Prudent Benchmarking of Target Date Funds and Actuarial Glidepaths

April 19, 2013

Presented by:

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Target Date Trends in 2013

- Target date funds continue to attract strong flows relative to other mutual fund categories and will account for 40-50% of DC assets in a few years
- Big Three continue to dominate market share
- Index-based series growing at faster rate than active
- Fees continue to trend downward, but wide disparities persist
- Since June 2009, expenses based on lowest-cost share class method have declined from 0.91% annually to 0.83%

Target Date Trends in 2013

- Fees range from 0.18% at Vanguard to 1.55% at Oppenheimer
- Losses during 2008 have prompted heightened awareness of risk surrounding near-retirees
- Benchmarking still very difficult, most plan sponsors and advisors do not understand the structure
- Prospectus benchmarks vary widely with S&P 500 most common, but over 20 different benchmarks listed across 43 fund families

PPA 2006 Safe Harbor

With the passage of the Pension Protection Act of 2006 ("PPA"), it is now easier for plan sponsors to increase participation in their plans without exposing themselves to the liability associated with making default investments.

This is because PPA added a new fiduciary protection to ERISA for default investments. Specifically, the PPA added ERISA §404(c)(5), which provides for Qualified Default Investment Alternatives or "QDIAs" (the "QDIA rule").

These rules are helpful when employees fail to make an investment election.

PPA 2006 Safe Harbor

The QDIA rule provides that, for default investments made in accordance with a regulation issued by the DOL, fiduciaries are entitled to a statutory defense against any claims by participants that they were improperly invested.

This is sometimes called a fiduciary “ safe harbor”.

There are three types of safe harbor: age based fund, risk based fund and/or a managed account.

Useful Reference Articles—FAB 2008-03

U.S. Department of Labor

Employee Benefits Security Administration
Washington, D.C. 20210

FIELD ASSISTANCE BULLETIN NO. 2008-03

DATE:	APRIL 29, 2008
MEMORANDUM FOR:	VIRGINIA C. SMITH DIRECTOR OF ENFORCEMENT REGIONAL DIRECTORS
FROM:	ROBERT J. DOYLE DIRECTOR OF REGULATIONS AND INTERPRETATIONS
SUBJECT:	GUIDANCE REGARDING QUALIFIED DEFAULT INVESTMENT ALTERNATIVES (29 CFR § 2550.404c-5)

BACKGROUND

On October 24, 2007, the Department of Labor (Department) published a final regulation[1] providing relief from certain fiduciary responsibilities under the Employee Retirement Income Security Act (ERISA) for investments made on behalf of participants or beneficiaries who fail to direct the investment of assets in their individual accounts. See 29 CFR § 2550.404c-5 (hereafter referred to as the "QDIA regulation"). Since publication of the QDIA regulation, a number of issues have been raised concerning the scope and meaning of various provisions of the QDIA regulation. This Bulletin is intended to supplement the QDIA regulation by providing guidance, in a question and answer format, on a number of the most frequently asked questions.

QUESTIONS AND ANSWERS

SCOPE OF QDIA REGULATION

Q-1. To what extent does the QDIA regulation relieve a plan sponsor from fiduciary liability when the plan sponsor chooses to create and manage a qualified default

[1] 72 FR 60452 (Oct. 24, 2007).

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29 C.F.R. §2550.404c-5(b)(1) Still Requires Investment Monitoring

Q-1. To what extent does the QDIA regulation relieve a plan sponsor from fiduciary liability when the plan sponsor chooses to create and manage a qualified default investment alternative (QDIA) itself using a mix of the plan's available investment alternatives?

A-1. A plan sponsor that chooses to create and manage a QDIA itself may be relieved of liability for decisions to invest all or part of a participant's or beneficiary's account in a QDIA only if the plan sponsor is a named fiduciary (see § 2550.404c-5(e)(3)(i)(C)).

The plan sponsor would not be relieved of liability for the management of the QDIA (see § 2550.404c-5(b)(1)(ii)) or the prudent selection and monitoring of the QDIA (see § 2550.404c-5(b)(3)).

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Useful Reference Articles from Morningstar

MORNINGSTAR

Target-Date Fund Series Rating and Research Reports Methodology

Morningstar Methodology Paper
August 4, 2011

Morningstar Fund Research
May 2012

Target-Date Series Research Paper: 2012 Industry Survey

Authors:
Josh Charlson, Ph.D., Senior Mutual Fund Analyst
Laura Pavlenko Lutton, Editorial Director

Contributors:
David Falkof, Mutual Fund Analyst
Xin Ling, Senior Developer
Kathryn Spica, Mutual Fund Analyst

MORNINGSTAR

MORNINGSTAR

Target-Date Series Research Paper: 2011 Industry Survey

Lead Authors: Josh Charlson, Ph.D. Laura Pavlenko Lutton

Contributors: Greg Carlson, David Falkof, Michael Herbst, Xin Ling, Kailin Liu, John Rekenthaler

Morningstar Fund Research, April 2011

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Useful Reference Articles from Standard and Poors

S&P DOW JONES INDICES

October 2011

TARGET DATE BENCHMARKING: THE VALUE OF A CONSENSUS GLIDE PATH

- A consensus target date glide path is formed by observing cross-sectional asset allocations of active target date managers, and using that data to create a glide path that represents the aggregate opinion with respect to asset class exposures.
- Target date benchmarks should meet all of the CFA Institute's properties of valid benchmarks, as well as several additional criteria that facilitate sound selection of managers and monitoring.
- Peer groups are not appropriate target date benchmarks. While it may be worthwhile to note a particular target date manager's returns relative to a peer group, peer groups cannot serve as truly representative benchmarks. With the exception of being measurable, peer groups fail to meet the properties of valid benchmarks. In particular, they are not specified in advance and are subject to survivorship bias.
- A consensus glide path index is not a peer group. It is constructed from the bottom up using the asset allocations that compose the benchmark glide path. Unlike a consensus glide path index, a peer group does not comprise asset allocations or a glide path.
- Custom indices, or blended benchmarks, do not permit attribution analysis. Since they represent a single manager's asset allocation rather than the market's asset allocation consensus, custom indices cannot be used to determine the proportion of a given target manager's returns that is attributable to asset allocation choices.
- A consensus glide path target date index can serve as a valid benchmark for facilitating attribution analysis, which isolates sources of return and risk. This approach can be particularly revealing for near-dated target date funds.

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S&P DOW JONES INDICES

S&P TARGET DATE SCORECARD

Mid-Year 2012

Summary

- The S&P Target Date Scorecard provides performance comparisons, equal- and asset-weighted category averages, and analytics covering the target date fund universe.
- The S&P Target Date Index series is a representative benchmark for target date funds and is used throughout the report. While its performance may be similar to peer-group averages in a given sample period, the index distinguishes itself because it consists of investable asset classes representing the target date fund industry's consensus view of asset class exposure. In addition, unlike peer group statistics and blended benchmarks, it is independently calculated and fulfills all of the CFA Institute criteria for valid benchmarks.[1]
- This is the first S&P Target Date Scorecard to reference the new S&P Target Date To and Through Indices. These benchmarks offer stakeholders style-specific measures of the two prominent approaches to glide path management within the target date fund universe.
- Asset-weighted average returns were generally somewhat higher than equal-weighted returns, indicating that larger target date funds earned somewhat higher returns than their smaller counterparts.
- Underlying data is obtained from the Morningstar Direct℠ U.S. Open-End Fund Database. The S&P Target Date Scorecard is published semiannually.

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Introducing a new way to explore indices
www.spindices.spdji.com

[1] See the Level 3 2011 CFA Program Curriculum. Benchmarks should be "unambiguous, investable, measurable, appropriate, reflective of current opinions, specified in advance, and owned."

S&P DOW JONES INDICES

S&P Dow Jones Indices: S&P Target Date Index Series Methodology

July 2012

S&P Dow Jones Indices: Index Methodology

Target Date Retirement Funds
Tips for ERISA Plan Fiduciaries

Target Date Retirement Funds - Tips for ERISA Plan Fiduciaries

U.S. Department of Labor
Employee Benefits Security Administration
February 2013

Target date retirement funds (also called target date funds or TDFs) have become an increasingly popular investment option in 401(k) plans and similar employee-directed retirement plans. The U.S. Department of Labor's Employee Benefits Security Administration (EBSA) prepared the following general guidance to assist plan fiduciaries in selecting and monitoring TDFs and other investment options in 401(k) and similar participant-directed individual account plans. Employers and other plan fiduciaries can learn more about their fiduciary responsibilities under the Employee Retirement Income Security Act of 1974 (ERISA) by visiting EBSA's website at www.dol.gov/ebsa/compliance_assistance.html.

Target Date Fund Basics

With the growth of 401(k) and other individual account retirement plans, many more participants are responsible for investing their retirement savings. Target date retirement funds, or TDFs, can be attractive investment options for employees who do not want to actively manage their retirement savings. TDFs automatically rebalance to become more conservative as an employee gets closer to retirement. The "target date" refers to a target retirement date, and often is part of the name of the fund. For example, you might see TDFs with names like "Portfolio 2030," "Retirement Fund 2030," or "Target 2030" that are designed for individuals who intend to retire during or near the year 2030. Because of these features, many plan sponsors decide to use TDFs as their plan's qualified default investment alternative (QDIA) under Department of Labor regulations. A QDIA is a default investment option chosen by a plan fiduciary for participants who fail to make an election regarding investment of their account balances.[1]

TDFs offer a long-term investment strategy based on holding a mix of stocks, bonds and other investments (this mix is called an asset allocation) that automatically changes over time as the participant ages. A TDF's initial asset allocation, when the target date is a number of years away, usually consists mostly of stocks or equity investments, which often have greater potential for higher returns but also can be more volatile and carry greater investment risk. As the target retirement date approaches (and often continuing after the target date), the fund's asset allocation shifts to include a higher proportion of more conservative investments, like bonds and cash instruments, which generally are less volatile and carry less investment risk than stocks. The shift in the asset allocation over time is called the TDF's "glide path." It is important to know whether a target date fund's glide path uses a "to retirement" or a "through retirement" approach. A "to" approach reduces the TDF's equity exposure over time to its most conservative point at the target date. A "through" approach reduces equity exposure through the target date so it does not reach its most conservative point until years later.

Within this general framework, however, there are considerable differences among TDFs offered by different providers, even among TDFs with the same target date. For example, TDFs may have different investment strategies, glide paths, and investment-related fees. Because these differences can significantly affect the way a TDF performs, it is important that fiduciaries understand these differences when selecting a TDF as an investment option for their plan.

- Establish a process for comparing and selecting TDFs.
- Establish a process for the periodic review of selected TDFs.
- Understand the fund's investments – the allocation in different asset classes (stocks, bonds, cash), individual investments, and how these will change over time.
- Review the fund's fees and investment expenses.
- Inquire about whether a custom or non-proprietary target date fund would be a better fit for your plan.
- Develop effective employee communications.
- Take advantage of available sources of information to evaluate the TDF and recommendations you received regarding the TDF selection.
- Document the process.

Understanding Glidepath Benchmarks

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Essential Characteristics of a Benchmark

- Unambiguous
- Investable
- Measurable
- Appropriate
- Reflective of current investment opinions
- Specified in advance

Comparison of Various Target Date Benchmarking Systems

1. S&P Target Date Series

Modified peer group average ("consensus") based on survey of fund families with AUM of $100 million or more. If an asset class is included in 25% of target maturity funds it is included in the average. Summed survey results lead to the equity glide path.

9 asset classes included in the index.

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Comparison of Various Target Date Benchmarking Systems

2. Dow Jones US Target Indexes

Semi-variance-based glide path. Starting 40 years prior to the target date, the funds target 90% of the semi-variance of equity. This decreases to 20% of the semi-variance of equity 10 years after the retirement date.

10 asset classes included in the index.

Comparison of Various Target Date Benchmarking Systems

3. Morningstar Lifetime Allocation

Three risk tracks; aggressive, moderate and conservative. Moderate usually used in most reports.

Modern Portfolio Theory (MPT)-based glide path evolves with the median U.S. citizen's total economic situation--including an evolving picture of their financial capital, human capital, and retirement income liability.

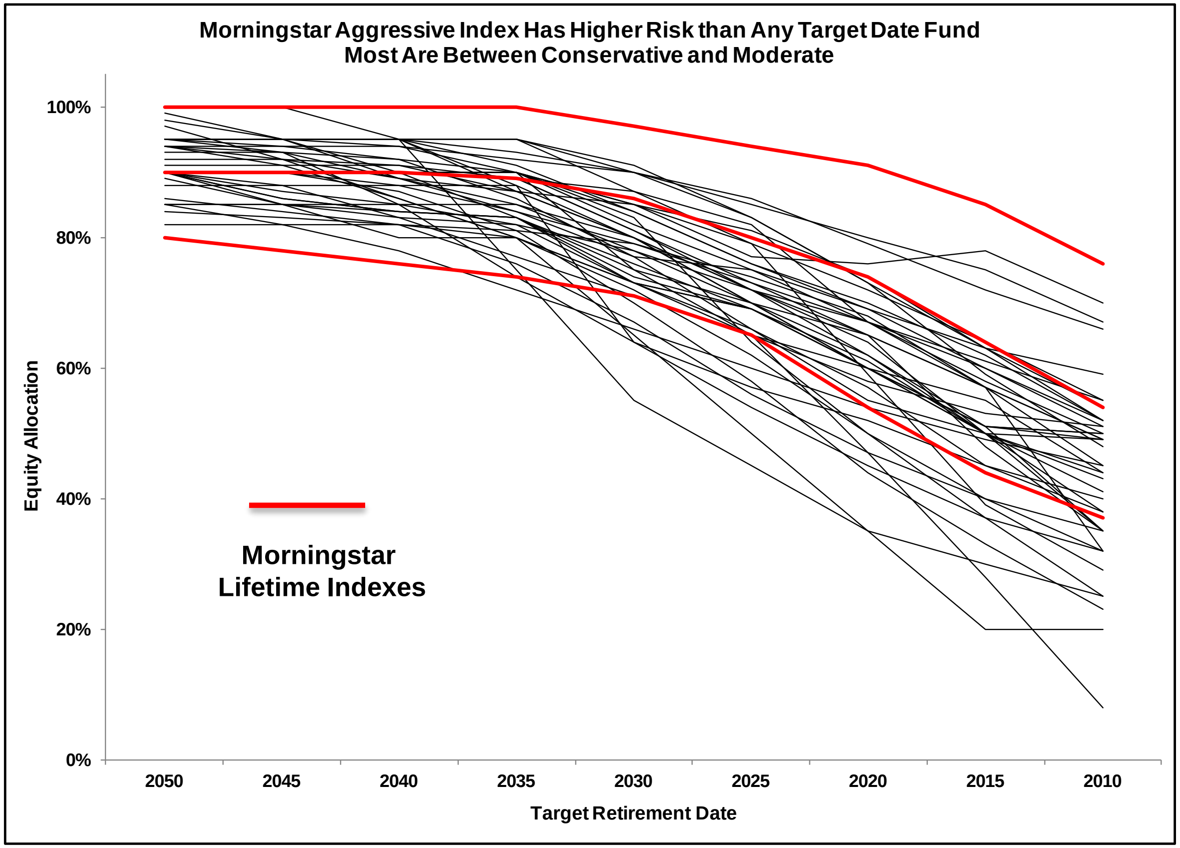
Comparison of Various Target Date Benchmarking Systems

3. Morningstar Lifetime Allocation

The glide paths attempt to maximize a participant's total financial health by investing their financial capital in such a way that it brings their total wealth closest to MPT's Sharpe maximizing portfolio (adjusted for risk preferences and liabilities).

