Fidelity's Target Date Glide Path: A Research-Driven Approach to Helping Investors Maintain Their Standard of Living in Retirement

Delivering retirement outcomes through a target date strategy requires a glide path that provides diversification, embraces participants' long-term investment horizons, and is supported by an investment process that can adapt to changes in capital markets and in participants' needs.

Key Takeaways

- A target date strategy's glide path is a primary driver of participant outcomes and reflects an investment manager's beliefs about strategic asset allocation, including asset class selection and the trade-offs between risk and return throughout participants' evolving time horizons.
- Diversification is a core principle within Fidelity's target date strategies, providing a balance among exposures in the portfolios to help navigate the uncertainty of capital markets over long-term time periods.
- Fidelity's unique insights on the retirement goals and savings behaviors of a broad range of target date participants are central to understanding their needs and tolerance for risk.
- Fidelity's glide path is supported by investment research that considers historical and forward-looking perspectives on capital markets.
- When constructing the glide path, we evaluate and synthesize research from multiple analytical frameworks to assess and balance the impact of various risks on retirement outcomes.

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Introduction

Target date strategies provide participants a simple, "do-it-for-me" approach to investing for retirement using a diversified portfolio that adjusts throughout their lifetimes. Over the past 20 years, target date strategies have become the default investment option in a majority of workplace retirement savings plans and are the primary retirement savings vehicle for a large percentage of American workers. For example, 89% of plan sponsors offer a target date strategy as the default investment option and 54% of plan participants invest all of their workplace retirement savings in a target date strategy.[1]

When evaluating a target date strategy, we believe plan sponsors' due diligence should focus on understanding the primary driver of investment outcomes—the glide path, which is the time-varying strategic asset allocation. We believe that the process for evaluating a glide path should address several fundamental questions:

- What is the goal of the target date strategy? Is it aligned with the retirement needs of investors in the strategies?
- For whom is the glide path designed? What are the characteristics and needs of target date investors, and are these investors utilizing the strategies as intended?
- What are the investment manager's beliefs and principles related to strategic asset allocation?
- How are these beliefs applied in an investment process? How does the investment manager deal with uncertainty as capital markets and investor needs evolve over time?

This white paper highlights Fidelity's approach to constructing a glide path, focusing on our investment process and answers to these questions. We believe that understanding our investment process is central to evaluating our target date strategies and the potential outcomes and performance that they may deliver for participants.

The goal of Fidelity's target date strategies

The goal of Fidelity's target date strategies is to help plan participants maintain their standard of living in retirement. We strive to balance the need for capital appreciation in the working years with the need for capital preservation and retirement income after the target retirement date. The strategies embrace participants' long-term investment horizons and seek to deliver performance to support participants' needs for inflation-protected income in retirement. We recognize that the process of saving for, planning for, and experiencing retirement can be challenging. Our strategies are designed to align with Fidelity's organizational commitment to empower individuals to achieve successful outcomes throughout their lives.

We believe that the greatest risk for a target date participant is experiencing a shortfall in retirement income, or "longevity risk." Other risks include "market risk" (volatility), and "inflation risk" (the risk of eroding purchasing power). Our investment process balances each of these risks throughout participants' lifetimes, with an emphasis on longevity risk as the most significant. As participants approach and enter retirement, their ability to "hedge" a potential income shortfall is reduced, because new or additional sources of income may not be available. We believe a "through" glide path, where the strategic allocation continues to adjust after the retirement date, embraces participants' long time horizon by balancing the potential for short-term volatility with participants' long-term retirement income objectives.

Understanding our investors: Designing target date strategies for a range of participants

