

Distributional Analysis and Pension Tax Provisions

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WORKING FOR AMERICA'S RETIREMENT

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EXECUTIVE SUMMARY

INTRODUCTION

ABSTRACT: Preparing a distribution analysis for the tax incentive for employer-based defined contribution retirement savings is not as straightforward as analyzing the distribution for amounts reported on individual income tax returns. This paper describes the considerations involved in the analysis, and shows that 71 percent of the benefit is going to families with AGI of less than \$150,000.

Discussion and debate about tax reform properly raises questions regarding the distribution of the tax benefit of various tax incentives. Distributional analysis of the tax incentives is generally limited to what group of taxpayers are receiving a reduction in their personal income tax burden as a result of the incentive, not the broader impact of the incentive. For example, a distribution analysis answers the question, “what portion of the tax savings for the mortgage interest deduction goes to families earning less than \$50,000?” The analysis does not attempt to measure the additional economic benefit gained by those families because of the tax savings.

Distributional analysis of the current year’s tax benefit makes sense for most tax incentives, because the tax benefit occurs in a single year. However, the retirement savings tax incentives are simply a deferral, not a permanent exclusion, so the standard cash basis analysis does not show the true distribution of the tax benefit over the lifetime of the deferral. A

present value analysis of the taxes deferred, then later paid when monies are distributed in retirement, would be a better representation of how the tax benefit for retirement savings is distributed, but the cash flow analysis is standard, and is the analysis developed in this paper.

Another distinction between the retirement savings incentive and most other individual tax incentives is that most of the necessary data required to do the analysis for the retirement savings incentive is not only not reported on individual tax returns, but is not available from any source in the detail required to directly calculate the tax benefit. The amount and distribution of the benefit must be estimated based on what data is available.

For example, part of the tax benefit for the retirement savings incentives is deferral of the income tax payable on investment earnings. In order to do the distribution analysis of this portion of the benefit, data would have to be available that shows the investment income earned, but not included in taxable income, by taxpayers’ adjusted gross income (AGI). Not only is the investment income not available by AGI, but the account balances on which that investment income was earned are not available. That means in order to do a distribution analysis for tax deferral on investment income for retirement savings, one first must estimate the account balances by AGI, then the investment earnings on those balances for the year in question.

Another challenge applies to this analysis for employer-based retirement plans. W-2s report individuals' personal contributions to a 401(k) or similar plan (called an "elective deferral") and whether or not the individuals were covered by a plan. However, there is no reporting of the employer contributions by individual taxpayer. There is data available on aggregate contributions (though it too is incomplete), but the preparer of the distribution analysis must estimate how the total is allocated across income groups. Because of the non-discrimination rules that apply to contributions to employer-based plans, employees who are not "highly compensated" may get significant employer contributions even though they are not contributing on their own behalf so the elective deferrals reported on the W-2 cannot serve as a proxy for the distribution of employer contributions.

Because of the unique nondiscrimination rules incorporated in the tax incentive for employer-based retirement plans, a distributional analysis such as the one developed in this paper for defined contribution plans significantly understates the true benefit of the tax incentive for employees in lower income groups. In order to take advantage of the tax incentive for retirement savings, a small business owner commonly uses the cash savings from the incentive to fund contributions required for other employees. The traditional analysis shows the owner's total deferred tax amount

as a tax benefit to the owner. An employee receiving a contribution is shown with a benefit equal to the contribution times the marginal tax rate (which could be zero). An analysis of the true benefit of the tax incentive for the year would include only the owner's net gain (taxes deferred less contributions for other employees) as a benefit for the owner, and would show the full contribution amount as a benefit for employees. In reviewing the results presented in this paper, the reader is urged to remember that this analysis reflects only the reduction in income tax liability, and an employee with no income tax liability who receives an employer contribution is considered to have received no benefit from this tax incentive.

In summary, preparing a distribution analysis for the tax incentive for employer-based defined contribution retirement savings is not as straightforward as analyzing the distribution for amounts reported on individual income tax returns. This paper describes the considerations involved in the analysis and shows that 71 percent of the benefit is going to families with AGI of less than \$150,000. Analysis of the distribution of the individual income tax burden shows this group pays only 44 percent of income taxes. By contrast, families with AGI of less than \$150,000 received only 8 percent of the tax savings from the capital gains tax incentive in 2010. (89% of the capital gains tax break went to families earning more than \$200,000.)

