Taxation of Saving for Retirement: Current Rules and Alternative Reform Approaches

Eric Toder

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1 Introduction

Saving rates in most advanced economies have been declining for the past quarter-century. Low saving rates reduce economic growth and make economies more dependent on capital imports to maintain investment. Resulting capital market imbalances may have contributed to the current worldwide economic crisis. With ageing populations, policymakers also worry if people are saving enough for retirement.

Public finance scholars and policymakers have long debated the relative merits of taxing income or consumption. While income taxation continues to be a major revenue source, most countries allow consumption tax treatment for most saving for retirement. With only a few exceptions, efforts in the 1980s to reform income taxes by broadening the tax base and lowering tax rates left preferences for retirement saving in place.

The mantra of tax reformers remains the same—lower tax rates and a broader tax base (whether income or consumption) to improve fairness, efficiency, and simplicity. But the laudable goals of tax reform run afoul of practices in many countries to use the tax system actively to promote social and economic goals. The widespread use of "tax expenditures" has been documented in a number of studies.[1] In recognition of the fact that the tax system will continue to be used to promote social goals, some authors have addressed the issue of when it is best to use the tax system or spending to advance policy goals,[2] while others have argued that social goals could be achieved more efficiently by converting tax expenditures to refundable credits.[3] Concerning taxation of saving, the terms of the debate have shifted from how to make the tax system neutral to how to use the tax system most effectively to raise saving.

This paper discusses tax rules for retirement saving and alternative reforms, with an emphasis on current practices and policy options in the United States. I review briefly general rules for taxing saving and the extent to which individual income from capital bears tax in the United States. I then discuss in more detail how retirement saving incentives work in the United States, emphasizing how employment-based tax preferences subsidize saving relative to *consumption* tax treatment and how subsidies have been affected by the evolution to a system that allows more individual choice in access to consumption tax treatment. I conclude by discussing two directions for reform: 1) supplementing or replacing indirect subsidies through employment with direct tax subsides to individuals, and 2) promoting the use of automatic enrolment in saving plans.

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[1] H Brixi, C Valenduc and Z Swift (eds), *Tax Expenditures—Shedding Light on Government Spending Through the Tax System* (World Bank, 2004); L Burman, E Toder and C Geissler, "How Big Are Individual Income Tax Expenditures and Who Benefits From Them?", Urban-Brookings Tax Policy Center Discussion Paper 31(December 2008), available at http://www.taxpolicycenter.org/UploadedPDF/1001234_tax_expenditures.pdf (accessed on 4 December 2008).

[2] D Weisbach and J Nussim, "The Integration of Tax and Spending Programs" (2004) 113 *Yale Law Journal* 955.

[3] L Batchelder, F Goldberg and P Orszag, "Efficiency and Tax Incentives: The Case for Refundable Tax Credits" (2006) 59 *Stanford Law Review* 23.

2 General rules for taxing the return to saving

Most countries with income tax systems provide significant preferences for income from savings, compared with a pure income tax model. While rules vary among countries, virtually all countries exempt the return to saving inside employment-based pension plans and other retirement saving accounts for most workers.[4] In addition, income tax laws typically either exempt or tax only partially returns to many types of assets held by households, most notably returns to home and consumer durables and capital gains.

2.1 Taxation under pure income and consumption taxes

Under an income tax, individuals include in their taxable income both the income they earn and annual returns on saving. Amounts consumed from the proceeds of asset sales bear no additional tax because they come from after-tax income. This taxing method is often referred to as TTE, corresponding to *T*axation of earnings, *T*axation of investment returns, and *E*xemption of return of capital.

The key difference between an income and consumption tax is that the latter exempts normal returns to capital. A consumption tax often can also differ in timing from an income tax by exempting saving and taxing investment returns only when they are withdrawn for consumption, instead of taxing wages and exempting returns to investment, but it is the exemption of the return to capital, not the timing of tax liability that is the critical difference between an income and a consumption tax.

Under a tax regime that imposes tax only when funds are withdrawn for consumption (EET), the worker pays no tax on wages used to purchase assets, accrues income from assets tax-free and pays tax on amounts withdrawn and not re-invested. The tax on withdrawals represents a deferred tax on the present value of the untaxed wages. Alternatively, a consumption tax can be imposed in pre-payment form, so that wages saved are taxable, but capital income and asset sales are tax-exempt (TEE). TEE is equivalent to EET if marginal tax rates are the same when working as in retirement and there are no economic rents. If, as is often the case, marginal tax rates are lower because the worker's income falls after retirement, then granting EET treatment is more favorable to the taxpayer than TEE treatment unless the effective limits on the amount that can be contributed to tax-favored accounts are higher for contributions to a TEE account than to an EET account. In those circumstances, TEE treatment of an account could be more favorable to the taxpayer than EET treatment.[5]

Beyond this, TEE may also differ from EET if the income individuals receive in the form of capital gains, interest, and dividends reflects monopoly rents or returns to labor instead of the reward for reducing current consumption. Discovery of a scarce resource or granting of a government franchise could generate monopoly rents that reflect returns on

[4] K Yoo and A Serres, "Tax Treatment of Private Pension in OCDE Countries" (2004) 39(2) *OECD Economic Studies* 75.

