



## PRICE PERSPECTIVE

April 2015

In-depth analysis and insights  
to inform your decision making.



Richard K. Fullmer, CFA

# Glide Path Classification: **SENSIBLY REFRAMING “TO VERSUS THROUGH”**

---

### EXECUTIVE SUMMARY

- The convention of classifying target date glide paths as either “to retirement” or “through retirement” suffers from a number of significant shortcomings that could lead those who rely on it to make misinformed investment decisions.
- The allure of “to/through” is that it provides a simple shorthand method for assessing a glide path’s investment objectives based solely on its shape. The problem is that while a glide path’s design objectives will influence its shape, it does not follow that a glide path’s shape can be translated back to its design objectives.
- We prefer a classification system that is solidly objectives-based rather than shape-based. Retirement plan objectives tend to be twofold: lifetime income replacement and limiting the risk of capital loss. Because these objectives compete against each other, glide path design involves the decision of how much to emphasize one objective versus the other.
- Our approach attempts to directly measure the emphasis placed on each objective. This allows glide paths to be not only categorized by their *direction* of emphasis, but also ranked by their *magnitude* of emphasis.
- T. Rowe Price offers two glide paths, each of which attends to both objectives, but with different degrees of emphasis.

---

It has become customary in the investment industry to employ a shorthand method of classifying target date portfolios as either “to retirement” or “through retirement” strategies based on the shape of their asset allocation glide paths. The purpose of such classification, presumably, is to help investors and retirement plan sponsors identify glide paths that may be suitable for their objectives. This is a noble purpose, one that perhaps arose out of a sense that target date portfolio providers had not communicated their objectives clearly enough, in which case it should not be surprising that some type of classification paradigm arose from the void.

Unfortunately, the “to/through” classification paradigm has serious shortcomings that make it wholly unsuitable for this purpose. The designation between “to” and “through” is a misnomer that serves to confuse more than it does to distinguish. One source of confusion is a lack of agreement on how these terms are defined. Even if a common definition existed, however, the “to/through” classification convention would still be of limited value to investors because its shape-based methodology reveals very little about the objectives a glide path seeks to achieve. Moreover, it forces categorization into one of only two buckets—as if investor preferences were

completely binary—whereas, in practice, a continuum of preferences exists. These shortcomings could lead investors and plan sponsors to unwittingly overlook an entire set of glide paths that might in fact be better-suited to their objectives.

For these reasons, we prefer to reframe the discussion into a more thoughtful evaluation of how the selection of a target date glide path depends upon the specific investment objectives and preferences of a defined contribution (DC) plan or individual investor. By focusing on the objectives that matter most, our approach preserves the desire for a simple shorthand method of glide path classification.

SHORTCOMINGS OF THE TO/THROUGH PARADIGM

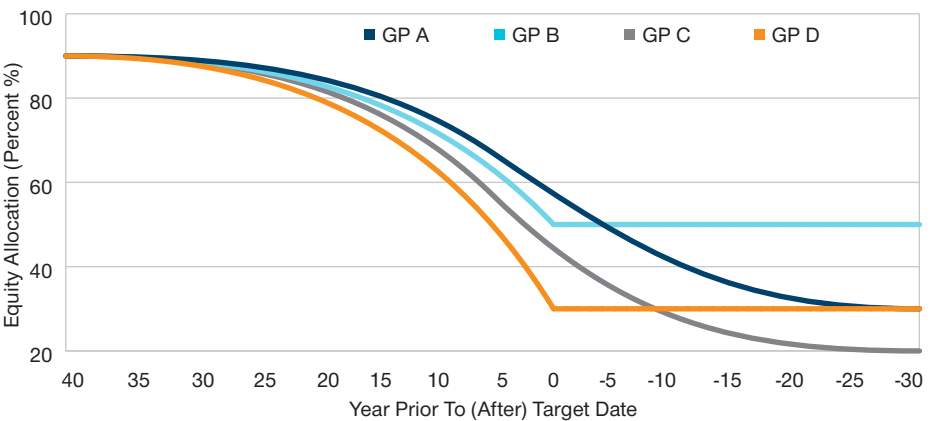
Glide paths are represented as the percentage of a target date portfolio that is strategically allocated to equity assets throughout its life cycle. Ideally, target date strategies should be classified based on their objectives—what the glide path is designed to accomplish. However, that is not the case with the “to/through” convention, which instead classifies them based on their shape—what the glide path “looks like.”

