



# Taken for a Ride

Greater Risk Exposure Means Less Income Security for Retirees

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Center for American Progress



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# Introduction and summary

U.S. households lost trillions of dollars in the first few quarters of the economic and financial crisis of 2007, 2008, and 2009. Total wealth relative to after-tax income had fallen to its lowest level since March 1995 by the end of 2008. This sharp drop likely had a severe effect on the retirement income security of millions of U.S. households.

Retirement savings have become increasingly individualized, meaning that retirees have had to manage several economic risks increasingly on their own. First, there is longevity risk, or the chance that a retiree will outlive his or her savings. Next, there is market risk, or the probability of an underperforming market and thus less-than-anticipated retirement income. Third, there is idiosyncratic risk, or the chance of unwise or unlucky investment and savings decisions, which can further reduce expected retirement income. Fourth, there is labor market risk, or the possibility of earnings losses alongside financial market declines. All of these risks may have increased over time.

Greater risk exposure has two policy implications. First, risks are an economic cost, and workers should save more than in the past to handle the new costs of greater risk. Investors, for instance, want to be compensated for greater risk with higher expected rates of return. Viewed from a slightly different angle, this means that savers must now accumulate more wealth than in the past to achieve the same level of economic security because their risk exposure with their personal wealth has also increased.

While rising asset prices have helped individuals to accumulate wealth, the personal saving rate fell dramatically before the crisis, leaving families with less of a buffer in case something went wrong. Additionally, individuals' psychological makeup stands in the way of optimal wealth creation. Savers do not regularly rebalance their portfolios; they buy high and sell low, and invest large amounts of their portfolio in employer stock, among other steps that can inadvertently reduce their savings.

The result of unnecessarily large risk exposure became clear to millions of 401(k) plan participants during the financial crisis as the statements detailing the quarterly returns on their investments began to arrive in the mail late last year. The losses were staggering.

The available data clearly show that wealth losses have been large and the drop in retirement income security has been real. Data from the Federal Reserve's Flow of Funds Accounts also show that from 2007 to 2008, total retirement wealth in private- and public-sector pension plans and retirement savings plans dropped by \$2.8 trillion (in 2008 dollars).<sup>1</sup> These losses followed a trend toward less diversification and greater leverage in individual savings.<sup>2</sup>

Not surprisingly, losses have been greater in defined contribution accounts than in defined benefit plans, suggesting that the inherent risks in individual accounts are greater than in professionally managed, pooled assets with a longer time horizon, such as defined benefit plans. These losses in individual accounts are further exacerbated by the concurrent burst in the housing bubble. Many families rely heavily on their homes to provide retirement income since they have no retirement savings outside of Social Security by the time they near retirement.

The financial crisis has also accompanied a major economic recession that has contributed to rapidly rising unemployment rates for all groups, including older workers. Working longer is thus not a viable option to compensate for massive wealth losses. Since 1985, U.S. retirees have increasingly supplemented their incomes by working part-time or having a working spouse. The labor force participation rate of older workers increased more in the first year of the most current recession than during the first year of any recession since the early 1960s, but older workers have not been immune from the recession. The unemployment rate for Americans 65 and older soared to 6.2 percent in the first quarter of 2009, the highest level since 1977.<sup>3</sup>

Data at the household level are only available through 2007. These data from the Federal Reserve's Survey of Consumer Finances, though, show that even before the crisis was in full swing, retirees were exposed to a number of risks. The exposure to market risks through less and less diversification and more and more leverage is probably the most visible risk exposure of retirees before the crisis. As stock and house prices fell, retirees thus stood to lose more wealth than would have been the case in the past. This loss of wealth, though, put retirees between a rock and a hard place. After all, retirement income from Social Security and pensions had already been declining, and opportunities to work longer have disappeared, meaning that retirees will have to rely increasingly on risky private savings exactly when risks have materialized and savings have been decimated.

So what now? For U.S. households to reach the same level of retirement income security that they enjoyed before the crisis, total wealth relative to after-tax income may actually have to rise above pre-crisis levels to compensate for the increased risk exposure. That is a tall order considering the large losses that families sustained in the crisis.

Policymakers can help rebuild retirees' personal wealth and reduce the risk exposure of individuals' retirement savings, and thus lessen the need to build up as much wealth as in the past. In particular policymakers should encourage more diversification and less leverage in individual retirement accounts, increase the annuitization of retirement savings, and create more stable labor market options for older workers.

Only time will tell whether current and future U.S. retirees will be able to retire as comfortably as they imagined before the crises. In the meantime, it is important to understand how we arrived at such a delicate retirement income situation in the United States. The following pages of this report detail the current state of the U.S. retirement system, the risks embedded in it, and steps that policymakers should consider to address shortfalls in the existing system.

# The U.S. retirement system

A review of the existing evidence on U.S. retirement savings leads to two conclusions. First, many families fail to save much or at all in dedicated retirement savings vehicles. Instead, other forms of wealth, especially owner occupied homes, largely serve as retirement savings tools. Second, families are exposed to more risks since there has been a shift from traditional defined benefit pensions to individual savings accounts, also known as defined contribution plans. As a result of both factors savers today face more risks on their own than they have in the past.

Persistently low coverage of retirement savings at work and the shift from defined benefit to defined contribution plans has had serious implications for the types of risks workers and retirees are exposed to in preparation for and during retirement. These risks include longevity risk, financial market risk, idiosyncratic risk, and labor market risk.<sup>4</sup> All are especially pronounced in individual savings, either in the form of retirement savings plans or individual savings outside of dedicated retirement wealth. The increased risk exposure poses a cost to savers and thus requires that families accumulate more wealth than they have in the past just to maintain the same level of risk-adjusted protection. Studies of retirement adequacy typically calculate total wealth levels over time without consideration of the risk exposure to the individual. They are therefore increasingly overstating the retirement income security of families. The empirical section later in this report will re-examine adequacy, considering changes in the risk exposure of retirees.

The primary source of retirement income in the United States is Social Security. Just over 91 percent of Americans aged 65 or older receive Social Security benefits, and it is the major source of income for two-thirds of beneficiaries. For more than one-third of beneficiaries, Social Security provides over 90 percent of their income.<sup>5</sup> Yet the program is only intended to offer a basic benefit. Social Security benefits will amount to a little over 40 percent of pre-retirement earnings for a lifetime earner with average earnings.<sup>6</sup> Workers thus must rely heavily on private retirement savings to maintain their standard of living in retirement.

Only about half of all private-sector workers, however, participate in a retirement plan at work. In 2007, the most recent year for which data are available, just 45.1 percent of all private-sector wage and salary workers participated in an employer-sponsored retirement plan, down from slightly more than half of all workers—50.3 percent—in 2000.<sup>7</sup> That is, other forms of wealth play a critical and possibly increasing role in supplying retirement income to America's retirees.

Workers who have access to an employer-sponsored retirement savings plan have seen significant changes to their plans, most of which have increasingly exposed workers to substantial risks. Specifically, over the course of the past three decades, the share of private-sector workers who participated in defined benefit pension plans fell from close to 40 percent to roughly 20 percent. At the same time, the share of private-sector workers who participated in a defined contribution plan almost tripled, from 15 percent to nearly 45 percent.<sup>8</sup>

An equivalent shift has not occurred in the public sector, where most government employees continue to be covered by a traditional pension and often have access to supplemental defined contribution plans. Approximately 12 percent of the workforce in the United States was employed by state or local government in 2006. State and local government entities typically provide employees a traditional final pay defined benefit pension plan and a supplemental defined contribution plan where employees can make voluntary contributions out of their own salaries.<sup>9</sup>

Under defined contribution plans workers implicitly accept certain responsibilities associated with saving for retirement: determining savings amounts over the lifecycle, making decisions about portfolio allocation and rebalancing, timing retirement, managing the drawdown of assets in retirement, and more. In doing so, they also accept the consequences of these decisions, and they may be more exposed to a range of risks in preparing for retirement. Only the amounts of employer and employee contributions are defined under the plan, although there is no requirement that either employers or employees contribute to an existing plan. Contributions are invested, and at retirement the amount available to the retiree will depend on how well the investments performed over their career. Decisions about how funds in the account are invested are typically left to the employee.

