LONG-RUN CHANGES IN TAX EXPENDITURES ON 401(K)-TYPE RETIREMENT PLANS

Ithai Z. Lurie and Shanthi P. Ramnath

In this paper, we explore the long-run revenue consequences of the tax deferral of contributions to 401(k)-type retirement plans. We use net present value (NPV) calculations to measure the long-run cost of contributions made in 2008. We show that the long-run NPV cost can be dramatically different if measured using relatively short time horizons, depending on assumptions regarding the rate of return on investments, the government’s discount rate on future payments, marginal tax rates, and taxpayers’ retirement behavior. Finally, we estimate the effect of limiting the maximum total contributions to 401(k)-type plans to $10,000 and find that even at high rates of return, the NPV cost of the tax expenditure declines at most by $33 billion or 21.1 percent.

Keywords: retirement, 401(k)-type plans, tax expenditure
JEL Codes: H2, H5

I. INTRODUCTION

The current fiscal climate, which includes persistent budget deficits and a growing national debt, has left policymakers searching for ways to reduce spending and raise revenue. Some recent deficit reduction proposals recommend scaling back and in some cases even eliminating certain tax expenditures to raise revenue.¹ Tax expenditures measure foregone revenue, or implicit spending done through the tax code as a result of deductions, credits, deferrals, and exclusions. The goal of cutting tax expenditures would be to broaden the tax base thereby increasing revenue; however, the type of policy that generates the tax expenditure has implications for its effectiveness as a future

¹ Some recent proposals to limit tax expenditures include proposals from the National Commission on Fiscal Responsibility and Reform (2010); the Bipartisan Policy Center (2010); and Demos, Economic Policy Institute, and The Century Foundation (2010).

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revenue source. This paper focuses specifically on the tax expenditure for contributions to 401(k)-type plans, which is a seemingly ample source of revenue.

In the fiscal year 2012 Tax Expenditure Budget, all retirement tax expenditures together accounted for more than 12 percent of all individual tax expenditures (Office of Management and Budget, 2011) and 401(k)-type plans alone were the third largest tax expenditure. We define 401(k)-type plans as retirement plans offered by employers that allow employees and employers to make direct pre-tax contributions to an employee’s own individual account; these include 401(k), 403(b), 457(b), and Simplified Employee Pension (SEP) plans. Given the size of the tax expenditure of 401(k)-type plans, it is not surprising that policymakers have expressed interest in limiting the tax benefit for retirement savings as a potential way to raise revenue. However, because the tax expenditure is generated by deferral of tax, its cost should be considered over a long time horizon that extends beyond the five years of the tax expenditure cost estimation window.

Tax provisions pertaining to 401(k)-type plans change the stream of federal government revenues in three major ways. First, contributions to retirement accounts have an immediate impact of reducing tax revenue. Employee contributions to 401(k)-type plans are excluded from wages for income tax purposes, but are still subject to payroll taxes. Employer contributions to 401(k)-type accounts are not counted towards wages for purposes of either individual income or payroll taxes paid by the employee. Employer contributions also reduce the amount of employer paid payroll taxes due to a smaller wage base. Second, 401(k)-type account earnings, including capital gains realization, dividends, and interest income, are not subject to taxation, which adds the additional cost of deferral of taxation on income generated by retirement savings known as inside buildup. Third, all funds distributed from 401(k)-type accounts are subject to income taxation and therefore generate additional tax revenue. Also, early distributions from the 401(k)-type accounts (made before the recipient reaches age 59 ½ and not rolled over to an Individual Retirement Account (IRA)) are taxed at ordinary rates and subject to an additional 10 percent penalty, though some exceptions could apply (e.g., hardship withdrawals). Because contributions to 401(k)-type accounts will eventually generate tax revenue, policies aimed at lowering the current tax expenditure on contributions also have the potential to lower future revenue. Thus, when considering changes to the tax benefits of making retirement contributions as a current source of revenue, it is important to also consider the long-run implications of such changes.

