# Tax-Favored Savings Accounts: Who Gains? Who Loses?

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# Executive Summary

Recent legislation greatly expands the limits on tax-deferred savings accounts, including 401(k) plans and IRAs. This legislation is the latest in a quarter century effort by the federal government to convince Americans that saving through tax-deferred retirement accounts results in lower lifetime taxes.

The premises behind tax deferral are the beliefs that people (a) will be in a lower tax bracket during their retirement years than during their working years and (b) will in effect have an interest-free loan on tax payments. Therefore, tax deferral represents an opportunity to avoid taxes when the rate of taxation is high and pay them when the rate is low. Twenty-five years ago this assumption was probably valid. But for millions of low- and moderate-income families today, the assumption is no longer true. Instead:

- The federal income tax levied on Social Security benefits will cause many low- and moderate-income families to face higher tax rates after they retire.
- Large accumulations in tax-free savings accounts, which will be withdrawn and taxed during retirement, will push taxpayers into even higher tax brackets.
- As a result, millions of American families will actually increase their lifetime tax burden if they take full advantage of tax-deferred savings opportunities.

Consider a 25-year old, two-earner couple with an annual income of $50,000:

- If the couple makes the maximum contribution to a 401(k) account permitted by the typical plan every year and earns a 6 percent real rate of return on its investments, its lifetime taxes will actually increase by $1,077 (measured in year 2000 dollars).
- If the couple earns an 8 percent return, its lifetime taxes will rise by $7,112.
- If taxes during the couple's retirement years are increased by 20 percent — a realistic possibility given the large unfunded liabilities in Social Security and Medicare — the lifetime tax hike climbs to $8,680 assuming a 6 percent return or $13,574 assuming an 8 percent return.
- In all cases, the couple would be better off not participating in the 401(k), paying taxes on the income as it is earned, and investing the funds directly!

Ironically, the only way the couple can gain through 401(k) participation, if it earns moderate to high rates of return on its savings, is if it contributes less than what the typical plan allows. A similar principle applies to individual retirement accounts. For example:

- If each spouse deposits $2,000 per year into an IRA, the couple's lifetime taxes will be reduced by more than $6,000 (6 percent return).
- But if the couple takes advantage of the new law and deposits $5,000 per year in its IRAs, it will be worse off — paying more than $5,000 in additional taxes as a result of the effort.

Low-income families get a slightly better deal because of another provision in the new tax law: the federal government partially matches contributions these families make to retirement accounts. However, in the case of contributions to 401(k) and other tax-deferred retirement accounts, the benefits of this gift are not enough to offset the negative effect of higher post-retirement tax rates, at least as the law is now written. Even if low-income families take full advantage of the new 401(k) opportunities, they gain only if: (1) the matching program is extended beyond its current expiration date, (2) the qualifying income limits are indexed for inflation and (3) taxes are not substantially increased after they retire.

The prospects are even worse for low-income families who take advantage of the higher limits on IRA deposits, even if the government's matching program continues throughout their working years. For example,

- Consider a couple earning $35,000 per year; if each spouse were to contribute $5,000 per working year, which is the maximum IRA contribution that will be permitted as of 2008, the couple's lifetime taxes would rise by more than $10,000.
- A couple earning $25,000 per year is entitled to receive a larger matching contribution. But despite this bonus, if the couple takes full advantage of the new IRA opportunities it will pay more than $23,000 in additional lifetime taxes!

In general, high-income families unambiguously gain from the opportunity created by the new tax law. For example:

- A couple earning $300,000 a year receives a lifetime benefit of more than $125,000 from making the maximum yearly contributions to 401(k) accounts (6 percent return).
- The couple still realizes a very hefty gain (more than $100,000) even if taxes during its retirement years are 20 percent higher.

But the same may not be true of the moderately well off. For example,

- A couple earning $100,000 a year can expect a slight increase in lifetime taxes if it earns an 8 percent real return on its 401(k) investments.
- And if taxes are hiked by 20 percent during its retirement years, the couple's loss climbs to more than $14,000.

Fortunately there is a fairly simple solution — one that would encourage saving without unfortunate tax surprises during the retirement years. The solution is to promote the use of Roth IRAs by low- and middle-income households. Deposits to Roth IRAs are made with after-tax dollars. But during retirement, withdrawals are tax-free. Every income group would benefit from taking advantage of this form of taxation. But it is especially beneficial to low- and moderate-income families who, if they save on a tax-deferred basis, can expect to face higher tax rates after they retire.

# Introduction

With the Social Security system under financial pressure from the impending retirement of the baby boom generation, the government is trying to encourage additional saving through retirement accounts. The Economic Growth and Tax Relief Reconciliation Act of 2001 (EGTRRA) greatly expands the limits on contributions to tax-deductible accounts, including 401(k), 403(b), Keogh and traditional individual retirement account (IRA) plans. It also raises contribution limits of non-tax-deductible Roth IRAs. These new provisions include:

- Raising from $30,000 to $40,000 the employer plus employee 401(k) and 403(b) contribution limit, or 25 percent of the employee's total compensation, whichever is less.
- Raising from $10,000 to $15,000 by 2007 the 401(k) and 403(b) individual contribution limits.
- The indexation after 2007 of 401(k) and 403(b) individual contribution limits.
- Raising from $2,000 to $5,000 by 2008 the traditional IRA and Roth IRA contribution limits.
- The indexation after 2008 of the $5,000 traditional IRA and Roth IRA contribution limits.