At retirement, employees have the option to take their account balance as a lump sum or to take periodic distributions from the account. Defined contribution plans are not legally bound to provide employees with the option to receive benefits as a lifetime annuity, or a guaranteed stream of lifetime income. Although in theory plan sponsors could provide lifetime annuities in defined contribution plans, in practice they rarely do.<sup>10</sup> Employees must therefore typically purchase an individual annuity from an insurance provider if they want to eliminate longevity risk, adding costs to their retirement savings that did not exist before.

In comparison, traditional defined benefit pensions in both the private and public sector promise a specific benefit in retirement, generally in the form of an annuity. Eligible employees automatically earn benefits in a defined benefit plan. Benefits are determined by length of service, age, and employee earnings, but typically not by investment performance.<sup>11</sup> To secure promised benefits, defined benefit plans have to be pre-funded. In particular, employers are required to establish and fund a dedicated trust to pay pension benefits, both of which are funded by employer contributions. The employer bears the downside risk if the plan has too little money to pay promised benefits to employees and requires additional contributions. The employer also bears the upside risk of being able to reduce contributions to the plan if investment returns are better than expected.

As this discussion makes clear, the shift from defined benefit to defined contribution plans, especially in the private sector, has meant that employees are increasingly exposed to a number of risks. These include longevity, market, idiosyncratic, and labor market risks.

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## Longevity risks

Longevity risk is significant for individual savers because a retiree cannot know with certainty exactly how long she will live. It is quite simple for a retiree to determine her life expectancy at retirement by consulting an actuary's mortality tables, but this represents the *average* expected lifespan for a large number of individuals. If a retiree plans the use of her retirement fund around living only to the average life expectancy, she faces the risk that her actual lifespan is longer and that she may outlive her savings. An efficient way to insure individuals against longevity risk is through lifetime annuities—insurance funds that provide an annual distribution to retirees for the rest of the retirees' lives.<sup>12</sup>

Purchasing an individual annuity, though, can be costly. The cost of a lifetime annuity averages approximately 5 percent of one's total accumulated savings, with smaller account balances accruing larger costs.<sup>13</sup> Retail annuity products have also been criticized for being overly complex and difficult for consumers to understand.<sup>14</sup>

Most retirees in the United States therefore avoid purchasing annuities and manage the withdrawal of their retirement savings on their own. Large numbers of households, however, seem to be drawing down their retirement savings too quickly, raising the risk that they will run through their savings before they die.<sup>15</sup> At the other extreme there is evidence that some retirees may be holding on to defined contribution plan assets too tightly and experiencing an unnecessarily reduced standard of living as a result.<sup>16</sup>

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## Market risks

Individual savings also expose savers to market risks. Workers and retirees bear the risk of fluctuations in asset prices in defined contribution plans and other individual savings. To insure against poor market performance, a saver could purchase, for example, a minimum investment guarantee for financial assets. To guarantee the rate of return on bonds with a balanced portfolio (50 percent stocks and 50 percent bonds) over 40 years, though, investors would have to spend 16.1 percent of their contributions to their retirement account on that guarantee.<sup>17</sup> This comparatively costly insurance still provides only limited protection for individuals and leaves investors exposed to large market fluctuations over the course of a lifetime.

Another limited protection against market risk is asset diversification. Many retirees, however, rely heavily on their homes as a source of retirement income, and the sharp rise in



home values after 2000 often translated into less diversification of total household assets.<sup>18</sup> Consequently, retiree households may have been heavily exposed to both financial market and housing market risks prior to the crisis.

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## Idiosyncratic risks

Idiosyncratic risks result from unlucky or unwise investment decisions. A rich collection of literature in the field of behavioral economics has developed over the past decade on the effect of employee responsibility and discretion of savings in defined contribution plans.<sup>19</sup> The research indicates that defined contribution plans require employees to “do too much.”<sup>20</sup> They have to take action to participate and then figure out how much to save, how to invest, and how to change their investments over time. They must avoid the temptation to withdraw savings before retirement. And then, at retirement, they must figure out how to make their savings last. The chance to make the wrong choice lurks with every each decision.

In reality, employees seem to fall short with each of these tasks. Workers generally fail to save enough, make poor asset allocation and investment decisions, withdraw savings before retirement, and are reluctant to purchase annuities with the retirement wealth they do manage to accumulate, even when doing so could enhance their well-being.<sup>21</sup>

A clear reflection of this problem is the lack of asset diversification. To ensure optimal diversification there should be minimal correlation between the types of assets held in a retirement account. If an outside factor causes a decline in one type of asset, investments that are uncorrelated should not decline at the same rate or time.<sup>22</sup>

Research in behavioral economics has shown that many 401(k) participants do not diversify their portfolios to achieve an optimal risk profile. Instead, many participants use “naïve diversification” when making decisions about what type of assets to invest in. Shlomo Benartzi of the Anderson School at the University of California-Los Angeles and Richard Thaler of the University of Chicago’s Graduate School of Business,<sup>23</sup> and Gur Huberman and Wei Jiang of the Finance and Economics Division at Columbia Business School<sup>24</sup> conclude that participants often divide their assets evenly across all available options. That is, more choices of equity funds, for instance, can result in a greater allocation toward equities, all else equal. Alternatively, if there are many available investment options participants seem to choose one item from each category and then evenly diversify across categories.<sup>25</sup>

In fact, if the range of available options becomes too confusing, participants in 401(k) plans may reduce their equity exposure, thus not optimally diversifying and becoming overexposed to the risks associated with other securities.<sup>26</sup> Finally, 401(k) participants tend to hold a relatively high share of their assets in their employer’s stock, often because they feel that they know the company.<sup>27</sup> Researchers at the Investment Company Institute and the Employee Benefits Research Institute conclude that 11 percent of partici-

pants' account balances were invested in employer stock in 2007.<sup>28</sup> Similarly, Fidelity Investments reports that 10 percent of 401(k) account balances in the third quarter of 2008 were invested in employer stocks.<sup>29</sup>

This risk exposure may be further exacerbated by the fact that many defined contribution plan participants rebalance their portfolios only infrequently. Researchers at Vanguard, for instance, find that only a minority of defined contribution plan participants rebalanced their portfolio during the IT stock boom of the late 1990s, when large price movements should have been accompanied by regular portfolio rebalancing.<sup>30</sup> Similarly, researchers at the Investment Company Institute find that most defined contribution plan participants did not change the allocation of their assets or their contributions during the stock market decline in 2008.<sup>31</sup>

Defined benefit plans, by contrast, are the ultimate “autopilot” plan. As long as employees are eligible for the plan, they earn benefits in it. The employer funds the plan and sets up a trust where assets are invested by professionals and benefits are ultimately paid out. Asset allocation patterns tend to be more stable and more likely to be optimal because investing is overseen by professionals rather than left to individuals as in defined contribution plans.<sup>32</sup>

Another aspect of idiosyncratic risk exposure that has gained attention in recent years is the fact that many savers' accounts are heavily leveraged. Leverage magnifies the effect of changes in price of the original investment. If the price changes are positive leverage can be a useful way to increase cash flow. But if price changes are negative, leverage can turn a bane by eliminating household wealth very quickly. This is especially problematic if leverage increases sharply during an asset boom, when the chance of a sharp downward correction continuously increases, as was the case over the past few years. Leverage is less of an issue in dedicated retirement savings because participants cannot borrow from defined benefit plans and they can only borrow to a limited degree from defined contribution plans. It is, however, an issue with other forms of wealth, especially housing wealth.<sup>33</sup>