At first glance, this “shape-based” approach may seem reasonable given that a glide path’s design objectives should determine its shape. While this is true, it does not follow that a glide path’s shape can be translated back into its design objectives. While the “to/through” convention may have been well-intentioned as a simple means of classifying glide paths according to their objectives, it is actually quite ineffective at doing so.

Glide paths are commonly classified as “to” or “through” using one of two methods:

- **Method One: Based on the shape of the glide path after the target retirement date.** The asset allocation

FIGURE 1: Hypothetical Target Date Glide Paths



Glide Path	Method One Classification	Method Two Classification
A	Through	Through
B	To	Through
C	Through	To
D	To	To

Source: T. Rowe Price.

in “to” glide paths reaches its most conservative point at the target date. The asset allocation in “through” glide paths continues to become more conservative after the target date.

- **Method Two: Based on the level of equity in the glide path as the target retirement date approaches.** “To” glide paths take relatively less market risk as retirement approaches to guard against negative wealth outcomes. “Through” glide paths take relatively more market risk as retirement approaches to help achieve a higher level of retirement income potential.

Method One categorizes each glide path on a standalone basis. Method Two categorizes glide paths relative to other glide paths available in the market. Figure 1 illustrates how the two methods would classify four hypothetical glide paths.

Using Method One, glide paths B and D are considered “to retirement” strategies because they reach their most conservative point at the target date. Glide paths A and C are considered

“through retirement” strategies because they continue to become more conservative after the target date.

Using Method Two, on the other hand, glide paths C and D are considered “to retirement” strategies because they both grow relatively more conservative as the target date approaches compared with glide paths A and B. The latter two glide paths are considered “through retirement” strategies, reflecting their relatively higher equity allocations at the target date.

Both methods rely heavily on subjective interpretation. Under Method One, a glide path with a static equity allocation after the target date would be classified as “to retirement” even though its designers might have intended for it to provide income throughout retirement. Similarly, the dividing line in Method Two between “more market risk” and “less market risk” is a matter of opinion that can vary from person to person.

## A QUAGMIRE

The previous illustrations reveal that a given glide path quite confusingly might be categorized differently under each method:

- Glide path B, which utilizes a comparatively higher level of equity as the target date approaches and remains static afterward, is classified as “to retirement” using Method One, but “through retirement” under Method Two.
- Glide path C, which utilizes a comparatively lower level of equity as the target date approaches and continues to reduce the equity allocation afterward, is classified as “through retirement” under Method One, but “to retirement” using Method Two.

This quagmire arises out of the fallacy that a glide path’s objectives can be determined simply by examining its shape.

Adding to the confusion, neither classification method requires that a “to retirement” glide path should actually end at the target retirement date. But if “to retirement” does not mean “to retirement only,” what does it mean? The answer is unclear. Often-heard views on the subject include:

- **The Rollover Argument:** Some argue that “to retirement” glide paths are designed to account for the fact that many DC plan participants roll their balances into individual retirement accounts soon after retiring. The problem with this argument is that since these investors, by definition, plan to continue investing after the target date, they really intend to be “through retirement” investors. Thus, the rollover argument does not actually support the “to” case.<sup>1</sup>

- **The Annuitization Argument:** Others contend that “to retirement” glide paths are based on the assumption that investors will purchase a life annuity with their account balances upon retiring. The problem here is that the income provided by a life annuity is, by definition, intended to last through retirement. Thus, the annuitization approach actually forces the glide path designer to consider outcomes on a “through retirement” basis.

- **The Spending Argument:** Still others argue that “to retirement” strategies reflect the assumption that investors will draw down (i.e., spend) their balances relatively quickly after retirement—say, within a few years rather than over the course of their lifetimes. This position may be justifiable provided the spending assumption is accurate. Some companies that offer well-funded defined benefit (DB) plans with rich benefits, for example, may not envision their DC plans serving as a primary source of lifetime income since the DB plan already fills that role.

The takeaway from these arguments is that unless one assumes investors truly plan to spend their account balances quickly after retirement, the distinction between “to retirement” and “through retirement” appears quite fuzzy.

### GETTING BACK TO WHAT MATTERS: OBJECTIVES AND OUTCOMES

The “to/through” convention places the focus on the wrong thing: the means (shape) rather than the ends (investment outcomes relative to one’s investment objectives). This misplaced focus could lead investors and plan sponsors to unwittingly exclude from consideration any number of glide paths that in fact might be well-suited to their

objectives. Rather than focusing on a shape-based categorization method, we believe plan sponsors and participants would be better served by focusing on their investment objectives and then assessing the suitability of various glide paths toward meeting them. These objectives tend to be twofold:

- lifetime income replacement and
- limiting the risk of capital loss, especially around the time retirement occurs.