[5] TEE may be more favorable than EET if the same limits are imposed on the nominal amounts that workers can deposit in both types of accounts. For example, if the annual amount that can be deposited in a tax-favored retirement account is limited to $1,000 per year and the worker's marginal tax rate is 33%, a $1,000 contribution in a TEE account, which comes from after-tax dollars, is equivalent in pretax dollars to a $1,500 contribution to an EET account.

a non-replicable investment far in excess of the time value of money. A successful entrepreneur typically reaps rewards in the form of a higher valuation of his/her business, reflecting the future profits that the business can generate. These rewards are effectively a return to the entrepreneur's skill, foresight, and enterprise, and therefore a form of labor income. In these circumstances, TEE is more favorable than EET, because it allows the investor to gain the entire extra-normal profit or return to a scarce skill or discovery tax-free, even though the initial investment must come from after-tax dollars. In contrast, under EET, the government becomes an (unwanted) partner in the high-return enterprise, contributing a portion of the investment funds (through deductibility), but also reaping a share of the profits.[6]

2.2 Is a consumption or income tax more efficient?

Taxing all economic activities at the same rate will not distort economic choices because taxpayers cannot reduce their liability by changing behavior. In practice, however, it is only feasible to tax observed market transactions, which leaves returns to time spent in home production (leisure) exempt from tax. When some economic activities are untaxed, optimal tax theory shows that efficiency is not always maximized by uniform taxation of all other activities, but Atkinson and Stiglitz[7] find that under certain conditions, equal taxation of all goods and services minimizes the economic cost of taxation.

Present and future consumption are two such competing goods. Both an income tax and a consumption tax favor leisure over market work (labor). But a consumption tax is neutral between current and future consumption, while an income tax favors current over future consumption by reducing the rate of return to saving. An income tax that raises the same revenue as a consumption tax requires a lower tax rate because the base of an income tax includes capital income, so it favors leisure over current consumption less than a consumption tax. But an income tax favors leisure over future consumption more than a consumption tax by reducing the return on saving, so it is not necessarily more favorable to work effort. If people's decision on how much to work is independent of their decision on how much of their income to save for future consumption (the utility function is separable in leisure and consumption), then a consumption tax unambiguously imposes smaller economic costs than an income tax—in other words, the optimal tax rate on capital income is zero. If future consumption and non-market production are complements or substitutes, the optimal tax on capital income could be positive or negative. This line of reasoning leads many analysts to argue for the presumed normative superiority of a consumption tax to an income tax,[8] absent more detail on behavioral responses. Others note, however, that it may in practice be difficult to achieve

[6] E Toder and K Rueben, "Should We Eliminate Taxation of Capital Income", in L Burman, H Aaron and E Steuerle (eds), *Taxing Capital Income* (2007), p 89. If additional investment opportunities at super-normal are yields are available, however, then the investor could do equally well with EET as with TEE simply by increasing the scale of investment.

[7] A Atkinson and J Stiglitz, "The Design of Tax Structure: Direct Versus Indirect Taxation" (1976) 6 *Journal of Public Economics* 55.

[8] J Bankman and D Weisbach, "The Superiority of an Ideal Consumption Tax Over an Ideal Income Tax" (2006) 80 *Stanford Law Review* 1413.

distributional objectives of a tax system without retaining some capital income taxation of high-income individuals.[9]

2.3 The United States hybrid income-consumption tax system

The United States, like most OECD countries, relies on an income tax as a major revenue source, but these income taxes are hybrid systems that include elements of both income and consumption taxation. Most countries exempt most income accrued in retirement saving plans from tax, tax some forms of capital income (such as capital gains) preferentially, and exempt from tax imputed rent from owner-occupied housing and consumer durables. Countries also limit the deductibility of interest income, in recognition that some income from some debt-financed investments is tax-exempt.

2.3.1. Exemption of retirement or life-cycle saving.

The U.S. income tax includes provisions that exempt from tax many forms of retirement saving and also exempt income from special accounts for higher education and health care. Most retirement saving accounts in the United States receive EET treatment, but individuals also can deposit money in prepaid accounts with TEE treatment. (The latter are called "Roth accounts" after the U.S. Senator who sponsored legislation establishing them.) Limits are imposed to restrict the use of accounts to life-cycle saving of most workers, while maintaining a capital income tax on large wealth accruals for high-income individuals.

2.3.2. Housing.

The value of rental services (net of interest, depreciation and operating costs) from owner-occupied housing is exempt from tax, making owner-occupied housing tax-favored relative to rental housing and other real capital investments. Beyond this, even though the gross rental income from housing is not taxable, homeowners may still deduct mortgage interest payments.[10] Most capital gains on owner-occupied housing are exempt from tax. Married couples may take an exemption for the first $500,000 of capital gains ($250,000 for single individuals) on homes in which they reside for two or more years. The exemption can be used multiple times by the same person for different residences.

2.3.3. Other saving preferences.

Financial assets and business assets held outside of retirement accounts also frequently qualify for favorable treatment at the individual level. There are tax preferences for capital gains, dividends, life insurance savings, bonds issued by state and local governments, special savings accounts for education and medical care, and a variety of business assets.

2.3.4. Overall taxation of individual saving.

[9] E Toder and K Rueben, above n 6.

[10] The deduction is limited to interest on the first $1 million of a mortgage loan for acquisition of a principal residence plus $100,000 for a home equity loan.

Taken as a group, these provisions make most assets held by most U.S. households exempt from individual income tax (Table 1). In 2004, an estimated 65 percent of household assets (75 percent for households below the top income decile) were in tax-exempt form, either in retirement saving accounts (21 percent) or owner-occupied housing, consumer durables, and life insurance policies (44 percent). The retirement saving figure includes both the value of contribution (DC) retirement plans and an estimate of the present value of pension income from employment-based defined benefit (DB) plans. The figure does not include the present value of federal Social Security retirement benefits, now the largest source of retirement income for households in the bottom four income quintiles.

The share of household assets in DC and DB plans rises with income through the first four quintiles, but declines sharply within the top income quintile. Retirement assets represent 32 percent of wealth for households between the 80th and 90th quintiles of the income distribution, but only 8 percent for households in the top 1 percent. For the very richest households, partially taxable assets (mainly corporate equity shares and business assets) dominate, accounting for over 55 percent of wealth. These very highest income households own 21 percent of all assets, but 36 percent of corporate equities, 39 percent of business assets, and 63 percent of tax-exempt bonds.[11]

Consequently, the U.S. income tax system is close to a consumption tax in its treatment of capital income for the vast majority of households, while subjecting returns to most assets of the very highest-income taxpayers to a partial and incomplete income tax. Many other OECD countries also exempt returns to owner-occupied housing and consumer durables and provide either EET or TEE treatment to retirement saving.[12] This means most income taxes in the OECD are closer to consumption than income taxes at the individual taxpayer level, except for taxes on very high income individuals who hold the vast bulk of financial assets or business assets that are outside of tax-deferred retirement saving plans.

