Marquette Benefits and Social Welfare Law Review

Volume 17
Issue 1 *Fall*

Article 4

2015

Transforming Federal and State Retirement Tax Deductions to Refundable Tax Credits

Teresa Ghilarducci

Ismael Cid-Martinez

TRANSFORMING FEDERAL AND STATE RETIREMENT TAX DEDUCTIONS TO REFUNDABLE TAX CREDITS

Teresa Ghilarducci[*] and Ismael Cid-Martinez[**]

The purpose of this Study is to calculate retirement account tax expenditures by states. States with income taxes that allow tax deferral of retirement account contributions and investment earnings lose nearly $20 billion in revenue. This Study uses a variety of data sources, including state reports from their executive agencies and known estimation techniques to calculate the amount of tax credits that a worker in each state would receive if the deferrals were converted to a refundable tax credit. The average credit under these estimation techniques and calculations would be $172.

[*] Bernard and Irene Schwartz Chair in Economic Policy Analysis, The New School for Social Research, New York, New York.

[**] Graduate Student in Economics, The New School for Social Research, New York, New York.

TABLE OF CONTENTS

INDEX OF FIGURES AND TABLES

I. INTRODUCTION

This article presents the first study to calculate how much states spend in foregone tax revenue to prop up the nation's failing retirement system. Despite over $120 billion in federal and state taxpayer subsidies for retirement savings projected each year for the next ten years,[1] the nation faces a retirement income crisis. Though the base layer of household retirement income (Social Security) is solid, the targets of federal and state retirement account tax subsidies—voluntary workplace retirement plans such as defined benefit (DB) and defined contribution (DC) plans—are insufficient and eroding.[2] In the forty years since they were first established, 401(k) plans have virtually replaced DB plans in the private sector.[3] The system of voluntary, tax-favored retirement accounts has failed to produce adequate account balances for the workers who have accounts, and has failed to extend coverage to over half of the workforce who do not have accounts.[4]

A household's retirement savings comes from three places: the worker, the employer, and the government.[5] The federal government and, increasingly, state governments subsidize retirement savings in the form of tax deductions and deferrals—not refundable tax credits.[6] As this article illustrates, over 80%

---

1. EXEC. OFFICE OF THE PRESIDENT, OFFICE OF MGMT. & BUDGET, FISCAL YEAR 2016, ANALYTICAL PERSPECTIVES OF THE U.S. GOVERNMENT 226 (2015), *available at* https://www.whitehouse.gov/sites/default/files/omb/budget/fy2016/assets/spec.pdf [hereinafter OFFICE OF MGMT. & BUDGET].

2. Teresa Ghilarducci & Joelle Saad-Lessler, *Explaining the Decline in the Offer Rate of Employer Retirement Plans Between 2003 and 2012*, 68 INDUS. & LAB. REL. REV., 807, 807-08 (2015).

3. Barbara A. Butrica et al., *The Disappearing Defined Benefit Pension and Its Potential Impact on the Retirement Incomes of Baby Boomers*, 69 SOC. SEC. BULLETIN 3 (2009).

4. Ghilarducci & Saad-Lessler, *supra* note 2, at 808-09.

5. The government provides tax deductions to qualified taxpayers for retirement accounts. Many employers contribute to their employees' defined contribution or defined benefit plans. And employees directly contribute to DC plans. *See* JASON FURMAN, CHAIRMAN, COUNCIL OF ECON. ADVISERS, THE BIPARTISAN POLICY CENTER & THE CONCORD COALITION, REMARKS ON RETIREMENT SECURITY 1 (May 12, 2015), https://www.whitehouse.gov/sites/default/files/docs/remarks_on_social_security_and_retirement_security_jf_10.23.13.pdf; *see also Retirement Plans, Benefits & Savings: Types of Retirement Plans*, U.S. DEP'T OF LABOR, http://www.dol.gov/dol/topic/retirement/typesofplans.htm (last visited Dec. 18, 2015).

6. STAFF OF J. COMM. ON TAXATION, 113TH CONG., 2D SESS., JCX-97-14, ESTIMATES OF FEDERAL TAX EXPENDITURES FOR FISCAL YEARS 2014-2018 4 (2014) [hereinafter J. COMM. ON TAXATION].

of the tax subsidies for retirement accounts come from the federal government; yet, the share of state indirect spending on retirement plans is significant and not well appreciated or known.[7] The Joint Committee on Taxation (JCT) and Office of Management and Budget (OMB) use different methodologies to calculate the size of the tax expenditures.[8] In 2014, the JCT calculated a federal retirement tax expenditure of $94.6 billion, and calculates $805.1 billion for the next five years (2014-2018).[9] The OMB estimates for the same expenditures are $146.4 billion for 2014 and $828.5 billion for 2014-2018.[10] We use the more conservative JCT method to value state retirement tax subsidies in this paper, in order to not bias our estimates upwards—not because one methodology is superior to the other.

Using the JCT's conservative method, we find that the size of the states' subsidies to the voluntary retirement account system is substantial: nearly $20 billion in 2014. Despite their size, however, state retirement account subsidies are rarely discussed.[11] This article represents a first attempt to measure the tax expenditures for retirement accounts at the state level. One reason that state tax expenditures for retirement accounts have not been analyzed is because state reports are inconsistent, at best, if they exist at all.[12] For example, three states do not publish tax expenditure reports and only eighteen states itemize their retirement tax expenditures. As such, our reported total is derived mainly through estimation.

We conclude that, without federal or state treasuries having to forgo additional revenue each year, all working Americans could have a retirement account if the preferential treatment was a refundable tax credit and not a deduction. If such treatment

---

7. We estimate that states spent over $20 billion in 2014 on tax subsidies for retirement accounts. If we add this figure to the federal retirement tax expenditure estimate of $94.6 billion for the same year, we arrive at total retirement tax expenditure of over $114 billion in 2014—with federal tax subsidies for retirement accounts making up more than 80% of the total. *See* Ghilarducci et al., *Retirement Savings Tax Expenditures: The Need for Refundable Tax Credits*, SCHWARTZ CTR. FOR ECON. POLICY ANALYSIS (June 2015), http://www.economicpolicyresearch.org/images/docs/retirement_security_background/Retirement_Savings_Tax_Expenditures.pdf.

8. *See* J. COMM. ON TAXATION, *supra* note 6, at 1-2.

9. *Id*. at 32.

10. OFFICE OF MGMT. & BUDGET, *supra* note 1, at 226.

11. *See* Michael Leachman et. al., *Promoting State Budget Accountability Through Tax Expenditure Reporting*, CTR. ON BUDGET & POL'Y PRIORITIES 7-8 (May 2011), http://www.cbpp.org/files/5-11-11sfp.pdf

12. *Id.* at 3-4.

occurred, more than eighty million more workers in 2015 would have had a retirement account, and the refundable tax credits would have been about $800 to each taxpayer.[13] Further, if the tax deduction had been a refundable tax credit protected from early withdrawal, the distribution of the subsidy would have been progressive and coverage universal. As a result, the median retirement account balance in this country would be over $70,000, instead of zero.[14]

This article is divided into four Parts. Part I introduces the concept of tax expenditures. Part II describes the relationship between U.S. savings policies and tax favoritism. Part III discusses how retirement tax expenditures are both effective in raising retirement savings and highly regressive. Part IV discusses conversion of retirement deductions and deferrals to credits that can be directly deposited in guaranteed retirement accounts. The Appendix to this article describes the methodology used in computing state tax expenditures.

II. RETIREMENT TAX EXPENDITURES AND SAVINGS

This Part is divided into three parts. Part A. provides an overview of retirement savings policy in the United States. Part B. discusses the size of the federal retirement tax expenditures, and Part C. discusses the size of the, until now, hidden state retirement tax expenditures.

---

13. *See* Ghilarducci et al., *supra* note 7, at 1 (dividing the total tax expenditure by the number of taxpayers).

14. We assume that each worker would receive a combined credit of $819, which would be deposited directly into a retirement savings account. If this process of reinvestment was fast-forwarded for forty years of employment, assuming an annualized rate of return of 3.5%, the average worker in the United States not participating in a retirement plan at work would save approximately $72,489. *See generally* Ghilarducci et al., *supra* note 7, at 4, 6, 16. Households near retirement (ages 55-64) and without an employer-sponsored retirement plan had a median balance of zero in retirement savings as of 2012. *See* Joelle Saad-Lessler et al., *Are U.S. Workers Ready for Retirement? Trends in Plan Sponsorship, Participation, and Preparedness*, SCHWARTZ CTR. FOR ECON. POLICY ANALYSIS (2015), http://www.economicpolicyresearch.org/images/docs/research/retirement_security/Are_US_Workers_Ready_for_Retirement.pdf, [hereinafter *Are U.S. Workers Ready for Retirement?*].

