Dynamic Risk Management Arrives in Target Date Funds
A market-aware approach targeting better retirement outcomes

September 2018

Key takeaways

Target date funds that maintain high equity allocations are vulnerable to severe market downturns. The highest-ranking funds at the start of the global financial crisis experienced punishing drawdowns when equity markets sank—especially damaging for participants close to retirement.

Funds that can adjust equity exposure to adapt to changes in the market environment may reduce risk when it's unlikely to be rewarded. The goal is to increase the probability of achieving the retirement income replacement objective for all participants.

Our dynamic risk management component combines volatility management, tail risk management, and tactical asset allocation aiming to capture equity opportunities while minimizing downside risk across the market cycle. Risk is managed dynamically, compared with a traditional static glide path, as the fund seeks to improve outcomes for participants.

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Time for a change

A key benefit of target date funds is the ability to gradually lower risk as retirement approaches—to adapt to the participant's changing investment horizon. But, the way these funds are managed has remained mostly unchanged since they were introduced more than 20 years ago, before lessons learned from the global financial crisis. That is, until now.

A recent innovation brings a more market-aware approach to target date performance, combining three institutional portfolio techniques for a more risk-controlled path to retirement, with the goal of adapting to changes in the market environment.

Adapting to the market environment

A broadly accepted goal for retirement savings is to provide 80% of preretirement income during retirement years. Target date funds often reach for that goal by maintaining high equity allocations during the accumulation years. But higher equity allocations mean higher investment risk. Why is this important? Because market downturns are inevitable and unpredictable. A downturn close to or during retirement can be especially damaging, with little time to recoup losses. The participant's sequence of returns matters a great deal.

Most target date funds are constrained by a fixed glide path that steadily shifts away from risky assets over time but is unresponsive to the market environment. When equity markets are strong, these funds are positioned for growth; when equity markets decline, they are vulnerable to significant losses. For plan sponsors who want a more market-aware approach to target date funds, dynamically managing equity exposures according to the market environment adds another dimension of risk management.

Our dynamic approach to target date funds focuses on minimizing the impact of down markets in the short term while capturing upside opportunities over the longer term. The goal is to lower downside risk without sacrificing upside returns, providing a smoother ride throughout multiple market cycles.

How can plan sponsors decide whether this dynamic risk management component may improve their participants' retirement outcomes? To help answer this question, we start by comparing target date funds that maintain high equity allocations and how they fared before and during the global financial crisis. Next, we introduce our dynamic risk management process and explain its three components: tactical asset allocation, volatility management, and tail risk management. We combine these three components with the goal of maintaining market exposure when equity markets are favorable and lowering exposure when market risk is less likely to be rewarded.

Investment opportunities vary throughout the market cycle. Our dynamic component is designed to maintain market risk when and where it is more likely to be rewarded and to dial back risk when and where it is not—to increase the probability of meeting the 80% income replacement goal.

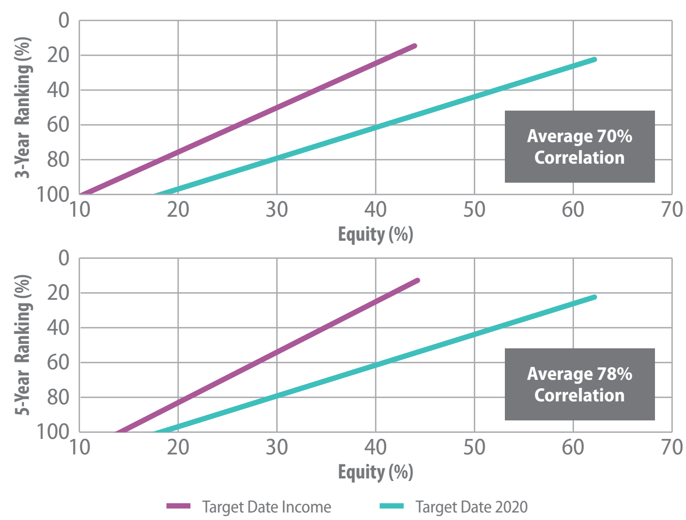
Equities dominate across the glide path

Target date funds were designed to reduce risk as participants get closer to retirement, but this is in the aggregate, over time. What will happen to participants who plan to retire during or shortly after the next market downturn? Funds that cannot adapt to the market environment lack the ability to reduce equity risk when it is less likely to be rewarded, leaving participants vulnerable to shortfall risk.

