

BRIEF ANALYSIS

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Is the Stock Market Too Risky for Retirement?

By William G. Shipman

Now that President Bush's Commission to Strengthen Social Security is preparing its report for release later this year, the debate on the wisdom of investing in the stock market is again at center stage. As we choose which option, if any, will replace Social Security's present financing, the behavior of our stock market over the last three-quarters of a century clearly suggests that it should be one of the considered choices.

Problems with Pay-as-You-Go Financing. Since the early days of Social Security, benefits have been financed by taxing workers' payroll. From 1937 through 1949 wage income up to \$3,000 was subject to tax at a rate of 2 percent. The \$60 maximum was all that was needed because there were many workers and few beneficiaries, a ratio of 16 to 1 in 1950. But over the last half-century the worker/beneficiary ratio has fallen because we're living longer and having fewer children; it is now just 3.4 to 1. Not surprisingly, this has put pressure on Social Security's finances. In 2001 the combined employer/employee tax for retirement benefits is 10.6 percent of wage income up to \$80,400, an inflation-adjusted tax increase of about 1,180 percent over the last five decades. Although there is currently enough tax revenue to pay benefits, that will no longer be the case starting in 2016. Benefits will have to be cut, taxes will have to be increased yet again or other sources of revenue must be found.

More than 125 countries face a comparable dilemma with their state-mandated pension systems. Only recently have their political leaders seriously contemplated the implications. Like President Bush,

they are now publicly considering a transition, in whole or in part, from pay-as-you-go to market-based financing.

Market Investment and Retirement. Preparing for retirement by investing in markets is not a new idea — rather, it is common, well established and has more than a 50-year history. In the United States, employer-sponsored defined benefit (DB) and defined contribution (DC) plans are prevalent and popular. The growth of DC plans, in particular, has been impressive. According to the Internal Revenue Service:

- As of year-end 1997 the number of workers covered by one or both of these plans totaled about 95 million.

- From 1988 to 1997 the number of DC participants has jumped from 37 million to 55 million.

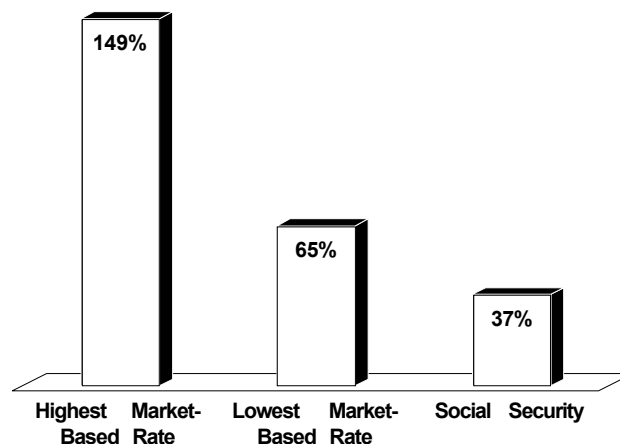
As of year-end 2000 total U.S. pension assets were about \$7.2 trillion, with 63 percent invested in stocks. Total worldwide pension assets were \$12.2 trillion.

But even in the face of market-based popularity and pay-as-you-go concern, there is anxiety about market risk as it relates to Social Security's finances. However, the historical record suggests that risk is

within reasonable bounds.

The average of the annual returns of the U.S. equity market from 1926 through 2000 was 13.4 percent; adjusted for inflation it was 10.1 percent. There is a rule of thumb that one's standard of living during retirement would be comparable to that just prior to retirement if retirement income equaled 70 percent of one's last year's wage, a ratio called the replacement rate. Assuming a 45-year working career, a 6 percent saving rate and life expectancy of 20 years at retirement, one's portfolio would have to earn an average annual real rate of return of 5.7 percent for the entire 65 years to achieve the 70 percent replacement rate.

