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The Impact of Individual Retirement Accounts on Savings

Jonathan McCarthy and Han N. Pham

Bills to expand individual retirement accounts have been introduced in both houses of Congress this year. While proponents argue that these accounts can help reverse the nation's declining saving rate, recent economic research suggests that the effect of the accounts on savings is in fact quite small.

In recent years, analysts have often charged Americans with saving too little. As evidence, they cite the decline in the net national saving rate from an average of 8.4 percent of net national product (NNP) in the 1950s and 1960s to 2.3 percent in the 1990s (Chart 1).[1] Although the large government budget deficits of the 1980s and 1990s contributed to this decrease, lower personal savings clearly played an important role. The decline in the national saving rate troubles policymakers for two reasons: savings may be insufficient to fund the investment necessary to raise living standards, and workers may not be saving enough for their retirement.

To arrest the decline in personal savings, many policymakers and economists have advocated expanding targeted saving incentives such as individual retirement accounts (IRAs). These accounts encourage saving by exempting contributors from certain taxes typically imposed on financial investments. The proponents of these incentives believe that they would induce an increase in personal savings well above any tax revenue loss, thus boosting national savings. The influence of this view is evident in a number of bills recently introduced in Congress that would expand IRAs.

Nevertheless, IRAs may not be as effective in increasing savings as their proponents believe. Although IRAs do encourage households to save by

increasing the after-tax rate of return for saving, this higher return also means that households need to save less to achieve the same retirement income goal. Furthermore, because households receive a tax break for their contributions to an IRA regardless of the amount of new savings, households may shift assets into the accounts without increasing their total savings. Such a switch has no effect on net household savings but reduces national savings by lowering tax revenue and increasing the budget deficit.

The uncertainty about the impact of IRAs on savings has prompted many researchers to investigate the topic. This article examines what we can learn from existing studies about the effect of IRAs on savings.[2] Although economists have reached conflicting conclusions, the balance of evidence suggests that while IRAs may increase savings in the long run, the impact would probably be modest. Moreover, the current IRA proposals are structured in such a way that they would reduce any favorable impact on savings. We therefore conclude that these proposals will not substantially raise saving rates from their low levels.

History of IRAs and 401(k) Plans
IRAs were established in 1974 for workers not covered by pension plans. Taxes on both the contributions and

the accumulated interest were deferred until the assets were withdrawn at retirement. Withdrawals before the beneficiary reached 59 1/2 years of age were penalized. Because IRAs were not widely promoted nor readily available in the 1970s, however, few eligible taxpayers contributed. Of the 51 percent of workers eligible to contribute to IRAs in 1978, fewer than 3 percent did, resulting in a mere $3 billion in contributions.
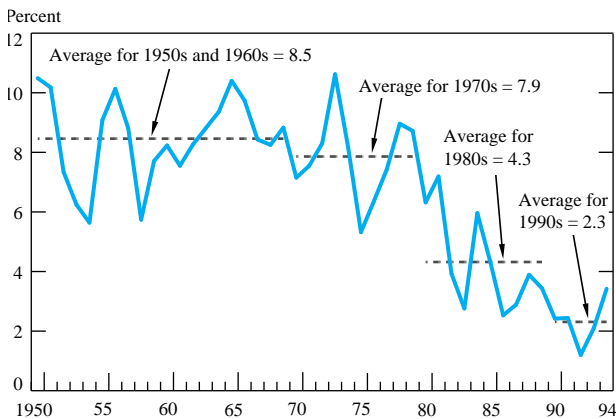
To encourage savings, the Economic Recovery Tax Act of 1981 expanded IRA eligibility to almost every working taxpayer. Contribution limits were raised from $1,500 to $2,000 for single taxpayers, from $1,750 to $2,250 for one-income joint filers, and to $4,000 for two-income joint filers. Financial institutions responded to the expanded market by promoting IRAs more heavily. Correspondingly, contributions jumped dramatically between 1981 and 1982 (Chart 2). But although contributions remained high through 1986, they were never more than 1 percent of GDP. Moreover, the small fraction of eligible taxpayers who opened IRAs were concentrated in upper income groups. For example, only 17.8 percent of eligible tax returns in 1985 claimed an IRA deduction, but about three-fourths of taxpayers with income above $75,000 did.