Looking at the performance of target date funds reveals that equities have tended to drive relative returns and rankings of fund families. Higher equity allocations benefited participants in upward-trending markets but also led to disastrous results when markets took a downturn. Funds with fixed allocations along the glide path cannot reduce risk in falling markets, as we saw in 2008.

Figure 1 shows the trendline relationships between equity allocations and performance rankings for the universe of target date income and 2020 funds during the bull market of 2018. A strong relationship exists between the amount of equity risk a fund takes and the fund's performance. Funds with higher equity allocations have been associated with favorable rankings during rising markets, and vice versa. When markets shift, as they inevitably do, funds that maintain high equity allocations may undergo severe drawdowns—even funds intended for participants near (or in) retirement.

Figure 1. Fund rankings linked with static equity allocations in the bull market—what happens when it ends?



Source: Morningstar, as of June 30, 2018.

A case study in risk: The global financial crisis

Risk is not an abstract concept. Target date funds that strategically decide to add risk with the goal of increasing expected return may also be driving up the probability of shortfall risk, especially for participants with short- or medium-term investment horizons. We can delve further into fund-level data during the global financial crisis to better understand the tendency for funds to mean revert over a market cycle. Figure 2 illustrates the results of high equity allocations in a falling market.

The top 5 of the existing 15 target date fund suites in 2007 (comparing the 2020 vintage for each fund suite) experienced heavy losses the following year, sinking their fund rankings over that short time period. Past performance was clearly not an indication of the funds' future results. All five top-ranked funds from 2007 fell to the bottom 50% of their peer group in 2008 as markets turned, two of which ended at the very bottom of the pack. These heavy losses were difficult to recoup. For some participants, that meant more working years and a delayed retirement date; for participants who didn't have that option, it may have meant a lower quality of life.

Figure 2: A reversal of fortune in just one year

Target Date Fund	2007 Rank	2008 Rank
Target Date Fund Suite A	1	8
Target Date Fund Suite B	2	7
Target Date Fund Suite C	3	9
Target Date Fund Suite D	4	14
Target Date Fund Suite E	5	15
Target Date Fund Suite F	6	5
Target Date Fund Suite G	7	1
Target Date Fund Suite H	8	12
Target Date Fund Suite I	9	13
Target Date Fund Suite J	10	6
Target Date Fund Suite K	11	10
Target Date Fund Suite L	12	4
Target Date Fund Suite M	13	2
Target Date Fund Suite N	14	3
Target Date Fund Suite O	15	11

Source: Morningstar, as of December 31, 2007, and December 31, 2008. Comparison of 2020 vintage fund for each target date suite.

Severe drawdowns with lasting effects

The results are similar when we home in on the 10 largest target date fund families, which represented 97% of the market in 2008. The 2020 vintage funds, which, at the time, were generally intended for participants within 15 years of retirement, had equity allocations of up to 80%. That year alone, these funds experienced drawdowns of -30% to -45%.[1] High equity allocations that had led to strong returns in previous years spelled disaster when markets turned. For the most part, these funds lacked the ability to adjust equity risk exposure to adapt to the weakening market environment and absorbed the full market impact. This also illustrates an important lesson for plan sponsors and participants: High fund rankings during upward-trending markets may be less a sign of manager skill than they are of high risk.

Younger participants have more time to recover from market volatility, but a large drawdown close to or during retirement can have a devastating impact. A market crash like we saw in 2008 can drastically reduce average total wealth going into retirement. For a 65-year-old retiree who is officially beyond their accumulation years, this is a huge loss of -30%. Even a 25-year-old participant with decades left to rebuild wealth with higher contributions or market rebounds faces an ending loss in wealth of -3% from this one market crash alone.[2]

Working against participants is the fact that investment losses are asymmetric; the larger the loss, the higher the subsequent gain required. For example, a loss of 25% requires a subsequent gain of 33% (\$100/\$25 – 1 = 33%), whereas a 50% loss requires a follow-up gain of 100% (\$100/\$50 – 1 = 100%).

