X. The Great Debate About the Public Sector

How Policymakers and State Pension Funds Can Help Prevent the Coming Retirement Income Crisis

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Abstract

The United States is on the brink of a retirement income crisis that will have severe consequences for future retirees, workers, and all levels of government if left unresolved. Analysis in this paper reveals that 43% of U.S. workers currently ages 25–64 will not have the adequate resources they need to retire with dignity at age 65. We propose that state legislatures mitigate this shortfall by giving workers who lack access to a retirement plan through work the opportunity to invest in a professionally managed, portable, individual cash-balance account with the state pension fund. At retirement, workers would have the option of converting their savings into an annuity—a guaranteed stream of income for life— to supplement other benefits.

Introduction

The financial security of the next generation of retirees is at risk. The Great Recession has battered retirement account balances, while lost jobs and mounting personal debt have made it harder or impossible for workers to save. Combined with the decline in the traditional defined benefit system and political threats to Social Security, the retirement picture is bleak for the majority of today's workers. The United States is on the brink of a serious retirement income crisis that could have severe consequences for future retirees, their families, and the next generation of workers, who will be left with the tab when federal, state, and local governments are forced to expand costly safety-net programs to accommodate the millions of elderly Americans who will be living in poverty.

Traditionally, American retirement income has been based on a pyramid of layered income sources: the bedrock and the base of retirement income is Social Security, the middle-tier is employer-sponsored retirement plans, and at the top of the pyramid is personal savings. Each layer is a different size for every person—low-income workers have a much larger Social Security base and fewer personal assets than higher-income workers. This metaphor makes it clear that although Social Security was designed to insure only a portion of a retiree's income, it often makes up a majority of that income. However, its benefits average only $1,177 a month, too little to ensure a decent standard of living; additional savings from other sources are necessary for a comfortable retirement.

For years, many workers have relied on employer-sponsored retirement plans to supplement Social Security in retirement. But the employer-sponsored retirement system is on the decline on several fronts; in fact, most private employers do not offer any type of retirement plan at all. Medium and small firms are least likely to sponsor any kind of plan[1] because retirement plans, like health insurance, are a voluntary expense

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and because small firms have less revenue and managerial expertise to navigate regulations and administrative burden. As a result, only 51% of private sector employees worked for an employer who sponsored a retirement plan in 2010, and only 42% of private sector workers reported actively participating in an employer-sponsored plan.[2]

Even if workers do have a retirement plan through their employer, these plans have shifted from defined benefit (DB) plans, where workers were guaranteed a set payment for life based on years of service and salary, to defined contribution (DC) or 401(k)-type plans. DC plans shift all the risks and costs of retirement onto the shoulders of workers: they charge exorbitant fees that eat away at returns[3], require workers to choose from a bewildering and opaque menu of investment options, and may be exhausted before the end of a worker's life.

All workers, whether or not they are covered by a 401(k)-style plan or an individual retirement account (IRA), need a financial institution that will administer their retirement savings in an efficient, low-cost way that earns a secure and sufficient rate of return and preserves savings for retirement. The policy challenge, then, is not just to expand access to existing individual account–based retirement plans, but to address the critical failures in the existing system to meet three key criteria for retirement income security: (1) adequate contributions; (2) low-cost, quality investment vehicles that are professionally managed and, ideally, shield individual workers from investment and market risks; and (3) a lifetime guaranteed stream of income at retirement.

This study proposes a two-part solution to improve workers' retirement income security: one, have states provide access for private sector workers to functional retirement plans that include a guaranteed return on contributions and access to low-cost annuities, and two, replace the tax deductions for retirement contributions to defined contribution plans with a revenue-neutral tax credit so that each worker receives a yearly boost in retirement savings. State legislatures could create such accounts and then take advantage of the already existing public pension infrastructure to invest the funds.

The second section of this paper provides the most up-to-date estimates of the retirement readiness of U.S. workers by projecting what their retirement income will be at age 65 and comparing it to the federal poverty threshold—a minimum benchmark for adequacy—to evaluate their future financial standing. The third section details why tweaking our current retirement system does not meet all the criteria for a functioning pension system. The fourth section outlines a policy proposal for state-based guaranteed retirement accounts, and the fifth describes how this policy solution is currently being proposed for implementation in California. The sixth section provides conclusions.

