overall income tax. The impact of reform on the distribution of benefits from specific tax code provisions should not be a consideration. Tax provisions that address legitimate policy goals can be included in a progressive income tax even if they are not, in themselves, progressive.

If a comprehensive reform of the federal income tax is undertaken, it would be important for policymakers to consider the effect of the complete tax reform package on the progressivity of the overall income tax. The impact of reform on the distribution of benefits from specific tax code provisions should not be a consideration.

The Limitations of the Tax Deferral Concept

Tax expenditure estimates answer a very narrow question. The estimates represent a particular measure of the tax benefits of individual tax code provisions: they measure how much tax liability would change if a specific tax code provision was eliminated, no other changes were made to the tax code, and there was no change in taxpayer behavior. Provided it is understood what the estimates represent, they provide potentially useful information to tax policy analysts.

The problem with tax expenditure estimates is not so much what they estimate, but how those estimates are interpreted.⁴⁰ Tax expenditure estimates have analytical value only to the extent that the question they answer is of interest to the analyst. Tax expenditure estimates do not have direct policy implications. The fact that a particular tax code provision is associated with a tax expenditure estimate does not, by itself, suggest a future path for tax reform. Tax expenditure estimates also do not answer the broader policy

questions that would be raised by a comprehensive tax reform effort. They are neither estimates of the revenue that would be raised if tax code provisions were eliminated,⁴¹ nor predictions about the impact of future tax reform efforts.⁴²

Tax Expenditures and Previous Tax Reform Efforts

Although eliminating or limiting tax expenditures has been a consistent focus of tax reform efforts, the impact of tax expenditures on the progressivity of the income tax has not typically been the overriding concern.⁴³ In previous tax reform efforts, concerns about the impact of tax expenditures on the fairness of the income tax have typically centered on horizontal equity—the concept that taxpayers with similar economic circumstances should have similar tax burdens—rather than vertical equity—the concept that taxpayers with more economic resources should face higher tax burdens.⁴⁴

For example, the policy discussions leading up to the Tax Reform Act of 1986 (TRA '86) were more focused on horizontal equity than on progressivity. Treasury I (U.S. Department of the Treasury 1984) and Treasury II (U.S. Department of the Treasury 1985)—the two reports that served as the basis for TRA '86—proposed to reform the tax code for “fairness, growth, and simplicity.” With regard to fairness, the concern was primarily about the impact of tax expenditures on the tax burden within income classes.

Erosion of the tax base also creates inequities. Most obviously it is unfair that two households with equal income should pay different amounts of tax, simply because one receives or spends its income in ways that are tax-preferred. (U.S. Department of the Treasury 1984, vol. 1, page 5)

In fact, the reform process that led to TRA '86 explicitly ignored the impact of tax expenditures on the progressivity of the tax system. The decision was made that the proposal would be roughly distributionally neutral. Although tax reform would result in winners and losers among taxpayers

within an income class, the relative burden across income classes would be roughly maintained.

In its study of fundamental tax reform the Treasury Department has adopted the simple working assumption that the existing distribution of tax payments across income classes should not be significantly changed by tax reform. If any change in the existing distribution of tax burdens is desired, it can and should be implemented by adjusting the proposed personal exemptions and rate schedules. It should not be achieved by taxing some sources or uses of income more or less heavily than others, since that would violate both economic neutrality and the principle that those with equal incomes should pay approximately equal taxes. (U.S. Department of the Treasury 1984, vol. 1, page 15)

How Does Tax Deferral Affect the Progressivity of the Current Tax System?

The effect of tax deferral on the progressivity of the U.S. tax system cannot be determined without first answering a seemingly simple question: Compared to what? Depending on the alternative tax policy chosen as a comparison, tax deferral could be judged to make the tax code less progressive, to make it more progressive, or to have no impact at all.

Tax expenditure estimates have a very specific alternative policy to which they compare current policy: a tax code with the relevant tax provision eliminated, but which is otherwise unchanged. This type of change to the tax code is uncommon, however. Most tax legislation, particularly major reforms, includes changes to multiple tax code provisions.

The most appropriate comparison for determining the effect of tax deferral on progressivity would be to ask what the tax code would look like if tax deferral had been eliminated by TRA '86. Although the tax code is constantly changing, the 1986 tax reform was the last comprehensive reform of federal income tax.

