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## Retirement Finance: Old Ideas, New Reality

By Alex J. Pollock

*The American economy has moved into its third historical phase, the knowledge-service economy, but our dominant ideas about retirement and how to pay for it are still stuck in the 1950s. Greater life expectancy combined with shorter working lives has, on average, depressed the work-to-retirement ratio to a financially unsustainable level. Meanwhile, the pension programs now thought of as “traditional” are faced with widespread deficits. Much longer lives, with improved health and vitality in what was formerly considered old age, require longer working lives and greater personal savings.*

Everywhere we look, we find retirement finance deficits. Both corporate and public sector pension plans are widely and seriously underfunded, Social Security is unfunded and will go cash flow negative in a little more than a decade, the government’s Pension Benefit Guaranty Corporation (PBGC) is insolvent,<sup>1</sup> the savings rate is low, and now the bulge of baby boomer retirement is upon us. There is an underlying factor: our retirement finance ideas, faced with the reality of contemporary life expectancy and demographics, are stuck in the world of fifty years ago.

There is much discussion of “traditional” pensions and the “traditional” security they were meant to represent. But how long does it take to make a tradition? Not very long—only a generation or two. What we experience in childhood seems normal and thus to constitute the “tradition,” so the baby boomers who grew up in the 1950s and 1960s with what were then new ideas of pensions and retirement, let alone their children, now think that our stressed structures of retirement finance are traditional. But these structures themselves represent rather recent historical changes, and they need to change again.

One cause of retirement finance problems is the blessing of greater life expectancy with better health

and robustness into what in former times was considered old age. In America until 1850, “old age was commonly defined as life after the age of 60.”<sup>2</sup> Now this has been pushed back a decade. Indeed, as we live longer and are in better shape, the estimate of Psalm 90:10 needs to be updated from:

The days of our years are three-score years  
and ten,  
[Or] by reason of strength four-score,  
to:

The days of our years are four-score years,  
Or by reason of strength four-score and ten.

This certainly applies to two of my own uncles, aged 88 and 84, both still working. But they are exceptions to the retirement trend, which is that as life expectancy has increased, the average age of retirement has fallen. Since along with this, retirement is now accompanied by the “traditional” expectation of being supported by pensions, the financial implications of the revised Psalm are profound.

Our ideas of retirement and retirement finance fall into three historical phases, reflecting the agricultural, industrial, and knowledge-service era economies.

In the agricultural phase, old age began at 60—the span of our years was three-score and ten—and few people survived past that. Work generally

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continued into old age and retirement finance relied on savings—particularly ownership of land—family, and charity.

The industrial phase brought lengthening life expectancy, and with it, the introduction of and then reliance upon corporate and government pensions, notably Social Security, mandatory retirement, and the idea of the “retirement age.” As this phase reached its apex in the 1950s, it introduced the “golden years” theory of retirement as securely financed leisure. Retirement came earlier as life became longer. This combination of factors is what is now called “traditional.” It is financially unsustainable.

In today’s knowledge-service economy, we see further lengthening of life expectancy to four-score and more. How are we to address the financial, political, and social aspects of greater longevity when people have come to expect income without being productively employed and as the proportion of such people in the population grows ever larger?

## The Work-to-Retirement Ratio

To start, we need to focus on a fundamental arithmetic relationship which is basic to all pension finance: how many years you will work compared to how many years you expect to be retired and have income without working. I call this the work-to-retirement (W:R) ratio.

Only working years can supply the savings to finance retirement. This is true whatever form the savings may take, whether in the form of a government pension, corporate pension, deferred savings program, or personal savings. But years of working life, on average, have been falling (and continue to fall) in proportion to the years spent in retirement.

As life expectancy has increased, not only has the average retirement age fallen, but years spent in education have also increased, so that entry into the workforce has been later. Thus, working years have been shrinking from both ends while retirement years have been expanding. This has pushed the W:R ratio to an unsustainably low level.

Consider a typical contemporary case of working from age 22 to 62, then living in retirement to the age of 82. Or, with more education and a somewhat longer life, one might work from 25 to 65, then live to 85. In either case,

this is working for forty years and then expecting to live twenty more years without working. This is quite an ordinary scenario today, although extraordinary if viewed historically.