The Current State of U.S. Workers' Retirement Income Prospects

The amount of savings needed to retire comfortably varies from person to person and depends on personal characteristics, health status, life expectancy, current financial situation, and preferences for consumption. As such, this study does not look at retirement readiness from the perspective of maintaining pre-retirement standards of living but uses a more absolute measure of adequacy—the federal poverty threshold—to calculate the proportion of future elderly who will be living on the margins of society. Unable to gain a secure footing financially, these retirees will be dependent on the public and younger generations for support.

To assess the severity of the coming crisis in the United States, we projected the income stream available to workers at age 65 who are currently ages 25–64 and live in the United States.[4] The Survey of Income and Program Participation (SIPP) data offers a comprehensive listing of survey respondents' financial assets, including the value of their bank accounts, bonds and securities, savings bonds, stocks and mutual funds, life insurance policies, Individual Retirement/Keogh accounts, DC accounts, real estate holdings, home equity, and business equity. There is also information on total debt owed. The data can be used to compute a projected stream of income in retirement from workers' net worth. This, in addition to a projection of Social Security benefits and income from retirement savings, gives a complete picture of the income available to workers when they retire at age 65.[5] To assess whether workers are financially prepared to retire, their total future income is compared to 200% of the U.S. Census Bureau's elderly federal poverty threshold for individuals, or $20,578 in 2009[6] (detailed methodology can be found in the appendix).

Table 1 shows the percentage of U.S. workers ages 25–64 who will be severely poor (at or below 50% of the poverty threshold, poor (51%–100% of the poverty threshold) or near poor (101%–200% of the poverty threshold) and those who will have adequate resources in retirement (201%–300% and above 300% of the poverty threshold) when they retire at age 65. Outcomes are projected by age group; workers who fall below 200% of the poverty threshold are considered at risk of not having the assets needed to prevent them from being poor when they retire at age 65.

TABLE 1
Retirement Readiness of U.S. Workers by Age Category

Ratio of Projected Retirement Income to Poverty Threshold	Ages 25–44	Ages 45–54	Ages 55–64
Less than or equal to 50%	6.92%	3.79%	3.35%
51%–100%	14.84%	9.53%	6.74%
101%–200%	30.75%	21.28%	21.13%
201%–300%	13.63%	18.19%	17.71%
Greater than 300%	33.86%	47.20%	51.07%
Total	100%	100%	100%
Percentage of workers at or below 200% of poverty threshold	52.51%	34.60%	31.22%

Source: 2008 Survey of Income and Program Participation (SIPP) Panel; data from 2009.
Note: Totals may not add up due to rounding. The U.S. Census Bureau's poverty threshold for individuals ages 65 and over was $10,289 in 2009. See the appendix for the full methodology behind these calculations.

A striking 52.51% of young workers ages 25–44 will struggle to make ends meet in retirement. This means their assets, including all of their savings for retirement in employer-sponsored plans and Social Security built up over a lifetime, will not be sufficient to keep them above 200% of the elderly federal poverty level. For workers in the prime of their careers, or those ages 45–54, 34.6% will struggle to make ends meet in retirement. Younger workers face a future that is bleaker than their older counterparts, but even for workers nearing retirement, or those ages 55–64, a significant number (31.22%) will not have the savings needed to maintain their current standard of living. The results for this oldest age group are especially troubling because many of those workers no longer have the time or earnings potential to build up the savings they need to retire comfortably. Overall, we find that 43% of all workers ages 24–64 will not have the adequate resources they need to retire with dignity at age 65.

Table 2 breaks down the retirement readiness of U.S. workers by personal income category. The risk of being poor or near poor in retirement is strongly correlated with wage level; nearly 79% of workers in the bottom 25% of the income distribution will be poor or near poor in retirement. However, a significant number of middle- and upper-class workers could also face severe hardship in retirement. Of workers earning $24,001–$65,004, 36.55% are at risk, and 5.01% of workers who are in the top 25% of the income distribution (earning more than $65,005 per year) are at risk of being poor in retirement.

Table 3 shows that although workers who participate in a retirement plan are at a lower risk of being poor in retirement than those who do not save for retirement, workers whose primary retirement plan is a DC plan fare significantly worse than those whose primary plan is a DB plan. Of workers whose primary plan is a DC plan, 29.34% will be poor or near poor compared to only 7.45% of DB plan participants. Needless to say, workers with no employer-sponsored plan are at the highest risk of having inadequate resources; a shocking 67.53% are expected to live on $20,578 or less in retirement.