2.3.5. Interest deductions and tax-arbitrage.

Under an income tax, interest income is taxable and interest payments deductible, but taxpayers can engage in tax arbitrage if they can finance purchase of tax-exempt assets with tax-deductible borrowing. This allows the taxpayer to reduce income tax liability without any net saving. Taxpayers with other wealth can also lower their tax liability without increasing saving by transferring a portion of their financial assets to tax-favored (EET or TEE) retirement saving plans.

In the United States, interest on credit cards and other personal loans (other than student loans) and interest secured by automobiles and other consumer durables are not deductible and interest on loans secured by other financial assets (such as corporate stocks) is only deductible against fully taxable capital income from those assets. Unlike many other countries (including Australia, Canada, and New Zealand), however, the

[11] We treat tax-exempt bonds as partially taxed because owners pay an "implicit tax" in the form of a lower interest rate than on taxable securities. In contrast, for assets held within retirement plans, the pretax return on assets is the same for investors holding them outside of as within retirement plans, so the entire benefit of tax-exemption goes to the investor.
[12] K Yoo and A Serres, above n 4.

United States allows individuals to deduct mortgage interest on up to $1 million of originally issued mortgages and up to $100,000 of home equity loans. Homeowners can use home equity loans to purchase cars and other household assets and finance contributions to retirement saving accounts.

The deductibility of mortgage and home equity loan interest makes the marginal cost of funds equal to the after-tax return for many U.S. households. The biggest step the United States could take to make its tax system neutral between present and future consumption for most taxpayers would be to eliminate deductibility of mortgage interest.

2.4 Limitations on retirement saving preferences in the real world

Maintaining the combination of taxation of capital income for the wealthy and consumption tax treatment of life cycle saving requires limits on contributions to EET and TEE accounts. The U.S. income tax regulates both DB and DC plans to maintain a capital income tax at the top of the income distribution, while broadening participation in retirement saving plans by rank and file workers.

2.4.1 Limits on DB plans.

DB plans promise employees an annuity at retirement, based on a formula that typically includes years of service and average pay in the last three or five years of employment. The plans favor long-tenured workers with a single employer over those who change jobs frequently and see their pensions eroded by inflation and real wage growth between job separation and the age of retirement eligibility. Employers bear the risks from changes in the market values of plan assets, but employees could be vulnerable if plans fail. DB pension plans in the United States are insured and regulated under the *Employee Retirement Income Security Act* (ERISA), but the insurance that is provided by the Pension Benefit Guarantee Corporation (PBGC) covers only benefits accrued at the time of plan failure or termination. This means that mid-career employees in plans that terminate lose the high accruals in years just prior to retirement eligibility that plan formulas provide.

Employers may deduct contributions to DB plans. Income accrued within qualified DB plans is tax-free. Distributions from the plans are included in taxable income of retired employees (EET). Employers must pay an excise tax on excess contributions to "over-funded" plans to prevent them from using the plans to accrue tax-free income beyond amounts needed to fulfill promises to retirees. Other rules provide some restrictions on "top-heavy" plans limited to highly compensated employees and limit the amount of retirement benefits that qualified plans can pay. (The limit is $195,000 for tax year 2009.)

2.4.2. Limits on DC plans.

Under DC plans, employers and employees contribute money to a retirement fund in the worker's name. At retirement, employees may make lump sum withdrawals from the plan or purchase a private annuity; very few choose the latter. Most DC plans receive EET treatment, but there are also "Roth" plans that are TEE.

Most DC plans sponsored by employers are salary reduction plans. (I refer to them as 401(k) plans after the tax code section that covers most of them, although there are other

plans too.) Employees may contribute up to 100 percent of earnings to a 401(k) plan, up to a maximum of $16,500 in tax year 2009. Workers over age 50 are allowed an additional $5,500 of "catch-up" contributions. Employers often supplement employee contributions, either by contributing a fixed share of earnings or a matching percentage (up to a limit) of employee contributions. The maximum combined contribution limit for employers and employees is $49,000 in 2009 plus the "catch-up". Discrimination rules limit the percentage of contributions that can be made by or for highly-paid workers.

Workers may also deduct contributions to individual retirement accounts (IRAs) if their employer does not offer a retirement plan or if their income is below specified limits. The maximum contribution in 2009 is $5,000 for a worker and an additional $5,000 for a non-working spouse ($6,000 for each if over age 50). The contribution limits are the same for Roth IRAs (taxed as TEE), but the income limits for participation are higher. Self-employed individuals may deduct contributions of 25 percent of their self-employment income, up to a maximum of $49,000 in 2009, to a qualified retirement plan (QRP).

Withdrawals before age 59 ½ from IRAs, employer sponsored DC plans, and QRPs for the self-employed are subject to a 15 percent penalty tax in additional to being included in taxable income. (Workers can withdraw money from an employer plan when they change jobs; if they transfer the money to an IRA or another employer's plan there is no penalty tax.) After age 70 ½, retirees are required to withdraw funds from tax-deductible qualified plans, based on formulas specified by IRS rules so that deferred earnings are eventually taxable either to taxpayers or heirs (who must withdraw money from inherited tax-deferred retirement plans). There is no withdrawal requirement for Roth accounts.

2.4.3. Employee choice in access to retirement saving tax preferences.

Employers used to fund most tax-preferred retirement plans. Employees could save more in a qualified plan by working at a firm offering more generous retirement savings provisions compared to cash compensation, but otherwise saved what their plan provided.