A. OVERVIEW OF UNITED STATES RETIREMENT SAVINGS POLICY

The federal and state governments have played a major role in the funding and distributional equity of the nation's retirement system for over 100 years.[15] At the early part of the 20th century, three trends shaped United States retirement policy: (1) federal, state, and municipal public sector retirement plans were expanded alongside the railroad retirement system; (2) Social Security was established for almost all workers; and (3) the income tax code became an important tool for the government to incentivize public and private employers and their workers to save for retirement.[16]

The use of the tax code to promote prefunded retirement plans dates back over ninety years[17] to the 1921 Revenue Act,[18] which eliminated current taxation of employer stock bonuses and profit sharing plans, and eventually pension trusts. Later, the 1942 Revenue Act[19] dramatically increased corporate income tax rates during World War II.[20] At the same time, corporations were exempt from these taxes if they engaged in activities that served a social purpose[21]—payment in the form of deferred compensation or in the form of employee benefits. Payment in such forms of compensation helped curb inflation and provide social insurance on the job through health insurance, vacation funds, disability insurance pools, and retirement plans.[22]

The 1942 Revenue Act raised revenue to be sure. However, it also initiated the modern era of the United States Government using the income tax system as a tool to induce more retirement savings for workers and employers.[23] Therefore, both the federal

---

15. *See generally* Gordon P. Goodfellow & Sylvester J. Schieber, *Death and Taxes: Can We Fund For Retirement Between Them?*, *in* THE FUTURE OF PENSIONS IN THE UNITED STATES 126, 128-29 *(*Ray Schmitt ed., 1993); *see also* Revenue Act of 1921, ch. 136, Pub. L. No. 67-98, 42 Stat. 227 (1921).

16. *See generally* DORA L. COSTA, *THE* EVOLUTION OF RETIREMENT*:* AN AMERICAN ECONOMIC HISTORY*,* 1880-1990 6-31 (Univ. of Chicago Press ed., 1998), http://www.nber.org/chapters/c6108.

17. Goodfellow & Schieber, *supra* note 15, at 128-29.

18. Revenue Act of 1921, ch. 136, Pub. L. No. 67-98, 42 Stat. 227 (1921).

19. Revenue Act of 1942, ch. 619, Pub. L. No. 77-753, 56 Stat. 798 (1942).

20. COSTA, *supra* note 16, at 17.

21. Lily L. Batchelder et al., *Efficiency and Tax Incentives: The Case for Refundable Tax Credits*, 59 STAN L. REV. 23, 42-44 (2006).

22. TERESA GHILARDUCCI, LABOR'S CAPITAL: THE ECONOMICS AND POLITICS OF PRIVATE PENSIONS 45 (MIT Press Ed., 1992).

23. *Id*. at 35, 153.

government and the states have long been committed to the goal of retirement income security. This is because, under our welfare state system of providing universal social insurance through private markets, providing tax incentives to employers and workers to set up voluntary retirement savings vehicles was the most important tool to achieve that goal.

In 1974, the Congressional Budget and Impoundment Act[24] was established in order for Congress to keep track of the amount of money that the federal government was spending, indirectly, to provide public goods.[25] The Act required calculations of tax expenditures to be included in the federal budget.[26] Many states have not been fastidious in their reporting or assessment of the fairness and effectiveness of the retirement account tax expenditures.[27] Tax expenditures are made up of special tax exclusions and deferrals for retirement savings accounts, and are referred to as "tax expenditures" because the revenue losses to the federal or state treasury are analogous to direct spending programs.[28]

Income tax rules without special preferences for retirement savings would mean that employer and employee contributions to qualified retirement and pension plans, and the earnings from these assets, would all be taxed as ordinary income. The current net exclusion of pension contributions and earnings allow taxpayers to exclude employer or individual retirement contributions from their gross income, and to defer taxes on the contributions and the investment-income earned on these savings until money is withdrawn.[29] Among these qualified retirement vehicles are 401(k) plans, traditional Individual Retirement Arrangements (IRAs), Roth IRAs (with tax subsidy granted upon withdrawal), DB plans, and DC plans.

The Joint Committee on Taxation report (JCT Report),

---

24. Congressional Budget and Impoundment Control Act of 1974, Pub. L. No. 93-344, 88 Stat. 297 (1974).

25. *Id.* at § 2.

26. *Id.* at § 102.

27. Leachman et. al., *supra* note 11, at 32.

28. J. COMM. ON TAXATION, *supra* note 6, at 2.

29. 26 I.R.C. § 415 (2012) (providing for dollar limitations on benefits and contributions under qualified retirement plans). For example, the limitation for defined contribution plans under I.R.C. § 415(c)(1)(A) was $52,000 in 2014. *See IRS Announces 2014 Pension Plan Limitations; Taxpayers May Contribute up to $17,500 to Their 401(k) Plans in 2014*, INTERNAL REVENUE SERVICE (Oct. 31, 2013), http://www.irs.gov/uac/IRS-Announces-2014-Pension-Plan-Limitations%3B-Taxpayers-May-Contribute-up-to-$17,500-to-their-401(k)-plans-in-2014.

"Estimates of Federal Tax Expenditures for Fiscal Years 2014-2018," begins with the baseline that all compensation to employees is subject to ordinary income tax.[30] The revenue that would have been collected—if the tax code did not specifically exclude the income—is the tax expenditure.[31] Specific exclusions for employer-provided benefits include coverage under disability and health insurance and group-term life insurance, among many others. Each exclusion is classified as a tax expenditure in the annual reports.[32] However, treatment of employer contributions to pension plans, income earned on pension assets, and worker contributions to DC plans and IRAs are deferred.[33] The federal (and some states') tax codes allow employer contributions to qualified pension plans, and require that employee contributions are not to be taxed until distributed to the employee (either before or at retirement).[34] The JCT Report elaborates that "[t]he tax expenditure for 'net exclusion of pension contributions and earnings' is computed as the income taxes forgone on current tax-excluded pension contributions and earnings less the income taxes paid on current pension distributions (including the 10-percent additional tax paid on early withdrawals from pension plans)."[35]

Tax expenditures for DB and DC plans that had been in place for years showed a larger rate of increase in 1983; the same year in which Congress and President Ronald Reagan not only raised the FICA tax, but also cut future Social Security benefits at each eligible age of collection by gradually raising the "normal retirement age" from sixty five to sixty seven.[36] The expansion of tax expenditures through exclusions goes against well-established public finance principles that, all things being equal, an efficient tax code is one that expands the tax base and keeps tax rates low. This is because high tax rates produce distortions in prices and behavior.[37] But, exclusions and deductions work in

30. J. COMM. ON TAXATION, *supra* note 6, at 10.

31. *Id.* at 2.

32. *Id.* at 4.

33. *Id.*

34. *Id.*

35. *Id.* (JCT does not take into account any behavioral changes or other tax consequences that might happen if special tax treatment did not exist).

36. *See* John A. Svahn & Mary Ross, *Social Security Amendments of 1983: Legislative History and Summary of Provisions*, 46 SOC. SECURITY BULL., no. 7, July 1983, at 3, 12.

37. RICHARD A. MUSGRAVE & PEGGY B. MUSGRAVE, PUBLIC FINANCE IN THEORY AND PRACTICE 49 (Bonnie E. Lieberman & James B. Armstrong eds., 3d ed. 1980); *see*

the opposite direction: they narrow the tax base and, thus, require higher tax rates to keep revenue constant.[38]

One unfortunate consequence of using tax deductions as a lever to induce socially acceptable behavior—behavior that advances the goals of social policy—is that the progressive income tax system produces an upside-down distribution of subsidies. That is, rather than steer subsidies to the households in need of the most help and that are the most sensitive to the encouragement, the greater subsidies go to the households with a higher marginal tax rate.[39] Further, households with high marginal tax rates consist of taxpayers in higher brackets who can afford to defer more consumption until retirement (and are in less need of the incentive or financial help from the government) than households in the lower tax brackets. The more a taxpayer saves, and the higher the tax bracket under which that taxpayer falls, the greater the subsidy from a federal and state deferral of taxes on retirement plan contributions, and the greater the buildup in those funds. Not everyone agrees that the upside-down nature of the subsidies is a problem. The Employee Benefit Research Institute (EBRI) provides a technical explanation that the taxpayers with the highest incomes derive the greatest benefits because the benefit is proportionate to their income and effort.[40]

Here is a simplified example of how the tax deferral works as a subsidy: let us imagine the case of a barista who earns $1,000 per month and who faces a (hypothetical) marginal tax rate of 12%. Our barista would pay $120 in taxes, which means she is left with $880 of after-tax income. If, instead, she contributes $100 to a qualified retirement plan, her taxable income would be lower, at $900. With only $108 due in taxes now, our barista would be left with less after-tax-income—$792 versus $880—but she will also have $100 in a retirement plan and will have saved

---

generally Batchelder et al., *supra* note 21, at 48.

38. Andrew Chamberlain & Patrick Fleenor, *America's Shrinking Income Tax Base Requires Higher Rates for Everyone*, TAX FOUNDATION (Sept. 21, 2005), http://www.taxfoundation.org/article/americas-shrinking-income-tax-base-requires-higher-rates-everyone.