TABLE 2
Retirement Readiness of US Workers by Personal Income Category

Ratio of Projected Retirement Income to Poverty Threshold	Bottom 25% ($24,000/yr or less)	Middle 50% ($24,001–$65,004)	Top 25% ($65,005 and above)
Less than or equal to 50%	14.73%	1.28%	0.80%
51%–100%	36.07%	1.07%	0.53%
101%–200%	28.02%	34.20%	3.68%
201%–300%	10.32%	20.26%	12.94%
Greater than 300%	10.85%	43.18%	82.05%
Total	100%	100%	100%
Percentage of workers at or below 200% of poverty threshold	78.82%	36.55%	5.01%

Source: 2008 Survey of Income and Program Participation (SIPP) Panel; data from 2009.
Note: Totals may not add up due to rounding. Income distribution thresholds were calculated from the sample of 25–64 year-old workers. Low-, middle-, and high-income categories are defined as the bottom 25th, middle 50th, and top 25th percentiles of the total personal earnings distribution, as calculated from the SIPP; see appendix for further details.

TABLE 3
Retirement Readiness of US Workers by Primary Retirement Plan Type

Ratio of Projected Retirement Income to Poverty Threshold	Defined Benefit	Defined Contribution	No Primary Plan
Less than or equal to 50%	0.43%	0.50%	10.63%
51%–100%	0.74%	3.40%	21.97%
101%–200%	6.28%	25.44%	34.93%
201%–300%	11.23%	22.35%	13.13%
Greater than 300%	81.33%	48.32%	19.33%
Total	100%	100%	100%
Percentage of workers at or below 200% of poverty threshold	7.45%	29.34%	67.53%

Source: 2008 Survey of Income and Program Participation (SIPP) Panel; data from 2009.
Note: Totals may not add up due to rounding. See Appendix for full methodology and definitions of primary plan type.

Working past age 65 may improve these findings to a degree; however, the marginal increases gained through higher Social Security benefits or the decreased savings needed over a shorter period of retirement cannot make up for a lack of asset accumulation over a person's lifetime. A report by the Employment Benefits Research Institute (EBRI) estimates that among baby boomer and Generation X households, those in the bottom 25% of the pre-retirement income distribution would need to defer retirement age to 84 before 90% of households would have a 50% probability of having adequate retirement income (VanDerhei and Copeland 2011:1). The middle 50% would need to defer retirement until age 75 to reach the same threshold (VanDerhei and Copeland 2001:14, Figure 8).

Recent analysis also shows that poverty risk typically increases as retirees get older. The oldest retirees, or those over age 80, are 30% more likely to be poor than the "young old" (ages 65–69).[7] Engelhardt and Gruber (2004) found that depressed earnings and asset values and increases in health care costs will boost future old age poverty rates. Therefore, the predictions of this report are optimistic because forecasted poverty rates are based on projected retirement income for the very "youngest" old, or those age 65.

Why Tweaking the Current System Isn't Enough

These findings suggest that the erosion of household savings and the decline in sponsorship and proliferation of 401(k)-type plans threaten to jeopardize the retirement income security of U.S. workers. The American retirement system is in desperate need of bold reforms that will ensure that all Americans have access to an affordable retirement plan that meets their needs.

A system in which millions of workers carry and individually manage their own accounts is inherently inefficient because it generates high administrative costs that are ultimately absorbed by workers while also exposing them to a host of risks, including the risk of outliving their funds and/or the risk of losing funds in a bear market. Moreover, individual investors have been generally found to underperform standard benchmarks, sell winning investments while holding losing investments, be heavily influenced by limited attention and past return performance in their purchase decisions, and hold undiversified stock portfolios— behaviors which all adversely affect their financial returns and that can only be partially mitigated through careful plan design (Barber and Odean 2011). Thus, even if we reform the private 401(k) system, applying Band-Aid solutions such as stricter regulations on brokers, disclosure of 401(k) fees, or requiring plan sponsors to offer more lower-cost index funds, these fixes would only be marginal. Fees would still remain high, and workers will be forced to shoulder most of the risks.