In this scenario the ratio of working to nonworking retirement years is only 2:1—merely two years of earning and saving to finance each year of living without earning. If you have only two years of working to save enough to support one year of retirement, you have to save a lot during those working years, whether by mandatory saving through a pension program or by voluntary personal saving.

A W:R ratio of only 2:1 requires annual savings for retirement alone of over 14 percent of pretax income throughout one’s entire working life.<sup>3</sup> This is hardly feasible

for contemporary Americans. In short, with a W:R ratio of only 2:1, the savings rate required to finance retirement, on average, is too high. The W:R ratio, now at a historical low, must rise.

This simply means that people will have to work longer and retire later than they have in recent times. It appears that a majority have the option to do so anyway, according to an international survey done by HSBC, which found that most respondents in ten countries believed employees should be able to continue working as long as they are capable.<sup>4</sup> It appears that retirement for today’s retirees not only represents a longer period of time and a greater proportion of life than it did for past generations, but also than it will for future generations. Our current situation is not really traditional, nor is it sustainable.

This is consistent with the findings of the British Turner Commission, which concluded that retirement finance in Great Britain requires that people work longer and save more. How much longer and how much more reflect a common-sense trade-off: save more, don’t have to work as long; work longer, don’t have to save as much.

Under the first government retirement pension program, instituted by Chancellor Otto von Bismarck for imperial Germany in 1889, the retirement age was 70. The influential early corporate pension plan of the Pennsylvania Railroad, adopted in 1900, which had a mandatory retirement age of 70, is a U.S. parallel. (A number of American state pension plans in the early twentieth century also had a pensionable age of 70.) Life expectancy, once you had survived to 50, was about 72.

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If work in those days began on average at about 16, fifty-four working years financed two years of retirement, for a W:R ratio of 27:1. Today, a much larger proportion of the population will live to and past 70 and are in much better shape, on average, than people of the same age were in 1900.

Closer to our situation were American conditions in 1950. The average U.S. retirement age in 1950 was 67. If the average worker began working at age 20, that would give him forty-seven working years. With a life expectancy of 76, he would have nine years of retirement years and a W:R ratio greater than 5:1. The required savings rate in these circumstances is about 6 percent. This is not feasible when the W:R ratio is only 2:1.

The fundamental trade-off is between the W:R ratio and the required savings rate for retirement. As working years are extended, the W:R ratio rises rather quickly, and the required savings rate correspondingly falls. This is shown in Table 1, which assumes a life expectancy of 60 years from the start of work, divided between work and retirement in different proportions.

TABLE 1

W:R RATIO AND REQUIRED SAVINGS RATE FOR RETIREMENT

Working Years	Retirement Years	W:R Ratio	Required Savings Rate (%)
40	20	2:1	14
43	17	2.5:1	11
45	15	3:1	9½
48	12	4:1	7
50	10	5:1	6

SOURCE: Alex J. Pollock, "Can You Afford to Retire?" *Barron's*, September 5, 2005, available at [www.aei.org/publication23131](http://www.aei.org/publication23131).

If you started work at 22 and matched the 1950s retirement age of 67, then lived in retirement to 82, your W:R ratio will have risen to 3:1, and your required savings rate will have been reduced to 9½ percent. If you matched Bismarck's and the Pennsylvania Railroad's retirement age of 70, your W:R ratio will have risen to 4:1, and the required savings rate will have dropped to 7 percent. This is only half of the savings rate required compared to taking retirement at 62, the average U.S. retirement age during 1995–2000.

You can approach this relationship from both directions. For a given W:R ratio, at what rate do you need to save? Or, for a given rate at which you are willing to save, how long should you plan on working?

Given our increased life expectancy, the basic math of retirement finance is sobering, and the current American work-to-retirement ratio is unsustainable.

## The Historical Movement of Ideas

When you think about it, it is remarkable that while still in good health and perfectly capable of productive work in a knowledge or service economy, people should expect to be comfortably paid for long years of being idle. This idea is new, historically speaking. Where did it come from? Here are some explanations from those familiar with the subject.

One version: "In the 1950s, the USA pioneered the idea of leisured retirement—the golden years in which one pottered about quietly and played golf."<sup>5</sup>

Another: "One study during the 1950s estimated that 50 to 60 percent of those reaching 65 would choose to work if retirement could be deferred. Another survey estimated that 30 percent of those forced into mandatory retirement would have preferred to be back at their jobs. While retirement for many Americans traditionally had been a cause for discouragement, starting in the 1950s, there was a movement to redefine retirement as a new, positive stage of life."<sup>6</sup>

A third: "By 1960 . . . the meaning of retirement had been transformed. It was now a form of leisure . . . [or] a period of enjoyment and creative experience."<sup>7</sup> The financial cost of this transformation has become apparent only recently.