In a less well-known provision, the law provides a significant non-refundable tax credit to low-income families for qualified contributions by workers (but not employers). Couples filing a joint return with an adjusted gross income under $30,000 get a 50-cent tax credit for each dollar contributed up to $2,000. For gross income between $30,000 and $32,000, the credit is provided at a rate of 20 cents per dollar contributed. And for gross income between $32,000 and $50,000, the credit is provided at a 10 cents per dollar rate. There is no credit if gross income exceeds $50,000.

*"People can end up with higher lifetime taxes by saving in a tax-deferred plan."*

The congressional debate on these provisions proceeded with little discussion of the gains to potential winners. And they certainly included no discussion of the losses to potential losers, since the general presumption is that participating in tax-favored saving vehicles can only benefit workers by reducing their lifetime taxes. As the authors of this paper demonstrated in a recent study, this presumption is correct for high-income families, but not for low- and moderate-income families who participate fully in 401(k) and similar tax-deferred saving plans.[1]

How can people end up with higher lifetime taxes by saving in a tax-deferred plan? The answer is: Their taxes are raised in old age by more than their taxes are lowered when they are young.

A 401(k) or similar tax-deferred savings account allows workers to delay paying taxes on their current earnings until they reach retirement. Hence, these accounts give workers an interest-free loan on the taxes they would

otherwise be currently paying. In addition to this unambiguous tax advantage, most people assume that they will be in a lower tax bracket after retirement. But withdrawals from a 401(k) account, coupled with other retirement income such as Social Security, can push retirees into higher brackets. The result is that increased taxes in retirement can more than eclipse the tax savings from earlier years. This perverse outcome occurs for four reasons:

- First, relatively large withdrawals from 401(k) and other tax-deferred accounts mean that taxable income is much higher in the year they occur. This spurt in income can push the taxpayer into a higher — indeed much higher — tax bracket during retirement than during the working years.
- Second, significant contributions to tax-deferred retirement accounts can mean that taxable income is lower in the year the deposits are made. Since the reduction in income can place the taxpayer in a lower tax bracket, this reduces the value of mortgage interest and other deductions.
- Third, shifting taxable income from youth to old age can substantially increase the share of Social Security benefits that becomes subject to federal income taxation.
- Finally, the government can raise taxes when one retires, and this is highly likely given the large unfunded liabilities in federal entitlement programs.

## 401(k) Participation and the New Tax Law

*"Because of the Social Security benefits tax, many families will be in a higher tax bracket after they retire."*

This study uses *ESPlanner*™ (Economic Security Planner), developed by Economic Security Planning, Inc., to calculate the gains or losses from contributing to tax-deferred and non-tax-deferred retirement accounts. ESPlanner is a proprietary life-cycle financial planning model with highly detailed tax and Social Security benefit calculators. [See the appendix for more details.] Applying ESPlanner to representative households generates some surprising conclusions.

The following tables assume married couples make the maximum contribution to 401(k) accounts and earn the same real rate of return on investments inside and outside the accounts. (Additional assumptions about the couples' spending and saving decisions are discussed in the appendix.) The tables show the tax consequences of depositing pretax income in 401(k) accounts over a worklife and paying taxes on withdrawals during the retirement years versus realizing an equivalent sum as income, paying taxes as the income is earned and investing the remainder in a non-tax-sheltered account. Investment income from the non-tax-sheltered account is assumed to be taxed at ordinary income tax rates, rather than at capital gains tax rates. For this reason, the comparison is very conservative — one that favors the 401(k) account option.

**TABLE I**

## Change in Present Value of Lifetime Taxes from 401(k) Participation

**(Constant 2000 Dollars)**

| Age-25 Earnings | 4 Percent Real Rate of Return | 6 Percent Real Rate of Return | 8 Percent Real Rate of Return |
|---|---|---|---|
| $25,000 | -$4,435 | -$420 | $2,862 |
| $35,000 | -$9,342 | -$2,304 | $2,423 |
| $50,000 | -$11,329 | $1,077 | $7,112 |
| $100,000 | -$36,883 | -$13,847 | $148 |
| $150,000 | -$74,004 | -$29,371 | -$11,465 |
| $200,000 | -$127,554 | -$58,537 | -$26,668 |
| $250,000 | -$195,035 | -$95,837 | -$51,066 |
| $300,000 | -$231,664 | -$125,620 | -$65,618 |
| $1,000,000 | -$428,674 | -$311,648 | -$236,065 |

Note: Assumes contribution tax credit is extended and indexed. Lifetime taxes refer to the present values of the couple's annual taxes. Household elective contributions set at 13.5 percent of earnings and matched at 3 percent earnings by the employer.

The tables show the present value of the change in total lifetime federal income and payroll taxes and state income taxes as a result of choosing the 401(k) investment option. Present values are expressed in year 2000 dollars and are calculated using the same rate of return assumed to be earned in the 401(k) account.

*"A couple earning $50,000 annually pays higher lifetime taxes with a 401(k) plan."*

**Effects on Average-Income Families.** Consider a typical 25-year-old couple that initially earns $50,000 (each spouse earns $25,000) and makes the maximum contribution to its 401(k) plans. The table shows the impact on the couple's lifetime taxes assuming it earns real rates of return of 4 percent, 6 percent or 8 percent on investments inside and outside the 401(k) accounts. As the table shows:

- Rather than lowering their lifetime taxes, 401(k) participation raises the couple's lifetime tax payments by $1,077 if the couple earns a 6 percent real rate of return.
- The lifetime tax hike is $7,112 if the couple earns an 8 percent real rate of return.

