United States Government Accountability Office

Report to the Ranking Member, Subcommittee on Select Revenue Measures, Committee on Ways and Means, House of Representatives

August 2013

AUTOMATIC IRAS

Lower-Earning Households Could Realize Increases in Retirement Income

GAO-13-699

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GAO Highlights

Highlights of GAO-13-699, a report to the Ranking Member, Subcommittee on Select Revenue Measures, Committee on Ways and Means, House of Representatives

Why GAO Did This Study

Participants in DC plans and IRAs may receive tax incentives for their contributions and lower-earning households may qualify for the Saver's Credit, an additional tax incentive for their contributions. However, less than half of the workforce participates in an employer-sponsored plan and upper-income workers have been more likely to take advantage of associated tax incentives. In recent years, proposals have been put forth to modify the Saver's Credit and create automatic IRAs, under which employers who do not sponsor a plan would generally be required to offer their employees the opportunity to save in an IRA through payroll deduction. These proposals would have fiscal impacts for the federal government.

GAO was asked to review tax incentives for contributions to DC plans and automatic IRAs. GAO examined (1) the earnings and tax rates of households that do not have DC plans or IRAs, (2) the effects of the Saver's Credit on retirement income, and (3) the effects of automatic IRAs on retirement income, especially for low- and middle-income workers. GAO examined the characteristics of households that do not take advantage of these tax incentives using data from the 2010 Survey of Consumer Finances, simulated the effects of the Saver's Credit and automatic IRAs, and reviewed related proposals.

GAO is making no recommendations. GAO received technical comments on a draft of this report from the Department of Labor and the Department of the Treasury, and incorporated them as appropriate.

View GAO-13-699. For more information, contact Charles Jeszeck at (202) 512-7215 or jeszeckc@gao.gov.

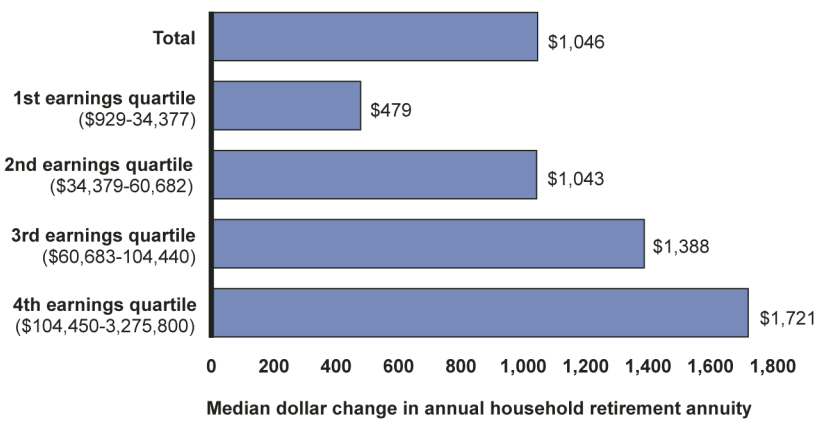
What GAO Found

Households without employer-sponsored defined contribution (DC) pension plans or individual retirement accounts (IRA) had lower incomes and tax rates than households with those plans, and are also likely to have limited additional resources to draw upon in retirement, according to GAO estimates. The median adjusted gross income for households without DC plans or IRAs was $32,000, compared to $75,000 for those that did have them. The median marginal tax rate for households without DC plans or IRAs was 15 percent, compared to 25 percent for households with those savings vehicles. A defined benefit (DB) pension plan could provide a monthly benefit during retirement years for those without a DC plan or IRA; however, in 2010 only 15 percent of married households and 11 percent of single households without a DC plan or IRA had a DB plan.

The existing Saver's Credit tax incentive could result in small increases in a household's retirement annuity—that is, the household's annual retirement income received from DC or DB plans. GAO estimates that, on account of this credit, the median annuity increase for households in the lowest earnings quartile ($929-34,377) would be $155. If, however, the Saver's Credit was refundable (i.e., could generate a tax refund in excess of tax paid), it could result in larger increases in households' annuities across all earnings levels, and the median increase for households in the lowest earnings quartile would be $876 per year.

Implementing automatic IRAs, unless waived by participants, could expand retirement coverage and modestly increase retirement annuities for households at all earnings levels. Specifically, 7 percent of all households could receive retirement annuities from automatic IRAs even though these households had no DB or DC plans, according to GAO's projections. Workers with DB or DC plans could also benefit from automatic IRAs at certain points in their lifetime if their jobs do not offer such plans. Moreover, low-income workers could see a sizable increase in their annuities under automatic IRAs and the existing Saver's Credit—the projected median dollar increase for these households' annual retirement annuity would be $479.

Projected Annual Changes in Households' Retirement Annuity under Automatic IRAs



Source: GAO analysis using the Policy Simulation Group's microsimulation models.

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Abbreviations

AGI	adjusted gross income
DB	defined benefit
DC	defined contribution
EBSA	Employee Benefits Security Administration
ERISA	Employee Retirement and Income Security Act of 1974
IRA	individual retirement account
IRC	Internal Revenue Code
IRS	Internal Revenue Service
OASDI	Old-Age, Survivors, and Disability Insurance
OLC	overlapping cohorts
PSG	Policy Simulation Group
SCF	Survey of Consumer Finances
RCS	representative cohort sample

U.S. GOVERNMENT ACCOUNTABILITY OFFICE
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August 23, 2013

The Honorable Richard Neal
Ranking Member
Subcommittee on Select Revenue Measures
Committee on Ways and Means
House of Representatives

Dear Mr. Neal:

Workers who make contributions to defined contribution (DC) pension plans and individual retirement accounts (IRAs) meeting certain qualifications receive favorable federal tax treatment, such as tax deferred savings. These tax preferences are one of the largest tax expenditures in the federal government. Under DC plans and certain IRAs, taxes on contributions and investment earnings are deferred until benefits are received in retirement. In fiscal year 2012, the estimated revenue loss associated with these accounts included $51.8 billion for DC plans and $16.2 billion for IRAs.[1] In addition, an estimated $1.1 billion in federal tax revenue was forgone in fiscal year 2012 due to the Saver's Credit, a tax credit to encourage workers with low earnings to contribute to a pension plan or an IRA. The purpose of giving such plans and IRAs preferential tax treatment is to encourage employers to form new plans or maintain existing ones and to encourage workers to save for retirement.[2]

However, in 2011, only about 45 percent of wage and salary workers aged 21-64 participated in employer-sponsored pension plans.[3] Studies by the Center for Retirement Research at Boston College and the Employee Benefit Research Institute show that low- and middle-wage

[1]Office of Management and Budget, *Fiscal Year 2014 Budget of the U.S. Government* (Washington, D.C.: April 2013). The tax expenditure is measured as the tax revenue that the government does not currently collect on contributions and earnings amounts, offset by the taxes paid on pensions by those who are currently receiving retirement benefits.

[2]Employer contributions to qualified pension plans are a tax deductible business expense. In addition, offering plans allows employers to retain employees.

[3]Craig Copeland, "Employment-Based Retirement Plan Participation: Geographic Differences and Trends, 2011," *EBRI Issue Brief,* no. 378 (November 2012).

workers are not prepared for retirement, even with these tax incentives.[4] Further, as we have previously reported, there is concern that much of the tax benefits flow to workers with higher earnings who have a greater incentive to save, and the financial constraints on lower-wage workers limit their ability to contribute to tax-qualified plans.[5]

In recent years, both members of Congress and the President have proposed requiring employers who do not sponsor a plan to offer their employees the opportunity to make contributions to an IRA through automatic payroll deduction.[6] In addition, in his 2010 and 2011 budgets, the President proposed modifying the existing Saver's Credit by making it refundable, expanding the number of households eligible for the credit by increasing the adjusted gross income (AGI) limit, and providing the same credit rate to all recipients.[7] Bills pending before Congress in 2012 and 2013 would make various changes to the Saver's Credit as well, including making it refundable.[8]

In light of your interest in understanding the extent to which workers with lower earnings could benefit from tax-deferred retirement savings accounts and automatic IRAs, this report addresses the following questions:

[4]Alicia Munnell, Anthony Webb, and Francesca Golub-Sass, *Is There Really a Retirement Savings Crisis? An NRRI Analysis* (Boston, MA: Center for Retirement Research at Boston College, August 2007); Nadia Karamcheva and Geoffrey Sanzenbacher, *Is Pension Inequality Growing?* (Boston, MA: Center for Retirement Research at Boston College, January 2010). Jack VanDerhei, *Retirement Income Adequacy for Boomers and Gen Xers: Evidence from the 2012 EBRI Retirement Security Projection Model®,* Employee Benefit Research Institute (Washington DC, May 2012).

[5]GAO, *Private Pensions: Some Key Features Lead to an Uneven Distribution of Benefits*, GAO-11-333 (Washington, D.C.: Mar. 30, 2011).

[6]Under these proposals, participants may choose to opt out of or terminate their participation in automatic IRAs.

[7]A nonrefundable tax credit can only reduce tax owed to zero. In contrast, a refundable tax credit can be used to generate a refund payment to the tax filer in excess of taxes paid.

[8]See the Savings for American Families' Future Act of 2012, H.R. 6472, 112th Cong. (2012) and the Savings for American Families' Future Act of 2013, H.R. 837, 113th Cong. (2013).

1. What are the earnings and tax rates of households that do not have DC plans or IRAs?
2. What are the effects of the Saver's Credit on retirement income?
3. How would automatic IRAs affect retirement income, especially for low- and middle-income workers?

To answer the first question, we used data from the 2010 Survey of Consumer Finances (SCF) to analyze the earnings and tax rates of households that did not take advantage of the existing tax incentives for retirement saving. To answer the two subsequent questions, we used the Policy Simulation Group's (PSG) microsimulation models to assess the distributional effects of the existing Saver's Credit, the President's 2011 budget proposal to modify the Saver's Credit, and H.R. 4049, which would have established automatic IRAs and which was pending before the 112th Congress.[9] We also reviewed relevant federal laws and regulations, as well as, presidential and legislative proposals related to the Saver's Credit and automatic IRAs. We conducted a data reliability assessment of the PSG models and selected variables from the SCF by conducting electronic data tests for completeness and accuracy, reviewing documentation on the dataset, or interviewing knowledgeable officials about how the data are collected and maintained and their appropriate uses. We found that for the purposes of our analysis, the data that we analyzed were sufficiently reliable. Finally, we interviewed experts in the area of retirement income security.

We conducted this performance audit from May 2012 to August 2013 in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

[9]We used the PSG's SSASIM, PENSIM, and GEMINI microsimulation models. These models analyze lifetime coverage and adequacy issues related to employer-sponsored pensions and Social Security in the United States. These models can estimate individual effects of policy scenarios for a representative sample of future beneficiaries. They can also simulate different reform features for their effects on the level and distribution of benefits.

Background

U.S. Retirement Saving System

According to one study, in 2011, 54 percent of wage and salary workers aged 21-64 worked for an employer that sponsored a pension plan, such as a defined benefit (DB) plan or a DC plan, but only about 45 percent of wage and salary workers aged 21-64 actually participated in the plan.[10] DB plans provide periodic benefits in retirement that are generally based on employees' salaries and years of service. Employers may also choose to sponsor DC plans, under which both employers and employees can make contributions to the plan. Distributions in retirement are, in turn, based on contributions and investment returns in these accounts.

Private sector employer-sponsored DB and DC plans are generally subject to the Employee Retirement Income Security Act of 1974 (ERISA), as amended, which establishes standards for private sector pension plans and sets forth protections for participants in these plans. The Department of Labor's Employee Benefits Security Administration (EBSA) generally administers and enforces the Title I provisions of ERISA. These employer-sponsored plans must also meet certain requirements in the Internal Revenue Code (IRC), which are enforced by the Internal Revenue Service (IRS).

Individuals can also save for retirement through IRAs, which allow individuals to make contributions for retirement regardless of whether they are covered by an employer-sponsored plan.[11] The IRS has primary responsibility for ensuring that IRAs meet IRC requirements necessary to qualify for preferential tax treatment.

Employers are continuing to shift away from sponsoring DB plans toward sponsoring DC plans. Data from the Department of Labor show that over the past few decades, DC plans have become the predominant plan type offered by private sector employers. Indeed, in 2010, over 90 percent of

[10]Copeland, "Employment-Based Retirement Plan Participation: Geographic Differences and Trends, 2011."

[11]While the vast majority of IRAs are individual retirement accounts, section 408(b) of the Code provides for an "individual retirement annuity" which represents an annuity contract or endowment issued by an insurance company and meeting certain regulatory requirements under 26 C.F.R. § 1.408-3.

all employer-sponsored plans were DC plans.[12] IRAs have also grown in importance in recent years and are a key retirement savings vehicle for many individuals. According to data from the Investment Company Institute, in the first quarter of 2013, IRA assets represented a larger portion of total U.S. retirement assets than 401(k) plans, the main type of DC plan. Specifically, IRA assets totaled almost $5.7 trillion, which represents about 27 percent of U.S retirement assets. In comparison, 401(k) assets accounted for about $3.8 trillion, or 18 percent, of U.S. retirement assets.[13] Rollovers from 401(k) plans and other employer-sponsored plans are the predominant source of contributions to IRAs. Approximately 95 percent of money contributed to traditional IRAs in 2008 was attributable to rollovers, primarily from employer-sponsored plans.[14] The greater reliance on DC plans and IRAs in the current retirement landscape indicates that the tax incentives are increasingly relevant for promoting retirement saving.

Tax Incentives for Retirement Saving

Tax preferences for pension plans are structured to encourage individuals to save for retirement. Contributions to DC plans that fall within certain limits and investment earnings on assets are not taxed until distributions are paid to participants.[15] Further, there are tax incentives for contributions to IRAs. There are two main types of IRAs: traditional and Roth.

- A traditional IRA allows individuals to make tax deductible contributions to their accounts, and distributions are generally subject to income tax. For traditional IRAs, deductions for contributions are subject to limits based on income and pension coverage. Distributions

[12]Department of Labor, Employee Benefits Security Administration, *Private Pension Plan Bulletin Historical Tables and Graphs* (Washington, D.C.: 2012). Data exclude plans with only one participant.

[13]Investment Company Institute, *The U.S. Retirement Market, First Quarter 2013*, (June 2013), accessed August 6, 2013, http://www.ici.org/info/ret_13_q1_data.xls.

[14]GAO, *401(K) Plans: Labor and IRS Could Improve the Rollover Process for Participants*, GAO-13-30 (Washington, D.C.: Mar. 7, 2013).

[15]Some defined contribution plans may have Roth accounts, where participants can make after-tax contributions.

made prior to age 59 ½, other than under specific exceptions, are generally subject to additional 10 percent tax.

- A Roth IRA allows individuals to make after-tax contributions to their accounts, and generally distributions after age 59 ½ for accounts at least 5 years old are not subject to income tax. For Roth IRAs, distributions prior to age 59 ½ are taxable on portions attributable to earnings on contributions with an additional 10 percent tax on distributions other than for specified purposes.

Saver's Credit

To further encourage low- and middle-income individuals and families to save for retirement, the Economic Growth and Tax Relief Reconciliation Act of 2001 authorized a nonrefundable tax credit (the Saver's Credit) of up to $1,000 against federal income tax.[16] Eligibility is based on a worker's adjusted gross income (AGI) and contributions made to qualified pension plans and IRAs.[17] The credit rate phases out as AGI increases, and the rate is applied to qualified contributions up to $2,000 for individuals and $4,000 for households.[18] The total Saver's Credit amount is equal to the amount of contributions multiplied by the credit rate (see table 1). Because the credit is nonrefundable, the ability to receive the full amount of credit is limited not only by income eligibility, but also by whether the taxpayer's tax liability is large enough. In fiscal year 2012, the Saver's Credit cost the federal government about $1.1 billion in revenue forgone, and revenue losses are estimated to amount to $6.2 billion for fiscal years 2013-2017, according to the Department of the Treasury.[19]

[16]Pub. L. No. 107-16, 115 Stat. 38. Begun in 2002 as a temporary provision, the Saver's Credit was made a permanent part of the tax code by the Pension Protection Act of 2006, Pub. L. No. 109-280, § 812, 120 Stat. 780, 997.

[17]AGI is defined as gross income minus adjustments to income.

[18]Taxpayers under 18 years of age, certain students, and those claimed as a dependent on another taxpayer's return are not eligible for the credit.

[19]Department of the Treasury estimates of revenue loss for 2013 and beyond do not reflect current law tax rates. In contrast to the Department of the Treasury's estimate of five-year revenue losses of $6.2 billion, the Joint Committee on Taxation estimated, based on current law tax rates, that the Saver's Credit will cost $5.3 billion for the same period (fiscal years 2013-2017). Joint Committee on Taxation, *Estimates of Federal Tax Expenditures for Fiscal Years 2012-2017*, JCS-1-13 (Washington, D.C.: Feb. 1, 2013).

Table 1: Saver's Credit Rates, AGI Limits, and Maximum Credits by Tax Filing Status, 2012

Credit Rate	AGI limit	Maximum Available Credit
Single, married filing separately, or qualifying widow(er)		
50%	$17,250	$1,000
20	18,750	400
10	28,750	200
Head of Household		
50	25,875	1,000
20	28,125	400
10	43,125	200
Married filing jointly		
50	34,500	2,000
20	37,500	800
10	57,500	400

Source: Department of the Treasury, IRS Form 8880.