Currently, many types of retirement arrangements offer substantial choice to workers. Within legislated limits, employees and the self-employed may choose whether and how much to contribute to IRA and Keogh plans. Employee participation in and contributions up to limits to employer-sponsored 401(k) plans is also voluntary, although often employers subsidize employee participation.

These changes have expanded participation to self-employed people, individuals whose employers do not offer a retirement saving plan, and low and middle-income workers who want to save more outside their employer's plan. 401(k) plans allow employees who want to save more or less for retirement than others in their firm to do so. The availability of EET treatment for employee contributions has contributed to a large expansion in the number of employers who offer DC plans. But many people do not contribute voluntarily to retirement saving plans, especially those with low incomes. Retirement plans that limit individual employee choice, such as DB plans or totally employer-funded DC plans, promote wider participation with a firm.

With current non-discrimination rules, 401(k) plans are a compromise between full individual choice and no choice within a firm. Anti-discrimination rules are based on the level of employee *participation*, not simply access. They induce many employers

offering 401(k) plans to provide minimum contributions for all employees or to subsidize their employees' contributions to meet the tests for qualification.

2.5 Who uses retirement saving incentives and why?

The percentage of U.S. employees participating in employer-sponsored pension plans rose only modestly over the past quarter century, from about 47 percent in 1980 to 51 percent in 2007,[13] but there was a huge shift from DB to DC plans. The share of workers participating in DB plans dropped from 39 to 20 percent, while the share with *DC participation only* increased from 8 to 31 percent. (Some DB plan participants also have DC coverage.) The growth in DC coverage reflects changes in the economy, worker preferences and changes in tax policy. As fewer workers spend lifetime careers with a single employer and more women have entered the workforce, DC plans with their portability have become more suited to many workers' needs than traditional DB plans.[14] DC plans also reduce long-term commitments and risks for employers operating in an increasingly competitive environment. Changes in tax laws allowing the establishment of 401(k) plans and increasing contribution limits have also spurred DC coverage. Remaining DB plans are concentrated in the public sector and among large and unionized private employers.

Participation rates in tax-favored retirement plans are much higher for upper and middle-income taxpayers than for low-income taxpayers (Table 2). In 2003, over 80 percent of taxpayers with income in excess of $80,000 in 1997 dollars contributed to tax-favored retirement plans or were in plans where their employers contributed, compared with 52 percent at incomes between $20,000 and $40,000, and only 20 percent at incomes less than $20,000. Higher income taxpayers participate more than lower-income taxpayers because their saving rates are higher, they have other assets they can shift into tax-deferred accounts, and they benefit far more from tax-exemption of the return to saving than low-income workers.

Participation rates are concentrated among high income taxpayers for voluntary plans, but not for non-contributory plans (DB plans and DC plans with employer contributions only). For voluntary plans (401(k) type plans, IRAs, and self-employed plans), participation rates for taxpayers with income over $80,000 is more than twice the rate for other taxpayers, while for non-contributory plans, participation rates are slightly higher than average for taxpayers with incomes between $20,000 and $80,000. This difference in participation rates reflects in part a different workforce composition between employers offering DB plans and other employers, but also suggests that the movement towards more voluntary plans may have increased the concentration of tax-deferred retirement saving among higher-income workers.

Average contributions among participants to tax-favored retirement plans are also higher among high-income than low income taxpayers (Table 3). Very few contributors

[13] B Cushing-Daniels and R Johnson, "Employer-Sponsored Pensions: A Primer", Urban Institute, The Retirement Project (January 2008).

[14] In recent years, some employers in the United States have established so called "cash-balance" (CB) plans, in which employers contribute to a separate account for each worker and guarantee a rate of return. Because accrual rates within a CB plan do not rise in the years prior to retirement, workers in CB plans do not lose retirement benefits when they change jobs.

to 401(k) plans contribute the maximum allowable amount.[15] Most who contribute the maximum are very high-earners.

High-income people hold large shares of the wealth in tax-deferred retirement saving plans, but much larger shares of DC plan wealth than DB plan wealth. In 2004, taxpayers in the top income quintile held 71 percent of DC plan assets, but only 41 percent of DB plan assets (Table 4).

3 Should government subsidize saving?

Under either the TEE or EET rules that apply to most retirement saving in the United States and most OECD countries, there is effectively no capital income taxation on saving for retirement. Should the tax system go further and provide positive subsidies for retirement saving so that after-tax returns are higher than pre-tax returns? And if saving is to be subsidized through tax system, what is the best way to design a subsidy?

There are two main rationales for subsidizing saving. First, many people may save too little and suffer a drastic drop in living standards in retirement. Universal public pension programs often provide a basic floor level of retirement income and high replacement rates for low wage earners (even if absolute retirement incomes are low), but may not provide enough for those in the middle of the income distribution to maintain their living standards in retirement. If people were to save more voluntarily, or with modest encouragement, it would relieve pressure on government to expand pension programs and protect older people from sharp declines in living standards.

Second, saving rates have been declining over time in many OECD countries. Lower saving rates either slow economic growth, by limiting funds available for investment, or raise dependence on capital imports from high-saving countries. The external deficits required to maintain domestic investment and growth may not be sustainable in the long-run and put countries at risk if external sources of finance should decrease suddenly. Even if external capital flows continue to finance high domestic investment levels, countries with low saving rates will eventually experience a slower growth in living standards as more of the income from its domestic capital flows to foreign investors.

Libertarians and others may challenge these rationales. If people prefer current to future consumption, is it the business of government to interfere in their decisions? And if the consequence is some sacrifice of future living standards so people can enjoy higher consumption today, what of it? Neo-classical economists who believe in individual rationality can argue that as long as government policies, through basic retirement pension programs, are providing enough to keep people out of poverty in retirement and the tax system is neutral between present and future consumption, there is no need to subsidize saving. Behavioral economists, in contrast, would argue that people do not make rational choices between present and future consumption and could use some

[15] J Kawachi, K Smith and E Toder, "Making Maximum Use of Tax-Retirement Accounts", Center for Retirement Research at Boston College (2006), available at http://crr.bc.edu/working_papers/making_maximum_use_of_tax-deferred_retirement_accounts.html (accessed on 17 March 2006).

encouragement (albeit through better structuring of decision choices instead of compulsion) to "nudge" them to save more.[16]

3.1 Are people saving enough for retirement?

Researchers in the United States differ widely in their assessments of whether people are saving enough for retirement. One problem is how an external observer can determine how much saving is enough. Another issue is whether the future retirees' projected living standards should be compared with previous cohorts or with their own pre-retirement income or consumption.

