How Much Is Too Much Risk In Retirement?

Evaluating asset allocation strategies.

By Massi De Santis

Target-date, or life-cycle, strategies will capture as much as 63 percent of DC plan contributions by 2018, according to Cerulli Associates.[1] Such "do-it–for-me" strategies, created by the Qualified Default Investment Alternative (QDIA) "safe harbor" provision of the 2006 Pension Protection Act permanently changed the DC investment landscape. Below I will answer key questions about the successes and risks of these investment strategies.

What is the range of the initial equity allocation in target-date funds at the time of retirement, and what is the average?

Equity allocation at retirement varies widely. According to recent Morningstar reports, it can range from a low of approximately 20 percent to a high of close to 60 percent. The average allocation across 2015 funds is 51 percent and falls to 42 percent across 2010 funds. These statistics can vary year-over-year; actual allocations for a fund family over time do not necessarily follow a smooth glide path.

Is it true that exposure to equity markets provides a meaningful way for a participant to help grow retirement savings?

Yes, research shows there is an expected premium associated with holding a well-diversified portfolio of equities over a risk-free asset. A manifestation of the premium is that, historically, equities have realized higher returns than assets like government bonds. While expected returns on equities are greater than returns on less risky assets, actual returns at any point in time may be lower. So the higher expected return offered by equities comes with a tradeoff. It is important to acknowledge the tradeoff and allocate a portion of your assets to equities only to the extent it helps achieve the desired goal.

What is a reasonable way for a participant (or a plan sponsor) to plan for retirement?

A good plan for retirement starts with defining the goal. For example, how much of my gross, pre-retirement income should I replace to maintain a desired standard of living? There is no easy answer. There is substantial uncertainty about how much one will need in retirement. A research paper by Marlena Lee (2012) at Dimensional provides a useful framework and a starting point for participants and plan sponsors to think about replacement income.[2]

Once the goal is defined, a good savings plan takes into account many of the uncertainties that participants face throughout their careers. First, there is uncertainty about future returns. Second, there is uncertainty about how much a participant will be able to contribute. A good plan should take these uncertainties into account and be flexible enough to recognize the difficulties savers may face. A one-size-fits-all savings rule may not work for a lot of people. In a recent research paper, Marlena Lee and I (2013) developed a dynamic saving rule that changes over time as a participant's income changes.[3] According to this rule, saving rates start low and increase as income increases. Besides leading to a higher probability of achieving goals across all income groups, the dynamic savings rule recognizes that it may be hard for young people with competing capital needs to achieve high savings rates. And it may be OK to start saving at low rates as long as savings rates increase over time as income increases.

A third important element of a good plan should be a way to answer the "Am I on track?" question. For younger participants with a lot of uncertainty about future goals and needs, being on track means you start saving, even at low rates, and invest in growth assets. As participants learn more about future earnings potential and future needs, it is important to monitor performance towards that goal. In our paper, we show how the level of accumulated assets relative to income can be used as a yardstick to evaluate goals and required savings rates at intermediate points in one's career.

How does the calculation change for younger vs. older employees?

Most of the retirement wealth for younger employees is in the form of future savings; very little is accumulated financial capital. Future savings — human capital — is an asset that can be treated in a similar way to fixed income. A high level of human capital gives young participants the ability to take on more risk with their financial assets. When viewed from a total capital perspective, their allocation to growth assets (like equities) is relatively low. As they convert their human capital into financial capital through savings, their human capital declines while their financial capital is expected to increase. Asset allocation should reflect the shift in the risk composition of the total retirement capital, so allocation to risky assets like equities should gradually decline.

You mentioned that you expect equities to outperform fixed income over time. Does that account for the risks?

Historically, equities have outperformed fixed income. Annual returns in US equity markets between 1926 and 2013 averaged 8.7 percent after inflation.[4] In the same period, five-year Treasury notes averaged 2.5 percent after inflation, and Treasury bills 0.6 percent, also in real terms.[5] Globally, since 1980, which coincides roughly with the introduction of the 401(k), equities have returned 8.7 percent on average, after adjusting for US inflation.[6] Expected growth of equity assets comes with the possibility of large losses. For example, we had at least two large financial crises in the last 85 years, one during the Great Depression and one in 2008–2009.

Can you elaborate on the impact of downturns in the economy as a whole?

When job losses occur during an economic downturn, it may take awhile before workers can be employed again. And when they are employed again, they may have to accept a lower real wage. Some workers may be discouraged, leave the workforce, and retire early — not because they are ready financially, but because they have no viable options in the labor market.