39. This assertion is merely mathematical. A person who deducts 1 dollar of qualified spending and is at a 39% marginal tax rate is allowed to not pay 39 cents in taxes they otherwise would owe. But a person in a 15% tax bracket is only allowed to not pay 15 cents in taxes otherwise owed. The person in the highest bracket gets the largest tax break. The regressive nature of the subsidy is upside down. *See Fast Facts: Are 401(k) Tax Preferences Upside Down?*, EMPLOYEE BENEFIT RESEARCH INSTITUTE (Aug. 29, 2013), https://www.ebri.org/pdf/FF.244.Up-Down.29Aug131.pdf.

40. *Id*.

$12 on her tax bill. Whatever investment gains are made on her retirement account would also be tax free.[41] Moreover, when our barista collects the money for retirement in the future, her income will be taxed at a rate presumably lower than 12%.[42] This is the case because, by and large, retirees earn less income and thus, face a lower tax liability than they did during their years of employment.[43] If we assume a case of zero growth, and a lower tax rate at retirement, our barista's initial $100 contribution would pay a tax of $6. This leaves her with a larger net worth (of $886) than she would otherwise have without contributing to a retirement account ($880).[44]

B. SIZE OF FEDERAL RETIREMENT TAX EXPENDITURES

Retirement tax expenditures are among the three largest federal tax expenditures.[45] Total federal retirement plan tax expenditures were $94.6 billion in 2014, with spending on DC plans, such as 401(k) plans, making up the largest share.[46] The costs of these tax subsidies are also projected to increase such that, between 2014 and 2018, the federal cost of retirement tax expenditures is projected to be $805.1 billion (see Table 1).[47]

41. OFFICE OF MGMT. & BUDGET, *supra* note 1, at 220-21.

42. *See* Teresa Ghilarducci & Adam Hayes, *401(k) Tax Policy Creates Inequality*, SCHWARTZ CTR. FOR ECON. POLICY ANALYSIS (2015), http://www.economicpolicyresearch.org/images/docs/research/retirement_security/Hayes_Ghilarducci_Policy_Note_1.9.15_FINAL.pdf

43. *See* Ghilarducci et al., *supra* note 7, at 1-2, 17.

44. *See id*.

45. *See generally* J. COMM. ON TAXATION, *supra* note 6, at 36.

46. In 2014, defined contribution plans accounted for 47% of the total cost of all tax expenditures; define benefit plans 28%, traditional IRAs 13%, Keogh plans 6%, Roth IRAs 5%, and special credits 1%. *See id*.

47. We are reporting low estimates of the tax expenditure. Please see the appendix for a discussion of the range of estimates based on different methodologies and assumptions.

TABLE 1. FEDERAL RETIREMENT TAX EXPENDITURES (IN BILLIONS)[48]

Function	2014	2015	2016	2017	2018	2014-2018
Keogh Plans	5.8	8.7	10.0	11.4	16.2	52.1
DB Plans	26.0	41.3	50.4	61.2	69.4	248.3
DC Plans	44.9	62.3	81.2	98.9	111.7	399.0
Traditional IRAs	11.8	12.8	13.9	15.0	16.0	69.5
Roth IRAs	4.9	5.5	6.1	6.6	7.2	30.2
Special Credits	1.2	1.2	1.2	1.2	1.2	6.0
Total	94.6	131.8	162.8	194.3	222.1	805.1

Table 1, above, provides a breakdown of the cost of retirement expenditures by type and year. Of the total cost of retirement tax expenditures in 2014, $5.8 billion accounted for preferential treatment to plans covering partners and sole proprietors (e.g., Keogh Plans), $26.0 billion for the more traditional DB plans, $44.9 billion for DC plans, and almost $17 billion for both traditional and Roth IRAs combined. With additional credits for certain elective deferrals and IRA contributions (special credits) making up more than $1 billion in 2014, the total cost of retirement tax expenditures amounted to $94.6 billion in 2014. This amount, as can be seen above, is projected to increase every year—to reach $222.1 billion by 2018.

Leveraging the tax code to achieve social goals escapes the scrutiny of annual evaluation. Unlike discretionary spending, revenue losses from the tax breaks are rarely debated. There is a built-in tendency for tax expenditure subsidies to grow without review or accountability, which is a constant theme of the Government Accountability Office (GAO), the government's neutral accounting and auditing agency.[49] As part of the annual budgeting cycle in Congress, the United States House of Representatives Committee on Appropriations (Appropriations Committee) considers funding for all types of discretionary

48. J. COMM. ON TAXATION, *supra* note 6, at 32.

49. U.S. GOV'T ACCOUNTABILITY OFFICE, GAO-05-690, GOVERNMENT PERFORMANCE AND ACCOUNTABILITY: TAX EXPENDITURES REPRESENT A SUBSTANTIAL FEDERAL COMMITMENT AND NEED TO BE REEXAMINED 18 (Sept. 2005).

spending; but, tax expenditures, mandatory spending, and net interest payments are not reviewed during the annual budget process.[50] In this sense, tax expenditures are entitlements because they do not end automatically, and, rather, it is the number and intensity of tax units who participate in the preferred activity that ultimately determines the amount of spending, just like with Social Security and Medicare.[51]

The government's large and indirect, but real, effect in boosting household savings is starkly appreciated when comparing the size of the tax expenditure for retirement savings to actual savings. Federal tax expenditures for pensions and retirement accounts as a share of personal savings has risen sharply since 1974 and has remained in the 16% to 20% range for the past fifty years.[52] To illustrate, the ratio of the retirement tax expenditure to personal savings was 5% in 1974, 21% in 1984, 20% in 2004, and 16% in 2011 (see Figure 1).[53] When we add state tax expenditures for retirement savings ($20 billion in 2014), the total amount of tax expenditures in 2014 ($114 billion) amounted to more than one-sixth of total savings—$633 billion in 2014.[54] Yet, the savings rate, which is the ratio of savings to personal income, has not been enhanced by this growing rate of tax expenditures. Instead, it has decreased; in 1974, the savings rate was 12.9%, in 1994, it was 6.3%, and in 2014 it was 4.9%.[55]

---

50. *See* Sima J. Gandhi, *Audit the Tax Code: Doing What Works for Tax Expenditures*, CTR. FOR AM. PROGRESS 5 (Apr. 2010), https://cdn.americanprogress.org/wp-content/uploads/issues/2010/04/pdf/dww_tax_framing.pdf.

51. Because tax expenditures resemble mandatory spending in this sense, they have often being called "the hidden entitlements." *See Tax Expenditures – The Hidden Entitlements*, CITIZENS FOR TAX JUSTICE 1-2 (May 1996), http://www.ctj.org/pdf/hident.pdf.

52. *See Personal Saving*, U.S. Bureau of Economic Analysis, ECON. RES. FED. RES. BANK OF ST. LOUIS (2015), https://research.stlouisfed.org/fred2/series/A071RC1A027NBEA.

53. *See id*.

54. *Id*.

55. *Id*.

FIGURE 1. TAX EXPENDITURES FOR RETIREMENT SAVINGS AS A PERCENTAGE OF TOTAL PERSONAL SAVINGS, 1974-2011[56]

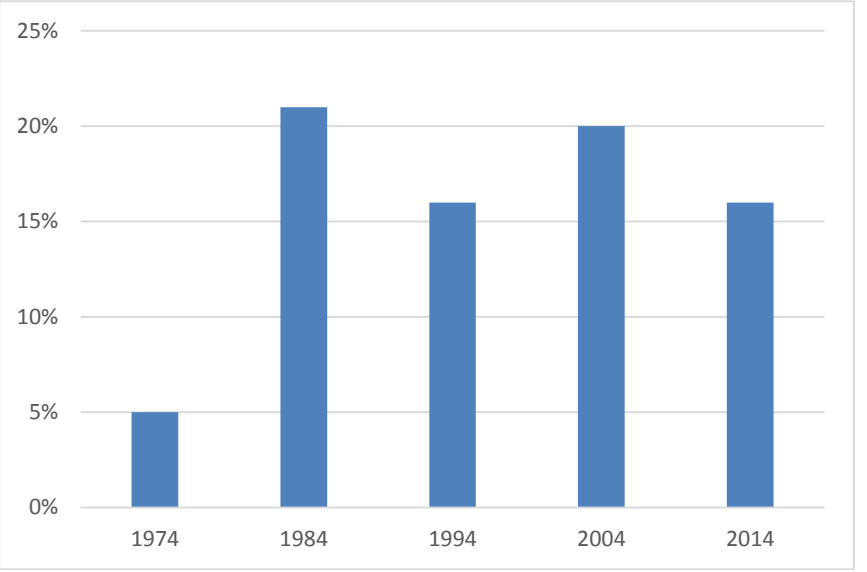

Figure 1 shows the sharp increase in the cost of retirement tax expenditures expressed as a share of total personal savings. By 1984, the cost of retirement expenditures—as a share of total personal savings—was four times that of the cost in the 1970s. The cost of retirement tax expenditures has remained within the 16% to 20% range of all personal savings since this sharp rise of the 1980s. As this chart aptly illustrates, the government is a major partner in household savings.