Judy A. Miller
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I. OVERVIEW

¹ The full picture of the impact that government policies have on individuals must consider the burdens and benefits imposed by changes in spending programs as well as tax policy.

² In a previous Joint Committee on Taxation pamphlet that detailed their methodology for distributional analysis, they state, "Because calculating the value of pension benefits at the time they are earned is so difficult, the JCT staff has decided to include pension benefits in income when they are distributed, rather than when they are earned. Refer to Joint Committee on Taxation, Methodology and Issues in Measuring Changes in the Distribution of Tax Benefits, JCS-7-93, June 14, 1993.

³ Further, the JCT points out that "... pension plan contributions are not perfect substitutes for wages. For example, most pension plans impose a years-of-service requirement before an employee is fully vested. Thus, even for defined contribution plans where the contribution made on behalf of the participant is easy to quantify, there is some probability that the pension contribution made on behalf of an employee will be allocated to other employees, or will reduce an employer's required contribution." *Ibid.*

Distributional analysis attempts to quantify the economic impact of policies on classes of taxpayers. The purpose of distributional analysis is to show the incidence of a tax or identify those taxpayers that bear the burden or benefit of a certain tax provision. Most distributional analyses capture only a portion of the true burden or benefits of government policies, as they tend to isolate a single policy or provision.¹

Pension tax benefits provide a particular challenge for distributional analysis, because they provide only a deferral of tax, not an exclusion from tax. Therefore, distributing by income class the tax benefits of qualified retirement savings is a difficult task.² To capture accurately the tax benefits associated with pension benefits, it is necessary to consider first what aspect of participant behavior to distribute—the cash-flow activity associated with pension benefits at any point in time (*e.g.*, tax expenditure analysis) or the lifetime benefits of pension deferrals.³

After identifying the tax benefits associated with each provision of pension benefits, it is important to select the appropriate data sources. The lack of comprehensive micro data to support the larger trends creates

uncertainty regarding the benefits of these tax benefits. Further, this data needs to track participant behavior over time or have a time-series feature. Because comprehensive micro data does not exist, the analysis must rely on economic simulation of participants. Anytime distributional analysis relies on simulations, it is always possible to question the results, as these results rely on judgment calls. There is no single methodology available to develop a precise distribution of pension benefits, because such analyses must rely on (1) incomplete data; (2) simulated, not actual behavior of plan participants; and (3) technical assumptions (*e.g.*, tax rates or rates of return).

The following sections address the issues analysts face when attempting to distribute pension tax benefits. The first section addresses the question of 'what to distribute.' The second section discusses the data needed to create such a distribution. The third section discusses the available data and the limitations with such data needed to simulate tax benefits for pension plans. The fourth section provides empirical evidence of pension participation by income class and a description of an effort to distribute pension tax benefits.

II. CHARACTERIZING PENSION BENEFITS FOR DISTRIBUTIONAL ANALYSIS

⁴ As the Administration states in its annual budget, “these [cash-based] estimates do not accurately reflect the true economic cost of providing deferral of tax, rather than a current exclusion or credit.” Refer to Budget of the United States Government, Fiscal Year 2012, Analytical Perspectives, Federal Receipts, Tax Expenditures.

Retirement savings contributions are not permanently exempt from tax. Rather, current law defers the tax on retirement savings contributions and earnings until an individual retires and begins making withdrawals. Thus, retirement savings provisions provide a deferral of tax, rather than a permanent tax benefit like a current deduction or tax credit.

Revenue and tax expenditure analysis rely on a cash-flow approach to evaluate changes in tax policy or quantify benefits of a policy. Using cash-flow analysis for retirement savings provisions that provide a deferral of tax from one year to another overstates the value of deferral relative to other tax provisions (*e.g.*, providing permanent tax relief).

The limitations imposed by the budget scoring rules require analysis of all tax provisions on a cash-flow basis. This method for calculating tax expenditures on a cash-flow basis measures the sum of the taxes otherwise paid on current retirement contributions and the accrued tax-exempt earnings on all existing retirement plans minus taxes paid on all withdrawals from retirement savings that occur during the year. As mentioned, this cash-flow measure overstates the value of retirement savings provisions in absolute terms.⁴

III. DATA NECESSARY TO SUPPORT PENSION DISTRIBUTIONS

⁵ The EBRI/ICI database has access to individual participant account balances, but there are several limitations. First, it does not correspond to the tax return data. Second, due to the confidential nature of the information, it is not publicly available.