Skinner[17] and Penner[18] summarize the literature and explain why it is difficult to tell if people are saving enough. The literature contains diverse views. Some are optimistic, based on estimates that baby boomers will have on average the same ratio of wealth to income as their parents[19] or are smoothing their consumption over time once one accounts for reduced needs when children leave the household.[20] Others are less optimistic; Munnell, Webb, and Golub-Sass[21] examine a National Retirement Risk Index (NRRI) based on replacement rates and conclude nearly 45 percent of boomers will be at risk of being unable to maintain their living standards in retirement.

Diverse sources of risk make it difficult to assess saving adequacy either for individuals or for populations as a whole. Risk factors affecting retirement income adequacy for the whole population include the rate of future increases in (un-reimbursed) medical costs and the performance of financial markets. Beyond this, for any individual, retirement adequacy is influenced by bequests they receive, their physical ability to continue working, changes in marital status, need for long-term care for themselves and their spouses, preferences for retirement consumption, and the extent to which more free time allows retirees to choose consumption goods and services more efficiently. Skinner[22] emphasizes these risks, noting that the best laid plans can be undone by unexpected events such as a messy divorce, a stock market crash, or many years of long-term care. Penner[23] concludes that many retirees will be living on the edge in future years, because of both changes in family structure or insufficient saving while working. Both authors express concern about projected increases in health care costs, which will affect future retiree cohorts much more than current retirees.

Penner notes, paradoxically, that the lowest income workers may be the best prepared for retirement because of the high income replacement rates in public retirement

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[16] R Thaler and C Sunstein, *Nudge* (2008).
[17] J Skinner, "Are You Sure You're Saving Enough for Retirement?" (2007) 21 *Journal of Economic Perspectives* 59.
[18] R Penner, "Are Baby Boomers Saving Enough for their Retirement?", Urban Institute, The Retirement Project Discussion Paper 08-05 (November 2008).
[19] Congressional Budget Office, "Baby Boomers' Retirement Prospects: An Overview", CBO Study (November 2003).
[20] JK Scholz and A Seshardi, "Are All Americans Saving 'Optimally' for Retirement?", presented at the 10th Annual Conference, Retirement Research Consortium, 8-9 August 2008.
[21] A Munnell, A Webb and F Golub-Sass, "Is There Really a Retirement Saving Crisis? An NRRI Analysis", Center for Retirement Research at Boston College Working Paper 7-11 (2007).
[22] J Skinner, above n 16.
[23] R Penner, above n 17.

programs. And one may assume the very rich can take care of themselves. So concerns about adequacy necessarily focus on middle-income earners in the United States and elsewhere. For example, for New Zealand, St John[24] concludes that individuals with moderate earnings are most vulnerable to deteriorated living standards in retirement.

3.2 Saving for economic growth

Most countries in the G7 have seen both household and national saving rates decline in the past few decades. Between the early 1990s and the mid 2000s, net household saving as a percentage of disposable income declined in every country in the G7, except France (Table 5). The declines between 1990-94 and 2005-08 have been especially large in Italy (20 to 8 percent), Japan (14 to 3 percent), Canada (12 to 2 percent), and the United States (7 to less than 1 percent). By comparison, the net household saving rate in Australia also dropped sharply, from 6 percent in 1990-04 to less than 1 percent in 2005-08, but has recovered slightly in recent years from a negative rate in 2000-04.

National saving, which includes business saving and the net government surplus (or deficit) is a better measure of how much a country is putting aside for the future. National saving rates have also been declining, with the biggest drop coming in Japan, which saved over 15 percent of GDP throughout the 1980-94 period, but only 4 percent in 2005-06. The national saving rate in the United States has been steadily falling, except for a slight upward turn during the late 1990s when the U.S. federal government was running a budget surplus. Compared with the average of the G7, Australia is saving slightly more, but New Zealand much less. After a sharp drop between the 1980s and early 1990s, Australia's national saving rate has recovered, while New Zealand's saving has declined to only 1 percent of GDP.

Economists in the United States have raised questions about the measurement of saving in the national accounts, noting that saving rates do not include asset appreciation or net investments in consumer durables. But alternative measures of saving also show that household and national saving has been declining. Preliminary data for 2008 from the National Income Accounts show that U.S. national saving has turned negative for the first three quarters of 2008, as a rising government deficit has exceeded private saving.

Reducing government deficits is the most direct way to raise national saving, but can tax incentives also raise saving? And if so, is the current design of incentives as effective as it could be? Alternatively, are policies other than financial incentives more effective?

4 Ways to increase saving: incentives versus "default rules"

Since the early 1980s, the United States has greatly expanded workers' access to tax-favored retirement saving accounts. Increases in employer offers of DC accounts, higher contribution limits in 401(k) plans, and expansion in the availability of IRAs have made consumption tax treatment available to more private saving of individuals. The share of household wealth in DC retirement accounts has doubled over the past two decades. But the concurrent fall in the private saving rate suggests perhaps that saving incentives have failed.

[24] S St John, "Retirement Incomes in New Zealand" (2005) 15(2) *Australian Economic and Labour Relations Review* 217.