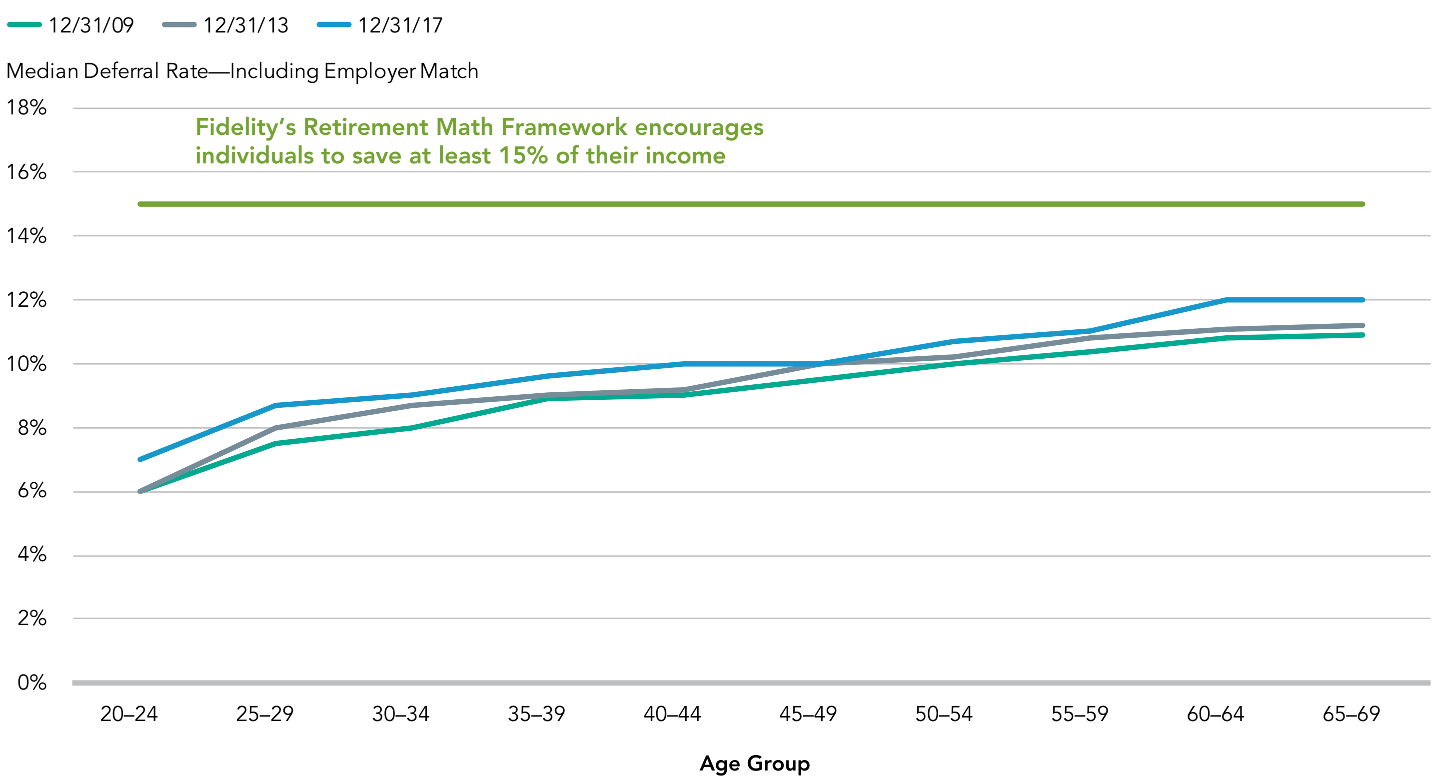
Fidelity's focus on helping investors achieve successful outcomes requires an understanding of participants' retirement income goals, as well as their needs, characteristics, and behaviors. Examples of characteristics and behaviors include deferral rates, account balances, retirement ages, life expectancies, and planning horizons. These are interconnected and can all influence an individual's ability to achieve a retirement income objective. For participants who seek support in planning for retirement, Fidelity provides guidance related to these variables, along with milestones at different ages to assess whether an individual is "on track" for success.

When constructing our target date strategies, we draw insights from the actual behaviors of over 20 million participants who are part of Fidelity's recordkeeping platform. For example, our research indicates a broad range of savings behaviors, with the median deferral rate (including employer match programs) ranging from 7% to 9% for participants in the earliest stages of their career to 12% for participants in their 60s (Exhibit 1). Although these rates have generally increased over the last decade, many participants are contributing below the levels Fidelity encourages to help ensure that they can maintain their pre-retirement standard of living after retirement.

We believe current savings rates support a glide path that emphasizes exposure to return-seeking assets (e.g., equities), while being mindful of the potential risks at each stage of a participant's life cycle.

In developing the glide path, we recognize that return-seeking assets have inherent volatility. For example, equity

EXHIBIT 1: Participants are saving more, but it still may not be enough.