Several pieces of information are necessary to estimate accurately pension tax benefits by income class. The following table describes the most important information and explains the need for each.

TABLE 1 – DATA TO SUPPORT ANALYSIS OF PENSION PROVISIONS	
VARIABLE	COMMENTS
Participant’s current adjusted gross income and/or tax rate	All savings behavior increases (correlates positively) with income, not just retirement savings. Individuals must have adequate disposable income to allow ample resources for any form of saving.
Years of tenure	Many plans limit the ability to participate in a plan, based on the worker’s tenure with his or her employer.
Participant’s age	Savings behavior increases (correlates positively) with age. After reaching 40 years of age, savings tends to increase dramatically.
Current deferral rates, by income class	Plan characteristics may determine the deferral rates. Specifically, meeting nondiscrimination provisions may limit deferrals of highly compensated individuals or may increase the deferrals (through employer matching or non-elective contributions) for lower paid individuals.
Account balances	Because the deferral of tax on investment income is a significant part of the tax incentive, the distribution of account balances is an important variable for analyzing any number of policy changes. However, account balance information by taxpayer is not available. ⁵
Average rate of return	This parameter depends heavily on the investment options available to participants.
Current withdrawals for active and retired workers	Withdrawal patterns will affect the account balance, as well as limit the benefit of the tax deferral.

IV. PRIMARY DATA SOURCES AVAILABLE FOR PENSION ANALYSIS

A. DATA SOURCES

Currently, no data source provides this level of detail for retirement savings on a participant (micro data) level. Therefore to estimate the tax benefits, it is necessary to simulate individual participant behavior, using the available information. Researchers and analysts must rely on a number of sources to characterize comprehensively retirement savings behavior as well as the corresponding participant balances.

Several public use data files are available from the Federal government and these sources provide a foundation for the revenue and tax expenditure analysis. They include the Internal Revenue Service (IRS) Statistics of Income (SOI) Division tax statistics, Bureau of Labor Statistics, National Compensation Study (NCS), and the Federal Reserve, Survey of Consumer Finance (SCF).

The **SOI tax statistics** rely on a sample of individual income tax returns filed during calendar year 2011 for tax year 2010. The IRS draws a stratified sample, selecting these returns at rates ranging from 0.10 to 100 percent. Then, they apply weights to the selected data to reconstruct aggregate targets. The 2010 return data relies on a sample of 308,946 returns and represents an estimated final population of 143,170,763 returns.

In addition to the tax return data, the IRS SOI publishes periodically special studies. One such study is the special tabulations on individual retirement arrangements. This study includes a tabulation of taxpayer W-2 forms that report pension coverage. This tabulation distributes by adjusted gross income the number of taxpayers reporting pension coverage.

The **NCS** provides measures of compensation cost trends, as well as incidence and detailed provisions of employee benefit plans. The data in the NCS present estimates of the access, participation, and take-up rates as well as characteristics of selected employee benefit plans. Estimates presented are on benefits for civilian workers—workers in private industry and in state and local government—by various employee and employer characteristics. However, the NCS are summary data only and do not allow for analysis of the underlying data source. This data provides a broad snap shot of compensation and benefits for civilian workers.

The **Federal Reserve SCF** produces survey results every three years to provide detailed information on the finances of U.S. families. While the vast majority of the past surveys are cross-sectional, the survey has a panel feature for two periods. The SCF re-interviewed the 1983 respondents in 1986 and 1989. Likewise, the SCF re-interviewed respondents to the

⁶ The 2011 EBRI/ICI database covers 46 percent of the universe of 401(k) plan participants, more than 10 percent of plans, and 47 percent of 401(k) plan assets.

⁷ Conversely, age and income also influence withdrawal behavior of pension participants.

2007 survey in 2009. Despite this panel-feature, the SCF does not track individual respondents' finances over time. However, the SCF is a comprehensive survey concerning household finances and is unique in this regard.

In addition to the public use data files, a number of important private surveys provide detailed analyses of defined contribution plans. These studies include the EBRI/ICI data collection project, Vanguard Investment studies, Fidelity 401(k) Plan quarterly analysis, and the Plan Sponsor Council of America's annual plan survey.