Econometric studies of the effects of IRAs and 401(k)s on saving using micro household data have shown mixed results. Different researchers use different methods and reach different conclusions. Engen, Gale, and Scholz[25] find that contributions to tax-deferred accounts came almost entirely from other forms of wealth or increased debt, while Poterba, Venti, and Wise[26] find that 401(k) plans increase net saving. Other studies find that 401(k) plans increase net saving only for less well-off groups, such as those with lower earnings[27] or no access to housing wealth.[28] 401(k) plans are more likely to increase net saving for low-income participants, because higher income individuals are more able to substitute for other assets or borrow more against their homes (tax deductible under U.S. law) to increase assets in tax-deferred retirement plans.

These studies may, however, be asking the wrong question if one wants to understand how the growth in 401(k) plans has affected private saving. They compare saving in 401(k) plans with estimated saving absent a tax-deferred plan. But the expansion of 401(k) plans in the United States mostly came at the expense of employer-funded retirement plans instead of representing a net expansion in assets in tax-deferred retirement plans. If this is true, the expansion in employee access to voluntary tax-deferred retirement saving in the United States over the past 25 years may have reduced instead of increased retirement saving for moderate income workers by lowering the extent to which employers subsidize saving by their employees.

4.1 Subsidies

EET or TEE rules exempt capital income from tax, but for low and middle-income individuals in a 0, 10, or 15 percent rate bracket, exemption provides little benefit relative to income tax treatment. In 2007, 75 percent of U.S. individual income tax units faced marginal tax rates of 15 percent or less and 30 percent were either non-filers or paid no individual income tax.[29] For these households, meaningful saving incentives would require explicit subsidies that make after-tax returns higher than pre-tax returns.
The United States has subsidized saving in this sense in two very different ways. The first and now most widely used approach regulates employer plans to encourage employers to fund saving plans for their workers. The second approach provides saving subsidies directly to workers.

4.1.1. Encouraging employer subsidies with anti-discrimination rules.

[25] E Engen, W Gale and J Scholz, "The Illusory Effects of Saving Incentives on Saving" (1996) 10(4) *Journal of Economic Perspectives* 113.
[26] J Poterba, S Venti and D Wise, "How Retirement Programs Increase Saving" (1996) 10(4) *Journal of Economic Perspectives* 91.
[27] E Engen and W Gale, "The Effects of 401(k) Plans on Household Wealth: Differences Across Earnings Groups", National Bureau of Economic Research Working Paper 8032 (2000).
[28] D Benjamin, "Does 401(k) Eligibility Increase Saving? Evidence from Propensity Score Subclassification" (2003) 87 *Journal of Public Economics* 1259.
[29] Urban-Brookings Tax Policy Center, "Distribution of Tax Units by Cash Income Level and Tax Bracket Under Current Law, 2007", Table T07-0330 (2007), available at http://www.taxpolicycenter.org/numbers/displayatab.cfm?Docid=1710&DocTypeID=1 (accessed on 20 November 2007).

Employers must satisfy anti-discrimination tests in order for their 401(k) plans to qualify for EET or TEE treatment. These tests require specified ratios of contributions by or on behalf of low-wage workers relative to high-wage workers. The tax law allows a variety of different types of plans employers can use to qualify.

Most employers provide either minimum contributions, matches to employee contributions, or both to encourage employees to participate in 401(k) plans so they can satisfy the anti-discrimination rules. (DB benefit plans and non-contributory DC plans are equivalent to a 100 percent employer subsidy because participation by an individual worker requires no sacrifice in cash wages.) Economic logic suggests that high-wage workers fund at least part of the non-elective contributions for low-wage workers through lower pre-tax compensation. They are willing to accept lower total compensation in exchange for the opportunity to deposit their saving in tax-deferred accounts, while low-income workers place little value on tax exemption.

By subsidizing contributions by low-wage workers, rules that require some uniformity in participation within a firm encourage retirement saving more than EET alone. But the subsidies this system provides are not transparent and vary greatly among firms, depending on employer attitudes and the composition of the workforce within a firm.

4.1.2. Encouraging individual worker subsidies with tax credits or matching grants.

An alternative to the current complex system of inducing employers to provide saving incentives is for the government to subsidize saving directly. The savers' credit introduced in the United States in 2001 is a small step in that direction. The credit in 2008 is equal to 50 percent of up to $4,000 of deposits in qualified retirement savings for married couples with income less than $31,800. The credit rate phases down and then disappears at higher incomes. It is not refundable, meaning that taxpayers can only use the credit to the extent they have positive income tax liability.

The 50 percent credit rate is the equivalent of a 100 percent match on the taxpayer's net contribution. This means that for every $100 of retirement income that the taxpayer would receive with EET treatment, she receives $200 for the same contribution with the 50 percent credit.

The credit could be more effective if it were refundable, so that low-income families could participate.[30] Based on research showing that matching grants are more effective incentives than subsidies with the same credit rate,[31] one might change the 50 percent offset to tax liability to a 100 percent match to deposits in accounts. President Obama in his election campaign proposed to make the savers' credit refundable, raise the income limits, and phase out the credit more gradually as income increases. Combining the President's proposal with reduced limits on contributions to IRA and 401(k) plans (not proposed) could increase private saving with no revenue loss and increase wealth accumulation of low and middle-income households.

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[30] W Gale, M Iwry and P Orszag, "The Saver's Credit: Expanding Retirement Savings for Middle and Lower-Income Americans", The Brookings Institution Retirement Security Project Policy Brief No 2005-2 (2005).

[31] C Eckel and P Grossman, "Rebate versus Matching: Does How We Subsidize Charitable Contributions Matter?" (2003) 87 *Journal of Public Economics* 681.

4.2 Default rules to put workers into saving plans

An alternative to higher subsidies is changing the default rules for participation in retirement saving. Recent research studies[32] show that participation in 401(k) plans increases substantially when enrolment is made the default option, so that individuals must opt out for non-participation instead of opting in to participate. Private employers have increasingly been adopting opt-out 401 (k) plans in recent years, aided by recent legislation that holds employers harmless from employee lawsuits in the event of stock market losses in plans they have been defaulted into. Thaler and Benartzi[33] have designed a retirement saving plan with the default option of a low contribution rate that increases as a percentage of earnings as an employee's pay rises. They found after four years that participants had much higher contribution rates than a control group, with very few opting out of the program.

