THE “WHEN TO RETIRE” DECISION:
Impact on Retirement Security and Workforce Management

Introduction

The timing of an individual's retirement can have a significant impact on his or her retirement security. It can affect the amount saved for retirement, the level of Social Security benefits received during retirement, and the investment returns earned on retirement savings after retiring. At the same time, the decision about when to retire has become more complex. Today, fewer individuals are covered by defined benefit (DB) plans, which help guide DB participants' retirement decisions by providing them with certainty about how much retirement income they will receive after retiring. Increasing longevity also makes retirement planning challenging, because individuals have to plan for retirements that may last anywhere from a few years to multiple decades.

Prudential Financial sponsored research by the University of Missouri to identify the key factors that impact when individuals choose to retire. This research identified several factors that make individuals more likely to retire in any given year, including strong equity markets performance, the retirement status of a spouse, and participation in a DB plan. Some of these factors heighten the retirement risks to which individuals are exposed. For example, based on historical stock market data, retiring after periods of strong equity market performance increases the likelihood of experiencing negative equity returns just after retiring, which have a much more detrimental impact on an individual's retirement security than negative returns experienced later in retirement.

This article outlines the findings from the University of Missouri's research, highlights Prudential's analysis of the investment risks associated with an individual's elective retirement decisions, and discusses the implications for employers.

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1Delaying retirement can increase Social Security benefits due to the incremental Social Security contributions paid by an individual working longer, as well as via delayed retirement credits earned by an individual delaying retirement past the minimum age at which he or she is eligible for benefits (up to age 70).

2Rui Yao and Eric Park, University of Missouri, “Do Market Returns Affect Retirement Timing?” March 2011. This study was fully funded by Prudential Financial.

3Prudential Financial analysis 2011.
“...after controlling for variables such as age, wealth and income, some of the factors that have a significant impact on individuals’ decisions about when to retire include: equity market returns, the retirement status of a spouse, and the type of retirement plan in which an individual participated.”
Key factors which impact an individual’s decision to retire

The University of Missouri research is based on an analysis of the elective retirement decisions of a cohort of pre-retirees tracked by the Health and Retirement Study from 1992 to 2008. This cohort comprised individuals between the ages of 51 and 61 in 1992, and hence likely to be making decisions about when to retire during the period the study was conducted. According to this research, after controlling for variables such as age, wealth and income, some of the factors that have a significant impact on individuals’ decisions about when to retire include: equity market returns, the retirement status of a spouse, and the type of retirement plan in which an individual participated.

Equity market returns have a pronounced effect on individuals’ elective retirement decisions. On average, a 1% increase in the S&P 500 Index in any given year increases the probability that a pre-retiree will retire during that year by 2.5%. For example, during a year in which the S&P 500 gains 10%, pre-retirees are 25% more likely to retire than a year in which the S&P 500 was flat.

The retirement status of a spouse is also an important consideration in elective retirement decisions. Pre-retirees with a retired spouse are 2.4 times more likely to retire in any given year than pre-retirees whose spouses are working. Finally, pre-retirees covered only by DB plans are 1.9 times more likely to retire in any given year than pre-retirees covered only by defined contribution (DC) plans.

Moreover, these factors have a cumulative impact on individuals’ retirement timing decisions. For example, the combination of the retirement of a spouse and recent strong equity market performance will make an individual more likely to retire than if only one of these conditions were true.

Not surprisingly, pre-retirees become more likely to retire the older they are and the higher their net worth, after controlling for other variables such as income.