On the other hand, a functioning retirement system would allow workers to save consistently and invest in financial vehicles that charge low fees, minimize investment and market risks while providing steady returns, and, at retirement, offer low-cost annuities. Criteria for a functioning pension system are discussed by the Government Accountability Office (2009) and detailed by Retirement USA (R-USA), a coalition of think tanks, unions, advocacy groups, and academics. R-USA identifies 12 core principles for a quality pension system:

1. **Universal coverage**. Every worker should be covered by a retirement plan that supplements Social Security.
2. **Secure retirement**. Workers should be able to count on a steady lifetime income stream.
3. **Adequate income**. The average worker should have sufficient income, together with Social Security, to maintain a reasonable standard of living in retirement. (Author's note: This is often defined as 70%–100% of pre-retirement earnings.)
4. **Shared responsibility**. Employers, employees, and the government should each contribute towards a worker's retirement account.
5. **Required contributions**. Employers and employees should be required to contribute a specified percentage of pay, and the government should subsidize the contributions of lower-income workers.
6. **Pooled assets**. Contributions to the system should be pooled and professionally managed to minimize costs and financial risks.
7. **Payouts only at retirement**. No withdrawals or loans should be permitted before retirement, except for permanent disability.
8. **Lifetime payouts**. Benefits should be paid out over the lifetime of retirees and any surviving spouses, domestic partners, and former spouses.
9. **Portable benefits**. Benefits should be portable when workers change jobs.
10. **Voluntary savings**. Additional voluntary contributions should be permitted, with reasonable limits for tax-favored contributions.
11. **Efficient and transparent administration**. The system should be administered by a governmental agency or by private, non-profit institutions that are efficient, transparent, and governed by boards of trustees that include employer, employee, and retiree representatives.
12. **Effective oversight**. The system should be administered by a governmental agency dedicated solely to retirement security.

The most efficient way to meet the above criteria for workers who do not have access to an employer-sponsored pension is through a publicly sponsored retirement savings plan. Despite the widely recognized problem of high and hidden fees in commercial retirement accounts, the current administration is

silent about how workers could get improved access to a low-cost investment pool. In the absence of adequate federal reform, and in the face of declining retirement plan coverage in the workplace, we propose that states help their residents save for retirement.

Ghilarducci (2007, 2008) has proposed a national Guaranteed Retirement Account (GRA), which combines the best features of DB and DC plans, including guaranteed retirement benefits that last a lifetime, low administrative costs, and steady contributions. It is essentially a portable, publicly sponsored cash-balance plan with automatic contributions through payroll deductions; pooled, professionally managed funds; a guaranteed rate of return; and a strong annuitization component. Retirement benefits would be tied to contributions rather than final pay, and the guaranteed rate of return should be set high enough to be attractive to workers but low enough to pose very little risk to the guarantor. The GRA is the only reform proposal that fulfills each of the 12 core requirements outlined above.

State-Level High-Performance Pensions for All Workers

Given the current state of retirement income security in the United States, we propose that state governments offer all workers a voluntary, low-fee, low-risk, public option retirement plan to help boost savings and the availability of secure resources in retirement. The best policy would be an individual account that would be portable between employers, in which workers and/or employers would contribute at least 5% of pay into an account guaranteed to earn at least 3% above inflation. At retirement, workers would have the option of converting their savings into an annuity, a guaranteed stream of income for life. This is not a radical idea: TIAA-CREF, a non-profit investment firm, and one of the largest in the country, has offered this type of fund to non-profit workers and teachers for more than 80 years.

These pension contributions would be pooled and invested professionally with an emphasis on prudent and low-risk, long-term gains, shielding workers from the high fees and poor investment choices they face when they are left to fend for themselves in the retail market. Most important, these accounts would be portable; the account would stay with the worker from job to job. Though these funds would be kept in a separate investment pool from public sector funds, having private sector workers invested in the same system would shore up public support for state public pension funds. The biggest beneficiaries of this proposal would be workers who currently lack access to any type of retirement account except an IRA—accounts that are plagued by even higher fees than employer-sponsored 401(k) accounts and substandard financial advice.

State legislatures could create such accounts by taking advantage of the already existing public pension infrastructure to invest the funds. States, through their employee pension plans, sponsor excellent financial institutions that, on a not-for-profit basis, get the highest returns for the least cost. These funds pool the market and longevity risks of a large number of individuals and have the best money managers, and their bargaining power lowers Wall Street fees. Public pension fund traders are also more disciplined and have a longer-term view, which stabilizes markets and protects individuals from swings in asset prices. In short, because they pool longevity risk, can offer a well-diversified portfolio over time, and are professionally managed, DB plans can deliver the same level of benefits as DC plans at a lower cost—46% less, to be exact (Almeida and Fornia 2008).

Participants would earn a fixed rate of return—initially set at 3% (adjusted for inflation), guaranteed by the public pension fund, the state, or a private insurer who would appropriately capitalize the risk. A board of trustees could periodically adjust the guarantee within a range of 2%–4%. Investment earnings in excess of the guarantee would be deposited into a rainy day fund. With widespread participation and regular contributions, this guarantee would pose very little risk for the insuring institution.