Looking further back for the source of this change: "As late as 1930, [industrialization] had not broken the basic connection between old age and work. By 1950, a complete metamorphosis of experience had become apparent: where once most old men worked or looked for jobs, the majority now entered retirement. An understanding of this revolutionary change"—which now seems to us like tradition—"must be sought . . . in the Social Security Act of 1935."<sup>8</sup>

One of the clear purposes of Social Security was to encourage retirement at age 65, according to the staff of the Committee for Economic Security, which designed the proposed legislation under the direction of Edwin Witte. Known as "the father of Social Security," Witte did not retire at 65, but continued working

at the University of Wisconsin until compulsory retirement at 70.<sup>9</sup>

Although retirement at 65 was not yet tradition, it was also not a new idea. A 1906 proposal, based on declining capacity with age, was for work to end at age 65—but work was to begin at 15!<sup>10</sup> This equals fifty working years. With a life expectancy of 72, that would leave seven years of retirement and a W:R ratio of over 7:1.

In 1905, William Osler, a distinguished Johns Hopkins University professor, proposed retirement at 60 because by that age people “had lost all mental elasticity.”<sup>11</sup> As those of us over 60 would suspect, he was then not yet 60 himself. But it is essential in looking back on the origin of our “traditional” retirement ideas to remember that age relative to life expectancy, health, and vigor is no longer the same, in line with our revised Psalm 90.

To understand the historical debates about age, work, and retirement, it would be better to think consistently about these things relative to life expectancy—that is, to consider appropriate retirement not as Birth plus X (simple age), but rather as Life Expectancy minus Y (relative age). At any rate, this would help focus on getting the W:R ratio to an affordable level.

Before we return to our own century, let us consider a different view of retirement expressed by *Saturday Review*: “Men shrink from voluntarily committing themselves to an act which simulates the forced inactivity of death.”<sup>12</sup> It was a long way from 1900 to the 1950s—and the 1950s are equally distant to us.

## Risk and the Pension Protection Act of 2006

The historical development sketched here has brought us to the idea (now “traditional”) that there should be pension security in long years of economically non-productive retirement, coupled with the fact of widespread underfunding of pension obligations of both public sector and corporate plans.

According to a recent study, the median U.S. corporate defined benefit plan is only 81 percent funded.<sup>13</sup> Alternately stated, its assets are 19 percentage points less than its pension liabilities. In a bank, this would be known as a negative 19 percent capital ratio. It means that the median pension trust, which is in fact

part of the financial structure of the sponsoring company, is heavily dependent on the guaranty of the company. This, in turn, has profound implications for corporate finance, accounting, and public finance.

In the eternal creative destruction of a market economy, some companies will always fail. When they do, their guaranty of an underfunded pension plan will be worth little to nothing. At the point of failure, the employees become unsecured creditors of the bankrupt firm to the extent of the underfunding. Moreover, the underfunding in all likelihood will by then have become worse, for when a company is struggling, putting its shrinking cash into the pension fund will always be a low priority compared to trying to save the enterprise.

This problem led the U.S. government in 1974 to set up a guarantor of corporate pensions: the Pension Benefit Guaranty Corporation. This government-owned corporation theoretically does not rely on the credit of the United States, but in fact can exist only because of implicit reliance upon it.

It is easy for both governments and companies to agree to “pay” pensions into the distant future if they do not have to be funded today. The PBGC is in the unhappy position of guaranteeing people’s natural tendencies to underfund future obligations, especially when their companies are failing. Since this in an inherently risky proposition, it should not surprise anybody that the PBGC is itself insolvent, with a net worth of negative \$23 billion.

The employee may thus become an unsecured creditor of a bankrupt company, guaranteed by an insolvent insurer. The role of the implied Treasury credit is clear. But should the 80 percent of private sector employees who do not have defined benefit pensions be forced to pay through taxes for the pensions of the 20 percent who do?