To expand retirement savings incentives for working families, the President's fiscal year 2010 and 2011 budgets proposed modifying the Saver's Credit. These modifications included: (1) making the credit refundable, (2) eliminating phase-out of the credit rate so that all eligible households would receive a 50 percent credit rate, and (3) extending the AGI limit to $85,000 for married couples filing their federal income taxes jointly.[20] The estimated cost for this expansion of the Saver's Credit was $323 million for fiscal year 2011 and $29.8 billion for fiscal years 2011-2020, according to the President's 2011 budget proposal.[21] The Joint Committee on Taxation estimated that the Administration's 2011 proposal

[20]The President's 2011 proposal called for increasing the AGI limit to $85,000, but the 2010 proposal would have increased it to $65,000. The President's 2011 proposal would also limit the maximum available credit to $500 per family. Office of Management and Budget, Executive Office of the President of the United States, *Budget of the U.S. Government, Fiscal Year 2011* (Washington, D.C.: Feb. 1, 2010). For this report, we modeled modifications to the Saver's Credit that were drawn from the President's 2011 budget because its provisions align with possible modifications suggested by experts we identified—including making the Saver's Credit refundable—that could improve retirement savings for low-income households.

[21]*Budget of the U.S. Government, Fiscal Year 2011*. The total estimated cost includes both reduced revenue as well as outlays for the refundable portion of the credit.

would have cost about $27.5 billion for the same period.[22] These modifications were not adopted and were not included in the President's budget proposals for fiscal years 2012 through 2014. Bills introduced during the current and immediately preceding legislative sessions include provisions for similar modifications to the Saver's Credit, including making the credit refundable and increasing the AGI range for taxpayers eligible for the 50 percent credit rate.[23]

Automatic IRA Proposals

Automatic enrollment has been advocated as a way to encourage greater participation in 401(k) plans. Our past work has shown that automatic enrollment policies considerably increased 401(k) participation rates for plans that adopted them.[24] Automatic IRAs would similarly extend the benefits of payroll-deduction savings and automatic enrollment. Legislative proposals to establish automatic IRAs have been introduced in both the House of Representatives and the Senate in recent legislative sessions.[25] Additionally, the President's budgets for fiscal years 2010 through 2014 included a proposal to establish automatic IRAs.

Under the 2012 automatic IRA legislative proposal, certain employers who do not maintain a qualified pension plan would be required to make available an automatic IRA arrangement to eligible employees. Typically, under this proposal, 3 percent of the employee's salary would be automatically contributed to an IRA through payroll deduction, unless the

[22]Joint Committee on Taxation, *Estimated Budget Effects of the Revenue Provisions Contained in the President's Fiscal Year 2011 Budget Proposal*, JCX-7-10R (Washington, D.C.: Mar. 15, 2010).

[23]See e.g., the Savings for American Families' Future Act of 2012, H.R. 6472, 112th Cong (2012), and the Savings for American Families' Future Act of 2013, H.R. 837, 113th Cong. (2013).

[24]GAO, *Retirement Savings: Automatic Enrollment Shows Promise for Some Workers, but Proposals to Broaden Retirement Savings for Other Workers Could Face Challenges*, GAO-10-31 (Washington, D.C.: Oct. 23, 2009).

[25]Automatic IRA legislative proposals have been introduced in the House of Representatives and the Senate in many recent years. The most recent legislative proposal for automatic IRAs is The Automatic IRA Act of 2013, H.R. 2035, 113th Cong. (2013). However, our analysis is based on the provisions of The Automatic IRA Act of 2012, H.R. 4049, 112th Cong. (2012) because it was the most recent proposal available when we conducted our analysis. We determined that the differences between H.R. 2035 and H.R. 4049 are minimal and would not have a significant effect on our simulation results.

employee elects to terminate his or her participation.[26] Investment options for automatic IRAs would be limited to certain types of funds, such as principal preservation and target-date or life cycle funds, and target-date funds would be the default investment option. If the employer elects, employees would also have the option of using their contributions to purchase a retirement bond, which would provide a low-cost investment option where small account balances are pooled together until they are large enough to be profitable in the private market.[27] This proposal also includes a provision for a tax credit for small employers to recoup start-up costs of establishing and maintaining automatic IRAs, such as setting up an automatic payroll deduction for employees. Automatic IRAs would also introduce costs to the federal government through the loss of federal income tax revenue.[28] According to the President's 2014 budget proposal, losses for automatic IRAs are estimated to amount to $1.1 billion for fiscal year 2015 and $17.6 billion for fiscal years 2014 through 2023, if the proposal were to be enacted.[29]

[26]Employers that do not have more than 10 employees who received at least $5,000 of compensation from the employer in the preceding calendar year and employers that were not in existence at all times during the calendar year and the preceding calendar year would be exempt. Under the proposal, employers would be permitted to exclude certain employees, including those under the age of 18 and employees who have not completed at least 3 months of service with the employer.

[27]Under this proposal, the Department of the Treasury would issue retirement bonds.

[28]Our prior work has examined the effects of automatic IRAs on employees, employers, the federal government, and 401(k) plans, including concerns that some employers may have about the administrative burden and costs of implementing automatic IRAs. See GAO-10-31.

[29]At the time of our analysis, there were no publicly available cost estimates for the 2012 legislative proposal for automatic IRAs. As a result, the estimates presented here pertain to the President's budget proposal regarding automatic IRAs. These estimates include doubling of the tax credit for small employer plan start-up costs. See *Fiscal Year 2014 Budget of the U.S. Government*. The Joint Committee on Taxation estimated the President's 2014 budget proposal for automatic IRAs would cost about $10.6 billion for fiscal years 2014 through 2023. Joint Committee on Taxation, *Estimated Budget Effects of the Revenue Provisions Contained in the President's Fiscal Year 2014 Budget Proposal*, JCX-11-13 (Washington, D.C.: May 10, 2013).

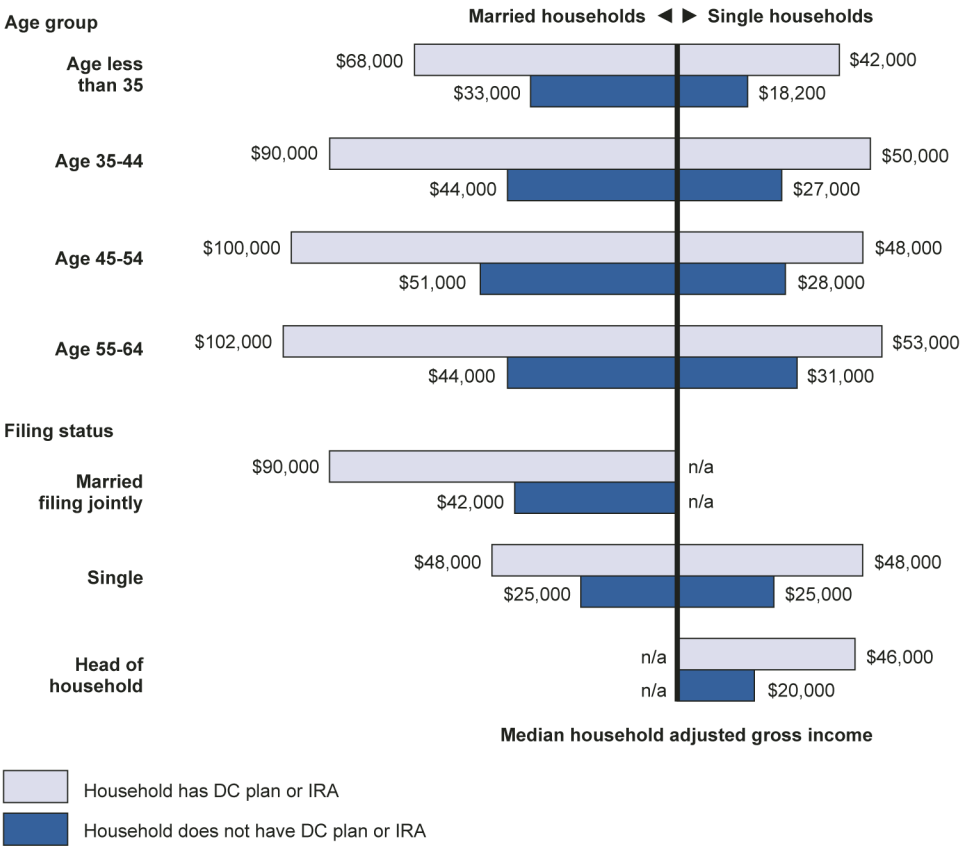
Households Without DC Plans or IRAs Had Lower Adjusted Gross Incomes

Households That Do Not Save for Retirement Have Lower Adjusted Gross Incomes and Marginal Tax Rates Than Those That Do Save

We found that households that do not save for retirement had lower AGI than those that do, regardless of age group or tax filing status (see fig. 1). Based on our analysis of the SCF data, we estimate that in 2010 approximately 43 percent of households working in the private sector did not have a DC plan or IRA.[30] We also estimate that the median AGI of all households that did not have a DC plan or IRA was $32,000, compared to $75,000 for those that did—a difference of about 43 percent. These trends hold across age groups and tax filing statuses in 2010. In addition, we estimate that 56 percent of single households did not have a DC plan or IRA, while 36 percent of married households did not and married household AGI was consistently higher than single household AGI.

[30]We analyzed households where the household head was under the age of 65 and either the respondent or spouse worked in the private sector in 2010. We selected households as the unit of analysis because the tax incentives for retirement saving we examined and taxes are filed at the household level. All estimates from the SCF are subject to sampling error. See appendix I for more information on standard errors and confidence intervals for SCF estimates.

Figure 1: Estimated Median AGI by Demographic Group for Households With and Without Defined Contribution (DC) Plans or Individual Retirement Accounts (IRAs), 2010



Source: GAO analysis of the 2010 Survey of Consumer Finances.

Notes: Results are for households where the household head was under the age of 65 and either the respondent or spouse worked in the private sector. The Federal Reserve provides a tax filing status variable, which we used in our analysis. For the married filing jointly category, the Federal Reserve included married households that filed income taxes jointly and separately. For married households, the single tax filing status category included households where only the respondent or their spouse filed taxes and the filer claimed one personal exemption. There are about 48 million married households in the married filing jointly category and about one million married households in the single tax filing status category.

In addition, households without DC plans or IRAs have lower median marginal tax rates than households with DC plans or IRAs. A marginal tax rate is the rate of tax paid on the next dollar of income that a taxpayer

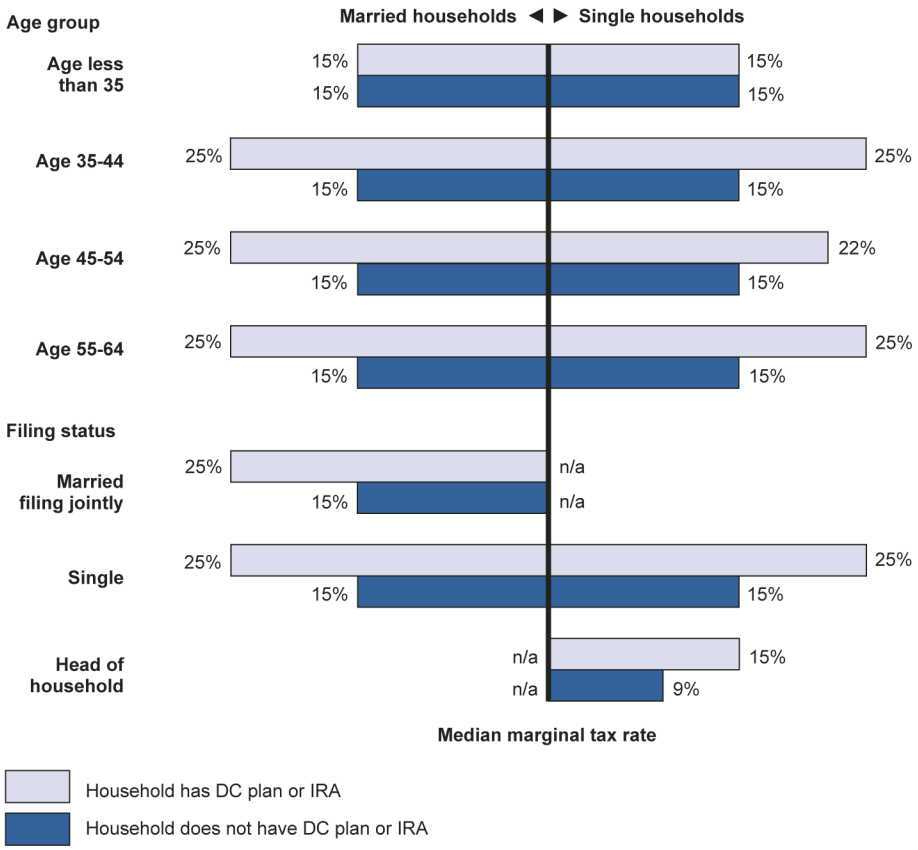
earns.[31] Generally households with higher earnings have higher marginal tax rates, and tax incentives are worth more to these households. Based on our analysis of the 2010 SCF data, we estimate the median marginal tax rate for households with DC plans or IRAs to be 25 percent and 15 percent for households without such savings vehicles. Across age groups and tax filing statuses, more households with higher median marginal tax rates took advantage of tax incentives for retirement saving than households with lower median marginal tax rates (see fig. 2).[32] For example, married households age 45 to 54 that did not have a DC plan or IRA had a median marginal tax rate of 15 percent, and those that did save had a median marginal tax rate of 25 percent. Single households age 45 to 54 that did not have a DC plan or IRA had a median marginal tax rate of 15 percent, compared to 22 percent for those that did save.[33]

[31]Federal marginal tax rates reflect effective tax rates taking into account phase-outs and use of other tax benefits, such as the earned income tax credit, rather than the scheduled or statutory tax rates.

[32]The median marginal tax rate for married and single households less than age 35 is 15 percent, regardless of whether or not the household had a DC plan or IRA. However, the average marginal tax rate varies. Married households age less than 35 with a DC plan or IRA have an average marginal tax rate of 18 percent, compared to 8 percent for those without. Single households age less than 35 with a DC plan or IRA have an average marginal tax rate of 18 percent, compared to 5 percent for those without.

[33]Households with lower earnings have lower tax rates and generally have less retirement savings. Our analysis did not test for and does not imply causality between retirement savings and tax rates.

Figure 2: Estimated Median Marginal Tax Rate by Demographic Group for Households With and Without Defined Contribution (DC) Plans or Individual Retirement Accounts (IRAs), 2010



Source: GAO analysis of the 2010 Survey of Consumer Finances.

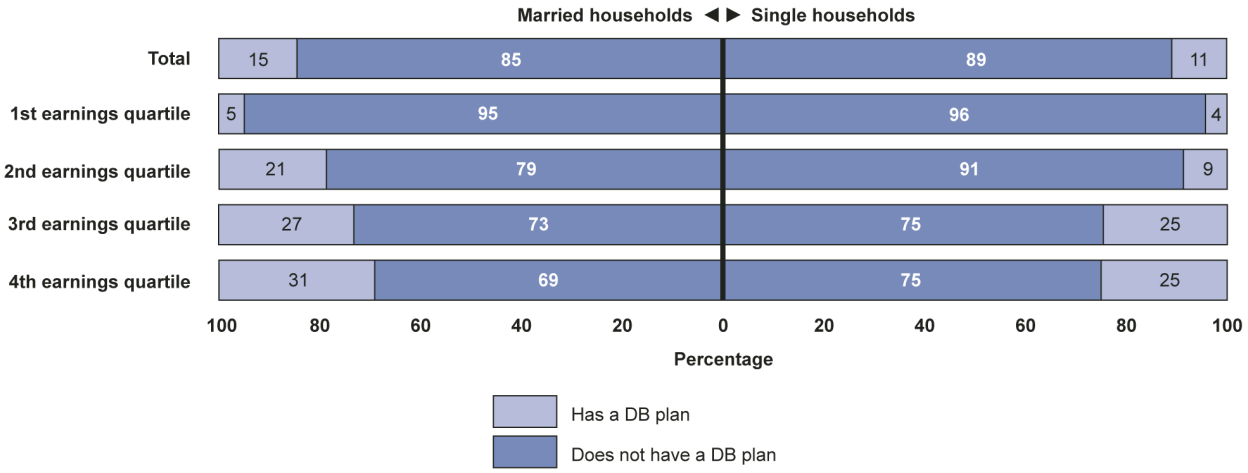
Notes: Results are for households where the household head was under the age of 65 and either the respondent or spouse worked in the private sector. The Federal Reserve provides a tax filing status variable, which we used in our analysis. For the married filing jointly category, the Federal Reserve included married households that filed income taxes jointly and separately. For married households, the single tax filing status category included households where only the respondent or their spouse filed taxes and the filer claimed one personal exemption. There are about 48 million married households in the married filing jointly category and about one million married households in the single tax filing status category. A marginal tax rate is the rate of tax paid on the next dollar of income that a taxpayer earns.

While DB Plans Could Provide Additional Retirement Income, Few Households Without DC Plans or IRAs Have Them

As mentioned previously, DB plans typically provide a monthly benefit once an individual reaches retirement age and could be a source of retirement income for households without DC plans or IRAs. However, the prevalence of DB plans has declined over the past few decades. Consistent with overall trends, we found that few households without DC plans or IRAs have a DB plan (see fig. 3). Only 15 percent of married households and 11 percent of single households without a DC plan or IRA had a DB plan. Although most households without a DC plan or IRA also do not have a DB plan, the first earnings quartile is worse off. For example, an estimated 5 percent of married households in the first earnings quartile had a DB plan, compared to an estimated 27 percent and 31 percent of married households in the third and fourth earnings quartiles, respectively.[34] The shift away from DB plans and the limited number of households that have them highlights the importance of other retirement savings vehicles such as DC plans or IRAs.