Comparing the current tax code to a hypothetical 1986 tax reform that eliminated tax deferral, tax deferral would be judged to have no impact on the progressivity of the current U.S. tax code. As already noted, the tax reform process that resulted in TRA '86 aimed to produce a new tax system that, compared to the prior law, was distributionally neutral. Given the goals set early on in the reform process, any tax reform—whether it retained tax deferral or eliminated tax deferral—would have produced a tax code with the same level of progressivity. That is, if tax deferral had been eliminated, then other changes would have been made—such as reducing statutory tax rates—to ensure that TRA '86 had no net effect on the progressivity of the tax code.

The Misplaced Focus on Microprogressivity

Focusing on the distribution of benefits from a single tax code provision can lead tax policy discussions astray. Although there are rationales for having a tax system that is progressive, there is no rationale for ensuring that every provision included in the tax code is progressive—a concept that, for ease of exposition, will be referred to as *microprogressivity*.

Not only is microprogressivity not a necessary condition for the tax code to be progressive, focusing on achieving it may lead to perverse results. Taken to its logical extreme, the quest for microprogressivity could lead to the adoption of policies that would make the tax and transfer system, as a whole, less progressive.

For example, many are concerned that higher-income workers get more tax benefits from each dollar they contribute to a 401(k) plan. It is true that, if marginal tax rates do not change over time, the benefit of tax deferral is roughly equivalent to getting a zero rate of tax on the investment income that would otherwise be subject to tax if invested in a taxable savings or investment account. Thus, to the extent that taxpayers with higher marginal tax rates benefit more from tax deferral, it is because under the normal income tax structure they would be taxed more heavily on investment income earned in a taxable account.

The most direct solution to the “problem” of higher-earning workers benefitting more from an effective zero rate of tax imposed on investment income is to tax all investment income earned in a taxable account at the same rate, regardless of a taxpayer’s income. This can be achieved in one of two ways: by increasing the tax rate on investment income earned by lower-income workers, or by reducing the tax rate on investment income earned by higher-income workers. Either change would ensure that all taxpayers got the same tax benefit on every dollar of investment income to which the zero rate of tax applied, and thus would increase microprogressivity. Either change would also make the tax system, as a whole, less progressive.

Tax Expenditures and Comprehensive Tax Reform

If a new comprehensive reform of the federal income tax is to be undertaken, the reform should be judged not on its impact on the progressivity of individual tax provisions but, rather, on its impact on the overall progressivity of a tax system. Before focusing on changing specific tax code provisions, it would be appropriate to set goals for a comprehensively reformed tax code, such as targets for revenue and progressivity. Regardless of the target level of progressivity, tax provisions that address legitimate policy goals can be included in the income tax even if they are not, in themselves, progressive. Then, other aspects of the tax code—such as statutory tax rates—can be adjusted to achieve the desired level of progressivity in the system as a whole.

If such a comprehensive reform process is undertaken, a decision to eliminate or restrict tax deferral would be less about its impact on the progressivity of the federal income tax, and more about its impact on horizontal equity, economic growth, and simplicity. For any given target level of progressivity, there would be multiple combinations of policy changes that would hit the target. These policy

combinations would not be judged by their impact on progressivity—as all would hit the target—but by their other effects. Tax deferral should only be eliminated or restricted if it was determined that it was a better way to hit the target level of progressivity than alternative policies, such as adjusting statutory tax rates.

Evaluating Tax Deferral by Criteria of Fairness, Economic Growth, and Simplicity

Tax-deferred compensation differs in many respects from other tax expenditures, and not simply because it defers, rather than eliminates, tax liability. *Blueprints for Basic Tax Reform* (U.S. Department of the Treasury 1977) notes perhaps a more fundamental difference between tax deferral and other tax expenditures: the impact that tax deferral has on economic growth and fairness.

Also, tax deferral on income from certain investments for retirement purposes is an example of how current law attempts to offset the adverse effects on savings of using an accretion income base. Significantly, this last example is also viewed as desirable for reasons of equity. (U.S. Department of the Treasury 1977, page 23)

Despite the claims of its critics, tax deferral increases the fairness of the income tax, enhances economic growth, and is relatively simple to understand and administer. In contrast, recent proposals to change the tax deferral rules would reduce horizontal equity and make the tax code considerably more complex.

