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## Glidepath Analysis

North Carolina Supplemental  
Retirement Plans

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# Project Overview

## NCSRP Glidepath Analysis

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**In 2024, Callan presented to the Supplemental Retirement Board of Trustees a glidepath suitability review that was conducted in conjunction with NCSRP Staff. The Board subsequently authorized NCSRP Staff and Callan to further pursue the following considerations:**

- Recognizing the distinct differences across the participant population in savings behavior, tenure, and retirement benefits, additional analysis on the glidepaths may help the Board evaluate whether changes to the glidepaths could benefit participant outcomes.
- With Empower’s planned changes to the service, the Board may consider conducting a deeper review of the current GoalMaker asset class allocations through a lens of expected risk & return.
- The Board may also weigh how the solution could be impacted going forward—in particular, Empower’s continued support of the legacy Prudential service.

### **Callan and Staff Propose:**

1. Consolidate to a single glidepath rooted in the current “moderate” framework, redesigning the glidepath to reflect participant demographics and capital market assumptions to optimize target allocations. This glidepath will become the default for all GoalMaker participants.
2. Integrate the additional target date segments (nodes) to improve outcomes for participants, considering the four primary risks in determining optimal equity exposure throughout the participants’ lifecycle: longevity risk, drawdown risk, shortfall risk, and inflation risk
3. Re-evaluate relationships below when constructing glidepath
  - a) US vs International Equity
  - b) Active vs Passive
  - c) Inflation Component
  - d) Stable Value

## Current Design

Conservative	2005	2010	2015	2020	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
NC Inflation Responsive Fund	2.0%	2.0%	2.0%	3.0%	3.0%	4.0%	5.0%	6.0%	7.0%	8.0%	8.0%	8.0%	8.0%	8.0%
NC Treasury Inflation Protected Securities Fund	24.0%	24.0%	19.0%	15.0%	10.0%	6.0%	3.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
NC Fixed Income Fund	29.0%	29.0%	33.0%	36.0%	41.0%	42.0%	41.0%	37.0%	31.0%	21.0%	21.0%	21.0%	21.0%	21.0%
NC International Fund	8.0%	8.0%	9.0%	9.0%	12.0%	16.0%	18.0%	25.0%	28.0%	32.0%	32.0%	32.0%	32.0%	32.0%
NC Large Cap Index Fund	9.0%	9.0%	10.0%	11.0%	13.0%	14.0%	17.0%	20.0%	24.0%	27.0%	27.0%	27.0%	27.0%	27.0%
NC Small/Mid Cap Core Fund	2.0%	2.0%	2.0%	4.0%	4.0%	6.0%	8.0%	8.0%	10.0%	12.0%	12.0%	12.0%	12.0%	12.0%
NC Stable Value Fund	26.0%	26.0%	25.0%	22.0%	17.0%	12.0%	8.0%	4.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

Moderate	2005	2010	2015	2020	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
NC Inflation Responsive Fund	3.0%	3.0%	4.0%	4.0%	5.0%	6.0%	7.0%	8.0%	9.0%	9.0%	9.0%	9.0%	9.0%	9.0%
NC Treasury Inflation Protected Securities Fund	22.0%	22.0%	16.0%	9.0%	5.0%	2.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
NC Fixed Income Fund	23.0%	23.0%	27.0%	34.0%	36.0%	33.0%	28.0%	21.0%	13.0%	6.0%	6.0%	6.0%	6.0%	6.0%
NC International Fund	12.0%	12.0%	14.0%	15.0%	19.0%	24.0%	28.0%	32.0%	36.0%	38.0%	38.0%	38.0%	38.0%	38.0%
NC Large Cap Index Fund	14.0%	14.0%	16.0%	18.0%	19.0%	21.0%	24.0%	27.0%	30.0%	33.0%	33.0%	33.0%	33.0%	33.0%
NC Small/Mid Cap Core Fund	4.0%	4.0%	4.0%	6.0%	6.0%	8.0%	10.0%	12.0%	12.0%	14.0%	14.0%	14.0%	14.0%	14.0%
NC Stable Value Fund	22.0%	22.0%	19.0%	14.0%	10.0%	6.0%	3.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

