Revisiting T. Rowe Price’s Asset Allocation Glide-Path Strategy

INTRODUCTION

Given 2008’s severe stock market losses, many investors approaching or already in retirement have been rethinking the role of equities in their portfolios—perhaps with an eye on reducing their allocations to stocks.

But rather than making critical long-term investment decisions based on extraordinarily poor short-term returns, it is important for investors to reconsider how potentially higher stock returns could reduce the long-term risks of running out of income in retirement, says Jerome Clark, lead portfolio manager of the T. Rowe Price Retirement Funds.

“Many people right now are focused on this extreme bear market, which, while devastating, is a short-term snapshot within decades of retirement saving and withdrawals,” Mr. Clark says. “Just to focus on that is to take a short-sighted view and is not the best way to go about structuring your assets with the goal of generating an income stream throughout a long retirement.”

T. Rowe Price studies have long shown that retirees need exposure to equities—decreasing over time to reduce market risk—in order to have a high probability of not outliving their assets over a potential 30-year span of retirement.

Consequently, while the T. Rowe Price asset allocation glide path pursues a more conservative investment strategy as investors grow older, it maintains an age-appropriate exposure to equities—even after investors retire.

“The glide path is not designed around an extreme market outcome for any one particular year but to address needs over 30 years of retirement,” Mr. Clark says. “If we were designing a strategy enabling you to cash out all your assets at retirement, then we would have built in much more principal stability with a higher fixed-income allocation approaching age 65. But most retirees don’t need all or most of their assets at 65. What retirees need is a long-term income stream from those assets.

“In order to have the best chance to not run out of money in retirement, we believe investors need to adequately participate in equity markets.”

THE GLIDE PATH

The T. Rowe Price asset allocation glide path starts with 90% of investors’ assets in stocks for those more than 25 years from retirement, reduces that to 55% at age 65, 35% at age 80, and 20% at age 95 and thereafter.

With more investors concerned about the level of equity exposure in their retirement accounts, T. Rowe Price undertook a new study to reexamine the potential benefits and risks of this asset allocation strategy.

The analysis reaffirms the glide path’s equity allocations for a diverse set of retirees who do not intend to cash out their assets at retirement but instead seek a stream of retirement income over their life spans.
In 2005, a 65-year-old couple had more than a 50% chance of one of them living to age 90 and a 23% chance of one of them living to age 95, according to the Society of Actuaries. Retirees also are not only living longer but staying active longer, and that tends to increase their income needs.

One of the key findings of the new simulation study is that if retirees restricted their initial withdrawal to 4% of their nest eggs (and increased each year’s withdrawal amount by 3% for inflation), then even a very conservative, all-fixed-income portfolio would provide a greater than 90% chance of not running out of money over 30 years.

However, relatively few retirees have saved enough or are so restrained in their withdrawals.

According to a 2007 survey by the Profit Sharing/401(k) Council of America, the average 401(k) participant’s saving rate is only 8.8%, including employer contributions—far less than the 15% savings rate that T. Rowe Price financial planners recommend to replace at least half of the participant’s preretirement income from his portfolio.

Meanwhile, the average withdrawal rate for participants 60 to 69 years old in 401(k) plans managed by T. Rowe Price is estimated to be more than twice as much as the recommended 4%.

Without sufficient equity exposure, retirees’ chances of not outliving their assets would fall sharply at higher withdrawal rates (see Figure 2).

At a 5% withdrawal rate, retirees potentially run the best chance of not running out of money with a portfolio that includes 40% equities—roughly the average allocation of T. Rowe Price’s glide path over a 30-year period from ages 65 to 95.

With 6% and 8% withdrawal rates, even greater stock allocations are required for better outcomes—though these results still fall far short of a 90% chance of success.

“Because many investors undersave and overspend, they tend to need help from their portfolios,” Mr. Clark says. “If they saved enough and didn’t withdraw too much, they could stick with a conservative allocation to stocks. But if you take into account what investors and retirees tend to actually do, then over the long term the best way to help them is by encouraging them to have adequate exposure to equities.”

**FIGURE 1: T. Rowe Price Retirement Funds’ Glide Path**

All T. Rowe Price Retirement Funds automatically change their asset allocations over time by emphasizing growth during the early phases of asset accumulation and becoming more conservative as the retirement date approaches and throughout a 30-year retirement period.