Tax deferral increases the fairness of the income tax, enhances economic growth, and is relatively simple to understand and administer.

Fairness

Allowing workers to defer a portion of their compensation until retirement arguably increases the fairness of the income tax. In contrast, many of the proposals to change tax deferral would make the tax code less fair by treating some forms of deferred compensation (DC plans, or in some cases employee contributions to DC plans) differently from other forms of deferred compensation (DB plans, or in some cases employer contributions to either DB plans or DC plans).

A progressive tax rate schedule can be justified only to the extent that annual income is a good measure of a household's economic resources. To the extent that annual income is not a good proxy for a household's economic resources, then a progressive tax rate schedule can lead to horizontal inequity—different tax burdens for individuals in similar economic situations. This is a particular concern if an individual's annual income varies considerably over time.

It has long been recognized that the tax burden can be affected by the timing of the receipt of income, and certain adjustments to annual income have been allowed to help counteract the impact of timing. For example, before TRA '86 taxpayers could elect to take advantage of “income averaging.”⁴⁵ That is, taxpayers could elect to have a lower marginal tax rate applied to income that was in excess of 140 percent of their average income over the previous three years.

The impact of the timing of income was highlighted in *Blueprints for Basic Tax Reform* (U.S. Department of the Treasury 1977), which emphasizes that annual income is an imperfect measure of economic resources and that the decision to measure income over a single year was based on practical considerations rather than on principle. To properly compare the relative economic circumstances of two taxpayers requires measuring income over a much longer period of time.

It is assumed in this study that the period over which such comparisons are made should be as long as possible. Ideally, two taxpayers should be compared on the basis of a whole lifetime of circumstances, and this is taken here to be a general goal of tax system design: lifetime tax burden should depend upon lifetime circumstances. (U.S. Department of the Treasury 1977, page 25; emphasis in original)

By essentially allowing workers to “income-average” over a lifetime, tax deferral arguably makes the tax system more—not less—fair. Earnings typically vary considerably over an individual's lifetime. On average, inflation-indexed wages increase early in a working career, with wage growth slowing and then plateauing during peak earning years. As a worker transitions into retirement, wages are either reduced substantially or eliminated, after which the individual may have many years at the end of life with no earnings at all. Allowing workers to set aside a portion of their compensation until retirement reduces the impact of the life-cycle pattern of earnings on taxable annual income, resulting in a measure of taxable annual income that is a better indicator of lifetime circumstances.

By essentially allowing workers to “income-average” over a lifetime, tax deferral arguably makes the tax system more—not less—fair.

Proposals to Change Tax Deferral Rules Would Reduce Horizontal Equity

Qualified tax-deferred compensation takes many forms. Compensation can be deferred through an employer-sponsored retirement plan or an IRA. Employers can sponsor a DB plan or a DC plan. Both private-sector and government workers can participate in a retirement plan. Compensation can be deferred through either employer contributions or elective employee contributions.

Regardless of the form that qualified tax-deferred compensation takes, it provides the same benefit—workers defer tax on current compensation until they receive a distribution from the retirement plan—and, fittingly, the current income tax maintains a rough neutrality in its treatment of the many different forms of qualified tax-deferred compensation. Recent proposals to change tax deferral would end this neutrality by targeting only DC plans, with some proposals targeting only elective employee contributions to DC plans and IRAs.

These proposals would arbitrarily punish workers based on how their employer structures their compensation package. In particular, the proposals would hit workers in the private-sector (where DB plans are increasingly rare) harder than government workers (where DB plans are still the norm). Further, proposals targeted at tax-deferred employee contributions would have more of an impact on workers whose employers contribute little to their retirement plan than it would have on workers with generous employer contributions; and more impact on workers whose plans do not allow Roth contributions than on workers who have a Roth contribution option in their plan.

Economic Growth

A primary motivation for eliminating tax expenditures is the belief that an income tax with a broad base and low rates would encourage more economic growth. An income tax can reduce economic growth by distorting economic behavior. In general, tax expenditures are viewed as increasing economic distortions because they narrow the tax base and necessitate higher marginal tax rates. Higher marginal tax rates reduce economic activity by discouraging work and investment. If the revenue raised by eliminating tax expenditures were used to reduce marginal tax rates, then economic efficiency would be increased because the disincentive to work and the disincentive to save, which are inherent in any income tax, would be reduced. In addition, a narrow tax base leads to an inefficient allocation of resources by favoring certain forms of economic activity

over others. Eliminating tax expenditures would lead to a more efficient allocation of economic resources, as resources move from the formerly subsidized activity to more productive uses.