C. STATE LEVEL EXPENDITURES FOR RETIREMENT

Because the cost of tax expenditures are most often opaque, we doubt many governors, treasurers, and legislators realize the extent of the losses to the state treasuries that exist from adopting the federal tax provisions. State tax expenditures, resulting from

56. *See generally Interactive Data*, U.S. DEP'T OF COM., BUREAU OF ECON. ANALYSIS, http://www.bea.gov/itable/index.cfm (last visited Jan. 5, 2016) [hereinafter BEA] (for JCT 2011 and NIPA accounts from the BEA). *See also* STAFF OF J. COMM. ON TAXATION, JCX-15-11, BACKGROUND INFORMATION ON TAX EXPENDITURE ANALYSIS AND HISTORICAL SURVEY OF TAX EXPENDITURE ESTIMATES: SCHEDULED FOR PUB. HEARING BEFORE S. COMM. ON FIN. MAR. 1, 2011 20-25(2011).

conformity with federal tax law, are called "implicit tax expenditures."[57] Since states often piggyback on federal tax provisions for administrative simplicity, for retirement preferential treatment alone, we estimate that they forgo nearly $20 billion of revenue each year.[58]

In 2014, the largest states incurred the highest tax expenditures. California and New York led the pack with $5.2 billion and $2.8 billion tax expenditures in annual tax revenues. And, both Pennsylvania and Massachusetts forgo more than $1 billion dollars each year in revenue due to the costs of their retirement expenditures (see Table 2).[59]

TABLE 2. RETIREMENT TAX EXPENDITURES, NATIONAL AND STATE (2014)[60]

State	Total Tax Retirement Account Expenditure (2014)
United States (Federal)	$94,600,000,000
All States	$19,910,797,336
Alabama	$112,785,823
Arizona	$121,002,756
Arkansas	$51,800,446
California	$5,170,000,000
Colorado	$209,132,532
Connecticut	$205,397,511
Delaware	$35,398,530
Georgia	$711,000,000
Hawaii	$80,737,496
Idaho	$45,988,492
Illinois	$498,959,734
Indiana	$152,352,803

57. Leachman et. al., *supra* note 11, at 14.

58. *See* Ghilarducci et al., *supra* note 7, at 1-2.

59. States without an income tax are Alaska, Florida, Nevada, South Dakota, Texas, Washington, and Wyoming. New Hampshire and Tennessee collect an income tax, which applies to interest and dividend income only. The appendix describes the calculation methodology. *See id.* at 3. *See also* Chris Kahn, *State with No Income Tax: Better or Worse?*, BANKRATE.COM, http://www.bankrate.com/finance/taxes/state-with-no-income-tax-better-or-worse-1.aspx (last visited Jan. 3, 2016).

60. Calculations are based on individual state tax expenditure reports and developed estimates. *See infra* Appendix for details.

Iowa	$520,000,000
Kansas	$78,363,652
Kentucky	$539,000,000
Louisiana	$92,289,333
Maine	$162,000,000
Maryland	$293,558,700
Massachusetts	$1,060,000,000
Michigan	$946,000,000
Minnesota	$881,000,000
Mississippi	$48,414,308
Missouri	$151,229,468
Montana	$159,000,000
Nebraska	$114,446,275
New Jersey	$350,615,243
New Mexico	$32,187,460
New York	$2,826,000,000
North Carolina	$914,000,000
North Dakota	$15,627,995
Ohio	$256,043,750
Oklahoma	$63,555,342
Oregon	$411,000,000
Pennsylvania	$1,100,300,000
Rhode Island	$41,846,348
South Carolina	$121,189,494
Utah	$92,421,733
Vermont	$37,829,036
Virginia	$303,532,120
West Virginia	$47,690,959
Wisconsin	$730,100,000
District of Columbia	$127,000,000

Table 2 provides the total cost of retirement tax expenditures at the state and federal levels. This Study is the first to measure the tax expenditures for retirement accounts for all states in the United States (including Washington, D.C.) that have an income tax on earnings. Table 2 shows that, in aggregate, states spend nearly $20 billion in preferential treatment for qualified retirement accounts. Eleven states, of the forty-two listed above, forgo more than half-a-billion dollars each in revenue as a result of this preferential treatment.

III. RETIREMENT TAX EXPENDITURES ARE BOTH INEFFECTIVE IN RAISING RETIREMENT SAVINGS AND HIGHLY REGRESSIVE

Tax subsidies for retirement accounts are intended to cajole individuals to save for retirement tomorrow, rather than to consume today.[61] But, experts have concluded that deductions for retirement plans are not effective in encouraging workers or households to save more.[62] Retirement tax expenditures are regressive and largely ineffective because access to retirement plans is skewed towards those at the higher-income brackets.[63] Almost one-half (47%) of workers in the United States between the ages of twenty five and sixty four are not offered a retirement plan at work, and access to an employer-sponsored retirement plan varies considerably by income and industry; with the higher rates of access found in high-income occupations, including those in finance, insurance, and real estate.[64]

Evidence shows that higher-income families respond to the preferential tax treatment by shifting assets from taxable accounts to non-taxable retirement accounts in order to lower their taxes.[65] Their savings levels are not affected.[66] Low- and middle-income families, least prepared for retirement, have tax rates that are too low to effectively induce them to save more.[67] This reality is compounded by the fact that retirement tax expenditures are highly regressive;[68] a $100 deduction typically

---

61. GHILARDUCCI, *supra* note 22, at 162.

62. *See* Raj Chetty et al., *Active vs. Passive Decisions and Crowdout in Retirement Savings Accounts: Evidence from Denmark* 1 (Nat'l Bureau of Econ. Research, Working Paper No. 18565, 2012), https://research.hks.harvard.edu/publications/getFile.aspx. *See also* Orazio P. Attanasio & Thomas DeLeire, *The Effect of Individual Retirement Accounts on Household Consumption and National Saving*, 112 ECON. J. 504, 505 (2002); William G. Gale & John Karl Scholz, *IRAs and Household Saving*, 84 AM. ECON. REV. 1233, 1233-34 (1994).

63. Gale & Scholz, *supra* note 62, at 1234-35.

64. Saad-Lessler et al., *supra* note 14, at 4-6 (finding that workers' declining bargaining power, along with decreasing firm sizes, serve as the largest factors in the drop in sponsorship rates from 61 percent in 1999 to 53 percent in 2011).

65. Chetty et al., *supra* note 62, at 3, 9, 31.

66. People who do not pay taxes are not eligible for a tax deduction or tax deferral. Only if the tax subsidies were in the form of a refundable tax credit would these households receive a tax subsidy.

67. Leonard E. Burman et al., *Distributional Effects of Defined Contribution Plans and Individual Retirement Arrangements*, 57 NAT'L TAX J. 671, 684 (2004).

68. Ghilarducci et al., *supra* note 7, at 4.

saves $39.60 for someone in the top income-tax bracket, which is 39.6%, but only $10 for a low-income worker in the 10% bracket. The bottom two quintiles (40%) of the income distribution receive only 3% of the tax subsidies for employer-sponsored retirement plans.[69] In similar fashion, 60% of tax subsidies for employer-based retirement savings and IRAs go to taxpayers in the top quintile (20%) of the income distribution.[70]

The regressivity of tax expenditures also compounds each year. All individuals benefit from tax-free accrual, but the higher-tax-bracket worker generates investment earnings on a larger initial contribution and tax break—the tax break is worth 39.6 cents on the dollar, compared to a low-wage barista who gets a tax break of less than 15 cents because she is in a lower tax bracket. And, if the tax savings are plowed back into the account, higher-income workers benefit from even larger tax subsidies.[71]

For these and other reasons, experts and the GAO have called for periodic and systematic reviews of federal tax expenditures to inform policy decisions about their efficiency, effectiveness, and equity.[72]

IV. CONVERT RETIREMENT DEDUCTIONS AND DEFERRALS TO CREDITS THAT CAN BE DIRECTLY DEPOSITED IN GUARANTEED RETIREMENT ACCOUNTS

If the 2014 retirement tax deferrals were converted to refundable tax credits in a revenue-neutral way, all U.S. workers would receive an $819 deposit into a retirement account from their federal and state governments—if the state has an income

69. Batchelder et al., *supra* note 21, at 54.

70. *See* C. Eugene Steuerle et al., *Who Benefits from Asset-Building Tax Subsidies?*, URB. INST. (Sept. 24, 2014), http://www.urban.org/sites/default/files/alfresco/publication-pdfs/413241-Who-Benefits-from-Asset-Building-Tax-Subsidies-.PDF.; *see generally* CONG. BUDGET OFFICE, PUB. NO. 4308, THE DISTRIBUTION OF MAJOR TAX EXPENDITURES IN THE INDIVIDUAL INCOME TAX SYSTEM (2013), http://www.cbo.gov/sites/default/files/cbofiles/attachments/43768_DistributionTaxExpenditures.pdf.

71. *See* Ghilarducci et al., *supra* note 7, at 2-4.