In this paper, we explore the long-run revenue consequences of the tax deferral of retirement contributions to 401(k)-type plans. We discuss the two specific methods for measuring the magnitude of the tax expenditure for 401(k)-type plans — cash flow and net present value (NPV). We then focus on the less commonly used NPV measure,

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2 We exclude Roth 401(k) and Roth 403(b) plans from our analysis. In 2008, we estimate total contributions to Roth 401(k) and Roth 403(b) plans to be $2.1 billion and $0.2 billion, respectively.

3 For example, the Illustrative Plan described in the National Commission’s “Moment of Truth” report suggests consolidating retirement accounts and limiting contributions to the lesser of $20,000 or 20 percent of income. This would be a decrease from the 2011 contribution limit of $49,000.
and estimate the long-run cost of contributions made in 2008 under a wide range of assumptions regarding the rate of return on investments, the government’s discount rate on future payments, marginal tax rates, and taxpayers’ retirement behavior. By focusing on a single year of contributions, we can abstract away from changes in costs due to other reasons, such as populations shifts and adoption of new types of retirement plans. We then track the 2008 contributions until each dollar is distributed to illustrate the changes in net cost over a long time horizon. Finally, we estimate the revenue gains from a potential policy that would limit the amount of allowable retirement contributions.

II. TAX EXPENDITURE OF 401(K)-TYPE PLANS

Tax expenditures are typically measured on a cash-flow basis, where cost is measured as the value of foregone income tax revenue less additional income tax revenue generated by the provision within a given year. Tax expenditures, unlike revenue estimates, do not take into account taxpayers’ behavioral responses, which can include, for example, shifting funds to other tax-deferred accounts in response to a policy change. In the case of 401(k)-type plans, the cash-flow measure includes tax revenue lost on retirement contributions and on the inside buildup of retirement accounts less the revenue collected on distributions. However, the cash-flow measure is problematic for measuring the cost of 401(k)-type plans, and the total cost of tax deferral more generally, because the cost of one dollar contributed to a retirement account is not followed over time. In particular, distributions and contributions come from different cohorts when a cash-flow measure is used. This has become more of an issue over the last few decades as many employers began offering a new type of retirement plan to their employees.

In the past, employers typically offered defined benefits (DB) plans but after a number of changes in law and changes in the regulatory environment, beginning in the early nineties, more employers began offering defined contribution (DC) plans instead of or in addition to DB plans. In 1975, DB plans outnumbered DC plans, with 33 million participants enrolled in DB plans compared to the 11.5 million DC plan participants (U.S. Department of Labor, 2010). As DC plans grew in popularity, this pattern was reversed during the next three decades and by 2008, there were half as many DB plan contributions...
participants compared to those participating in DC plans, with 42.3 million DB plan participants and 82.5 million DC plan participants.

Besides the implications for retirement savings in general, the shift in retirement plans also had implications for the relative magnitude of retirement tax expenditures. Expenditures for DC and DB plans are estimated separately implying that as the workforce moved towards a system dominated by DC plans, of which the majority are 401(k)-type plans, the amount of money contributed to DC accounts initially outweighed the amount distributed from them. As new retirees begin to draw down DC accounts, the net cost at a point in time will appear to fall as the revenue from distributions grows (holding all else equal). In addition to the shift in plan type, if there are large differences between cohorts, such as plan adoption rates and population size, then the cash-flow cost measure will produce tax expenditures that can either overstate or understate the true cost of a contribution depending on how the behavior of different cohorts compares at a point in time.