Tax deferral is different from other tax expenditures, however, in that it actually reduces the economic distortions caused by the income tax. By taxing investment returns, an income tax reduces the incentive to save (see Figure 10 and discussion on pages 22–26). Tax deferral effectively reduces the tax on investment returns and increases the incentive to save.

If tax deferral were eliminated and the additional revenue raised were used to reduce marginal tax rates, it would likely reduce economic efficiency. As already noted, eliminating tax deferral would reduce—not increase—the incentive to save.⁴⁶ Further, the reduction in marginal tax rates would not increase the incentive to work, as the impact of lower marginal tax rates would be offset by the increase in lifetime taxation caused by the elimination of tax deferral.⁴⁷ The end result would be little or no change to the returns from work when viewed from a lifetime perspective. Finally, it is unlikely that allocative efficiency would improve, as tax deferral encourages saving, but does not favor investments in any particular sector of the economy.

Simplicity

Although complex rules govern who can defer tax on compensation, it is relatively simple for the IRS to administer tax deferral. At its root, tax deferral simply involves setting aside a portion of compensation for retirement and not taxing that compensation until a worker takes a distribution. Provided plan rules are followed, the IRS does not need to track taxpayer contributions and distributions over time. The IRS need only ensure that contributions are not made in excess of annual limits on contributions, that benefits paid out are not in excess of annual limits on benefits, and that all distributions are subject to tax in the year in which they are distributed.

From a worker's point of view, it is fairly easy under current law to decide whether or not to contribute to a retirement plan. Workers not subject to an early withdrawal penalty cannot be made worse off by contributing and need only keep the contribution in the plan for one year to be better off. Although the contribution decision is slightly more complicated for those subject to an early withdrawal penalty, most would expect to benefit from deferral provided that the probability of withdrawal in the first few years was low.

A Refundable Credit or Government Matching Contributions Would Encourage Churning

Proposals to adopt a flat-rate refundable tax credit⁴⁸ or flat-rate government matching contributions⁴⁹ would require new penalties on withdrawals to discourage churning, and would likely require the IRS to track the behavior of taxpayers over time. If adopted, these proposals would encourage workers with low marginal tax rates to churn contributions to retirement plans—that is, contribute to a retirement plan and then withdraw the contribution shortly thereafter.

Tax deferral does not provide an incentive to churn contributions. Even for workers older than 59½ who are not subject to early withdrawal penalties, contributing to a retirement plan and immediately withdrawing the contribution provides no benefits. This is because the benefit of the contribution would exactly equal the tax on the distribution. Tax deferral only provides benefits for those who defer compensation for a minimum of one year, with the benefits increasing with each additional year that taxes are deferred.⁵⁰

With a flat-rate refundable credit or matching government contributions, workers with low marginal tax rates would have an incentive to churn contributions because the benefit of the contribution would exceed the tax on the distribution. These proposals greatly increase the incentive for lower-

income workers to contribute, but provide no more incentive to keep the contribution in the retirement plan than current law. Current law penalties for early withdrawal would not be sufficient to discourage churning for those younger than 59½, and would not apply at all to those aged 59½ or older.

These proposals would make the tax system more complex because a new mechanism would be needed to control churning or the proposals would be prohibitively expensive in terms of lost tax revenue. It would be difficult to design simple penalties that would discourage churning among low-income workers, but that were not considered overly punitive for other workers. Instead, complex penalties or direct restrictions on access to retirement plan assets would be required. In either case, the IRS would need to expend additional resources to track individuals' contributions and distributions over an extended period of time.

Proposals to Limit the Up-Front Benefit Would Complicate the Contribution Decision

In contrast to tax deferral, proposals to limit the up-front benefit of retirement plan contributions—by either imposing an up-front cap⁵¹ or by replacing tax deferral with a refundable credit⁵² or government matching contributions⁵³—would make the decision to contribute to a retirement plan more complicated. These proposals would reduce the up-front tax benefits of retirement plan contributions for workers with higher marginal tax rates, but would continue to tax distributions from the plans. The limit on up-front benefits acts as a contribution penalty that can only be offset by deferring further taxation of the contribution for an extended period of time. Unlike current law, workers not subject to an early withdrawal penalty could be made worse off by contributing to a retirement plan. Workers subject to an early withdrawal penalty would need even greater certainty that they would not need to access their account unexpectedly before they decided to contribute to a retirement account.