[34]We analyzed our results by earnings level using earnings quartiles. Households with adjusted gross incomes (adjusted for family size) of less than $18,960 were in the first earnings quartile, households with incomes of $18,961-33,519 were in the second earnings quartile, households with incomes of $33,520-56,559 were in the third earnings quartile, and households with incomes of $56,560-25,583,473 were in the fourth earnings quartile.

Figure 3: Percent of Households Without a Defined Contribution (DC) Plan or Individual Retirement Account (IRA) by Whether They Have a Defined Benefit (DB) Plan, 2010



Source: GAO analysis of the 2010 Survey of Consumer Finances.

Notes: Results are for households where the household head was under the age of 65 and either the respondent or spouse worked in the private sector and do not save for retirement through a DC plan or IRA. We analyzed our results by earnings level using earnings quartiles. Households with adjusted gross incomes (adjusted for family size) of less than $18,960 were in the first earnings quartile, households with incomes of $18,961-33,519 were in the second earnings quartile, households with incomes of $33,520-56,559 were in the third earnings quartile, and households with incomes of $56,560-25,583,473 were in the fourth earnings quartile.

We also analyzed the net worth—the difference between gross assets and liabilities—of single and married households without DC plans or IRAs by income quartile. Our evidence suggests that in addition to some households not having a DC plan or IRA, these households also may have limited additional assets to draw upon in their retirement years.[35] For example, single households in the first income quartile without a DB plan had an estimated average net worth of $17,164.[36] Married households in the first income quartile without a DB plan had an estimated average net worth of $70,485.

[35]Households without DC and DB plans or IRAs may have other assets, but there is no way to determine if these assets will be used for retirement or if they will even be available at retirement.

[36]We used the SCF's definition of net worth–all of the household's assets, including houses and vehicles, minus its debts.

Modifying the Existing Saver's Credit Could Result in Larger Increases in Retirement Income

The Saver's Credit could increase retirement income for a sizeable portion of the population, especially if modifications, such as making it refundable and expanding eligibility, are included in its design.[37] To analyze the effect of the credit on retirement income, we modeled two different Saver's Credit scenarios: the existing credit and a modified refundable credit.[38] (See "Saver's Credit Modeling Scenarios" text box and app. II for detailed descriptions of these scenarios and the underlying assumptions).[39] Specifically, we projected the effects of the two different Saver's Credits for a cohort of individuals born in 1995 (see fig. 4).[40] We assumed that all eligible taxpayers claimed the credit, and found that under the existing Saver's Credit, just over a third of all individuals would be projected to receive the credit at some point during their working years. In contrast, we projected that about half of all individuals would receive the credit at some point during their working years if it were refundable. According to experts, the nonrefundable nature of the existing credit may limit its utility for low-income households. Specifically, many low-income households do not receive the full amount of the credit because their tax liability is not high enough.[41] Our estimates show that

[37]The refundable portion paid to a taxpayer increases federal outlays.

[38]For the purposes of this report, the "refundable Saver's Credit" scenario includes the following modifications: making the credit refundable, having a 50 percent credit rate for all tax filers, and increasing AGI limits. See "Saver's Credit Modeling Scenarios" text box and appendix II for more information on the assumptions for this scenario.

[39]Both our existing Saver's Credit and refundable Saver's Credit scenarios assume that all workers eligible for the credit take it. Thus, our scenarios show the maximum potential of the Saver's Credit for accumulating retirement income. We compared the effects of the Saver's Credit scenarios to a simulation where there is no Saver's Credit available. The results of the modeling scenarios are sensitive to our assumptions. We also modeled alternate scenarios using different assumptions for utilization, investment fund fees, and Social Security benefits. See appendix II for our projections under our alternate simulations as well as reproductions of the figures in this section using means instead of medians. In general, mean values for dollar changes were higher than median values.

[40]Our simulation model only included this information for individuals born in 1995. Spouses may also have received the Saver's Credit. As a result, these estimates do not reflect the percentage of households that could receive the credit.

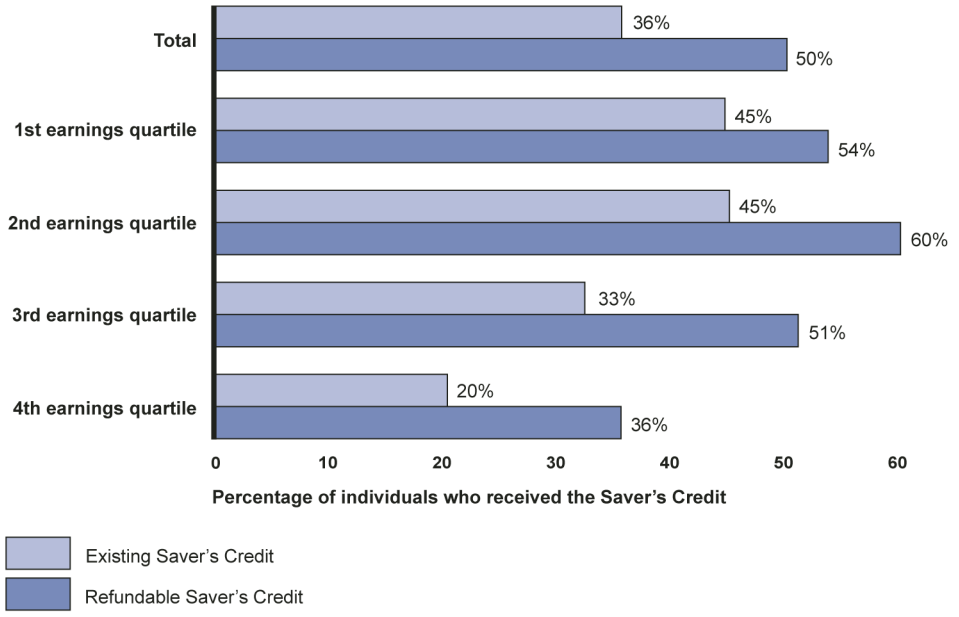
[41]One analysis shows that a majority of taxpayers who qualify for the Saver's Credit based on their incomes would not be in a position to take advantage of the credit because they have no tax liability. According to this analysis, 69 million taxpayers qualified for the Saver's Credit based on their income in 2007, but about 45 million of these taxpayers had no federal tax liability. See Lisa Mensah, Raymond O'Mara III, Colby Farber, and Robert Weinberger, *The Freedom Savings Credit: A Practical Step to Build Americans' Household Balance Sheets* (Washington, D.C.: the Aspen Institute Initiative on Financial Security, February 2012).

changing the current design of the credit to make it refundable could substantially increase the percentage of individuals who would receive the credit. However, such modifications to the credit would also result in increased costs to the federal government through the loss of tax revenue and increased outlays.

Under both scenarios, the lowest two earnings quartiles have the largest percentage of individuals who could receive the credit.[42] For example, under the existing Saver's Credit, about 45 percent of individuals in each of the lowest two earnings quartiles could receive it. Alternatively, a refundable Saver's Credit could result in more middle-income workers receiving the credit, with an estimated 60 percent of individuals in the second earnings quartile potentially receiving it. Because we present our results across earnings quartiles that were based on lifetime earnings, these results reflect individuals who could have received the credit while they were lower earners but subsequently became higher earners.

[42]We analyzed our results by earnings levels using earnings quartiles, which were calculated based on a measure of lifetime household earnings. Households with lifetime earnings of $929-34,377 on an annual basis were in the first quartile, households with earnings of $34,379-60,682 were in the second quartile, households with earnings of $60,683-104,440 were in the third quartile, and households with earnings of $104,450-3,275,800 were in the fourth quartile.

Figure 4: Projected Percent of Individuals Who Received the Saver's Credit During their Working Years



Source: GAO analysis using the Policy Simulation Group's microsimulation models.

Notes: We projected the effects of the Saver's Credit for a cohort of individuals born in 1995. The effects were compared to a situation in which the credit did not exist. The results shown are projections for the year 2062 when the cohort is age 67. We assumed that these individuals retired between ages 62 and 67. We analyzed our results by earnings level using earnings quartiles, which are calculated based on a measure of lifetime household earnings. Households with lifetime earnings of $929-34,377 on an annual basis were in the first quartile, households with earnings of $34,379-60,682 were in the second quartile, households with earnings of $60,683-104,440 were in the third quartile, and households with earnings of $104,450-3,275,800 were in the fourth quartile. The PENSIM model does not report whether the spouses of individuals born in 1995 received the Saver's Credit. As a result, this figure does not represent the percent of households that benefit from the credit.

Saver's Credit Modeling Scenarios

Scenario I: *Existing Saver's Credit.* Individuals received a nonrefundable credit of up to $1,000 if filing singly or $2,000 if married filing jointly. The credit rate is 10, 20, or 50 percent depending on AGI and tax filing status. For 2013, the AGI limit is $59,000 for individuals with a filing status of married filing jointly, $44,250 for individuals with a filing status of head of household, and $29,500 for individuals with a filing status of single, married filing separately, or widow(er). Limits in subsequent years were indexed to inflation.

Scenario II: *Refundable Saver's Credit.* This scenario was drawn from the President's fiscal year 2011 budget proposal because its provisions align with possible modifications identified by experts. In this scenario, the credit would become refundable in 2014. The credit rate would be 50 percent for all tax filers. In 2014, AGI limits would be extended to $85,000 for individuals with a filing status of married filing jointly, $63,750 for individuals with filing status of head of household, and $42,500 for individuals with a filing status of single, married filing separately, or widow(er). Limits in subsequent years would be indexed to inflation. Individuals could receive a refundable credit of up to $1,000 if filing singly or $2,000 if married filing jointly.

Assumptions Applied to Each Scenario

We projected the effects of both Saver's Credit scenarios for a cohort of individuals born in 1995. Cohort members could have worked in either the private or public sectors. The effects were compared to a situation in which the credit did not exist. Our projections show household income for retired individuals in the year 2062, when the cohort is 67 years old.[a] In our projections, individuals could retire at any time after they turned 62. Projections were adjusted for household size and reported in 2013 dollars. We analyzed our results by earnings level using earnings quartiles, which were calculated based on a measure of lifetime household earnings. Households with lifetime earnings of $929-34,377 on an annual basis were in the first quartile, households with earnings of $34,379-60,682 were in the second quartile, households with earnings of $60,683-104,440 were in the third quartile, and households with earnings of $104,450-3,275,800 were in the fourth quartile.[b]

Our projections assumed a 100 percent utilization rate for the Saver's Credit under both the existing and refundable scenarios, meaning that all eligible taxpayers claimed the credit. This utilization rate shows the maximum potential impact of the Saver's Credit on retirement income.[c] We assessed the Saver's Credit as a mechanism for accumulating retirement income and did not analyze behavioral responses associated with the credit.[d] Research suggests that early utilization rates for the existing Saver's Credit, when it was first enacted, ranged from 60-67 percent. Account fees varied by investment fund type. We used annual non-stochastic nominal rates of return of 9.2 percent for stocks and 5.7 percent for government bonds.[e] At retirement, workers used their entire defined contribution (DC) account balance to purchase a single-life, non-inflation-adjusted annuity. This annuity uses prices that are based on projected mortality rates for the 1995 birth cohort and annuity price loading factors that ensure that the cost of providing these annuities equals the revenue generated by selling them at those prices. Benefits from defined benefit (DB) plans are also provided in the form of an annuity. For the purposes of this report, we defined the household retirement annuity as including the annual retirement income received from all DC or DB plans. Individuals also received Social Security benefits promised under current law.

Because these scenarios are sensitive to the assumptions used, we ran alternate simulations. These simulations used a lower Saver's Credit utilization rate and higher investment fund account fees.

See appendix II for a detailed explanation of the underlying assumptions and projections under our alternate simulations.

[a]In our simulations, retirement occurs when an individual leaves the labor force and starts claiming a Social Security retirement benefit.

[b]For example, a household in the first quartile could have had lifetime household earnings of $25,000 on an annual basis over the course of its working years.

[c]PENSIM assumes that the Saver's Credit amount is automatically deposited into a recipient's DC account. However, under the existing credit, a tax filer would receive the credit amount as part of his refund and would be free to use it for any purpose.

[d]We did not account for any behavioral response that changes in the Saver's Credit may have created. In reality, some individuals may choose to contribute more to their pension plans in response to receiving the Saver's Credit or may choose to start saving in a pension plan or IRA.

[e]Using different rates of return would result in different DC account balances at retirement and, as a result, the size of the household's retirement annuity could be different. Also, because our projections do not stochastically model stock returns, assuming a rate of return on assets equal to the historical return on stocks does not capture the risks associated with stock returns.

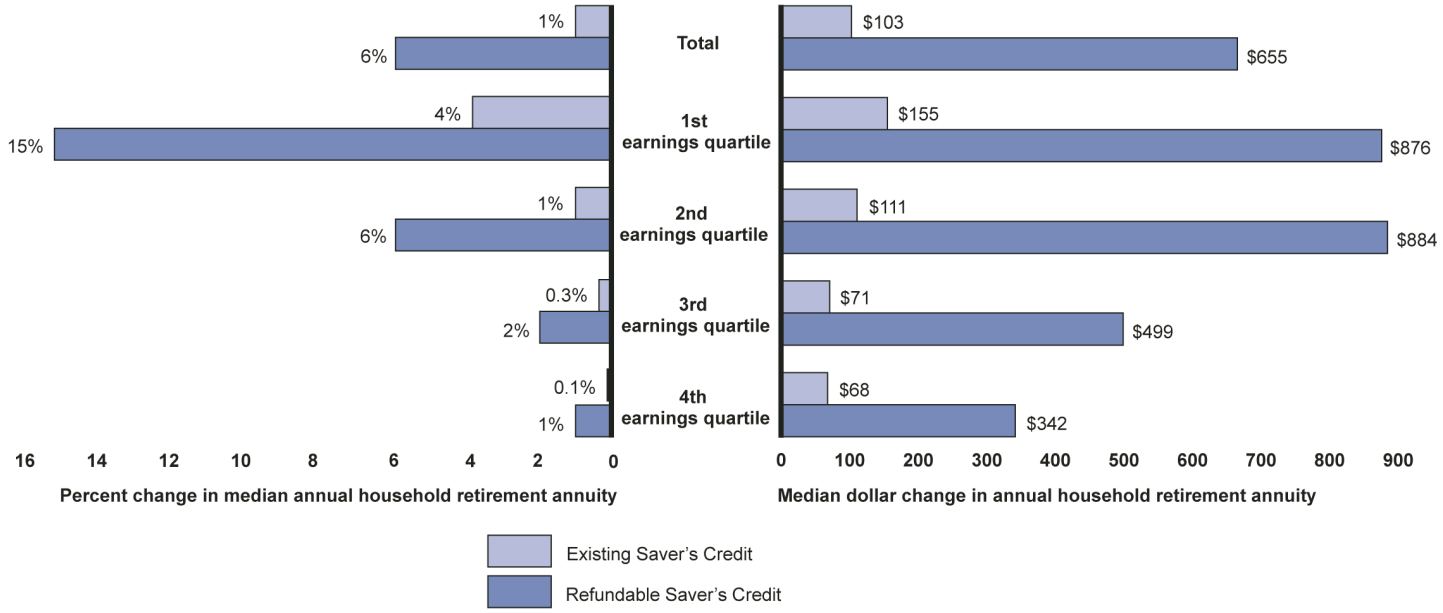
Households could experience larger retirement annuity increases from a refundable Saver's Credit than the existing credit, according to our projections (see fig. 5). For the purposes of this report, household retirement annuities include all annual retirement income received from DC or DB plans and represent income that the household receives in retirement. DB plans typically provide benefits in the form of periodic payments which can be summed together into one annual payment. DC account balances represent a worker's DC or IRA savings from past jobs, and we assumed that at retirement, workers used their entire DC account balance to purchase an annuity. We estimate that the median increase in

households' retirement annuity under the existing credit could be $103 per year.[43] In contrast, under a refundable Saver's Credit, the median increase could be $655 per year, according to our simulations. For both Saver's Credit scenarios, low- and middle-earning households could receive the largest benefit from the credit.[44] For households in the lowest earnings quartile, we projected that the median increase in annuity under the existing Saver's Credit would be $155 per year, while the median increase in annuity under a refundable credit would be $876 per year. In addition, about 21 percent of households in the lowest earnings quartile could see an additional $1,000 to $1,999 per year in their retirement annuities under a refundable credit. Under the existing credit, only 6 percent of households could potentially receive an increase in annuity of this size.

[43]For purposes of this report, we defined the household retirement annuity as including the annual retirement income received from all DC or DB plans. Social Security benefits are not included in this annuity. Dollar amounts from our simulations are adjusted for family size and are presented in 2013 dollars.

[44]Under the existing Saver's Credit, households in the lowest earnings quartile receive the largest median dollar increase. Under the refundable Saver's Credit, households in the second-lowest earnings quartile receive the largest median dollar increase ($884).

Figure 5: Projected Annual Changes in Households' Retirement Annuity under Saver's Credit



Source: GAO analysis using the Policy Simulation Group's microsimulation models.

Notes: These projections show the results for only households that benefited from the Saver's Credit. We projected the effects of the Saver's Credit for a cohort of individuals born in 1995. The effects were compared to a situation in which the credit did not exist. The results shown are projections for the year 2062 when the cohort is age 67. We assumed that these individuals retired between ages 62 and 67. For purposes of this report, we defined the household retirement annuity as including the annual retirement income received from all defined contribution or defined benefit plans. This annuity does not include Social Security benefits. The annuity values are adjusted for family size and are presented in 2013 dollars. We analyzed our results by earnings level using earnings quartiles, which are calculated based on a measure of lifetime household earnings. Households with lifetime earnings of $929-34,377 on annual basis were in the first quartile, households with earnings of $34,379-60,682 were in the second quartile, households with earnings of $60,683-104,440 were in the third quartile, and households with earnings of $104,450-3,275,800 were in the fourth quartile.