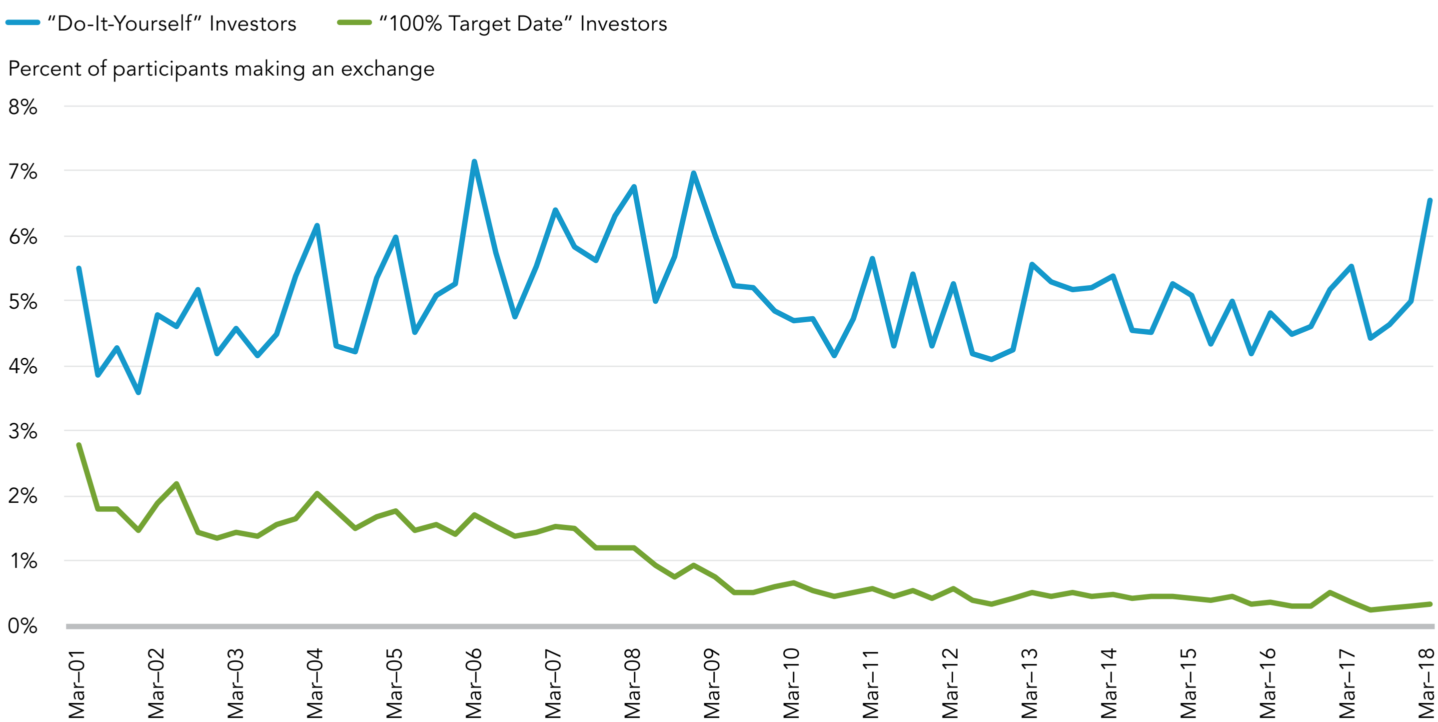
Participant Deferral Rates represent median deferral rates, including employee contributions and employer match. Source: Fidelity's defined contribution and tax-exempt recordkeeping data.

investors have typically received higher returns over long-term periods for bearing higher levels of risk. In order to realize the full potential of these returns, investors must stay the course and maintain their holdings during times of heightened market turbulence.

With more than twenty years of experience managing target date portfolios, we have evaluated the actual behavior of investors across various market environments to understand their responses to market events and drawdowns. In our analysis, we have found that participants in target date strategies have exhibited disciplined behavior, remaining invested through periods of higher and lower market volatility. Over the past ten years, we have observed that a small portion (less than 0.5% of target date participants) have redeemed or exchanged their holdings in response to market events. In comparison, a meaningfully higher proportion of "do-it-yourself" participants exhibit greater trading activity in their portfolios (Exhibit 2). This type of information provides a helpful validation point to ensure that participants are utilizing the strategies as intended, and that the portfolio allocations and risk levels are constructed in a prudent manner.

As we gather additional data about participants and have a greater set of market experiences to evaluate, our research on investor behavior and participant characteristics becomes more robust over time. Based on our current research in this area, we believe that

EXHIBIT 2: Investors using target date strategies have exhibited less trading activity than do-it-yourself investors, remaining invested through market volatility.



Percent of participants making an exchange includes participant-driven exchanges only. Source: Fidelity's corporate defined contribution and tax-exempt recordkeeping data. Quarterly exchange data shown. "100% Target Date" investors represent participants who hold their entire balance in a target date strategy. "Do-It-Yourself" (DIY) Investors represent participants who hold less than 100% of their balance in a target date strategy or managed account.

participants will continue to benefit from a glide path that emphasizes capital appreciation in the accumulation period, balances return and risk at each point in the time horizon, and focuses on long-term outcomes.

The principles of our strategic asset allocation investment philosophy

Our investment philosophy for strategic asset allocation and glide path design is based on principles and beliefs about capital markets that we apply in the context of the retirement goals for target date participants. These principles form the foundation for the capital markets research that informs our investment process and glide path.

Investors earn long-term returns for bearing risk. We believe that investors earn returns as compensation for bearing risk. The origins of these risks generally relate to macroeconomic conditions or the preferences of market participants. In our view, risks that are systematic in nature and difficult to diversify should be rewarded with a return or "risk premium." Unexpected changes in growth and inflation are examples of systematic risk factors. Surprises in growth and inflation can cause the market price for assets (debt or equity) to change in value, creating price volatility and risk for which investors earn returns.

The return or risk premium for any asset depends on its relationship with various risk factors and the premium associated with each factor. While the return or premium associated with any specific risk factor should be the same across asset classes, the sensitivity to each factor is unique for each asset. As a result, asset classes respond differently to changes in underlying risk factors. For asset types that have a wider range of potential outcomes or perform poorly during adverse shocks, investors generally demand higher levels of returns. Target date investors have a unique opportunity to earn these returns because of the relatively long time horizon associated with saving and planning for retirement.

Asset classes for strategic allocation should provide sources of return and risk that are as independent as possible. Our starting point for strategic asset allocation is identifying a set of asset classes that are appropriate to hold over long-term periods. We consider the attributes of various asset classes and the resulting drivers of their return, risk, and diversification characteristics in different market environments. In addition, asset classes selected for our glide path generally have high levels of liquidity for implementation.