The Tax Reform Act of 1986 curtailed the tax deduction of IRA contributions for many workers. Those covered by pension plans could deduct IRA contributions fully only if their income was below $25,000 for single filers and $40,000 for joint filers; the deduction was fully phased out for single and joint filers with incomes above $35,000 and $50,000, respectively. Higher income earners could continue to make nonde-ductible contributions and earn tax-deferred interest on their accounts. These restrictions caused tax-deductible contributions to fall 62 percent in 1987, and contribu-

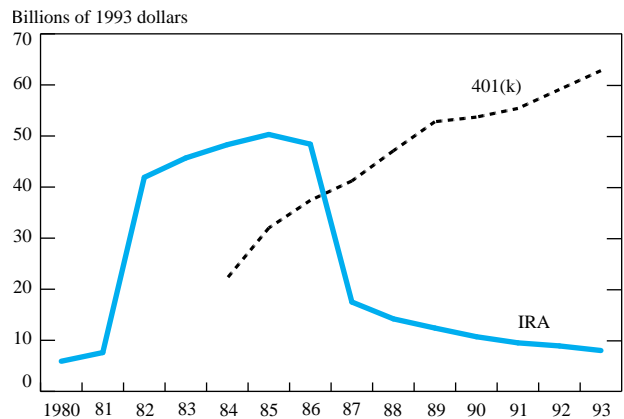tions since have continued to slip (Chart 2).

In 1978, another saving incentive similar to the IRA, the 401(k) plan, was established. These plans did not attract much interest until the early 1980s, after the Treasury issued clarified rules on their tax advantages. Like IRAs, 401(k) plans feature tax-deferral of contributions and accrued interest, annual contribution limits, and restrictions on early withdrawals. Some differences exist, however. Only workers of sponsoring employers are eligible to contribute to 401(k) plans. Contributions are made through payroll deductions and can be matched by the employer, whereas IRA contributions can be made at any time and have no provision

Chart 2
IRA and 401(k) Contributions

Billions of 1993 dollars

Sources: Internal Revenue Service, *Statistics of Income*; IRS Form 5500.

Notes: IRA contributions for 1993 are preliminary tabulations reported in Weber (1994). Total contributions to 401(k) plans for 1991-93 were estimated by using data on employee contributions from the 1993 *Current Population Survey* multiplied by the 1988 ratio of total contributions to employee contributions.

for employer matching. The annual contribution limit for 401(k) plans, $9,240 in 1994, is much higher than that for IRAs, although employers can impose additional limits on eligible contributions.

As Chart 2 indicates, 401(k) plans gained popularity in the late 1980s and early 1990s, in part as a supplement to (or substitute for) employer-sponsored pension plans. Although this increase has to some extent counteracted the decline of IRAs, the total contribution to targeted saving incentives as a percentage of GDP has remained less than in 1986.

Current Proposals
Despite waning taxpayer interest in IRAs, many policymakers and economists still view the accounts as a reliable vehicle for encouraging savings. As saving rates have continued to fall in the 1990s, a number of

Chart 1
Net National Savings as a Percentage of Net National Product

Percent

Source: U.S. National Income and Product Accounts.

bills to expand IRAs have been proposed in Congress.

Separate bills have recently been introduced in the House and the Senate, and the Clinton Administration has put forth its own proposal. Although the proposals differ in their details, they do share some common features. First, to encourage more contributions, these proposals would relax the penalties on early withdrawals so that IRA holders could remove funds to pay for higher education, a first home, or medical expenses.

Second, each of the proposals would establish a new type of IRA. The contributions to these IRAs would not be deductible, but the accumulated interest and penalty-free withdrawals would be tax-free. This type of IRA is described as "back loaded" because most of the tax advantages are realized at the time of withdrawal; the current IRAs are termed "front loaded" because most of the tax advantages are realized at the time of contribution.