The first objective is important for those whose retirement accounts are meant to provide lasting income. The second objective is important for those who wish to take withdrawals over shorter horizons, because losses ultimately matter only when they are actually realized by selling shares. Both objectives are important, and the relative importance placed between them is a matter of personal preference. For some, lifetime income takes precedence. For others, limiting the risk of capital loss takes precedence.

These two objectives also are clearly at odds with each other. Glide paths with higher levels of equity exposure offer better potential for delivering higher levels of lifetime income.<sup>2</sup> Conversely, glide paths with lower levels of equity exposure offer reduced risk of capital loss as participants approach and enter retirement. Thus, glide path selection involves making a compromise between these two objectives.

Although the *slope* of a glide path certainly matters, its significance should be kept in perspective. Regardless of slope (whether steeply downward-sloping, gradually downward-sloping, perfectly flat, or even U-shaped), the primary driver of investor outcomes is

<sup>1</sup>The mere act of rolling over a balance into a different account should have virtually no effect on the glide path strategy when the rollover does not create a tax liability, which is the case with most rollovers. This assumes rollovers can be handled efficiently, as with electronic transactions, so that investors do not need to be out of the market while the transaction is being processed.

<sup>2</sup>Keep in mind that the primary objective of a lower-equity glide path could very well be to provide lifetime income, just less of it on average than would be the case with a higher-equity glide path.

<sup>3</sup>This fact is often cited as justification for using Method Two to distinguish “to retirement” from “through retirement.” The problem is that while the level of equity does affect outcomes, it does not by itself imply the length of the intended investment horizon. Additional perspectives on the topic of glide path slope can be found in “Reflections on Recent Target Date Research,” T. Rowe Price Asset Allocation Insights Report, February 2014, and its references.

the dollar-weighted average exposure to equity over the glide path.<sup>3</sup>

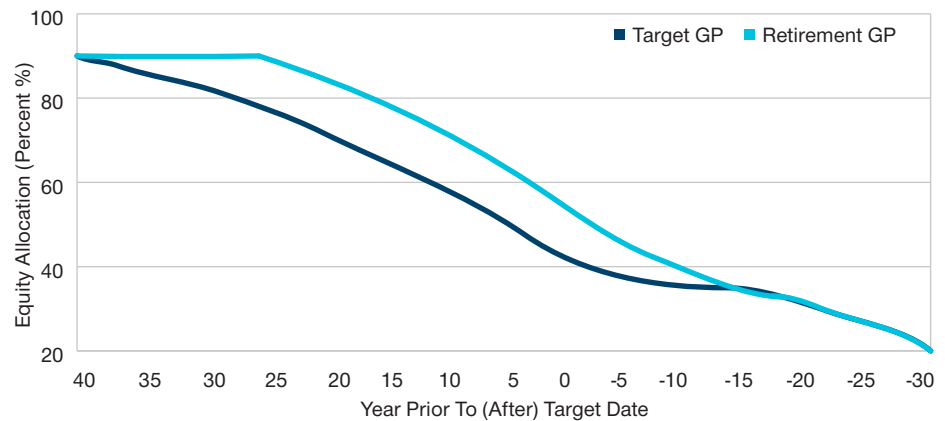
T. Rowe Price's objectives-based approach to distinguishing glide paths bears some similarities to the shape-based approach of the "to/through" convention. The goal of lifetime income replacement is comparable with the common notion of a "through" glide path, while the goal of limiting the risk of capital loss near retirement is comparable with the common notion of a "to" glide path.

The advantage of our approach, however, is that it measures glide path efficacy with respect to investment goals directly rather than by inference. It also does not suffer from ambiguity caused by fuzzy definitions or by forcing glide paths into one category or another. Instead, it allows for a continuum of choice to exist with regard to the importance that different investors might place on competing objectives.

Our approach can be implemented in a way that is understandable and usable. Glide paths could be scored and ranked in terms of their efficacy with respect to each objective.<sup>4</sup> Some would place a relatively higher emphasis on lifetime income, while others would place a relatively higher emphasis on limiting the risk of capital loss near retirement. Such a ranking system could signal not only the *direction* of emphasis, but also the *magnitude* of emphasis. Some glide paths might tilt strongly toward one objective or the other, while others might be more balanced.