Each fund is structured as a “fund of funds” investing in up to 12 other T. Rowe Price mutual funds to offer a broadly diversified portfolio of stocks and bonds. Each fund provides an asset allocation strategy that managers consider appropriate for investors at various stages of the retirement planning process—both before and after retirement. The Retirement Funds invest in many underlying funds and are exposed to the risks associated with various markets. The higher a fund’s allocation to stocks, the greater the risk.

Call 1-800-922-9945 to request a prospectus, which includes investment objectives, risks, fees, expenses, and other information that you should read and consider carefully before investing.
The new study also found that adequate equity exposure could potentially provide more purchasing power for retirees, which is no small matter. For that reason, even those who withdraw only 4% of assets in the first year of retirement should consider having a significant equity allocation in their portfolios.

Based on thousands of potential market outcomes, the study examined the median remaining purchasing power for various asset allocation strategies after 30 years of retirement based on the inflation-adjusted final balance in the account as a percentage of the initial balance at retirement.

The result: Higher equity allocations generally translated to higher purchasing power.

For example, after 30 years of withdrawals, a fixed portfolio of 40% stocks and the rest in bonds had a median purchasing power of 131% of the original balance at retirement, while a portfolio of 60% stocks had a median purchasing power of 162% of the original balance.

Higher ending balances are assets that ultimately could be bequeathed to heirs or used for the all-too-common event of an unexpected medical or other expense arising late in life.

“So for retirees—who are not only concerned about having enough to live on for 30 years but also about having more protection from inflation and about meeting emergency expenses—maintaining a meaningful equity exposure makes sense,” Mr. Clark says.

At the same time, the principle that more equities tend to result in higher ending balances must be tempered by an appreciation for the greater risks of short-term market losses with higher equity allocations.

Because of the volatility of equities, the T. Rowe Price glide path aims to balance potential gains and risks by reducing equity exposure over time.

So it is designed for higher equity allocations and short-term risks in the first 15 years of retirement (when there remains time to recover from potential losses in stocks) and lower equity allocations and short-term risks in the remaining 15 years (when there is less time to recover from losses and when retirees tend to be more risk averse).

WHAT’S THE DOWNSIDE?

This T. Rowe Price analysis projects thousands of possible market outcomes based on expected returns for various asset classes. A look at actual historical results also supports the findings.

The firm compared three portfolio strategies over actual 30-year periods, starting with the one ended in 1955 through the one ended in 2008 (54 30-year periods in all). In the vast majority of these periods, investors tended to benefit from adequate equity exposure. (See Figure 3.)

The study compared the ending balances of three portfolios for each period, assuming a starting balance of $1 million and an initial annual withdrawal of 4% (increased annually by the Consumer Price Index for All Urban Consumers).
One of the three portfolios followed the T. Rowe Price asset allocation glide path for a 65 year old retiring with a 30-year horizon. Another was invested according to a more conservative glide path that had 10% less stocks and 10% more devoted to fixed income until an equity allocation of 20% was reached. The third portfolio followed an even more conservative glide path that had 20% less in stocks and 20% more in fixed income until an equity allocation of 20% was reached.

As might be expected, the standard glide path—with relatively more stocks than the other two more conservative portfolios—outperformed the other portfolios in the large majority of 30-year periods, providing significantly higher final balances to retirees.

However, even in the relatively few 30-year periods in which markets performed so poorly that the standard glide path ran out of money prematurely, there were very few times that it significantly underperformed the other portfolios. “In almost every period where the glide path ran out of money before the end of 30 years, the more conservative glide paths ran out of money too,” Mr. Clark says.

For example, during the 30-year period ended in 1998, the T. Rowe Price glide path ran out of money after the 28th year, as did the portfolio with 10% less in stocks. The portfolio with 20% less in stocks ran dry after 29 years.

“This is because, although more conservative allocations have performed better in below-average markets over the shorter term, there has tended to be a very limited range among poor outcomes for longer time periods, such as 30 years,” Mr. Clark says. “There hasn’t been much difference among widely varying asset allocations when markets are so disappointing over long periods.”

That’s not as much the case in stronger stock markets, when stocks have tended to outpace bonds by healthy margins.

“So long-term exposure to equities has tended to produce more long-term potential upside than more exposure to bonds,”

**FIGURE 3: Equity Gains Have Tended to More Than Offset Risks**

*Portfolio Value at End of Each 30-Year Period*

Based on historical returns, portfolios with the exposure to equities provided by the T. Rowe Price asset allocation glide path have tended to outperform similar portfolios with less equity exposure—while tending not to significantly underperform those more conservative portfolios over time in poor markets. Please note that past performance cannot guarantee future results.