A government guarantee of a 3% real rate of return for state GRAs is not only attractive to workers, but it also avoids putting the government at significant risk of having to make up the difference with tax revenue. Monte Carlo simulations show that this prediction holds up whether the government invests retirement contributions in a balanced portfolio of stocks including small stock, corporate bonds, and Treasury securities, or in a portfolio in which those asset classes are weighted by their total investable value (Stubbs 2010). In fact, there has never been a 40-year period in which these portfolios yield an average annual real return of less than 3.5%—a rate that is adequate to cover a 3% guaranteed return on contributions plus administrative expenses. The negligible risk the government would bear in order to back this guarantee needs

to be set against the enormous positive economic returns from improved retirement income security and, conversely, the potential fiscal consequences of a large percentage of workers entering retirement without sufficient resources to meet basic needs.

Participants would begin collecting retirement benefits at the same time as Social Security, and therefore no earlier than the Social Security early retirement age. Funds cannot be accessed before retirement for any reason other than death or disability. By minimizing the fund's liquidity requirements, this feature also enables the fund to offer a guaranteed rate of return. Account balances are converted to inflation-indexed annuities upon retirement to ensure that workers do not run out of retirement income while they are alive. However, individuals can opt to take a partial lump sum equal to 10% of their account balance or $10,000 (whichever is higher) or opt for survivor benefits in exchange for a lower monthly check. Account balances of participants who die before retiring will be transferred to the state GRAs of designated beneficiaries; those who die after retiring can bequeath half their final account balance after benefits received—payable as a lump sum or transferred to another state GRA.

What would be the projected replacement rate from a state GRA in retirement? A full-time worker who works 40 years and contributes 5% of earnings would, if retiring at age 65, have a benefit equal to roughly 20% of pre-retirement income, adjusted for inflation, and assuming a 3% real rate of return on contributions and on the worker's annuity. This, in addition to Social Security benefits, would replace 67.7% of a low-wage worker's pre-retirement income and 56.8% of a middle-wage worker's income.[8]

In terms of costs, since the proposal would take advantage of existing infrastructure, there would be only some minimal start-up costs for employers and the state to implement the new system. However, if the states and/or employers wanted to defray these costs or match a portion of workers' contributions, they could without spending another dime. Federal and state governments effectively spend billions of dollars on annual tax deductions for contributions to 401(k) and other individual retirement accounts. In 2012 alone, the federal government is expected to give up $100.3 billion in tax revenue to subsidize contributions to these accounts.[9] Because this subsidy is in the form of a tax deduction rather than a tax credit, these expenditures are highly regressive. Taxpayers in the highest income brackets, who are likely to save without government incentives, receive the largest tax break. For higher income workers, current tax policy provides a benefit worth more than $7,000 per year, while a minimum wage worker who contributes the maximum would receive no benefit from the deduction.

Because most state and local tax codes allow the same deductions as federal tax law, most states also subsidize these accounts as well. If a state were to eliminate or cap this tax deduction, it could use these funds to contribute to or match workers' contributions to GRAs. For example, California's tax expenditures for 401(k), IRAs, and Keogh retirement accounts in fiscal year 2009–2010 were $2.3 billion. If California converted these tax deductions into a flat tax credit, each worker would receive $145 a year to contribute into the retirement account of his/her choice. That might not sound like much, but it would be seed money for workers who need it most—those who currently have little or no retirement savings.

California's Golden State Pension Plan Proposal

Prominent California policymakers and government officials are advocating swift action to start the work of restoring retirement security to all workers within the state. Recent remarks by California Treasurer Bill Lockyer highlighted both the need for public sector pension reform and the political advantage of linking these reforms to the demand for a meaningful retirement security option for California private sector workers.[10] Lockyer lauded the state GRA plan proposed by Ghilarducci here and also published in a recent California-specific report, *Meeting California's Retirement Security Challenge* (October 2011), by the UC Berkeley Center for Labor Research. As a result, California Senator Kevin de León is sponsoring a bill that would create a Personal Pension Plan program that would pool employee and employer contributions into a professionally managed retirement fund administered by the California Public Employees' Retirement System (CalPERS).