72. U.S. GOV'T ACCOUNTABILITY OFFICE, *supra* note 49, at 48. Some states, like California, have begun to provide information on the purpose and cost of some tax expenditures but the scope of these reports remain limited, and very few states are following suit. *See* Leachman et. al., *supra* note 11, at 45-47; *see also* Gandhi, *supra* note 50, at 9.

tax on earnings.[73] This automatic deposit through a refundable tax credit would have a larger and more significant impact on total savings than policies that rely upon individuals to take specific steps to increase their own retirement savings.[74] A refund is more progressive than a deduction because refundable credits do not increase with a taxpayer's marginal tax rate.[75]

Transforming the deduction to a refundable tax credit would provide 87.8 million workers nationwide, who do not participate in a retirement plan at work, with a credit of $647.[76] More than 68 million of these workers are in states with an income tax (see Table 3). As such, these workers' federal credits would be supplemented with an average state credit of $172, which would be deposited into their retirement savings accounts (see Table 3).[77]

TABLE 3. NUMBER OF BENEFICIARIES OF REFUNDABLE TAX CREDITS, NATIONAL AND STATE (2014)[78]

State	**Workers Who Do Not Participate in an Employer Retirement Account**
United States (National)	87,783,000
Alabama	1,161,452
Arizona	1,882,631
Arkansas	796,525
California	11,051,443
Colorado	1,548,600
Connecticut	975,150

73. This amount represents the sum of the federal tax expenditure per worker ($647) and the state tax expenditure per worker ($172). Workers in states that do not collect an income tax on earnings would only be eligible for a credit from the federal level, while those from states with an income tax on earnings would receive the sum of the federal and state tax expenditure as a credit. *See* Ghilarducci et al., *supra* note 7, at 4.

74. *See* Chetty et al., *supra* note 62, at 4.

75. *See* Eric Toder & Daniel Baneman, *Distributional Effects of Individual Income Tax Expenditures: An Update* 6 (Urban Inst. & Brookings Inst., Tax Pol'y Ctr., Working Paper, 2012), *available at* http://www.urban.org/UploadedPDF/412495-Distribution-of-Tax-Expenditures.pdf.

76. *See* Ghilarducci et al., *supra* note 7, at 4.

77. *Id.* at 4-5, 13.

78. *Id.* at 5 (Table 3).

Delaware	251,340
Georgia	2,587,337
Hawaii	347,076
Idaho	452,855
Illinois	3,521,499
Indiana	1,711,644
Iowa	880,627
Kansas	818,203
Kentucky	1,150,307
Louisiana	1,311,329
Maine	388,252
Maryland	1,528,903
Massachusetts	1,871,068
Michigan	2,617,841
Minnesota	1,509,685
Mississippi	728,207
Missouri	1,690,669
Montana	311,404
Nebraska	578,024
New Jersey	2,433,660
New Mexico	612,203
New York	5,307,365
North Carolina	2,747,885
North Dakota	231,292
Ohio	3,159,542
Oklahoma	1,048,392
Oregon	1,088,922
Pennsylvania	3,358,076
Rhode Island	291,700
South Carolina	1,223,594
Utah	846,416
Vermont	199,230
Virginia	2,213,049
West Virginia	398,006
Wisconsin	1,588,315
District of Columbia	175,737

Table 3 shows the total number of workers, at the state and federal levels that would benefit from a refundable credit for retirement. In more than half (twenty-four) of the forty two states listed, one million workers (or more) who do not participate in a retirement plan at work stand to benefit from a retirement credit.

In large states like California, this figure rises to eleven million workers, while five million workers would benefit in New York.

One example of how the refundable tax credits will help workers save can be illustrated in the Commonwealth of Massachusetts, where the combined refundable tax credit (state and federal) will amount to $964 (see Table 8). All workers in the state of Massachusetts would have this combined credit directly and annually deposited into their retirement accounts. If we fast-forward the same reinvestment process for forty working years and assume an annualized rate of return of 2%, the average worker in Massachusetts who does not participate in a retirement plan will have saved more than $58,000 by 2054. This figure is higher than the median account balance of a near-retiree today who has access to an IRA or 401(k) plan at work.[79]

In a second example, a worker from the Commonwealth of Pennsylvania would have a combined refundable credit of $830. If we fast-forward the same yearly process of reinvestment as above for forty working years, and apply a more advantageous annual return of 5%, the average worker in Pennsylvania who starts with no savings will have saved approximately $100,264 by 2054. This same exercise can be performed with each of the forty two states (including Washington, D.C.) with an income tax on earnings.

The uniform refundable tax credits we propose in this Study should be part of a comprehensive retirement and savings reform that includes the creation of new, low-cost savings vehicles. Guaranteed Retirement Accounts (GRAs), as advocated by Ghilarducci in previous writings, could be such a vehicle.[80] GRAs are "individual, 'cash-balance' accounts, where benefits at retirement are based solely on contributions and returns."[81] Additionally, GRAs would guarantee a rate of return above inflation to protect workers from the volatility of the stock market, and "[a]ll individual account assets would be invested together in one large pool, with an emphasis on low-risk, long-term gains."[82] Individual employees and the government could also fund GRAs by having the refundable credits directly deposited into workers'

79. *See* Joelle Saad-Lessler et al., *supra* note 14, at 13-14.

80. Teresa Ghilarducci et al., *State Guaranteed Retirement Accounts: A Low-Cost, Secure Solution to America's Retirement Crisis*, DEMOS & SCHWARTZ CTR. FOR ECON. POLICY ANALYSIS 3 (Nov. 2012), http://www.demos.org/sites/default/files/publications/StateGRAReport-1.pdf.

81. *Id.*

82. *Id.*

savings accounts.[83] At no extra cost to employers, the state, or the federal government, these reforms, GRAs and refundable tax credits combined, will expand the reach of a secure and dignified retirement for all workers.[84]

V. CONCLUSION

Tax breaks for retirement savings accounts made up the third largest federal tax expenditure in 2014.[85] These tax breaks also cause substantial, but opaque, losses to state treasuries. In this Study, we have estimated and assembled the costs of retirement tax expenditures at the state level. The loss is of nearly $20 billion per year.

Transforming retirement tax expenditures into refundable tax credits at the federal and state levels would lead to more equitable and expanded retirement security for working- and middle-class families. These tax credits could be automatically deposited into workers' retirement savings GRA accounts. If the deductions were credits today, more than eighty million workers nationwide without retirement accounts would have more than $800 deposited in a retirement savings account. Over forty years, and assuming an annualized rate of 3.5%, these accounts would yield over $70,000 per worker. The transition from tax deductions to refundable tax credits would add no extra costs to the budget of employers, the states, or the federal government. However, such a reform would finally make real the promise of a secure retirement for all workers in the United States.

APPENDIX: METHODOLOGY OF COMPUTING STATE TAX EXPENDITURES

This Study uses the Estimates of Federal Tax Expenditures for Fiscal Years 2014-2018 report (JCT Report),[86] prepared by the Joint Committee on Taxation, as its baseline for categorizing and calculating state tax expenditures on retirement. This Study also uses provisions in federal tax legislation, enacted up to June 30, 2014.[87] The JCT Report notes that, a tax expenditure is

83. *Id.* at 16.
84. *Id.*
85. J. COMM. ON TAXATION, *supra* note 6, at 21, 32.
86. *See generally id.*
87. *Id.* at 1

calculated by the difference between current law tax liability and that which would result if the provision were revoked, which allows taxpayers to benefit from any of the remaining provisions applicable to the income or expenses associated with the revoked tax expenditure.[88]

The Treasury's Office of Management of the Budget (OMB) also releases tax expenditure estimates each year.[89] Due to disparate assumptions and methodology, OMB estimates are larger than those released by the JCT ($146.4 billion versus $94.6 billion, respectively).[90] This Study uses JCT estimates. The difference between retirement tax expenditure estimates released by the OMB and the JCT is discussed further in previous work by Teresa Ghilarducci,[91] and in Part I of the JCT report, under the heading, "Comparisons with Treasury."[92]

The OMB also reports discounted present-value estimations, which are treated as more accurately reflecting the true economic cost of tax provisions.[93] The total present-value estimate for retirement tax expenditures in the OMB report is $101.3 billion.[94] This figure "represents the revenue effects, net of future tax payments, which follow from activities undertaken during calendar year 2014 which cause the deferrals."[95] For example, pension contribution in 2014 would cause a deferral of tax payments on wages in the same year. Such deferrals would also be on pension fund earnings on these contributions in later years. When the worker retires, these same 2014 pension contributions and accrued earnings will be distributed to workers and taxes on these amounts will be due. These additional taxes are included in the OMB's $101.3 billion estimate,[96] and explain the higher tax expenditure number reached by the OMB compared to that calculated by the JCT.

We use the lower number presented by the JCT ($94.6

88. *Id.* at 13.

89. *See generally* OFFICE OF MGMT. & BUDGET, *supra* note 1.

90. *Compare* OFFICE OF MGMT. & BUDGET, supra note 1, at 226, *with* Ghilarducci et al., *supra* note 7, at 1.