The back-loaded IRAs originated as a response to near-term deficit concerns. The current desire in Washington is to balance the budget by about 2002, and back-loaded IRAs appear to lose less revenue over this time frame. However, such reasoning underestimates the ultimate impact of back-loaded IRAs on the government budget. In fact, if marginal tax rates and interest rates are constant, the incentives that a taxpayer receives from front- and back-loaded IRAs are the same (see the box for a more detailed explanation). Thus the ultimate impact of front- and back-loaded IRAs on the government debt is identical under these assumptions.

Moreover, even though the incentives created by the two types of IRAs are equivalent under the stated conditions, back-loaded IRAs may not generate the contributions expected by their proponents. Because income is likely to decline after retirement, most taxpayers' marginal tax rates are expected to be lower at the time of withdrawal than at the time of contribution. Thus, many people will choose front-loaded over back-loaded IRAs, reasoning that they will ultimately pay less in taxes. In addition, taxpayers appear to value the

The Saving Incentives Provided by Front- and Back-loaded IRAs

We compare the incentives provided by front- and back-loaded IRAs by means of an example (see table). Suppose a taxpayer has $2,000 of before-tax income in 1995 that is to be saved until retirement in 2010, and faces a constant 5 percent before-tax rate of return and a constant 28 percent marginal tax rate. If the taxpayer places the $2,000 in a taxable savings account (column 1), he or she pays taxes on the $2,000 (leaving $1,440 as the amount saved) and on the yearly interest. The account then will grow to $2,448 ($1,440$\times[1+(.05\times[1-.28])]^{15}$) by 2010.

If this taxpayer contributes to a front-loaded IRA, he or she will not pay any taxes on these funds until they are withdrawn in 2010. After paying these taxes, the contributor will have $2,994 to spend, $546 more than if the funds were in a taxable account (column 2). This difference is the result of the preferential treatment of the IRA. (It also represents the increase in the government debt caused by the program.) Because the gain is not realized until 2010, its present value is $546/(1.05)^{15}$=$263 in 1995 dollars (last row).

If the taxpayer contributes to a back-loaded IRA instead, he or she will have $2,994 ($1440$\times(1.05)^{15}$) to spend in 2010, the same as under the front-loaded IRA (column 3). Even though the taxpayer pays taxes on the contribution in 1995, the amount paid is the same in present value as the taxes paid at withdrawal for a front-loaded IRA ($560 = $1,164/(1.05)^{15}$).* The gain the taxpayer receives from a front- or back-loaded IRA comes from the tax-free accrual of interest in the accounts, rather than from the tax treatment of the contribution or withdrawal.

*Note that because contributions to back-loaded IRAs are made with after-tax dollars, a $2,000 limit is more generous for a back-loaded IRA than for a front-loaded IRA.

A Comparison of Front- and Back-loaded IRAs
All Values in Dollars

	Taxable Savings Account	Front-loaded IRA	Back-loaded IRA
Before-tax income, 1995	2,000	2,000	2,000
Less: taxes paid, 1995	560	0	560
Equals: amount contributed to account, 1995	1,440	2,000	1,440
Accumulated balance in 2010, 5% interest rate	2,448 (28% tax)	4,158 (tax-free)	2,994 (tax-free)
Less: taxes paid, 2010	0	1,164	0
Equals: after-tax proceeds, 2010	**2,448**	**2,994**	**2,994**
Increase in government debt from IRA, 2010	0	546	546
Present value of cost, 1995	0	263	263

Source: Hubbard and Skinner (1995, p. 12).

immediate tax write-off from a front-loaded IRA, probably for the psychological satisfaction it affords.[3]

The Effect of IRAs on Savings

Some Ambiguities. The effect of IRAs on savings is more ambiguous than many IRA proponents believe. It depends on the interest rate elasticity of savings—that is, the degree of response shown by savings to a given change in the interest rate. This elasticity is influenced by two counteracting forces. A higher after-tax interest rate causes households to want to save more to become wealthier in the future (the so-called substitution effect), but the higher capital income in the present encourages households to consume more and save less (the income effect). Thus the magnitude of this elasticity remains controversial and can only be determined by studying actual data on the response of savings to interest rate changes.[4]

A further complication arises in determining the short-run, transitional effect of IRAs on savings. Households will receive the tax break for their contributions whether or not the contributions are new savings. During the initial years of an IRA program, households may shift existing assets into the accounts without increasing their saving. So even if the program ultimately has a positive effect on savings, the short-run effect could be reduced until households no longer desire to shift assets into the accounts.