- In fact, the couple only gains from 401(k) participation if its return is relatively low; for example, at a 4 percent real rate of return, choosing the 401(k) option lowers lifetime taxes by more than $11,000.

These results do not mean that low rates of return are better than high ones. To the contrary, other things being equal, a high rate of return is always better. Instead, the results show that if the couple invests in a largely stock portfolio, both within and outside of its 401(k), with the purpose of earning the long-run return paid by the capital market as a whole, it does better paying taxes on income as it is earned and avoiding the 401(k) option. The reason: a high rate of return means more accumulation and, therefore, larger withdrawals and higher tax brackets during the retirement years. Only if this couple plans to make very conservative investments (say in government bonds) does saving significant sums in a 401(k) plan make sense.

*"Unfunded federal liabilities mean future taxes will likely be higher."*

**Effects of a Post-Retirement Tax Hike on Average-Income Families.** The picture becomes even bleaker if taxes are increased by 20 percent when the couple retires — a very realistic possibility given the federal government's enormous unfunded liabilities in Social Security and Medicare. As Table II shows:

**TABLE II**

## Change in Present Value of Lifetime Taxes from 401(k) Participation Assuming 20 Percent Higher Tax Liability After Retirement

**(Constant 2000 Dollars)**

| Age-25 Earnings | 4 Percent Real Rate of Return | 6 Percent Real Rate of Return | 8 Percent Real Rate of Return |
|---|---|---|---|
| $25,000 | -$1,238 | $2,429 | $5,666 |
| $35,000 | -$4,334 | $2,332 | $6,861 |
| $50,000 | -$3,196 | $8,680 | $13,574 |
| $100,000 | -$16,616 | $2,033 | $14,299 |
| $150,000 | -$46,005 | -$4,851 | $9,744 |
| $200,000 | -$99,103 | -$30,924 | -$2,904 |
| $250,000 | -$162,769 | -$71,491 | -$27,410 |
| $300,000 | -$200,968 | -$105,683 | -$42,426 |
| $1,000,000 | -$402,312 | -$303,553 | -$226,435 |

Note: Assumes contribution tax credit is extended and indexed. Lifetime taxes refer to the present values of the couple's annual taxes. Household elective contributions set at 13.5 percent of earnings and matched at 3 percent earnings by the employer.

*"A couple earning $300,000 per year can save $125,000 in taxes from 401(k) participation."*

**TABLE III**

## Percentage Change in Lifetime Taxes from 401(k) Participation: Alternative Assumptions about the Contribution Tax Credit

**(6 Percent Real Rate of Return)**

| Age-25 Earnings | Credit Not Extended and Not Indexed | Credit Extended but Not Indexed | Credit Extended and Indexed |
|---|---|---|---|
| $25,000 | 1.35% | 1.23% | -0.68% |
| $35,000 | -0.68% | -0.95% | -2.08% |
| $50,000 | 1.07% | 1.07% | 0.58% |
| $100,000 | -2.79% | -2.79% | -2.79% |
| $150,000 | -3.43% | -3.43% | -3.43% |
| $200,000 | -4.97% | -4.97% | -4.97% |
| $250,000 | -6.26% | -6.26% | -6.26% |
| $300,000 | -6.69% | -6.69% | -6.69% |
| $1,000,000 | -4.64% | -4.64% | -4.64% |

Note: Lifetime taxes refer to the present values of the couple's annual taxes. Household elective contributions set at 13.5 percent of earnings and matched at 3 percent earnings by the employer.

- With a 20 percent higher tax liability during their retirement years, the couple's loss from 401(k) participation rises to $8,680 if their contributions earn a 6 percent rate of return.
- At an 8 percent rate of return, the couple can expect to pay $13,574 more in taxes because of 401(k) participation.

**Effects on High-Income Families.** In general, high-income families unambiguously gain from the opportunity created by the new tax law. For example:

- A couple earning $300,000 a year receives a lifetime benefit of more than $125,000 from making the maximum yearly contributions to 401(k) accounts assuming a 6 percent return.
- The couple also realizes a hefty gain (more than $100,000) even if taxes during its retirement years are 20 percent higher.

But the same may not be true of the moderately well off. For example,

- A couple earning $100,000 a year can expect a slight increase in lifetime taxes if it earns an 8 percent real return on their 401(k) investments.
- And if taxes are hiked by 20 percent during their retirement years, the couple's loss climbs to more than $14,000.

**Effects on Low-Income Families.** As noted above, the new tax law provides low-income families with significant non-refundable tax credits. But the effect of the tax credits is difficult to calculate because it depends on how long the credit lasts and how much inflation erodes its provisions. The law states the credit will end in 2007, with no (inflation) adjustment to the nominal income levels at which it is phased out. If these provisions are retained, the tax credit will do little to nullify the lifetime tax hike low-income households potentially face from participating in tax-deferred retirement plans.

*"Low-income families increase their tax burden if they save too much through IRAs."*

Table III illustrates three different assumptions about the evolution of the new contribution tax credit, assuming a 6 percent rate of return. The first is that the law is not changed, so that the credit is terminated after 2007. The second is that the credit is extended, but the thresholds for the credit are not indexed for inflation. And the third is that the credit is extended indefinitely and the thresholds are indexed for inflation.