We believe that many asset classes have common sources of return and risk, because many financial and real asset prices are sensitive to the same macroeconomic forces. As a result, the number of independent sources of return and risk is lower than the number of asset classes. The primary drivers of return and risk over long-term horizons are surprises to inflation and growth expectations, because these forces affect the value of assets. We also view liquidity as an important and related source of risk and return, where liquidity is defined as the ability to convert an asset into cash at a low cost. Our goal when selecting exposures for strategic allocations is to include asset classes that have different responses to unexpected changes in these types of factors.

For example, nominal bonds and equities serve as the foundation for strategic asset allocation portfolios. Owning a nominal bond is akin to providing a loan to a corporate or government issuer, with a specific time horizon and expected interest payment. Investors who purchase bonds expect to be compensated for inflation surprises and the risk that the borrower defaults. When realized inflation and growth are different from the market's or investors' expectations, the bond price adjusts and volatility is created. Nominal bonds with longer maturities tend to have larger changes in price compared to bonds with shorter maturities, as surprises are more impactful on the value of future cash flows over longer horizons. For these reasons, both long-term and short-term nominal bonds are attractive for strategic asset allocation portfolios. In comparison, equities are a participating interest in the cash flows of a corporate issuer. The value of an equity security is equal to the expected discounted value of the future cash flows. Because the cash flows are unknown in advance, the price an investor is willing to pay includes an expectation about how certain factors, including growth and inflation, will influence future cash flows. Positive surprises in growth generally increase the value of equities, while negative growth surprises generally reduce the value of equities.

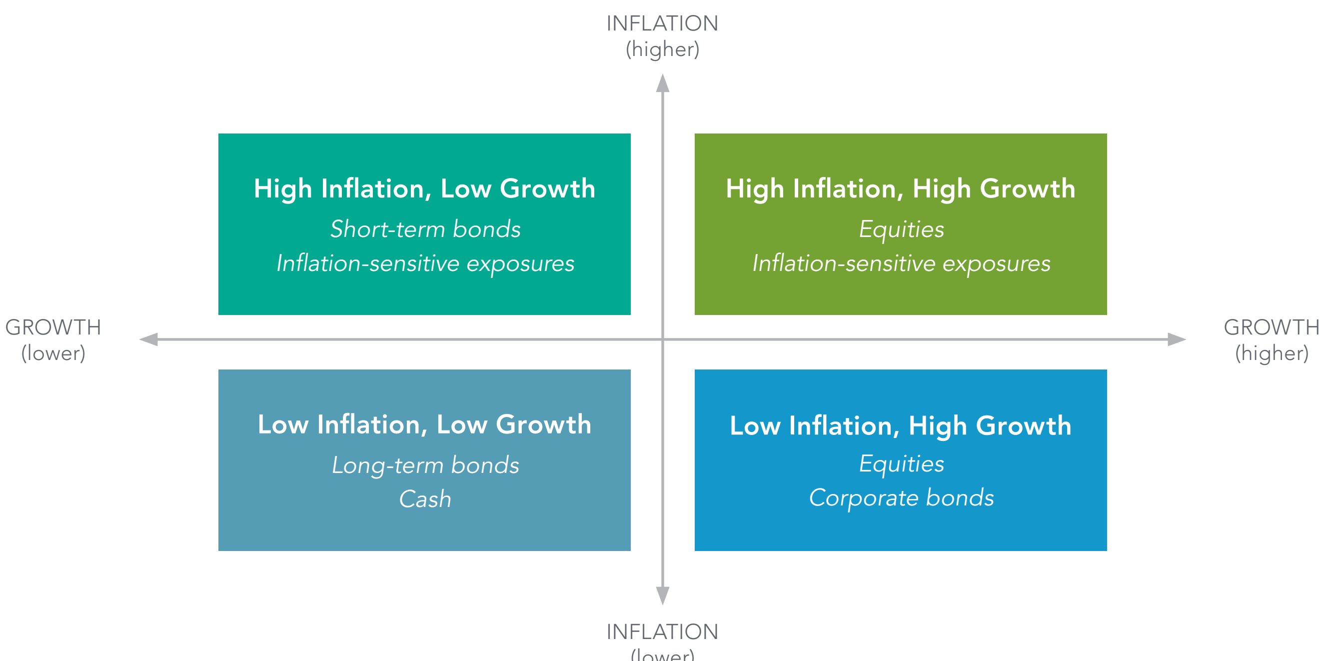
The prices of equities tend to have a positive correlation with moderate levels of inflation over long-term periods, as the assets of issuers tend to be linked to overall inflation.

Our process for identifying strategic exposures considers the attributes and sensitivities of asset classes from multiple perspectives. Exhibit 3 illustrates one way that we evaluate how strategic exposures to various asset types may respond to surprises in growth and inflation.

Diversification is the most effective way to manage volatility and uncertainty. Because forecasting the precise sources of risk and return is difficult, our strategic asset allocation philosophy emphasizes diversification as a core principle to reflect and manage the uncertainties that can occur. We seek to construct strategic allocations with exposures that provide access to diversified and complementary sources of return because target

EXHIBIT 3: Asset classes with independent sources of risk and return are expected to respond differently to inflation and growth surprises.