91. *See* Teresa Ghilarducci, *Calculating Retirement Tax Expenditures: 2010*, SCHWARTZ CTR. FOR ECON. POLICY ANALYSIS (2011), http://www.economicpolicyresearch.org/images/docs/retirement_security_background/Calculating_Retirement_Tax_Expenditures.pdf.

92. J. COMM. ON TAXATION, *supra* note 6, at 13-14.

93. OFFICE OF MGMT. & BUDGET, supra note 1, at 243.

94. *See id.*

95. *See* Ghilarducci et al., *supra* note 7, at 7.

96. OFFICE OF MGMT. & BUDGET, supra note 1, at 220.

billion) so as to not exaggerate the revenue losses. We use this number under the understanding that the individual state tax expenditure reports we examine provide cash-based, not present-value, estimates.[97] Because this figure is lower than both OMB estimates (the cash-based and present-values), our Study may actually underestimate the true cost of retirement tax expenditures.

Retirement tax expenditures in the JCT Report fall under the following main categories: "Net exclusion of pension contributions and earnings," "Individual retirement arrangements," and "Credit for certain individuals for elective deferrals and IRA contributions." The net exclusion of pension contributions and earnings category consists of plans covering partners and sole proprietors, DB plans, and DC plans. Among the individual retirement arrangements category are listed traditional IRAs and Roth IRAs.[98]

A. DERIVING ESTIMATES FOR STATES THAT PUBLISH TAX EXPENDITURE REPORTS

The state figures for retirement tax expenditures are calculated using the tax expenditure reports released by each state.[99] Forty-two states (including Washington, D.C.) have an earnings income tax.[100] The states of New Hampshire and

97. *See generally* J. COMM. ON TAXATION, *supra* note 6.

98. *Id.* at 32.

99. Ghilarducci et al., *supra* note 7, at 7.

100. *Id.* The following illustrate the authors' investigations of each state report and the computation of a census:

See CAL. DEP'T. OF FIN., TAX EXPENDITURE REPORT 2014-15 (2015); D.C. OFF. OF REVENUE ANALYSIS, D.C. TAX EXPENDITURE REP. (May 2014); GA. DEP'T. OF AUDITS & ACCTS., GEORGIA TAX EXPENDITURE REPORT FOR FY 2016 (Dec. 2014); IOWA DEP'T. OF REVENUE, 2010 IOWA TAX EXPENDITURE STUDY: FINAL RELEASE (Nov. 2014); KY. GOVERNOR'S OFFICE FOR ECON. ANALYSIS: OFFICE OF THE STATE BUDGET DIR., TAX EXPENDITURE ANALYSIS, FISCAL YEARS 2014-2016 (2014); DEP'T. OF ADMIN. & FIN. SERVS., ME. REVENUE SERVS., OFFICE OF TAX POLICY, MAINE STATE TAX EXPENDITURE REPORT 2014-2015 (2013); EXEC. OFFICE FOR ADMIN. & FIN., COMMONWEALTH OF MASS., TAX EXPENDITURE BUDGET, FISCAL YEAR 2015 (Jan. 2014); MICH. DEP'T. OF TREASURY, EXECUTIVE BUDGET APPENDIX ON TAX CREDITS, DEDUCTIONS, AND EXEMPTIONS, FISCAL YEARS 2014 AND 2015 (2014); MINN. DEP'T. OF REVENUE, TAX RESEARCH DIV., STATE OF MINNESOTA TAX EXPENDITURE BUDGET, FISCAL YEARS 2014-2017 (Feb. 2014); MONT. DEP'T. OF REVENUE, BIENNIAL REPORT, JULY 1, 2012-JUNE 30, 2014 (2014); N.Y DIV. OF THE BUDGET, DEP'T OF TAXATION & FIN., FY 2016 ANNUAL REPORT ON NEW YORK STATE TAX EXPENDITURES (2014); N.C. DEP'T. OF REVENUE, REVENUE RESEARCH DIV., NORTH CAROLINA BIENNIAL TAX EXPENDITURE REPORT (Dec. 2013); OR. DEP'T. OF ADMIN. SERVS., STATE OF OREGON TAX EXPENDITURE REPORT 2015-2017 (2015); PA. OFFICE OF THE GOVERNOR, 2015-2016 PENNSYLVANIA

Tennessee collect an income tax that applies to interest and dividend income only.[101] Of the seven states that do not collect an income tax, two states (Texas and Florida) are very large in geographical size, one state (Washington) is medium in geographical size, and the remaining three (Nevada, South Dakota, Wyoming) are very small—but only in terms of population size.[102]

Of the forty two states that collect an income tax on earnings, thirty nine publish a tax expenditure report.[103] Of these thirty nine states (including Washington, D.C.), only eighteen estimate costs of the tax preference for "tax-qualified retirement accounts."[104] There are obvious differences—size, region, politically Democratic or Republican—between these three groups of states. Less obvious, but very important, differences also exist: (1) states (three in total) that collect an income tax, and that presumably allow for deductions and exclusions, but do not publish a tax expenditure report; (2) states (twenty one, in total) that account for the cost of total tax expenditures in reports, but offer no details on retirement expenditures; and (3) states (eighteen, in total)[105] that publish the cost of retirement account preferential treatments.[106] Further study on these groups would have to determine whether the eighteen states that do publish reports of cost estimates are more sophisticated, careful, transparent, and exhibit other characteristics of good government.[107]

We make the distinction among the three groups of states here only to further distinguish between states for which we estimated tax expenditures and those for which we report their estimates. Of the eighteen states that report retirement tax expenditures, we estimate tax expenditure values for Kansas,

---

EXECUTIVE BUDGET (2015); R.I. DEPT. OF REVENUE, OFFICE OF REVENUE ANALYSIS, 2014 TAX EXPENDITURES REPORT (May 15, 2014); WIS. DEP'T. OF REVENUE & DEP'T OF ADMIN., STATE OF WISCONSIN SUMMARY OF TAX EXEMPTION DEVICES (Feb. 2013).

101. Ghilarducci et al., *supra* note 7, at 17.

102. *See generally id.*, *supra* note 7.

103. *Id.* at 8.

104. *Id.*

105. The 18 states that publish a tax expenditure report for retirement accounts include: California, District of Columbia, Georgia, Montana, Nebraska, Iowa, Kansas, Pennsylvania, Kentucky, Rhode Island, Maine, Massachusetts, Michigan, Minnesota, Mississippi, New York, North Carolina, Oregon, and Wisconsin. *Id.*

106. *Id.*

107. *See Full- and Part-Time Legislatures*, NAT'L CONF. OF STATE LEGIS. (June 1, 2014), *available at* http://www.ncsl.org/research/about-state-legislatures/full-and-part-time-legislatures.aspx.

Mississippi, and Rhode Island. Kansas, for example, "does not publish estimates for net exclusions of private pension contributions and earnings."[108] Additionally, the state of Mississippi does not provide estimates with respect to contributions to employee pension plans.[109] Rhode Island, for its part, does not specify whether it includes "deferred earnings from retirement plans and contributions to public pensions or private [DB] plans."[110] The final fifteen states we find with reliable tax expenditure calculations are: California, District of Columbia, Georgia, Iowa, Kentucky, Maine, Massachusetts, Michigan, Minnesota, Montana, New York, North Carolina, Oregon, Pennsylvania, and Wisconsin.

Not all of the above fifteen states provide complete estimates of retirement tax expenditures in their reports.[111] Each state provides distinct categories that are not comparable. Pennsylvania, for example, only provides estimates for employer-made retirement contributions.[112] Additionally, Massachusetts provides estimates for deductions of employee contributions to public pension plans, but listed as part of the total under the category of "Deduction for Employee Social Security and Railroad Retirement Payments."[113] Since this combined estimate would have overstated the cost of retirement tax expenditures for Massachusetts, deductions of employee contributions to public pensions were left out of our calculation. The bottom line is that, where we have had to make a judgment call for the purposes of this article, we erred on the side of underreporting.

B. ESTIMATING RETIREMENT TAX EXPENDITURES PER WORKER FOR STATES THAT DO NOT PUBLISH ESTIMATES

Importantly, "[t]he majority of states do not report lost revenue from favoring activities in the tax code."[114] In this subpart, we provide estimates for the remaining twenty seven states that collect an income tax on earnings, but that do not publish reliable estimates.[115]

---

108. This is the author's own count and analysis of the state reports. *See* Ghilarducci et al., *supra* note 7, at 8.

109. *Id.*

110. *Id.*

111. *Id.*

112. *Id.*

113. *Id.*

114. *See* Ghilarducci et al., *supra* note 7, at 8.