4.2.1. Mandatory automatic enrolment.

Beyond voluntary plans, government could mandate various forms of automatic enrolment. New Zealand's KiwiSaver plan is an example.[34] Employers are required to establish opt-out retirement saving accounts for new employees, with existing employees given the opportunity to sign up voluntarily. Although New Zealand, unlike most of the OECD, generally taxes income accrued in retirement accounts (TTE), the government offered start-up bonuses for enrollees in Kiwi-saver, preferences for employer contributions, and subsidies to cover administrative costs. New Zealand Inland Revenue[35] finds that enrolments are exceeding expectations and automatic enrolment as opposed to opting in is the main source of participation. The report also notes that it is too early to tell if KiwiSaver has raised the net private saving rate.

A number of retirement experts in the United States have advanced proposals for automatic enrolment.[36] In his election campaign, President Obama proposed requiring employers with 401(k) plans to provide automatic enrolment and requiring employers without plans to offer access to automatic IRAs, in which employees would contribute through payroll deduction unless they choose actively to opt out.

4.2.2. Interaction between default rules and subsidies.

Default rules can interact with tax incentives. The two approaches could be complementary, but default rules could also partially replace subsidies. For example, if

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[32] Summarized in J Beshears, J Choi, D Laibson and B Madrian, "The Importance of Default Options for Retirement Saving Outcomes: Evidence from the United States", National Bureau of Economic Research Working Paper 12009 (2006).

[33] R Thaler and S Benartzi, "Save More Tomorrow™: Using Behavioral Economics to Increase Employee Saving" (2004) 112(S1) *Journal of Political Economy* S164.

[34] E Toder and S Khikatrakun, "KiwiSaver Evaluation Literature Review", Final Report to New Zealand Inland Revenue (4 December 2006).

[35] New Zealand Inland Revenue, "KiwiSaver Evaluation: Six-monthly Report 1: 1 July 2007–31 December 2007" (February 2008).

[36] W Gale, M Iwry and P Orszag, "The Automatic 401(k): A Simple Way to Strengthen Retirement Savings", The Brookings Institution Retirement Security Project Policy Brief No 2005-4 (2005); M Iwry and D John, "Pursuing Universal Retirement Security Through Automatic IRAs", The Brookings Institution Retirement Security Project Working Paper (2006).

U.S. companies can induce more rank and file participation in 401(k) plans by changing the default rule, they could meet anti-discrimination tests with less generous subsidies. By reducing the cost of subsidies in 401(k) plans to firms and their highly-compensated employees, changing the default could raise both the number of firms with plans and the participation of rank and file employees with firms. But reduced subsidies would offset to some degree gains in participation for the change in default and could lower net compensation for rank and file employees.

Changing default rules is a powerful tool to increase participation among rank and file workers in retirement saving plans. Default rules interact with financial subsidies, both in the form of indirect incentives for employers to provide subsidies and in the form of direct government subsidies (either through tax credits or matching grants) to workers who save. Designing the best mix of these instruments is a challenging policy and research question. The evidence does indicate, however, that a combination of direct subsidies, indirect subsidies, and default rules, is a much more effective way to increase saving than the predominant recent U.S. policy of increasing wealth subject to EET or TEE treatment by raising contribution limits in voluntary retirement saving plans.

5 Conclusions

Most OECD countries have income taxes, but allow consumption tax (EET or TEE) treatment to household assets and most retirement saving and provide significant other tax preferences for capital income. In the United States, household assets and assets in qualified retirement saving plans are about 65 percent of wealth for all households and over 75 percent of wealth for taxpayers in the bottom 90 percent of the income distribution; only at the very highest incomes are the majority of assets subject to some income taxation. Even with most capital income of most people tax-exempt, private saving rates in most advanced economies have been falling in the past quarter century and there are rising concerns that people are not saving enough for retirement.

Most workers in the United States face marginal income tax rates of either 0 or 15 percent and therefore benefit little from consumption tax treatment of retirement saving. But retirement plans that require uniformity of coverage within a firm induce employers to subsidize participation by low earning workers so that high-wage workers can gain the benefit of tax-exemption. Because of these government-induced private subsidies, an employer-based retirement saving system within a progressive income tax provides *more incentive* for rank and file workers to save for retirement than a uniform consumption tax.

There is an inherent tension between policies to ensure wide participation in retirement saving plans and policies to allow more choice to individual employees. Over the past quarter century, the United States has seen a large shift from purely employer-funded plans to 401(k) plans with voluntary employee contributions. Although anti-discrimination rules in 401(k) plans induce many employers to subsidize contributions, participation in these plans is more tilted to high-earning workers than participation in wholly employer-funded plans.

In the United States, policymakers who want to improve the effectiveness of tax subsidies for retirement saving are promoting two alternatives to the current reliance on anti-discrimination rules to induce employers to subsidize saving. The first approach

would provide government subsidies directly to workers, either in the form of tax credits or matching grants for contributions to savings accounts. The second approach would encourage or require automatic enrolment in retirement saving plans, based on research findings that changing default rules significantly affects behavior.

The tax reform agenda has shifted since the 1980s push for a more neutral tax system. There is increasing recognition of the role of the income tax in shaping broader social policies. Designing tax reforms to promote more saving among a broad spectrum of the population requires understanding of the different effects of employer-based and individual-based incentives and of how default rules affect outcomes.