Asset Class Leadership in Environments of Growth and Inflation Surprise



For illustrative purposes only. Source: Fidelity Investments.

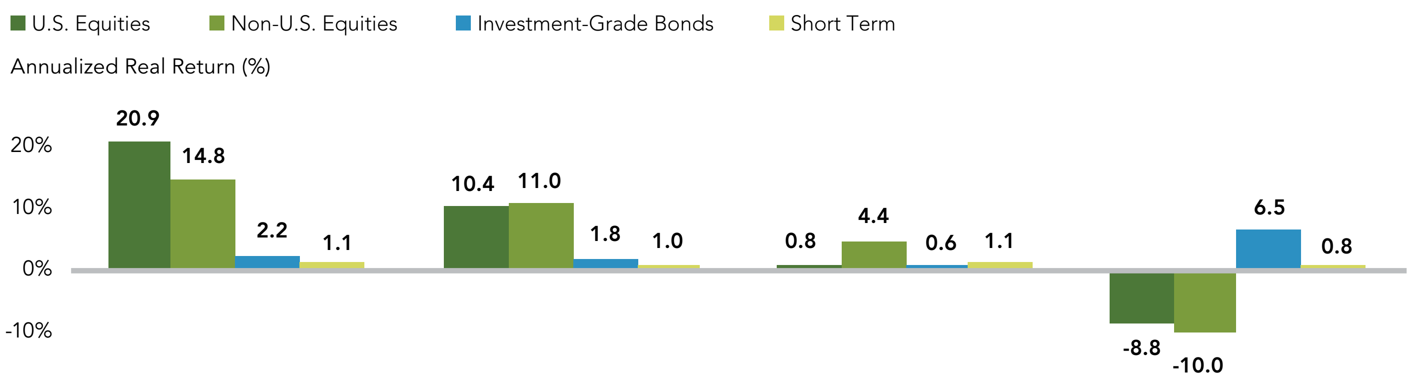
date investors are likely to experience multiple market environments, economic regimes, and cycles over the course of their lifetimes.

For any long-term investment strategy, understanding the impact of various market environments—and the transitions between them—can provide insights that inform the ongoing development of a glide path. One of our research frameworks incorporates a look back at history—the various states and cyclical "regimes" that have occurred—and the resulting impact on asset pricing. As shown in Exhibit 4, asset class performance has varied across market environments, with U.S. equities delivering more than 20% annualized real return in growth environments but falling nearly 9% in stress environments. Because we do not know how the future may unfold and what mix of states and regimes may occur, we believe that it is important to construct a portfolio that is diversified across a combination of potential future paths.

Strategic asset allocation decisions should consider historical and forward-looking perspectives. While history provides a starting point for understanding actual capital market experiences, we believe that it is important to consider historical performance and data in context. For example, history represents just one possible path of capital markets, during which asset class performance has been influenced by a high proportion of periods of low inflation and positive growth. We believe that future outcomes may reflect the unique characteristics of markets and environments that will be different from the path that we have experienced, and therefore we blend the learnings of history with our forward-looking perspectives.

EXHIBIT 4: Because the future is uncertain, a strategic asset allocation strategy should be diversified across market environments.

Asset Class Performance in Different Market Environments



Growth (17% of the time)

Strong returns for stocks
Strong growth
Benign inflation
Moderately negative correlation between stocks and bonds

Expansion (52% of the time)

Relatively sluggish growth
Low inflation
Moderately good for bonds
Recovery periods post-WWII, 1957, 2000, 2008

Stagflation (17% of the time)

High inflation
Low U.S. Treasury returns

Stress (14% of the time)

Deflationary/recession
Market volatility [1987 U.S. stock market decline, 1998 Russian financial crisis (Long Term Capital Mgt.), 2008–2009 subprime credit crisis]

For illustrative purposes only. Past performance is no guarantee of future results. Real return: return after inflation. Duration percentages of four historical market environments and return data from 1/1/52 to 12/31/2016, using monthly data and Fidelity proprietary analysis to identify environments. See index representation and definitions in the endnotes. Source: Bloomberg Finance L.P., Fidelity Investments, as of 8/1/2017.

Diversification and asset allocation do not ensure a profit or guarantee against a loss.

Investment process: Applying our investment principles to glide path construction