The **EBRI/ICI Participant-Directed Retirement Plan Data Collection Project** is the largest, most representative data concerning individual 401(k) plan participant accounts.⁶ As of December 31, 2011, the EBRI/ICI database included statistical information about 24 million 401(k) plan participants, in 64,141 employer-sponsored 401(k) plans, holding \$1.415 trillion in assets.

Vanguard Investments prepares periodically a detailed analysis of all of their defined contribution clients. This consists of more than 2,200 qualified plans, 1,800 clients, and more than three million participants. About 9 in 10 of these plans have a 401(k) or 403(b) employee-contributory feature; the other 1 in 10 is an employer-contributory DC plan, such as a profit sharing or money purchase plan where participants self-direct their investments. The most recent data is as of December 31, 2008.

Quarterly analysis of Fidelity 401(k) plans relies on an analysis of accounts under their administration. Fidelity Investments had assets under administration of \$3.9 trillion, including managed assets of \$1.7 trillion, as of December 31, 2012.

The Plan Sponsor Council of America produces an annual survey of profit sharing and 401(k) plans. This current survey reports on the 2011 plan-year experience of 840 plans with 10.3 million participants and \$753 billion in plan assets.

In all cases, the available data does not provide individual participant activity over time. Individual behavior, with respect to their retirement savings, varies considerably with age and income. Income is an important factor in explaining participant behavior. However, nondiscrimination testing with safe harbor provisions and automatic enrollment serve to increase participation among lower income participants. In many cases, these factors create a pattern for savings that continues throughout their working tenure. Further, as taxpayers approach retirement age (approximately 40 years of age), they begin to increase their deferral rate.⁷

Without detailed information about account balances, deferral rates, income or tax rates by participant, the analysis must rely on average statistics or trends that reflect broadly participant behavior.

B. PENSION DATA/STATISTICS

The following section provides an overview of the data and/or statistics that are available to support a distributional analysis of pension benefits. While the following provides only a snapshot of the available data, it does provide an indicator of the benefits for classes of participants.

The starting point to analyze the distribution of pension benefits is to first characterize active participants by their current adjusted gross income.⁸ Graph 1 provides only a static view of participants, and does not include those in self-employed plans (that tend to populate the lower end of the distribution). In addition, it does not include those taxpayers that contribute directly to individual retirement arrangements. Therefore, this provides a limited starting point that requires additional analysis to capture accurately the distribution of benefits.⁹

From this starting point, it is necessary to include those individuals with retirement benefits that do not appear on a W-2 form (e.g., self-employed).

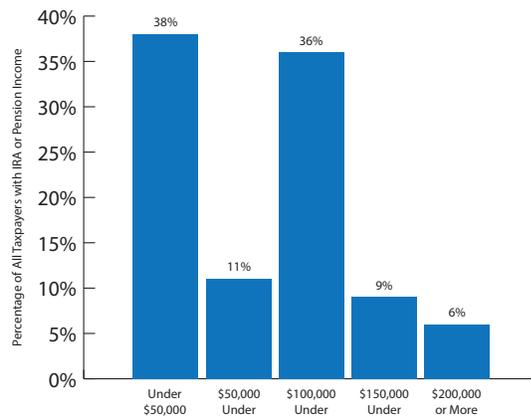
In addition to active participants, it is important to identify retirees. Retired taxpayers receive tax benefits from the ongoing deferral (until they make withdrawals for retirement expenses). Graph 2 shows the distribution of taxpayers that receive any pension income. As shown in this graph, the vast majority of retirees (nearly 90 percent) report taxable income below \$150,000.

For these taxpayers it is important to simulate account balances and estimate the value of their deferral, as retirees hold a considerable share of defined contribution assets.

The next step is to simulate actual behavior, which will vary with the participant's age, years of tenure with the employer, and their current deferral rates. From this simulation, the analysis can then estimate the average account balances, by income class. Table 2 displays the relationship between age, tenure, and average account balance in

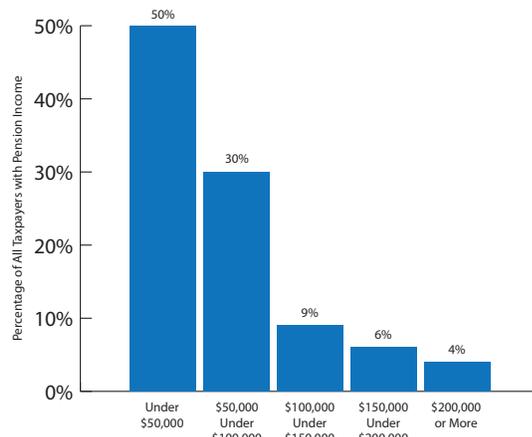
Graph 1—Returns Reporting IRA Contributions or Pension Coverage on their W-2, Distributed by Income Class, 2008