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*The Health and Retirement Study is a national biannual panel survey that tracks the retirement, health, insurance, and economic status of a sample of individuals over age 50 and their spouses/partners. The survey is conducted by the Institute for Social Research at the University of Michigan and funded by the National Institute of Aging. Data was used from nine interview waves, beginning with the wave collected in 1992. The total sample size in 1992 was 12,652 respondents from 7,608 households. This sample was narrowed to respondents between age 51-61 in 1992 and still working full-time or part-time.*


*This relationship is based on analysis of market return data that ranged from -38% to 52% in returns in one year.*
Risks posed by retiring after periods of strong equity market performance

The University of Missouri research demonstrates that individuals have a tendency to retire after periods of strong equity market performance. This raises two important retirement planning questions:

- Does retiring after periods of strong equity market performance make it more likely that an individual will experience negative equity returns just after retiring?
- What is the impact of negative returns experienced early in retirement?

To explore the first question, Prudential analyzed the complete set of historical returns of the S&P 500 to determine how likely that index was to have a negative year of investment returns after preceding three-year periods in which the S&P 500 Index had an average annual return above a certain level.

As shown in Exhibit 1, the probability of a negative year for the S&P 500 was higher after periods of stronger performance in the preceding three years. For example, the probability of a negative year was nearly twice as high after three-year periods in which the average annual return for the S&P 500 was 20% or higher than three-year periods in which the average annual return was 10% or higher.

Individuals may retire after sustained periods of strong equity market performance because they have achieved a certain level of retirement assets. Unfortunately, based on historical market data, this behavior increases the risk of individuals experiencing a market decline right after retiring.

Exhibit 1: Market Returns After Strong Periods of Market Performance

<table>
<thead>
<tr>
<th>Three-year average annual returns exceeding 10% through 20%*</th>
</tr>
</thead>
<tbody>
<tr>
<td>10%</td>
</tr>
<tr>
<td>28%</td>
</tr>
</tbody>
</table>

*For example, the last column represents a 50% probability of a negative one-year return after a three-year average annual return of 20% or higher.

Source: Prudential analysis based on historical annual returns of the S&P 500 Index from 1926 to 2010
To make matters worse, market losses during the early years of retirement are much more detrimental to retirement security than losses experienced later in retirement. This risk, known as the sequence of returns risk, is illustrated in Exhibit 2, which shows how a hypothetical retiree’s portfolio performs in two different scenarios:

- **Scenario 1**: A retiree experiences positive investment returns early in her retirement and negative returns during the latter part of her retirement.

- **Scenario 2**: The pattern of returns is reversed, with negative returns occurring earlier and positive returns occurring later. The average annual return over the modeled time period is identical to Scenario 1.

The retiree’s portfolio fares much worse in Scenario 2, highlighting the risk posed by negative returns early in retirement. The reason for this is that as the retiree withdraws assets from her retirement portfolio, there are fewer assets left for her to benefit from positive returns in her later years of retirement.

### Exhibit 2
Impact of the Sequence of Market Returns on a Retirement Portfolio

**Key Assumptions**
- $1,000,000 starting balance for portfolio in both scenarios
- $50,000 annual withdrawal from portfolio in both scenarios
- Average returns of 0% over 11 years in both scenarios
- Negative returns occur during the later years in Scenario 1 and during the early years in Scenario 2

**Source**: Prudential Financial Calculations

**Notes**: This example is hypothetical, intended for illustrative purposes only, and not meant to represent the performance of any particular investment; the hypothetical returns do not reflect any investment or account fees.

<table>
<thead>
<tr>
<th>Year</th>
<th>Scenario 1: Early positive returns</th>
<th>Scenario 2: Early negative returns</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Annual Return</td>
<td>Ending Balance</td>
</tr>
<tr>
<td>0</td>
<td>N/A</td>
<td>$1,000,000</td>
</tr>
<tr>
<td>1</td>
<td>10%</td>
<td>$1,050,000</td>
</tr>
<tr>
<td>2</td>
<td>8%</td>
<td>$1,084,000</td>
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<tr>
<td>3</td>
<td>6%</td>
<td>$1,099,040</td>
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<tr>
<td>4</td>
<td>4%</td>
<td>$1,093,002</td>
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<tr>
<td>5</td>
<td>2%</td>
<td>$1,064,862</td>
</tr>
<tr>
<td>6</td>
<td>0%</td>
<td>$1,014,862</td>
</tr>
<tr>
<td>7</td>
<td>–2%</td>
<td>$944,564</td>
</tr>
<tr>
<td>8</td>
<td>–4%</td>
<td>$956,782</td>
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<tr>
<td>9</td>
<td>–6%</td>
<td>$755,375</td>
</tr>
<tr>
<td>10</td>
<td>–8%</td>
<td>$644,945</td>
</tr>
<tr>
<td>11</td>
<td>–10%</td>
<td><strong>$530,450</strong></td>
</tr>
</tbody>
</table>