This chart compares the ending balances based on actual historical returns for three different portfolios after 30 years of withdrawals in retirement, starting with the 30-year period ended in 1955 and so on. The three different portfolios are invested according to three glide paths: the T. Rowe Price asset allocation glide path, a glide path that starts with a 10% lower allocation to stocks, and a glide path with a 20% lower stock allocation.

The three portfolios each start with $1 million and a 4% initial withdrawal amount the first year. Withdrawals are increased by the rate of inflation each subsequent year. Portfolio balances more than $0 reflect surplus assets at the end of a 30-year retirement horizon. Negative balances reflect shortfalls or running out of income before the end of the 30-year retirement period.

![Equity Gains Have Tended to More Than Offset Risks](chart)

1 T. Rowe Price glide path with equity allocation reduced by 10% and fixed income allocation increased by 10%, with minimum equity allocation of 20%.
2 T. Rowe Price glide path with equity allocation reduced by 20% and fixed income allocation increased by 20%, with minimum equity allocation of 20%.


Please note that it is not possible to invest in any of these indexes directly.

Mr. Clark says, “and it has not tended to produce significantly more long-term downside risk.” Of course, past performance cannot guarantee future results.

“There’s no Holy Grail here—your outcomes depend on the market,” he says. “After 2008, many investors may well say they wish they had not had such a high equity allocation because they lost so much money. But if you’re not successful because of bad markets, the alternative approaches—more conservative asset allocations—also tend to be unsuccessful.”

**ACCUMULATED GAINS**

While investors naturally focus on severe losses suffered in a bear market, they often overlook the accumulated gains from equity exposure during the preceding years.

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**SIMULATION STUDY EXPLAINED**

Monte Carlo simulations model future uncertainty. In contrast to tools generating average outcomes, Monte Carlo analyses produce outcome ranges based on probability, thus incorporating future uncertainty.

**Material Assumptions Include:**

- Underlying long-term expected annual returns for the asset classes are not based on historical returns, but estimates, which include reinvested dividends and capital gains.
- Expected returns—plus assumptions about asset class volatility and correlations with other classes—are used to generate random monthly returns for each class over specified time periods.
- These monthly returns are then used to generate thousands of scenarios, representing a spectrum of possible performance for the modeled asset classes. Success rates are based on these scenarios.
- Taxes aren’t taken into account, nor are early withdrawal penalties. However, fees (average expense ratios for typical actively managed funds within each asset class) are subtracted from the expected annual returns.

**Material Limitations Include:**

- Extreme market movements may occur more often than in the model.
- Some asset classes have relatively short histories. Expected results for each asset class may differ from our assumptions, with those for classes with limited histories potentially diverging more.
- Market crises can cause asset classes to perform similarly, lowering the accuracy of projected portfolio volatility and returns. Correlation assumptions are less reliable for short periods.
- The model assumes no month-to-month correlations among asset class returns. It does not reflect the average periods of bull and bear markets, which can be longer than those modeled.
- Inflation is assumed constant, so variations are not reflected in our calculations.

- The analysis does not use all asset classes. Other asset classes may be similar or superior to those used.

**Model Portfolio Construction**

Portfolios used in the analysis were designed to illustrate certain principles—not necessarily for effective diversification among asset classes. The models are either preset, static allocations, or the model allocations shift in 5% increments throughout the retirement horizon creating a “glide path.”

The initial withdrawal amount is the percentage of the initial value of the investments withdrawn on the first day of the first year. In subsequent years, the amount withdrawn grows by a 3% annual rate of inflation. Success rates are based on simulating 10,000 market scenarios and various asset allocation strategies. The underlying long-term expected annual return assumptions (without fees) are 10% for stocks; 6.5% for intermediate-term, investment-grade bonds; and 4.75% for short-term bonds. Net-of-fee expected returns use these expense ratios: 1.211% for stocks; 0.726% for intermediate-term, investment-grade bonds; and 0.648% for short-term bonds.

**IMPORTANT:** The projections or other information generated by the T. Rowe Price Investment Analysis Tool regarding the likelihood of various investment outcomes are hypothetical in nature, do not reflect actual investment results, and are not guarantees of future results. The simulations are based on assumptions. There can be no assurance that the projected or simulated results will be achieved or sustained. The charts present only a range of possible outcomes. Actual results will vary with each use and over time, and such results may be better or worse than the simulated scenarios. Clients should be aware that the potential for loss (or gain) may be greater than demonstrated in the simulations.

The results are not predictions, but they should be viewed as reasonable estimates. Source: T. Rowe Price Associates, Inc.
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