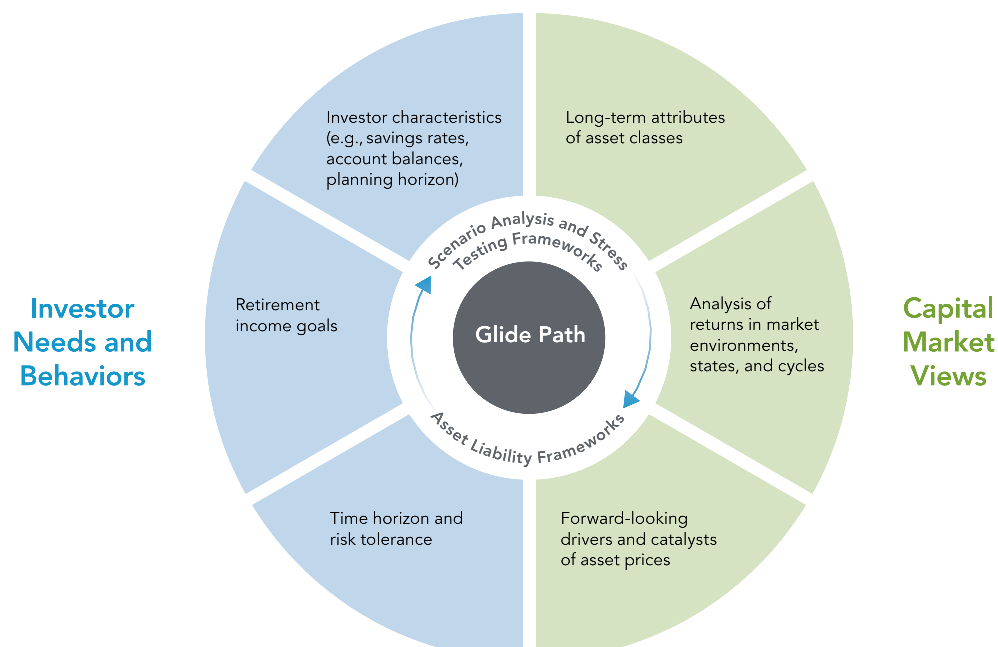
Our investment philosophy and strategic asset allocation principles serve as the foundation for the investment process that supports our glide path. The strategic allocations at each point in the glide path reflect a balance among several elements, including the relationship between portfolio diversification and investors' behaviors, needs, and time horizon, as well as the application of capital market views. We utilize a variety of quantitative and qualitative research and analytical frameworks that inform our judgment when determining the glide path allocations, as illustrated in Exhibit 5.

Investor Needs and Time Horizon

Constructing a glide path requires consideration of the trade-offs between return and risk at different points in a participant's life cycle. For example, retired investors seeking a consistent level of income may have lower tolerance for the impact of market volatility on their portfolios and assets, and may have higher sensitivities to longevity risk and inflation risk. In contrast, participants earlier in their careers have a longer time horizon, a need for higher total returns, and generally a higher tolerance for market risk. Exhibit 6 illustrates the general relationship between time horizon and market volatility.

For participants who are near and beyond the target retirement date, we recognize that unexpected drawdowns or heightened market volatility can be impactful, so we emphasize diversification and resiliency more prominently as the time horizon for a participant becomes shorter. For the most conservative portfolio, designed for investors who are meaningfully beyond

EXHIBIT 5: The glide path investment process includes several research areas and analytical frameworks.



For illustrative purposes only. Source: Fidelity Investments.

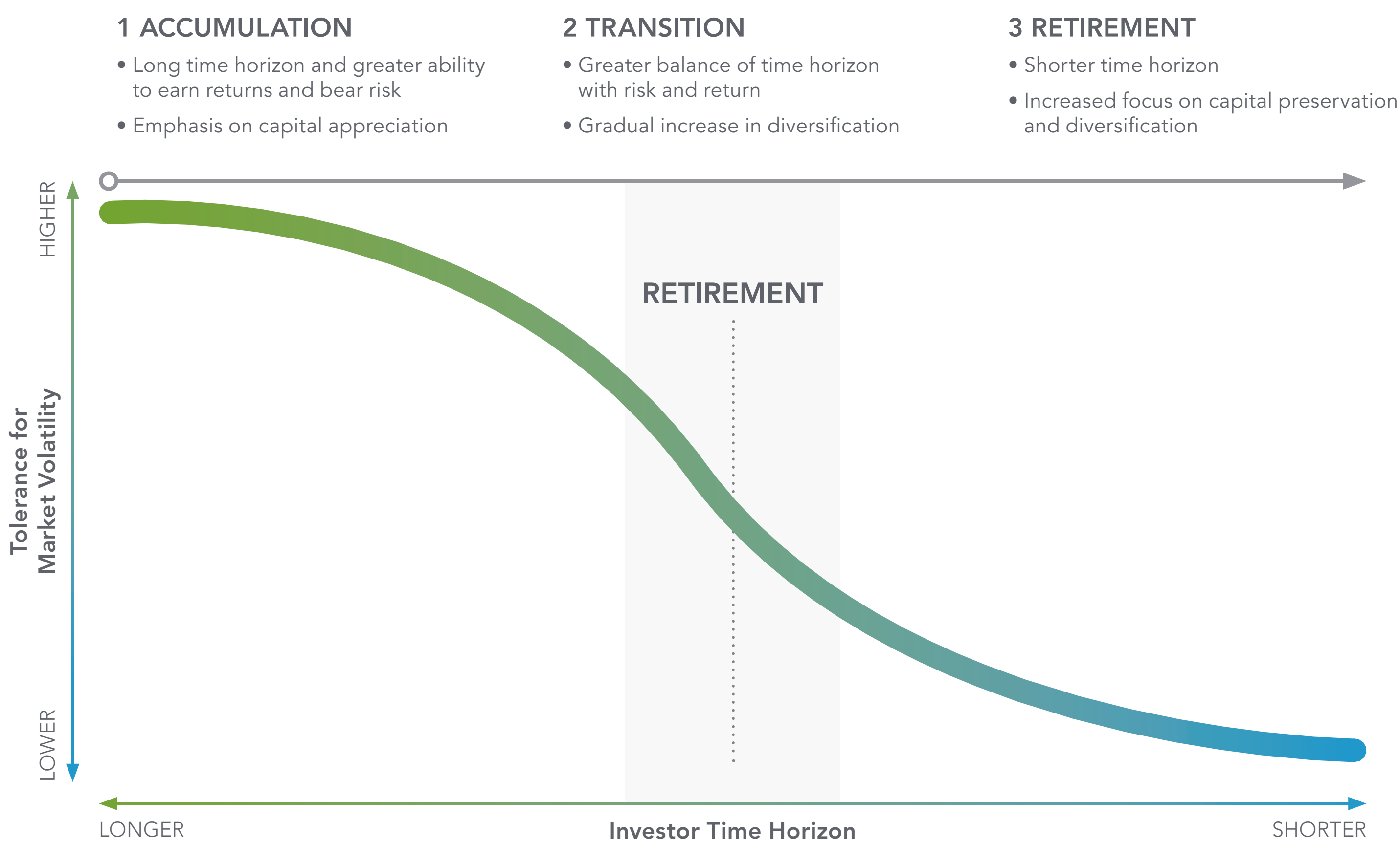
the target retirement date, we construct the strategic allocation to be highly diversified, with a goal of providing capital preservation and a high potential for experiencing positive returns.