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## Labor market risk

U.S. retirees increasingly supplement their incomes by working part time or having a working spouse. Although having wage income in retirement lessens the need to save as much for retirement, it exposes workers to another risk commonly referred to as labor market risk.<sup>34</sup> Patrick Purcell of the Congressional Research Service, for instance, reports that the labor force participation for workers over 65 began to rise in 1985.<sup>35</sup> By 2006 the labor force participation rate for men over 65 had risen to 20 percent, up from 17 percent in 1995, in part because fewer workers had access to defined benefit pensions and thus were exposed to more risks.<sup>36</sup>

In a similar vein, Alicia H. Munnell, Marric Buessing, Mauricio Soto, and Steven Sass, all with the Center for Retirement Research at Boston College, estimate that by 2030, workers will have to work an additional three and a half years to maintain their retirement income compared to workers today due to higher Medicare premiums, higher taxes, and lower Social Security benefits.<sup>37</sup> And Kevin E. Cahill of Analysis Group, Inc., Michael D. Giandrea of the Bureau of Labor Statistics' Office of Productivity and Technology, and Joseph F. Quinn of Boston College's Department of Economics argue that a lack of retiree health insurance keeps many older workers in the workforce.<sup>38</sup> That is, increased risk exposure in retirement savings has contributed to rising labor force participation rates among older workers. Similarly, in the current crisis, as people's wealth has decreased more and more older workers expect to stay in the labor force longer than is currently the case.<sup>39</sup>

Greater risk exposure, though, is not the only reason older workers are working longer. The labor force participation rates of older workers have increased in part because disincentives under the U.S. tax code to stay in the labor force were reduced in the 1990s.<sup>40</sup> Improving health, fewer physically demanding jobs,<sup>41</sup> and more employment opportunities for older workers<sup>42</sup> have also contributed to the increase in older workers' participation in the labor force.

It is important to note, though, that there are limits on how long most workers can delay their retirement. Many older workers aren't physically able to continue working in many types of jobs, and labor market obstacles may prevent older workers from working as late in their life as their financial needs dictate. The demand for older workers may also be smaller than the supply of such workers.<sup>43</sup>

Working longer increases workers' exposure to labor market risk. A worker's earnings path has direct consequences on their relative retirement savings performance. Since earnings fluctuate with financial market returns—both reflect the performance of an economy—earnings will be lower when financial market prices are lower and many buying opportunities exist. In essence a worker could pay “too much” for financial assets over the course of a lifetime due to short-term and long-term labor market risks.

These higher purchasing prices for financial assets as a result of coincident changes in a worker's purchasing power due to labor market changes would thus reduce a worker's rate of return over the course of a lifetime relative to a situation without labor market risk. This problem is especially pronounced in individual retirement savings, where savers can decide when and how much to save. As more retirees now rely on earnings and on their assets in defined contribution plans, their exposure to labor market risks may have increased.

# Aggregate wealth losses in the crisis

The financial and economic crisis is still very recent, so comprehensive data on its effect on retirement income security is relatively sparse. Thus, this section first summarizes the few existing studies on the topic and then provides a discussion of wealth and labor market trends from two comprehensive national data sources. The data clearly show that wealth losses have been greater in defined contribution accounts than in defined benefit plans, which suggests that the inherent risks in individual accounts are greater than in managed pooled assets such as defined benefit plans. The data also suggest that older workers may have been exposed to substantial labor market risk during the recent crisis.

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## Summary of findings on retirement wealth during the crisis

Several researchers have documented the decline in retirement wealth during the crisis. Researchers at the Center for Retirement Research at Boston College conclude that during the year following October 9, 2007—identified as the stock market peak—the value of equities in retirement plans fell by an estimated \$4 trillion.<sup>44</sup>

These equity losses translated into sharp declines in account balances in individual accounts. Just 60.9 percent of families with heads of household between the ages of 55 and 64 had an individual retirement account in 2007, and the median balance of those accounts was \$98,000.<sup>45</sup> The average account balances for workers between the ages of 35 and 44 who had been in their current job for at least 10 years declined by more than 20 percent from January 1, 2008 to January 20, 2009.<sup>46</sup> For workers who had been in their current job for 20 to 29 years losses exceeded 25 percent during that same period.

Coupled with losses in the housing market, many American households may ultimately have to rely more heavily on Social Security as their primary source for retirement income. As previously discussed, a large share of American families has no retirement savings outside of Social Security by the time they near retirement; thus they rely heavily on their homes to provide income in retirement. Eighty-one percent of families nearing retirement owned their home with a median home equity of \$210,000 in 2007.<sup>47</sup>

The flip side of this reliance on home equity as a source of retirement income is that the concurrent decline in the housing and the stock markets quickly depleted workers' retire-

ment savings. Dean Baker and David Rosnick of the Center for Economic and Policy Research, for example, conclude that families, especially those nearing retirement, will likely have little wealth outside of Social Security due to large asset price losses in individual accounts and the housing market.<sup>48</sup>

Losses also occurred in private-sector defined benefit plans, although these plans generally seemed to be better equipped to handle the consequences of the crisis due to professional risk management and a longer time horizon. The funding ratio—the ratio of assets to liabilities—of private-sector defined benefit plans had fallen to an estimated 85 percent in October 2008, down from 98 percent when the financial crisis began a year earlier. This means that these plans had “more than enough money to meet their immediate benefit commitments,” but also that plan sponsors will have to increase their contributions to their pension plans to cover the difference between assets and liabilities.<sup>49</sup>

Defined benefit pension plans for state and local government employees appear to have equally experienced a sharp decline in the average funding ratio. Boston College’s Alicia H. Munnell, Jean-Pierre Aubry, and Dan Muldoon document that experts typically consider a funding ratio of 80 percent of assets to pension plan liabilities for public-sector plans to be adequate. They estimate an average funding ratio of 87 percent of assets to liabilities for state and local government pension plans in 2007, but that had dropped to an estimated 65 percent by October 9, 2008. The same researchers also forecast that if equity values return to their peak level reached in 2007 by the end of 2010, assets of public pension plans will average 75 percent of liabilities at that time.<sup>50</sup>

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## Retirement wealth and labor force participation of older workers in the crisis

Data from the Federal Reserve’s Flow of Funds Accounts also show relatively large declines in defined contribution plans during the first year of the crisis.<sup>51</sup> From 2007 to 2008, total retirement wealth in private- and public-sector pension plans and retirement savings plans dropped by \$2.8 trillion (in 2008 dollars). Holding gains and losses—changes in asset values minus contributions—relative to initial asset values tend to be higher for traditional pension plans than for defined contribution plans. Holding gains are typically used as an approximation of rates of return for these data. In 2008, holding losses for retirement savings plans were equal to 28.7 percent relative to the balance at the end of 2007. In comparison, holding losses for traditional pension plans were equal to 24.2 percent relative to the balance at the end of 2007.<sup>52</sup>

This was not a one-time occurrence. Over the entire duration of the last business cycle—from 2000 to 2007—the average holding gain for traditional private-sector pension plans amounted to 4.0 percent. The same average for retirement savings plans was to less than half of this, with 1.6 percent.

The same data source also shows that during the previous business cycle, family wealth became increasingly less diversified and increasingly more leveraged. In particular, households were increasingly less diversified across all of their assets at the time of the financial crisis, making them even more vulnerable to drops in housing and stock prices.<sup>53</sup> Home values accounted for a large share of total assets, while stocks made up a large share of retirement accounts. Real estate and corporate equities historically comprised 43 percent of total assets on average. By 2001, however, real estate and corporate equities were more than 50 percent of total assets on average. A near constant decline in home equity relative to home values after 2002 further shows the rise in leverage.<sup>54</sup> By December 2008, home equity was roughly 43 percent of the total value of homes—a historic low.