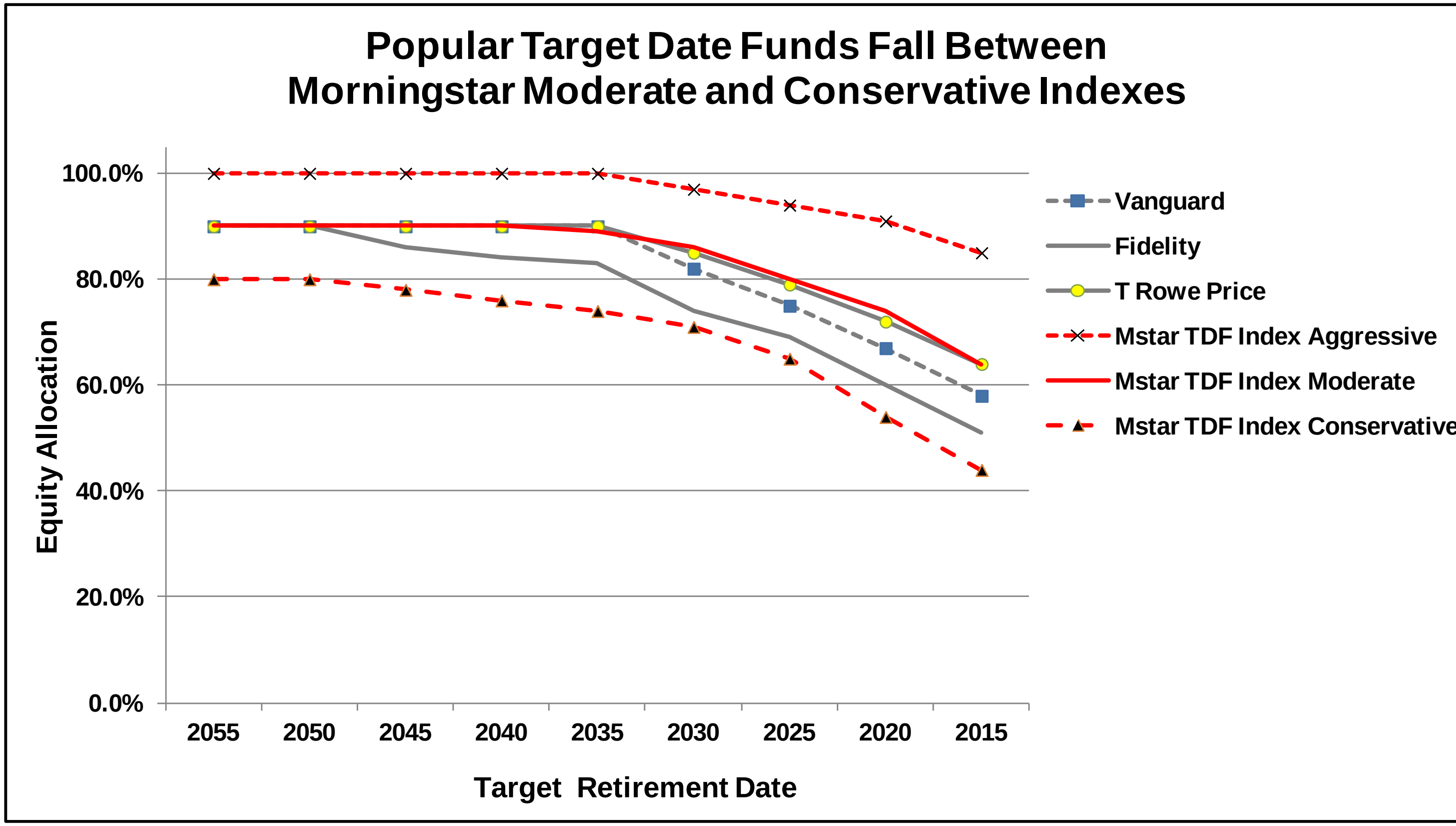
19 asset classes included in the index.

Most Target Date Funds Fall Between the Morningstar Moderate and Conservative Lifetime Index Bands



Source: Data from all 43 fund family TDF holdings,
Morningstar Target-Date Series Research Paper: 2012 Industry Survey, May, 2012

“ Big Three” Target Date Funds Fall Between Morningstar Moderate and Conservative Index Glidepaths



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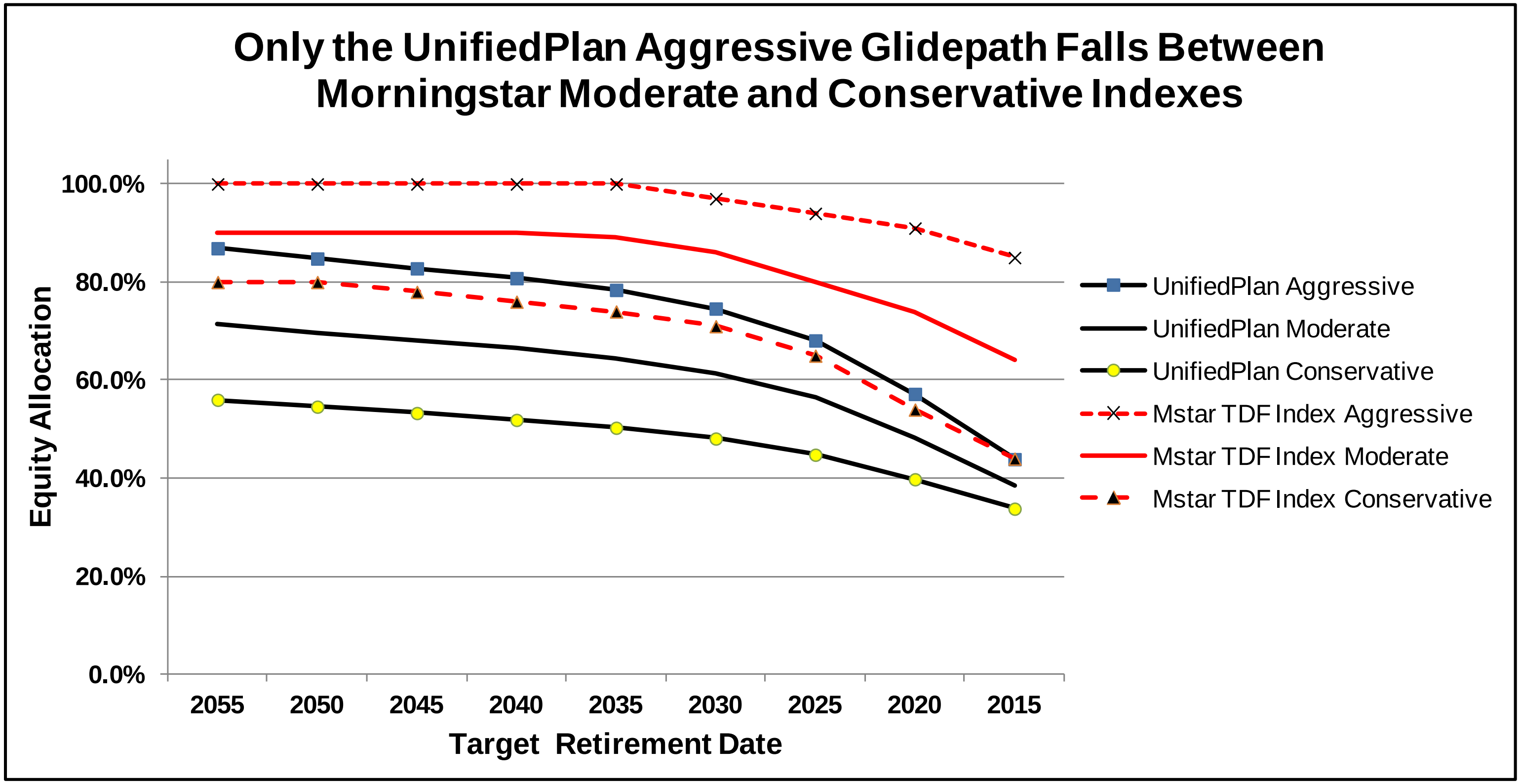
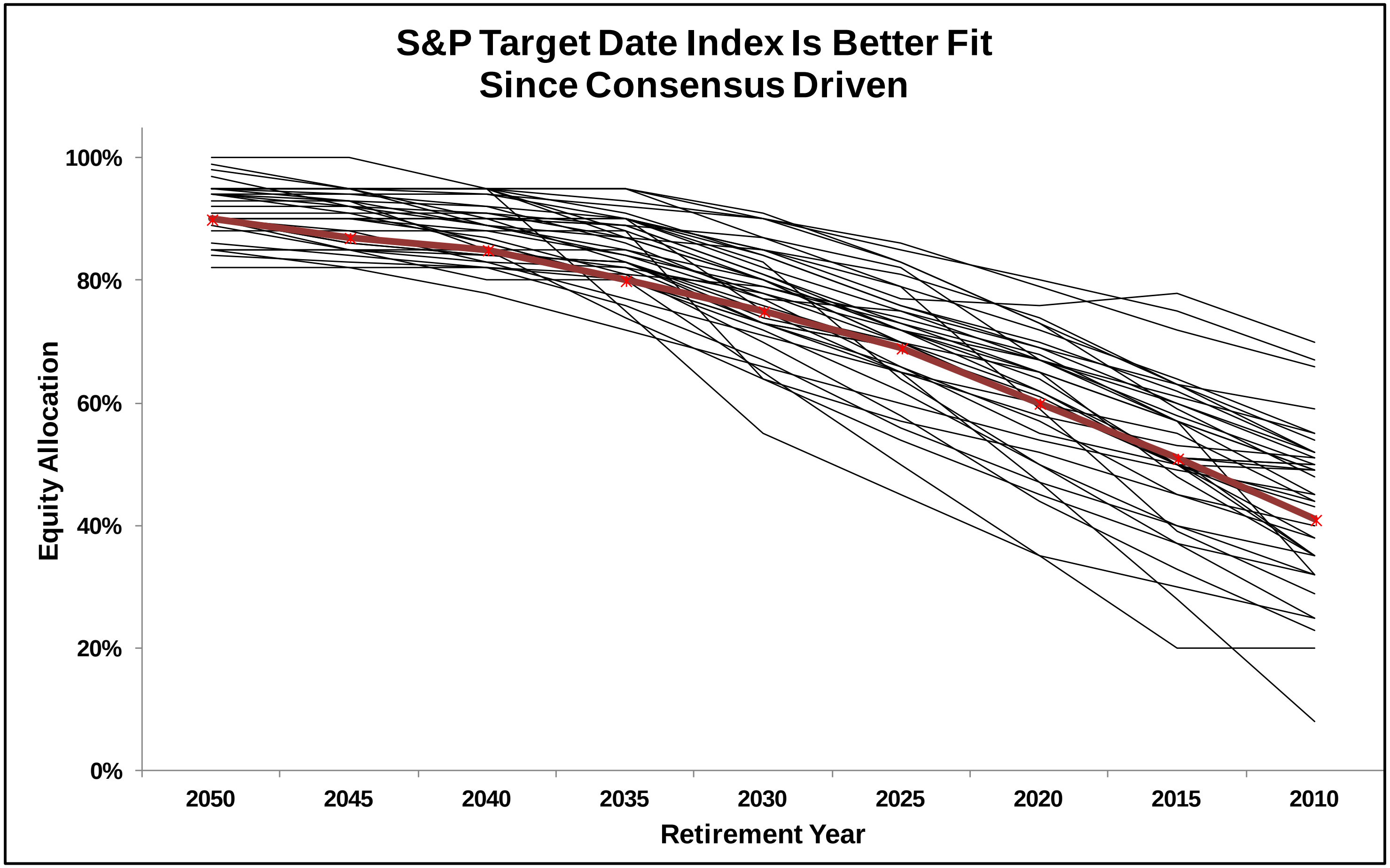
Only the UnifiedPlan Aggressive Glidepath Falls Between Morningstar Moderate and Conservative Index Glidepaths



Consensus Driven S&P Target Date Indexes Fit Better to TDF Universe



Source: Data from all 43 fund family TDF holdings,
Morningstar Target-Date Series Research Paper: 2012 Industry Survey, May, 2012
Source: S&P Target Date Scorecard data as of December 31, 2011