115. We follow the methodology used by authors in the following source: Lauren

We begin by calculating the mean contribution an average worker makes to their private account (see Table 4). Here, we also make the assumption that the typical employer contributes 2.1% of each worker's pay, while the typical worker contributes 6% of their salary.[116]

TABLE 4. ESTIMATED AVERAGE CONTRIBUTION PER WORKER IN 2014[117]

State	Annual Mean Wage (2014)	Estimated Employee Contribution	Estimated Employer Contribution	Estimated Contribution Per Worker*
Alabama	$40,879	6.0%	2.1%	$3,311
Arizona	$45,075	6.0%	2.1%	$3,651
Arkansas	$37,933	6.0%	2.1%	$3,073
Colorado	$49,727	6.0%	2.1%	$4,028
Connecticut	$55,274	6.0%	2.1%	$4,477
Delaware	$50,042	6.0%	2.1%	$4,053
Hawaii	$46,141	6.0%	2.1%	$3,737
Idaho	$39,457	6.0%	2.1%	$3,196
Illinois	$48,437	6.0%	2.1%	$3,923
Indiana	$41,428	6.0%	2.1%	$3,356
Kansas	$41,895	6.0%	2.1%	$3,393

Schmitz & Teresa Ghilarducci, *New York City and State Tax Expenditures for Defined Contribution Plans* (Schwartz Ctr. for Econ. Policy Analysis, Working Paper No. 2012-2, 2012), http://www.economicpolicyresearch.org/images/docs/research/retirement_security/WP%202012-2%20Lauren%20Schmitz.pdf. *See generally id.* at 1-2 (providing "Executive Summary" of authors' estimates for those states that do not publish dependable estimates).

116. *See* ALICIA H. MUNNELL & ANNIKA SUDÉN, COMING UP SHORT: THE CHALLENGE OF 401(K) PLANS 29-31, 58-61 (2004); *see also* David Wray, *401(k) Sponsors Increase Focus on Plan Investments*, PLAN SPONSOR COUNCIL OF AM. (Sept. 16, 2010), http://www.psca.org/401-k-sponsors-increase-focus-on-plan-investments.

117. Ghilarducci et al., *supra* note 7, at 9 (2014 annual mean wage calculated using Bureau of Labor Statistics (BLS) 2013 State Occupational Employment and Wage Estimates. Those estimates were converted into 2014 dollars with BLS Consumer Price Index (CPI) data. States are listed in alphabetical order.). *See Occupational Employment Statistics, May 2014 State Occupational Employment and Wage Estimates*, U.S. DEP'T OF LAB., BUREAU OF LAB. STATS., http://www.bls.gov/oes/current/oessrcst.htm (last visited Jan. 6, 2016); *see also CPI Detailed Report, Data for January 2015*, U.S. Dep't. of Lab., Bureau of Lab. Stats., www.bls.gov/cpi/cpid1501.pdf (last visited Jan. 6, 2016).

Louisiana	$40,137	6.0%	2.1%	$3,251
Maryland	$53,689	6.0%	2.1%	$,349
Mississippi	$36,643	6.0%	2.1%	$2,968
Missouri	$42,687	6.0%	2.1%	$3,458
Nebraska	$40,849	6.0%	2.1%	$3,309
New Jersey	$53,638	6.0%	2.1%	$4,345
New Mexico	$42,129	6.0%	2.1%	$3,412
North Dakota	$43,083	6.0%	2.1%	$3,490
Ohio	$43,856	6.0%	2.1%	$3,552
Oklahoma	$40,574	6.0%	2.1%	$3,287
Rhode Island	$49,595	6.0%	2.1%	$4,017
South Carolina	$39,609	6.0%	2.1%	$3,208
Utah	$43,419	6.0%	2.1%	$3,517
Vermont	$44,760	6.0%	2.1%	$3,626
Virginia	$50,916	6.0%	2.1%	$4,124
West Virginia	$38,146	6.0%	2.1%	$3,090

*Product of the sum of both contribution and the annual mean wage.

Table 4 provides estimates of the average retirement account contribution per worker in 2014 for states that do not publish reliable estimates. The estimated contribution per worker is expressed as a function of each state's mean wage, the average employee contribution to a private retirement account, and that of the employer, as a share of a worker's pay.

In Table 5 (below), we multiply the derived mean contributions by the median tax rate for the state. This is done in order to develop an estimate of the tax expenditure per employee or worker.

TABLE 5. 2014 ESTIMATED RETIREMENT TAX EXPENDITURE PER WORKER IN EACH STATE[118]

State	Estimated Contribution Per Worker	Median Statutory Tax Rate (2014)	Estimated Retirement Expenditure Per Worker (2014)
Alabama	$3,311	4.00%	$132
Arizona	$3,651	3.36%	$123
Arkansas	$3,073	4.00%	$123
Colorado	$4,028	4.63%	$186
Connecticut	$4,477	5.75%	$257
Delaware	$4,053	5.00%	$203
Hawaii	$3,737	7.40%	$277
Idaho	$3,196	5.10%	$163
Illinois	$3,923	5.00%	$196
Indiana	$3,356	3.40%	$114
Kansas	$3,393	3.75%	$127
Louisiana	$3,251	4.00%	$130
Maryland	$4,349	4.87%	$212
Mississippi	$2,968	4.00%	$119
Missouri	$3,458	3.75%	$130
Nebraska	$3,309	8.52%	$282
New Jersey	$4,345	4.51%	$196
New Mexico	$3,412	3.95%	$135
North Dakota	$3,490	2.52%	$88
Ohio	$3,552	3.22%	$114
Oklahoma	$3,287	3.00%	$99
Rhode Island	$4,017	4.75%	$191
South Carolina	$3,208	4.50%	$144
Utah	$3,517	5.00%	$176
Vermont	$3,626	7.80%	$283
Virginia	$4,124	4.00%	$165
West Virginia	$3,090	4.50%	$139

Table 5 provides our estimated retirement tax expenditure per worker for 2014. The states listed above are those that do not publish reliable estimates of their own. The state retirement tax

118. Ghilarducci et al., *supra* note 7, at 10.

expenditure per worker is expressed as a function of the previously estimated mean contribution per worker in each state and the state's median statutory tax rate.

It is important to note that by using the median tax rate, our figures, by and large, underestimate the per-worker tax expenditures for retirement. Retirement plan contributions swell significantly for workers in the highest income brackets.[119] Our undervaluing is evidenced by the fact that, in our calculation, only three states generate figures larger than what we observed published in their respective tax expenditure reports.[120]

In Table 6, we multiply the per-worker tax expenditure for retirement at the state level by the share of workers in the state who participate in an employer-provided or employer-sponsored retirement plan, and further by the total number of workers in the state in 2014.

TABLE 6. 2014 ESTIMATED TOTAL RETIREMENT TAX EXPENDITURE PER STATE[121]

State	Estimated Retirement Expenditure Per Worker (2014)	2014 Employment Level (Annual Average)	Fraction of Workers Who Participate in an Employer-Sponsored Retirement Plan (2012)	Estimated Total Retirement Tax Expenditure for 2014
Alabama	$132	2,013,000	0.42	$112,785,823
Arizona	$123	2,869,000	0.34	$121,002,756
Arkansas	$123	1,218,000	0.35	$51,800,446
Colorado	$186	2,670,000	0.42	$209,132,532
Connecticut	$257	1,773,000	0.45	$205,397,511
Delaware	$203	426,000	0.41	$35,398,530

119. *Id.* at 8.

120. This study ultimately gives priority to estimates derived from tax expenditure reports in the states that publish them. *Id.*

121. Participation rates are calculated from March 2013 Current Population Survey data for U.S. workers. Employment levels per state are from the Bureau of Labor Statistics. States are listed in alphabetical order. *Id.* at 11.

Hawaii	$277	639,000	0.46	$80,737,496
Idaho	$163	735,000	0.38	$45,988,492
Illinois	$196	6,065,000	0.43	$498,959,734
Indiana	$114	3,047,000	0.44	$152,352,803
Kansas	$127	1,434,000	0.43	$78,363,652
Louisiana	$130	2,021,000	0.35	$92,289,333
Maryland	$212	2,915,000	0.48	$293,558,700
Mississippi	$119	1,136,000	0.36	$48,414,308
Missouri	$130	2,857,000	0.41	$151,229,468
Nebraska	$282	984,000	0.41	$114,446,275
New Jersey	$196	4,223,000	0.42	$350,615,243
New Mexico	$135	851,000	0.28	$32,187,460
North Dakota	$88	409,000	0.43	$15,627,995
Ohio	$114	5,398,000	0.41	$256,043,750
Oklahoma	$99	1,693,000	0.38	$63,555,342
Rhode Island	$191	511,000	0.43	$41,846,348
South Carolina	$144	2,063,000	0.41	$121,189,494
Utah	$176	1,372,000	0.38	$92,421,733
Vermont	$283	333,000	0.40	$37,829,036
Virginia	$165	4,053,000	0.45	$303,532,120
West Virginia	$139	741,000	0.46	$47,690,959

Table 6 provides the estimated total cost, in 2014, of retirement tax expenditures for states that do not publish workable and reliable estimates of their own. Total state costs of retirement tax expenditures are expressed as a function of per-worker tax expenditure for retirement in each state, the share of works in the state who participate in an employer-provided or employer-sponsored retirement plan, and the total number of workers in the state for 2014.