We believe this approach provides a more useful framework for assessing the degree to which different glide paths align with investor objectives. Additional information on T. Rowe Price's approach can be found in the asset allocation papers listed in the reference section on page 5.

**FIGURE 2: T. Rowe Price Target Date Glide Paths**



Source: T. Rowe Price.

### THE T. ROWE PRICE GLIDE PATHS

T. Rowe Price currently offers two target date glide paths: the Retirement Glide Path and the Target Glide Path. These are shown in Figure 2. While both begin and end with the same equity allocation, the Retirement Glide Path maintains a moderately higher equity weight for most of the preretirement wealth accumulation phase and for the first few years after the target date.

One of the primary roles of the DC retirement system is to serve as a means for participants to accumulate sufficient savings to fund lifetime retirement living expenses beyond those covered by Social Security and other potential income sources that may be available, such as DB plans. Thus, both T. Rowe Price glide paths are designed with lifetime income potential in mind. However, we also recognize the importance of mitigating the risk of capital loss, especially in the transitional years leading up to retirement, and for that reason, both of our glide paths are designed with that risk in mind as well.

### BEHAVIORAL DESIGN: WHY OUR RETIREMENT GLIDE PATH AND TARGET GLIDE PATH CONTINUE TO SLOPE AFTER THE TARGET DATE

Both glide paths continue to slope downward after the target date. This has nothing to do with the "to/through" classification convention or either of the investment objectives discussed previously.

Rather, the equity slope in each glide path is designed to reflect common behavioral biases. Recall that target date portfolios are intended, in large part, for investors who may not be knowledgeable enough to make asset allocation decisions on their own. We believe an important aspect of glide path design is to help these investors avoid harmful behaviors—such as selling after market declines and buying again after market recoveries.

Our research suggests that many investors prefer to continue de-risking their portfolios throughout their retirement years. Our glide paths take this into account by continuing to gradually lower the equity exposure, thus helping investors avoid the harmful consequences of "sell low, buy high" behavior.<sup>5</sup>

<sup>4</sup>The scoring process involves modeling potential investment outcomes. Ideally, this assessment should be performed by an unbiased party with sufficient investment modeling expertise.

<sup>5</sup>This behavioral research is discussed in "Evaluation of Target-Date Glide Paths within Defined Contribution Plans," T. Rowe Price Investment Dialogue, August 2013. Behavioral biases as a missing element in recently published papers on the "optimal" shape of target date glide paths is discussed in "Reflections on Recent Target Date Research," T. Rowe Price Asset Allocation Insights Report, February 2014.



While both glide paths take both objectives into account, they do so with different degrees of emphasis (Figure 3):

- The Retirement Glide Path places relatively greater emphasis on lifetime income potential, and less emphasis on the risk of capital loss over shorter withdrawal horizons. It may, therefore, be more suitable for participants who are primarily concerned about lifetime income.
- The Target Glide Path places relatively greater emphasis on limiting the risk of capital loss over shorter withdrawal horizons, and less emphasis on lifetime income potential. It, therefore, may be more suitable for participants who are focused on short-term market volatility—whether because they intend to spend their account balances relatively quickly after retirement, or because they are simply more risk averse, even if their primary objective is lifetime income.

One glide path places relatively greater emphasis on lifetime income, while the other places relatively greater emphasis on limiting the risk of capital loss. In each case, however, the magnitude of emphasis is moderated by the fact that both objectives play a role in their design. We believe this balanced approach is sensible given the heterogeneous nature of investor situations, goals, and needs.

## CONCLUSION

The “to retirement” versus “through retirement” convention suffers from a number of significant shortcomings that make it an ill-suited system of glide path classification. Because there is no standard definition or methodology, many glide paths ambiguously may be categorized either way depending on the method used. Being highly subjective, the system is wholly reliant on interpretation, which will differ from

**FIGURE 3: Relative Emphasis of T. Rowe Price Glide Paths**

Glide Path	Emphasis On:		Shape-Based Categorization Using:	
	Lifetime Income Replacement Potential	Limiting Risk of Capital Loss Near Retirement	Method One	Method Two <sup>6</sup>
Retirement	Higher	Lower	Through	Through
Target	Lower	Higher	Through	To?

