

EDITORIAL COMMENTARY

Can You Afford to Retire?

It depends on your work-to-retirement ratio

A long, comfortable retirement takes a lot more savings than most Americans imagine. Maybe that is why they are so unrealistic about the returns they expect from securities investments and their homes.

By **ALEX J. POLLOCK**

ON THIS LABOR DAY, WE SEE an important part of the compensation for a lifetime of work placed in doubt. There are deficits in every part of the pension system -- in Social Security, corporate and public defined-benefit plans, the Pension Benefit Guaranty Corp. We have heard much about contributing factors, primarily greater longevity and earlier retirement.

It's so simple that it's hard to fix. At the base of all pension finance is a fundamental arithmetic relationship: How many years you are going to work, compared to how many years you expect to have income without working.

Consider a typical contemporary case of working 40 years, with the expectation of living 20 more years without working. For example, working from the age of 22 to 62 (which was the average retirement age from 1995 through 2000), and then living in retirement to age 82. This is quite an ordinary scenario under modern conditions, although almost unimaginable just three generations ago.

The ratio of working to non-working retirement years is only two-to-one! Only two years of earning and saving to finance each year of living without earning. Think about it. If you have only two years of working to save enough to support one year of retirement, how much do you have to save during those two years, either by mandatory saving through a pension program or by voluntary saving? Obviously, a lot! Let's examine the numbers.

Starting With Bismarck

Consider two quite different cases.

The first is the situation of the original state retirement pension program, instituted by Chancellor

Otto von Bismarck for Germany in 1889. The retirement age was 70. Adult life expectancy in those days was about 72. If work back then began, on average, at 16, that gave 54 working years to finance two years of retirement, a Work-To-Retirement ratio of 27:1.

The second case is based on the America of 1950. An average American back then would have worked 47 years, from age 20 to what was then the average retirement age of 67, with the expectation of living to 76. This would be nine years of retirement. Still, the work-to-retirement ratio was over 5:1. What does your savings rate have to be with five working years to cover each year of retirement? Obviously, a lot lower than when the ratio is only 2:1.

Let's get specific: At what rate do you have to save during 40 working years to provide enough income for 20 non-working retirement years?

Suppose we take 70% of ending wages as a reasonable retirement-income goal, as recommended by many financial planners. In addition, suppose that labor productivity and wages grow at a reasonable 1.5% annual rate during your career. And assume that you can save in a tax-deferred investment account.

We need to specify one more variable: The real, after-inflation rate of return on your savings. The long-run historical average of pre-tax real yields on long-term U.S. Treasury bonds is about 3%, although currently it is much less, about 1.75%, as indicated by inflation-indexed Treasuries. Going forward, a conservative portfolio of stocks and bonds might be expected to return 4% over inflation, on average, which would be a compound nominal return of 6% to 7%.

The analysis is sensitive to the optimism or pessimism of the return used, of course. Let's take the realistic compound real return of 4% and calculate what savings rate is needed to have enough at retirement to purchase a 20-year annuity, which would provide the target retirement income.

Investment Hurdle

Bad news: The required savings rate is over 14% of pre-tax income. Every working year, you need to save more than 14% of total pre-tax income and invest these savings at a compound real return of 4% in order to finance 20 non-working retirement years at 70% of the final year's wages.

Compare this to the current U.S. savings rate, which averaged about 1.5% during the past five years.

These required savings do include some part of Social Security taxes, although the return on those taxes will vary substantially with income and with the future politics of Social Security. The savings also include other involuntary savings, such as pension-plan contributions made by an employer on your behalf -- if you have a pension plan and if the employer remains solvent.

In any case, providing for 20 retirement years with savings from 40 working years requires

something like Asian savings rates.

Our 1950 case, providing for nine years of retirement with 47 working years, with all the other assumptions the same, required a 6% savings rate. No problem. During the decade of the 1950s, personal savings alone averaged about 7% of pre-tax income.

In fact, from 1950 to 1990, the average personal savings rate was 7.7%. If we take this as defining a historical norm, and make the extreme assumption that it would be entirely devoted to retirement in a scenario of 40 working years and 20 retirement years, it would generate retirement income of about 38% of ending wages.

Of course, there is nothing magic or unalterable about the retirement ages of 62 or 65. If you are going to live another 20 years, you could work longer. But Americans generally are going in the opposite direction. They are rejecting the idea of long careers.

Corporate early-retirement programs, designed to save compensation expense today by putting increased costs into the pension plan tomorrow, notably move the fundamental work-to-retirement relationship in the wrong direction and make adequate pension finance that much harder to achieve. If we change our example to early retirement at 57, the work-to-retirement ratio drops to 1.4 to 1. The required savings for a 70% wage replacement will be 20%.

Laboring On

If you do continue working, the ratio rises rather quickly.

Say you started work at 22 and matched the Bismarck plan's retirement age of 70, then lived to 82. That's 48 years of work and 12 years of retirement; the ratio rises to 4:1. The required savings for the annuity with 70% wage replacement falls to 7% of pre-tax income.

You also can put the question the opposite way: If you are saving for retirement at a given rate, how many years should you plan on working to have sufficient money for your life expectancy when you retire? Assume again that your career-long investment returns beat inflation by 4% a year, on average. If your savings rate is 6% of your pre-tax income, you will need to work 50 years to retire for 10 years at the age of 72, with a work-to-retirement ratio of 5:1.

Save less than that and retirement will be financially less pleasant. If you can manage to save 10%, your requirement falls to 44 years working, with 16 years of retirement, beginning at age 66, a work-to-retirement ratio of 2.8:1. As stated before, you will need a savings rate of 14% to retire at 62 with an expected retirement of 20 years.

If you could adjust your personal work-to-retirement ratio to 5:1 by delaying retirement, your Social Security tax alone would provide the target retirement income -- if it were invested in a personal retirement account. This would leave your employer's Social Security tax to cover the

disability, survivors, and other "safety net" aspects of Social Security.

The basic, sobering math explains why most Americans, and even most remaining defined-benefit pension plans, are hoping for unlikely returns on their investments in stocks and homes. They can't get to a long and comfortable retirement any other way, unless they want to face the reality of either saving a lot more or working long past age 62. This is the real choice.