*Assumes that a retiree has begun drawing income from his or her retirement assets.*
Implications for employers

Individuals’ retirement timing decisions clearly impact their retirement prospects. Moreover, these decisions may also have workforce management implications for employers. For example, periods of strong equity market performance are likely to lead to more retirements across a workforce, and conversely, periods of weak performance are likely to lead to fewer retirements. Employers may actually prefer that the opposite occur. Periods of weak equity market performance are likely to coincide with times when employers face challenging economic conditions and, therefore, may prefer that retirements take place as forecasted.

There are a number of steps employers can take to enhance their employees’ retirement prospects, while addressing the workforce management implications of this research.

• Motivate employees to think beyond a “number” for retirement. Employees may be more likely to retire after periods of strong equity market performance because their retirement assets have reached a certain level, informally called “hitting your number.” However, in addition to assessing whether they have sufficient assets to retire, employees should also evaluate whether they will have enough income in retirement. For example, today’s low interest rate environment can make it difficult to generate high levels of retirement income from retirement assets invested in CDs or money market accounts.

To address this, it may be appropriate to educate employees to not only base their retirement decisions on how much they have saved, but also on how much retirement income it will generate. This may motivate employees to save more for retirement, potentially postpone their retirement to increase their Social Security benefit (hence their future retirement income) and help reduce their future retirement expenses since they will have to fund fewer years while not working.

• Educate employees about the risks associated with the timing of their retirements. For example, an employee who just “hit his number” after several years of strong equity market performance faces more risk if retiring today than an employee who “hit his number” years ago, but kept working and saving. In another example, households in which both earners retire at the same time are exposed to the risk of being unable to replenish their retirement assets if a significant market downturn occurs. Helping employees understand the risks associated with the timing of their retirements can help them make more informed decisions about when to retire.

• Strengthen DC plans by incorporating guaranteed lifetime income products. According to University of Missouri’s research, individuals covered only by DB plans are more likely to retire in any given year than individuals covered only by DC plans. DC participants may delay retirement because they feel less secure than DB participants about how financially prepared they are. Guaranteed lifetime income products can help DC participants feel more confident about their retirements. These products typically provide employees with certainty about how much retirement income they will receive after retiring, regardless of how long they live or how the markets perform. As a result, such products may dampen the impact of the equity markets on employees’ elective retirement decisions, thereby potentially improving an employer’s ability to forecast and plan for their staffing needs. In addition, such products mitigate the sequence of returns risk to which DC participants are exposed by insulating participants’ retirement income from the impact of market fluctuations.

In a recent survey, 40% of finance executives said that their companies either already offer, or plan to offer within the next two years, guaranteed lifetime income products to DC plan participants.9

Conclusion

Individuals decide when to retire based on factors that go well beyond just their age. Moreover, individuals have a tendency to retire at potentially risky times, such as after periods of strong equity market performance or following the retirement of a spouse. Fortunately, there are a number of retirement planning approaches and investment solutions that employers can use to influence when their employees retire and to help mitigate the risks associated with the timing of those retirements. These approaches and solutions will not just brighten the retirement prospects of employees, but also have the potential to improve an employer’s ability to manage its workforce.

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