Summary

Tax expenditure estimates of the benefits of tax deferral have been widely used to motivate proposals to change the tax treatment of employer-sponsored retirement plans and IRAs.

The estimates in this study illustrate that—using the same standard used to judge the progressivity of tax deferral in isolation—the U.S. retirement system as a whole, inclusive of both tax deferral and the Social Security system, is, in fact, progressive. These estimates are intended to provide context for interpreting the previous research on the benefits of tax deferral, and to improve understanding of the way in which tax deferral and the Social Security system combine to provide retirement resources to U.S. workers.

The analysis also refutes two often repeated and widely accepted myths. First, rather than differences in marginal tax rates, the primary reason that workers with high lifetime earnings benefit more from tax deferral is that Social Security benefits replace less of their pre-retirement earnings and they rely more on employer-sponsored retirement plans and IRAs. Second, far from providing an “upside-down” incentive, tax deferral equalizes the incentive to save by eliminating the disincentive to save inherent in an income tax.

If a comprehensive reform of the income tax is undertaken, it would be important to consider the effect of the complete tax reform package on the progressivity of the overall income tax. A narrow focus on microprogressivity (that is, the progressivity of specific tax code provisions) is misplaced. Tax provisions that address legitimate policy goals can be included in a progressive income tax even if the provisions are not, by themselves, progressive.

Specific tax provisions should be judged less narrowly and assessed by their impact on fairness, economic growth, and simplicity—and on these criteria tax deferral scores well. Allowing workers to set aside a portion of their compensation until retirement reduces the impact of the life-cycle pattern of earnings, resulting in a measure of taxable annual income that is a better indicator of a worker’s lifetime circumstances and resulting in a fairer tax system. Tax deferral reduces the economic distortions by eliminating the disincentive to saving that is inherent in any income tax. Tax deferral is also simple for the IRS to administer and simple for workers to understand.