Replacement of Last Working Year's Wages



Note: Assumes 6 percent savings rate for Bar 1 and Bar 2, 10.6 percent payroll tax for Bar 3; retirement at age 65.

Source: Author's calculations.

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- The stock market's worst average annual real rate of return for 65 consecutive years was 8.5 percent.
- The worst average annual real return over 65 years for a more modest portfolio of 60 percent stocks and 40 percent bonds was 6.0 percent.

The Effect of Year-to-Year Returns on Average Return. Although these long-run returns appear to be sufficient to achieve the 70 percent replacement rate, they don't tell the whole story. Accumulated wealth most likely would vary from that estimated using the average return for the full period.

To illustrate, imagine saving \$1,000 at the beginning of each year for two years. Further imagine that although the average rate of return is 10 percent for the two-year period, it is provided by different yearly returns of, say, 10 and 10 percent, 15 and 5 percent, and 5 and 15 percent. Accumulations from the three patterns differ. They are \$2,310.00, \$2,257.50 and \$2,357.50, respectively. This is true even though the same amount was saved and the average of the annual returns was the same.

Market-Based Retirement Benefits. One way to cut through these complications is to estimate how much wealth, as a multiple of one's last year's wage, is necessary at the beginning of retirement to provide for a 70 percent replacement rate. The answer is about 10.5 times, assuming a 3 percent real rate of return earned on an annuity certain for 20 years during retirement. That is, if one's last year's wage were \$30,000, approximately the average income for Americans, then accumulated wealth needs to be about \$315,000 to provide the 70 percent replacement rate for the next 20 years.

Over the last three quarters of a century, how did the stock market do in achieving this goal? Starting in 1926 there are 30 possible 45-year investment periods, the last one ending in 2000. Assuming a constant 6.0 percent saving rate, all but four of the 30 periods achieved the 70 percent goal. As the figure shows:

- The worst last year's wage multiple was 9.7 for the worker entering the labor force in 1937, earning a replacement rate of 65 percent.
- The highest multiple was 22.4 for the 1955-to-1999 cohort, earning a 149 percent replacement rate.

In contrast, at age 65 average income workers' replacement rate from Social Security is scheduled to

be only 37 percent from a payroll tax rate of 10.6 percent. From this analytical perspective, at their worst, market-based retirement benefits are about 76 percent greater than projected pay-as-you-go benefits at a cost that is 43 percent less.

Although the history of our equity market in estimating the future is instructive, it certainly is not conclusive. Returns may be less, their ordering may not be advantageous and unforeseen shocks may appear. Nevertheless, risks associated with the unknown can be managed, although not eliminated, by diversifying across asset classes, borders and time. There are now more than 65 functioning stock markets around the world that trade in corporate securities worth approximately \$20 trillion. Country market returns do not move in lock-step, allowing for the construction of portfolios that are highly diversified. These opportunities are now available to American workers who save for their retirement needs.

Conclusion. The history of pay-as-you-go financing in estimating the future is also instructive — but in contrast, it is more conclusive. Historical benefits provided by a ratio of many workers to beneficiaries are simply unattainable at the same payroll tax rate as the relative number of workers declines. Taxes may rise as they have in the past, or benefits may be cut. But the two cannot remain constant while the worker/beneficiary ratio shrinks further.

Both market-based and pay-as-you-go financing have risk. But from most any reasonable perspective, retirement benefits provided from systematic saving and investing will be less expensive and more secure than those provided from taxing workers, each of whom must continually support more beneficiaries.

President Bush has asked our country to engage in this issue for he realizes that a national dialogue is necessary before substantive change can possibly occur. He is no longer alone. Leaders from around the world also are encouraging their citizens to consider the possibility of market-based financing for the future of their retirement systems. An open dialogue with reasoned discourse has started, a necessary prelude to solving one of society's great financial challenges.

William G. Shipman is coauthor of Promises to Keep: Saving Social Security's Dream (Washington, D.C.: Regnery Publishing, 1996).

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