The cash-flow measure, though problematic, is relatively easy to estimate as it only requires data on current contributions and distributions with a limited number of assumptions needed to extend the estimate over five years. An arguably more appropriate measure of the 401(k)-type plan tax expenditure is a NPV calculation. In practice, such a calculation requires a heroic set of assumptions. In particular, a dollar contributed to a retirement account today would incur a cost equal to the immediate foregone tax revenue as well as the foregone tax revenue on that dollar’s earnings. Once that dollar and its subsequent earnings are distributed, tax revenue would be generated, which in turn lowers the overall cost of the deferral. Thus, in order to estimate the net cost of a dollar contributed to a retirement account, information regarding future policy on tax rates, future rates of return, taxpayers’ retirement behavior, and the government’s discount rate are necessary. NPV estimates are produced by the U.S. Department of Treasury for certain tax expenditures that involve deferral, including 401(k)-type plans, but the more widely cited estimate is the cash-flow measure. The cash-flow measure for tax expenditures serves as a useful short-run calculation both because of its less restrictive data requirements and its focus on cost at a point in time. But as policymakers increasingly look to tax expenditures for new sources of tax revenue, a long-run approach for analyzing provisions, particularly those that stem from deferral, becomes more important.

III. DATA

We use the Statistics of Income stratified probability sample of individual tax returns for 2008 (INSOLE), which contains information from Form 1040 as well as additional tax forms for each tax unit. We restrict our sample to taxpayers who are part of the Continuous Work History Sample (CWHS). The CWHS subsample is drawn based

5 Xanthopoulos and Schmitt (2011) argue for the use of present-value estimates when considering revenue estimates for changes in tax policy related to retirement.
6 More information regarding the 2008 INSOLE can be found in Internal Revenue Service (2008).
7 We restrict our analysis to the CWHS subsample because additional detail is provided on the type of retirement account individuals contribute to on their W-2.
on the last four digits of the primary filer’s social security number each year. In 2008, 10-four-digit combinations were sampled. We use the Office of Tax Analysis Individual Microsimulation Tax Model on our restricted sample to calculate marginal income tax rates for each tax unit in the CWHS under 2008 law.

For information on employee retirement contributions, we link the 2008 CWHS tax returns to W-2 data for both primary and secondary filers. The W-2 forms include information on wage earnings as well as pre-tax contributions to 401(k)-type retirement accounts at the individual level. Using our sample we estimate that in 2008, 401(k) plans had the largest employee (primary and secondary filer) contributions, totaling $170.1 billion, 403(b) plans had contributions of $28.1 billion, 457(b) plans had $13.0 billion of contributions, and SEP plans were the smallest with $0.5 billion dollars of contributions. Table 1 provides a summary of the mean retirement contributions per return (primary and secondary filers’ contributions for joint returns, and primary filers’ contributions otherwise) by type of retirement account. The earnings categories are defined over the combined earnings of all filers on a return. As expected, contributions to retirement plans tend to increase with earnings. Also, the mean contribution for primary filers is similar across account types.

Employer contributions to retirement accounts are not included in tax data at an individual level; however large firms are required to report aggregate employer contributions on Form 5500. To impute employer contributions at the individual level, we use data from the 2004 Survey of Income and Program Participation (SIPP). The SIPP is a longitudinal survey in which respondents are interviewed every four months over a three-year period. In each wave there is a core survey consisting of questions that are asked at every interview and several topical modules with detailed questions on specific topics. We use information from the topical module of wave 7 on employer

<table>
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<tr>
<th>Total Earnings</th>
<th>401(k)</th>
<th>403(b)</th>
<th>SEP</th>
<th>457(b)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than $25,000</td>
<td>782</td>
<td>1,523</td>
<td>580</td>
<td>1,096</td>
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<tr>
<td>$25,000 to $49,999</td>
<td>2,003</td>
<td>2,370</td>
<td>1,905</td>
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<tr>
<td>$50,000 to $74,999</td>
<td>3,665</td>
<td>3,592</td>
<td>2,973</td>
<td>3,226</td>
</tr>
<tr>
<td>$75,000 to $149,999</td>
<td>6,679</td>
<td>4,945</td>
<td>5,323</td>
<td>5,042</td>
</tr>
<tr>
<td>$150,000 or more</td>
<td>15,002</td>
<td>10,654</td>
<td>5,798</td>
<td>9,902</td>
</tr>
<tr>
<td>Overall Mean</td>
<td>4,800</td>
<td>4,445</td>
<td>3,608</td>
<td>4,067</td>
</tr>
</tbody>
</table>

Notes: Means are given only for returns that have contributions greater than zero. Total earnings and mean contributions include both the primary and secondary filers for joint returns.