Notes

- ¹ ICI analysis of the Federal Reserve Board's Survey of Consumer Finances (SCF). See Figure 13 on page 29 of Brady, Burham, and Holden 2012.
- ² For this reason, Brady, Burham, and Holden 2012 suggests that a pyramid is a better analogy for retirement resources than is a three-legged stool.
- ³ Analysis of Health and Retirement Study (HRS) data included in Gustman, Steinmeier, and Tabatabai 2009 show that, for households aged 53 to 58 in 2006, the combination of the present value of future DB benefits and assets in DC plans and IRAs was greater in value than the present value of future Social Security benefit payments for the top 40 percent of U.S. households ranked by a comprehensive measure of wealth, and more than 60 percent of the value of future Social Security benefits for the middle 20 percent of households. See discussion on pages 34–35 of Brady, Burham, and Holden 2012.
- ⁴ Burman, Toder, and Geissler 2008; Toder, Harris, and Lim 2009; Toder and Baneman 2012; and Congressional Budget Office 2013.
- ⁵ U.S. Department of the Treasury 2012, 2013, 2014, and 2015.
- ⁶ The Tax Reform Act of 2014.
- ⁷ Net Social Security taxes are measured as the difference, in present value, between the Social Security payroll taxes paid by an individual and the Social Security benefit payments received by the individual. The term *net Social Security taxes* and the term *net Social Security benefit payments* can be used somewhat interchangeably. Net Social Security taxes are the difference, in present value, between the amount of taxes paid and the amount of benefit payments received. Net Social Security benefit payments are the difference, in present value, between the amount of benefit payments received and the amount of taxes paid. The two measures are of equal magnitude but opposite sign. That is, an individual who pays positive net Social Security taxes receives negative net Social Security benefit payments, and an individual who pays negative net Social Security taxes receives positive net Social Security benefit payments.
- ⁸ Because workers pay zero net Social Security taxes in the third simulation in which both tax deferral and the Social Security system are eliminated, the difference between net Social Security taxes paid in the third simulation and the baseline simulation is equal to the negative value of net Social Security taxes paid in the baseline simulation. Therefore, the difference between net Social Security taxes paid in the two simulations is also equal to net Social Security benefit payments received in the baseline simulation (see note 7).
- ⁹ For example, reducing the marginal tax rate on investment income for higher income taxpayers would reduce the tax expenditure associated with tax deferral, but would make the overall tax code less progressive.
- ¹⁰ Forman 1986 and Shaviro 2003.
- ¹¹ U.S. Department of the Treasury 1969.
- ¹² For the most recent estimates, see Joint Committee on Taxation 2014 and Office of Management and Budget 2015.
- ¹³ Burman, Toder, and Geissler 2008; Toder, Harris, and Lim 2009; Toder and Baneman 2012; and Congressional Budget Office 2013.
- ¹⁴ See, for example, Marr and Highsmith 2011 and Hanlon 2011.
- ¹⁵ See, for example, Van Hollen 2013 and Senate Budget Committee 2015.
- ¹⁶ See Surrey and McDaniel 1985.
- ¹⁷ One of the earliest criticisms of the tax expenditure concept was the arbitrary definition of the normal income tax structure, and it remains a primary criticism today. See, for example, Bittker 1969, Kahn and Lehman 1992, and Bartlett 2001.
- ¹⁸ In a taxable account, investment returns are taxed when received. Only the portion of withdrawals that represented unrealized gains would be taxable.
- ¹⁹ See, for example, Burman et al. 2004 and Burtless and Toder 2010.
- ²⁰ See, for example, Congressional Budget Office 1987.
- ²¹ Goodfellow and Schieber 1993, Schieber 2012, and Schieber 2014.
- ²² See, for example, Burman et al. 2004; Goodfellow and Schieber 1993; Schieber 2012; Congressional Budget Office 2013; and Schieber 2014.
- ²³ See, for example, Goodfellow and Schieber 1993; Smith, Toder, and Iams 2004; Congressional Budget Office 2006; Schieber 2012; Schieber 2014; and Smith and Toder 2014.
- ²⁴ Net Social Security benefit payments are a part of the benefit measure because they represent the difference in net Social Security taxes paid between the alternative simulation without Social Security and the baseline simulation of current policy. See note 8.