Source: IRS SOI, Table 2. Taxpayers with Individual Retirement Arrangement (IRA) Plans by Size of Adjusted Gross Income, Tax Year 2008



Graph 2—Returns Reporting Pension Income, Distributed by Income Class, 2010

Source: IRS SOI, Table 1.4 All Returns: Sources of Income, Adjustments, and Tax Items, by Size of Adjusted Gross Income, Tax Year 2010



401(k) accounts. It is important to note that estimating account balances requires making assumptions about rates of returns. For purposes of revenue estimates and tax expenditures, the Congressional Budget Office is the primary source for long-term rates of return.¹⁰

⁸ A precise distribution by employment status (active participant, separated, or retired) is not available. These concepts tend to remain fluid as worker turnover continues over time. Refer to the Bureau of Labor Statistics, Job Opening and Labor Turnover Study available online at <http://www.bls.gov/jlt/>.

⁹ Refer to Appendix A for a discussion of access and participation among lower income taxpayers.

¹⁰ The Congressional Budget Office releases their annual baseline budget and projections that provide variables that are critical to estimating economic and taxpayer behavior. Refer to the Congressional Budget Office Budget and Economic Outlook: Fiscal Years 2013 to 2023, available at <http://www.cbo.gov/publication/43907>.

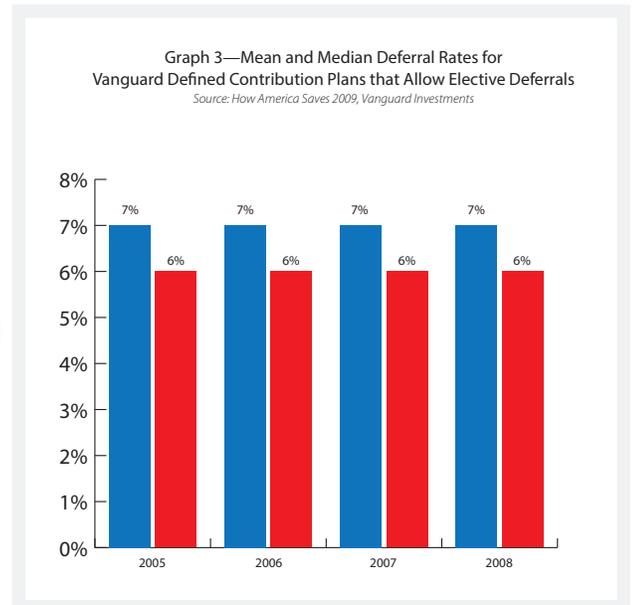
¹¹ Refer to 401(k) Plan Asset Allocation, Account Balances, and Loan Activity in 2011, Jack Van Derhei, Sarah Holden, Luis Alonso, and Steven Bass, EBRI Issue Brief, December 2012, No. 380.

TABLE 2 – AVERAGE 401(k) BALANCES, BY PARTICIPANT AGE AND TENURE						
Age Group	Up to 2 years	More than 2 up to 5	More than 5 up to 10	More than 10 up to 20	More than 20 up to 30	More than 30 years
20s	\$ 3,426	\$ 10,024	\$ 15,146			
30s	\$ 8,745	\$ 20,425	\$ 34,450	\$ 52,583		
40s	\$ 14,582	\$ 29,162	\$ 48,899	\$ 84,757	\$ 128,158	
50s	\$ 20,623	\$ 35,496	\$ 55,571	\$ 97,006	\$ 175,962	\$ 200,908
60s	\$ 25,678	\$ 36,949	\$ 53,063	\$ 89,568	\$ 158,447	\$ 208,892

Source: ICI Research Perspective, Vol. 18, No. 9, December 2012

Additional information regarding deferral rates supplements the retirement savings picture. Graph 3 depicts the stability in deferral rates over time. The rates depicted in the graph may indicate features in plan design, including the employer match or non-elective contribution rate, or limitations imposed by nondiscrimination testing on certain deferrals. It is difficult to determine a complete explanation for the average deferral rates without knowing the characteristics of individual plans.