For the couple earning $25,000, the credit does not help enough to make 401(k) participation attractive. If the credit is made permanent and indexed for inflation, 401(k) participation becomes largely a break-even proposition, netting them a meager $420 gain. The magnitude of this gain is unlikely to compensate for a 40-year loss of liquidity, however. (Any withdrawals prior to age 59 ½ are subject to normal income taxes plus a 15 percent penalty.) The reason the credit does

**TABLE IV**

## Change in Lifetime Taxes from Participating in Regular and Roth IRA Plans with Constant Annual Contributions

| Age-25 Earnings | Regular IRA: $2,000 per Spouse per Year | Regular IRA: $5,000 per Spouse per Year | Roth IRA: $2,000 per Spouse per Year | Roth IRA: $5,000 per Spouse per Year |
|---|---|---|---|---|
| $25,000 | -$754 | $23,409 | -$5,855 | -$5,534 |
| $35,000 | -$5,084 | $10,091 | -$4,409 | -$4,265 |
| $50,000 | -$6,183 | $5,329 | -$6,109 | -$6,035 |
| $100,000 | -$14,542 | -$17,222 | -$17,817 | -$18,066 |
| $150,000 | -$19,438 | -$38,105 | -$22,521 | -$33,824 |
| $200,000 | -$24,027 | -$48,408 | -$27,443 | -$58,537 |
| $250,000 | -$26,485 | -$56,492 | -$34,140 | -$67,515 |
| $300,000 | -$28,166 | -$63,467 | -$36,991 | -$75,109 |
| $1,000,000 | -$45,673 | -$104,107 | -$69,180 | -$151,122 |

Note: Lifetime taxes refer to the present values of the couple's annual taxes. The table assumes, incorrectly, that upper-income couples are eligible to contribute to IRAs. Additional assumptions: The couple makes annual contributions in constant 2001 dollars; the credit is permanent and indexed; and the real rate of return is 6 percent.

relatively little for this couple, even if extended and indexed, is that the credit is available only to the extent that taxes are actually paid. Since each year's available credit exceeds the couple's tax liability for that year, the couple never enjoys the full advantage of the credit.

If the couple starts out earning $35,000, the credit is more effective because the couple has more taxes against which the credit may be offset. Indeed, even if the credit is only temporary, the $35,000 couple will still break even from 401(k) participation. If the credit is made permanent and indexed, the couple will enjoy a 2 percent decrease in lifetime taxes as a result of 401(k) participation.

## Contributing to Regular IRAs and Roth IRAs

Not all companies offer tax-deferred saving plans. For workers in such firms, access to tax-sheltered saving plans is limited to regular IRAs or Roth IRAs. Table IV compares the lifetime tax and spending effects under the new law of investing either $2,000 or $5,000 annually in real 2001 dollars in either a regular or Roth IRA. The table assumes a 6 percent real return. It also assumes, for the purpose of comparison, that high-income workers are also able to contribute these same amounts. Finally, it assumes that the contribution credit is permanent and indexed for inflation.

The first two columns of the table deal with contributions to regular IRAs and reinforce the lesson learned above: Too much tax-deferred saving should be avoided by low-income households. For example:

- If a couple earning $25,000 makes an inflation-adjusted $2,000 annual contribution each to a regular IRA, it will lower its lifetime taxes by $754.
- But if the contribution is $5,000, rather than $2,000, lifetime taxes will rise by 38 percent, increasing the couple's lifetime tax bill by more than $23,000!

*"Roth IRA participation generates tax savings for all income groups."*

In contrast, contributing the same amounts to a Roth IRA generates lifetime tax savings in both cases. Under this option, deposits to the account are made with after-tax dollars and withdrawals during the retirement years are tax-free. The pattern here is repeated for all income groups earning $50,000 or less. [See Figure I.] For example:

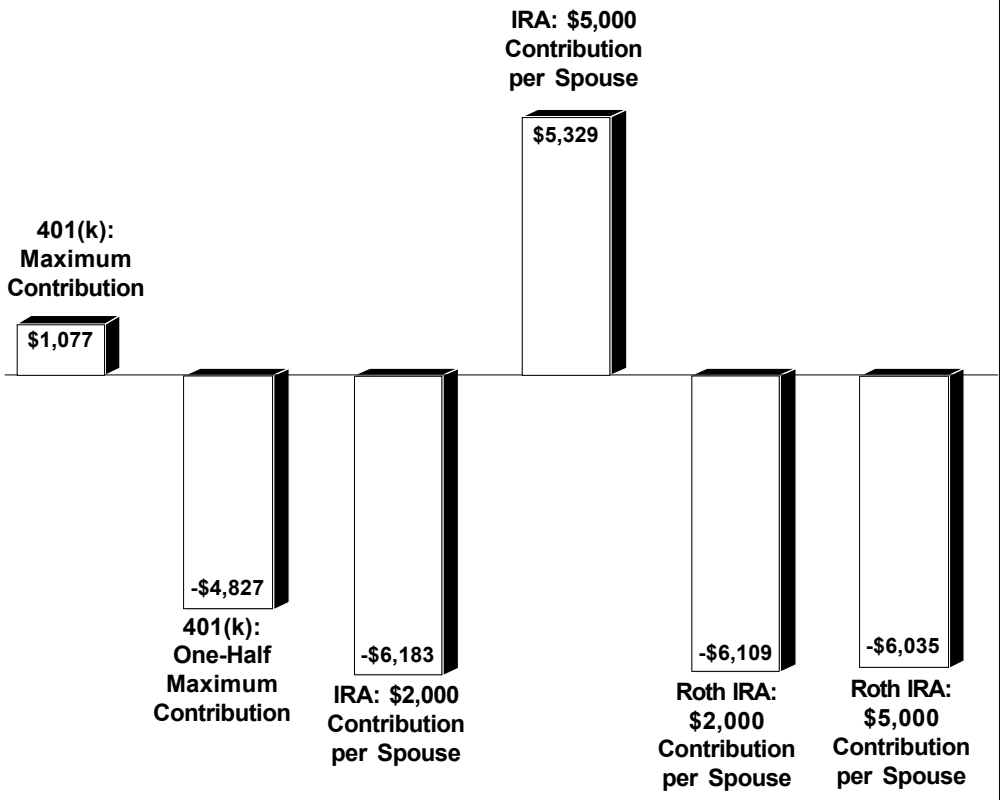
- The $50,000 a year couple lowers its lifetime taxes by more than $6,000 when its IRA contributions are $2,000 each per year.
- But this gain is converted into a loss in excess of $5,000 when the IRA contributions climb to $5,000 a year.
- By contrast, the couple will enjoy a $6,000 lifetime tax reduction if the contributions are made to a Roth IRA.