Short-Run Effect. Because IRAs have existed for a relatively brief time, only their short-run effect on savings has been examined empirically. The table below presents the results from several major studies. As the table indicates, these studies have arrived at very different conclusions: some find a substantial effect, while others find almost no effect.

These conflicting findings can be traced in part to differences in the design of the studies. Besides a wide variation in data sources, a key difference between these studies is the choice of households whose saving behavior is to be compared to identify the effect of IRAs on savings. For example, Venti and Wise (1986, 1987, 1990, 1991) compare the savings of non-IRA contributors and IRA contributors. In contrast, Gale and Scholz (1994) compare households that contribute the statutory IRA limit (limit contributors) with those that contribute less than the limit (nonlimit contributors).

Both of these choices are problematic. Venti and Wise's observation that IRA contributors save more than noncontributors does not necessarily mean that IRAs have a strong effect on savings, because IRA con-

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The balance of the evidence in the studies surveyed points to a relatively modest short-run effect of IRAs on savings.

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tributors are more likely to be high savers, even in the absence of an IRA program. Gale and Scholz attempt to circumvent this problem by identifying noncontributors as low savers and effectively leaving them out of the comparison. However, by comparing limit and nonlimit contributors, they may underestimate the impact of IRAs on saving. For example, in their model, past IRA contributions help to identify a household as a high saver. But evidence indicates that households that contributed in the past usually continue to contribute. If such a household made its original IRA contribution because of the program's incentives, its current IRA

Studies on the Short-Run Effect of IRAs on Savings

Author(s) and Date	Data Source	Key Results
Hubbard, 1984	1979 President's Commission on Pension Policy Survey	"Much of the contributed funds represent marginal saving"
Venti and Wise		
1986	1983 Survey of Consumer Finances	About 50% of contributions add to net national savings
1987	1983 Survey of Consumer Finances	45-55% of contributions add to net national savings
1990	1980-85 Consumer Expenditure Survey	65% of contributions add to net national savings
1991	1984-85 Survey of Income and Program Participation	66% of contributions add to net national savings
Feenberg and Skinner, 1989	1980-84 IRS/University of Michigan Taxpayer Panel	IRAs cause only marginal reshuffling of assets
Attanasio and DeLeire, 1994	1982-91 Consumer Expenditure Survey	Less than 20% of contributions add to net national savings
Gale and Scholz, 1994	1983 and 1986 Survey of Consumer Finances	2% of contributions add to net national savings
Engen, Gale, and Scholz, 1994	1979-88 IRS/University of Michigan Taxpayer Panel	About 4% of contributions add to net national savings
Joines and Manegold, 1995	1979-86 IRS/University of Michigan Taxpayer Panel	19-26% of contributions add to net national savings

savings may be said to result from these incentives rather than from its taste for saving.

Still, we believe that the balance of the evidence in the studies surveyed points to a relatively modest short-run effect of IRAs on savings. The most recent studies listed in the table, which use data sources somewhat better suited for examining the issue than those used in earlier work, indicate that one-quarter or less of IRA contributions add to net national savings. Moreover, even if the higher estimates of Venti and Wise were correct, the effect of IRAs on aggregate savings would be modest because IRA contributions have been a small fraction of NNP. During the peak years of IRAs (1982-86), contributions were slightly more than 1 percent of NNP. The Venti and Wise estimates then imply that IRAs during this period would have raised the net national saving rate 0.7 percentage points at most, a small increase compared with the 3.6 percentage point decline in the average net national saving rate between the 1970s and 1980s (see Chart 1).

Long-Run Effect. Because data on the ultimate effect of IRAs are not available, economists must turn to artificial simulation models to study the long-run effect. Engen, Gale, and Scholz (1994) develop a life-cycle model that incorporates many important features of current IRAs and 401(k) plans: tax-deductible contributions, annual limits on contributions, and early withdrawal penalties.