For participants with longer time horizons we emphasize return-seeking assets, including meaningful allocations to a globally diversified group of equities. Of the strategic asset classes in our target date strategies, we believe that equities offer the greatest potential for long-term capital appreciation. We believe that investors with longer time horizons have a higher tolerance for the market risk associated with this allocation, and that their extended time horizon provides an opportunity to earn returns over long-term periods.

Capital Market Views

We apply our capital market views with the objective of providing a glide path that reflects our ongoing research on the secular drivers of asset prices. We believe that future outcomes will reflect the unique characteristics of markets and environments that may be different from the past, and participants will benefit from an investment portfolio that can evolve with the

EXHIBIT 6: Investors' needs change as their time horizons change.

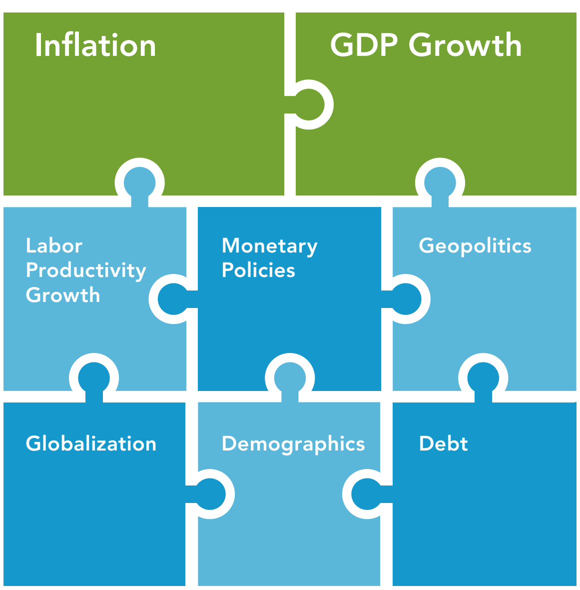


For illustrative purposes only. Source: Fidelity Investments.

dynamic nature of capital markets. Because it is difficult to forecast secular outcomes with precision, we diversify to reflect uncertainty.

Our forward-looking views are underpinned by fundamental analysis of the core drivers of capital markets—growth and inflation—and the principal linkages between economic trends and the performance of various asset classes across geographies. We focus on a number of factors that may influence how the long-term backdrop for capital markets will evolve, with particular emphasis on how asset relationships will vary under different growth and inflation regimes and the impact of starting valuations. In the future, secular trends in demographics, debt, globalization, and other factors may be different than the past (Exhibit 7). We analyze and monitor the potential shifts in these factors in order to understand and evaluate the distribution of outcomes that this implies for capital market returns.

EXHIBIT 7: Our research process considers secular trends that may influence growth and inflation, the core drivers of asset prices.



For illustrative purposes only. Source: Fidelity Investments.

Based on our current secular research, we expect most major asset classes to have lower real returns relative to their long-term histories, in part due to weaker demographics, lower U.S. GDP growth, and elevated asset valuations. We continue to expect that over the long term, global equities will provide higher returns than bonds. We also track various factors as potential catalysts that could cause long-term inflation to be higher or lower than expected. Given our secular view, we believe that diversification will increase in importance, particularly for investors near and beyond the target retirement date.

Analytical frameworks: a multi-dimensional approach

Our process for constructing the glide path is iterative in nature, anchored in our principles and supported by a multi-dimensional approach to evaluating the risk and return trade-offs of our investment decisions. We synthesize a variety of research and analytical frameworks to evaluate the potential impact of short-term and long-term factors on outcomes. By considering multiple frameworks, we are able to more effectively manage the uncertainties in capital markets and participant behaviors that occur over time.