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8 See U.S. Census Bureau (2001) for detailed information on the SIPP.
contributions to retirement plans. We then derive a mean contribution based on age, gender, wage earnings, and level of employee contribution, which we statistically match with the comparable variables from tax return data.9

IV. METHOD, RESULTS, AND POLICY IMPLICATIONS

A. Method and Results

Using our combined data, we derive a set of NPV tax expenditure calculations for total retirement contributions to 401(k)-type plans in 2008. The NPV calculations allow us to estimate the total cost to the government of each dollar that was contributed in 2008. These calculations are used to gauge the impact of a policy change in terms of its long-run effects. As described earlier, in order to estimate the NPV cost, we must make assumptions regarding the rate of return on investments, the government’s discount rate on future payments, marginal tax rates, and taxpayers’ retirement behavior. For simplicity, we assume that taxpayers invest their retirement contributions into a taxable bond that yields a fixed rate of return each year. The earnings from that bond are then reinvested back into taxpayers’ 401(k)-type accounts. We assume that all taxpayers retire at age 65 and distribute their full account over 10 years, which includes their 2008 contributions and the earnings on those contributions. Distributions are divided into equal payments over the 10 years, taking into account the additional growth that occurs in retirement.10 For marginal tax rates, we make three different assumptions: constant 2008 marginal tax rates, marginal tax rates that change when an individual retires, and marginal tax rates that vary each year based on age and marital status before retirement and change when individuals retire. Finally, we present results for different values of the government’s discount rate, which we assume is constant over time.

Table 2 provides the NPV cost of contributions to 401(k)-type plans in 2008 when we assume marginal tax rates are constant at 2008 levels for each taxpayer. Although the assumption that tax rates remain constant throughout one’s life is very strong, by assuming a constant tax rate we can isolate changes in cost that depend solely on the inside buildup of retirement accounts and the government’s discount rate. The first column of Table 2, where the discount rate is zero, highlights that the deferral of income tax on retirement contributions simply shifts the timing of when revenue is collected.11 In other words, if there is no change in marginal tax rates and the government values

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9 The total employee contribution in our sample amounts to $211.8 billion compared to $172.6 billion in contributions reported in Form 5500. This difference is expected because the Form 5500 data does not include employees at small firms in 2008. Similarly, we impute employer contributions to be $161.9 billion while Form 5500 reports employer contributions of $120.3 billion.

10 We assume that taxpayers over age 65 in 2008 immediately retire and begin taking distributions in 2009.

11 It is important to note that although there is no income tax loss at a discount rate of zero, the payroll tax exclusion that the employer contribution receives is not repaid. We estimate that exclusion to be about $20.6 billion.
future revenue the same as current revenue, then irrespective of the rate of return on contributions, the tax expenditure on 401(k)-type plans would be zero. However, even when the rate of return is zero, once the government discounts the future, the deferral on retirement contributions generates a cost. Holding the government’s discount rate constant, as the rate of return on contributions increases, the tax expenditure also increases. Similarly, holding the rate of return constant, as the government’s discount rate increases, tax expenditures generally increase (an exception is discussed below).

The previous results assumed that marginal tax rates stayed constant throughout a taxpayer’s life. In general, marginal tax rates tend to fall during retirement typically due to a decline in wage earnings. We present alternative results holding individual marginal tax rates constant until retirement. During retirement, we apply an average marginal tax rate (AMTR) to individuals, which is calculated as the AMTR for taxpayers over age 65 weighted by the amount of retirement income reported on Form 1040. We restrict this group to include only taxpayers over 65 with any retirement income and with no reported wages on their return to try to isolate taxpayers who are truly retired. This AMTR is then used to proxy for the marginal tax rate at retirement for our sample of contributors. The retirement income used to weight the marginal tax rates of retired taxpayers includes income from IRAs and distributions from both DB and DC plans. Unfortunately we are unable to exclude distributions from DB plans because distributions from both DB and DC plans are reported jointly on Form 1040. If DB income is greater than income from DC plans, then the AMTR could be biased upward. Also, the