The bill would establish the Golden State Retirement Savings Trust Act, which would create the Golden State Retirement Savings Trust administered by the Golden State Retirement Savings Investment Board, under the state treasurer's office. The board would be chaired by the California state treasurer and

would also consist of a director of finance, an individual with expertise in retirement savings and investments appointed by the Senate Committee on Rules; a small business representative appointed by the governor; and an employee representative appointed by the speaker of the assembly. The board would conduct a market analysis, and if this legislative proposal is determined to be self-sustaining, develop a Personal Pension Plan program that offers cash-balance pension plans to private sector California workers and that features voluntary, low-cost, and portable retirement savings options.

Eligible employers, or any person or entity engaged in a for-profit or non-profit enterprise (excluding any local or state government employers) that have five or more employees would be required to enroll eligible employees into the Personal Pension Plan program offered by the Golden State Retirement Savings Trust and use their payroll system to directly deposit a portion of employee earnings into the retirement savings plan or offer another employer-sponsored retirement plan, such as a 401(k) or other defined benefit plan. Employees that do not want to contribute a portion of their salary to retirement savings may opt out at any time.

The employer requirement would be phased in, starting with employers with 100 employees or more offering the retirement plans three months after the program is open for enrollment. After six months, the requirement would apply to employers with more than 50 employees, and after nine months, it would apply to employers with five or more eligible employees. If an employer fails to offer a retirement savings plan by the applicable deadline, the Franchise Tax Board would administer and collect a penalty of $100 per employee after a 90-day grace period. All employers participating in the Personal Pension Plan program would be provided with the protection of legal indemnity from fiduciary responsibility.

The employee default savings amount would be set at 3%, but the board has authorization to adjust the amount to between 2%–4% and vary the amount according to the length of time the employee has contributed to the Personal Pension Plan program. The employer would also be required to contribute a minimum of 1% of an employee's annual salary for the employee's first year of participation and a minimum of 2% in the second and subsequent years of the employee's participation.

Senator De León will introduce the bill in the spring of 2012 and hearings will be held to review the proposed legislation. If passed, the legislation would enable the currently 7 million private sector workers in California who lack access to any retirement plan at work to participate in the Personal Pension Plan program.

Conclusion

The consequences of declining sponsorship and the erosion of household savings are higher rates of poverty and less ability for workers to maintain their standard of living in retirement. Workers of all ages and income groups in the United States are affected. Seventy-nine percent of low-income workers, 37% of middle income workers, and 5% of high income workers will be poor or near poor at age 65. These findings suggest that the erosion of household savings and the decline in sponsorship and proliferation of 401(k)-type plans threaten to jeopardize the retirement security of U.S. residents. The result is a greater number of retirees living in a chronic state of want due to severe downward pressure on their living standards when they retire.

Universal access to professionally managed pension funds would calm down the stock market, stabilize retiree income, raise savings rates, and make the tax code fairer and a lot more efficient, while giving much-needed coverage to more than 60 million American workers who currently have no Social Security supplement. "Opening the window" for private sector workers to state pension funds would help shore up support for these funds while allowing private sector workers to reap some of the same benefits enjoyed by public sector workers.

A legislative bill that proposes to expand retirement security to private sector workers through the public pension system is already under consideration in California and could raise savings by as much as $6.6 billion in the first year alone if the 7 million workers that are currently not participating in an employer-sponsored retirement plan joined and contributed 3% of their earnings. Down the road, local economies, in turn, would benefit from the regular expenditures these future retirees will make on food, medical services, transportation, and other goods (Boivie and Almeida 2009).

Existing financial companies that charge high fees would have to step up their game in face of more competition, but that would be a good thing. 401(k) and IRA investors, and all of us, should demand swift and deliberate action to obtain the retirement plan options and choices we need to protect our financial futures.

Appendix: Retirement Income Projection Methodology

For the purposes of this study, we use data from waves 3 and 4 of the 2008 panel of the Survey of Income and Program Participation (SIPP). Specifically, we use data from the Retirement Expectations module in wave 3 of the 2008 SIPP panel, as well as from the Assets and Liabilities, Real Estate, Stocks and Mutual Funds, Value of Business, Rental Properties, Interest Earning, and Other Financial Assets modules in wave 4 of the 2008 SIPP panel. The data for these modules was collected in the fourth reference month for each rotation (from April 2009–July 2009 for wave 3, and August 2009–November 2009 for wave 4).

Because waves 3 and 4 are four months apart, their samples are not identical. Wave 3 contains 95,252 observations while wave 4 contains 91,219 observations for the United States. The merged data set has 84,994 observations. Since the merged data set drops a number of observations, it does not exactly mimic population numbers in the general population. Due to attrition in the sample, we use weights from the fourth reference month of wave 4 data for the merged sample because the wave 4 sample reflects the population that remained in the sample as of November 2009.