Their simulations indicate that the ultimate effect of these plans is likely to be fairly small even though the interest rate elasticity in the model is sizable.[5] IRAs eventually would increase net national savings about 3 percent if the contribution limit is $2,000, and about 5 percent if the limit is $4,000. The 401(k) plans, which provide greater incentives, would increase net national savings about 8 percent if a 100 percent penalty is placed on early withdrawals, and about 17 percent if a 10 percent penalty is placed on early withdrawals.[6] Consequently, if the initial national saving rate is 6 percent (which is close to the initial saving rate in the model and consistent with the post-World War II average), an IRA program would eventually raise the saving rate to 6.3 percent at most, and a 401(k) plan would raise it to 7 percent at most.

Even though the tax incentive programs show only a modest effect on the saving rate, the model appears to suggest a substantial cumulative impact on the capital stock—the amount of funds available to be invested by firms. Hubbard and Skinner (1995) calculate that the most effective IRA and 401(k) plans studied by Engen, Gale, and Scholz would eventually increase the capital stock $4 and $16, respectively, for every dollar increase in the government debt. However, this calcu-

lation probably exaggerates the effect of these plans. The national assets-to-income ratio in the model initially falls because the larger government budget deficit overwhelms higher private savings. It then takes thirty-five to fifty years before this ratio returns to its original level, and the ultimate effect is not reached until after seventy years. Over this entire period, many variables in the model, such as interest rates, are assumed to remain constant. If the model is modified to allow these variables to change over time, the long-run effect on the capital stock is considerably smaller.[7]

Conclusion

What does the research surveyed in this article imply about the current proposals to expand IRAs? We believe that the proposals will probably be even less effective in generating savings than the current programs—front-loaded IRAs and 401(k)s—for several reasons. First, the back-loaded IRAs in these proposals are unlikely to increase contributions substantially because taxpayers appear to prefer an immediate tax write-off. Second, the proposals lack the employer matching provisions that help make 401(k) plans more effective in generating savings. Third, even though the relaxed withdrawal provisions may encourage more contributions at the outset, this effect would probably be offset by greater asset-shifting in the short run and by more withdrawals in the long run.

As for IRAs in general, the short-run effect of these accounts on savings is difficult to establish, but any increase in savings is likely to be extremely modest. An IRA program maintained over the long term is also likely to have a small impact, although it might increase savings at the margin. In sum, such programs by themselves are probably insufficient to reverse the recent decline in the saving rate. Thus, a major turnaround in the national saving rate will require much more ambitious initiatives: a total overhaul of the tax system to favor all savings, a large-scale effort to reduce the budget deficit, or a significant change in household attitudes toward saving.

Notes

1. The net national saving rate is calculated using data from the National Income and Product Accounts (NIPA). It is gross saving minus depreciation, all divided by net national product.

2. Other recent surveys include Gravelle (1991) and Hubbard and Skinner (1995).

3. Feenberg and Skinner (1989) provide some evidence on such behavior. They find that a predictor of IRA contributions is whether a taxpayer would owe money on his or her return. They interpret this finding to mean that taxpayers prefer opening an IRA to paying the Internal Revenue Service.

4. For example, Boskin (1978) estimates that savings would increase by 0.4 percent for each 1 percent increase in interest rates. In contrast to Boskin's figure, which is at the upper bound of empirical estimates, Hall (1988) calculates an elasticity of close to zero. Steindel (1981) explains that such calculations can differ greatly because the elasticity depends on both the consumption function and the relative responses of property income and wealth to a change in the interest rate.

5. The implied (uncompensated) interest rate elasticity of savings in the model is between 0.15 and 0.35, compared with the largest estimates of about 0.4 (see preceding note).

6. Under current law, allowable early withdrawals are penalized at a 10 percent rate. However, early withdrawals are allowed only in certain circumstances, such as employee separation from a firm and "financial hardship," so that the effective penalty rate is between 10 and 100 percent.

7. For example, as the capital stock increased in later periods, interest rates would probably fall. This effect would reduce the increase in the capital stock. In the extreme, a simple general equilibrium model such as the Solow growth model would imply a constant steady state capital-to-income ratio. An IRA plan then would have no effect on the capital stock in the long run.

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About the Authors

Jonathan McCarthy is an economist and Han N. Pham an assistant economist in the Domestic Research Function of the Research and Market Analysis Group.