

Lecture Notes 7b: Saving Incentives

(reference: Engen, Gale and Scholz, “The Illusory Effect of Saving Incentives on Saving,” JEP 1996.)

In the 1980s, saving rates fell dramatically in the U.S. Continued low saving since then has raised concerns regarding the ability of the economy to finance investment and sustain growth, and the ability of individuals to support themselves in retirement.

These led to the development of savings programs like Individual Retirement Accounts, 401(k)s and Keogh plans. Such voluntary savings accounts, or saving incentives, offer preferential tax treatment of contributions and returns, and have annual contribution limits and penalties for early withdrawals.

Engen, Gale and Scholz (EGS) study whether such saving incentives have increased net (public + private) saving.

Aggregate trends in saving incentives and saving

Figure 1 reports 1980-95 time series on savings/GDP and saving incentive contributions/GDP.

Personal savings measurements are taken from National Income and Product Accounts Data, where they are calculated as personal disposable income – personal spending.

Over the 1980-1992 period, contributions to saving incentives rose by 1.1% of GDP. They had 2 major changes, one in 1982 with the expansion of IRAs and 401(k)s, and one in 1987 following TRA86.

Personal saving also fell after TRA86. In total, contributions fell by only \$5 billion while personal savings fell by \$28 billion from 86-87. Saving incentives cannot account for more than 1/5 of the personal savings drop.

Note that saving incentives are important: from 1982-94, saving incentives account for 1/3 or more of personal saving.

The macro evidence reported in Figure 1 does not suggest that expanded savings incentives accompanied an increase in savings. Clearly, however, the savings decline might have been worse absent the expansions. For this reason we turn to the micro evidence.

5 Issues Prior Studies Have Overlooked

EGS point out five major issues in the determination of savings incentive effects on savings that previous studies have overlooked.

1. Saving varies across households. Households eligible for or participating in saving incentive programs differ systematically from those who aren't/don't.
2. Households with saving incentives have taken on more debt than households without. Studies of savings effects must consider net wealth—assets – debt—not just assets. Financial assets are a relatively small portion of wealth, so studies that focus on financial assets alone are of limited significance.
3. Since the early 80s, financial markets, pensions and Social Security have undergone major changes. The interactions between these changes and savings incentives have been overlooked.

4. Savings contributions are generally tax-deductible. Balances generally represent pre-tax balances. For this reason, direct comparison of the sizes of saving incentive accounts and conventional assets overstates the relative size of incentive savings. Saving incentive account dollars represent less foregone consumption, or less available future expenditure than do conventional asset dollars.

5. Consider workers with equal cash wages, but one of whom has a 401(k) while the other doesn't. The first worker has greater total compensation. Ignoring the difference between cash wages and total compensation can lead to overestimates of the impact of saving incentives on savings.

EGS then apply their 5 factors to the evaluation of existing measures of saving incentive effects on savings.

Cross-Sectional Evidence on IRAs

The extent to which IRAs raise savings depends on the behavior of households that hold IRAs, not those that don't.

The extent to which households view IRAs as tax-favored substitutes for existing savings is important. Households for which IRAs are most likely to be good substitutes for other saving are those with heads aged 59+, so that they face no penalty on IRA withdrawals, and those with large amounts of other assets, so that they can draw down other assets before IRAs to avoid penalties.

From '83-'85, almost 70% of IRA contributions were made by households with heads 59+ OR non-financial assets > \$20,000. 78% of households that contributed up to the IRA contribution

limit in each of the 3 years were in these groups. For these contributors, IRAs are likely to be good substitutes for other savings.

In 1983, near the start of the IRA program, the median IRA contributor had \$77,000 in net worth and \$16,000 in financial assets; the median household contributing the max in each of '83-'85 had \$101,000 net worth and \$30,000 financial assets.

By comparison, the median SCF respondent had \$20,448 wealth and \$2050 financial assets.

This heterogeneity is due in part to variation in observables like age, earnings & family size. After controlling for such observables, substantial heterogeneity remains due to unobserved heterogeneity in tastes for saving. Allowing for heterogeneity while estimating IRA effects has proven difficult.

Venti and Wise (1986, 87, 90, 91) estimate that raising the annual contribution limit would raise IRA saving, and that 45-66% of the increase would come from reductions in consumption. They employ the identifying assumption that IRA contributors and non-contributors save the same total amount.

EGS point out that if contributors have stronger tastes for saving than non-contributors, then the Venti-Wise model interprets the evidence that IRA limit-contributors saved more than non-contributors as evidence that IRAs increase saving.

Gale and Scholz (1994) develop and estimate a model of household saving in IRA and other vehicles. Households enjoy the higher return to savings in IRAs, but dislike the penalties for early withdrawal. IRAs are imperfect substitutes for other saving in the model. As age and assets rise, IRAs become better substitutes for other saving.

The model implies that, in the absence of IRAs, households that contribute to the limit in each year would have saved the same amount as other IRA contributors, and not non-contributors.

Estimates indicate that people with higher assets find IRAs to be better substitutes for other saving, that contributors and non-contributors would save different amounts absent IRAs and that overall 2% or less of the additional contributions from an IRA contribution limit expansion would represent net additions to national saving.

Cross-sectional evidence on 401(k)s: is eligibility endogenous?