Losses are asymmetric

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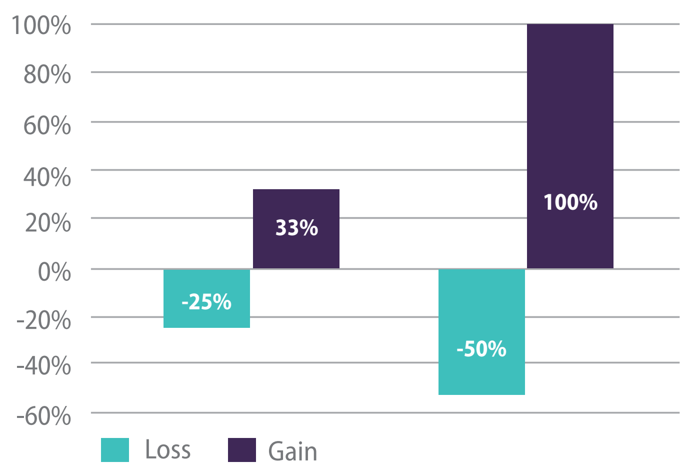


A dynamic approach to managing equity exposure may add value over the long run—reducing risk and improving returns. What makes this possible is the ability to adjust exposure to equity risk in the short term while maintaining meaningful equity allocations over the longer term.

[1] Data sourced from Morningstar.

[2] Results of simulations calculated by Wells Fargo Asset Management.

Capturing opportunities, seeking to protect from downturns

Our dynamic risk management process is grounded in research that helps us identify and understand various risk components—from actual participant contribution data to short-term market stressors to long-term capital market assumptions. A three-pronged approach is designed to adjust market exposure as opportunities fluctuate by combining:

1 Volatility management

2 Tail-risk management

3 Tactical asset allocation

1. **Volatility management.** We aim to keep short-term volatility closer to a fund's long-term average by dynamically adjusting the equity exposure, as market conditions shift. Each fund has a target volatility band of +/- 10% of the projected long-term volatility. If short-term volatility moves outside the band, equity exposure is increased (or decreased) using equity futures to efficiently bring the projected volatility closer to historical norms. Our research shows that market stress has often been preceded by an increase in short-term volatility above the historical long-term average. As market risk increases (decreases), as measured by the equity futures' short-term implied volatility, the portfolio equity exposure is decreased (increased). The goal is to provide a smoother stream of returns over time.

2. **Tail risk management.** When market stress starts to spike, we use tail risk management to systematically hedge the portfolio against further losses. We apply this technique when a portfolio drops 10% in value from a previous high. The fund establishes a protective hedge by selling a basket of futures that match the underlying fund exposures. If markets continue to decline, the size of the hedge is increased. When markets improve, the size of the hedge is reduced and ultimately eliminated, as the portfolio continues to recover. Our funds have the ability to take profits on the hedge when we see that the market is oversold. We use tail risk management as a hedge against severe market downturns, without the recurring costs associated with always-on tail risk protection.

3. **Tactical asset allocation.** The third component aims to add alpha in a risk-aware manner, by tactically positioning the portfolio toward market opportunities. We consider factors that drive long-term returns along with economic indicators for shorter-term trade ideas to deliver better risk-adjusted returns. The WFAM Investment Committee meets regularly to assess the model signals, review our trade conviction, and weigh the contribution to portfolio risk.

   Tactical asset allocation and volatility management shifts are subject to +/-15% equity position limits over the strategic equity allocation for each fund. As a standalone investment strategy, tactical asset allocation, as measured by the Tactical Asset Allocation (TAA) Overlay -10% Shift Composite, has contributed positive alpha to client portfolios over three- and five-year trailing periods, as of June 30, 2018.[3]

These three components work together and aim to improve outcomes for participants, compared with a traditional static glide path approach.