- ²⁵ Typical replacement rates measure the extent to which total (or gross) retirement income replaces total (or gross) pre-retirement income (see, for example, Aon Consulting 2008). Rather than use a target gross replacement rate, this study uses a target net replacement rate measure, which, as explained in Brady 2012a, more directly measures the ability of retirees to maintain their pre-retirement consumption expenditures.
- ²⁶ The present value of the benefits of tax deferral can be calculated using one of three equivalent measures: (a) the present value of the reduction in taxes paid by individuals; (b) the present value of the revenue cost incurred by the government; or (c) the present value of the increase in net retirement income.
- ²⁷ A more detailed discussion of the tax calculation is included in the forthcoming book. The lifetime benefits of tax deferral depend on the amount of retirement plan contributions; the timing of contributions (which affects the length of deferral); marginal tax rates at the time of contribution, during the deferral period, and at the time of distribution; and other factors, such as the effect of 401(k) plan distributions on the share of Social Security benefits included in income and subject to tax.
- ²⁸ See Figure 7 and 8 and the related text on pages 20 and 21 for an explanation of why, even when controlling for the length of deferral, the marginal benefits of tax deferral are not closely related to a worker's marginal tax rate.
- ²⁹ As discussed in note 26, the present value of the reduction in taxes paid by individuals is equal to the present value of the increase in net retirement income.
- ³⁰ See definition of net Social Security taxes in note 7.
- ³¹ See discussion in note 8.
- ³² Net benefit payments are a lower share of lifetime total compensation for the Earn234K worker because a large percentage of the worker's wage income is above the Social Security earnings cap and not subject to Social Security payroll tax.
- ³³ The benefits of the Social Security system are derived by comparing the results from the third simulation, which assumes that both tax deferral is disallowed and that Social Security is eliminated, to the second simulation, which assumes that tax deferral is disallowed but that the current Social Security system is maintained.
- ³⁴ For a more detailed analysis of the marginal benefits of tax deferral, see Brady 2012b.
- ³⁵ In fact, when marginal tax rates are sufficiently high, the marginal benefits actually begin to decline as marginal tax rates increase. See Figures 7 and 8 and the related discussion on pages 18–21 of Brady 2012b.
- ³⁶ For example, see Gale, Iwry, and Orszag 2005; Valenti and Weller 2013; and Corporation for Enterprise Development 2014.
- ³⁷ Workers whose marginal tax rates decline in retirement receive the full market rate of return plus an additional benefit from the tax rate reduction. As illustrated in the forthcoming book, even when changes in tax liability are fully accounted for in a simulation, the incentive to save for workers with lower lifetime earnings is typically as high as or higher than the incentive to save for workers with higher lifetime earnings.
- ³⁸ That is, the \$1,809 of future consumption is equal to the \$750 of forgone consumption grown at a compound rate of 4.5 percent interest for 20 years. Or, expressed mathematically, $\$1,809 = \$750 * (1.045)^{20}$.
- ³⁹ That is, for all workers, future consumption is equal to the forgone consumption grown at a compound rate of 6.0 percent interest for 20 years. Expressed mathematically, $\$3,207 = \$1,000 * (1.06)^{20}$; $\$2,726 = \$850 * (1.06)^{20}$; $\$2,405 = \$750 * (1.06)^{20}$; and $\$2,085 = \$650 * (1.06)^{20}$.
- ⁴⁰ See Shaviro 2003 for a discussion of “overreaching” by those who overstate the policy implications of tax expenditure estimates.
- ⁴¹ Revenue estimates would need to account for changes in taxpayer behavior. The confusion between tax expenditure estimates and revenue estimates is not caused by nondisclosure, as both JCT (Joint Committee on Taxation 2014, pages 16–17) and Treasury (Office of Management and Budget 2015, pages 219–220) explain the differences between the two types of estimates.
- ⁴² Predicting the impact of a comprehensive reform of the income tax would require accounting for both taxpayer behavior and other, possibly offsetting, changes made to the tax code.
- ⁴³ *Progressivity* is a concept that summarizes how taxes paid vary with taxpayers' incomes. Taxes are progressive if the ratio of total taxes paid to income increases as income increases. Taxes are neutral if the ratio of taxes to income remains flat as income increases. Taxes are regressive if the ratio of taxes to income declines as income increases.
- ⁴⁴ In tax policy discussions, the term *fairness* encompasses both the concept of horizontal equity and the concept of vertical equity.

- ⁴⁵ Income averaging was repealed by the Tax Reform Act of 1986 because it was thought that the provision was no longer needed given that there were only two statutory tax rates and the top statutory tax rate was reduced to 28 percent (see Conrad 1998). Income averaging was reinstated for farmers in 1997 and for fishermen in 2004.
- ⁴⁶ Eliminating tax deferral would sharply increase the effective tax rate on investment returns for savings that, under current law, would be done through employer-sponsored retirement plans and IRAs. Offsetting this effect, however, marginal tax rates on taxable investment income would be reduced by a small percentage. The overall impact on the incentive to save would depend on the relative importance of these two effects. For most workers, the impact of eliminating tax deferral would dominate, and their overall incentive to save (accounting for both the substantially lower incentive to save in tax-deferred retirement plans and the slightly higher incentive to save in taxable accounts) would be reduced.
- ⁴⁷ For most taxpayers, eliminating tax deferral and reducing marginal tax rates either would have no impact or would reduce the incentive to work. Viewed from a lifetime perspective, workers who defer taxes on a portion of their compensation reduce their lifetime tax burden. At best, the effects of eliminating tax deferral and reducing marginal tax rates would offset each other, resulting in little or no change to the returns from work, viewed from a lifetime perspective.

⁴⁸ See, for example, Batchelder, Goldberg, and Orszag 2006.

⁴⁹ See, for example, Gale, Gruber, and Orszag 2006; Gale 2011; and Gale, John, and Smith 2012.

⁵⁰ Early withdrawal penalties on distributions are not needed to prevent churning under current law. The early withdrawal penalty is only needed to prevent workers from using retirement plans to save for reasons other than retirement that involve a shorter time horizon.

⁵¹ See, for example, the president's budget proposals beginning in fiscal year 2013 (U.S. Department of the Treasury 2012, 2013, 2014, and 2015) and House Ways and Means Chairman Camp's 2014 tax reform proposal (Tax Reform Act of 2014).

⁵² See note 48.

⁵³ See note 49.

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