The working sample is limited to U.S. civilian residents who are ages 25–64, who stated that they worked at some point in the reference period (the previous four months), and who had positive earnings; it excludes unpaid family workers.

The worker's most important retirement plan was deemed to be a DB plan if he/she answered that the plan was based on earnings and years on the job, or if it was a cash-balance plan, or if they stated that the plan benefits would be increased or decreased because of participation in the Social Security program. Alternatively, the most important plan was determined to be a DC plan if it is an individual account plan, if it is a 401(k) plan, or, for those who had only one plan, if they stated that they could choose the investments in the plan, if they could take (or had already taken) out a loan against the plan, or if the contributions to the plan are tax deferred *and* employer contributions depend fully or in part on the employee's contributions. The latter characteristics were asked about all retirement plans, not just the primary plan; therefore, they could be used only to ascertain the nature of the most important retirement plan for those who had only one retirement plan.

The SIPP sample gives us a snapshot of earnings and assets for workers aged 25–64 in 2009. Assets include non-interest-earning checking accounts (jointly owned and solely owned), interest-earning accounts (jointly owned and solely owned), bonds and securities (jointly owned and solely owned), savings bonds (solely owned), equity in stocks and mutual funds (jointly owned and solely owned), cash value of life insurance policies, equity in other financial investments, market value of Individual Retirement/Keogh accounts, the value of solely owned DC accounts, the equity in rental properties not on the land of residence jointly owned and solely owned, home equity (adjusted for share of ownership), mobile home (adjusted for share of ownership), other real estate (adjusted for share of ownership), business equity (adjusted for share of ownership), and money owed to the respondent for the sale of a business. We then subtract the debt owed jointly and solely for loans, store bills/credit cards, and other debt. This gives us a measure of current net worth.

We decided not to forecast earnings growth and growth in assets and debt by choosing among competing macroeconomic forecasting models; instead, we based our estimates of earnings growth and growth in assets and debt on the recent past. In order to forecast final net worth at age 65, we run a regression of current net worth on social and economic characteristics including age interacted with an indicator for three age categories: 25–44, 45–54, 55–64. The estimated coefficient on age is the amount that net worth increases each year a person ages; this coefficient differs for each of the age categories. The value of the coefficient divided by the average value of net worth for each age category yields the yearly growth rate of net worth for a typical worker following the age profile of net worth. We then apply this yearly growth rate to current net worth (plus a 2.5% yearly inflation adjustment) for each year a person lives until he/she reaches

age 65. The growth rates we get are 6% for 25–44 year-old workers, 4.3% for 45–54 year-old workers, and 3.9% for 55–64 year-old workers. For workers whose current net worth is zero or negative, final net worth is calculated as $1 times the growth rate plus the current net worth (if we applied the growth rate to current net worth, their final net worth would get progressively more negative).

We then convert the value of final net worth into a monthly annuity. The annuity formula for a single life annuity (no beneficiaries, and no leftover value upon death) is

$$P = R\left[\frac{1-(1+i)^{-n}}{i}\right] = R \cdot a_{\overline{n}|i}$$

where P is the present value of the annuity, R is the periodic annuity payment, i is the interest rate, and n is the number of payment periods. We use the Fidelity Guaranteed Income Calculator to derive the annuity value of different levels of future net worth for a male (and separately, for a female) age 65 who was born on June 1, 1944. This calculation is done for males and females separately because of their different life expectancies (different value of n). Based on the R we get from the Fidelity Guaranteed Income Calculator, we calculate the value of a for males and females, which is 158.98 for males and 169.49 for females, for a present value of $100,000. According to the U.S. Center for Disease Control (publication in 2010 using 2007 data), life expectancy at age 65 for males is 17.2 years, while for females it is 19.9 years. Because the life expectancy estimates used by the Fidelity Guaranteed Income Calculator are not disclosed, we calculate the annual rate of return on the annuities offered using our life expectancy estimates. These yield annual interest rates in the range of 3.17%–3.66% depending on gender, as of July 21, 2011. In reality, the annual interest rate offered by commercial annuity providers is lower than this estimate for a number of reasons. One, annuity companies assume longer life expectancy because of adverse selection (they recognize that individuals who want to buy an annuity know they are likely to live longer than the average individual). Two, a commercial annuity provider is a for-profit entity, and so it will require a sales or load fee. It is also worth noting that the annual interest rate on annuities is not inflation protected, meaning that the real rate of return will fall as a person ages.