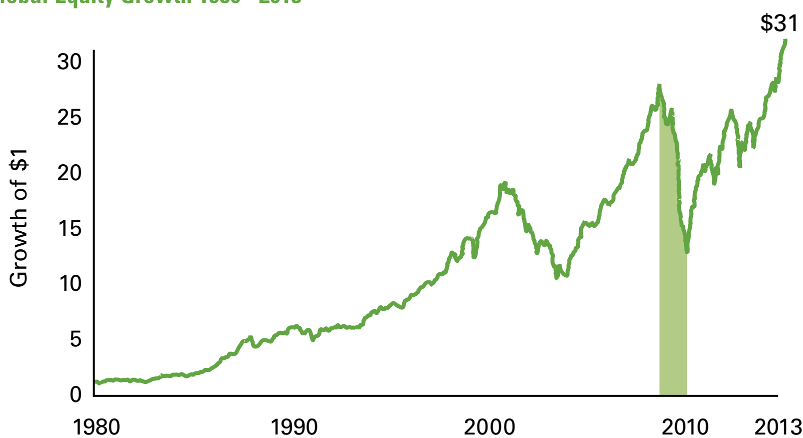
The 2014 Employee Benefit Research Institute (EBRI) study finds that while the median expected retirement age among workers is 65, the actual median retirement age for recent retirees is 62. Many Americans have to retire early unexpectedly, the study concludes. Besides the economy, health and disability are the main reasons. So it is important to plan to be ready a number of years before you expect to retire, and have flexibility in when you plan to retire.

What could people investing for retirement have expected to lose with various allocations to equities during the financial crisis?

One way to measure the downside risk of a portfolio is to look at what is called the maximum drawdown of the portfolio. When you look at the portfolio value during a given sample period, you can observe several peaks and troughs. The maximum drawdown is simply the maximum peak-to-trough loss that you observe. For example, since 1926, the maximum drawdown in US equities occurred between August 31, 1929, and June 30, 1932; the stock market experienced a loss of 83.4 percent.[7] If you look at the period since 1980 (see chart, below), the maximum peak-to-trough loss in global equities occurred between October 2007 and February 2009, when equity markets lost 54.6 percent.[8]

The maximum loss in a portfolio of equities and fixed income depends on the relative exposure to the two asset classes. Since January 1980, a portfolio of five-year T-notes would have peaked in May 1980 and bottomed out in August 1981 (using monthly data). The peak-to-trough loss would have been 8.5 percent.[9] The maximum peak-to-trough losses of a portfolio are sensitive to the equity/fixed income split. A portfolio with 25 percent global equities and 75 percent in five-year T-notes would have a maximum drawdown of 11 percent in the period since 1980. In contrast, the maximum peak-to-trough losses for a 45/55 portfolio — close to the industry average — would be 23 percent, more than double the losses of the 25/75 portfolio.[10]

Global Equity Growth 1980–2013



Global equities based on monthly nominal returns of the MSCI World Index (gross div.) from January 1, 1980, to December 31, 1987, and the MSCI All Country World Index (gross div.) from January 1, 1988, through December 31, 2013.

How did average target-date funds fare during this time period?

For 2010 target-date funds, the closest vintage to retirement during the crisis, equity allocations ranged from 26 percent to 65 percent as of late 2009, with an average of approximately 46 percent across funds.[11] Between October 2007 and February 2009, maximum peak-to-trough across the 2010 target-date funds in the Morningstar report averaged 33 percent. The largest loss was 57 percent and the smallest 17 percent.[12]

What does your research suggest for plan sponsors as they evaluate asset allocations for employees getting close to retirement?

There are three main findings:

1. A reasonable way to structure a retirement savings plan is to target a replacement rate and a corresponding savings rate. It is also important to monitor performance and revise the plan as circumstances change.
2. There is no free lunch. An allocation to equities should be taken to the extent it helps achieve a goal and in relation to the overall composition of one's assets. Younger workers with a high human capital component are natural bearers of equity risk.
3. It follows that plan sponsors should evaluate the level of risk in popular QDIA products for cohorts close to, or in, retirement.

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Past performance is no guarantee of future results. All investments are subject to market risks and may fluctuate in value over time. Investing entails risks, including possible loss of principal.

[1] The Cerulli Edge — Retirement Edition, 1Q 2014, Issue #30.

[2] Marlena Lee, "The Retirement Income Equation," DC Dimensions, Summer 2012.

[3] Massi De Santis and Marlena I. Lee, "Dynamic Saving Rates," Dimensional Fund Advisors, 2013.

[4] CRSP 1–10 index returns adjusted for CPI inflation.

[5] Using data from Morningstar.

[6] Global equity returns measured by MSCI AC Index for the period 1988–2013, and MSCI WI Index for the period 1980 to 1987.

[7] US equity returns measured by monthly nominal returns on the CRSP 1–10 index.

[8] Monthly global equity returns uses nominal returns on MSCI AC for the period January 1988–December 2013, and MSCI WI for the period January 1980–January 1987.

[9] Using data from Morningstar.

[10] Peak-to-trough dates may differ depending on portfolio composition: for 25 percent equity exposure, 3/31/2008–2/28/2009; for 45 percent equity exposure, 11/30/2007–2/28/2009.

[11] As computed from Morningstar 2010 Target-Date universe, comprising 27 funds. Note: Two fund families did not operate throughout the entire time period and were excluded from the calculation.

[12] Ibid.

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