*"With smaller contributions, tax deferral can be profitable."*

**FIGURE I**

## Change in the Present Value of Lifetime Taxes with Annual Contributions

**Annual Income = $50,000**




Note: Lifetime taxes refer to the present values of the couple's annual taxes; the real rate of return is 6 percent.

In general, the tax saving from Roth IRA participation is higher, the higher one's income. This is because higher-income taxpayers are escaping higher progressive tax rates. However, in percentage terms the tax reductions enjoyed by low-income households are larger than those enjoyed by higher-income households if they, too, contributed similarly to a Roth IRA, but did not contribute to any other retirement account. This reflects the fact that a fixed annual Roth contribution represents a smaller share of earnings as the household's income level rises.

For households with initial earnings of less than $50,000 per year, tax savings are smaller when Roth IRA contributions are $5,000 per year than when they are at $2,000 per year. As Table V shows, a similar result is obtained for the same households if Roth contributions grow annually 1 percent faster than inflation rather than remaining fixed in real terms. The explanation for this surprising result is that the couple accumulates very little in the way of regular assets prior to retirement when it makes the $2,000 Roth contribution.[2] Its regular asset accumulation is

roughly the same when it makes the $5,000 contribution. That means that the $2,000 contribution pretty much eliminates taxable capital income and pretty much exhausts the ability of this household to save on capital income taxes.

## Taking a Closer Look at the Components of Tax Deferral

*"The Social Security benefit tax is actually a tax on other income."*

Table VI considers a couple that has $50,000 in total initial annual income and earns a 6 percent real pretax rate of return on its investments both inside and outside the 401(k) accounts. The table is based on the tax law prior to the 2001 legislation and shows the percentage change in lifetime total tax payments as a result of making maximum contributions to 401(k) accounts. The first row assumes the couple is not covered by Social Security, has no home, no children and pays no college tuition or life insurance premiums.[3] The remaining rows add in each of these elements.

**Factors Affecting Lifetime Taxes for an Average-Income Family.** If the couple has only labor earnings, 401(k) participation is a terrific deal, delivering a 26.2 percent reduction in lifetime tax payments. However, once Social Security is included in the scenario, these gains decline dramatically. The reason is the federal income taxation of Social Security benefits.

**TABLE V**

### Change in Lifetime Taxes from Participating in Regular and Roth IRA Plans with Growing Annual Contributions

| Age-25 Earnings | Regular IRA: $2,000 per Spouse per Year | Regular IRA: $5,000 per Spouse per Year | Roth IRA: $2,000 per Spouse per Year | Roth IRA: $5,000 per Spouse per Year |
|---|---|---|---|---|
| $25,000 | $636 | $28,239 | -$5,750 | -$4,632 |
| $35,000 | -$4,132 | $13,979 | -$4,342 | -$3,744 |
| $50,000 | -$5,682 | $8,003 | -$6,035 | -$5,478 |
| $100,000 | -$16,180 | -$16,726 | -$17,917 | -$17,569 |
| $150,000 | -$21,579 | -$39,647 | -$25,432 | -$33,652 |
| $200,000 | -$26,265 | -$53,355 | -$30,976 | -$59,361 |
| $250,000 | -$30,466 | -$62,003 | -$38,427 | -$74,098 |
| $300,000 | -$32,860 | -$70,790 | -$41,873 | -$83,183 |
| $1,000,000 | -$51,046 | -$116,868 | -$77,912 | -$169,257 |

Note: Lifetime taxes refer to the present values of the couple's annual taxes. The table assumes, incorrectly, that upper-income couples are eligible to contribute to IRAs. Additional assumptions: The couple makes annual contributions in constant 2001 dollars; the credit is permanent and indexed; and the real rate of return is 6 percent.