The growing PBGC insolvency was an incentive for Congress to enact the Pension Protection Act of 2006 (PPA). This act takes a number of steps to reduce the risk exposure of the PBGC, including requiring more adequate funding of pension plans over time, limiting new obligations that severely underfunded plans can undertake, and increasing the insurance premiums and fees the PBGC receives.

The Center on Federal Financial Institutions has estimated that these steps will reduce the long-term PBGC deficit from \$92 billion to about \$60 billion in their base-case projection.<sup>14</sup> In a related effort, the Financial

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Accounting Standards Board (FASB) is set to mandate a new pension accounting standard. This will cause the amount of pension underfunding to be reported on a “mark-to-market” basis as opposed to the former “smoothing” basis. In other words, a company will calculate its pension obligation, subtract the current market value of its pension assets, and book the difference in its financial statements as a formal liability, thus—in many cases—reducing the company’s accounted net worth by large amounts.

The principle involved is that the liability for pensions is debt of the company to its employees. This is unquestionably correct. Exactly how this liability is to be calculated has given rise to a justifiable debate, but FASB is already committed to choosing the calculation known as the projected benefit obligation, which yields the larger liability and thus the larger hit to net worth.

The combination of the new, more demanding law and the impending changes in accounting treatment, it is argued, is “certain to drive the remaining defined benefit plans out of existence.”<sup>15</sup>

Stated differently, the PPA will be “a Trojan horse that [will bring] the end of the defined benefit system.”<sup>16</sup>

These predictions may be extreme, but it seems clear that the new act and the new accounting standards will accelerate the trend away from defined benefit pensions and toward defined contribution plans. Indeed, the PPA takes some important, positive steps to help retirement savings through defined contribution plans grow.

From the viewpoint of the companies, this trend away from “traditional” defined benefit plans reduces risk—the kind of risk that is hard to manage because the financial requirements of long-term pension commitments can only be estimated, not known, and are subject to many complex assumptions. Unknowns include future salaries and the future behavior of interest rates and equity prices, but especially increasing longevity and the future scientific breakthroughs which may extend it by several more years. Some hard-nosed writers have described defined benefit plans as “management’s absurdly open-ended promise to pay an unknown amount.”<sup>17</sup>

Another aspect of the risk of these plans is that, while they are generally thought of as the cost to the company of the employee benefit, they actually constitute a line of

business—the business of writing annuities. Indeed, this financial business can become very large relative to a company’s primary operations.

A defined benefit pension plan means the company takes in insurance premiums in the form of foregone wages, and in exchange writes life annuities for the employees. This business has significant risks, principally underestimating longevity, overestimating future investment returns and the level of interest rates, and making exceedingly long-term commitments, which can run forty or fifty years into the uncertain future.

Since pension funds typically have large equity portfolios, and pension obligations are a company’s debt to its employees, a skeptic might say that these businesses are making 100 percent leveraged investments in stocks. This has the additional result of creating large equity cross-holdings among American corporations.

Either way, these financial businesses—when called “pension plans”—do not have the risk management regulations and discipline required of all insurance companies that write annuities. In partic-

ular, they have no capital requirement, as all other financial businesses that write annuities do, to protect against the inevitable mistakes in estimating the future and the vicissitudes of financial markets.

Even a plan which is “100 percent funded” (the goal of the PPA) and is measured on a mark-to-market basis (the goal of the new accounting standards) has, by definition, liabilities equal to assets and therefore a capital ratio of zero. One idea worth considering has emerged in the Netherlands, where a 5 percent capital ratio is now required of pension funds, similar to capital requirements for banks.

## Working into the Golden Years

Living longer in good health and vigor is a blessing, and living even longer in poor health perhaps less so—but outliving your financial resources is a major risk. How is retirement to be financed?

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Economist Dora Costa of the Massachusetts Institute of Technology correctly observed in 1998 that “taxpayers may be less willing to finance a system that provides for a long and, for many, a recreation-filled retirement.”<sup>19</sup> Not only will current workers and taxpayers be less willing, but governments and companies will become less able to do so.

Working years, which have been decreasing, must grow again. Greater reliance on savings, both personal and through corporate plans, will be required to finance the average life expectancy. For the financial risk of the possibility of living even longer, risk sharing—longevity insurance programs—such as annuities which begin to pay at age 85, will become more common.