Aggressive	2005	2010	2015	2020	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
NC Inflation Responsive Fund	3.0%	3.0%	3.0%	4.0%	6.0%	7.0%	9.0%	9.0%	10.0%	10.0%	10.0%	10.0%	10.0%	10.0%
NC Treasury Inflation Protected Securities Fund	17.0%	17.0%	14.0%	8.0%	3.0%	1.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
NC Fixed Income Fund	19.0%	19.0%	19.0%	26.0%	27.0%	21.0%	13.0%	7.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
NC International Fund	17.0%	17.0%	20.0%	21.0%	24.0%	32.0%	36.0%	38.0%	40.0%	40.0%	40.0%	40.0%	40.0%	40.0%
NC Large Cap Index Fund	21.0%	21.0%	24.0%	25.0%	27.0%	28.0%	30.0%	32.0%	34.0%	34.0%	34.0%	34.0%	34.0%	34.0%
NC Small/Mid Cap Core Fund	6.0%	6.0%	6.0%	8.0%	10.0%	10.0%	12.0%	14.0%	14.0%	14.0%	14.0%	14.0%	14.0%	14.0%
NC Stable Value Fund	17.0%	17.0%	14.0%	8.0%	3.0%	1.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

Considerations:

Same Allocation

Same Allocation

- NCSRP is unique in offering a choice between three glidepaths rather than a single glidepath
- Utilization data indicates a number of participants are not aligned with their appropriate retirement date
- Target date funds differ from GoalMaker allocations, in that they implement glidepath in a roll-down fashion, with growth assets “gliding” lower smoothly as participants near retirement; GoalMaker implementation is more similar to stair-steps

# 1. Consolidate the Glidepath

## Summary of Findings:

- NCSRP is unique in offering a choice between three glidepaths rather than a single glidepaths
- Glidepath analysis indicates the conservative glidepath has a low probability of getting participants retirement-ready, especially low savers
- Utilization data indicates a number of participants are not properly utilizing the options

## Objective:

**Unify the current conservative, moderate, and aggressive into a single glidepath that better aligns with participant needs, plan simplicity, and fiduciary alignment.**

## Benefits:

- **Participant Clarity:** Minimizes potential confusion and choice overload, facilitating better decision making
- **Behavioral Advantage:** Anchors disengaged participants to a more thoughtfully constructed default investment option
- **Fiduciary Alignment:** Multiple glidepaths are very rare in defined contribution plans. A single, robust glidepath enables efficient ongoing monitoring and optimization
- **Operational Simplicity:** Reduces administrative burden, oversight requirements, and communication

## 2. Expand and Recalibrate the Glidepath

### Summary of Findings:

- The average NCSRP participant tenure differs from the typical standard assumptions of 40 years at retirement age of 65 (19 years for 401(k) Plan participants and 22 years for 457 Plan participants)
- The moderate path begins with and maintains lower equity exposure than “industry-average” Target Date Fund series for first ~15 years.
- Equity exposure remains higher than industry-average Target Date Fund series thereafter until ~15 years after retirement

### Objective:

**Recalibrate the glidepath across the life cycle to reflect current participant demographic information and capital market assumptions to address key risks and ensure alignment with participants’ long-term return needs**

### Benefits:

- **Improved Retirement Outcomes:** Increases likelihood of achieving higher income replacement ratio
- **Modernized Risk Framework:** Reflects updated capital market assumptions and longer life expectancy
- **Better Equity Utilization:** Leverages the recent GoalMaker enhancements, maximizing growth in early years and reducing risk of drawdowns nearing retirement
- **Lifecycle Prioritization:** Better accommodate participants with different levels of savings in various stages of their careers

### 3. Optimize Asset Allocation & Component Construction:

#### Summary of Findings:

- Higher allocations to capital preservation
- Equity allocations have a meaningful non-US bias relative to the broad equity markets
- US equity portfolios are overweight small cap relative to broad market weights
- Inflation-sensitive allocations emphasize TIPS

#### Objective:

**Enhance the quality and design of underlying asset class exposures within the glidepath to improve diversification, manage costs, and manage lifecycle risk**

#### Benefits:

- **Stronger Diversification:** Better align portfolio exposures with the broader equity market composition
- **Cost Efficiency:** Balance active and passive management to optimize net-of-fee returns
- **Manage inflation risk:** Provide opportunities for participants to further diversify their portfolios and to perform well when inflation is higher than expected
- **Improved governance:** Establish process for evaluating investment structures to maintain alignment with the broader markets and to explore changing market environments and new investment opportunities