*"A number of tax law provisions affect the attractiveness of tax-deferred savings."*

**TABLE VI**

## Percentage Change in Lifetime Taxes from 401(k) Participation under the Old Tax Law

**Assumptions: Couple with $50,000 Initial Annual Income; 6 Percent Real Rate of Return**

| Included Factors | Change in Taxes |
|---|---|
| Earnings | -26.19% |
| Earnings and Social Security | -4.71% |
| Earnings, Social Security, and Housing | -0.56% |
| Earnings, Social Security, Housing and Children | 0.37% |
| Earnings, Social Security, Housing, Children, and College Tuition, Life Insurance Premiums | 1.10% |
| Earnings, Social Security, Housing, Children, College Tuition, but No Income Taxation of Social Security Benefits | -2.26% |

The tax on Social Security benefits actually is a tax on other income. The tax is determined by a complicated formula that taxes no benefits if a special measure of income is below a base threshold, taxes up to half of benefits for income falling between this base threshold and a higher threshold, and taxes up to 85 percent of benefits for income falling above the higher threshold.[4] For single filers these limits are $25,000 and $34,000 respectively. For joint filers they are $32,000 and $44,000 respectively. Congress has intentionally chosen not to index these thresholds. Hence, over time, an ever-larger portion of the elderly will find they are paying federal income taxes on 85 percent of their Social Security benefits.

The further addition of home ownership to the case transforms 401(k) participation into a roughly break-even proposition. The reason is that 401(k) participation lowers tax brackets when young — because taxes on 401(k) contributions are deferred — and consequently reduces the tax savings from deducting mortgage interest payments. If children are also added to the equation, 401(k) participation turns, on balance, into a bad deal because the value of the tax exemptions for children is reduced when the couple's tax brackets are lowered in their child-raising years.

Finally, if the couple also opts to pay its children's college tuition, 401(k) participation really begins to hurt; specifically, it raises the couple's lifetime taxes by 1.1 percent. How does paying college tuition interact with 401(k) participation? Because it pays college tuition, the couple saves less and brings less regular wealth into retirement. As a result, 401(k) withdrawals during retirement generate a bigger increase in tax brackets than occurs when there is more other taxable income, including taxable capital income.

To further clarify the importance of Social Security benefit taxation, the last row of Table VI considers how the household with Social Security benefits and payroll taxes, children, housing, college tuition payments and life insurance premiums would fare from 401(k) participation were there no federal income taxation of Social Security benefits. In this case, participation lowers lifetime taxes by 2.3 percent. The awful conclusion is that federal income taxation of Social Security benefits is sufficient to change 401(k) participation from a good deal to a bad one for moderate-income households.

**The Impact of Changing Social Security Benefit Taxation.** How would the gains from 401(k) participation change if Congress were to index for inflation the threshold limits that determine taxable Social Security benefits? For the $50,000 household, inflation indexing raises the nominal values of the thresholds and eliminates Social Security benefit taxation in the no-participation case. But with participation, indexing the limit makes no difference to Social Security benefit taxation.

*"Eliminating Social Security benefit taxation is a better option for 401(k) savers."*

The reason is that the 401(k) withdrawals are so large that non-Social Security taxable income exceeds the top limit even if that limit is inflation-indexed. Indeed, despite the indexation of the thresholds, the full 85 percent of Social Security benefits remains taxable. Since indexing lowers the Social Security benefit taxes paid by the non-401(k) participating household and leaves unchanged the taxes paid by the 401(k) participating household, indexation makes participating in a 401(k) an even worse choice. A better option (for 401(k) holders) is to eliminate Social Security benefit taxation altogether.

**Tax Bracket Indexing.** Indexing federal income tax brackets to nominal wages rather than the price level is another policy we considered. This assumption precludes real bracket creep and means that our households will be in lower tax brackets in retirement. Nonetheless, this assumption makes little difference to calculated gains and losses from 401(k) participation.

**Reducing Contributions.** If fully participating in 401(k) plans is a bad deal for low-income families, how would they fare if they reduced their contributions by 50 percent? The answer is much better. Another way to limit contributions is to stop contributing after a certain number of years, or to delay the onset of contributions. Either practice can transform 401(k) participation into a much better deal for those with lower incomes.

The fact that low- and moderate-income families are likely to do better contributing less than the maximum allowable amounts (together with the severe borrowing constraints they are likely to face in making maximum contributions) helps explain the findings that 401(k) participants typically contribute only about 9 percent of their earnings to their plans, although the firms offering 401(k) plans typically permit participants to contribute up to 13 percent of their earnings.[5]

# Conclusion

For the vast majority of low- and moderate-income households, saving significant sums in tax-deferred retirement accounts is a bad idea. Only those at the top end of the income spectrum realize lifetime tax reductions. For such households, these tax savings are remarkably large. Low- and moderate-earning families who participate fully in these types of retirement accounts end up with less money to spend now, and higher taxes to pay later. The just-enacted credit for retirement account contributions limits the damage that low-income earners experience, but does little to change the overall highly regressive nature of tax-deferred saving incentives.

*"Conclusion: Make Roth IRA taxation available to 401(k) plan savers."*

The good news for low- and moderate-income households is that contributing to Roth IRAs is guaranteed to save taxes over their lifetime. Thanks to the new credit, these savings can be substantial for the lowest-income households. However, despite the credit, the tax gains remain meager for most low- and moderate-income households compared to those available to the rich from tax-deferred saving in general.

At a minimum, we should give all taxpayers the option of prepaying taxes on tax-sheltered accounts so that the Roth IRA method of taxation is also available to those who save through 401(k) plans and other tax-favored accounts.

Under current law, employers will be able to offer employees Roth-type 401(k) accounts beginning in 2006. In principle, the tax credit would apply to deposits to these accounts except that the credits are scheduled to expire at the end of 2005. And, of course the entire act expires at the end of 2010.