Table 1. Shares of Assets Held by U.S. Households by Taxability Status, 2004 (percent)

Income Group	Fully Taxable	Partially Taxable	Tax-Exempt		
			Total	Pensions	Other
Bottom quintile	7.5	20.0	72.6	12.7	59.8
Second quintile	9.1	14.0	76.8	20.5	56.4
Middle quintile	5.4	13.8	80.8	24.8	56.0
Fourth quintile	7.3	15.3	77.4	27.7	49.7
Top quintile	5.6	37.0	57.4	18.8	38.7
80-90th percentiles	5.4	14.0	80.7	31.6	49.0
90-95th percentiles	5.8	21.3	72.9	26.9	45.9
95-99th percentiles	6.2	40.3	53.5	17.8	35.7
Top 1%	5.0	55.5	39.5	8.0	31.5
All Households	6.1	28.7	65.1	20.9	44.2

Sources: Asset value from U.S. Federal Reserve Board, *Survey of Consumer Finances*, 2004; estimates of defined benefit plans from values from G.B.T. Mermin, S.R. Zedlewski, and DJ. Toohey, "Diversity in Retirement Wealth Accumulation" (Washington, DC: Urban Institute, 2008)
Notes: Tax-exempt assets consist of: owner-occupied housing, consumer durables, life insurance plans, and retirement accounts (pensions). Retirement accounts include both defined contribution plans and an estimated value of defined benefit plans.

Partially taxable assets include corporate equity, business capital, and tax-exempt bonds. (Tax-exempt bonds are classified as partially taxable because investors pay an implicit tax in the form of a lower after-tax yield than on taxable securities).

Taxable assets are taxable bonds (corporate bonds, Treasuries, mortgage-backed securities) and other interest bearing assets (checking accounts, savings accounts, money market funds, etc.).

Table 2. U.S. Workers Actively Participating in Tax-Favored Retirement Plans by Income Group, 2003 (percent)

Income Group	All Plans	401(k) Type Plans	Non-Contributory Plans Only	IRAs	Self-Employed Plans
Under $20,000	20	6	12	2	*
$20,000 to $40,000	52	26	22	6	*
$40,000 to $80,000	68	42	21	10	1
$80,000 to $120,000	80	57	17	14	2
$120,000 to $160,000	82	60	14	15	4
$160,000 and over	79	54	12	12	10
All Income Groups	50	28	17	7	1

Source: Congressional Budget Office, "Utilization of Tax Incentives for Retirement Saving: Update to 2003," 2007
Notes: Incomes are expressed in 1997 dollars.
401(k) type plans include employer-sponsored salary reduction plans.
Non-contributory plans include DB plans and DC plans with employer contributions only.
* = less than 1%

Actively participating either means they or their employer made a contribution to a DC plan or they are covered by a DB plan.

Table 3. Average Contributions of U.S. Workers to Tax-Favored Retirement Plans by Income Group, 2003

Income Group	401(k) Type Plans	IRAs	Self-Employed Plans
Under $20,000	636	1,481	2,716
$20,000 to $40,000	1,388	1,720	3,525
$40,000 to $80,000	2,772	1,912	5,534
$80,000 to $120,000	4,634	2,142	7,836
$120,000 to $160,000	6,553	2,310	11,640
$160,000 and over	8,330	2,578	21,015
All Income Groups	3,257	1,926	11,995

Source: Congressional Budget Office, "Utilization of Tax Incentives for Retirement Saving: Update to 2003," 2007
Notes: Averages are for those contributing only. Incomes are expressed in 1997 dollars.
401(k) type plans include employer-sponsored salary reduction plans.

Table 4. Shares of Retirement Assets Held by U.S. Households, 2004 (percent)

Income Group	DC Plans	DB Plans	Total
Bottom quintile	0.9	2.9	1.9
Second quintile	2.7	9.1	6.0
Middle quintile	7.8	16.7	12.3
Fourth quintile	17.2	29.9	23.7
Top quintile	71.3	41.3	56.0
80–90th percentiles	20.0	18.2	19.1
90–95th percentiles	16.2	9.6	12.8
95–99th percentiles	23.5	9.2	16.2
Top 1%	12.1	4.3	8.1
All Households	100.0	100.0	100.0

DC plans include employer-sponsored retirement plans (401(k) and other), IRAs, and plans for the self-employed.

Sources: Asset values from U.S. Federal Reserve Board, *Survey of Consumer Finances*, 2004; estimates of defined benefit plans values from Mermin, Toohey, and Zedlewski, Table 1

Table 5. Household Saving Rates as Percentage of Disposable Income, Selected Countries, 1990–2008

Country	1990–94	1995–99	2000–04	2005–08
Australia	6.1	4.3	-0.9	0.6
Canada	12.1	6.0	3.8	1.6
France	11.0	12.4	12.7	12.1
Germany	12.5	10.2	9.8	10.7
Italy	20.2	14.3	10.3	8.1
Japan	13.9	10.8	5.2	3.2
United States	6.5	3.8	2.1	0.8

Source: OECD *Economic Outlook*: June No. 83 - Volume 2008 Issue 1, Statistical Annex

Table 6. National Saving Rates as Percentage of GDP, Selected Countries (percent)

	1980–84	1985–89	1990–94	1995–99	2000–04	2005–06
Australia	6.8	5.8	1.7	4.2	4.8	6.4
Canada	9.0	7.9	2.5	6.1	9.1	11.4
France	6.3	6.5	6.9	7.9	7.4	5.6
Germany	7.5	10.1	8.2	6.0	5.1	8.2
Italy	8.4	7.7	5.6	7.3	5.5	4.0
Japan	16.5	16.6	15.1	10.0	5.5	4.0
New Zealand	3.6	4.0	1.3	2.6	4.6	1.1
United Kingdom	4.2	4.4	2.1	4.9	3.9	3.3
United States	6.9	5.5	3.5	5.5	2.8	2.5
G7 unweighted	8.4	8.4	6.3	6.8	5.6	5.8

OECD(2008), OECD Disposable Income, Saving and Net Lending/Net Borrowing for OECD Member Countries: Aggregated Data (Online Database), OECD Publishing. (Accessed on December 16, 2008) http://stats.oecd.org/wbos/Index.aspx?datasetcode=SNA_TABLE2