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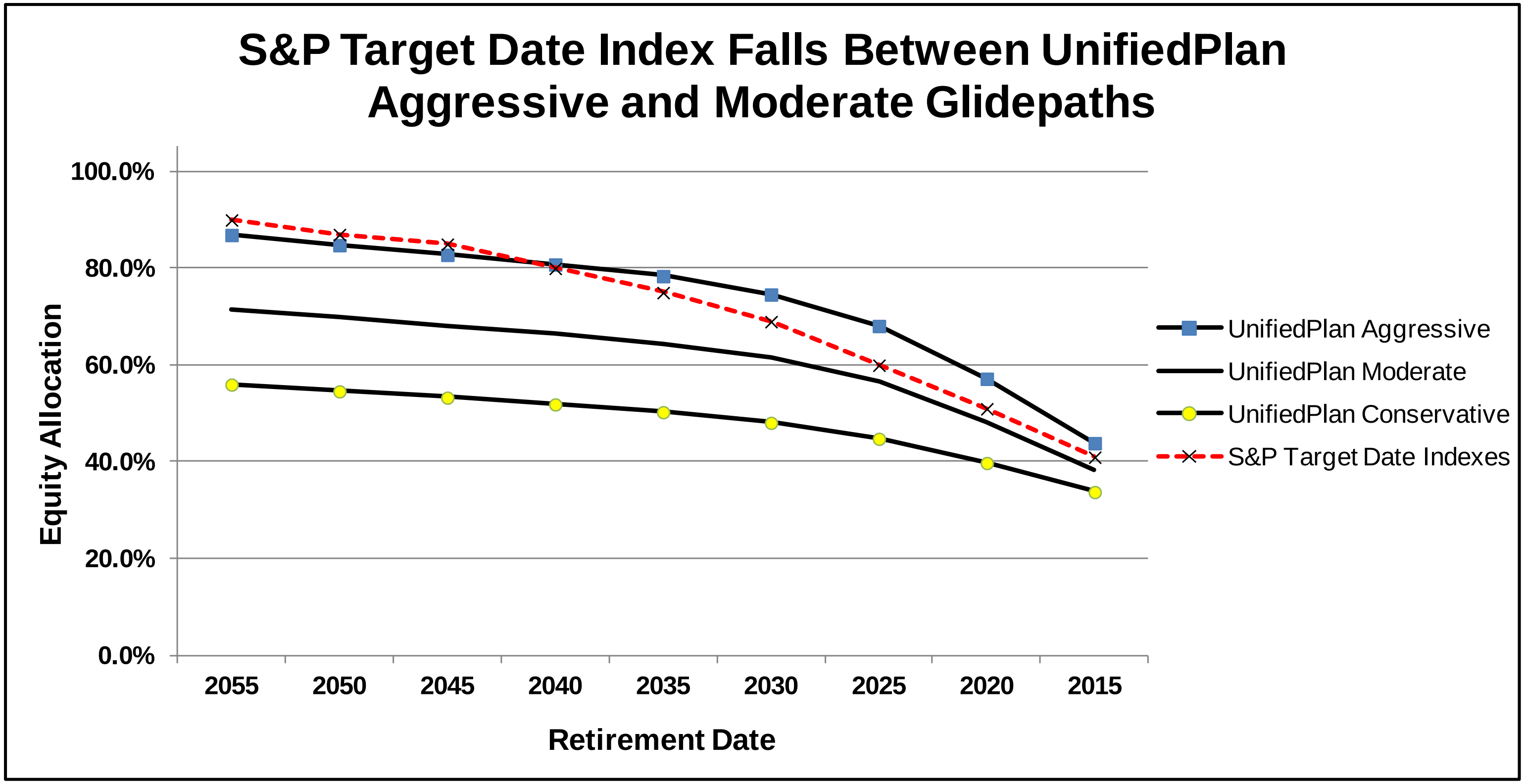
S&PTarget Date Indexes Fit Better to UnifiedPlan Aggressive and Moderate Glidepaths



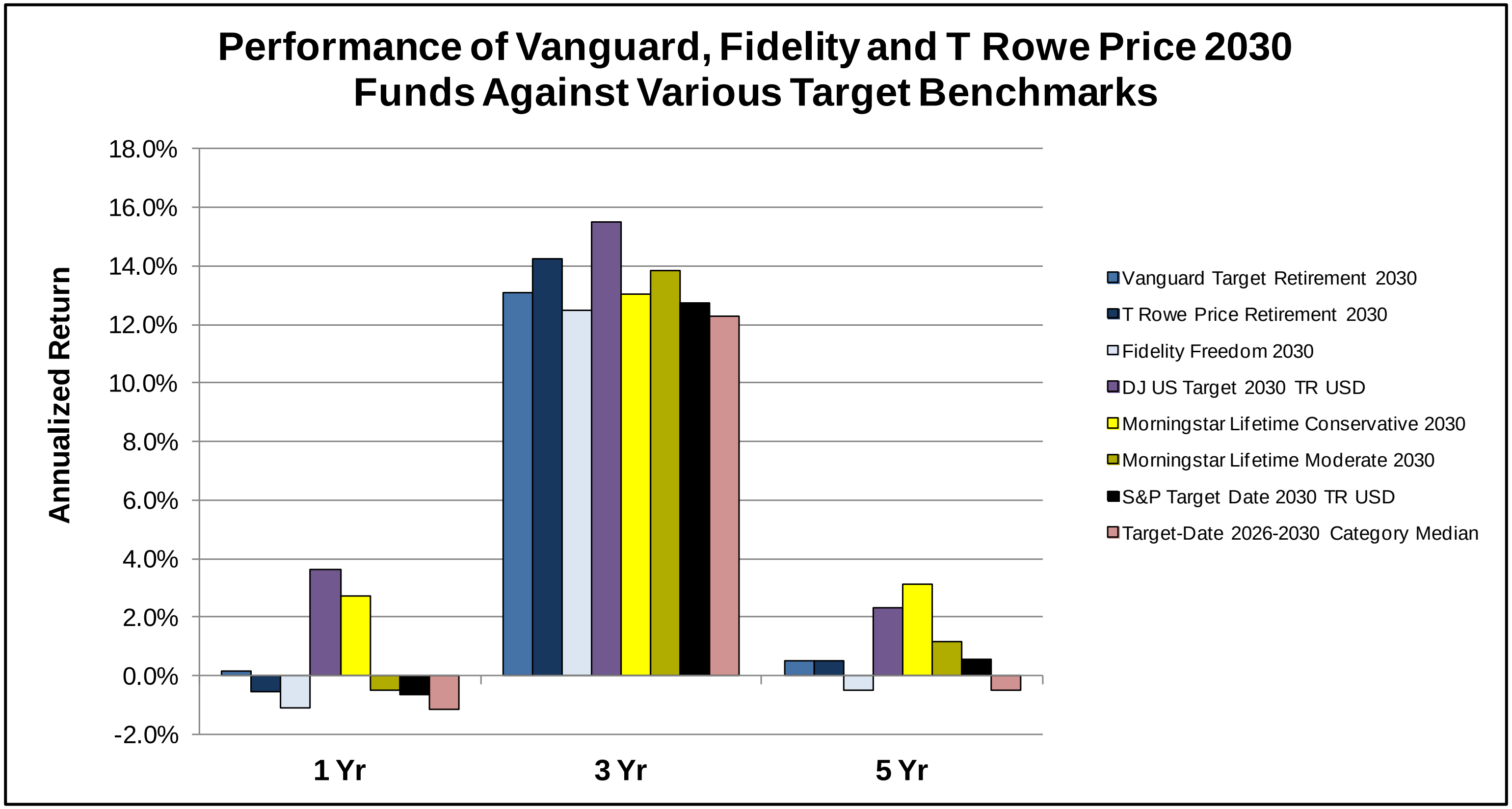
Source: Data from all 43 fund family TDF holdings,
Morningstar Target-Date Series Research Paper: 2012 Industry Survey, May, 2012
Source: S&P Target Date Scorecard data as of December 31, 2011

Most Target Date Funds Underperform the S&P Target Date Indexes

Fraction of TDF Mutual Funds Lagging S&P Index				
Fund Category	**Comparison Index**	**One Year**	**Three Year**	**Five Year**
Retirement Income	S&P Target Date Ret Income	87.2%	17.6%	62.5%
Target 2010	S&P Target Date 2010	80.8%	18.2%	82.4%
Target 2015	S&P Target Date 2015	78.9%	13.8%	76.5%
Target 2020	S&P Target Date 2020	71.8%	22.9%	87.0%
Target 2025	S&P Target Date 2025	77.8%	23.1%	85.7%
Target 2030	S&P Target Date 2030	79.5%	28.6%	91.3%
Target 2035	S&P Target Date 2035	85.7%	36.0%	85.7%
Target 2040	S&P Target Date 2040	84.6%	40.0%	80.0%
Target 2045+	S&P Target Date 2045	89.0%	42.6%	63.2%

Source: S&P Target Date Scorecard data as of December 31, 2011

“Big Three” Target Date Funds Have Generally Lagged All TDF Benchmarks, with Fidelity Performing the Worst



Source: Data from all 43 fund family TDF holdings. Fund performance data are as of June 30, 2012.
Morningstar Target-Date Series Research Paper: 2012 Industry Survey, May, 2012

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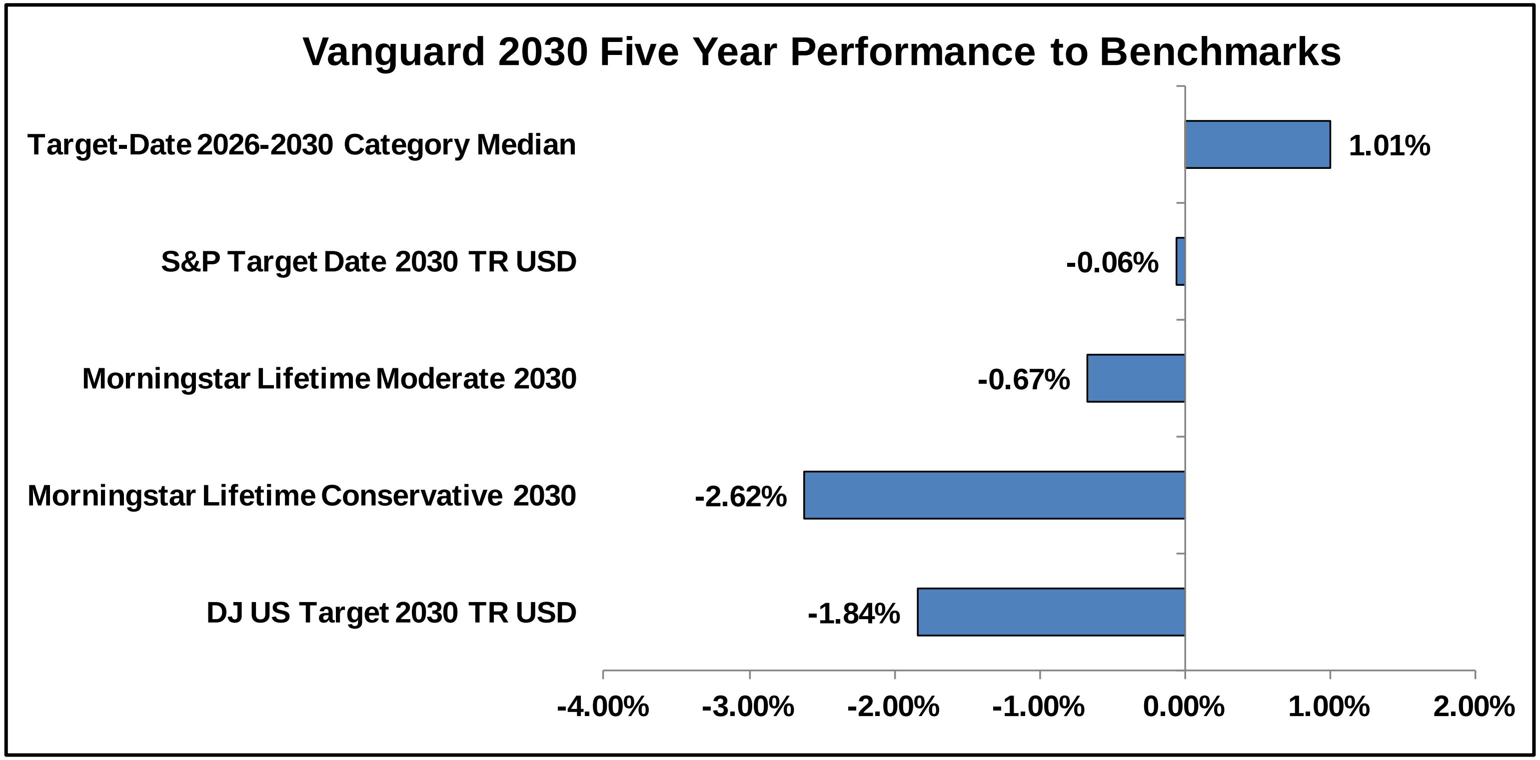