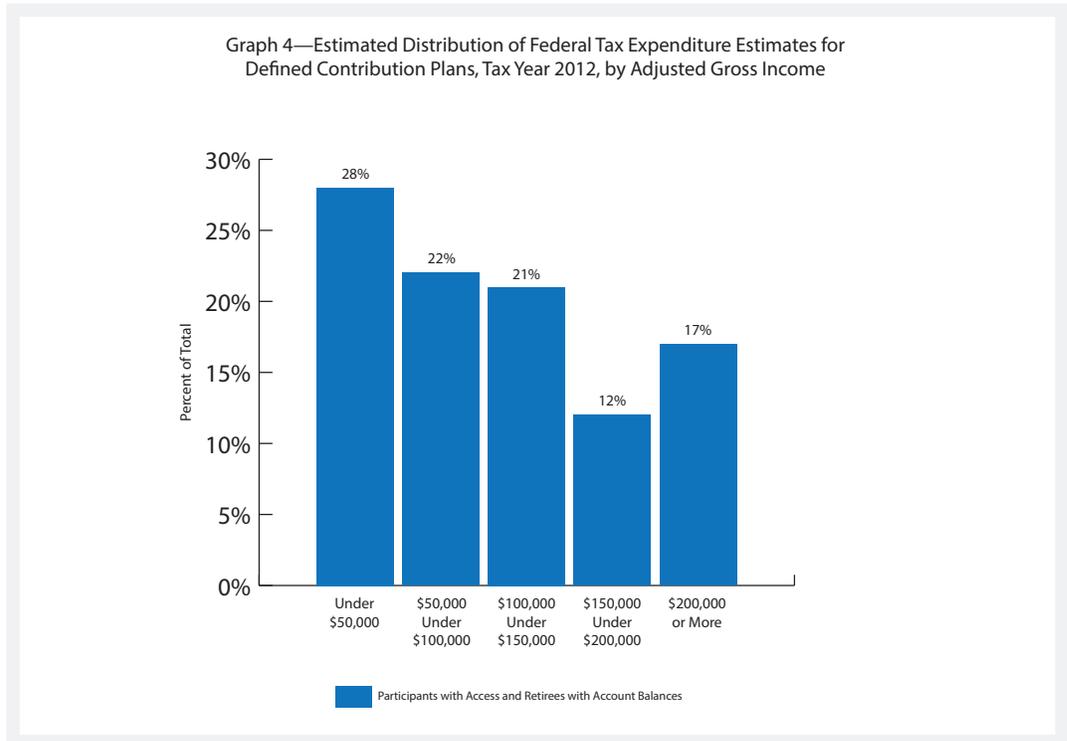
IRS SOI data provides an indication of the current withdrawals for all retirement plans (refer to Graph 2 above). However, it does not distinguish between the type of worker (active or retired). Nor does it distinguish between the type of plan from which the taxpayer is making the withdrawal (defined contribution or defined benefit plan). It becomes necessary to supplement the IRS data with such survey data as the EBRI/ICI data. In addition to withdrawal trends, this data provides information about loans and lump sum distributions that may also affect estimated account balances.¹¹



V. ESTIMATED DISTRIBUTION OF PENSION TAX BENEFITS

The following graph displays the estimated tax expenditure benefits by income class. This graph represents the distribution of cash-flow tax benefits. However, it does not reflect the true nature of retirement savings provisions—the deferral of tax, rather than the exclusion from tax.

The distribution includes active participants in all defined contribution plans, including public plan participants (Federal, State, and Local). In addition to the active participants, the estimated benefits includes those retirees with account balances.



As displayed in this graph, the distribution of benefits for defined contribution plans shows that approximately 71 percent of the benefits are attributable to taxpayers with less than \$150,000 of adjusted gross income (AGI).

ESTIMATING THE DISTRIBUTION OF THE TAX EXPENDITURE ESTIMATES—

The estimated number of taxpayers relies on primary data from the Internal Revenue Service (IRS) Statistics of Income Division

¹² The number of taxpayers with pension coverage is determined from Form W-2 box 13, which indicates participation in a retirement plan.

¹³ To remain consistent with the 2010 return data, the analysis estimated the change in the number of returns by detailed income classes.