Clearly, additional reform is needed.

## Appendix

## *ESPlanner*

ESPlanner smooths a household's living standard over its life cycle to the extent possible without having the household go into debt. The program has highly detailed federal income tax, state income tax, Social Security payroll tax and Social Security benefit calculators. The federal and state income-tax calculators determine whether the household should itemize its deductions, compute deductions and exemptions, deduct from taxable income contributions to tax-deferred retirement accounts, include in taxable income withdrawals from such accounts as well as the taxable component of Social Security benefits, and calculate total tax liabilities after all applicable refundable and non-refundable tax credits. These calculations are made separately for each year that the couple is alive as well as for each year a survivor may be alive.

The program also takes into account the non-fungible nature of housing, bequest plans, economies of shared living, the presence of children under age 19 and the desire of households to make "off-the-top" expenditures on college tuition, weddings and other special expenses. Finally, ESPlanner simultaneously calculates the amounts of life insurance needed by each spouse to guarantee that potential survivors suffer no decline in their living standards compared with what would otherwise be the case.

ESPlanner calculates time-paths of consumption expenditure, taxable saving and term life insurance holdings in constant (2001) dollars. Consumption in this context is everything the household gets to spend after paying for its "off-the-top" expenditures — its housing expenses, special expenditures, life insurance premiums, special bequests, taxes and net contributions to tax-favored accounts. Given the household's demographic information, preferences and borrowing constraints, ESPlanner calculates the highest sustainable and smoothest possible living standard over time, leaving the household with zero terminal assets apart from the equity in homes that the user has chosen not to sell.

In our use of ESPlanner for this study, we consider how contributing to retirement accounts affects the present values of a household's total tax payments and spending, which is defined as the sum of consumption expenditures, special expenditures, housing expenditures and life insurance premiums.

# Assumptions Behind the Calculations

Our analysis considers a number of couples with common attributes and differing annual incomes, ranging from $25,000 to $1 million. Each couple consists of a husband and wife, both of whom are age 25 and live at most to age 95. Each spouse works to age 65 and earns half of the household's total earnings. Real earnings grow annually by 1 percent. Each couple lives in Massachusetts and has no initial assets apart from a home. Each couple has two children. The first is born when the couple is age 25 and the second when the couple is age 30. The market value of each couple's house is set at three times household labor earnings as of age 25.

The couples purchase their homes at age 25 by paying 20 percent down and borrowing the remainder at 8 percent for 30 years. Annual homeowner's insurance, property taxes and maintenance are set at 0.17 percent, 1 percent and 1 percent of house value, respectively. Each child attends college for four

years. Couples earning $25,000 per year spend, by assumption, $7,500 per child for each year of college. This college expense is set at $15,000 for couples earning $50,000 and $30,000 for couples earning $100,000 or $150,000. For couples earning $200,000 or more per year, annual college expenses are capped at $35,000. There are no bequests apart from the value of home equity, which the couple chooses not to sell.

Our calculations assume elective employee contributions and employer matching contributions equal to the average of maximum contributions permitted by employer-provided defined contribution plans. Each household's elective contribution is set at 13.5 percent of earnings. The employer-matching contribution is set at 3 percent of earnings. Hence, 401(k) contributions total 16.5 percent of earnings. At this contribution rate, the contribution ceiling limits the household's combined elective and employer contribution to $60,000 at earnings exceeding $363,636.36.[6] In modeling the old tax law, we also apply the current $10,500 limit on elective individual contributions and assume that limit also grows with real wages. In modeling the new tax law, we adhere to the increase in nominal contribution limits specified through 2007, but then allow those limits to grow with real wages.[7]

Our method of determining the lifetime net tax benefit of 401(k) participation is to compare lifetime taxes and spending with and without such participation. But to make the comparison meaningful, we need to ensure that the couple's gross income is the same in both cases. To do so, we increase each spouse's earnings where they don't contribute to a 401(k) plan by the amount the employer contributes to their plan where they do contribute. Hence, in the no-401(k) participation case, this additional income is subject to immediate federal and state income taxation as well as to payroll taxation.

# Notes

[1] Jagadeesh Gokhale and Laurence J. Kotlikoff, "Does Participating in a 401(k) Raise Your Lifetime Taxes," National Bureau of Economic Research, NBER working paper No. 8341, June 2001.

[2] Larger Roth contributions leave the couple more liquidity-constrained. This means that the couple consumes less when young, and requires less life insurance for survivors to sustain that lower level of consumption. Consequently, when the young couple makes Roth contributions of $5,000, it spends less on insurance premiums and ends up saving somewhat more in non-tax-sheltered assets than would be the case had it contributed $2,000 each annually to a Roth. (See the Appendix for a fuller discussion of assumptions about taxing and saving hehavior.) This, in turn, means that the couple has more regular assets and has more regular asset income on which it must pay taxes. Hence, tax payments can be, and in this case are, higher with larger Roth contributions.

[3] The couple does pay the Medicare payroll tax but not the Social Security payroll tax.

[4] To be precise, to determine the amount of Social Security benefits that must be included in federal AGI, we first calculate *provisional income*—which is modified AGI (non-Social Security income including tax-exempt interest) plus half of the Social Security benefit. If provisional income exceeds the first threshold, X1, but not the second, X2, half of the excess over X1 or half of the Social Security benefit, whichever is smaller, is included in AGI. If provisional income exceeds X2, then the amount to be included equals the smaller of two items: A) 50 percent of benefits or $6,000, whichever is smaller, plus 85 percent of the excess of provisional income over X2, or B) 85 percent of benefits.