As for the possibility of a longer working life, we have some great models. Alan Greenspan continued to bestride the financial world as chairman of the Federal Reserve System until age 79. At 76, famous investor Warren Buffett continues to run Berkshire Hathaway Inc. At 79, Joe Paterno continues to coach the Penn State football team, which last season shared the Big Ten Conference title and won the Orange Bowl. And on a personal note, as mentioned above, there are my own uncles.

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*AEI research assistant Daniel Geary and editorial assistant Evan Sparks worked with Mr. Pollock to edit and produce this Financial Services Outlook.*

## Notes

1. Alex J. Pollock, “Addressing the Insolvency of the Pension Benefit Guaranty Corporation,” *Financial Services Outlook* (June 2006), available at [www.aei.org/publication24552/](http://www.aei.org/publication24552/).

2. Kevin C. Fleming, Jonathan M. Evans, and Darryl S. Chutkan, “A Cultural and Economic History of Old Age in America,” *Mayo Clinic Proceedings* 78, no. 7 (July 2003): 914, available at [www.mayoclinicproceedings.com/pdf%2F7807%2F7807sg2%2Epdf](http://www.mayoclinicproceedings.com/pdf%2F7807%2F7807sg2%2Epdf) (accessed on September 18, 2006).

3. Alex J. Pollock, “Can You Afford to Retire?,” *Barron's*, September 5, 2005, available at [www.aei.org/publication23131/](http://www.aei.org/publication23131/).

4. HSBC, *The Future of Retirement in a World of Rising Life Expectancies*, 2005, 5, available at <http://a248.e.akamai.net/7/248/3622/5d4393a0c726bf/www.img.ghq.hsbc.com/public/group>

[site/assets/retirement\\_future/hsbc\\_future\\_of\\_retirement.pdf](http://www.hsbc.com/assets/retirement_future/hsbc_future_of_retirement.pdf) (accessed on September 18, 2006).

5. *Ibid.*, 6.

6. Daniel Geary, “Retirement in America: 1940s–Present” (research memorandum, American Enterprise Institute, Washington, DC, August 18, 2006).

7. William Graebner, *A History of Retirement: The Meaning and Function of an American Institution, 1885–1978* (New Haven: Yale University Press, 1980), 270.

8. Carole Haber and Brian Gratton, *Old Age and the Search for Security: An American Social History* (Indianapolis: Indiana University Press, 1994), 109–10.

9. John Allen, “The Architect of Social Security,” *On Wisconsin* (Spring 2006): 37, available at [www.uwalumni.com/media/images/photography/onwisconsin/pdf/SocialSecurity.pdf](http://www.uwalumni.com/media/images/photography/onwisconsin/pdf/SocialSecurity.pdf) (accessed on September 18, 2006).

10. Dora Costa, *The Evolution of Retirement: An American Economic History, 1880–1990* (Chicago: University of Chicago Press, 1998), 11.

11. *Ibid.*

12. “Life and Rest,” *Saturday Review of Politics, Literature, Science, and Art* (January 24, 1903): 101, quoted in William Graebner, *A History of Retirement*, 10.

13. FutureMetrics, *Corporate Pensions: 2006 Final Status Report*, August 9, 2006, available at [www.futuremetrics.net/Pension%20Status%20August%2009%202006.pdf](http://www.futuremetrics.net/Pension%20Status%20August%2009%202006.pdf) (accessed on September 18, 2006).

14. Douglas J. Elliott, *Pension Reform: Summary of Final 2006 Bill* (Washington, DC: Center on Federal Financial Institutions, 2006), available at [www.coffi.org/pubs/Pension%20Reform%20Summary%20of%20Final%20Bill.pdf](http://www.coffi.org/pubs/Pension%20Reform%20Summary%20of%20Final%20Bill.pdf) (accessed on September 18, 2006).

15. Alvin Lurie, “The Value of a Golden Egg,” *Barron's*, August 28, 2005.

16. Jerry Bowyer and John Agatston, “Bush: A Pension Reformer with Results,” *National Review Online* (September 8, 2006), available at <http://article.nationalreview.com/?q=NGI3NzdmYjk1OTI4ZjNhYWE2YmY4NDIwYzA4ZWZjYmM> (accessed on September 18, 2006).

17. Paul B. W. Miller and Paul R. Bahnson, “Pensionaphobia’ Strikes Again!” *Accounting Today* 20 (August 21–September 3, 2006): 12–13.

18. Dora Costa, *The Evolution of Retirement*, 181.

19. *Ibid.*