We calculate the income stream from a DB plan as final earnings * 1.5% * the number of years of tenure through retirement (tenure so far + years to retirement). This is divided by 12 to convert it to a monthly stream of income. We assume that all workers who currently participate in a DB plan will remain in such a plan until retirement—which is optimistic.

In order to forecast final earnings, we run a regression of current earnings on social and economic characteristics, including age interacted with an indicator for three age categories: 25–44, 45–54, and 55–64. The estimated coefficient on age is the amount that earnings increase each year a person ages, and this coefficient differs for each of the age categories. Moreover, the value of the coefficient divided by the average value of earnings for each age category yields the yearly growth rate of earnings for a typical worker following the age profile of earnings. We then apply this yearly growth rate to current earnings (plus a 2.5% yearly inflation adjustment) for each year a person lives until he/she reaches age 65. The earnings growth rates we get are 3.2% for 25–44 year-old workers, 3% for 45–54 year-old workers, and 2.8% for 55–64 year-old workers.

We also compute a forecast of monthly Social Security benefits for each respondent. We use the worker's final monthly earnings to construct the average indexed monthly earnings (AIME). This assumes that the wage-indexed earnings for the 35 highest-earning years all yielded the same value—the final earnings. This assumption overstates workers' AIME and therefore yields higher Social Security benefits than would actually accrue. The primary insurance amount (PIA) is calculated using the 2009 bend points, where PIA = 0.9 * (AIME between $1 and $744) + 0.32 * (AIME between $744 and $4483) + 0.15 * (AIME above $4483). The PIA is the Social Security monthly benefit.

The forecast total monthly income in retirement is the sum of the monthly annuity, the monthly DB income stream (if the respondent's primary plan is a DB plan), and the Social Security monthly benefit, less $100 for Part B Medicare premium obligations. This constructed measure of monthly income upon

retirement is then compared to a forecast poverty threshold upon retirement for U.S. workers to gauge how each respondent in the sample will fare when he/she reaches age 65 and retires. We forecast the poverty threshold upon retirement by adjusting the annual federal poverty threshold for inflation (2.5% per year) for each year until the worker reaches age 65. The annual federal poverty threshold for individuals 65 and over is $857 per month ($10,289/12).

The deficit fraction for each worker is calculated as the forecast total monthly income divided by the monthly value of the poverty threshold, and the result is multiplied by 100. When the deficit fraction is 100%, that means that the respondent's total monthly income is just equal to the poverty threshold.

Acknowledgments

Endnotes

[1] See the Bureau of Labor Statistics National Compensation Survey, Employee Benefits in Private Industry, for information on sponsorship by firm size (http://www.bls.gov/news.release/ebs2.t01.htm).

[2] Author calculations from the 2011 Current Population Survey, March Supplement.

[3] See Hiltonsmith (2010).

[4] See also Allegretto, Rhee, Saad-Lessler, and Schmitz (2011) for an evaluation of the retirement income prospects of California workers using the same methodology.

[5] We chose to retire our sample of workers at age 65 because the majority of workers choose to retire before the full-benefit retirement age for Social Security. Research shows that the average retirement age is currently 64 for men and 62 for women (Munnell 2011).

[6] The U.S. Census Bureau's official federal poverty measure that was developed in the 1960s does not take into account the rise in the cost of housing, medical spending, or regional differences in cost of living that affect contemporary spending patterns. As such, evaluating income at 200% of the elderly federal poverty threshold—a well-accepted measure of poverty in high-cost areas such as California or New York—is used as an absolute measure of retirement income adequacy in this study.

[7] "Income of the Aged Chartbook, 2008: Social Security Administration Office of Research, Statistics, & Policy Analysis," 2008. (http://www.ssa.gov/policy/docs/chartbooks/income_aged/2008/iac08.html#aggregate).

[8] See Ghilarducci (2011) for the full details and methodology behind these calculations.

[9] See the White House Office of Management and Budget's 2012 Analytical Perspectives report for a complete display of tax expenditures for 401(k) and other individual retirement accounts (http://www.whitehouse.gov/omb/budget/Analytical_Perspectives).

[10] Lockyer, Bill. 2010. "California's Fiscal Future: Do We Need a Public Pension Reboot?" at the 21st Annual Northern California Public Retirement Seminar. October 13. Sacramento, CA (http://www.treasurer.ca.gov/news/releases/2011/20111013.pdf).

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