No two market environments are identical. It's not just the total equity exposure but rather the type of exposure that affects performance. For example, where are the opportunities in developed versus emerging markets? Small caps or large caps, using index or active management? And where do factors work best? Our dynamic process aims to systematically optimize risk control, cost management, and return opportunities—across these dimensions and relative to fixed income and inflation-hedging assets. Just as the glide path adjusts for total risk over time, we can adjust the mix of equities to target the appropriate risk level within the current market environment.

[3] The Tactical Asset Allocation (TAA) Overlay- 10% Shift Composite ("Composite") includes all discretionary accounts managed in this style. Prior to January 1, 2016, the minimum market value for this Composite was $5 million. This style is a portable alpha style that employs a disciplined process to shift up to 10% of the portfolio's assets toward stocks or bonds based on relative value to improve the risk and return profile of a balanced account using a long/short futures overlay strategy. The returns expressed represent the returns from the overlay. Because the returns are expressed as the returns from the overlay strategy, there is no relevant benchmark – notionally it is "zero." The Composite was created in July 2002. The Composite inception date is July 1, 2002.

A market aware approach for the full market cycle

Target date funds have helped plan sponsors improve plan usage and plan participants to invest in a QDIA option that reflects their investment horizon. But until now, funds have overlooked an important component of risk management: adjusting equity exposure to reflect the market environment.

These funds are intended for long-term investing, but maintaining a fixed equity allocation ignores important information about the market cycle. With dynamic risk management, participants gain access to some of the advanced risk management techniques that have been used by pension plans for decades to balance longevity risk and market risk. Our dynamic approach to risk management may even help close the performance gap that has historically existed for defined benefit and defined contribution plans, improving the probability of achieving the participant's replacement income goal.

Balancing longevity risk and market risk

An important part of a target date fund's ability to achieve its goals is the construction of the glide path. Our GPS methodology (for glide path success) was designed to objectively compare thousands of actual glide paths, to improve the participant's probability of achieving the replacement income goal. See the appendix for details on our Dynamic Target Date Funds' glide path and methodology assumptions. For more information on how the GPS process aims to lower longevity risk without adding market risk, see our related publication, "To Objectively Compare Target Date Funds, Focus on Outcomes."

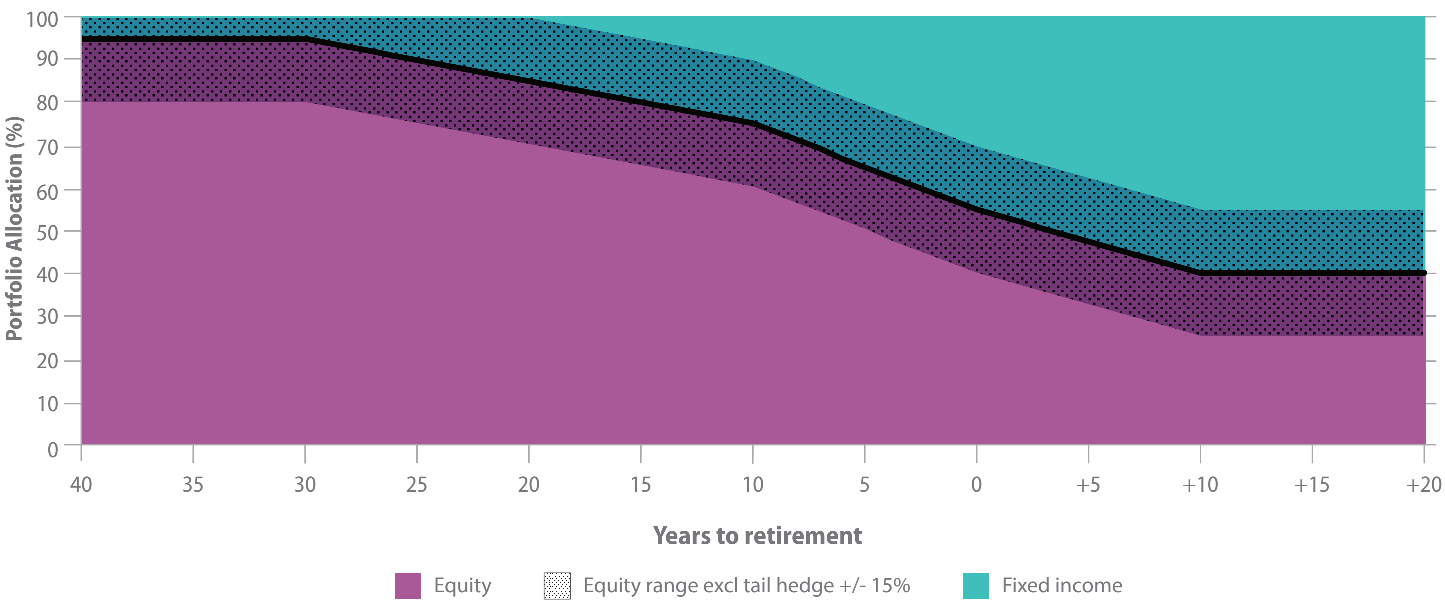
We want to help our clients build for successful outcomes, defend portfolios against uncertainty, and create long-term financial well-being. To discuss your investment needs, please contact us:

- To reach our U.S.-based investment professionals, contact your existing client relations director, or contact us at WFAMInstitutional@wellsfargo.com.
- To reach our U.S.-based intermediary sales professionals, contact your dedicated regional director, or call us at **1-888-877-9275**.
- To reach our U.S.-based retirement professionals, contact **Nathaniel Miles**, head of Defined Contribution at Wells Fargo Asset Management, at nathaniel.s.miles@wellsfargo.com.
- To reach our international investment professionals, contact your regional client relations or sales director, or contact **Ben Foley** at either ben.foley@wellsfargo.com or **+44 20 7518 2947**.
- To discuss environmental, social, and governance (ESG) investing solutions, contact **Jessica Mann**, head of ESG at Wells Fargo Asset Management, at jessica.mann@wellsfargo.com.

Appendix: Glide path and performance

The glide path of our Dynamic Target Date Funds has a meaningful equity allocation through retirement. Across the full market cycle, our dynamic risk management process adjusts the equity allocation, depending on the expected risks and opportunities available.

Dynamic Target Date Fund strategic glide path



Absolute and relative performance of the WFAM Dynamic Target Date Funds have been strong, even during this strong equity market. But the market environment over the next 10 years may be very different from that of the past 10 years. A dynamic risk management process may help avoid large drawdowns across the glide path.

WELLS FARGO ASSET MANAGEMENT

The target date represents the year in which investors may likely begin withdrawing assets. The funds gradually seek to reduce market risk as the target date approaches and after it arrives by decreasing equity exposure and increasing fixed-income exposure. The principal value is not guaranteed at any time, including at the target date. The fund invests in alternative investments, such as short sales, which are speculative and entail a high degree of risk. The fund invests using alternative investment strategies such as equity hedged, event driven, global macro, and relative value, which are speculative and entail a high degree of risk. Alternative investments, such as commodities and merger arbitrage strategies, are speculative and entail a high degree of risk. Stock values fluctuate in response to the activities of individual companies and general market and economic conditions. Bond values fluctuate in response to the financial condition of individual issuers, general market and economic conditions, and changes in interest rates. Changes in market conditions and government policies may lead to periods of heightened volatility in the bond market and reduced liquidity for certain bonds held by the fund. In general, when interest rates rise, bond values fall and investors may lose principal value. Interest rate changes and their impact on the fund and its share price can be sudden and unpredictable. High-yield securities have a greater risk of default and tend to be more volatile than higher-rated debt securities. The use of derivatives may reduce returns and/or increase volatility. Securities issued by U.S. government agencies or government-sponsored entities may not be guaranteed by the U.S. Treasury. Certain investment strategies tend to increase the total risk of an investment (relative to the broader market). This fund is exposed to foreign investment risk, mortgage- and asset-backed securities risk, new fund risk, regulatory risk, and smaller-company investment risk. Consult the fund's prospectus for additional information on these and other risks.

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