Finally, the labor force participation rate of older workers increased more in the first 12 months of the most recent recession than during the first 12 months of any recession since the early 1960s, as calculations based on data from the Bureau of Labor Statistics' Current Population Survey show. But this masks the fact that the employed share of the population 65 and older started to decline in October 2008—10 months into the recession. That is, older workers were not immune from the recession's effects. This is further supported by the fact that the unemployment rate of the population 65 and older reached a historic high of 6.8 percent in February 2009 after standing at only 4.2 percent in October 2008, when the employment to population rate started to decline.<sup>55</sup>

# U.S. retirees' risk exposure over time

Data at the household level show that the crisis did not pass by retirees. This section details several risk measures of U.S. households using the Federal Reserve's triennial Survey of Consumer Finances, or SCF. The SCF provides detailed information on households' assets and debt. Consistent data are available from 1989 to 2007, although some data are only available from 2001 on. The last available data year is 2007, which marks the last full year before the economic and financial crisis contributed to sharp wealth losses. The data presented here thus paint a picture of retirees' risk exposure before the crisis began.

The measures of risk exposure that I use here mirror the previous discussion. In particular, to capture families' exposure to longevity risk, I first look at how much income families received in the form of annuities from pensions and from Social Security. I report both the real amount of annuities and the share of annuities out of total income. Less annuity income translates into greater longevity risk exposure. Moreover, I calculate two indicator variables for longevity risk. I determine that a household is not exposed to risk if its annuity income is greater than the poverty line or greater than twice the poverty line—a common basic living standards measure.

Second, I consider a range of measures that capture market and idiosyncratic risk exposure. Households can be adversely affected by market fluctuations. The effect of these fluctuations can be exacerbated by individual actions, or what was discussed as idiosyncratic risk in the previous section. Market risk and idiosyncratic risk are indistinguishable when considering household wealth data. The measures of these risks include diversification, leverage, debt, and capital income.

In particular, I consider two indicators of household asset diversification: the share of owner-occupied real estate out of total assets and the share of directly and indirectly held equities out of total financial assets. Indirectly held equities refer to corporate equity owned by a household through retirement plans and other managed assets. I also report the leverage of homeowners, defined here as the share of home equity relative to total home values, and total indebtedness of retirees. And finally, I calculate real capital income and the share of capital income out of total income for retirees. Capital income includes dividends, interest payments, and realized capital gains. Less diversification, more leverage and debt, and more capital income expose retirees to more market and idiosyncratic risks.

Third, I capture labor market risk by considering trends in labor market income. As before, I report both real wage income and wage income as a share of total income.

All data are reported for retirees over the age of 55. Additional divisions by age between near elderly—between the ages of 55 and 64—and elderly—65 and older—show that the results are robust, and age groups are not reported separately here.

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## Longevity risk

Table 1 summarizes the data on annuity income. Only 20.5 percent of retirees had annuity income that was greater than twice the poverty line in 2007—the definition for basic income security used here—down from 24.5 percent in 2004.<sup>56</sup> In comparison the median share of annuity income out of total income continued to rise from 71.4 percent in 2004 to 73.2 percent in 2007. Annuity income deterioration was largely a middle-income and not a low-income phenomenon since the share of households that had annuitized income above twice the poverty threshold decreased, while the share of families with annuitized incomes above the poverty threshold continued to grow. The combination of these three factors suggests that there were more moderate-income retirees who relied more heavily on annuity income in 2007 than in 2004.

In comparison, middle-income retirees saw particularly strong gains from 2001 to 2004 (Table 1). The share of retirees with basic income security increased and did so at a faster rate than the share of retirees with annuity incomes above the poverty line. Also, the median share of annuity income out of total income grew during the same period. This suggests that middle-income retirees saw particularly strong gains in retirement income security in the early 2000s.

The post-2004 decline likely reflects broader economic trends and suggests that the deterioration in basic income security for moderate-income and middle-income retirees may have continued after 2007. The earlier increase was likely a result of higher Social Security benefits that followed a strong labor market in the late 1990s and of solid pension benefits due to an extended stock market run.<sup>57</sup> The decline from 2004 to 2007 similarly may have paralleled fewer Social Security benefits due to an especially weak labor market, cuts to Social Security benefits for new retirees starting in 2002, and a wave of pension freezes, following funding uncertainty due to large economic, financial market, and legal changes.<sup>58</sup> All of these factors also suggest that the share of retirees with annuity income greater than two times the poverty line will continue to decline for the foreseeable future.



**TABLE 1**  
**Amounts and income shares of annuitized retiree income, 1989 to 2007**

	1989	1992	1995	1998	2001	2004	2007
Share of households with pension income	n.a.	n.a.	n.a.	n.a.	49.4%	56.0%	56.1%
Mean real pension income for households with pension income	n.a.	n.a.	n.a.	n.a.	\$18,578	\$22,474	\$19,188
Median real pension income for households with pension income	n.a.	n.a.	n.a.	n.a.	\$12,351	\$14,497	\$13,200
Mean real annuitized income for households with annuitized income	\$ 21,682	\$ 20,330	\$ 21,669	\$ 23,123	\$ 23,505	\$ 28,938	\$ 25,760
Median real annuitized income for households with annuitized income	\$18,626	\$16,317	\$18,001	\$18,045	\$18,034	\$21,428	\$20,594
Mean share of pension income out of total income for households with pension income	n.a.	n.a.	n.a.	n.a.	39.6%	41.5%	40.1%
Median share of pension income out of total income for households with pension income	n.a.	n.a.	n.a.	n.a.	34.0%	38.2%	34.0%
Mean share of annuitized income out of total income for households with annuitized income	55.7%	56.9%	57.4%	57.3%	57.0%	65.6%	65.0%
Median share of annuitized income out of total income for households with annuitized income	60.0%	60.0%	61.5%	61.2%	59.4%	71.4%	73.2%
Annuitized income exceeds twice the poverty line, all households	13.9%	13.0%	13.6%	16.9%	13.5%	24.5%	20.5%
Annuitized income exceeds the poverty line, all households	33.9%	37.4%	33.8%	37.4%	38.1%	44.4%	45.3%

Notes: Due to the survey design, shares of income can theoretically be greater than 100 percent, but are capped at 100 percent for calculations presented here. The mean of the share of income is the population-weighted mean, but not the income-weighted mean. Separate data for pensions are only available for 2001, 2004, and 2007. "n.a." indicates that data are not available.

## Diversification

Table 2 presents data on the diversification of retirees’ assets. In particular, the table summarizes the shares of owner-occupied real estate out of total assets and the share of directly and indirectly held equity out of total financial assets.

The figures show that more retirees were exposed to equity market fluctuations in 2007 than was the case before, but that the typical retiree household that held any equity was less vulnerable to stock market fluctuations than in the past. The share of retiree households, for instance, with direct or indirect equity holdings was 46.1 percent—the highest on record, going back to 1989. On the other hand, the share of equities out of total financial assets was substantially lower in 2007 than at any point since 1992 for the average share and since 1995 for the median share (Table 2).<sup>59</sup>

In comparison, the risk exposure in the real estate market was substantially greater than in the equity market for retiree households. After all, the vast majority of retirees—82.6 percent in 2007—owned their own home. And homes constituted a larger share of total assets than ever before. In 2007, the median share of home values out of total retiree assets was 66.7 percent, higher than at any point since 1989. Sharp price declines in the U.S. residential real estate market thus likely reduced retiree wealth substantially after 2008. This was even more so the case since a growing share of retirees owed money on an outstanding mortgage over time and since leverage only gradually declined during the years of the real estate boom, as I discuss further below.

Retiree households were thus susceptible to price declines in asset markets, more so in the residential real estate market than in the corporate equity market.

**TABLE 2**  
**Asset diversification of retiree households, 1989 to 2007**

	1989	1992	1995	1998	2001	2004	2007
Share of households with direct or indirect equity holdings	30.5	31.3	33.9	38.0	39.5	41.3	46.1
Share of households who are homeowners	80.3	79.9	76.5	81.0	81.5	85.2	82.6
Mean share of equities out of financial assets for households with equity investments	31.6	32.4	42.4	45.0	53.1	45.5	42.0
Median share of equities out of financial assets for households with equity investments	27.4	26.0	34.5	42.0	52.1	45.3	39.5
Mean share of home values out of total assets for homeowners	56.9	61.8	60.3	57.3	57.9	62.2	63.2
Median share of home values out of total assets for homeowners	58.2	64.3	63.0	56.7	58.1	64.0	66.7

Notes: All figures are in percent.