Employers determine 401(k) eligibility by offering or not offering the accounts. If eligibility is distributed independently of underlying saving propensities, then a comparison of the savings of eligibles and ineligibles is a good estimate of the effect of 401(k)s on saving.

One might expect that employers respond to the demands of employees in structuring work benefits. Additionally, even if employers randomly decided whether or not to participate in 401(k) plans, workers with strong preferences for saving would be expected to seek out employers offering 401(k)s.

Whether 401(k)s eligibility is endogenous is an empirical question. Poterba, Venti and Wise (PVW) (1995) compare the non-401(k) wealth of eligible and ineligible households controlling for observables, and based on this offer empirical evidence that 401(k)s are exogenous.

EGS (1994) refute this claim by running similar tests with more explanatory variables, and by incorporating pensions in their analysis. EGS find that employees with 401(k)s are more likely to

have defined benefit pensions, and overall more wealth than non-eligibles.

EGS also claim that PVW assume that all 401(k) savings is new savings, so that in their test for endogeneity they compare only non-401(k) assets for eligibles and ineligibles, biasing their results toward the exogeneity finding.

Additionally, returning to point 4 in the list of 5 omissions, EGS note that PVW control for earnings as cash earnings and not as total compensation. Because employer 401(k) contributions constitute compensation as well, households identical with the exception that one has a 401(k) and the other doesn't have different earnings and thus should have different savings rates.

EGS conclude that 401(k) eligibility is endogenous.

Bernheim & Garrett (1995) control for tastes for saving in a manner that EGS approve, and their results suggest that only 10% of 401(k) contributions represent new savings, according to EGS. EGS further note that this low estimate of the effect of 401(k)s on saving is biased upward, since the regressions control for cash and not total earnings.

Cohort Analysis

Cohort: group of people born in the same time interval.

Table 1 reports PVW's (1996) cohort analyses. The table presents evidence on the mean financial assets and saving incentives for cohorts aged 60-64 in 1984 and 1991, respectively.

Venti and Wise (1996) interpret the results in Table 1 as evidence that saving incentives have raised private savings. Since the later

cohort had more time to save into the IRA and 401(k) programs than the older cohort, and the cohorts are otherwise observably similar, the difference in total savings is attributable to the savings incentive effect.

EGS criticize this conclusion. Age, time and cohort effects are difficult to separate because age = time – cohort. As a result, cohort analyses reflect confounded information on age, time and cohort effects.

EGS report that from 1984-91 aggregate real financial assets grew by \$4 trillion, while saving incentive balances grew by \$1 trillion, so that we cannot attribute a majority of changes in financial assets to saving incentives.

They note that between 1984 & 91 the US experienced a stock market boom. From '84-'91, the S&P 500 rose 78% in real terms. From '77-'84, by contrast, the index fell 5% in real terms. Thus the recent rate of return on assets faced by the age 60-64 cohorts varied dramatically.

EGS argue that this difference alone would induce most of the higher '91 cohort saving reported in Table 1.

Changes in 4 other types of wealth can explain the relative asset positions of the '84 and '91 cohorts. These assets are

- Tangible capital (housing, etc.)
- Mortgages & household debt
- Social Security
- Private pensions other than 401(k)s

First, when inflation and marginal tax rates declined in the '80s, investors shifted out of tangible capital like housing that had been more attractive in the '70s. Some of the change in financial assets

across the cohorts just reflects a shift from non-financial to financial assets.

Second, household debt rose. At least $\frac{1}{4}$ of the rise in financial assets from '84 to '91 was matched by a rise in debt.

Third, the value of Social Security benefits was reduced in the 1983 reform. For households 65-69 in '91 SSW was \$6000 less than it had been for 65-69yo's in '84. This would imply some of the increase in financial assets may have been to offset the SS decrease with retirement savings.

Fourth, non-401(k) pension coverage decreased. In the SIPP, 55.4% of working households 60-64 were covered by defined benefit (DB) or non-401(k) defined contribution (DC) plans in 1984, compared to 46.9% in '91. The increase in saving incentive assets could simply offset the decrease in other pension assets. (There exists a growing literature on substitution over time between DB & DC, and DB and 401(k) retirement benefits.)

Finally, we look back to omission 4 in the EGS list. The saving incentive balances reported in Table 1 are pre-tax, while the other financial asset balances are generally post-tax. This would indicate that in terms of foregone or available future consumption savings incentive balances are smaller relative to other financial asset balances than reported in Table 1.

Similar issues arise in the consideration of the comparison of savings between saving incentive contributors and non-contributors in the bottom of Table 1. Particularly, we note that participants held many times more financial assets in 1984 than did non-participants, so the stock market boom and higher real interest rates contributed differentially to the growth of the financial assets of participants and non-participants.

Additionally, debt increased more rapidly for contributors than for non-contributors over the period, but debt is not included in the calculations in Table 1.

EGS conclude that there is little evidence in cohort analyses that saving incentives increased wealth.

Discussion

The above constitutes only an introduction to the side of the savings debate presented by Engen, Gale and Scholz. Among remaining topics they discuss are:

- Successive cross-section studies
- Evidence from panel data
- Substitution between pensions and 401(k)s at the firm level
- Simulation analysis and
- Offsetting revenue effects of tax preferences for saving.