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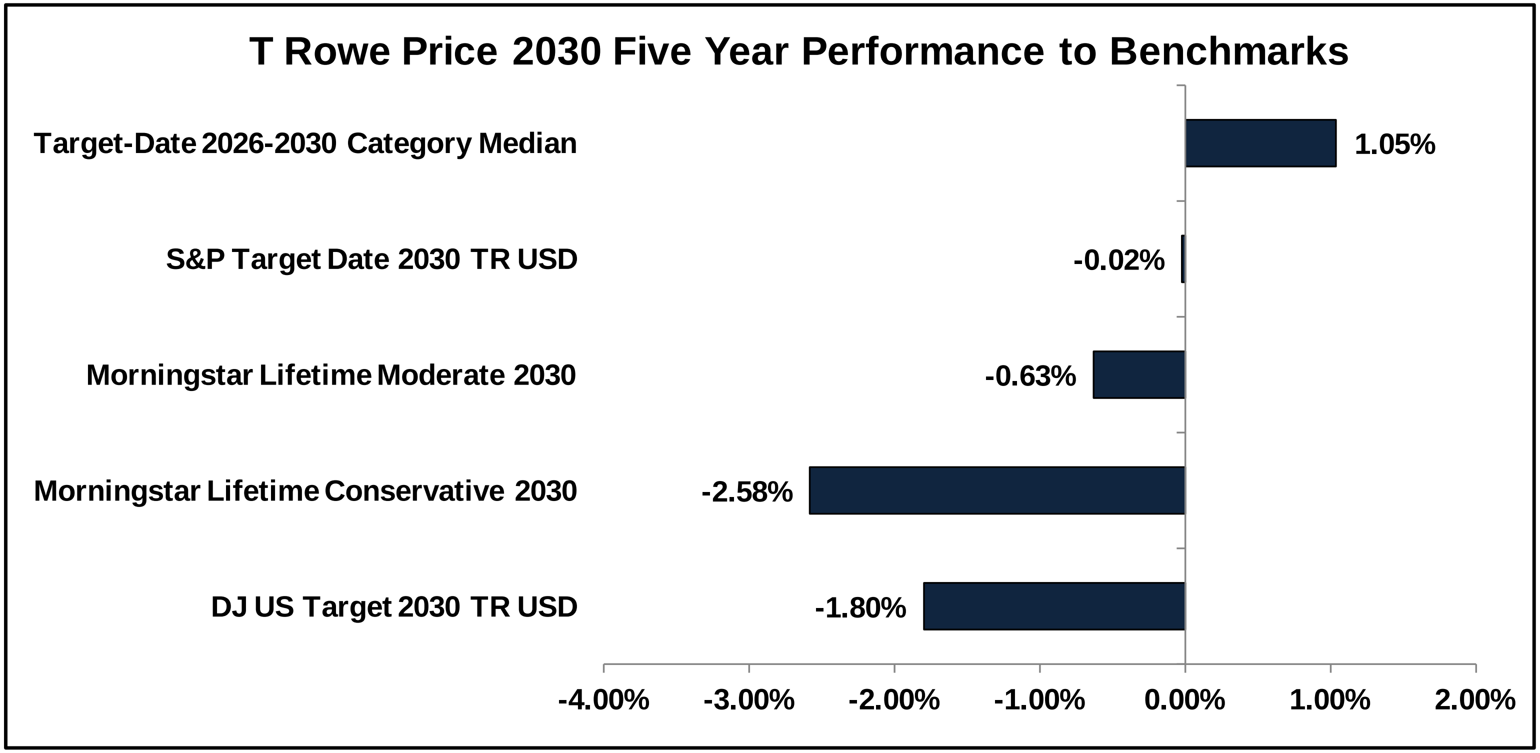

Source: Data from all 43 fund family TDF holdings. Fund performance data are as of June 30, 2012.
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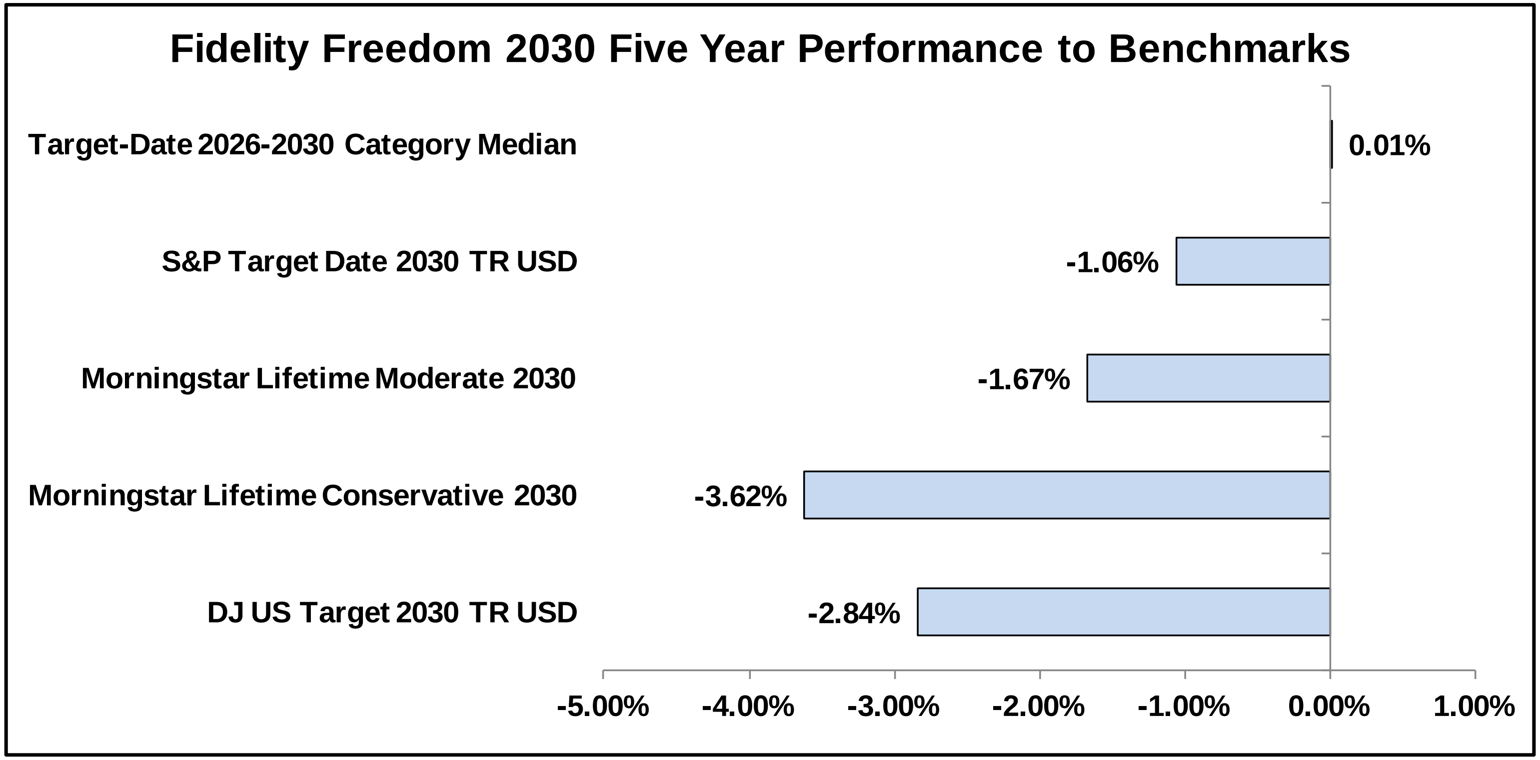

Source: Data from all 43 fund family TDF holdings. Fund performance data are as of June 30, 2012.
Morningstar Target-Date Series Research Paper: 2012 Industry Survey, May, 2012

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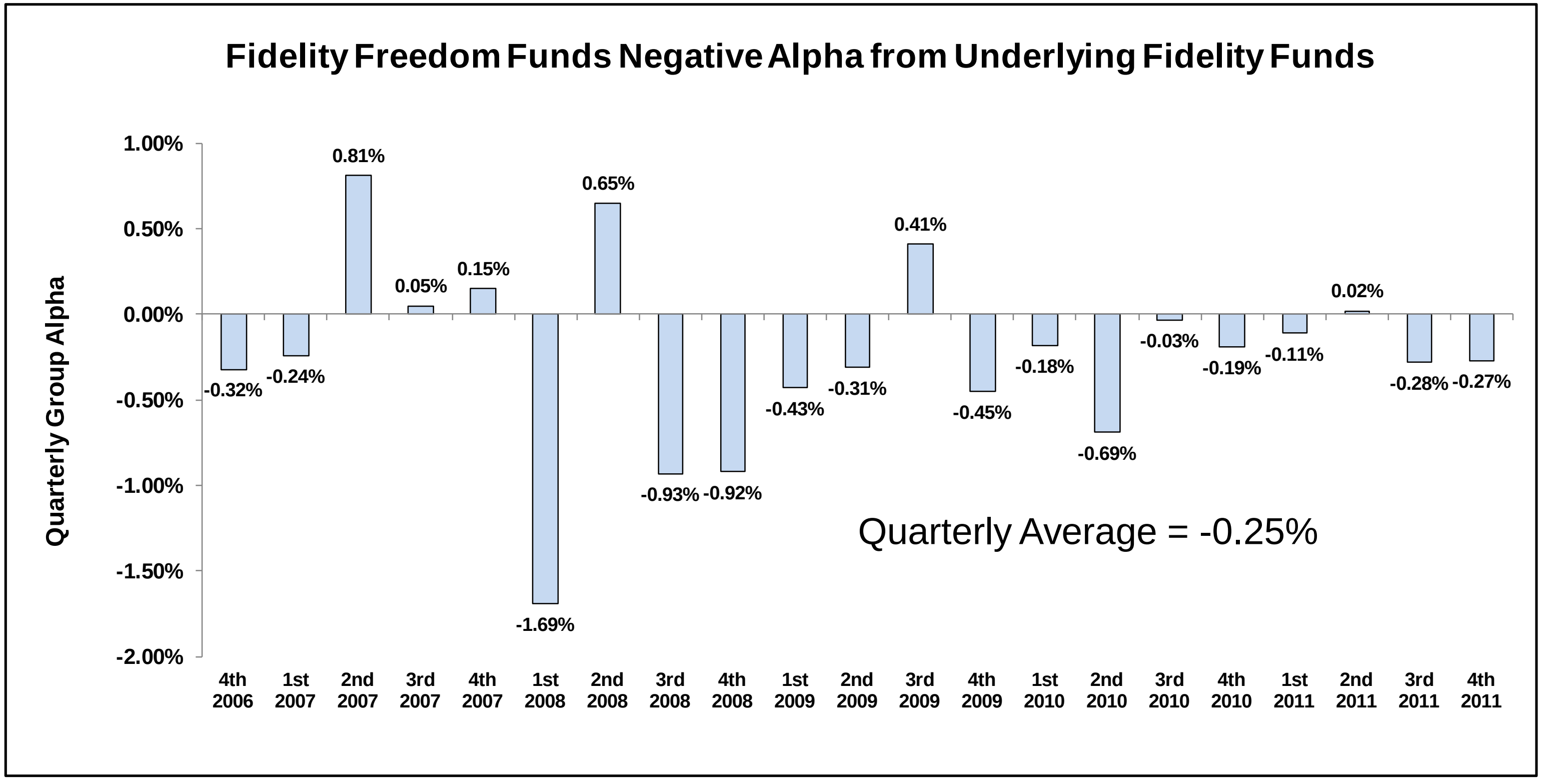
Fidelity Freedom Performed the Worst Because of Negative Alpha in Underlying Proprietary Fidelity Funds



Source: Morningstar Using a Target Date Benchmark, April, 2012

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Target Date Glidepath Benchmarking Conclusions

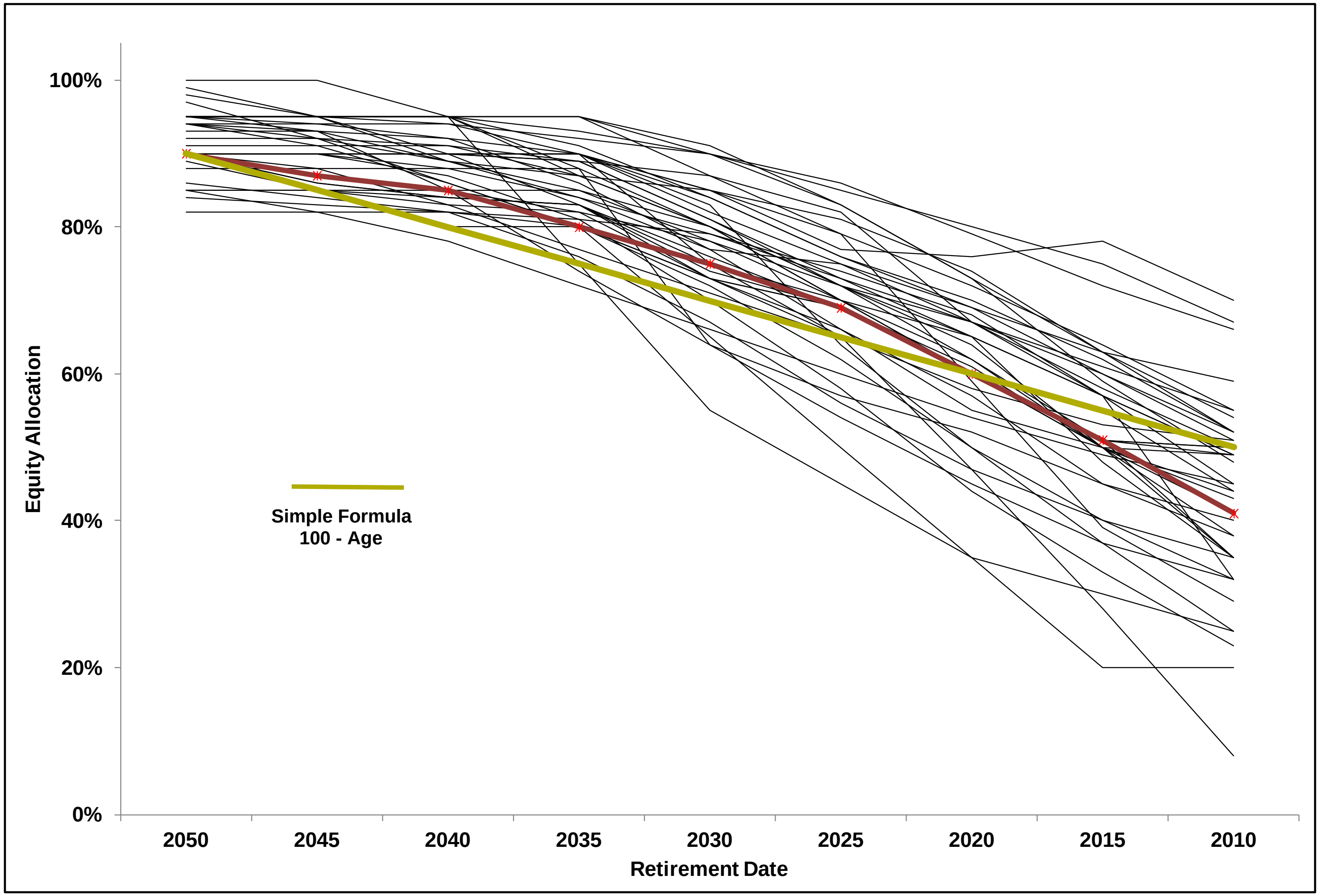
1. There is no perfect glidepath benchmark since glidepaths vary widely. None are investable.

2. Morningstar Lifetime Moderate Index is most popular, but more aggressive than many funds.

3. S&P Target Date Series is closest to actual fund holdings and industry universe.

4. No glidepath is right or wrong—prudence depends upon the individual participant's asset/liability funded status.

Simple Formula of “100- Age” Works Just As Well for “Ideal” Glidepath



Target Date Glidepath Benchmarking Conclusions

5. Most target date funds lag behind all the target date glidepath benchmarks.

6. Lagging performance can be explained by fees, proprietary sub-portfolio funds that underperform their benchmarks, and asset allocation significantly different from the benchmark.