<table>
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<tr>
<th>Rate of Return (Percent)</th>
<th>Discount Rate (Percent)</th>
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<tbody>
<tr>
<td></td>
<td>0</td>
</tr>
<tr>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>4</td>
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</table>

Notes: 401(k)-type plans include 401(k)s, SEPs, SIMPLEs, 403(b)s, and 457(b)s. Marginal tax rates are simulated using the Office of Tax Analysis Individual Tax Microsimulation Model. Employer contributions are imputed based on age, gender, earnings, and employee contributions using Wave 7 from the 2004 SIPP. The investment portfolio assumes a constant rate of return. Taxpayers invest until age 65 and then distribute the entirety of their account earnings based on the 2008 contribution over 10 years. The above calculations exclude the additional revenue loss from the exclusion of employer contributions to retirement accounts from payroll taxes. The additional tax loss in 2008 due to the payroll exclusion of employer contributions is $20.7 billion.

Source: 2008 INSOLE file matched to the CWHS of Form W2.
AMTR does not account for selection into filing at retirement, which could cause an additional bias. The results presented in Table 3 show an increase in the NPV cost of 401(k)-type plans compared to the case with constant marginal tax rates. This increase in cost reflects that the revenue collected from distributions during retirement, even with a discount rate of zero, is less than the immediate cost of the deferral due to the decline in marginal tax rates.

The last case we consider accounts for life-cycle changes in income, as income tends to increase in later working years compared to early working years. This income pattern would impact an individual’s marginal tax rate and consequently we would expect to see rates start out low, increase, and then decrease in retirement. To account for changes in the marginal tax rate over an individual’s life cycle, we apply the sample AMTR calculated by age and marital status of the primary filer and weighted by total employee and employer contributions to individuals beginning in 2009 and until retirement. During retirement, we apply the AMTR as described above for use in Table 3, thereby fully relaxing the assumption that marginal tax rates are held constant. The results presented in Table 4 show that when the rate of return is zero, the cost is the same as the case when marginal tax rates only change in retirement regardless of the discount rate assumed. This reflects that if there are no earnings on contributions, the cost of deferral comes from the lower marginal tax rate in retirement. With the exception of the case of zero rate of return, allowing pre-retirement marginal tax rates to vary with age increases the cost of tax deferral of contributions to 401(k)-type plans.

The estimates presented in Tables 2–4 give the NPV cost of the tax expenditure for 401(k)-type retirement plans under different sets of assumptions. We vary both the rate of return and the discount rate for differing methods of specifying marginal tax rates, which highlights the sensitivity of long-run NPV calculations. By varying our

<table>
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<th>Rate of Return (Percent)</th>
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<th>4</th>
<th>6</th>
<th>8</th>
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<tbody>
<tr>
<td>0</td>
<td></td>
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<td>38,360</td>
<td>53,715</td>
<td>63,001</td>
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<td>2</td>
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<td>66,848</td>
<td>76,155</td>
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</tr>
<tr>
<td>4</td>
<td></td>
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<td>65,731</td>
<td>85,449</td>
<td>94,219</td>
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</tr>
<tr>
<td>6</td>
<td></td>
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<td>112,431</td>
<td>119,624</td>
<td>120,529</td>
</tr>
<tr>
<td>8</td>
<td></td>
<td>42,248</td>
<td>126,602</td>
<td>152,473</td>
<td>156,213</td>
<td>152,136</td>
</tr>
</tbody>
</table>