## Leverage and debt

Table 3 presents data on leverage and household debt. The figures show that the share of retirees with debt in 2007 was relatively high in historical comparison, as were the levels of debt they held. Almost half of all retirees—48.4 percent—owed any debt in 2007, slightly less than the 48.5 percent recorded in 2004. More than one-fourth of retired homeowners—27.1 percent—owed money on a mortgage, which was the largest such share for any data year since 1989. Furthermore, the median debt-to-income ratio in 2007 was the largest since 1989, while the average debt to income ratio and the median and mean ratio of mortgages to income were the second highest, slightly below their peak in 2004. The end of the lending boom in 2007 helped to reduce the indebtedness of retired households, although even with the declines in debt relative to income after 2004, the total indebtedness of retirees was still high by historical standards.

Retirees' indebtedness also meant that retired homeowners, for instance, remained comparatively heavily leveraged, despite a boom in home prices during the 2000s. In 2007, the mean ratio of home equity to home values was 67.9 percent and the median ratio was 72.1 percent. In other words, close to one-third of the homes owned by retired homeowners with a mortgage were still owned by a bank. These median and mean ratios of home equity to home values in 2007 were slightly higher than the same ratios for 1998, 2001, and 2004, but well below the ratios of the years from 1989 to 1995. The unprecedented home price boom of the 2000s thus helped to reduce the leverage of retired homeowners somewhat.

Yet the housing boom also meant that more homeowners were in debt than in the past and that mortgage growth almost kept pace with home price growth. The result of this persistently high leverage was that homeowners stood to lose a larger share of their home equity than would have been the case with less leverage.<sup>60</sup> Future increases in debt among retirees will depend on financial market regulations and on risk assessment by lenders. In the short run, declines in indebtedness are more likely than increases.

**TABLE 3**  
**Indebtedness and leverage of retiree households**

	1989	1992	1995	1998	2001	2004	2007
Households with debt	36.4	42.7	42.4	38.9	41.8	48.5	48.4
Homeowners with a mortgage	15.7	16.8	18.4	18.4	18.9	25.1	27.3
Average debt to income for households with debt	53.2	68.9	171.5	104.7	83.0	199.5	140.1
Median debt to income for households with debt	27.4	23.0	27.7	46.0	37.5	50.8	65.6
Average mortgage to income for homeowners with a mortgage	67.4	99.6	172.0	144.6	127.2	223.5	171.2
Median mortgage to income for homeowners with a mortgage	42.6	68.9	83.7	103.1	87.2	126.9	120.2
Mean leverage of homeowners with a mortgage	81.8	73.5	70.0	65.7	65.8	66.3	67.9
Median leverage of homeowners with a mortgage	86.8	78.5	77.9	72.9	70.5	70.0	72.1

Notes: All figures are in percent. Leverage can theoretically be negative, but is capped at zero percent for calculations here. The mean of leverage is the population-weighted mean, but not the housing value weighted mean.

## Capital income

Table 4 summarizes the data on capital income of retirees. Interestingly, fewer retirees reported having capital income in 2007 than had been the case in the past. The share of retirees with capital income was 42.2 percent in 2007, slightly higher than the 39.4 percent for 2004, but well below the shares of earlier years (Table 4).

Capital income seems to have become more concentrated over time, in line with greater wealth inequality. The average real amount of capital income is typically substantially larger than the median amount. Also, the average real amount of capital income has grown

over time, while the median amount has fallen. This divergence between the average and the median typically indicates increasing inequality.

The data on capital income suggests that there has been a declining source of risk for the typical household, even though total financial wealth has grown for retirees. This may reflect the fact that many retirees continue to accumulate wealth and draw down less wealth than is necessary to maintain their consumption levels, as was discussed in the previous section.

Furthermore, a declining reliance on capital income through 2007 is consistent with the fact that retirees had enjoyed growing income support from annuitized income. If annuitized income, though, becomes a less important source of retiree income due to the factors previously mentioned, it is unclear whether retirees will be able to continue their declining exposure to potential risks included in capital income.

**TABLE 4**  
**Capital income of retirees, 1989 to 2007**

	1989	1992	1995	1998	2001	2004	2007
Household has capital income	65.6%	57.8%	57.3%	49.6%	49.5%	39.4%	42.2%
Mean real amount of capital income	\$20,232	\$13,557	\$19,857	\$22,556	\$23,254	\$22,457	\$31,496
Median real amount of capital income	\$4,995	\$3,263	\$2,631	\$3,867	\$5,410	\$3,383	\$2,677
Mean share of capital income out of total income	20.8%	19.5%	17.5%	19.0%	19.6%	16.0%	17.8%
Median share of capital income out of total income	13.2%	11.5%	7.3%	10.0%	12.0%	6.7%	6.7%

Notes: All figures only for household with capital income. Due to the survey design, capital income can exceed 100 percent of the total income, but the share is capped at 100 percent for these calculations. The mean of the share of income is the population-weighted mean, but not the income-weighted mean.

## Labor income

Another way retirees may have managed to avoid exposure to capital market fluctuations is through increased wage earnings. Table 5 summarizes the relevant data on labor income. The figures show that retirees face some exposure to labor market risks, although the exposure seems to have declined over time, rather than increased.

Less than one-fifth of retirees typically report having wage earnings. For those retirees who report having any wage earnings, wages amount to more than 40 percent of their income. And the share of income generated by wage earnings seems to depend on the strength of the labor market. In particular, the share of wage earnings increased during the labor market boom years of 1995 and 1998, fell during the recession of 2001, and continued to fall during the weak labor market recovery after 2001. By 2007, wages as a share of retiree income for those retirees with wage earnings had reached the lowest level since 1989, with an average share of 41.3 percent and a median share of 38.5 percent (Table 5).

It is unlikely that retirees could substantially expand earnings to compensate for the wealth losses that they experienced elsewhere. The financial crisis went along with a major economic recession. Unemployment rates soared for all groups during the course of 2008. The unemployment rate for workers 65 and older reached 6.2 percent in the first quarter of 2009—the highest level since the first quarter of 1977.<sup>61</sup> Older workers are clearly looking for more work, but they are unable to find it.

TABLE 5  
Wage income of retirees, 1989 to 2007

	1989	1992	1995	1998	2001	2004	2007
Household has wage income	19.1%	17.7%	19.6%	17.1%	16.3%	18.1%	17.1%
Average real wage income	\$33,657	\$38,346	\$38,882	\$41,657	\$53,728	\$47,271	\$52,000
Median real wage income	\$22,012	\$23,734	\$18,001	\$27,068	\$28,854	\$22,556	\$24,713
Average share of wage income to total income	43.4%	44.7%	44.6%	47.1%	46.3%	42.3%	41.3%
Median share of wage income to total income	41.7%	40.0%	40.0%	50.0%	44.0%	40.0%	38.5%

Notes: All figures only for households with wage income. Due to the survey design, wage income can exceed 100 percent of the total income, but the share is capped at 100 percent for these calculations. The mean of the share of income is the population-weighted mean, but not the income-weighted mean.

# Conclusion

The recent economic and financial crisis led to a massive loss of household wealth in the United States. The onslaught of declining house and stock prices and rising unemployment will likely leave many retirees in much worse financial shape than previous generations of retirees.