7. Since target date manufacturers are not ERISA fiduciaries, they can select imprudent sub-portfolio funds and face no fiduciary liability.

Fiduciary Analytics Target Date Benchmarking— Overview

Fi360 Fiduciary Score® Breakdown (Funds/ETFs/GRPAs Only)

fi360 Fiduciary Score Criteria

1	Inception Date: The investment must have at least a 3 year track history.
2	Manager Tenure: The investment manager must have at least a 2 year track history. (Most senior manager's tenure)
3	Assets: The investment must have at least 75 million under management. (Total across all share classes for funds/etfs)
4	Composition: The investment's allocation to its primary asset class should be greater than or equal to 80%. (Not applied to all peer groups)
5	Style: The investment's current style box should match the peer group. (Not applied to all peer groups)
6	Prospectus Net Exp Ratio: The investment must place in the top 75% of its peer group.
7	Alpha: The investment must place in the top 50% of its peer group.
8	Sharpe: The investment must place in the top 50% of its peer group.
9	1 Year Return: The investment must place in the top 50% of its peer group.
10	3 Year Return: The investment must place in the top 50% of its peer group.
11	5 Year Return: The investment must place in the top 50% of its peer group.

Calculation Methodology

The fi360 Fiduciary Score is a peer percentile ranking of an investment against a set of quantitative due diligence criteria selected to reflect prudent fiduciary management. The criteria include total returns, risk-adjusted returns, expenses, and other portfolio statistics. Investments are ranked according to their ability to meet due diligence criteria every month. The rank becomes the fi360 Fiduciary Score. The fi360 Fiduciary Score Average is a one-, three-, five- or ten-year rolling average of an investments fi360 Fiduciary Score. The fi360 Fiduciary Score represents a suggested course of action and is not intended, nor should it be used, as the sole source of information for reaching an investment decision. Visit the Glossary or fi360.com/fi360-Fiduciary-Score for more information.

Legend

√	Investment meets the criterion
X	Investment does not meet the criterion
N/Av	Investment data is not available
N/S	Investment doesn't have the history to be scored
N/App	Investment is not screened on the criterion

Investment Name	Peer Group		fi360 Fiduciary Score Score	Average 1 Yr	Average 3 Yr	Average 5 Yr	Average 10 Yr	fi360 Fiduciary Score Criteria 1	2	3	4	5	6	7	8	9	10	11
Allocation																		
Vanguard Target Retirement 2055 Inv (VFFVX)	Target Date 2051+		-	-	-	-	-	X	√	√	N/App	N/App	√	N/Av	N/Av	√	N/Av	N/Av
		# of Peers																
Vanguard Target Retirement 2010 Inv (VTENX)	Target Date 2000-2010		0	0	4	-	-	√	√	√	N/App	N/App	√	√	√	√	√	√
		# of Peers	126	115	94													
Vanguard Target Retirement 2015 Inv (VTXVX)	Target Date 2011-2015		0	0	3	3	-	√	√	√	N/App	N/App	√	√	√	√	√	√
		# of Peers	123	106	60	25												
Vanguard Target Retirement 2020 Inv (VTWNX)	Target Date 2016-2020		0	0	5	-	-	√	√	√	N/App	N/App	√	√	√	√	√	√
		# of Peers	157	150	101													
Vanguard Target Retirement 2025 Inv (VTTVX)	Target Date 2021-2025		0	0	7	6	-	√	√	√	N/App	N/App	√	√	√	√	√	√
		# of Peers	111	94	51	20												
Vanguard Target Retirement 2030 Inv (VTHRX)	Target Date 2026-2030		0	0	4	-	-	√	√	√	N/App	N/App	√	√	√	√	√	√
		# of Peers	157	150	101													
Vanguard Target Retirement 2035 Inv (VTTHX)	Target Date 2031-2035		0	0	2	3	-	√	√	√	N/App	N/App	√	√	√	√	√	√
		# of Peers	111	94	51	20												

Fiduciary Analytics Target Date Benchmarking—Moderate Detail

Investment Comparison - fi360 Fiduciary Score®

The fi360 Fiduciary Score is a peer percentile ranking of an investment against a set of quantitative due diligence criteria selected to reflect prudent fiduciary management. The fi360 Fiduciary Score Average is a one-, three-, five- or ten-year rolling average of an investments fi360 Fiduciary Score.

Investors should consider the investment objectives, risks, and charges and expenses of a fund carefully before investing. Prospectuses containing this and other information about the fund are available by contacting your financial consultant. Please read the prospectus carefully before investing to make sure that the fund is appropriate for your goals and risk tolerance. The performance information shown represents past performance and is not a guarantee of future results. The investment return and principal value of an investment will fluctuate so that the shares, when redeemed, may be worth more or less than their original cost. The performance information shown reflects performance without adjusting for sales charges. If adjusted for sales charges, the load would reduce the performance quoted. Current performance may be lower or higher than the performance information shown. For performance data current to the most recent month-end, please reference the Investment Company Contact Information section.

Legend √ Meets the criterion X Does not meet the criterion *N/Av* Data is not available *N/S* Does not have the history to be scored *N/App* Not screened on the criterion

	Vanguard Target Retirement Income Inv Type: Fund | Ticker: VTINX			Vanguard Target Retirement 2010 Inv Type: Fund | Ticker: VTENX			Vanguard Target Retirement 2015 Inv Type: Fund | Ticker: VTXVX		
Peer Group	Retirement Income			Target Date 2000-2010			Target Date 2011-2015		
fi360 Fiduciary Score	Value	Quartile 1 2 3 4	# peers	Value	Quartile 1 2 3 4	# peers	Value	Quartile 1 2 3 4	# peers
Score	7	1	222	0	1	126	0	1	123
Average (1-Year)	7	1	204	0	1	115	0	1	106
Average (3-Year)	9	1	77	4	1	94	3	1	60
Average (5-Year)	7	1	52	-			3	1	25
Average (10-Year)	-			-			-		

fi360 Fiduciary Score Criteria	Value	Meets Criterion	Value	Meets Criterion	Value	Meets Criterion
1) Inception Date	10/27/2003	√	6/7/2006	√	10/27/2003	√
2) Assets	$ 9,711.1 million	√	$ 6,434.8 million	√	$ 17,622.9 million	√
3) Manager Tenure	9.2 years	√	6.6 years	√	9.2 years	√
4) Composition	Peer not screened for composition	N/App	Peer not screened for composition	N/App	Peer not screened for composition	N/App
5) Style Consistency	Peer not screened for style drift	N/App	Peer not screened for style drift	N/App	Peer not screened for style drift	N/App

	Value	Quartile 1 2 3 4	# peers	Meets Criterion	Value	Quartile 1 2 3 4	# peers	Meets Criterion	Value	Quartile 1 2 3 4	# peers	Meets Criterion
6) Prospectus Net Expense Ratio	0.17%	1	248	√	0.17%	1	139	√	0.17%	1	163	√
7) Alpha	3.61%	1	222	√	1.90%	1	126	√	0.70%	1	123	√
8) Sharpe Ratio	1.56%	1	222	√	1.08%	1	126	√	0.91%	1	123	√
9) 1-Year Total Return	8.23%	3	243	X	10.12%	2	131	√	11.37%	2	139	√
10) 3-Year Total Return	7.61%	1	222	√	8.25%	1	126	√	8.41%	1	123	√
11) 5-Year Total Return	4.87%	1	158	√	3.73%	1	103	√	3.25%	1	72	√

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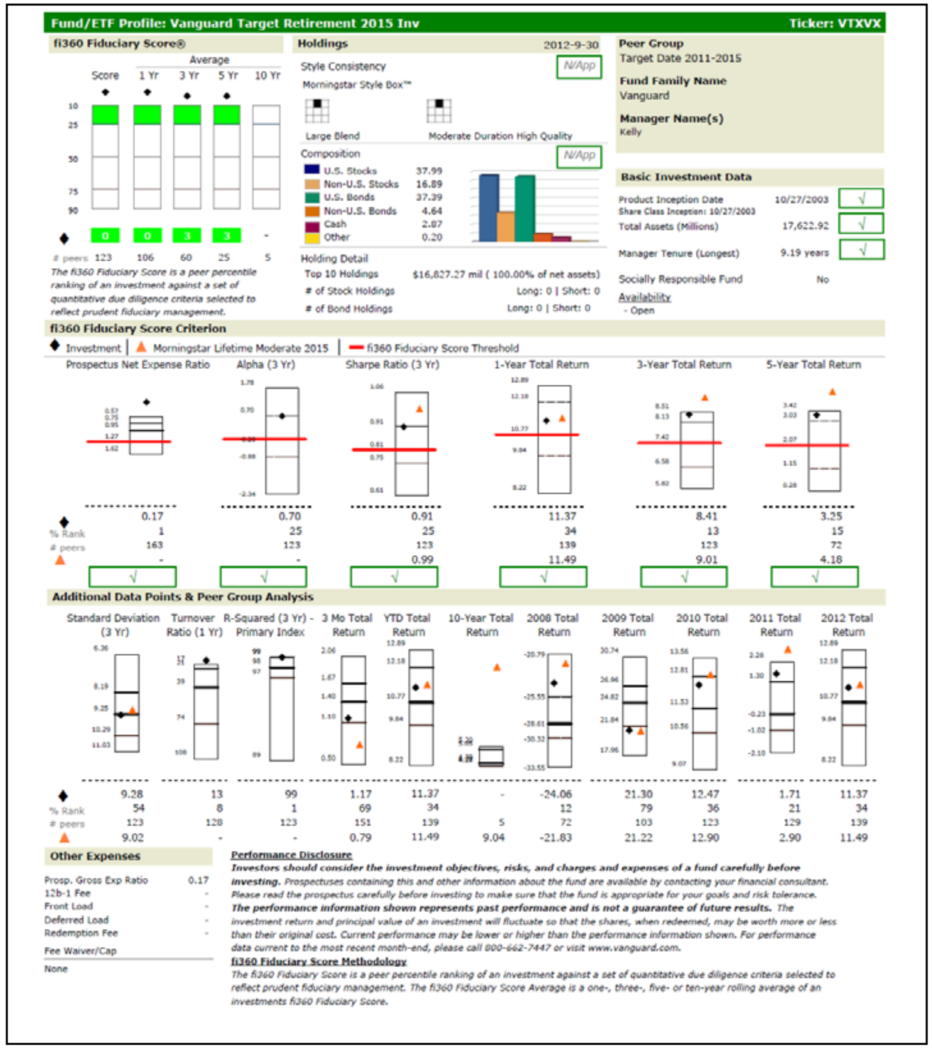
Fund data as of 12/31/2012

Fiduciary Analytics Target Date Benchmarking—High Detail



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Understanding Glidepath Risk