Notes: See notes from Table 2. Post-retirement AMTRs are calculated using the AMTR for all taxpayers with no wages over age 65 in 2008, weighted by retirement income.
Source: 2008 INSOLE file matched to the CWHS of Form W2.
assumptions, we also gain a better understanding of how each assumption impacts the NPV cost. In general, as the rate of return increases, the cost also increases. However, when both the rate of return and the discount rate are high, an additional increase to the discount rate can actually reduce the NPV cost. For example, when we assume constant marginal tax rates and an 8 percent rate of return, increasing the discount rate from 6 to 8 percent actually decreases the NPV cost. Intuitively, as the discount rate increases, the government values today’s revenue more than it values future revenue. Likewise, a higher discount rate implies that future losses are valued less. Thus, for higher rates of return, where a large element of the cost of the tax expenditure is due to the deferral of future account earnings, the NPV cost could actually fall as the discount rate increases. This illustrates that the interaction between the rate of return and the government’s discount rate is important for the NPV calculation. The NPV cost of the 2008 contributions also increases when we allow marginal tax rates to change in retirement. In fact, when the government’s discount rate is zero, the entire NPV cost is due to the generally lower marginal tax rates in retirement. If instead we allow marginal tax rates to change over time, the NPV cost of deferral increases further due to an increase in the value of deferral as marginal tax rates rise with income.

Table 5 shows the range of expenditure estimates for the 2008 contributions, when assuming equivalent values for discount rates and rates of return.\(^\text{12}\) We again assume that marginal tax rates are constant at 2008 levels until retirement, at which point they

\(^{12}\) In Table 5, we set the rate of return equal to the discount rate to avoid what was referred to in the Auerbach, Gale, and Orszag (2003) response to Boskin (2003) as “tax arbitrage.” Tax arbitrage implies that when the rate of return is different from the discount rate, there is an implicit assumption that either the federal government or the taxpayer can reap greater returns by investing themselves.
take on the AMTR for retirees. Table 5 shows that when the discount rate and the rate of return are 2 percent, the long-run NPV cost of the 2008 contributions is about 55 percent lower than the short-run NPV cost, where the short run is measured by both the budget window and the tax expenditure window. As the rate of return increases, both the short-run and the long-run NPV calculations increase, but the long-run NPV cost increases more rapidly. In fact, the long-run NPV cost is greater than it would be if measured in the short run when the discount rate and the rate of return are 8 percent. In this case, the long-run NPV cost is 35 percent higher than the short-run NPV cost measured in the tax expenditure window, and 13 percent higher than the short-run NPV cost measured in the budget window. These stark differences in the estimates of the NPV costs of the tax expenditure have important implications for using short-run estimates when evaluating long-run policy goals. If rates of return are expected to be high (low) and the rate of return is identical to the discount rate, then short-run tax expenditures estimates for 401(k)-type plans will tend to underestimate (overestimate) the long-run cost of the tax expenditure.

### B. Policy Analysis

The government’s desire to create incentives for retirement savings is apparent through certain tax provisions, including the deferral of tax on retirement contributions, tax-free accumulation of earnings in retirement accounts, and the Saver’s Credit which provides additional tax benefits to low and middle income households for retirement contributions. Eliminating all the provisions in the tax code that create incentives for retirement savings would therefore conflict with the government’s goal to encourage retirement savings. In addition, fewer incentives could lead to a decrease in retirement savings.
savings and place an additional strain on other areas of government spending. Rather than repeal all retirement related tax benefits, policymakers might instead simply lower the amount of contributions eligible to receive tax benefits.

We consider a potential policy that would limit combined employer and employee contributions to retirement accounts to $10,000, from the 2008 limit of $46,000 for total employer and employee contributions. Figure 1 shows the fraction of contributors who are made worse off by lowering the cap on contributions and the average loss in tax benefit conditional on being a loser, by total earnings reported on a return. As expected, the cap largely affects high earners as roughly 80 percent of taxpayers who report earnings above $150,000 are made worse off. In contrast, about 6 percent of taxpayers with earnings below $25,000 are made worse off. This pattern exists regardless of the primary filer’s age (not shown). Furthermore, the average tax benefit lost in 2008 due to the policy change is about $145 for the lowest category of earnings and about $3,200 for highest category. Table 6 shows the long-run change in the NPV of 2008

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Figure 1

Fraction of Contributors Made Worse off by Imposing a $10,000 Cap on Total Contributions
(Average Loss in Tax Benefit, Conditional on Contributing)

Note: The average loss in tax benefit, conditional on being a loser is given above each bar. Source: 2008 INSOLE file matched to the CWHS of Form W2.