Source: T. Rowe Price.

person to person. Being binary, it does not allow for a continuum of investor preferences. Being shape-based rather than objectives-based, it could lead to misinformed investment decisions because a glide path’s objectives cannot be ascertained reliably from its shape.

T. Rowe Price prefers an objectives-based method of classifying glide paths. Our approach identifies the twin (and competing) objectives of lifetime income replacement and limiting the risk of capital loss during the transition to retirement. Because both are important, our method evaluates the efficacy of glide paths with respect to each objective. Because investor preferences vary, our method allows for a continuum of choice rather than forced assignment into one bucket or another.

Both of the T. Rowe Price glide paths are designed to help carry investors through retirement, with an eye on limiting the risk of capital loss in the transition to retirement. The Retirement Glide Path places greater emphasis on lifetime income replacement potential and lesser emphasis on the risk of capital loss over shorter withdrawal horizons. The Target Glide Path places greater emphasis on limiting the risk of capital loss over shorter withdrawal horizons and lesser emphasis on lifetime income replacement potential.

## REFERENCES

- Fullmer, Richard K. “Reflections on Recent Target Date Research.” *T. Rowe Price Asset Allocation Insights Report*, February 2014.
- Fullmer, Richard K. and James A. Tzitzouris, Jr. “Evaluation of Target-Date Glide Paths within Defined Contribution Plans.” *T. Rowe Price Investment Dialogue*, August 2013.
- Fullmer, Richard K. “Target-Date Glide Paths: Balancing Plan Sponsor Goals.” *T. Rowe Price Investment Dialogue*, October 2013.
- Fullmer, Richard K. “Evaluating Target-Date Glide Paths for Defined Contribution Plans.” *CFA Institute Investment Risk and Performance Newsletter*, Vol. 2014, No. 1 (July 2014). Available at: <http://www.cfapubs.org/doi/pdf/10.2469/irpn.v2014.n1.7>
- Fullmer, Richard K. “Evaluation of Target-Date Glide Paths within Defined Contribution Plans.” *Journal of Retirement*, Vol. 1, No. 4 (Spring 2014), pp. 75–94.

<sup>6</sup>Since the categorization of glide paths under Method Two is highly subjective, some organizations might categorize our glide paths differently than we show here. This is especially true of our Target Glide Path, for which the equity allocation is close to the industry average.

## INVEST WITH CONFIDENCE®

T. Rowe Price is a global asset manager focused on delivering investment management excellence and retirement services that investors can rely on—now and over the long term.

To learn more, please visit [troweprice.com](http://troweprice.com).

---

### Important Information

*Call 1-800-225-5132 to request a prospectus or summary prospectus; each includes investment objectives, risks, fees, expenses and other information that you should read and consider carefully before investing.*

The principal value of the Retirement Funds and Target Retirement Funds (collectively, the "target date funds") is not guaranteed at any time, including at or after the target date, which is the approximate year an investor plans to retire (assumed to be age 65) and likely stop making new investments in the fund. If an investor plans to retire significantly earlier or later than age 65, the funds may not be an appropriate investment even if the investor is retiring on or near the target date. The target date funds' allocations among a broad range of underlying T. Rowe Price stock and bond funds will change over time. The Retirement Funds emphasize potential capital appreciation during the early phases of retirement asset accumulation, balance the need for appreciation with the need for income as retirement approaches, and focus on supporting an income stream over a long-term retirement withdrawal horizon. The Target Retirement Funds emphasize asset accumulation prior to retirement, balance the need for reduced market risk and income as retirement approaches, and focus on supporting an income stream over a moderate postretirement withdrawal horizon. The target date funds are not designed for a lump-sum redemption at the target date and do not guarantee a particular level of income. The key difference between the Retirement Funds and the Target Retirement Funds is the overall allocation to equity; although they each maintain significant allocations to equities both prior to and after the target date, the Retirement Funds maintain a higher equity allocation, which can result in greater volatility over shorter time horizons.

This material is provided for informational purposes only and is not intended to be investment advice or a recommendation to take any particular investment action. The views contained herein are as of April 2015 and may have changed since then.

This Price Perspective provides opinions and commentary that do not take into account the investment objectives or financial situation of any particular investor or class of investor. Investors will need to consider their own circumstances before making an investment decision.

Information contained herein is based upon sources we consider to be reliable; we do not, however, guarantee its accuracy. Past performance cannot guarantee future results. All charts and tables are shown for illustrative purposes only.

T. Rowe Price Investment Services, Inc., distributor.