Our estimates of the percent change in median household retirement annuities show similar trends. The refundable Saver's Credit results in a larger percent increase in the median household retirement annuity at all earnings levels. In both scenarios, the projected percent increase in the median household retirement annuity for the lowest earnings quartile was larger than the increase for other earnings quartiles. According to our projections, the percent increase in the median retirement annuity for low-earning households would be 4 percent under the existing Saver's Credit and 15 percent under a refundable credit.

Automatic IRAs Could Increase Retirement Income for Households at All Earnings Levels

Automatic IRAs Could Increase the Number of Lower-Earning Households with Retirement Savings and Modestly Increase Retirement Income

Automatic IRAs provide a new opportunity to increase the number of households saving for retirement at all earnings levels. We project that 7 percent of all households had no retirement annuities from DB or DC plans but could receive annuity income from automatic IRAs. (See "Automatic IRA and Saver's Credit Modeling Scenarios" text box and app. II for detailed descriptions of the scenarios we modeled and their underlying assumptions.[45]) Based on our projections, more households in the lowest earnings quartile would benefit than in any other earnings quartile.[46] An estimated 12 percent of households that do not have a DB or DC plan in the lowest earnings quartile could receive annuity income from automatic IRAs, according to our analysis.

[45]We also modeled alternate scenarios using different assumptions for the aggregate participation rate, investment fund fees, and Social Security benefits. See appendix II for our projections under our alternate scenarios as well as reproductions of the figures in this section using means instead of medians. In general mean values for dollar changes were higher than median values.

[46]We analyzed our results by earnings level using earnings quartiles, which were calculated based on a measure of lifetime household earnings. Households with lifetime earnings of $929-34,377 on an annual basis were in the first quartile, households with earnings of $34,379-60,682 were in the second quartile, households with earnings of $60,683-104,440 were in the third quartile, and households with earnings of $104,450-3,275,800 were in the fourth quartile.

Automatic IRA and Saver's Credit Modeling Scenarios

Scenario I: *Automatic IRAs.* This scenario was drawn from the provisions of H.R. 4049, the Automatic IRA Act of 2012 and assumed automatic IRAs became effective in 2014.[a] We assumed an aggregate participation rate of 69 percent, a default contribution rate of 3 percent, and a target-date fund as the default investment. Consistent with the provisions of the bill, under this scenario, individuals may choose to terminate their participation after being enrolled in the plan. Provisions for the Saver's Credit matched those of our existing Saver's Credit scenario.

Scenario II: *Automatic IRAs plus refundable Saver's Credit.* This scenario used the automatic IRAs scenario described above and a refundable Saver's Credit. The Saver's Credit was drawn from the President's fiscal year 2011 budget proposal. We assumed that the Saver's Credit would be refundable; all eligible tax filers would receive a 50 percent credit rate; and the AGI limits would be increased to $85,000 for households filing joint income tax returns, $63,750 for those filing as head of household, and $42,500 for those filing singly. AGI limits in subsequent years would be indexed to inflation. Individuals could receive a refundable credit of up to $1,000 if filing singly or $2,000 if filing jointly. The credit would be automatically deposited into the recipient's retirement account and the utilization rate was 100 percent.

Assumptions Applied to Each Scenario

We projected the effects of both automatic IRA scenarios for a cohort of individuals born in 1995. Cohort members could have worked in either the private or public sectors. Our projections show household income for retired individuals in the year 2062,[b] when the cohort is 67 years old. In our projections, individuals could retire at any time after they turned 62. Projections were adjusted for household size and reported in 2013 dollars. We analyzed our results by earnings level using earnings quartile, which were calculated based on a measure of lifetime household earnings. Households with lifetime earnings of $929-34,377 on an annual basis were in the first quartile,[c] households with earnings of $34,379-60,682 were in the second quartile, households with earnings of $60,683-104,440 were in the third quartile, and households with earnings of $104,450-3,275,800 were in the fourth quartile.

Account fees varied by investment fund type. We used annual nonstochastic nominal rates of return of 9.2 percent for stocks and 5.7 percent for government bonds.[d] At retirement, workers used their entire defined contribution (DC) and automatic IRA account balances to purchase a single-life, non-inflation-adjusted annuity. This annuity uses annuity prices that are based on projected mortality rates for the 1995 birth cohort and annuity price loading factors that ensure that the cost of providing these annuities equals the revenue generated by selling them at those prices. Benefits from defined benefit (DB) plans are also provided in the form of an annuity. For the purposes of this report, we defined the household retirement annuity as including the annual income received from all DB and DC plans and automatic IRAs. Individuals also received Social Security benefits promised under current law.

Because these scenarios are sensitive to the assumptions used, we ran alternate simulations. These simulations used lower aggregate participation rates, higher investment fund account fees, or different measures for calculating Social Security benefits.

Our simulations do not include behavioral responses that the introduction of automatic IRAs or changes to the Saver's Credit may have created. In reality, some individuals may choose to contribute more to their pension plans or may choose to start saving in a pension plan or automatic IRA. Further, individuals automatically enrolled in automatic IRAs may decide to increase their contributions in the future. However, automatic IRA participants may need to choose between participating in an automatic IRA or paying down debt. In addition, some households may decide to participate in automatic IRAs but borrow money to make up for the loss in take-home pay. Also, some of the money invested in the automatic IRA may have been invested in other vehicles, had the IRA not been available.[e]

See appendix II for a detailed explanation of the underlying assumptions and projections under our alternate simulations.

[a]We analyzed H.R. 4049, the Automatic IRA Act of 2012 because it was the most recent legislative proposal at the time we conducted our analysis. On May 16, 2013, H.R. 2035, the Automatic IRA Act of 2013 was introduced before the House of Representatives. The differences between H.R. 2035 and H.R. 4049 are minimal and we determined that they would not have a significant effect on our simulation results.

[b]In our simulations, retirement occurs when an individual leaves the labor force and starts claiming a Social Security retirement benefit.

[c]For example, a household in the first quartile could have had lifetime household earnings of $25,000 per year over the course of its working years.

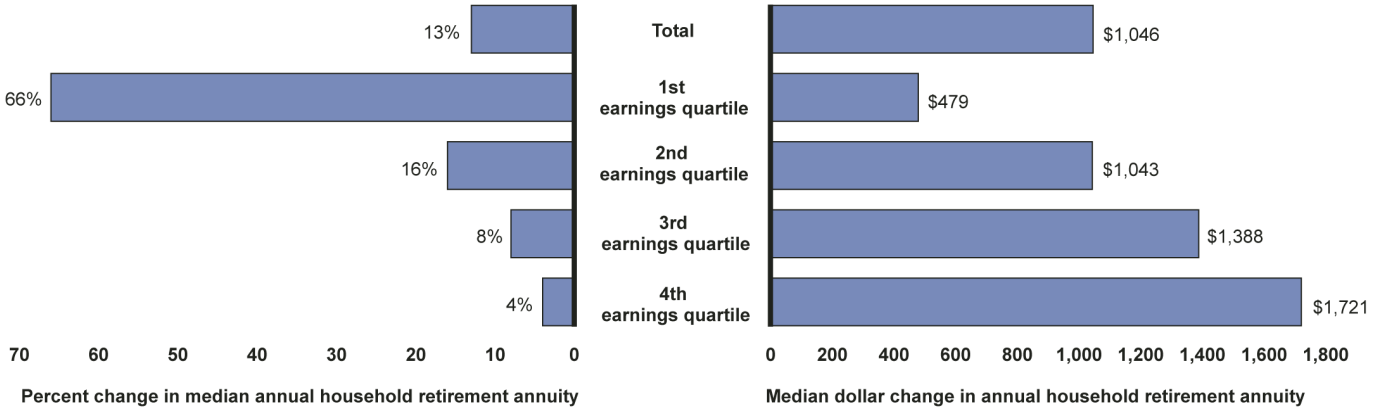
[d]Using different rates of return would result in different DC and automatic IRA account balances at retirement and, as a result, the size of the household's retirement annuity could be different. Also, because our projections do not stochastically model stock returns, assuming a rate of return on assets equal to the historical return on stocks does not capture the risks associated with stock returns.

[e]These other savings vehicles may or may not have been tax advantaged.

Under automatic IRAs, 36 percent of households could see modest increases in their retirement annuities, according to our projections. These households include workers who have not had access to a DB or DC plan as well as workers who had access to DB or DC plans at some jobs but not at others. Specifically, we projected that the median dollar

increase in a household's annuity was $1,046 (see fig. 6).[47] While our projections show that those in the lowest earnings quartile saw the smallest median dollar increase in the household's annuity ($479), the percent change in the median annuity was 66 percent. In addition, we estimate that 30 percent of households in this quartile saw an increase in their annuity of $1,000 or more. In comparison, the percent change in the median retirement annuity for households in the second earnings quartile was 16 percent and the median dollar increase in the household's retirement annuity was $1,043.

Figure 6: Projected Annual Changes in Households' Retirement Annuity under Automatic IRAs



Source: GAO analysis using the Policy Simulation Group's microsimulation models.

Notes: These projections show the results for only households that benefited from automatic IRAs. We projected the effects of automatic IRAs for a cohort of individuals born in 1995. The results shown are projections for the year 2062 when the cohort is age 67. We assumed that these individuals retired between ages 62 and 67. For the purposes of this report, we defined the household retirement annuity as including the annual retirement income received from all defined contribution or defined benefit plans and automatic IRAs. This annuity does not include Social Security benefits. The annuity values are adjusted for family size and are presented in 2013 dollars. We analyzed our results by earnings level using earnings quartiles, which are calculated based on a measure of lifetime household earnings. Households with lifetime earnings of $929-34,377 on an annual basis were in the first quartile, households with earnings of $34,379-60,682 were in the second quartile, households with earnings of $60,683-104,440 were in the third quartile, and households with earnings of $104,450-3,275,800 were in the fourth quartile. For the first earnings quartile, while the percent change in the median household annuity is high, the dollar amounts are small. The median household retirement annuity is $1,998 under current law and $3,317 under automatic IRAs.

[47]Dollar amounts from our simulations are adjusted for family size and are presented in 2013 dollars.

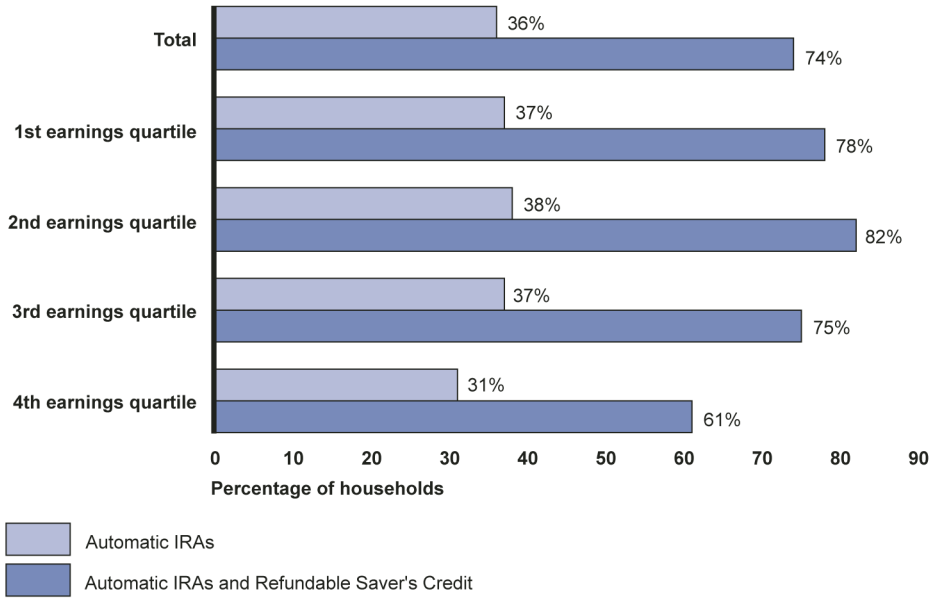
Almost 75 Percent of Households Could Experience an Increase in Retirement Income under Automatic IRAs Combined with a Refundable Saver's Credit

Almost 75 percent of households could experience an increase in their retirement annuity if the Saver's Credit were made refundable at the same time automatic IRAs were implemented (see fig. 7).[48] Further, according to our projections, making the Saver's Credit refundable in addition to implementing automatic IRAs could double the number of households experiencing an increase in retirement income.[49] Under this scenario, many more households could benefit than under automatic IRAs alone. Retirement annuities could increase if the household participated in automatic IRAs, was eligible to receive the refundable Saver's Credit but not the existing Saver's Credit, received a larger credit under the refundable Saver's Credit, or some combination of these events. Further, under the proposals we used for our modeling, the refundable Saver's Credit would be available for certain households with AGI of up to $85,000 a year, resulting in all lower and many middle-income households seeing an increase in their retirement savings. Households in the two lowest earnings quartiles could be most likely to benefit, with about 80 percent of households seeing an increase in their retirement annuities, according to our projections.

[48]See text box above, "Automatic IRA and Saver's Credit Modeling Scenarios", for a description of this scenario and its assumptions.

[49]As previously discussed, making the Saver's Credit refundable would result in a loss of revenue and additional outlays for the federal government.

Figure 7: Projected Percent of Households That Could See an Increase in Retirement Annuity under Automatic IRAs and a Refundable Saver's Credit

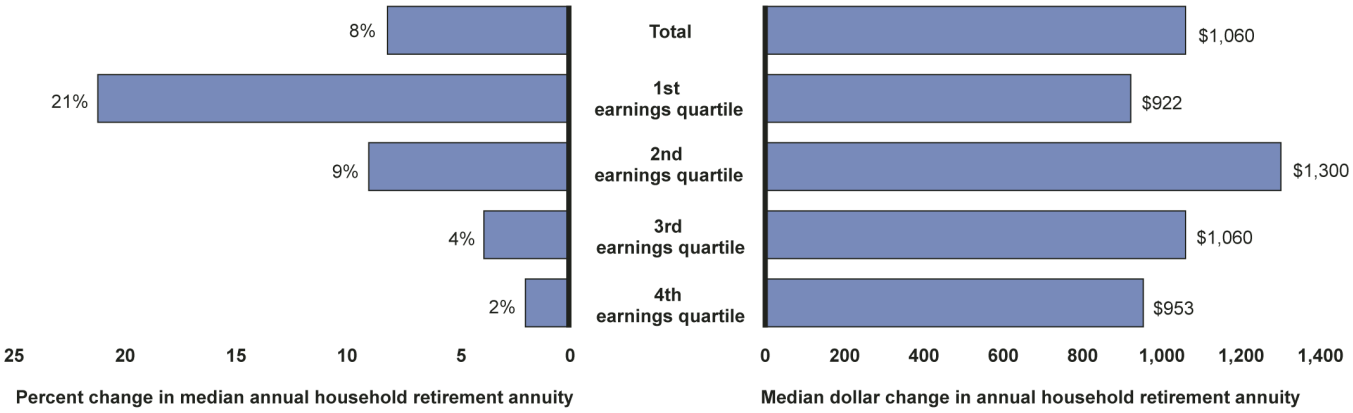


Source: GAO analysis using the Policy Simulation Group's microsimulation models.

Notes: We projected the effects of automatic IRAs and a refundable Saver's Credit for a cohort of individuals born in 1995. Results shown are projections for the year 2062 when the cohort is age 67. We assumed that these individuals retired between ages 62 and 67. For the purposes of this report, we defined the household retirement annuity as including the annual retirement income received from all defined contribution or defined benefit plans and automatic IRAs. This annuity does not include Social Security benefits. We analyzed our results by earnings level using earnings quartiles, which are calculated based on a measure of lifetime household earnings. Households with lifetime earnings of $929-34,377 on an annual basis were in the first quartile, households with earnings of $34,379-60,682 were in the second quartile, households with earnings of $60,683-104,440 were in the third quartile, and households with earnings of $104,450-3,275,800 were in the fourth quartile.

Our projections show that households in the lowest earnings quartile could gain the most from the combination of automatic IRAs and a refundable Saver's Credit. For these households, the percent increase in the median retirement annuity could be 21 percent, compared to a potential 2 percent increase for households in the highest quartile (see fig. 8). Furthermore, 48 percent of households in the lowest earnings quartile could see an increase in their retirement annuities of $1,000 or more.