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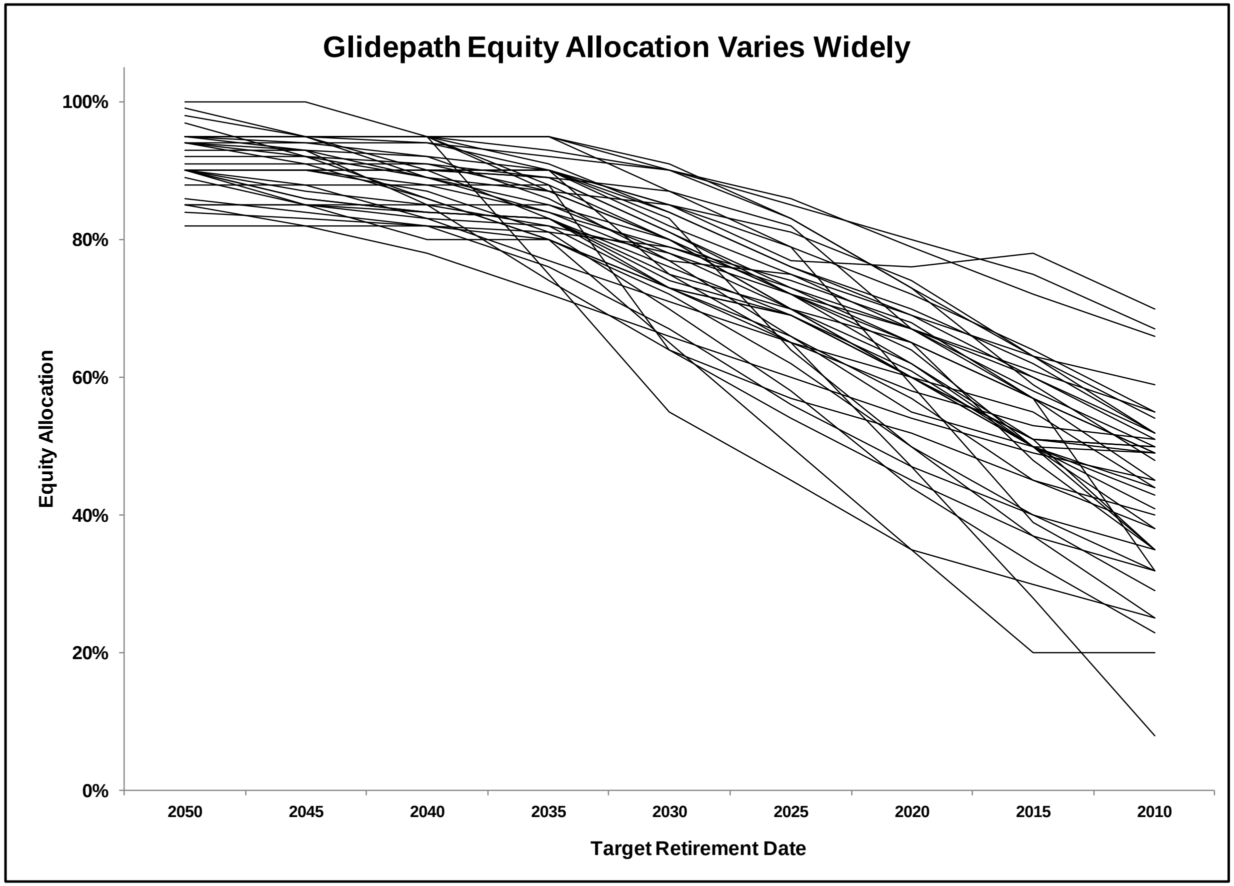
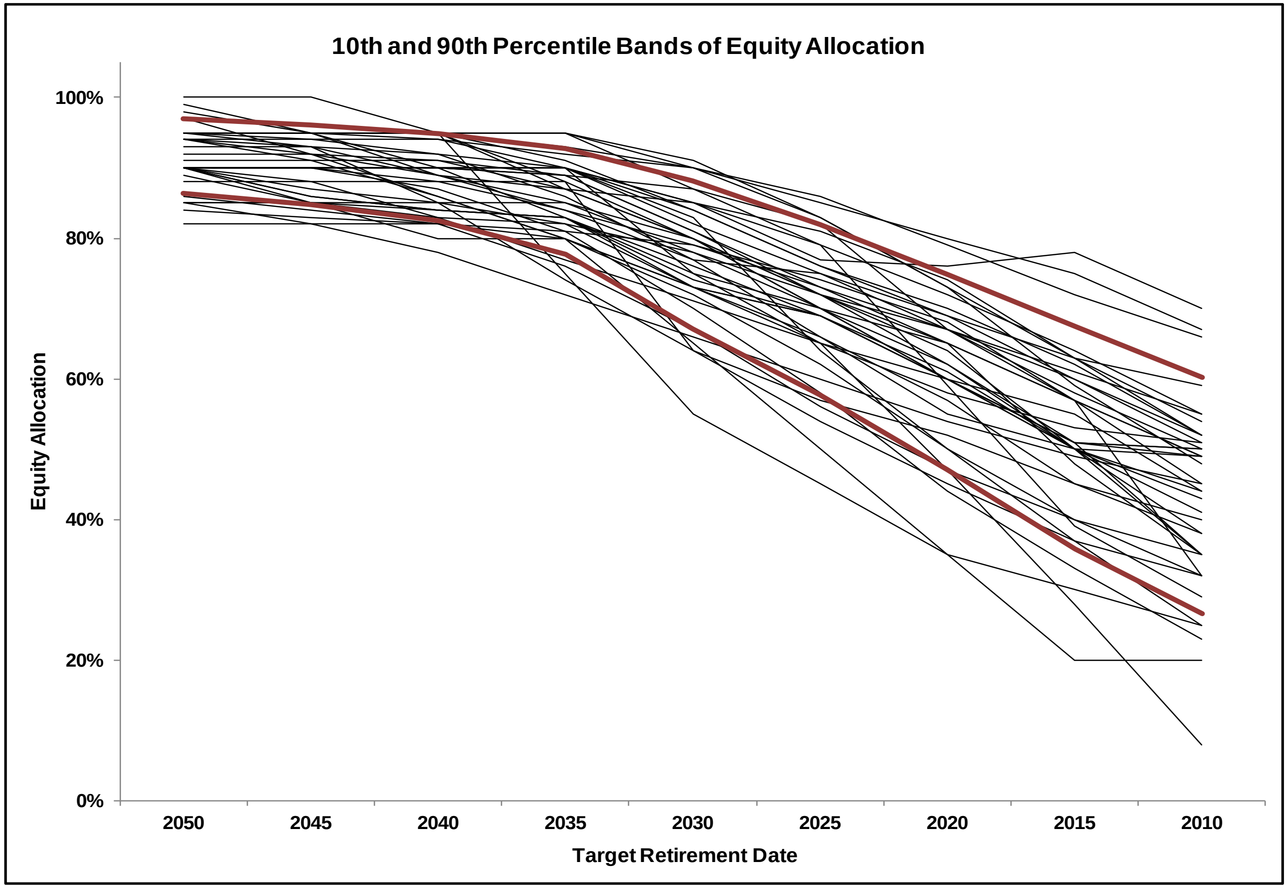
Variability of Target Date Fund Glidepath Risk Increases as the Retirement Date Draws Closer



Source: Data from all 43 fund family TDF holdings,
Morningstar Target-Date Series Research Paper: 2012 Industry Survey, May, 2012

10^{th} and 90^{th} Percentile Equity Allocation Bands Show Significant Variability



Source: Data from all 43 fund family TDF holdings,
Morningstar Target-Date Series Research Paper: 2012 Industry Survey, May, 2012

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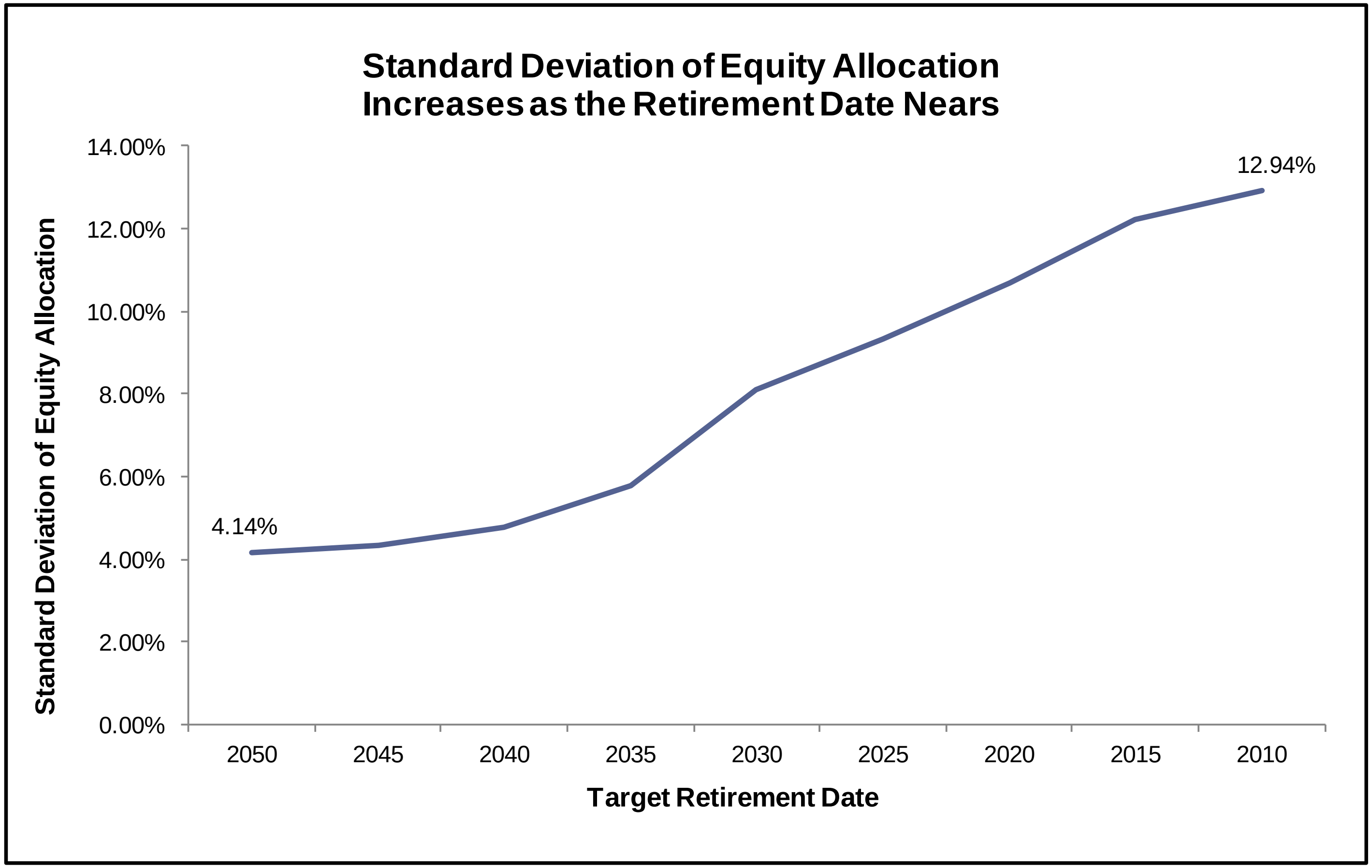
10th and 90th Percentile Equity Allocation Bands Increase Variability When Uncertainty Should be Decreasing

	2050	2045	2040	2035	2030	2025	2020	2015	2010
Mean	**91.7%**	**90.5%**	**88.6%**	**85.3%**	**77.6%**	**69.9%**	**61.0%**	**51.6%**	**43.4%**
St Dev	**4.1%**	**4.3%**	**4.8%**	**5.8%**	**8.1%**	**9.3%**	**10.7%**	**12.2%**	**12.9%**
90th Percentile	**97.0%**	**96.2%**	**94.8%**	**92.8%**	**88.1%**	**82.0%**	**74.9%**	**67.5%**	**60.2%**
10th Percentile	**86.3%**	**84.8%**	**82.4%**	**77.7%**	**67.1%**	**57.7%**	**47.1%**	**35.8%**	**26.6%**

Source: Data from all 43 fund family TDF holdings,
Morningstar Target-Date Series Research Paper: 2012 Industry Survey, May, 2012

Variability of Glidepath Risk Increases as the Retirement Date Draws Closer



Source: Data from all 43 fund family TDF holdings,
Morningstar Target-Date Series Research Paper: 2012 Industry Survey, May, 2012

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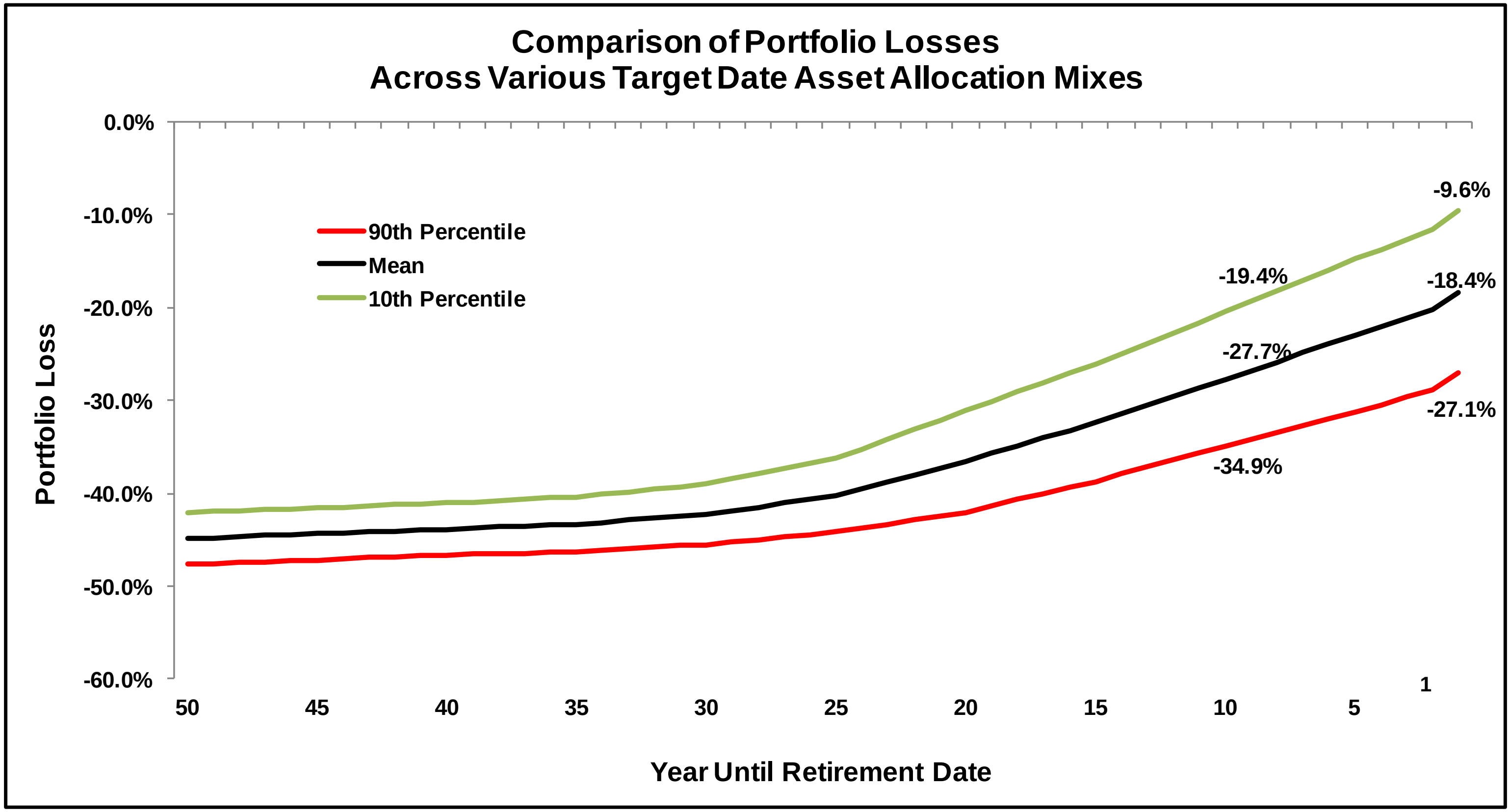
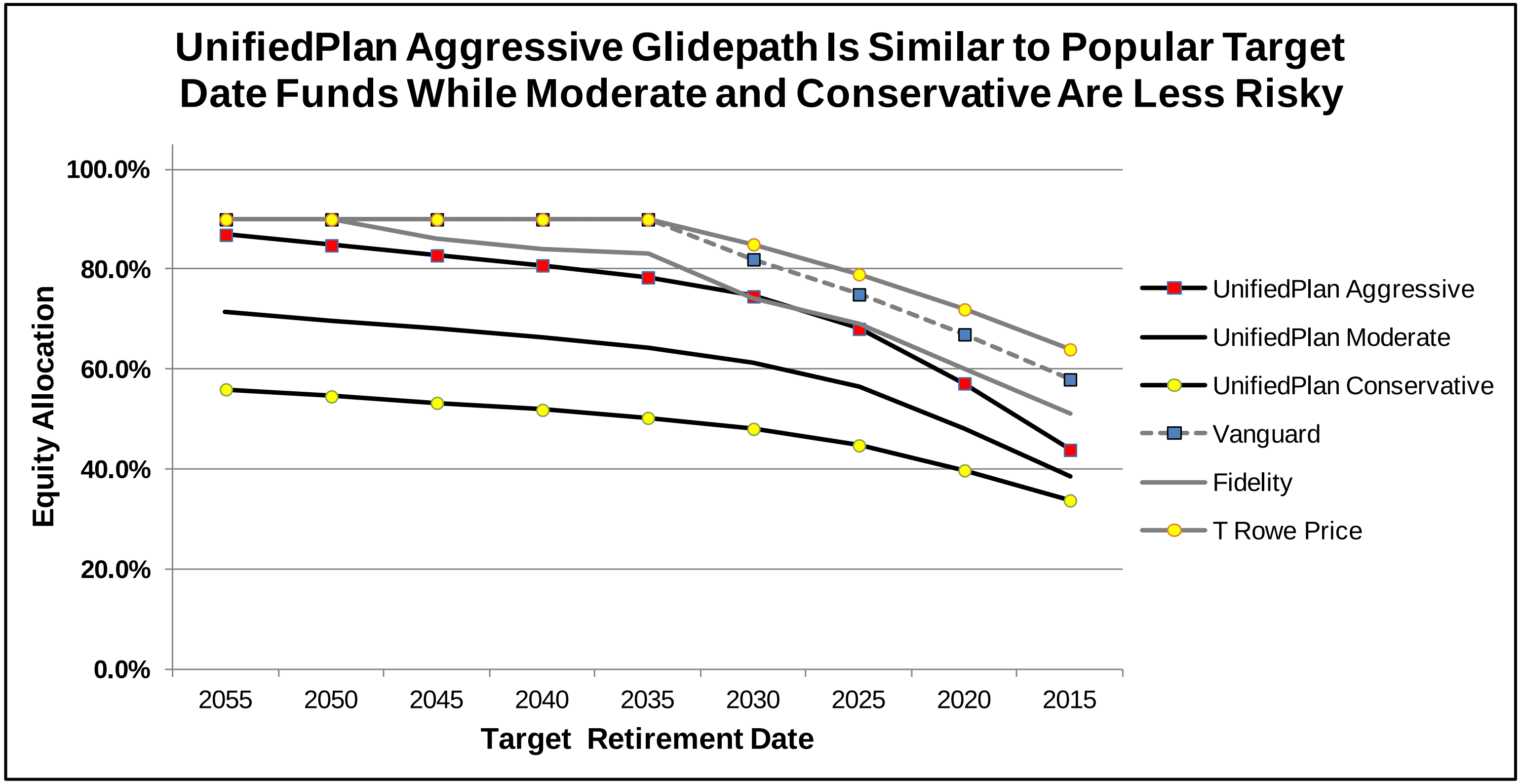
10^{th} and 90^{th} Percentile Equity Allocation Bands Show Significant Risk Variability—Especially As Retirement Approaches