Data collected before the onset of the recent crisis in 2007 show that U.S. retirees were already exposed to a number of risks, some of which ultimately materialized. U.S. retirees were exposed to more asset market fluctuations in 2007, due to comparatively low levels of diversification, especially outside of residential real estate, along with relatively high levels of household debt and homeowners' leverage. Declines in home and stock prices are thus able to damage retiree wealth more than they could in the past. Also, retirees had already felt the impact of a weak labor market after the last recession, which meant that a relatively modest share of retirees reported any wage earnings, and wages amounted to comparatively low shares of total income for these retirees in 2007. In all likelihood, the sharp labor market recession of 2008 and 2009 further eroded access to wage income for U.S. retirees.

The upside is that U.S. retirees still had a comparatively good buffer in the form of annuitized income from pensions and Social Security in 2007. There are, however, good reasons to believe that the decline in the relative importance of these secure retiree income sources that occurred between 2004 and 2007 will continue in the future. In particular, pension plans have become underfunded, which could lead employers to reduce benefits for new hires, and the weak labor market of previous years will likely translate into fewer Social Security benefits in addition to the benefit cuts that are already scheduled by law.

The combination of these trends implies that U.S. retirees will increasingly have to rely on capital income as a source of retirement income. Retirees have actually relied less and less on capital income over time, but the onset of several adverse economic trends will likely mean that more and more retirees will turn to capital income to supplement their retirement incomes from other, less readily available sources. Retirees may consequently have to dip into their individual savings accounts exactly at a time when asset values have been hit hard because other sources of income, such as pensions, Social Security, and wages are also less than they were in the past. The effect of this is that secure income is replaced with volatile income, translating the risk exposure in household wealth into risky retiree income that can fluctuate more than in the past.

Public policy will have to consider two separate, yet connected goals. First, public policy needs to help retirees rebuild their economic security by improving their personal wealth, especially since other sources of retirement income security have been gradually declining. And second, public policy needs to reduce the risk exposures that are currently included in individual retirement savings. Individuals are increasingly exposed to market, idiosyncratic, longevity, and labor market risks—and reducing exposure to all of these is a tall order.

Yet the situation also offers several entryways for public policy. If public policy can reduce the risk exposure of individuals, it will require less wealth than otherwise would be the case to achieve the same level of economic security for retirees. That is, achieving the second goal will make it easier to reach the first goal. Retirement risks can be reduced by encouraging more diversification and less leverage in individual accounts, increasing the annuitization of retirement savings, and by creating more stable labor market options for older workers, among other policy steps.

# References

- Almeida, B. and F. Fornia. 2008. "A Better Bang for the Buck: The Economic Efficiencies of Defined Benefit Pension Plans." Washington: National Institute on Retirement Security.
- Baker, D. and D. Rosnick. 2008. "The Housing Crash and Retirement Prospects of Late Baby Boomers." Washington: Center for Economic and Policy Research.
- Benartzi, S. and R. Thaler. 2007. "Heuristics and Biases in Retirement Savings Behavior." *Journal of Economic Perspectives* 21 (3): 81-104.
- Bernstein, J., Brocht, C., and Spade-Aguilar, M., 2000, How Much is Enough? Basic Family Budgets for Working Families, Washington, D.C.: Economic Policy Institute.
- Board of Governors, Federal Reserve System. 2009. "Release Z.1 Flow of Funds Accounts of the United States." Washington.
- Brady, P. and S. Sigrist. 2008. "Who Gets Retirement Plans and Why." *Investment Company Institute Perspective* 14, (2), Washington: Investment Company Institute.
- Brown, J. and M. Warshawsky. 2001. "Longevity-Insured Retirement Distributions from Pension Plans: Market and Regulatory Issues." Working Paper 8064. National Bureau of Economic Research.
- Bucks, B., A. Kennickell, T. Mach, and K. Moore. 2009. "Changes in U.S. Family Finances from 2004 to 2007: Evidence from the Survey of Consumer Finances." *Federal Reserve Bulletin* February: A1-A55.
- Bureau of Labor Statistics. 2009. "Current Population Survey." Washington.
- Cahill, K. E., M. D. Giandrea, and J. F. Quinn. 2006. "Retirement Patterns From Career Employment." *The Gerontologist* 46 (40): 514-523.
- Congressional Budget Office. 2004. "Administrative Costs of Private Accounts in Social Security." Washington.
- Copeland, C. 2007. "How Are New Retirees Doing Financially in Retirement?" *EBRI Issue Brief* 302. Washington: Employee Benefit Research Institute.
- Employee Benefit Research Institute. 2009. "401(k) Balances and Changes Due to Market Volatility—Data to January 21, 2009." Washington.
- Employee Benefit Security Administration. 2008. "Private Pension Bulletin, Abstract of Form 5500." Washington.
- Englehart, G. 1999. "Have 401(k)s Raised Household Saving? Evidence from the Health and Retirement Study." Working Paper 14. Syracuse University Aging Studies Program.
- Fabozzi, F. J., F. Gupta, and H. M. Markowitz. 2002. "The Legacy of Modern Portfolio Theory" *Journal of Investing* 11 (3): 7-22.
- Fidelity Investments. 2009. "Fidelity Reports on 2008 Trends in 401(k) Plans." Boston.
- Garr, E. 2009. "Older Americans In the Recession: More are staying in the workforce, more are losing their jobs." Washington: Economic Policy Institute.
- Geanakoplos, J., O. Mitchell, and S. Zeldes. 1999. "Social Security Money's Worth." In O. Mitchell, R. Myers and H. Young, eds., *Prospects for Social Security Reform*. Philadelphia University of Pennsylvania Press.
- Government Accountability Office. 2007. "State and Local Government Retiree Benefits: Current Status of Benefit Structures, Protections, and Fiscal Outlook for Funding Future Costs." GAO-07-1156, Washington.
- Gustman, A.L. and T. L. Steinmeier. 2009. "How Changes in Social Security Affect Recent Retirement Trends." *Research on Aging* 31 (2):261-290.
- Helman, R., Matthew Greenwald & Associates, C. Copeland, and J. VanDerhei. 2009. "The 2009 Retirement Confidence Survey: Economy Drives Confidence to Record Lows; Many Looking to Work Longer." Washington: Employee Benefit Research Institute.
- Holden, S., VanDerhei, J., Alonso, L, and Copeland, C. 2008. "401(k) Plan Asset Allocation, Account Balances, and Loan Activity in 2007." *Research Perspective* 14 (3) Washington: Investment Company Institute.