C. DERIVING THE REFUNDABLE TAX CREDIT PER WORKER

To generate the per-worker refundable tax credits at the federal level, we divide the total tax expenditures for retirement from the JCT report by the yearly average employment level in the United States in 2014.[122]

122. *Id.* at *12.*

Federal Per Worker Retirement Tax Expenditure:

$$\frac{\text{2014 Total Tax Expenditures for Retirement}}{\text{2014 Annual Level of Employment}}$$

$$\frac{\$94{,}600{,}000{,}000}{146{,}305{,}000} = \$647$$

We follow a similar methodology to derive estimates for per-worker refundable tax credits at the state level (see Table 8).

Table 7 provides the latest annual figures we had available for our calculations in this Study:

TABLE 7. ANNUAL DATA UTILIZED TO DERIVE ESTIMATES FOR STATES[123]

State	Retirement Tax Expenditures*	Annual Employment Statistics
California	FY 2014-2015	2014
New York	FY 2015-2016	2014
Pennsylvania	FY 2014-2015	2014
Georgia	2014	2014
North Carolina	FY 2014-2015	2014
Michigan	FY 2014	2014
Massachusetts	FY 2015	2014
Wisconsin	2012	2012
Minnesota	FY 2014	2014
Kentucky	FY 2014	2014
Oregon	FY 2013-2015	2014
Iowa	2010	2010
Maine	FY 2014	2014
Montana	FY 2013	2013
District of Columbia	FY 2014	2014

*All retirement tax expenditure estimates derive from tax expenditure reports for the listed fiscal years.

For each state, we reviewed the latest tax expenditure reports available. The annual employment statistics used as

123. Figure used for Oregon is half of the estimate for the 2013-2015 period, given that Oregon's tax expenditure report is published every other year. *Id.*

denominators in each fraction was determined by the fiscal year of the report reviewed.

Table 8 illustrates the estimated refundable credit per state. The average refundable credit at the state level (for all forty-two states surveyed) is derived by dividing the total tax expenditures for retirement in all states by the total number of workers in all states. This calculation yields a mean (state level) refundable tax credit of $172.

TABLE 8. ESTIMATED REFUNDABLE TAX CREDITS (2014)[124]

State	State Tax Expenditures	Employment Level (2014)	Refundable Tax Credit
National	$94,600,000,000	146,305,000	$647
All States	$19,910,797,336	115,783,000	$172
Alabama	$112,785,823	2,013,000	$56
Arizona	$121,002,756	2,869,000	$42
Arkansas	$51,800,446	1,218,000	$43
California	$5,170,000,000	17,298,000	$299
Colorado	$209,132,532	2,670,000	$78
Connecticut	$205,397,511	1,773,000	$116
Delaware	$35,398,530	426,000	$83
Georgia	$711,000,000	4,371,000	$163
Hawaii	$80,737,496	639,000	$126
Idaho	$45,988,492	735,000	$63
Illinois	$498,959,734	6,065,000	$82
Indiana	$152,352,803	3,047,000	$50
Iowa	$530,000,000	1,633,000	$318
Kansas	$78,363,652	1,434,000	$55
Kentucky	$539,000,000	1,876,000	$287
Louisiana	$92,289,333	2,021,000	$46
Maine	$162,000,000	656,000	$247
Maryland	$293,558,700	2,915,000	$101
Massachusetts	$1,060,000,000	3,349,000	$317
Michigan	$946,000,000	4,408,000	$215
Minnesota	$881,000,000	2,855,000	$309
Mississippi	$48,414,308	1,136,000	$43
Missouri	$151,229,468	2,857,000	$53

124. Ghilarducci et al., *supra* note 7, at 13.

Montana	$159,000,000	500,000	$318
Nebraska	$114,446,275	984,000	$116
New Jersey	$350,615,243	4,223,000	$83
New Mexico	$32,187,460	851,000	$38
New York	$2,826,000,000	8,946,000	$316
North Carolina	$914,000,000	4,354,000	$210
North Dakota	$15,627,995	409,000	$38
Ohio	$256,043,750	5,398,000	$47
Oklahoma	$63,555,342	1,693,000	$38
Oregon	$411,000,000	1,801,000	$228
Pennsylvania	$1,100,300,000	6,018,000	$183
Rhode Island	$41,846,348	511,000	$82
South Carolina	$121,189,494	2,063,000	$59
Utah	$92,421,733	1,372,000	$67
Vermont	$37,829,036	333,000	$114
Virginia	$303,532,120	4,053,000	$75
West Virginia	$47,690,959	741,000	$64
Wisconsin	$730,100,000	2,920,000	$250
District of Columbia	$127,000,000	349,000	$364

Table 8 provides estimates of the size of the refundable tax credit for retirement in each of the forty-two states (including Washington, D.C.) that collect an income tax on earnings. This figure is expressed as the quotient of the total cost of retirement expenditures in a state and the total number of workers in that state.

D. CALCULATING NUMBER OF WORKERS ABLE TO TAKE ADVANTAGE OF A REFUNDABLE CREDIT

To estimate the number of workers in each state who would benefit from the conversion of retirement tax expenditures into refundable tax credits, we first calculate the fraction of workers who do not participate in a retirement plan at work (or through their union) in each state.[125] We then multiply this fraction by the 2014 annual average employment level for each state, in order

125. Participation in a retirement plan at work requires the employer to offer a retirement plan to their workers and for workers to be eligible and to choose to participate in such a plan. *See* John Turner et al., *Defining Participation in Defined Contribution Pension Plans*, BUREAU OF LAB. STATS., MONTHLY LAB. REV. 36, 36-37, 42 (Aug. 2003), http://www.bls.gov/opub/mlr/2003/08/art3full.pdf.

to arrive at the number of workers who are not participating in a retirement plan at work in each state and who are, therefore, not benefitting from the current retirement tax incentive. In other words, these are the workers who stand to benefit from converting retirement tax expenditures into refundable tax credits (see Table 9).

TABLE 9. NUMBER OF WORKERS WHO STAND TO BENEFIT FROM REFUNDABLE TAX CREDITS 126

State	Fraction of Workers Who do Not Participate in an Employer-Sponsored Retirement Plan (2012)	2014 Employment Level (Annual Average)	Number of Workers Who do Not Participate in an Employer-Sponsored Retirement Plan as of 2014
United States (National)	0.60	146,305,000	87,783,000
Alabama	0.58	2,013,000	1,161,452
Arizona	0.66	2,869,000	1,882,631
Arkansas	0.65	1,218,000	796,525
California	0.64	17,298,000	11,051,443
Colorado	0.58	2,670,000	1,548,600
Connecticut	0.55	1,773,000	975,150
Delaware	0.59	426,000	251,340
Georgia	0.59	4,371,000	2,587,337
Hawaii	0.54	639,000	347,076
Idaho	0.62	735,000	452,855
Illinois	0.58	6,065,000	3,521,499
Indiana	0.56	3,047,000	1,711,644
Iowa	0.54	1,633,000	880,627
Kansas	0.57	1,434,000	818,203

126. Participation rates are calculated from March 2013 Current Population Survey data for U.S. workers. Employment levels per state are from the Bureau of Labor Statistics. States are sorted by decreasing the size of their employment level. *See* Ghilarducci et al., *supra* note 7, at 15.

Kentucky	0.61	1,876,000	1,150,307
Louisiana	0.65	2,021,000	1,311,329
Maine	0.59	656,000	388,252
Maryland	0.52	2,915,000	1,528,903
Massachusetts	0.56	3,349,000	1,871,068
Michigan	0.59	4,408,000	2,617,841
Minnesota	0.53	2,855,000	1,509,685
Mississippi	0.64	1,136,000	728,2070
Missouri	0.59	2,857,000	1,690,669
Montana	0.62	500,000	311,404
Nebraska	0.59	984,000	578,024
New Jersey	0.58	4,223,000	2,433,660
New Mexico	0.72	851,000	612,203
New York	0.59	8,946,000	5,307,365
North Carolina	0.63	4,354,000	2,747,885
North Dakota	0.57	409,000	231,292
Ohio	0.59	5,398,000	3,159,542
Oklahoma	0.62	1,693,000	1,048,392
Oregon	0.60	1,801,000	1,088,922
Pennsylvania	0.56	6,018,000	3,358,076
Rhode Island	0.57	511,000	291,700
South Carolina	0.59	2,063,000	1,223,594
Utah	0.62	1,372,000	846,416
Vermont	0.60	333,000	199,230
Virginia	0.55	4,053,000	2,213,049
West Virginia	0.54	741,000	398,006
Wisconsin	0.54	2,920,000	1,588,315
District of Columbia	0.50	349,000	175,737

Table 9 estimates the total number of workers, in each state, who stand to benefit from a retirement credit. At the federal level, 87.7 million workers stand to benefit from the conversion of the deduction to a credit. The majority of the beneficiaries, 68.6 million, are from states that collect an income tax on earnings. These 68.6 million workers will also qualify for state credits, which would supplement the federal credit of $647.