Source: Data from all 43 fund family TDF holdings,
Morningstar Target-Date Series Research Paper: 2012 Industry Survey, May, 2012
Assumes 2008 like market with equity loss of -48.0%, fixed income gain of +4.0%.

The UnifiedPlan Aggressive Glidepath Is Similar to “ Big Three” Target Date Funds



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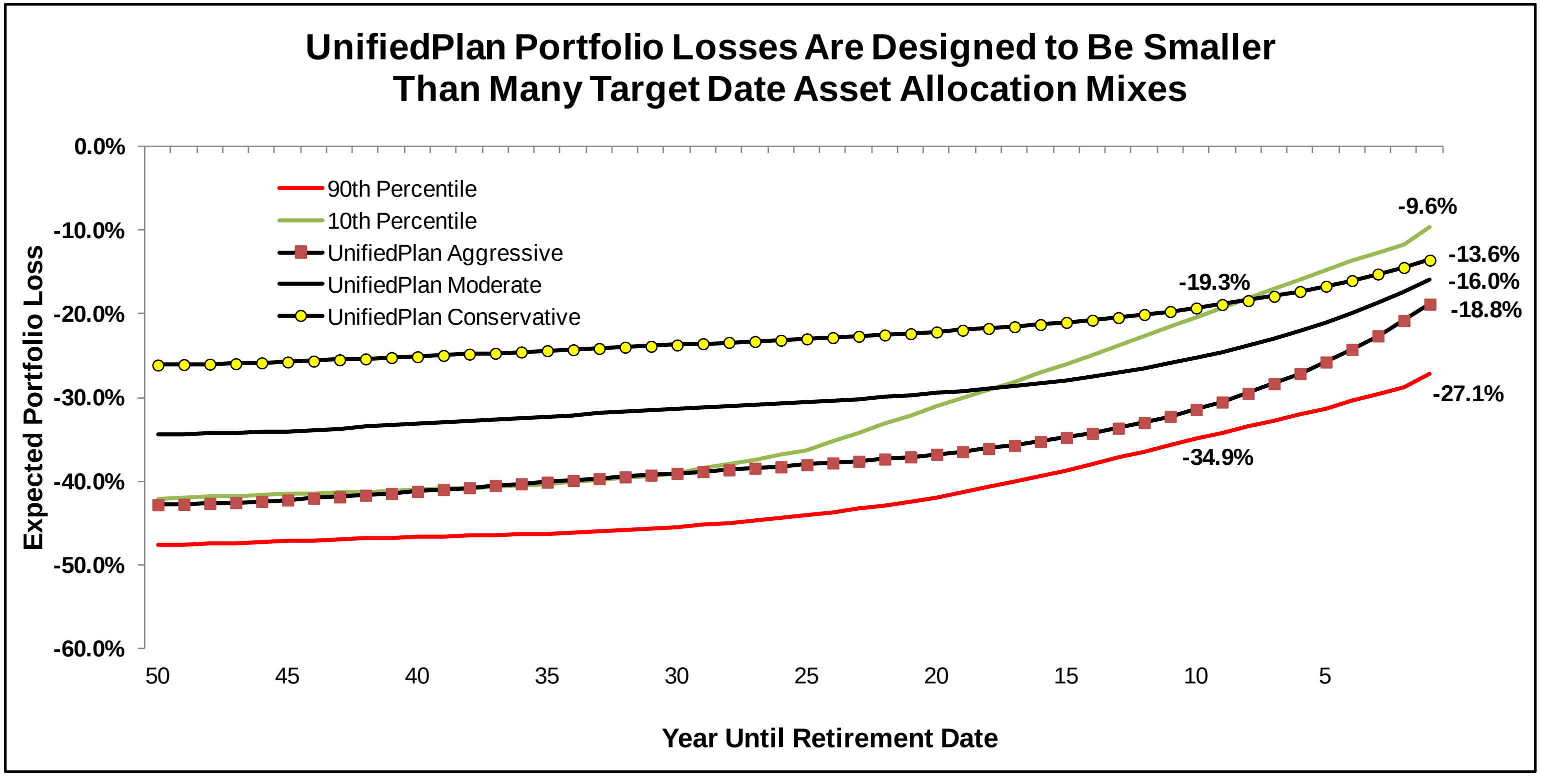
UnifiedPlan Portfolios Are Designed to Be Less Risky and More Consistent — Especially As Retirement Approaches



Source: Data from all 43 fund family TDF holdings,
Morningstar Target-Date Series Research Paper: 2012 Industry Survey, May, 2012
Assumes 2008 like market with equity loss of -48.0%, fixed income gain of +4.0%.

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Benchmarking "To" Versus "Through"

1. One of the reasons for the wide disparity in ending equity allocation is the "to" versus "through" philosophy.

2. The 'through" approach assumes participants will leave their money in the TDF (plan) for another 20-30 years after beginning retirement.

3. Yet most (> 83%) participants withdraw or rollover all their funds within 3 years of terminating employment.

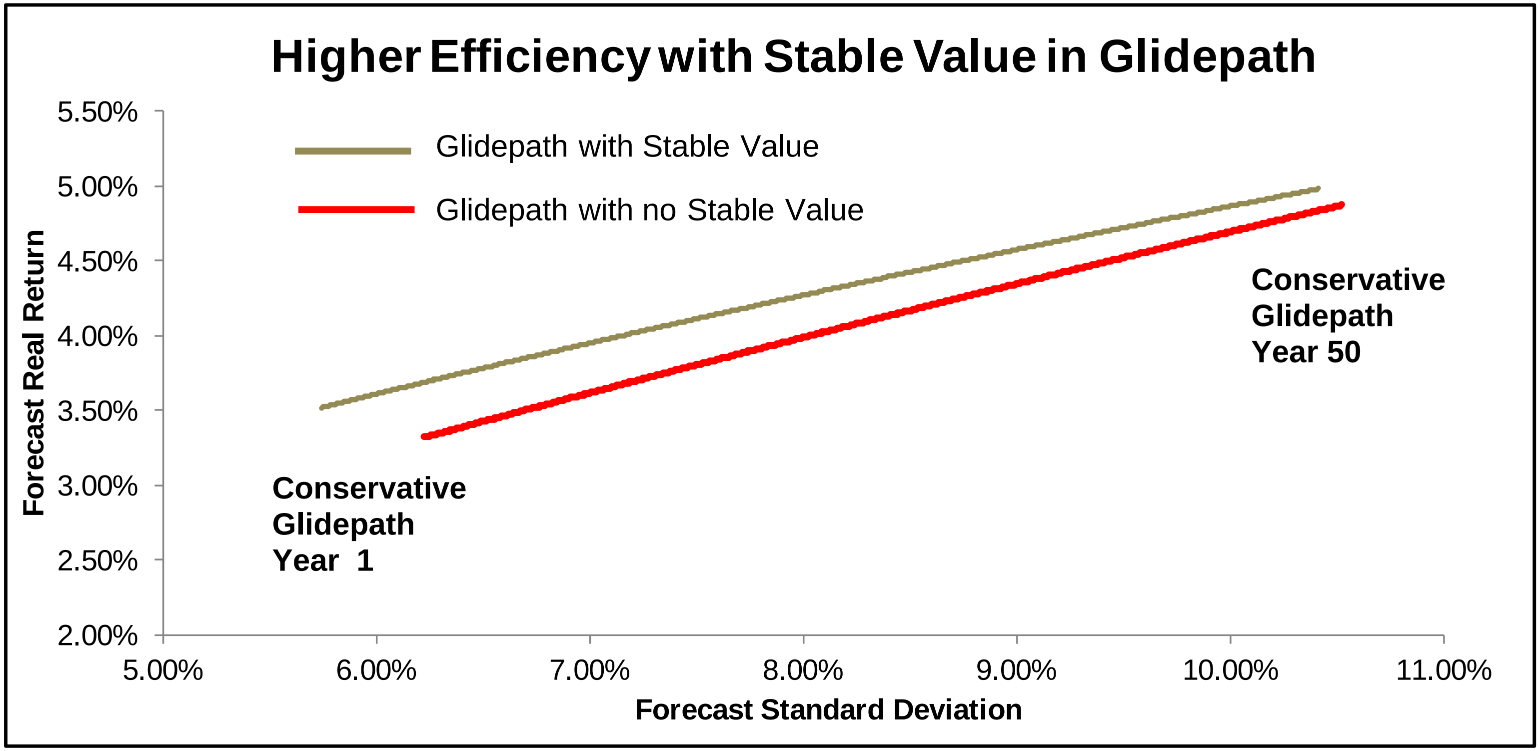
Why No Stable Value in Target Date Funds?

1. Stable Value not available in any mutual fund

2. No true open architecture since built from proprietary underlying mutual funds

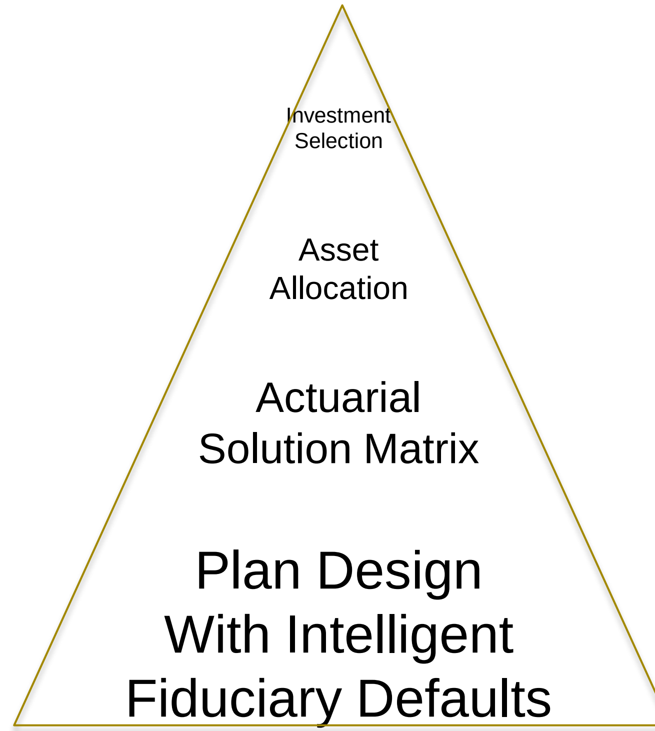
3. Lack of critical thinking and fiduciary process

Stable Value Addition to Portfolio Reduces Risk and Increases Efficiency



Individual Asset/Liability Funded Status Is the Most Important Glidepath Determinant

The Four Key Parts to Retirement Success are Like a Pyramid



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Without Knowing the Participant's Funded Status There Cannot Be a "Correct" Glidepath

Using the Asset/Liability Funded Ratio to Better Manage Target Date Risk

Participant #1 " Steady Saver"

- ✓ 40 years old
- ✓ Earns $50,000 per year
- ✓ Saves 8% of pay in total
- ✓ Has 1 year's pay saved in plan
- ✓ Wants to retire at 65 (25 years from now)
- ✓ Seeks to replace 70% of income
- ✓ Social Security replaces 32% of pay

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Using the Asset/Liability Funded Ratio to Better Manage Target Date Risk

Participant #1 “ Steady Saver”

Age 65 infl. Adj. plan liability = $363,213

10th percentile TDF asset forecast = $318,108

50th percentile TDF asset forecast = $331,560

90th percentile TDF asset forecast = $345,639

Source: Data from all 43 fund family TDF holdings,
Morningstar Target-Date Series Research Paper: 2012 Industry Survey, May, 2012
Assumes 2008 like market with equity loss of -+5.0%, fixed income gain of +2.0%.

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WARNING!