Figure 8: Projected Annual Changes in Households' Retirement Annuity under Automatic IRAs and Refundable Saver's Credit

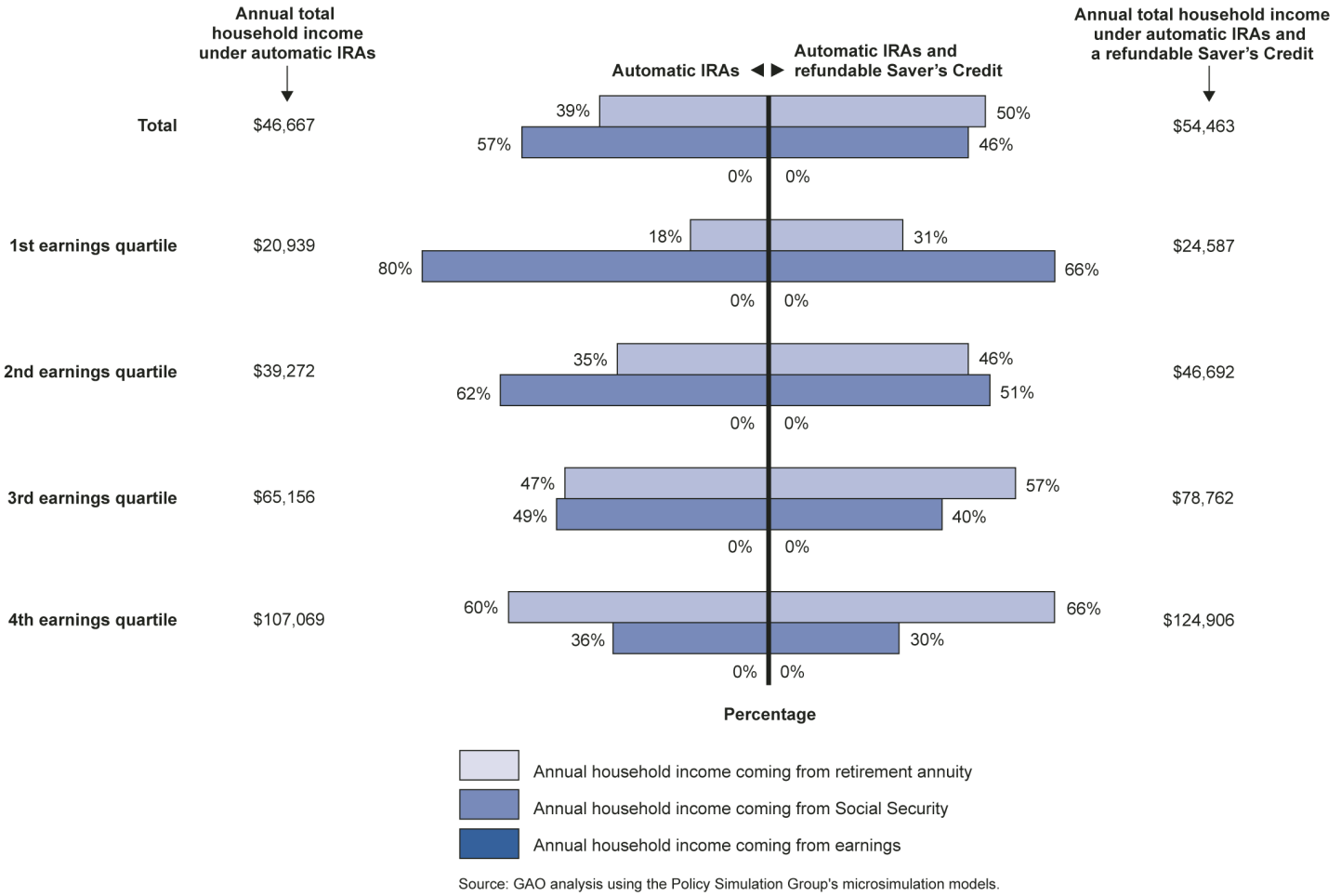


Source: GAO analysis using the Policy Simulation Group's microsimulation models.

Notes: These projections show the results for only households that benefited from automatic IRAs. We projected the effects of automatic IRAs and a refundable Saver's Credit for a cohort of individuals born in 1995. The results shown are projections for the year 2062 when the cohort is age 67. We assumed that these individuals retired between ages 62 and 67. For the purposes of this report, we defined the household retirement annuity as including the annual retirement income received from all defined contribution or defined benefit plans and automatic IRAs. This annuity does not include Social Security benefits. The annuity values are adjusted for family size and are presented in 2013 dollars. We analyzed our results by earnings level using earnings quartiles, which are calculated based on a measure of lifetime household earnings. Households with lifetime earnings of $929-34,377 on an annual basis were in the first quartile, households with earnings of $34,379-60,682 were in the second quartile, households with earnings of $60,683-104,440 were in the third quartile, and households with earnings of $104,450-3,275,800 were in the fourth quartile.

In general, under our projections, lower-earning households were more reliant on Social Security for income in retirement than higher-earning quartiles (see fig. 9). This may be because higher-earning households have the ability to save more for retirement, generating a larger retirement savings account at retirement. Further, Social Security benefits are progressive and replace a larger portion of lifetime earnings for people with low earnings than for people with high earnings. Thus, higher-earning households may receive a greater share of retirement income from annuitizing their retirement savings than from their Social Security benefits. The combined effects of automatic IRAs and a refundable Saver's Credit could decrease lower- and middle-income household's reliance on Social Security in retirement. Under our projections of automatic IRAs, the two lowest earnings quartiles relied on Social Security for 80 and 62 percent of their total household income, respectively. However, the percent of income derived from a household's retirement annuity increased when we added a refundable Saver's Credit. The two lowest earnings quartiles relied on retirement annuities for 31 and 46 percent, respectively, of their household's total income.

Figure 9: Projected Median Percent of Household Income Coming from Retirement Annuities and Social Security



Source: GAO analysis using the Policy Simulation Group's microsimulation models.

Notes: These projections show the results for only households that benefited from automatic IRAs. We projected the effects of automatic IRAs for a cohort of individuals born in 1995. The results shown are projections for the year 2062 when the cohort is age 67. We assumed that these individuals retired between ages 62 and 67. For the purposes of this report, we defined the household retirement annuity as including the annual retirement income received from all defined contribution or defined benefit plans and automatic IRAs. This annuity does not include Social Security benefits. The annuity values and total household incomes are adjusted for family size and are presented in 2013 dollars. Median annual household income is the household's income in retirement, at age 67. Median annual household income coming from earnings was 0 percent across all categories. We analyzed our results by earnings level using earnings quartiles, which are calculated based on a measure of lifetime household earnings. Households with lifetime earnings of $929-34,377 on an annual basis were in the first quartile, households with earnings of $34,379-60,682 were in the second quartile, households with earnings of $60,683-104,440 were in the third quartile, and households with earnings of $104,450-3,275,800 were in the fourth quartile.

Concluding Observations

Concerns about retirement security have grown as private sector employers have shifted to predominantly sponsoring DC plans. First, despite existing tax incentives aimed at fostering plan formation and coverage, less than half of workers aged 21-64 were covered by an employer-sponsored plan in 2011 and the participation rate has barely changed over the last several decades. Second, despite significant tax incentives aimed at increasing retirement savings, many households enter retirement without adequate financial resources.

Recent proposals, such as those that would establish the automatic IRA, could represent a significant step toward increasing participation to over 50 percent within the current framework of a voluntary system. Further, redesigning the Saver's Credit could improve the retirement income and savings imbalance between lower and higher earners by giving lower- and middle-earning households an additional incentive to accumulate more in their retirement accounts or to start saving for retirement. By itself, increasing coverage through automatic IRAs will likely result in, at best, moderate increases in retirement income. However, even these increases could bolster the financial prospects of many future retirees. These options do, of course, pose important trade-offs for individuals, employers, and the government that will need to be carefully weighed. Individuals, especially those in lower-income households, will still have to make difficult choices between spending now and saving for later. In addition, the government would forego tax revenue in the near-term because contributions to automatic IRAs would be tax-deferred. Moreover, the expansion of the Saver's Credit would result in both a loss of revenue and increased federal spending. Such costs will have to be considered along with the proposals' potential effects on labor force participation and dependence on other government programs, such as Social Security, in retirement.

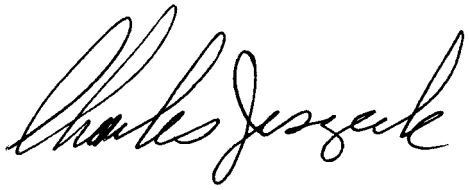
Agency Comments and Our Evaluation

We provided a draft of this report to the Department of Labor and the Department of the Treasury for review and comment. While neither agency provided official comments, each provided technical comments, which we incorporated as appropriate.

As agreed with your office, unless you publicly announce its contents earlier, we plan no further distribution until 30 days after the date of this letter. At that time, we will send copies of this report to the Secretary of Labor, the Secretary of the Treasury, and other interested parties. In addition, the report will be available at no charge on the GAO website at http://www.gao.gov.

If you or your staff have any questions about this report, please contact me at (202) 512-7215 or jeszeckc@gao.gov. Contact points for our Offices of Congressional Relations and Public Affairs may be found on the last page of this report. GAO staff who made contributions to this report are listed in Appendix III.

Sincerely yours,



Charles A. Jeszeck
Director, Education, Workforce, and
Income Security

Appendix I: Objectives, Scope, and Methodology

To analyze the extent to which workers with lower earnings can benefit from tax incentives for retirement savings and automatic IRAs, we examined (1) the earnings and tax rates of households that do not have DC plans or IRAs, (2) the effects of the Saver's Credit on retirement income, and (3) how automatic IRAs could affect retirement income, especially for low- and middle-income workers. This appendix and appendix II provide a detailed account of the information and methods we used to answer these objectives. Section 1 describes the key information sources we used. Section 2 describes the empirical methods we used to answer objective 1 and presents information on standard errors and confidence intervals for our estimates.

Section 1: Information Sources

To answer our objectives, we obtained information from a variety of sources including the Survey of Consumer Finances (SCF); the Policy Simulation Group's (PSG) microsimulation models; relevant literature; interviews with a range of experts in the area of retirement security; presidential and legislative proposals to modify the Saver's Credit and create automatic IRAs; and relevant federal laws and regulations.

SCF

To answer the first objective, we used data from the 2010 SCF to analyze incomes and tax rates of households that did not take advantage of the existing tax incentives for retirement savings. The SCF is a triennial, nationally representative survey from the Board of Governors of the Federal Reserve. The 2010 SCF surveyed 6,482 households about their pensions, incomes, labor force participation, asset holdings and debts, use of financial services, and demographic information. The SCF is conducted using a dual-frame sample design. One part of the design is a standard, multistage area-probability design, while the second part is a special over-sample of relatively wealthy households. This is done in order to accurately capture financial information about the population at large as well as characteristics specific to the relatively wealthy. The two parts of the sample are adjusted for sample nonresponse and combined using weights to make estimates from the survey data representative of households overall. In addition, the SCF excludes people included in the Forbes Magazine list of the 400 wealthiest people in the United States. Furthermore, the 2010 SCF dropped 10 observations from the public data set that had net worth at least equal to the minimum level needed to qualify for the Forbes list.

For the purposes of this report, a household refers to the primary economic unit within a household, which the SCF refers to as a family. To

estimate the age, marital status, net worth, tax filing status, and whether the household had a member with a DC or DB plan, we relied on variable definitions used for Federal Reserve publications using the SCF.[1] To estimate AGI and tax rates, we used TAXSIM, an application provided by the National Bureau of Economic Research that estimates tax information for households using survey data. To prepare the data for TAXSIM, we relied on a program provided by the Federal Reserve. We followed SCF documentation and estimated the standard errors that incorporate both implicates and replicate weighting. The estimated populations we used for our analysis were derived with the first implicate.

The SCF and other surveys that are based on self-reported data are subject to several other sources of nonsampling error, including the inability to get information about all sample cases; difficulties of definition; differences in the interpretation of questions; respondents' inability or unwillingness to provide correct information; and errors made in collecting, recording, coding, and processing data. These nonsampling errors can influence the accuracy of information presented in the report, although the magnitude of their effect is not known.

PSG Microsimulation Models

To answer objectives 2 and 3, we used PSG's SSASIM, GEMINI, and PENSIM simulation models. GEMINI simulates Social Security benefits and taxes for large representative samples of people born in the same year. GEMINI simulates all types of Social Security benefits including retired workers', spouses', survivors', and disability benefits. It can be used to model a variety of changes to Social Security. GEMINI uses inputs from SSASIM, which has been used in numerous prior GAO reports, and PENSIM, which was developed for the Department of Labor. GEMINI relies on SSASIM for economic and demographic projections and relies on PENSIM for simulated life histories of large representative samples of people born in the same year and their spouses.[2] Life histories include educational attainment, labor force participation,

[1]See Jesse Bricker, et al. "Changes in U.S. Family Finances From 2007 to 2010: Evidence from the Survey of Consumer Finances," *Federal Reserve Bulletin*, vol. 98, no. 2 (June 2012).

[2]While these models use sample data, our report, like others using these models, does not address the issue of sampling errors. The results of the analysis reflect outcomes for individuals in the simulated populations and do not attempt to estimate outcomes for an actual population.

earnings, job mobility, marriage, disability, childbirth, retirement, and death. Life histories are validated against data from the Survey of Income and Program Participation, the Current Population Survey, Modeling Income in the Near Term (MINT),[3] and the Panel Study of Income Dynamics. Additionally, any projected statistics (such as life expectancy, employment patterns, and marital status at age 60) are, where possible, consistent with intermediate cost projections from the Social Security Administration's Office of the Chief Actuary (OCACT). At their best, such models can provide only very rough estimates of future incomes. However, these estimates may be useful for comparing future incomes across alternative policy scenarios and over time.

GEMINI can be operated as a free-standing model or it can operate as a SSASIM add-on. When operating as an add-on, GEMINI is started automatically by SSASIM for one of two purposes. GEMINI can enable the SSASIM macro model to operate in the Overlapping Cohorts (OLC) mode or it can enable the SSASIM micro model to operate in the Representative Cohort Sample (RCS) mode. The SSASIM OLC mode requests GEMINI to produce samples for each cohort born after 1934 in order to build up aggregate payroll tax revenues and Old-Age, Survivors, and Disability Insurance (OASDI) benefit expenditures for each calendar year, which are used by SSASIM to calculate standard trust fund financial statistics. In either mode, GEMINI operates with the same logic, but typically with smaller cohort sample sizes in OLC mode than in the RCS or stand-alone-model mode.

PENSIM simulates the timing for each life event by using data from various longitudinal data sets to estimate a waiting-time model (often called a hazard function model) using standard survival analysis methods. PENSIM incorporates many such estimated waiting-time models into a single dynamic simulation model. This model can be used to simulate a synthetic sample of complete life histories. PENSIM employs continuous-time, discrete-event simulation techniques, such that life events do not have to occur at discrete intervals, such as annually on a person's birthday. PENSIM also uses macro-demographic and macroeconomic variables generated by SSASIM.

[3]MINT is a detailed microsimulation model developed jointly by the Social Security Administration, the Brookings Institution, RAND, and the Urban Institute to project the distribution of income in retirement. MINT6 is the latest version and makes projections for the 1926 to 1975 birth cohorts.

PENSIM imputes pension characteristics using a model estimated with 1996—1998 establishment data from the Bureau of Labor Statistics Employee Benefits Survey (now known as the National Compensation Survey). Pension offerings are calibrated to historical trends in pension offerings from 1975 to 2005, including plan mix, types of plans, and employer matching. Further, PENSIM incorporates data from the 1996–1998 Employee Benefits Survey to impute access to and participation rates in DC plans in which the employer makes no contribution, which the Bureau of Labor Statistics does not report as pension plans in the National Compensation Survey. The inclusion of these "zero-matching" plans enhances PENSIM's ability to accurately reflect the universe of pension plans offered by employers. The baseline PENSIM assumption, which we adopted in our analysis, is that 2005 pension offerings, including the imputed zero-matching plans, are projected forward in time. PENSIM also simulates federal income taxes.

PSG has conducted validation checks of PENSIM's simulated life histories against both historical life history statistics and other projections. Different life history statistics have been validated against data from the Survey of Income and Program Participation, the Current Population Survey, MINT, the Panel Study of Income Dynamics, and the Social Security Administration's Trustees Report. PSG reports that PENSIM life histories have produced similar annual population, taxable earnings, and disability benefits for the years 2000 to 2080 as those produced by the Congressional Budget Office's long-term Social Security model and as shown in the Social Security Administration's 2004 Trustees Report. According to PSG, PENSIM generates simulated DC plan participation rates and account balances that are similar to those observed in a variety of data sets. For example, measures of central tendency in the simulated distribution of DC account balances among employed individuals are similar to those produced by an analysis of the Employee Benefit Research Institute-Investment Company Institute 401(k) database and of the 2004 SCF. We performed no independent validation checks of PENSIM's life histories or pension characteristics.

In 2006, the Employee Benefits Security Administration (EBSA) submitted PENSIM to a peer review by three economists. The economists' overall reviews ranged from highly favorable to highly critical. While the economist who gave PENSIM a favorable review expressed a "high degree of confidence" in the model, the one who criticized it focused on PENSIM's reduced form modeling. This means that the model is grounded in previously observed statistical relationships among individuals' characteristics, circumstances, and behaviors, rather than on

any underlying theory of the determinants of behaviors, such as the common economic theory that individuals make rational choices as their preferences dictate and thereby maximize their own welfare. The reduced form modeling approach is used in pension microsimulation models and the feasibility of using a nonreduced form approach to build such a model may be questionable given the current state of economic research. The third economist raised questions about specific modeling assumptions and possible overlooked indirect effects.

Data Reliability

We conducted a data reliability assessment of the PSG models and selected variables from the SCF by conducting electronic data tests for completeness and accuracy, reviewing documentation on the data set, and interviewing knowledgeable officials about how the data are collected and maintained and their appropriate uses. When we learned that particular fields were not sufficiently reliable, we did not use them in our analysis. For the purposes of our analysis, we found the variables that we ultimately reported on to be sufficiently reliable.

Literature Review and Interviews

We conducted an extensive literature review and interviewed a range of experts. To identify existing studies, we conducted searches of various databases, such as ECO, ArticleFirst, WorldCat, Social SciSearch, Harvard Business Review, EconLit, ProQuest, PolicyFile and CQ.com. From these sources, we reviewed article abstracts, when available, to determine which articles contained information germane to our report and reviewed those articles. In addition, we collected articles posted on the websites of organizations such as Brookings, the Heritage Foundation, and AARP. We performed these searches and identified articles from June 2012 through October 2012.