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## **Appendix**

Glidepath Analysis – Summary of Phase I Evaluation

# Executive Summary

## Glidepath Analysis Observations, Phase I

### GoalMaker Utilization

- ▶ GoalMaker is heavily utilized in the NCSRP:
  - 401(k) – 73% of participant accounts enrolled, 52% of Plan assets in service
  - 457 – 73% of participant accounts enrolled, 37% of Plan assets in service
- ▶ Most GoalMaker users are in the Moderate (default) path:
  - 401(k) – of enrolled accounts: 58% in Moderate path, 22% in Aggressive path, 20% in Conservative path
  - 457 – of enrolled accounts: 53% in Moderate path, 25% in Aggressive path, 22% in Conservative path

### GoalMaker “Paths” Design\*

- ▶ Conservative path begins with very conservative equity exposure and maintains very conservative equity levels throughout. Equity exposure falls below that of 10<sup>th</sup> percentile off-the-shelf (OTS) target date fund (TDF) series for first ~15 years and sits near that of 10<sup>th</sup> percentile OTS TDF series thereafter. Terminal equity exposure (19%) falls below that of 10<sup>th</sup> percentile TDF series.
- ▶ Moderate path begins with and maintains lower equity exposure than “industry-average” TDF series for first ~15 years. Equity exposure sits above that of industry-average TDF series thereafter and near that of 90<sup>th</sup> percentile OTS TDF series until “portfolio jumps”.
- ▶ Aggressive path maintains very aggressive equity exposure in mid-career, late-career, and retirement periods. Equity exposure exceeds that of 90<sup>th</sup> percentile OTS TDF series after first ~17 years. Terminal equity exposure (45%) well exceeds that of 90<sup>th</sup> percentile OTS TDF series.

### GoalMaker Asset Allocation

- ▶ Within equity sleeves of all three paths, foreign country bias is very high. Throughout all or most of accumulation phase (e.g., preceding retirement), foreign country bias of all three paths exceeds that of 90<sup>th</sup> percentile OTS TDF series.
- ▶ TIPS exposure begins very early and reaches very high levels approaching and into retirement.

\*Observations assume an age-65 retirement. Participant data referenced as of Aug. 31, 2024. Data source: Empower.



## Executive Summary (cont.)

### Glidepath Analysis Observations, Phase I

#### NCSRP Participant Observations

- ▶ There are large disparities in participant deferral rates and account balances in the NCSRP:
  - 401(k) deferral rates – 90<sup>th</sup> percentile = 10%, 10<sup>th</sup> percentile = 2%
  - 457 deferral rate – 90<sup>th</sup> percentile = 10%, 10<sup>th</sup> percentile = 1%
  - 401(k) active account balances – 90<sup>th</sup> percentile = \$138,380, 10<sup>th</sup> percentile = \$642
  - 457 active account balances – 90<sup>th</sup> percentile = \$80,231, 10<sup>th</sup> percentile = \$459
- ▶ Though most NCSRP participant accounts enrolled in GoalMaker appear to be in a model portfolio with an implied retirement age between the ages of 55 and 65, there are notable exceptions. For instance, in the 401(k) Plan there are 601 participant accounts under the age of 25 that are in a 2005 model portfolio (representing 6% of 401(k) GoalMaker accounts under the age of 25).

**Additionally, the Supplemental Retirement Board of Trustees has responsibility with respect to the methodology and asset allocation underlying GoalMaker for the default glidepath. The recordkeeper does not accept fiduciary duty.**

# NCSRP Investment Structure

Tier I: Asset Allocation	Tier II: Passive Core	Tier II: Active Core	Tier III: Specialty
Model Portfolios		Capital Preservation	
GoalMaker		Stable Value Fund (13%)	
	Core Fixed Income	Core Plus Fixed Income	
	Fixed Income Passive (1%)	Fixed Income Fund (13%)	
	Inflation Sensitive		
	Treasury Inflation Protected (2%)		
	Inflation Responsive Fund (4%)		
	U.S. Large-Cap Equity	U.S. Large-Cap Equity	
	Large Cap Passive (27%)	Large Cap Core Equity Fund (14%)	
	Non-U.S. Equity	Non-U.S. Equity	
	International Passive (1%)	International Equity Fund (16%)	
	U.S. Small/Mid-Cap Equity	U.S. Small/Mid-Cap Equity	
	SMID Cap Passive (3%)	Small/Mid Cap Equity Fund (7%)	

Text in yellow represents building block asset classes and investment options utilized by GoalMaker.

Percentage allocations rounded to the nearest whole percent and as of Dec. 31, 2024. Percentage allocations for core tier options include GoalMaker assets. Data source: Empower.