- Huberman, G. and W. Jiang. 2006. "Offering versus Choice in 401(K) Plans: Equity Exposure and Number of Funds." *Journal of Finance* 61 (2): 763-801.
- Hurd, M. and C. Panis. 2006. "The Choice to Cash Out Pension Rights at Job Change or Retirement." *Journal of Public Economics* 90 (12): 2213-2227.
- Iyengar, S. and E. Kamenica. 2006. "Choice Overload and Simplicity Seeking." Working Paper. University of Chicago Graduate School of Business.
- Lachance, M. and O. Mitchell. 2003a. "Guaranteeing Individual Accounts." In O. Mitchell and K. Smetters, eds. *The Pension Challenge: Risk Transfers and Retirement Income Security*. New York: Oxford University Press.
- . 2003b. "Understanding Individual Account Guarantees." *American Economic Review* 93 (2): 257-260.
- Love, D., P. Smith, and L. McNair. 2007. "Do Households Have Enough Wealth for Retirement?" *Finance and Economics Discussion Series* No. 2007-17. Washington: Board of Governors, Federal Reserve System.
- Maestas, N. 2005. "Back to Work: Expectations and Realizations of Work After Retirement." Working Paper WR-196-1. RAND Labor and Population working paper series.
- Mermin, G.B.T., R. W. Johnson, and D. P. Murphy. 2006. "Why Do Boomers Plan to Work So Long?" Washington: Urban Institute.
- Mitchell, O., G.R. Mottola, and S. Utkus. 2005. "The Inattentive Participant: Portfolio Trading Behavior in 401(k) Behavior." Working Paper 2006-5. Pension Research Council, Wharton School, University of Pennsylvania.
- Munnell, A. H. and A. Sunden. 2004. *Coming Up Short: The Challenge of 401(k) Plans*. Washington: Brookings Institution Press.
- Munnell, A. H., J. Aubry, and D. Muldoon. 2008. "The Financial Crisis and Private Defined Benefit Plans." *CRR Issues in Brief* No. 8-18, Boston Center for Retirement Research at Boston College.
- Munnell, A. H., M. Buessing, M. Soto, and S. Sass. 2006. "Will We Have to Work Forever?, Work Opportunities for Older Americans No. 4, Boston Center for Retirement Research at Boston College, 2006.
- Munnell, A. H., F. Golub-Sass, M. Soto, and F. Vitagliano. 2006. "Why Are Healthy Employers Freezing their Pension Plans?" *CRR An Issue in Brief* No. 44 Boston, MA: Center for Retirement Research at Boston College.
- Orszag, P. 2008. "The Effects of Recent Turmoil in Financial Markets on Retirement." Testimony before the Committee on Education and Labor of the U.S. House of Representatives, October 7. Washington: Congressional Budget Office.
- Perun, P. 2007. "Putting Annuities Back into Savings Plans." In T. Ghilarducci and C. Weller, eds. *Employee Pensions: Policies, Problems, and Possibilities*. Champaign: Labor and Employment Relations Association.
- Poterba, J. and M. Warshawsky. 1999. "The Costs of Annuity Retirement Payouts from Individual Accounts." Working Paper 6918. National Bureau of Economic Research.
- Purcell, P. 2009. "Retirement Plan Participation and Contributions: Trends from 1998 to 2006." CRS Report 7-5700. Washington: Congressional Research Service.
- . 2008. "Pension Sponsorship and Participation: Summary of Recent Trends." CRS Report 30122. Washington: Congressional Research Service.
- Reid, B. and S. Holden. 2008. "Retirement Saving in Wake of Financial Market Volatility." Washington: Investment Company Institute.
- Russell, L.H., E. A. Bruce, and J. Conahan. 2006. "A Methodology to Determine Economic Security for Elders, Boston, MA: Gerontology Institute, University of Massachusetts Boston, and Washington, DC: Wider Opportunities for Women.
- Social Security Administration. 2008a. "Annual Statistical Supplement to the Social Security Bulletin, 2007," Washington.
- Social Security Administration. 2008b. "Social Security Trustees Report 2008." Washington.
- Weller, C. and E. Wolff. 2005. "Retirement Security: The Particular Role of Social Security." Washington: Economic Policy Institute.
- Weller, C. and J. Lynch. 2009. "Fraying the Private Safety Net: Household Wealth in Freefall." Washington: Center for American Progress.
- Weller, C. and J. Wenger. 2009a. "Prudent Investors: The Asset Allocation of Public Pension Plans." forthcoming in *Journal of Pension Economics and Finance*.
- . 2009b. "What Happens to Defined Contribution Accounts When Labor Markets and Financial Markets Move Together?" forthcoming in *Journal of Aging and Social Policy*.
- . 2008. "Robbing Tomorrow to Pay for Today." Washington: Center for American Progress.
- Weller, C. and K. Sabatini. 2008. "From Boom to Bust: Did the Financial Fragility of Homeowners Increase in an Era of Greater Financial Deregulation?" *Journal of Economic Issues* 42 (3): 607-632.

# Endnotes

- 1 Board of Governors, Federal Reserve System, "Release Z.1 Flow of Funds Accounts of the United States" (2009).
- 2 C. Weller and J. Lynch, "Fraying the Private Safety Net: Household Wealth in Freefall" (Washington: Center for American Progress, 2009).
- 3 Bureau of Labor Statistics, "Current Population Survey" (2009).
- 4 Employer default can be a concern with defined benefit plans. It is typically mitigated by explicit or implicit government guarantees and by risk pooling in multiemployer private sector and multiple employer public plans.
- 5 Social Security Administration, "Annual Statistical Supplement to the Social Security Bulletin, 2007," (2008a).
- 6 Social Security Administration, "Social Security Trustees Report 2008" (2008b).
- 7 P. Purcell, "Pension Sponsorship and Participation: Summary of Recent Trends," CRS Report 30122 (Washington: Congressional Research Service, 2008).
- 8 Employee Benefit Security Administration, "Private Pension Bulletin, Abstract of Form 5500" (2008) and Bureau of Labor Statistics, "Current Population Survey" (2008).
- 9 Government Accountability Office, "State and Local Government Retiree Benefits: Current Status of Benefit Structures, Protections, and Fiscal Outlook for Funding Future Costs" (Washington, 2007).
- 10 P. Perun, "Putting Annuities Back into Savings Plans." In T. Ghilarducci and C. Weller, eds. *Employee Pensions: Policies, Problems, and Possibilities* (Champaign: Labor and Employment Relations Association, 2007).
- 11 A slight wrinkle to this is that strong investment performance can result in pension plans having more assets than they need to cover current and expected future benefits. This can and has often translated into benefit improvements. The opposite is harder to accomplish since accrued benefits are generally legally protected from cuts, even if a pension plan's assets fall short of the current and promised future benefit payments for extended periods of time.
- 12 By one estimate, offering a lifetime benefit to a large group of individuals can cost about 25 percent less than having individuals self insure against longevity risks (Almeida and Forna, 2008).
- 13 Congressional Budget Office, "Administrative Costs of Private Accounts in Social Security" (2004); J. Poterba and M. Warshawsky, "The Costs of Annuity Retirement Payouts from Individual Accounts" Working Paper 6918 (National Bureau of Economic Research, 1999); J. Geanakoplos, O. Mitchell, and S. Zeldes, "Social Security Money's Worth." In O. Mitchell, R. Myers and H. Young, eds., *Prospects for Social Security Reform* (Philadelphia University of Pennsylvania Press, 1999).
- 14 J. Brown and M. Warshawsky, "Longevity-Insured Retirement Distributions from Pension Plans: Market and Regulatory Issues." Working Paper 8064 (National Bureau of Economic Research, 2001); Perun, "Putting Annuities Back into Savings Plans."
- 15 C. Copeland, "How Are New Retirees Doing Financially in Retirement?" *EBRI Issue Brief* 302 (Washington: Employee Benefit Research Institute, 2007).
- 16 Copeland, "How Are New Retirees Doing Financially in Retirement?"; D. Love, P. Smith, and L. McNair, "Do Households Have Enough Wealth for Retirement?" *Finance and Economics Discussion Series* No. 2007-17 (Washington: Board of Governors, Federal Reserve System, 2007).
- 17 M. Lachance and O. Mitchell, "Guaranteeing Individual Accounts." In O. Mitchell and K. Smetters, eds. *The Pension Challenge: Risk Transfers and Retirement Income Security* (New York: Oxford University Press (2003); M. Lachance and O. Mitchell, "Understanding Individual Account Guarantees" *American Economic Review* 93 (2) (2003): 257-260.
- 18 C. Weller, C. and K. Sabatini, "From Boom to Bust: Did the Financial Fragility of Homeowners Increase in an Era of Greater Financial Deregulation?" *Journal of Economic Issues* 42 (3) (2008): 607-632.
- 19 S. Benartzi, S. and R. Thaler, "Heuristics and Biases in Retirement Savings Behavior," *Journal of Economic Perspectives* 21 (3) (2007): 81-104.
- 20 Ibid.
- 21 Benartzi and Thaler, "Heuristics and Biases in Retirement Savings Behavior"; G. Englehart, "Have 401(k)s Raised Household Saving? Evidence from the Health and Retirement Study" Working Paper 14 (Syracuse University Aging Studies Program, 1999); M. Hurd and C. Panis, "The Choice to Cash Out Pension Rights at Job Change or Retirement" *Journal of Public Economics* 90 (12) (2006): 2213-2227; O. Mitchell, G.R. Mottola, and S. Utkus, "The Inattentive Participant: Portfolio Trading Behavior in 401(k) Behavior," Working Paper 2006-5 (Pension Research Council, Wharton School, University of Pennsylvania, 2005); A. H. Munnell and A. Sunden, *Coming Up Short: The Challenge of 401(k) Plans* (Washington: Brookings Institution Press, 2004).
- 22 F. J. Fabozzi, F. Gupta, and H. M. Markowitz, "The Legacy of Modern Portfolio Theory," *Journal of Investing* 11 (3) (2002): 7-22.
- 23 S. Benartzi, S. and R. Thaler, "Heuristics and Biases in Retirement Savings Behavior," *Journal of Economic Perspectives* 21 (3) (2007): 81-104.
- 24 G. Huberman and W. Jiang, "Offering versus Choice in 401(K) Plans: Equity Exposure and Number of Funds," *Journal of Finance* 61 (2) (2006): 763-801.
- 25 S. Benartzi, S. and R. Thaler, "Heuristics and Biases in Retirement Savings Behavior," *Journal of Economic Perspectives* 21 (3) (2007): 81-104.
- 26 S. Iyengar and E. Kamenica, "Choice Overload and Simplicity Seeking," Working Paper. (University of Chicago Graduate School of Business, 2006).
- 27 Benartzi and Thaler, "Heuristics and Biases in Retirement Savings Behavior."
- 28 S. Holden, J. VanDerhei, L. Alonso, and C. Copeland, "401(k) Plan Asset Allocation, Account Balances, and Loan Activity in 2007," *Research Perspective* 14 (3) (Washington: Investment Company Institute, 2008).
- 29 Fidelity Investments, "Fidelity Reports on 2008 Trends in 401(k) Plans" (2008).
- 30 Mitchell, Mottola, and Utkus, "The Inattentive Participant: Portfolio Trading Behavior in 401(k) Behavior."
- 31 B. Reid and S. Holden, "Retirement Saving in Wake of Financial Market Volatility," (Washington: Investment Company Institute, 2008).
- 32 C. Weller, and J. Wenger, "Prudent Investors: The Asset Allocation of Public Pension Plans" forthcoming in *Journal of Pension Economics and Finance*.
- 33 C. Weller, C. and K. Sabatini, "From Boom to Bust: Did the Financial Fragility of Homeowners Increase in an Era of Greater Financial Deregulation?" *Journal of Economic Issues* 42 (3) (2008): 607-632.