We also interviewed experts. To ensure we obtained a balanced perspective, we interviewed experts with a range of perspectives and from different types of organizations including government, research organizations, advocacy groups, and the private sector. We also conducted interviews with several experts in government and the private sector on technical issues related to our analysis. Specifically, we interviewed agency officials at the departments of the Treasury and Labor; researchers from the Urban Institute, the Heritage Foundation, and the Economic Policy Institute; experts and advocates from the Pension Rights Center, Demos, Aspen Institute, American Society of Pension Professionals and Actuaries, and AARP; and private sector professionals from PAi, Prudential Financial, Inc., and Putnam Investments. We

consulted with officials at the Social Security Administration (SSA) and an expert from the PSG on technical issues.

Section 2: Analysis of Incomes and Tax Rates of Households That Do Not Take Advantage of Incentives to Save for Retirement

Methodology

To analyze the earnings and tax rates of households that do not take advantage of the tax incentives for retirement saving, we used the 2010 SCF. We limited our sample to households where the household head was under age 65 and either the respondent or spouse worked in the private sector. Our estimates for households only include retirement benefits and savings of the survey respondent and a spouse or partner and do not include retirement benefits or savings held by additional family members. As a result, our estimates may understate retirement assets held by a household. We estimated whether the household had a DB plan, and AGI and marginal tax rates for households with and without DC plans or IRAs. We also estimated net worth using variable definitions outlined by the Federal Reserve.[4] We estimated AGI and marginal tax rates by inputting the SCF data into the National Bureau of Economic Research's (NBER) TAXSIM Model, a microsimulation model of U.S. federal and state income tax systems.[5] TAXSIM calculates estimated liabilities under U.S. federal and state income tax laws from actual tax

[4]Bricker et. al., "Changes in U.S. Family finances from 2007 to 2010."

[5]AGI is defined as gross income minus adjustments to income. A marginal tax rate is the rate of tax paid on the next dollar of income that a taxpayer earns.

returns that have been prepared for public use by the Statistics of Income Division of the IRS.[6]

Confidence Intervals for Our Estimates

The SCF is a probability sample based on random selection, so the 2010 SCF sample is only one of a large number of samples that might have been drawn. Since each sample could have provided different estimates, we express our confidence in the precision of our particular sample's results as a 95 percent confidence interval (e.g., plus or minus 4 percentage points). This is the interval that would contain the actual population value for 95 percent of the samples we could have drawn. As a result, we are 95 percent confident that each of the confidence intervals in this report will include the true values in the study population. Tables 2 through 6 show the confidence intervals for our estimates of AGI, marginal tax rates, and retirement plan ownership.

Table 2: Median AGI for Households With and Without DC Plans or IRAs, by Age, 2010

	Age	Estimate	Standard error	Lower bound of 95 percent confidence interval	Upper bound of 95 percent confidence interval
Married with DC plan or IRA					
	Less than 35	$68,000	$1,969	$64,141	$71,859
	35-44	$90,000	$3,759	$82,632	$97,368
	45-54	$100,000	$2,507	$95,086	$104,914
	55-64	$102,000	$5,181	$91,845	$112,155
Married without DC plan or IRA					
	Less than 35	$33,000	$1,824	$29,424	$36,576
	35-44	$44,000	$2,027	$40,027	$47,973
	45-54	$51,000	$2,901	$45,315	$56,685
	55-64	$44,000	$3,736	$36,677	$51,323
Not married with DC plan or IRA					
	Less than 35	$42,000	$2,447	$37,203	$46,797
	35-44	$50,000	$2,789	$44,533	$55,467
	45-54	$48,000	$1,877	$44,321	$51,679
	55-64	$53,000	$3,237	$46,655	$59,345

[6]See Daniel Feenberg and Elisabeth Coutts, "An Introduction to the TAXSIM Model," Journal of Policy Analysis and Management, vol. 12, no. 1 (1993), 189-194.

	Age	Estimate	Standard error	Lower bound of 95 percent confidence interval	Upper bound of 95 percent confidence interval
Not married without DC plan or IRA					
	Less than 35	$18,200	$1,034	$16,173	$20,227
	35-44	$27,000	$1,451	$24,157	$29,843
	45-54	$28,000	$1,563	$24,937	$31,063
	55-64	$31,000	$2,817	$25,478	$36,522

Source: GAO analysis of the 2010 SCF.

Note: Results are for households where the household head was under the age of 65 and either the respondent or spouse worked in the private sector.

Table 3: Median AGI for Households With and Without DC Plans or IRAs, by Tax Filing Status, 2010

	Tax filing status	Estimate	Standard error	Lower bound of 95 percent confidence interval	Upper bound of 95 percent confidence interval
Married with DC plan or IRA					
	Single	$48,000	$4,661	$38,864	$57,136
	Married filing jointly	$90,000	$1,360	$87,335	$92,665
Married without DC plan or IRA					
	Single	$25,000	$3,368	$18,398	$31,602
	Married filing jointly	$42,000	$1,768	$38,534	$45,466
Not married with DC plan or IRA					
	Single	$48,000	$1,821	$44,432	$51,568
	Head of household	$46,000	$1,613	$42,838	$49,162
Not married without DC plan or IRA					
	Single	$25,000	$415	$24,187	$25,813
	Head of household	$20,000	$1,050	$17,942	$22,058

Source: GAO analysis of the 2010 SCF.

Notes: Results are for households where the household head was under the age of 65 and either the respondent or spouse worked in the private sector. The Federal Reserve provides a tax filing status variable, which we used in our analysis. For the married filing jointly category, the Federal Reserve included married households that filed income taxes jointly and separately. For married households, the single tax filing status category included households where only the respondent or their spouse filed taxes and the filer claimed one personal exemption. There are about 48 million married households in the married filing jointly category and about one million married households in the single tax filing status category.

Table 4: Median Marginal Tax Rate for Households With and Without DC Plans or IRAs, by Age, 2010

	Age	Estimate	Standard error	Lower bound of 95 percent confidence interval	Upper bound of 95 percent confidence interval
Married with DC plan or IRA					
	Less than 35	15%	0.0%	15%	15%
	35-44	25%	3%	19%	31%
	45-54	25%	0.0%	25%	25%
	55-64	25%	0.1%	25%	25%
Married without DC plan or IRA					
	Less than 35	15%	0.0%	15%	15%
	35-44	15%	0.0%	15%	15%
	45-54	15%	0.0%	15%	15%
	55-64	15%	0.2%	15%	15%
Not married with DC plan or IRA					
	Less than 35	15%	2%	12%	18%
	35-44	25%	4%	17%	33%
	45-54	22%	5%	13%	31%
	55-64	25%	1%	23%	27%
Not married without DC plan or IRA					
	Less than 35	15%	2%	11%	19%
	35-44	15%	0.0%	15%	15%
	45-54	15%	0.0%	15%	15%
	55-64	15%	0.0%	15%	15%

Source: GAO analysis of the 2010 SCF.

Notes: Results are for households where the household head was under the age of 65 and either the respondent or spouse worked in the private sector. The standard error of our estimate of the midpoint was larger when there were multiple modes of the data—when two different marginal tax rates were close to being equally likely. A marginal tax rate is the rate of tax paid on the next dollar of income that a taxpayer earns.

Table 5: Median Marginal Tax Rate for Households With and Without DC Plans or IRAs, by Tax Filing Status, 2010

	Tax filing status	Estimate	Standard error	Lower bound of 95 percent confidence interval	Upper bound of 95 percent confidence interval
Married with DC plan or IRA					
	Single	25%	4%	16%	34%
	Married filing jointly	25%	1%	22%	28%
Married without DC plan or IRA					
	Single	15%	0.2%	15%	15%
	Married filing jointly	15%	0.0%	15%	15%
Not married with DC plan or IRA					
	Single	25%	2%	22%	28%
	Head of household	15%	0.2%	15%	15%
Not married without DC plan or IRA					
	Single	15%	0.0%	15%	15%
	Head of household	9%	3%	3%	15%

Source: GAO analysis of the 2010 SCF.

Notes: Results are for households where the household head was under the age of 65 and either the respondent or spouse worked in the private sector. The standard error of our estimate of the midpoint was larger when there were multiple modes of the data—when two different marginal tax rates were close to being equally likely. The Federal Reserve provides a tax filing status variable, which we used in our analysis. For the married filing jointly category, the Federal Reserve included married households that filed income taxes jointly and separately. For married households, the single tax filing status category included households where only the respondent or their spouse filed taxes and the filer claimed one personal exemption. There are about 48 million married households in the married filing jointly category and about one million married households in the single tax filing status category. A marginal tax rate is the rate of tax paid on the next dollar of income that a taxpayer earns.

Table 6: Percent of Households Without a DC Plan or IRA, by Whether They Have a DB Plan, 2010

	Income quartile	Estimate	Standard error	Lower bound of 95 percent confidence interval	Upper bound of 95 percent confidence interval
Married with DB plan					
	1st quartile	5%	1%	3%	7%
	2nd quartile	21%	3%	16%	26%
	3rd quartile	27%	3%	20%	33%
	4th quartile	31%	6%	20%	42%
Total		**15%**	**1%**	**13%**	**18%**
Married without DB plan					
	1st quartile	95%	1%	93%	97%
	2nd quartile	79%	3%	74%	84%

	Income quartile	Estimate	Standard error	Lower bound of 95 percent confidence interval	Upper bound of 95 percent confidence interval
	3rd quartile	73%	3%	67%	80%
	4th quartile	69%	6%	58%	80%
Total		**85%**	**1%**	**82%**	**87%**
Not married with DB plan					
	1st quartile	4%	1%	3%	6%
	2nd quartile	9%	2%	6%	12%
	3rd quartile	25%	4%	17%	32%
	4th quartile	25%	4%	17%	33%
Total		**11%**	**1%**	**9%**	**13%**
Not married without DB plan					
	1st quartile	96%	1%	94%	97%
	2nd quartile	91%	2%	88%	94%
	3rd quartile	75%	4%	68%	83%
	4th quartile	75%	4%	67%	83%
Total		**89%**	**1%**	**87%**	**91%**

Source: GAO analysis of the 2010 SCF.

Notes: Results are for households where the household head was under the age of 65 where either the respondent or spouse work in the private sector and do not save for retirement through a DC or IRA plan. We analyzed our results by earnings level using earnings quartiles. Households with adjusted gross incomes (adjusted for family size) of less than $18,960 were in the first earnings quartile, households with incomes of $18,961-$33,519 were in the second earnings quartile, households with incomes of $33,52 -$56,559 were in the third earnings quartile, and households with incomes of $56,560-$25,583,473 were in the fourth earnings quartile.

Appendix II: Sensitivity Analysis and Summary Statistics for Saver's Credit and Automatic IRA Modeling Scenarios

This appendix describes the modeling scenarios and assumptions for objectives 2 and 3. It also presents the results from our sensitivity analyses and describes cohort summary statistics resulting from our simulations.

Modeling Scenarios and Assumptions

To analyze the effects of the Saver's Credit and automatic IRAs on retirement income, we used the PSG models. We started with a 2 percent sample of a 1995 cohort, totaling 118,142 people at birth. We projected income in retirement when the cohort is age 67.

Our simulations included some of the following key assumptions and features:

- Individuals who died before they retire, died before age 67, retire after age 67, immigrated into the cohort at an age older than 25, emigrated before age 67, or became permanently disabled before age 62 were omitted from the sample. We did not include individuals who became permanently disabled before age 62 because we could not account for missed career growth and opportunities to participate in employer-sponsored pension plans.
- Retirement occurred as early as age 62.
- Anyone who became disabled at age 62 or older was considered retired.
- Workers could be covered by DB plans. We relied on PENSIM's defaults to determine DB plan coverage and benefit amounts.
- Rates of return were fixed. The annual nonstochastic nominal rate of return was 9.2 percent for stocks and 5.7 percent for government bonds. Using different rates of return would result in different effects on DC and automatic IRA account balances at retirement and, as a result, the size of the household's retirement annuity. Also, because our projections did not stochastically model stock returns, assuming a rate of return on assets equal to the historical return on stocks did not capture the risks associated with stock returns. Further, the nominal

rate of return for stocks is based in part on a long-term equity risk premium calculated in 2000.[1]

- PENSIM assigned each individual one of four "lifetime asset allocation styles." DC assets were invested according to the individual's asset allocation style. These styles included (1) all assets are invested in a diversified-equity fund, (2) all assets are invested in a government bond fund, (3) 15 percent of assets are invested in a collection of individuals stocks and the remaining 85 percent are invested in an age-specific mixture of a diversified-equity fund and a government-bond fund, and (4) 15 percent of assets are invested in a collection of individual stocks and the remaining 85 percent are invested in a target-date fund.

- Account fees for investment funds were 75 basis points for target-date funds; 100 basis points for diversified-equity funds; 45 basis points for money-market funds, equity-index, and government bond funds; and 0 basis points for stable-value and guaranteed-return funds. We considered these account fees to be our "standard fees" scenario.

- When workers change jobs, they either roll over their DC account balances or cash them out. Whether workers roll over their DC account balances or cash them out depends on the relative size of their account balances. We relied on PENSIM's defaults to determine whether workers rolled over their account balances. PENSIM does not allow for hardship withdrawals. Workers accumulated DC and IRA savings from past jobs in one rollover account, which continued to receive investment returns. At retirement, benefits were consolidated into one account.

- Workers used their entire DC account balance at retirement to purchase a single-life annuity at retirement that was not adjusted for inflation. DB benefits were also provided in the form of an annuity. DB and DC annuities were combined into one retirement annuity.

- Annuity prices were based on projected mortality rates for the 1995 birth cohort and on loading factors that ensured that the cost of providing annuities in PENSIM equaled the revenue generated by

[1]Peter A. Diamond, "What Stock Market Returns to Expect for the Future?" *Social Security Bulletin*, vol. 63, no. 2 (2000).

selling them at those prices. We assume that the annuity provider had no administrative or marketing costs, no costs in acquiring the capital it needs to hold in reserve, and earns no profits.

- Eligible individuals received Social Security benefits in retirement. According to 2012 projections of the Social Security Trustees for the next 75 years (2012-2087), revenues will not be adequate to pay full benefits as defined by the current benefit formula. Therefore, estimating future Social Security benefits should reflect that actuarial deficit and account for the fact that some combination of benefit reductions and revenue increases will be necessary to restore long-term solvency. Our tax-increase-only benchmark simulated "promised benefits," or those benefits promised by the current benefit formula. We also developed an alternative benefit-reduction-only benchmark which simulated "funded benefits," or those benefits for which currently scheduled revenues are projected to be sufficient (see Sensitivity Analysis below). Our tax-increase-only benchmark raised payroll taxes once and immediately by the amount of Social Security's actuarial deficit as a percentage of payroll. It resulted in the smallest ultimate tax rate of those we considered and spread the tax burden most evenly across generations; this was the primary basis for our selection. The later that taxes are increased, the higher the ultimate tax rate needed to achieve solvency, and, in turn, the higher the tax burden on later taxpayers and lower on earlier taxpayers. Still, any policy scenario that achieves 75-year solvency only by increasing revenues would have the same effect on the adequacy of future benefits in that promised benefits would not be reduced. Nevertheless, alternative approaches to increasing revenues could have very different effects on individual equity. All estimates related to this benchmark were simulated using the SSASIM OLC mode. Starting in 2013, we increased the tax rate by 2.61 percent in order to achieve 75-year solvency. As reported in the Social Security

Administration's 2012 Trustees Report, immediately raising taxes by 2.61 percent would achieve solvency.[2]

In our policy scenarios, we varied other assumptions to see how these variations affect retirement income at age 67. We did not account for any behavioral responses that changes in policy may have created. In reality, some individuals may choose to contribute more to their pension plans or may choose to start saving in a pension plan or IRA in response to policy changes. Policy scenarios we analyzed include:

- **No Saver's Credit.** In addition to the assumptions described above, this scenario assumed no Saver's Credit's was available. This scenario served as the baseline against which we compared the results for the existing and refundable Saver's Credit scenarios.

- **Existing Saver's Credit.** This scenario was drawn from the existing design of the Saver's Credit as established by the Economic Growth and Tax Relief Reconciliation Act of 2001. Under the credit's current design, taxpayers may receive a non-refundable credit of up to $1,000 ($2,000 if married filing jointly) for contributing to a pension plan or IRA. The credit amount is equal to the credit rate multiplied by the amount of qualified contribution (of up to $2,000 per individual). Taxpayers receive a credit rate of 50, 20, or 10 percent depending on AGI and filing status. Certain students, individuals under age 18, and those who are claimed as a dependent on another taxpayer's return are not eligible to receive the credit. If a worker receives a pre-retirement distribution from a pension plan, any credit received in that year and the subsequent two years will be reduced by the amount of the distribution. We used information from the Internal Revenue Service to determine current AGI limits. 2013 AGI limits are: $59,000

[2]At the time of our analysis, the Social Security Administration's 2013 Trustees Report had not been released. This report was released on May 31, 2013. As reported in 2012, the 2013 report found that revenues will not be adequate to pay full Social Security benefits for the next 75 years. Also, as in 2012, the asset reserves in the Social Security Trust Funds are projected to deplete in 2033. However, even though the depletion date for the Trust Funds has not changed, we are one year closer to asset reserve depletion. Our Social Security benchmarks would require minor adjustments to achieve solvency for the 2013-2087 period. See The Board of Trustees, Federal Old-Age and Survivors Insurance and Federal Disability Insurance Trust Funds, *The 2013 Annual Report of the Board of Trustees of the Federal Old-Age and Survivors Insurance and Federal Disability Insurance Trust Funds* (Washington, D.C.: May 31, 2013) and *The 2012 Annual Report of the Board of Trustees of the Federal Old-Age and Survivors Insurance and Federal Disability Insurance Trust Funds* (Washington, D.C.: Apr. 25, 2012).

for individuals with a filing status of married filing jointly, $44,250 for individuals with a filing status of head of household, and $29,500 for individuals with a filing status of single, married filing separately, or widow(er). Limits in subsequent years were indexed to inflation. PENSIM assumed the credit was deposited directly into the taxpayer's DC account. This is not a requirement under law, and in reality the credit would be part of the household's tax refund. We assumed a 100 percent utilization rate, meaning that all eligible taxpayers received the credit, to show the maximum potential accumulation for retirement income from the Saver's Credit. This utilization rate also reflects PENSIM's default values for 2012 and beyond. We did not assess behavioral responses related to the utilization of the Saver's Credit.