(SOI). This data source matched Form 1040 with the corresponding Form W-2 to determine pension participation in a defined contribution plan.¹² This analysis identifies active participants for the given tax year, in this case tax year 2008. The analysis extrapolated base numbers for 2008 to reflect the 2010 return data (the most current data).¹³

The active participants include any:

- Qualified pension, profit-sharing, or stock-bonus plan [including 401(k) plans] described in section 401(b)
- Annuity plan described in section 403(a)
- Annuity contract or custodial account described in section 403(b)
- Simplified employee pension (SEP) plan described in section 408(k)
- SIMPLE retirement account described in section 408(p)
- Trusts described in 501(c)(18)
- Plans for Federal, State and Local governments

In addition to these active participants, retirees with account balances were included to reflect the benefit of the tax deferral for inside buildup.

The analysis estimated the average deferrals, associated inside buildup by income class, and applied to the distribution of participants. Data from the PSCA's Annual Survey provided the foundation for estimating the average elective deferrals and the corresponding employer matching contributions. The average deferral rates for (lower- and higher-paid) workers determined the percent of elective deferrals. The estimated employer matching or profit sharing contributions relied on PSCA's statistics and overall contribution rates.

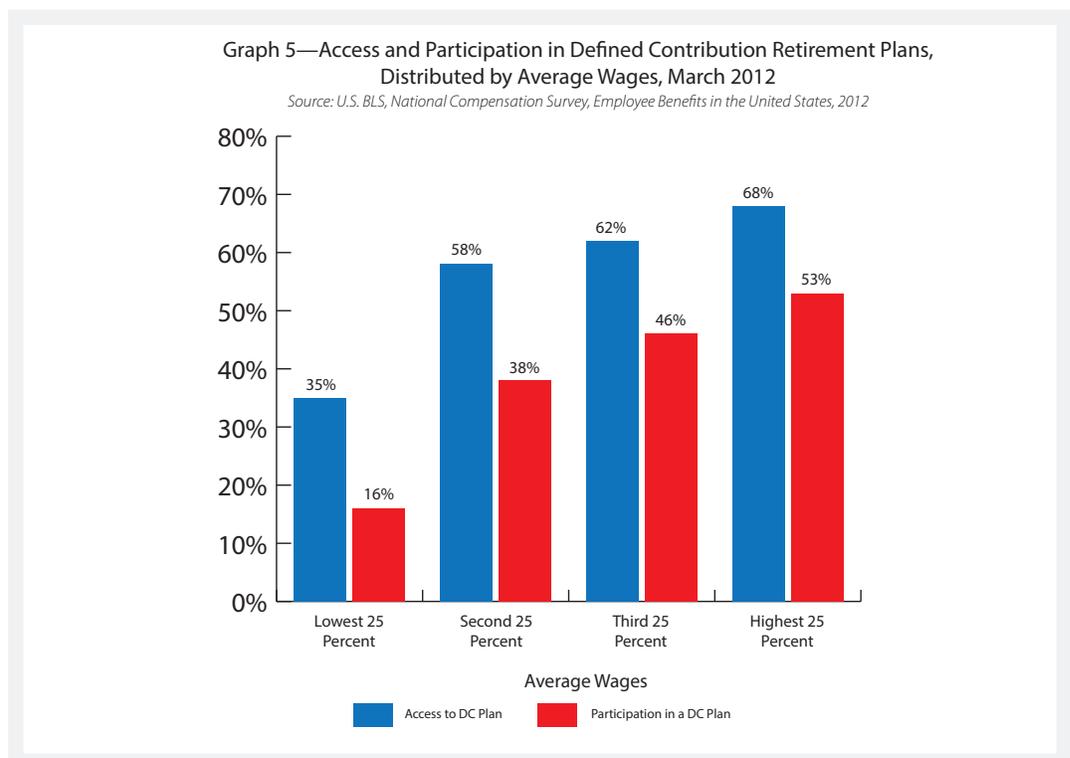
Estimated average account balances provided the basis for estimating the inside buildup attributable to retirees. The analysis applied the aggregate deferrals and inside buildup by income class and the corresponding income tax rates by each income class to create the final distribution of benefits.