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13 The individual limit in 2008 was $15,500 for people under age 50 and $20,500 for people age 50 and over; however, we impose our restriction on the total amount of contributions.
contributions after limiting the total employer and employee contribution to $10,000, calculated for different rates of return and discount rates and assuming marginal tax rates change in retirement (i.e., we subtract the NPV cost in Table 3 from the NPV cost when limiting the contribution). The long-run gains in revenue range between $5 billion and $33 billion (which is about 21.1 percent of the NPV cost) for the discount rates and rates of return considered. To put these estimates in context, with an annual budget deficit of about $1.5 trillion, $33 billion in additional revenue would account for roughly 2 percent of the total deficit.

Although 401(k)-type plans make up one of the largest tax expenditures, the cash-flow tax expenditure estimates reflect only short-run revenue losses. The nature of deferral can limit the long-run revenue gains that can be achieved from reducing this tax expenditure. This is not the case for other tax expenditures that do not have a deferral element, such as the exclusion of employer-sponsored health insurance or the deduction for home mortgage interest.

### V. CONCLUSION

The urgency of resolving the current budget deficit and debt issues has focused attention on limiting tax expenditures. But to accurately determine the budgetary effects of such reforms, a long-run analysis is necessary. The typical cash-flow measures in the

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14 We also considered a policy that imposes the lesser of $10,000 or 20 percent of earnings as the contribution limit. The results from this policy change are similar to the results from simply imposing a $10,000 limit. However, as expected, individuals at the lower end of the income distribution are more likely to be losers with a slightly higher average loss from the policy change.
five-year tax expenditure window or the 10-year budget window for revenue estimation do not take into account the long-run effect that is incorporated into NPV estimates of the costs of tax expenditures. This is especially true in the case of 401(k)-type plans, where the switch from DB to DC plans and the nature of a deferral makes short-run windows especially misleading for measuring long-run costs.

In this paper we focus on NPV tax expenditure calculations, and show that the NPV cost of 2008 contributions can differ substantially based on the assumptions made regarding the rate of return on investments, the government’s discount rate on future payments, marginal tax rates, and taxpayers’ retirement behavior. Not surprisingly, the NPV cost of tax expenditures increases with the rate of return and generally increases with the discount rate. Varying marginal tax rates before and after retirement can have a substantial effect on NPV tax expenditures, especially with a higher rate of return. Given the sensitivity of NPV calculations, it is important to consider alternative assumptions and focus on a range of estimates when considering the impact of a policy change.

After presenting baseline results under different assumptions, we estimate the effect of limiting the maximum total contributions to 401(k)-type plans to $10,000. Conditional on making contributions, the $10,000 limit mainly impacts taxpayers with earnings above $150,000, as 80 percent of such taxpayers reduce their contributions, on average losing $3,200 in tax benefits from their 2008 contributions. Notwithstanding the large effect on high earners, we find that the $10,000 limit imposed on contributions to 401(k)-type plans, even at high rates of return, decreases the NPV cost of the tax expenditure by at most $33 billion, or about 2 percent of the current $1.5 trillion deficit. Hence, if policymakers hope to raise substantial revenue from reforming 401(k)-type plans, a much deeper reduction in the contributions limit or other reforms would be needed. Of course, substantially lowering the contribution limit seems to be at odds with policymakers’ concern that even with the current tax benefits taxpayers may not be saving enough for retirement. Moreover, if contributions were further limited, taxpayers with lower earnings could reduce their retirement savings, which might result in increased government spending in other areas that could offset any revenue gains from reducing the contribution limit.

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