- **Refundable Saver's Credit.** This scenario had the same eligibility requirements and 2013 AGI limits as the existing Saver's Credit scenario. Starting in 2014, the following changes were implemented, drawn from our understanding of modifications included in the President's budget proposal of fiscal year 2011: (1) the credit became fully refundable, (2) all taxpayers received a 50 percent credit rate (there is no phase-out), and (3) AGI limits were increased. The 2014 AGI limits were: $85,000 for individuals with a filing status of married filing jointly, $63,750 for individuals with a filing status of head of household, and $42,500 for individuals with a filing status of single, married filing separately, or widow(er). Limits in subsequent years were indexed to inflation. Individuals could receive a refundable credit of up to $1,000 if filing singly or $2,000 if filing jointly. PENSIM assumed that the credit is deposited directly into the taxpayer's DC account. This change was not proposed in the President's budget. We assumed a 100 percent utilization rate, meaning that all eligible taxpayers claimed the credit, to show the maximum potential accumulation for retirement income from the Saver's Credit. We did not assess behavioral responses related to the utilization of the Saver's Credit.

- **Automatic IRAs.** This scenario is drawn from our understanding of H.R. 4049 The Automatic IRA Act of 2012.[3] For our scenario, we assumed that private sector employers began offering automatic IRAs in 2014. Employers who employed more than 10 employees and did not offer a DB or DC plan were required to offer automatic IRAs to employee ages 18 and over after they have been employed for 90 days. Contributions were made to traditional IRAs.[4] If the employee did not select a contribution rate or investment fund, 3 percent of the employee's salary was contributed to a target-date fund. The aggregate participation rate is centered around a target participation rate of 69 percent in the year 2035, when the cohort was age 40 and in the midst of its prime working years. We selected this rate by estimating a hypothetical average participation rate using parameters from economic literature and SCF data on households that did not currently participate in a DC or IRA plan. Our model considered the effects of automatic enrollment in 401(k) plans, the effects of an employer match (or a lack there-of), income, and age. Individuals may choose to terminate their participation in the automatic IRA after being enrolled in the plan. The Saver's Credit provisions matched the Existing Saver's Credit scenario described above. We assumed that the utilization rate for the credit was 100 percent to model the full savings potential of the credit.

- **Automatic IRAs and a refundable Saver's Credit.** In addition to modeling automatic IRAs as described above, we modeled the Saver's Credit with the same provisions as in the Refundable Saver's Credit scenario, also described above. The refundable Saver's Credit was fully refundable, there was no credit rate phase-out, and AGI limits were extended starting in 2014. Individuals could receive a refundable credit of up to $1,000 if filing singly or $2,000 if filing jointly.

[3]We analyzed H.R. 4049, The Automatic IRA Act of 2012 because it was the most recent legislative proposal at the time we conducted our analysis. On May 16, 2013, H.R. 2035, The Automatic IRA Act of 2013, was introduced before the House of Representatives. We determined that the differences between H.R. 2035 and H.R. 4049 are minimal and would not have a significant effect on our simulation results. For a small group of individuals in our simulations, i.e. individuals who participated in automatic IRAs in 2014, income in retirement would be slightly less because they would miss out on making contributions in 2014.

[4]While H.R. 4049 calls for depositing automatic IRA contributions into Roth IRAs as the default option, PENSIM models traditional IRAs.

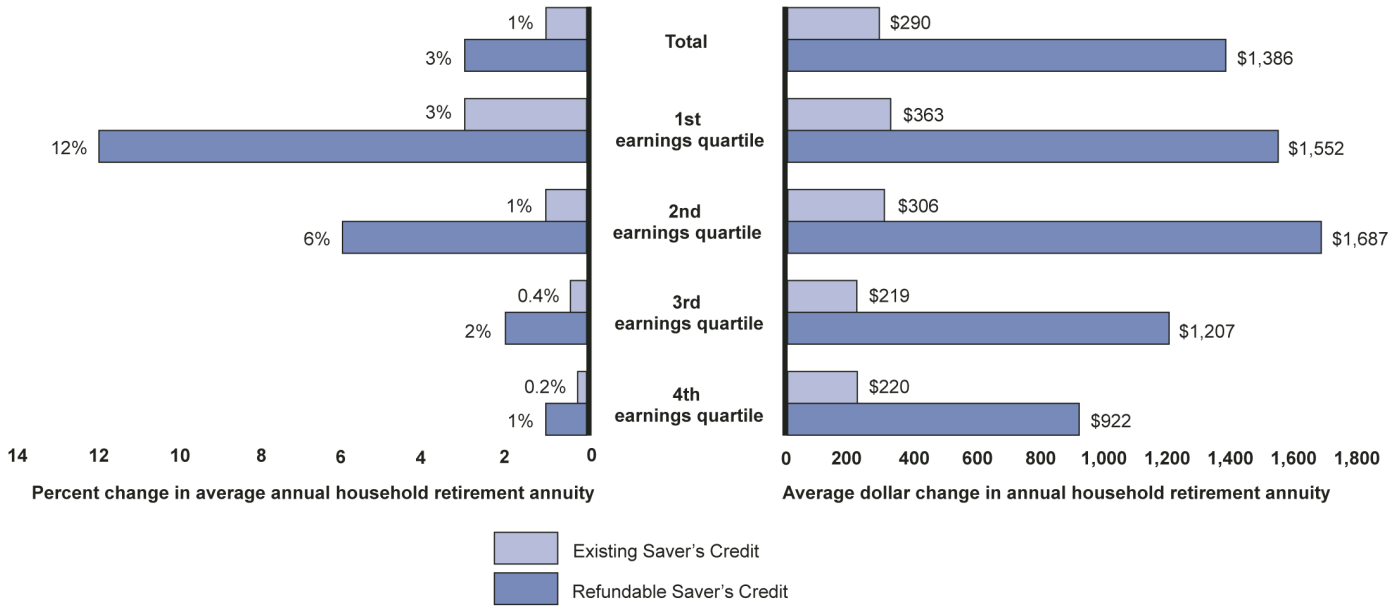
We assumed that the utilization rate for the refundable Saver's Credit was 100 percent.

Sensitivity Analysis

Results Using Means

Figures 10 through 13 show the results of our modeling scenarios presenting means instead of medians. In general, for dollar changes, the means were higher than the medians.

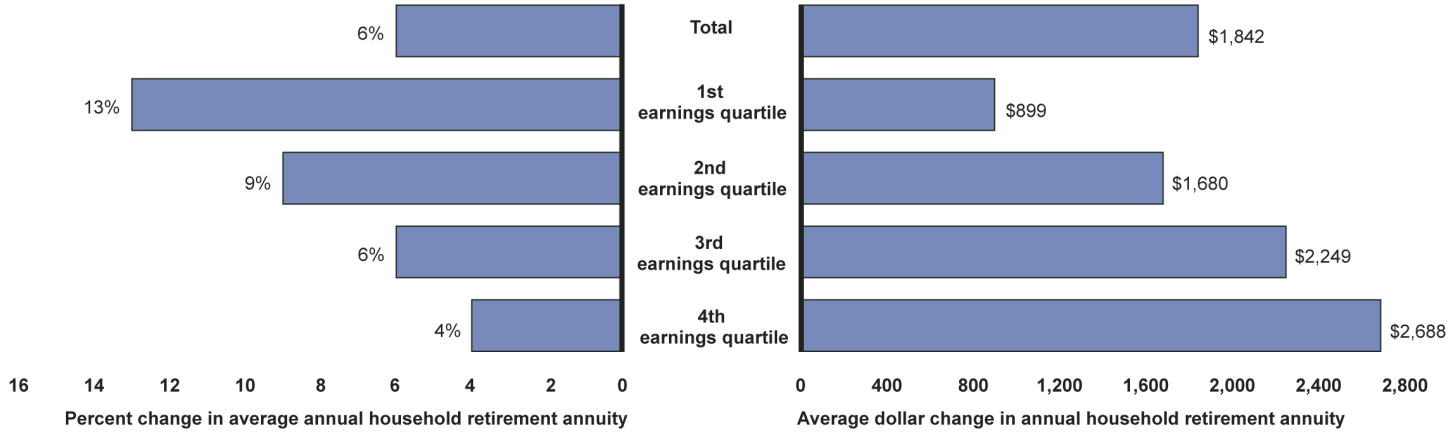
Figure 10: Projected Annual Changes in Households' Retirement Annuity under Saver's Credit



Source: GAO analysis using the Policy Simulation Group's microsimulation models.

Notes: These projections show the results for only households that benefited from the Saver's Credit. We projected the effects of the Saver's Credit for a cohort of individuals born in 1995. The results shown are projections for the year 2062 when the cohort is age 67. The effects were compared to a situation in which the credit did not exist. We assumed that these individuals retired between ages 62 and 67. For the purposes of this report, we defined the household retirement annuity as including the annual retirement income received from all defined contribution or defined benefit plans. This annuity does not include Social Security benefits. The annuity values are adjusted for family size and are presented in 2013 dollars. We analyzed our results by earnings level using earnings quartiles, which are calculated based on a measure of lifetime household earnings. Households with lifetime earnings of $929-34,377 on an annual basis were in the first quartile, households with earnings of $34,379-60,682 were in the second quartile, households with earnings of $60,683-104,440 were in the third quartile, and households with earnings of $104,450-3,275,800 were in the fourth quartile.

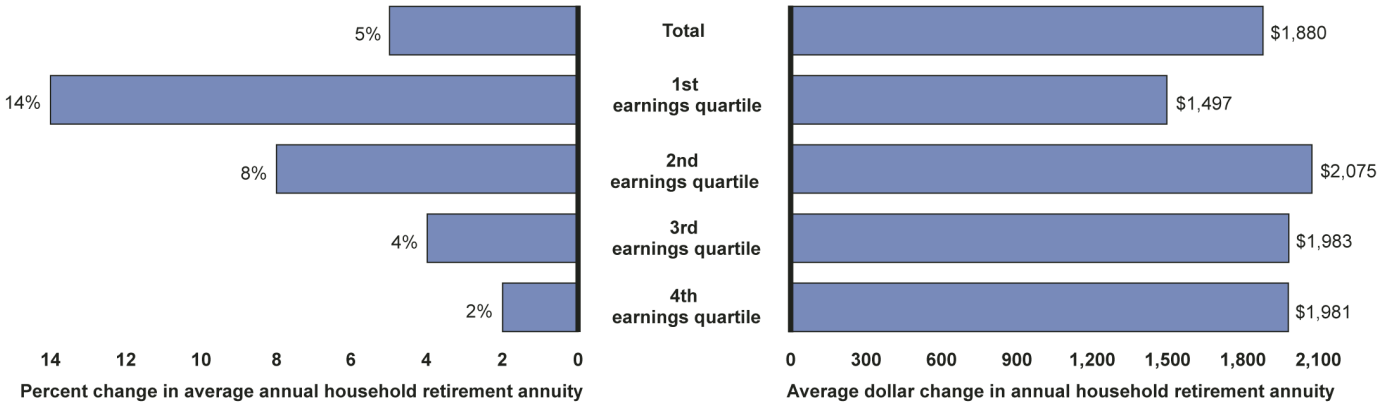
Figure 11: Projected Annual Changes in Households' Retirement Annuity under Automatic IRAs



Source: GAO analysis using the Policy Simulation Group's microsimulation models.

Notes: These projections show the results for only households that benefited from automatic IRAs. We projected the effects of automatic IRAs for a cohort of individuals born in 1995. The results shown are projections for the year 2062 when the cohort is age 67. We assumed that these individuals retired between ages 62 and 67. For the purposes of this report, we defined the household retirement annuity as including the annual retirement income received from all defined contribution or defined benefit plans and automatic IRAs. This annuity does not include Social Security benefits. The annuity values are adjusted for family size and are presented in 2013 dollars. We analyzed our results by earnings levels using earnings quartiles, which are calculated based on a measure of lifetime household earnings. Households with lifetime earnings of $929-34,377 on annual basis were in the first quartile, households with earnings of $34,379-60,682 were in the second quartile, households with earnings of $60,683-104,440 were in the third quartile, and households with earnings of $104,450-3,275,800 were in the fourth quartile.

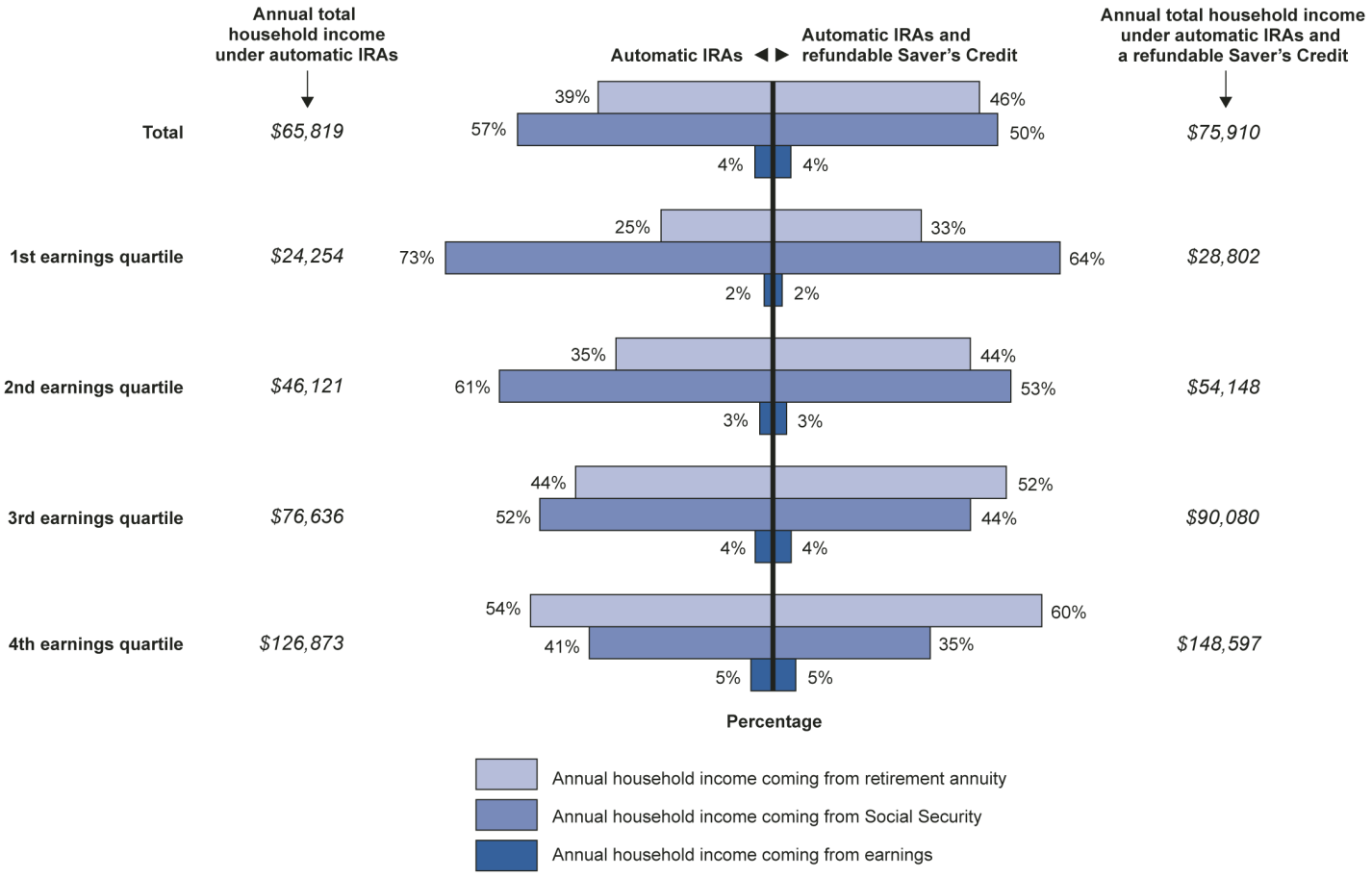
Figure 12: Projected Annual Changes in Households' Retirement Annuity under Automatic IRAs and Refundable Saver's Credit



Source: GAO analysis using the Policy Simulation Group's microsimulation models.

Notes: These projections show the results for only households that benefited from automatic IRAs or the refundable Saver's Credit. We projected the effects of automatic IRAs for a cohort of individuals born in 1995. The results shown are projections for the year 2062 when the cohort is age 67. We assumed that these individuals retired between ages 62 and 67. For the purposes of this report, we defined the household retirement annuity as including the annual retirement income received from all defined contribution or defined benefit plans and automatic IRAs. This annuity does not include Social Security benefits. The annuity values are adjusted for family size and are presented in 2013 dollars. We analyzed our results by earnings level using earnings quartiles, which are calculated based on a measure of lifetime household earnings. Households with lifetime earnings of $929-34,377 on an annual basis were in the first quartile, households with earnings of $34,379-60,682 were in the second quartile, households with earnings of $60,683-104,440 were in the third quartile, and households with earnings of $104,450-3,275,800 were in the fourth quartile.