[5] James Poterba, Steven Venti and David Wise, "The Transition to Personal Accounts and Increasing Retirement Wealth: Macro and Micro Evidence," mimeo, Massachusetts Institute of Technology, May 2001.

[6] We assume this ceiling grows at 1 percent real per year.

[7] The new tax law specifies that the contribution limits will be indexed to inflation after 2007. However, we think it is likely that these limits will be adjusted over time for real wage growth. In modeling other changes in the new tax law we assume they continue after 2010 rather than revert back to their current values as formally stipulated in the new law.

# About the Authors

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# About the NCPA

The National Center for Policy Analysis is a nonprofit, nonpartisan research institute founded in 1983 and funded exclusively by private contributions. The mission of the NCPA is to seek innovative private-sector solutions to public policy problems.

The center is probably best known for developing the concept of Medical Savings Accounts (MSAs). The *Wall Street Journal* called NCPA President John C. Goodman "the father of Medical Savings Accounts." Sen. Phil Gramm said MSAs are "the only original idea in health policy in more than a decade." Congress approved a pilot MSA program for small businesses and the self-employed in 1996 and voted in 1997 to allow Medicare beneficiaries to have MSAs.

Congress also relied on input from the NCPA in cutting the capital gains tax rate, in creating the Roth IRA and eliminating the Social Security earnings penalty. These proposals were part of the pro-growth tax cuts agenda contained in the Contract with America and first proposed by the NCPA and the U.S. Chamber of Commerce in 1991. Two other tax changes — an increase in the estate tax exemption and abolition of the 15 percent tax penalty on excess withdrawals from pension accounts — also reflect NCPA proposals.

Another NCPA innovation is the concept of taxpayer choice — letting taxpayers rather than government decide where their welfare dollars go. Legislation to create taxpayer choice at the state level was sponsored last year by Reps. John Kasich, J.C. Watts and others. The idea is also a priority of President Bush.

Entitlement reform is another important area. With the grant from the NCPA, economists at Texas A&M University have developed a model to analyze Social Security and Medicare, and are publishing a series of studies on the future of the two entitlement programs. This work is directed by Texas A&M Professor Tom Saving, who has been appointed a Social Security and Medicare trustee. The NCPA has also established an interactive online Social Security calculator (www.mysocialsecurity.org) that allows visitors to compare their Social Security benefits with returns if their payroll taxes had instead been invested privately.

In the 1980s, the NCPA was the first public policy institute to publish a report card on public schools based on results of student achievement exams, and an NCPA task force made the case for school choice. Subsequently, the NCPA pioneered the concept of education tax credits as one route to school choice. The NCPA and Children First America have published an Education Agenda for the new administration, a book whose contributors include Nobel laureate Milton Friedman, Sen. Jon Kyl and other school choice experts.

The NCPA's Environmental Center works closely with other think tanks to provide common sense alternatives to extreme positions that frequently dominate environmental policy debates. In 1991 the NCPA organized a 76-member task force, representing 64 think tanks and research institutes, to produce *Progressive Environmentalism*, a pro-free enterprise, pro-science, pro-human report on environmental issues. The task force concluded that empowering individuals rather than government bureaucracies offers the greatest promise for a cleaner environment. Later, the NCPA produced *New Environmentalism*, written by Reason Foundation scholar Lynn Scarlett. The study proposes a framework for making the nation's environmental efforts more effective while reducing regulatory burdens. More recent publications include a pathbreaking study that showed the costs of the Kyoto protocol on global climate change would far exceed any benefits.

In 1990 the NCPA's Center for Health Policy Studies created a health care task force with representatives from 40 think tanks and research institutes. The pro-free enterprise policy proposals developed by the task force became the basis for a 1992 book, *Patient Power*, by John Goodman and Gerald Musgrave. More than 300,000 copies of the book were printed and distributed by the Cato Institute, and many credit it as becoming the focal point of opposition to Hillary Clinton's health care reform plan.

A number of bills before Congress promise to protect patients from abuses by HMOs and other managed care plans. Although these bills are portrayed as consumer protection measures, NCPA studies show they would make insurance more costly and increase the number of uninsured Americans. An NCPA proposal to solve the problem of the growing number of Americans without health insurance would provide refundable tax credits for those who purchase their own health insurance. The NCPA has assisted members of Congress to formulate a bipartisan tax credits proposal.

NCPA studies, ideas and experts are quoted frequently in news stories nationwide. Columns written by NCPA experts appear regularly in national publications such as the *Wall Street Journal, Washington Times* and *Investor's Business Daily*. NCPA Policy Chairman Pete du Pont has a weekly column on the *Wall Street Journal's* OpinionJournal.com and another weekly column distributed by the Knight-Ridder Tribune news wire. In addition, his radio commentaries reach 2.2 million listeners across America.

According to Burrelle's, the NCPA was mentioned or quoted in about 15 news articles every day somewhere in the United States in 2000. The advertising dollar equivalent of all print and broadcast coverage was more than $50 million.

The NCPA Internet site (www.ncpa.org) embraces the philosophy of one-stop shopping, linking visitors to the best available information on public policy, including studies produced by think tanks all over the world. Brittanica.com named the NCPA Web site one of the best on the Internet for quality, accuracy of content, presentation and usability.

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