- 34 Weller and Wenger, "What Happens to Defined Contribution Accounts When Labor Markets and Financial Markets Move Together?"
- 35 P. Purcell, "Pension Sponsorship and Participation: Summary of Recent Trends," CRS Report 30122 (Washington: Congressional Research Service, 2008).
- 36 Ibid.
- 37 A. H. Munnell and others "Will We Have to Work Forever?," Work Opportunities for Older Americans No. 4, (Boston Center for Retirement Research at Boston College, 2006).
- 38 K. E. Cahill, M. D. Giandrea, and J. F. Quinn, "Retirement Patterns From Career Employment" *The Gerontologist* 46 (40) (2006): 514-523.
- 39 R. Helman and others, "The 2009 Retirement Confidence Survey: Economy Drives Confidence to Record Lows; Many Looking to Work Longer" (Washington: Employee Benefit Research Institute, 2009).
- 40 A. L. Gustman and T. L. Steinmeier, "How Changes in Social Security Affect Recent Retirement Trends" *Research on Aging* 31 (2) (2009):261-290.
- 41 G. B. T. Mermin, R. W. Johnson, and D. P. Murphy, "Why Do Boomers Plan to Work So Long?" (Washington: Urban Institute, 2006).
- 42 N. Maestas, "Back to Work: Expectations and Realizations of Work After Retirement," Working Paper WR-196-1 (RAND Labor and Population working paper series, 2005).
- 43 C. Weller, C. and J. Wenger, "Robbing Tomorrow to Pay for Today" (Washington: Center for American Progress, 2008).
- 44 A.H. Munnell, J. Aubry, and D. Muldoon, "The Financial Crisis and Private Defined Benefit Plans," *CRR Issues in Brief* No. 8-18, (Boston Center for Retirement Research at Boston College, 2008).
- 45 B. Bucks and others, "Changes in U.S. Family Finances from 2004 to 2007: Evidence from the Survey of Consumer Finances," *Federal Reserve Bulletin* February (2009): A1-A55.
- 46 Employee Benefit Research Institute, "401(k) Balances and Changes Due to Market Volatility – Data to January 21, 2009" (2009).
- 47 Bucks and others, "Changes in U.S. Family Finances from 2004 to 2007: Evidence from the Survey of Consumer Finances."
- 48 D. Baker and D. Rosnick, "The Housing Crash and Retirement Prospects of Late Baby Boomers" (Washington: Center for Economic and Policy Research, 2008).
- 49 A. H. Munnell and others, "The Financial Crisis and Private Defined Benefit Plans," *CRR Issues in Brief* No. 8-18, (Boston Center for Retirement Research at Boston College, 2008).
- 50 Ibid.
- 51 Board of Governors, Federal Reserve System, "Release Z.1 Flow of Funds Accounts of the United States" (2009).
- 52 All calculations based on data from BOG (2009).
- 53 Weller and Lynch, "Fraying the Private Safety Net: Household Wealth in Freefall."
- 54 Ibid.
- 55 Bureau of Labor Statistics, "Current Population Survey" (2009).
- 56 Twice the poverty line is an income threshold that is used to approximate basic income needs. See, for instance, Bernstein, J., Brocht, C., and Spade-Aguilar, M., "How Much is Enough? Basic Family Budgets for Working Families," (Washington: Economic Policy Institute, 2000); and Russell, L.H., Bruce, E.A., & Conahan, J., "A Methodology to Determine Economic Security for Elders" (Boston, MA: Gerontology Institute, University of Massachusetts Boston, and Washington, 2006): Wider Opportunities for Women.
- 57 C. Weller and E. Wolff, "Retirement Security: The Particular Role of Social Security" (Washington: Economic Policy Institute, 2005).
- 58 A. H. Munnell and others, "Why Are Healthy Employers Freezing their Pension Plans?" *CRR An Issue in Brief* No. 44 (Boston, MA: Center for Retirement Research at Boston College, 2006).
- 59 To some degree, this reflects the rising average age of retiree households from 72.2 years in 1989 to 74.6 years in 2007. Data on retiree household ages are not shown here. It is also possible that this may reflect some price declines as the data are collected between May and December of each survey year. However, the fact that home values as share of total assets did not decline during the same period indicates that price movements played a subordinated role in determining retirees' asset allocations.
- 60 C. Weller, C. and K. Sabatini, "From Boom to Bust: Did the Financial Fragility of Homeowners Increase in an Era of Greater Financial Deregulation?" *Journal of Economic Issues* 42 (3) (2008): 607-632.
- 61 Bureau of Labor Statistics, "Current Population Survey."

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## About the author

Dr. Christian E. Weller is a Senior Fellow at American Progress and an Associate Professor of Public Policy at the University of Massachusetts Boston. His area of expertise includes retirement income security, macroeconomics, money and banking, and international finance. He is also a research scholar at the University of Massachusetts Amherst's Political Economy Research Institute and an Institute Fellow at the University of Massachusetts Boston's Gerontology Institute. Prior to joining the Center, he was on the research staff at the Economic Policy Institute, where he remains a research associate. Christian has also worked at the Center for European Integration Studies at the University of Bonn in Germany, under the Department of Public Policy of the AFL-CIO in Washington, D.C., and served in the banking sector in Germany, Belgium, and Poland. Christian is a respected academic with more than 100 academic and popular publications. His academic publications have appeared in the *Journal of Policy Analysis and Management*, the *Journal of Development Studies*, the *Cambridge Journal of Economics*, the *Journal of International Business Studies*, the *Journal of Aging and Social Policy*, and the *Journal of Economic Issues*, among others. His popular writings have been published in *The New York Times*, *USA Today*, and *The Atlanta Journal Constitution*.

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