Figure 13: Projected Mean Percent of Household Income Coming from Retirement Annuities and Social Security



Source: GAO analysis using the Policy Simulation Group's microsimulation models.

Notes: Sum totals may not equal 100 percent due to rounding. These projections show the results for only households that benefited from automatic IRAs. We projected the effects of automatic IRAs for a cohort of individuals born in 1995. The results shown are projections for the year 2062 when the cohort is age 67. We assumed that these individuals retired between ages 62 and 67. For the purposes of this report, we defined the household retirement annuity as including the annual retirement income received from all defined contribution or defined contribution plans and automatic IRAs. This annuity does not include Social Security benefits. The annuity values and total household incomes are adjusted for family size and are presented in 2013 dollars. Median annual household income is the household's income in retirement, at age 67. We analyzed our results by earnings level using earnings quartiles, which are calculated based on a measure of lifetime household earnings. Households with lifetime earnings of $929-34,377 on an annual basis were in the first quartile, households with earnings of $34,379-60,682 were in the second quartile, households with earnings of $60,683-104,440 were in the third quartile, and households with earnings of $104,450-3,275,800 were in the fourth quartile.

Results Using Alternative Assumptions

In addition, we modeled alternative scenarios to examine how sensitive our results were to our assumptions. Specifically, we ran the PSG models using the following alternative assumptions:

- **Alternative assumptions for investment account fees.** Should investment account fees be higher than those in our standard fees assumption, we established a "high fees" assumption. Account fees for target-date funds were 200 basis points; account fees for diversified-equity funds were 225 basis points; account fees for money-market funds, equity-index, and government bond funds remained at 45 basis points; and account fees for stable-value and guaranteed-return funds remained at 0 basis points.

- **Alternative assumptions for Social Security benefits.** Our benefit-reduction-only benchmark simulated "funded benefits," or those benefits for which currently scheduled revenues are projected to be sufficient. Under this scenario, the benefit reduction did not begin until 2018 to give workers and Social Security beneficiaries time to prepare for the reduction. In 2018, benefits were reduced by 18.2 percent for new and existing beneficiaries. SSA actuaries scored this benchmark and determined it would achieve 75-year solvency.

- **Alternative assumptions for Saver's Credit utilization rate.** Research on Saver's Credit utilization rate for the first couple of years it was available indicates that between 60-67 percent of eligible taxpayers claimed the credit.[5] We modeled a utilization rate of 60 percent to reflect the lower bound of this range. This scenario demonstrates the effects of the Saver's Credit if utilization is as low as the initial rate at which taxpayers claimed the credit.

- **Alternative assumptions for automatic IRA participation rate.** We modeled an aggregate automatic IRA participation rate of 48 percent to demonstrate the effects of automatic IRAs should overall participation be lower than expected. This alternative participation rate

[5]We reviewed the following three studies with estimates of the initial utilization rate for the Saver's Credit. Lisa Southworth and John Gist, *The Saver's Credit: What Does it Do for Saving?* (Washington, D.C.: AARP Public Policy Institute, February 2008). The Aspen Institute Initiative on Financial Security, *The Freedom Savings Credit: A Practical Step to Build Americans' Household Balance Sheets* (2012); and Gary Koenig and Robert Harvey, "Utilization of the Saver's Credit: An Analysis of the First Year," *National Tax Journal,* vol. LVIII, no. 4 (2005).

is similar to one study's estimate for the participation rate for new employees in retirement plans where participation is voluntary.[6]

The results for all of our modeling scenarios, including those using our alternative assumptions, are presented in tables 7 through 11 below.

Table 7: Results for Saver's Credit Scenarios With Immediate Tax Increase Social Security Benchmark

		By earnings quartile			
	Total	**$929-34,377**	**$34,379-60,682**	**$60,683-104,440**	**$104,450-3,275,800**
Existing Saver's Credit, standard fees, 100% utilization rate, immediate tax increase Social Security benchmark					
Percent of Individuals who received the Saver's Credit[a]	36	45	45	33	20
Median dollar change in household's retirement annuity[b]	$103	$155	$111	$71	$68
Percent change in median household retirement annuity[b]	1	4	1	0.3	0.1
Refundable Saver's Credit, standard fees, 100% utilization rate, immediate tax increase Social Security benchmark					
Percent of Individuals who received the Saver's Credit[a]	50	54	60	51	36
Median dollar change in household's retirement annuity[b]	$655	$876	$884	$499	$342
Percent change in median household retirement annuity[b]	6	15	6	2	1
Existing Saver's Credit, high fees, 60% utilization rate, immediate tax increase Social Security benchmark					
Percent of Individuals who received the Saver's Credit[a]	31	41	40	26	15
Median dollar change in household's retirement annuity[b]	$62	$85	$63	$46	$49
Percent change in median household retirement annuity[b]	1	2	1	0.2	0.2
Refundable Saver's Credit, high fees, 60% utilization rate, immediate tax increase Social Security benchmark					
Percent of Individuals who received the Saver's Credit[a]	45	51	56	44	28%
Median dollar change in household's retirement annuity[b]	$374	$460	$469	$296	$224
Percent change in median household retirement annuity[b]	4	9	4	1	1

Source: GAO analysis using the PSG microsimulation models.

Notes: We projected the effects of the Saver's Credit for a cohort of individuals born in 1995. The effects were compared to a situation in which the credit did not exist. Results shown are projections for the year 2062 when the cohort is age 67. We assumed that these individuals retired between ages 62 and 67. For the purposes of this report, we defined the household retirement annuity as including the annual retirement income received from all DC or DB plans. This annuity does not include Social Security benefits. Earnings and annuity values are adjusted for family size and are presented in 2013 dollars. We analyzed our results by earnings level using earnings quartiles, which are calculated based on a measure of lifetime household earnings.

[a]The PENSIM model does not report whether the spouses of individuals born in 1995 received the Saver's Credit. As a result, this figure does not represent the percent of households that benefit from the credit.

[6]William E. Nessmith, Stephen P. Utkus, and Jean A. Young, *Measuring the Effectiveness of Automatic Enrollment* (Vanguard Center for Retirement Research, December 2007).

[b]Calculated for households that received the Saver's Credit only.

Table 8: Results for Saver's Credit Scenarios With Standard Fees, 100 Percent Utilization Rate, and Social Security Benefit Reduction Benchmark

		By earnings quartile			
	Total	**$929-34,377**	**$34,379-60,682**	**$60,683-104,440**	**$104,450-3,275,800**
Existing Saver's Credit, standard fees, 100% utilization rate, benefit reduction Social Security benchmark					
Percent of Individuals who received the Saver's Credit[a]	36	45	45	33	20
Median dollar change in household's retirement annuity[b]	$103	$155	$111	$71	$68
Percent change in median household retirement annuity[b]	1	4	1	0.3	0.1
Refundable Saver's Credit, standard fees, 100% utilization rate, benefit reduction Social Security benchmark					
Percent of Individuals who received the Saver's Credit[a]	50	54	60	51	36
Median dollar change in household's retirement annuity[b]	$655	$876	$884	$499	$342
Percent change in median household retirement annuity[b]	6	15	6	2	1

Source: GAO analysis using the PSG microsimulation models.

Notes: We projected the effects of the Saver's Credit for a cohort of individuals born in 1995. The results were compared to a situation in which the credit did not exist. Results shown are projections for the year 2062 when the cohort is age 67. We assumed that these individuals retired between ages 62 and 67. For the purposes of this report, we defined the household retirement annuity as including the annual retirement income received from all DC or DB plans. This annuity does not include Social Security benefits. Earnings and annuity values are adjusted for family size and are presented in 2013 dollars. We analyzed our results by earnings level using earnings quartiles, which are calculated based on a measure of lifetime household earnings.

[a]The PENSIM model does not report whether the spouses of individuals born in 1995 received the Saver's Credit. As a result, this figure does not represent the percent of households that benefit from the credit.

[b]Calculated for households that received the Saver's Credit only.

Table 9: Results for Automatic IRA and Refundable Saver's Credit Scenarios With Standard Fees, 69 Percent Automatic IRA Participation Rate, and Immediate Tax Increase Social Security Benchmark

		By earnings quartile			
	Total	$929-34,377	$34,379-60,682	$60,683-104,440	$104,450-3,275,800
Automatic IRAs, standard fees, 69% participation rate, immediate tax increase Social Security benchmark					
Median dollar change in household retirement annuity[a]	$1,046	$479	$1,043	$1,388	$1,721
Percent change in median household retirement annuity[a]	13	66	16	8	4
Percent of households that see an increase in retirement annuity	36	37	38	37	31
Household's total annual income (median)[a]	$46,667	$20,939	$39,272	$65,156	$107,069
Percent of household's annual income coming from retirement annuity (median)[a]	39	18	35	47	60
Percent of household's annual income coming from Social Security benefits (median)[a]	57	80	62	49	36
Percent of household's annual income coming from earnings (median)[a]	0	0	0	0	0
Automatic IRAs, refundable Saver's Credit, standard fees, 69% participation rate, immediate tax increase Social Security benchmark					
Median dollar change in household retirement annuity[b]	$1,060	$922	$1,300	$1,060	$953
Percent change in median household retirement annuity[b]	8	21	9	4	2
Percent of households that see an increase in retirement annuity	74	78	82	75	61
Household's total annual income (median)[b]	$54,463	$24,587	$46,692	$78,762	$124,906
Percent of household's annual income coming from retirement annuity (median)[b]	50	31	46	57	66
Percent of household's annual income coming from Social Security benefits (median)[b]	46	66	51	40	30
Percent of household's annual income coming from earnings (median)[b]	0	0	0	0	0

Source: GAO analysis using the PSG microsimulation models.

Notes: We projected the effects of automatic IRAs and a refundable Saver's Credit for a cohort of individuals born in 1995. Results shown are projections for the year 2062 when the cohort is age 67. We assumed that these individuals retired between ages 62 and 67. For the purposes of this report, we defined the household retirement annuity as including the annual retirement income received from all DC or DB plans and automatic IRAs. This annuity does not include Social Security benefits. Earnings, annuity values, and total household incomes are adjusted for family size and are presented in 2013 dollars. We analyzed our results by earnings level using earnings quartiles, which are calculated based on a measure of lifetime household earnings.

[a]Calculated for households that participated in automatic IRAs only.

[b]Calculated for households that participated in automatic IRAs or received a refundable Saver's Credit.

Table 10: Results for Automatic IRA and Refundable Saver's Credit Scenarios With High Fees, 48 Percent Automatic IRA Participation Rate, and Immediate Tax Increase Social Security Benchmark

		By earnings quartile			
	Total	**$929-34,377**	**$34,379-60,682**	**$60,683-104,440**	**$104,450-3,275,800**
Automatic IRAs, high fees, 48% participation rate, immediate tax increase Social Security benchmark					
Median dollar change in household retirement annuity[a]	$1,019	$451	$920	$1,269	$1,488
Percent change in median household retirement annuity[a]	10	85	18	7	3
Percent of households that see an increase in retirement annuity	24	19	24	26	25
Household's total annual income (median)[a]	$47,568	$20,564	$36,165	$59,982	$96,642
Percent of household's annual income coming from retirement annuity (median)[a]	35	14	28	41	56
Percent of household's annual income coming from Social Security benefits (median)[a]	60	84	69	55	40
Percent of household's annual income coming from earnings (median)[a]	0	0	0	0	0
Automatic IRAs, refundable Saver's Credit, high fees, 48% participation rate, immediate tax increase Social Security benchmark					
Median dollar change in household retirement annuity[b]	$757	$692	$914	$732	$666
Percent change in median household retirement annuity[b]	7	15	7	3	2
Percent of households that see an increase in retirement annuity	69	71	77	71	57
Household's total annual income (median)[b]	$52,475	$24,589	$44,736	$74,454	$116,181
Percent of household's annual income coming from retirement annuity (median)[b]	48	31	44	54	64
Percent of household's annual income coming from Social Security benefits (median)[b]	49	67	53	43	33
Percent of household's annual income coming from earnings (median)[b]	0	0	0	0	0

Source: GAO analysis using the PSG microsimulation models.

Notes: We projected the effects of automatic IRAs and a refundable Saver's Credit for a cohort of individuals born in 1995. Results shown are projections for the year 2062 when the cohort is age 67. We assumed that these individuals retired between ages 62 and 67. For the purposes of this report, we defined the household retirement annuity as including the annual retirement income received from all DC or DB plans and automatic IRAs. This annuity does not include Social Security benefits. Earnings, annuity values and total household incomes are adjusted for family size and are presented in 2013 dollars. We analyzed our results by earnings level using earnings quartiles, which are calculated based on a measure of lifetime household earnings.

[a]Calculated for households that participated in automatic IRAs only.

[b]Calculated for households that participated in automatic IRAs or received a refundable Saver's Credit.

Table 11: Results for Automatic IRA and Refundable Saver's Credit Scenarios With Standard Fees, 69 Percent Automatic IRA Participation Rate, and Social Security Benefit Reduction Benchmark

		By earnings quartile			
	Total	$929-34,377	$34,379-60,682	$60,683-104,440	$104,450-3,275,800
Automatic IRAs, standard fees, 69% participation rate, benefit reduction Social Security benchmark					
Median dollar change in household retirement annuity[a]	$1,046	$479	$1,043	$1,388	$1,721
Percent change in median household retirement annuity[a]	13	66	16	8	4
Percent of households that see an increase in retirement annuity	36	37	38	37	31
Household's total annual income (median)[a]	$41,462	$17,859	$34,668	$59,323	$99,654
Percent of household's annual income coming from retirement annuity (median)[a]	44	21	39	52	65
Percent of household's annual income coming from Social Security benefits (median)[a]	52	77	57	44	31
Percent of household's annual income coming from earnings (median)[a]	0	0	0	0	0
Automatic IRAs, refundable Saver's Credit, standard fees, 69% participation rate, benefit reduction Social Security benchmark					
Median dollar change in household retirement annuity[b]	$1,060	$922	$1,300	$1,060	$953
Percent change in median household retirement annuity[b]	8	21	9	4	2
Percent of households that see an increase in retirement annuity	74	78	82	75	61
Household's total annual income (median)[b]	$49,478	$21,431	$42,287	$73,037	$118,051
Percent of household's annual income coming from retirement annuity (median)[b]	55	36	51	61	71
Percent of household's annual income coming from Social Security benefits (median)[b]	41	61	46	35	26
Percent of household's annual income coming from earnings (median)[b]	0	0	0	0	0

Source: GAO analysis using the PSG microsimulation models.

Notes: We projected the effects of automatic IRAs and a refundable Saver's Credit for a cohort of individuals born in 1995. Results shown are projections for the year 2062 when the cohort is age 67. We assumed that these individuals retired between ages 62 and 67. For the purposes of this report, we defined the household retirement annuity as including the annual retirement income received from all DC or DB plans and automatic IRAs. This annuity does not include Social Security benefits. Earnings, annuity values and total household incomes are adjusted for family size and are presented in 2013 dollars. We analyzed our results by earnings level using earnings quartiles, which are calculated based on a measure of lifetime household earnings.

[a]Calculated for households that participated in automatic IRAs only.

[b]Calculated for households that participated in automatic IRAs or received a refundable Saver's Credit.

Cohort Summary Statistics

Lifetime summary statistics of the simulated 1995 cohort's workforce and demographic variables give some insight into the PSG model's projections of income in retirement in our report (see tables 12 and 13).

By restricting the sample to retirees who do not immigrate into the cohort after age 25, do not emigrate or die before age 67, and do not become permanently disabled before age 62, we reduce the full sample of 118,142 individuals to a sample of 60,813 individuals.

Table 12: Sample Summary Statistics at Age 67, 1995 PENSIM cohort

		By earnings quartile			
Demographic variables	**Full sample**	**$929-34,377**	**$34,379-60,682**	**$60,683-104,440**	**$104,450-3,275,800**
Total number of cohort members at age 67	60,813	15,203	15,203	15,204	15,203
Percent male	48	37	46	51	59
Highest level of schooling (median)	Some college	High school graduate	High school graduate	Some college	College or graduate degree
Percent whose longest-held job offers a pension	74	60	71	78	85
Percent who were ever eligible to participate in a DC plan	91	85	90	93	95

Source: GAO analysis using the PSG microsimulation models.

Notes: The sample excludes cohort members who immigrated into the cohort after age 25, emigrated or died before age 67, or became permanently disabled before age 62. Earnings are adjusted for family size and are presented in 2013 dollars. We analyzed our results by earnings level using earnings quartiles, which are calculated based on a measure of lifetime household earnings.

Table 13: Means at Age 67, 1995 PENSIM cohort

		By earnings quartile			
Demographic variables	**Full sample**	**$929-34,377**	**$34,379-60,682**	**$60,683-104,440**	**$104,450-3,275,800**
Annual lifetime household earnings	$82,485	$22,600	$46,670	$80,105	$180,565
Number of years working full time	27	20	27	29	32
Number of years working part time	6	10	6	5	4
Number of jobs held over lifetime	5	5	5	5	5
Duration of longest job (years)	18	17	19	19	20
Retirement age	63	63	63	63	63
Number of years vested in a DC plan	15	11	14	16	18
Number of jobs on which eligible for a DC plan	2	2	2	2	3

Source: GAO analysis using the PSG microsimulation models.

Notes: The sample excludes cohort members who immigrated into the cohort after age 25, emigrated or died before age 67, or became permanently disabled before age 62. Earnings are adjusted for family size and are presented in 2013 dollars. We analyzed our results by earnings level using earnings quartiles, which are calculated based on a measure of lifetime household earnings.

Appendix III: GAO Contact and Staff Acknowledgments

GAO Contact

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Staff Acknowledgments

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