You Generally Cannot Solve a Funding Shortfall With Riskier Portfolios

Using the Asset/Liability Funded Ratio to Better Manage Target Date Risk

Participant #1 "Steady Saver"

All TDFs leave the participant underfunded at age 65, but aggressive looks closest!

10th percentile TDF A/L funded ratio = 0.876

50th percentile TDF A/L funded ratio = 0.913

90th percentile TDF A/L funded ratio = 0.952

Unified Trust asset/liability calculations assume real (inflation adjusted) net equity returns of +5.0%, fixed income of +2.0%.

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90th Percentile Exposes the Participant to Much Greater Losses Near Retirement and a Greatly Reduced Funded Ratio

Participant #1 " Steady Saver"

Age 65 account value after pre-retirement year bear market--aggressive is -31% underfunded!

10th percentile equity = -9.6%, funded = 0.792

50th percentile equity = -18.4%, funded = 0.745

90th percentile equity = -27.1%, funded = 0.694

Unified Trust asset/liability calculations assume real (inflation adjusted) net equity returns of +5.0%, fixed income of +2.0%.
Assumes 2008 like market with equity loss of -48.0%, fixed income gain of +4.0%.

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Actuarial Solution Matrix Can Still Keep the Participant Fully Funded

Participant #1 " Steady Saver"

Age 67 Actuarial Solution Matrix before the final year bear market. (ASM Solution 0 A)

ASM Actuarial Solution Matrix

Year	0	1	2	3
C	0.905	1.140	1.473	1.971
M	0.964	1.218	1.578	2.117
A	1.020	1.291	1.677	2.256

Unified Trust asset/liability calculations assume real (inflation adjusted) net equity returns of +5.0%, fixed income of +2.0%.

Actuarial Solution Matrix Can Still Keep the Participant Fully Funded

Participant #1 " Steady Saver"

Age 67 Actuarial Solution Matrix after the final year bear market. (ASM Solution 1 M)

ASM Actuarial Solution Matrix

Year	0	1	2	3
C	0.782	0.985	1.273	1.704
M	0.810	1.023	1.326	1.779
A	0.828	1.048	1.362	1.831

Unified Trust asset/liability calculations assume real (inflation adjusted) net equity returns of +5.0%, fixed income of +2.0%.
Assumes 2008 like market with equity loss of -48.0%, fixed income gain of +4.0%.

The Aggressive Target Date Fund Allocation Is Even Worse for the Near Retiree

Participant #2 " Just About Retired"

- ✓ 59 years old
- ✓ Earns $50,000 per year
- ✓ Saves 15% of pay in total
- ✓ Has 5 year's pay saved in plan
- ✓ Wants to retire at 65 (6 years from now)
- ✓ Seeks to replace 70% of income
- ✓ Social Security replaces 32% of pay

Using the Asset/Liability Funded Ratio to Better Manage Target Date Risk

Participant #2 “ Just About Retired”

Age 65 infl. Adj. plan liability = $363,213

10th percentile TDF asset forecast = $349,821

50th percentile TDF asset forecast = $358,617

90th percentile TDF asset forecast = $367,607

Source: Data from all 43 fund family TDF holdings,
Morningstar Target-Date Series Research Paper: 2012 Industry Survey, May, 2012
Assumes 2008 like market with equity loss of -+5.0%, fixed income gain of +2.0%.

Using the Asset/Liability Funded Ratio to Better Manage Target Date Risk

Participant #2 " Just About Retired"

The aggressive (90^{th} percentile) TDF forecast to be fully funded at 65.

10^{th} percentile TDF A/L funded ratio = 0.963

50^{th} percentile TDF A/L funded ratio = 0.987

90^{th} percentile TDF A/L funded ratio = 1.012

Unified Trust asset/liability calculations assume real (inflation adjusted) net equity returns of +5.0%, fixed income of +2.0%.

90th Percentile Exposes the Participant to Much Greater Losses Near Retirement and a Greatly Reduced Funded Ratio

Participant #2 " Just About Retired"

Age 65 account value after pre-retirement year bear market— 90^{th} is now -26% underfunded!

10^{th} percentile equity = -9.6%, funded = 0.871

50^{th} percentile equity = -18.4%, funded = 0.806

90^{th} percentile equity = -27.1%, funded = 0.738

Unified Trust asset/liability calculations assume real (inflation adjusted) net equity returns of +5.0%, fixed income of +2.0%.
Assumes 2008 like market with equity loss of -48.0%, fixed income gain of +4.0%.

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Actuarial Solution Matrix Can Still Keep the Participant Fully Funded

Participant #2 " Just About Retired"

Age 67 Actuarial Solution Matrix before the final year bear market. (ASM Solution 0 C)

ASM Actuarial Solution Matrix

Year	0	1	2	3
C	1.166	1.475	1.912	2.567
M	1.185	1.503	1.955	2.631
A	1.205	1.532	1.997	2.694

Unified Trust asset/liability calculations assume real (inflation adjusted) net equity returns of +5.0%, fixed income of +2.0%.

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Actuarial Solution Matrix Can Still Keep the Participant Fully Funded

Participant #2 " Just About Retired"

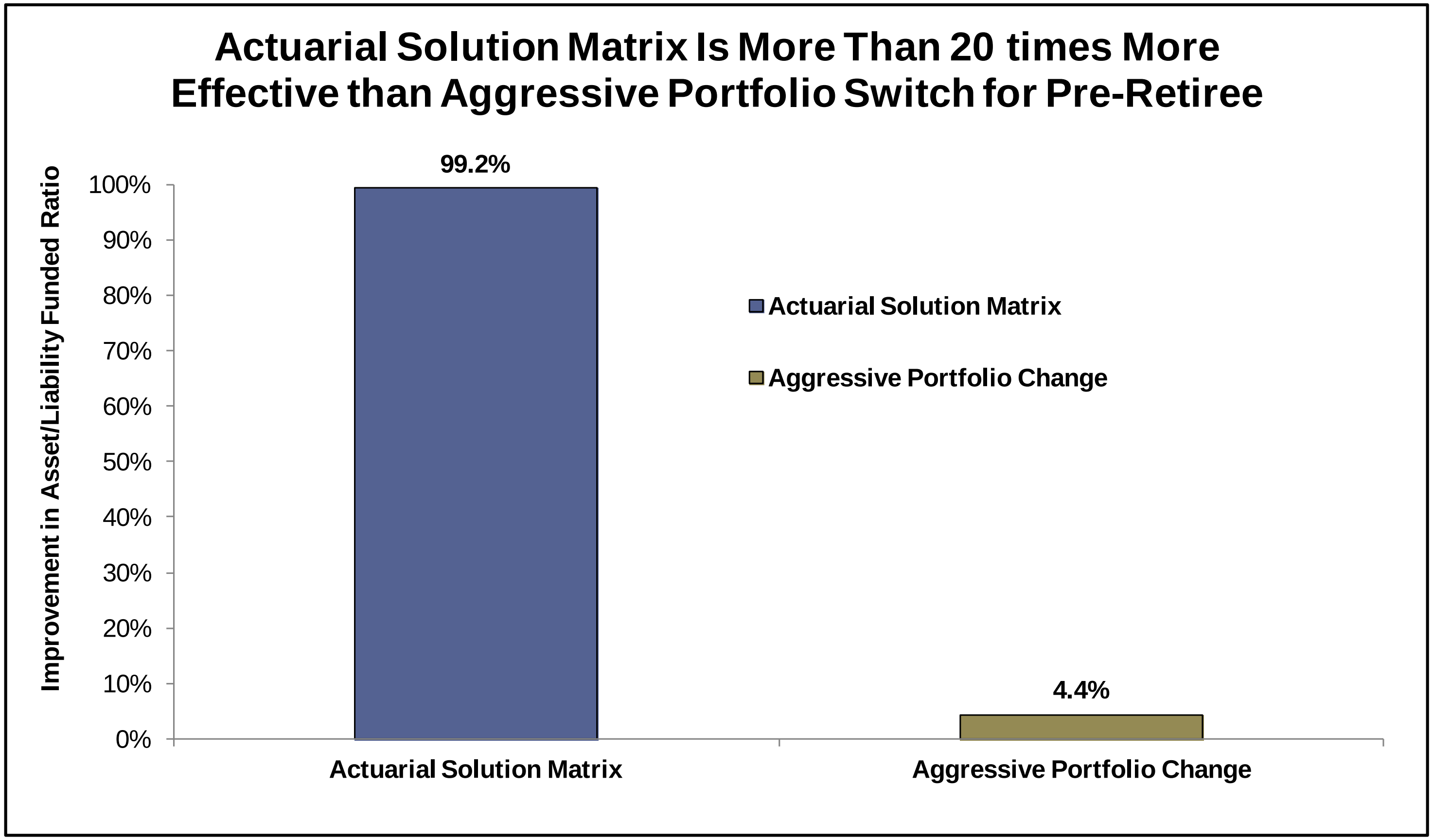
Age 67 Actuarial Solution Matrix after the final year bear market. (ASM Solution 0 C)

ASM Actuarial Solution Matrix

Year	0	1	2	3
C	1.008	1.275	1.653	2.218
M	0.996	1.263	1.642	2.211
A	0.978	1.243	1.621	2.187

Unified Trust asset/liability calculations assume real (inflation adjusted) net equity returns of +5.0%, fixed income of +2.0%.
Assumes 2008 like market with equity loss of -48.0%, fixed income gain of +4.0%.

The Actuarial Solution Matrix Is Much More Powerful than Just Investment Changes



Unified Trust asset/liability calculations assume real (inflation adjusted) net equity returns of +5.0%, fixed income of +2.0%.

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Asset/Liability Funded Status Conclusions

1. The individual participant's funded status drives the glidepath allocation.

2. Target date funds do not know the individual participant’s funded status.

3. Many, if not most, target date funds expose near retirees to significant risk just prior to retirement.

4. The Actuarial Solution Matrix is many times more effective than a simple portfolio change. It is not about “ finding alpha”.

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Asset/Liability Funded Status Conclusions

5. The individual participant's funded status information makes their asset allocation more effective.

Their investment performance results are better.

Variability is reduced by 30% and accounts are 10% more likely to hit targeted ending value.

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FEATURE ARTICLES

Wolters Kluwer
Law & Business

Prudent Benchmarking of Target Date Funds and Actuarial Glidepaths

Questions?

Presented by:

Gregory W. Kasten, MD, MBA, CFP®, CPC, AIFA®
Chief Executive Officer
Unified Trust Company, NA

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Disclosures

1. The UnifiedPlan reporting tool helps investors understand whether they are on course to achieve a successful retirement. The UnifiedPlan uses " asset liability" matching. The asset is the money forecast to be accumulated and the liability is the amount of money needed to pay for the retirement. For investors who are planning for retirement, the tool estimates the amount of funds required to meet their retirement spending goals and provides alternatives such as delaying retirement or lowering retirement spending for those who may not be able to save the required amount.

2. For investors who are already retired, the tool estimates the confidence that their portfolio will be able to sustain their desired spending throughout retirement. The tool uses a combination of deterministic methods and Monte Carlo simulation that consider factors that include saving and spending levels, long-term market expectations associated with the risk profile selected, pre- and in-retirement time horizons, and other sources of outside income.

3. The UnifiedPlan limitations relate to the large number of assumptions used in the analysis. The accuracy of these assumptions directly impacts the quality of the tool's assessment. Potential problems may include, but are not limited to, the use of inaccurate financial data by the investor, the selection of a risk tolerance by the investor that does not represent how their portfolio is actually invested, long term market expectations of risk, return, and inflation that are not achieved in the modeled time frame, the inclusion future income that is never received, and unforeseen life emergencies that require decreased saving before retirement, force an earlier retirement, or increase spending needs during retirement.

4. The UnifiedPlan is highly dependent upon assumptions of annual income and annual savings. Any variances or changes in the figures used should be reported immediately by the plan participant. Unified Trust is not responsible for any discrepancies in the data, or output from the UnifiedPlan tool.

5. All mutual fund and collective investment fund data was gathered from publicly available sources of information such as Standard & Poor's, Morningstar, Zephyr or vendors' own websites. We take reasonable care in collecting the data, and believe the data are accurate, but reserve the right to correct any errors. Individual mutual fund or collective fund performance data throughout the document are net of underlying fund expense ratios but gross of add-on expenses such as Trustee fees, administration fees, or advisory fees. The performance histories reported are simply dollar-weighted historical returns for the proposed funds and do not reflect the effects of rebalancing or fund replacements.

Disclosures

6. Any past performance information for the illustrated investment selections is not indicative of future returns but is merely a snapshot of historical performance. Past performance is not a guarantee of future performance. The investments are not FDIC insured.

7. Differences will probably exist between prospective and your actual results because events and circumstances frequently do not occur as expected, and those differences may be material, especially when making estimates over extended time periods. All figures are shown in current (inflation adjusted) dollars. The estimated inflation rate used in this analysis may vary over time.

8. The UnifiedPlan portfolio changes and time line changes for each participant are governed by the Plan Document, the Investment Policy Statement and the Benefit Policy Statement for their Plan.

9. The calculated 70% income replacement goal includes the estimated Social Security benefit. The actual Social Security benefit may be different from the estimated value.

10. Compensation in excess of the IRC 415 limit is excluded. All figures reported in current (inflation-adjusted) real dollars.

11. The projections or other information generated by the 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. Projected growth of assets is based Unified Trust Company's Projected Future Modeled Returns and the asset allocation of your portfolio for this goal. The graphical representations are an approximation taken from the direct path between the pertinent events tied to your goal. Indices are unmanaged, do not incur management fees or expenses, and cannot be invested in directly.

12. Neither the Plan Sponsor nor Unified Trust can guarantee that any participant will achieve a successful retirement. The UnifiedPlan reporting tool helps investors understand whether they are on course to achieve a successful retirement. The UnifiedPlan uses "asset liability" matching. The asset is the money forecast to be accumulated and the liability is the amount of money needed to pay for the retirement. For investors who are planning for retirement, the tool estimates the amount of funds required to meet their retirement spending goals and provides alternatives such as delaying retirement or lowering retirement spending for those who may not be able to save the required amount.

13. Projections are made based upon expected asset transfers. Actual transfer amounts may be different and may require a new retirement solution.