Long-Term asset-liability analysis. Our asset-liability frameworks are constructed to evaluate potential outcomes for target date participants in a manner similar to the approach that a defined benefit plan may utilize. These frameworks consider investor contributions and portfolio returns (assets) against the potential range of income replacement levels (liabilities). Given the variability in participant behavior and the uncertainty of markets, our analytical frameworks provide insight into the interconnected nature of these variables that may influence retirement outcomes. For example, our risk-capacity framework applies behavioral finance principles and the economic effects of risk in the context of a target date strategy. The framework provides insight into the ability for participants to withstand portfolio volatility, assuming the "pain" of loss is more impactful than the pleasure from an equivalently sized gain at any point in the life cycle. This type of analysis provides one type of quantitative assessment of the return and risk trade-offs at different points in an investor's time horizon.

Additionally, we apply quantitative and qualitative frameworks to evaluate the distributions of retirement outcomes that investors may experience. As part of these frameworks, we consider the potential benefits and costs associated with hedging volatility and inflation risks over long-term periods. This type of research provides insight into the balance between providing a high likelihood for successful long-term outcomes and the potential shortfall risk that would occur if success were not achieved.

Scenario analysis and sensitivity testing. Our investment process utilizes research frameworks that evaluate potential outcomes under a range of historical and potential future market movements. We consider the impact of a variety of actual market events, including periods of unusually strong returns and periods of market stress. In addition, we evaluate results from sensitivity analysis of correlated and uncorrelated "shocks" to asset class and factor exposures in the strategies. For example, we analyze the potential impact of movements in factors such as credit, equity, commodities, interest rates, and volatility. We use these frameworks to understand potential short-term and long-term portfolio returns in different market environments.

Our investment process also applies research frameworks that are designed to stress-test the impact should our long-term capital market views prove to be incorrect. We consider scenarios in which the long-term capital market environment would be unfavorable to an investor in the portfolios, to evaluate options that may make our allocations more robust and resilient across the range of environments that could occur.

Conclusion

This white paper has highlighted Fidelity's approach to constructing a glide path, focusing on answering the most important questions for plan sponsors to evaluate.

- For our target date strategies, we have defined the goal to align with the retirement income needs and interests of participants in the strategies.
- We construct the glide path to reflect the broad range of participants in the strategies, leveraging research about the actual behavior of target date investors.
- Our investment process is supported by clearly articulated investment beliefs and principles, which we apply in the context of the goals and needs of a target date investor.
- We apply a variety of quantitative and qualitative research and analytical frameworks that inform our judgment when determining the glide path allocations.
- Finally, our process is designed to engage and manage uncertainty, and is supported by ongoing research, in order to respond and adapt as the capital markets and investor needs change over time.

Fidelity is committed to helping retirement investors reach their goals, including maintaining a level of income that will help support them throughout their retirement. Our research-driven approach to building the glide path for our target date strategies reflects that deep commitment.

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Fidelity's Strategic Asset Allocation Research Team conducts economic, fundamental, and quantitative research and is responsible for generating insights for strategic asset allocation portfolios.

Institutional Portfolio Managers Sarah O'Toole, CFA, and Christopher Luongo, CFA, also contributed to this white paper. Fidelity Thought Leadership Vice President Vic Tulli, CFA, provided editorial direction.

Endnotes

[1] Source: Fidelity Investments as of 3/31/18. Includes corporate defined contribution and tax-exempt plans on Fidelity's recordkeeping platform. Usage data states the percentage of participants holding 100% of their balance in a target date fund, if offered.

Important Information

Exhibit 4 representative asset class benchmark indexes: U.S. equity: U.S. stock data is based on the value-weighted total return, obtained from CRSP, for all U.S. firms listed on the NYSE, AMEX, or NASDAQ (monthly). Non-U.S. equity: MSCI World ex-USA Return Index (in U.S. dollars) from Global Financial Data (GFD). After 1970, MSCI EAFE Return Index (in U.S. dollars; monthly). U.S. investment-grade bonds: Bloomberg Barclays U.S. Aggregate Bond Index since 1976 and the 10-year U.S. Treasury Bond prior to that date (monthly). U.S. short-term Investments: 3-month U.S. Treasury Bill returns (GFD), entire time period (monthly).

Index Definitions: MSCI World ex USA Index is a market capitalization-weighted index designed to measure the equity market performance of developed markets, excluding the U.S. **MSCI Europe, Australasia, Far East Index (EAFE)** is a market capitalization-weighted index that is designed to measure the investable equity market performance for global investors in developed markets, excluding the U.S. and Canada. **Bloomberg Barclays U.S. Aggregate Bond Index** is a broad-based, market-value-weighted benchmark that measures the performance of the investment grade, U.S. dollar-denominated, fixed-rate taxable bond market.

While indexes can provide insight on how asset classes have performed during historical market cycles, they do not take into account key factors such as portfolio expenses or portfolio manager investment decisions, and should not be considered representative of how a portfolio has, or will, perform. Index performance included the reinvestment of dividends and interest income. Indexes are unmanaged. It is not possible to invest directly in an index.

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