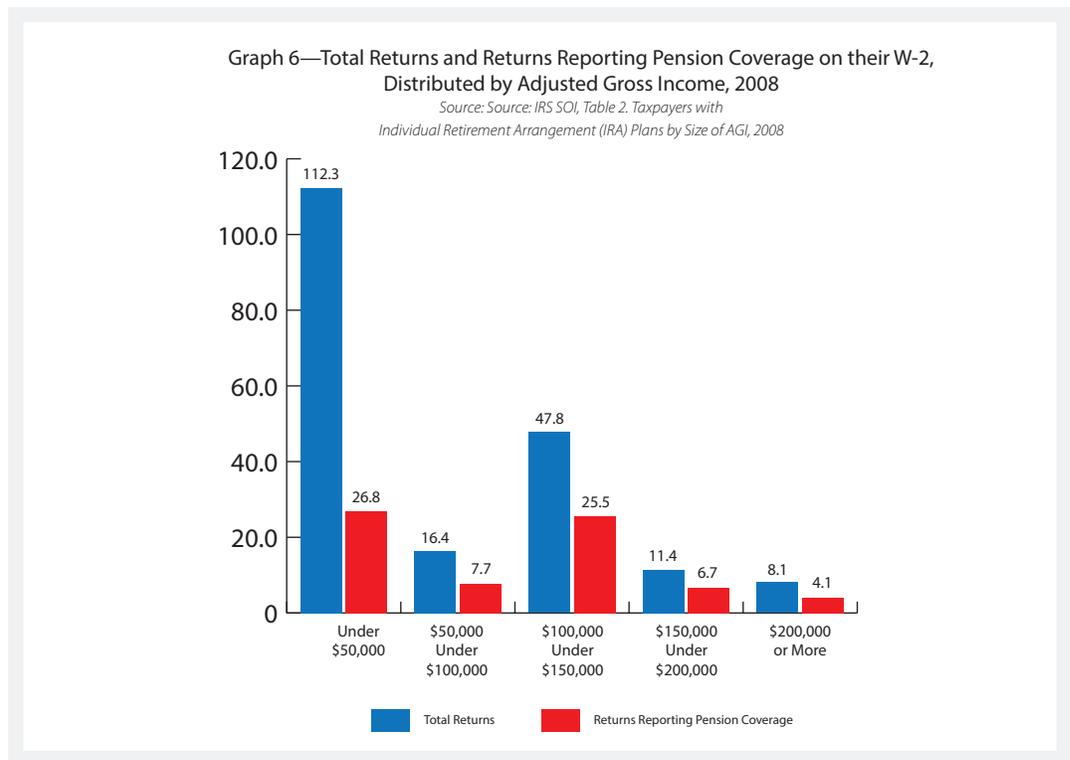
APPENDIX A— UNDERSTANDING PARTICIPATION RATES FOR LOWER-INCOME WORKERS

Quite often in the tax policy debate, critics point to retirement benefits as offering disproportionate benefits to higher income taxpayers. Using the distributional analysis of pension benefits in this way obscures or overlooks a structural issue in our labor markets—lower income workers tend to have less access to retirement plans. Such worker characteristics as seasonal or part-time employment explain the lack of benefit for lower-income workers. Eliminating or curtailing retirement benefits for higher income taxpayers does not ameliorate this

structural problem in the labor market.

Graph 5 displays the access and participation rates for workers distributed by wage classes. Graph 6 shows the distribution of tax returns and the preponderance of returns with incomes below \$50,000. As shown in Graph 5, only 35 percent of low-income workers have access to a defined contribution plan in the workplace. Approximately half of those workers participate in a plan. This translates to a 46 percent take up rate for low-wage workers compared to 78 percent for high-





¹⁴ For a detailed discussion of this issue, refer to Peter Brady, Kimberly Burham, and Sarah Holden, *The Success of the U.S. Retirement System*, the Investment Company Institute, 2012. In addition, refer to Biggs, Andrew and Glenn Springstead, *Alternate Measures of Replacement Rates for Social Security Benefits and Retirement Income*, *Social Security Bulletin*, Vol. 68, No. 2, 2008.

wage workers. The low take-up rates do not suggest a problem with the pension system, but rather that savings occurs after meeting the household budget needs. If a household faces liquidity constraints, as many low-wage households do, they are unable to save even when employers offer a plan.

Further, as discussed in detail in a recent ICI report, the savings behavior that correlates positively with income reflects another goal of the private pension system—income

replacement rates in retirement. In other words, low-income taxpayers tend to receive a greater share of their pre-retirement income in Social Security benefits compared to their higher income counterparts. In order to replace comparable shares of pre-retirement income, higher income individuals must save through private retirement plans. This is not an indication of a failure or inequity in the retirement savings system, but rather a reality or characteristic of the broader retirement system.¹⁴