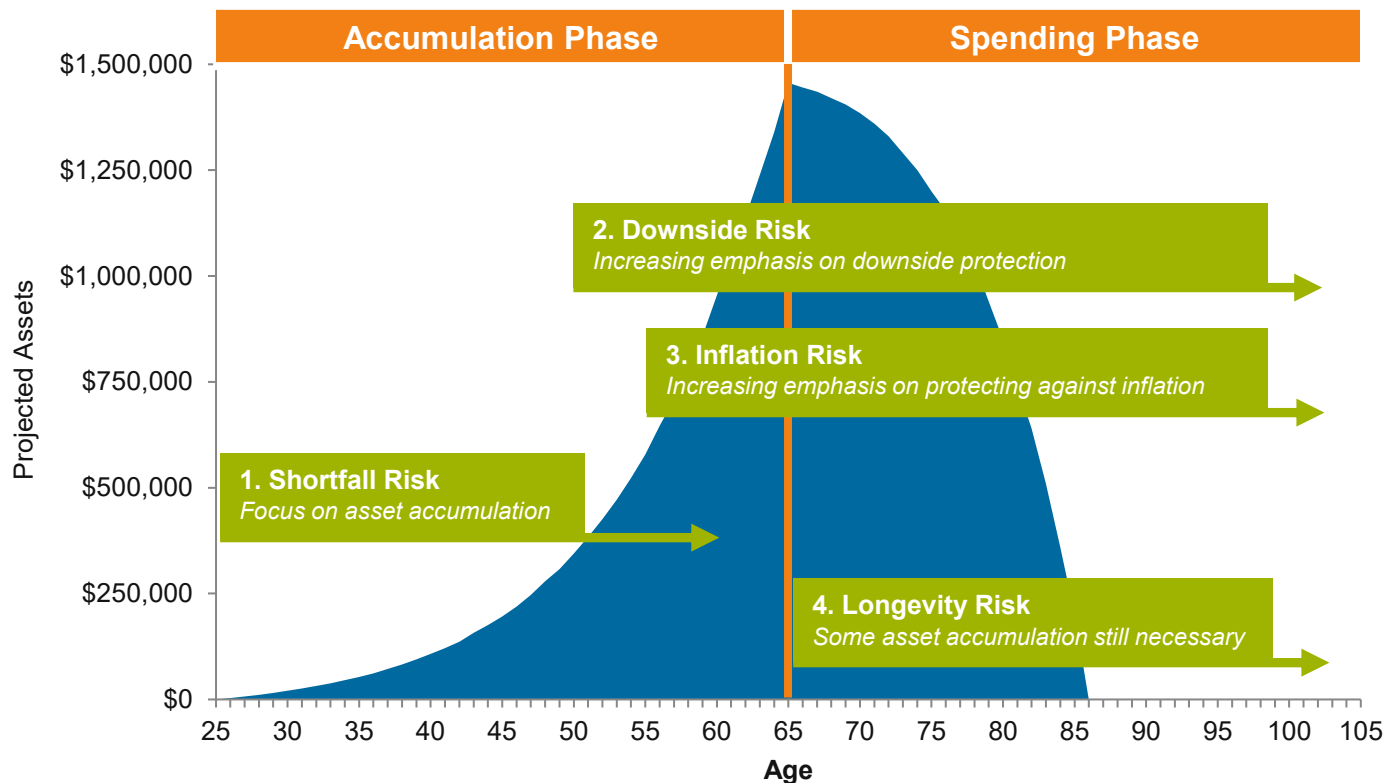
## NCSRP GoalMaker vs. Non-GoalMaker Assets

	GoalMaker Assets		Non-GoalMaker Assets		
Investment Option	\$	% of Total Assets	\$	% of Total Assets	Total Assets
NC Fixed Income Fund	\$1,957,013,478	83%	\$405,051,501	17%	\$2,362,064,979
NC Fixed Income Index Fund	\$0	0%	\$95,880,598	100%	\$95,880,598
NC TIPS Fund	\$240,921,882	77%	\$72,376,550	23%	\$313,298,432
NC International Fund	\$2,470,668,911	86%	\$402,902,111	14%	\$2,873,571,022
NC International Index Fund	\$0	0%	\$119,441,636	100%	\$119,441,636
NC Large Cap Core Fund	\$0	0%	\$2,520,686,004	100%	\$2,520,686,004
NC Large Cap Index Fund	\$2,247,380,026	47%	\$2,528,707,320	53%	\$4,776,087,346
NC Inflation Responsive Fund	\$612,300,158	90%	\$66,022,754	10%	\$678,322,912
NC Small/Mid Cap Core Fund	\$871,406,277	68%	\$406,795,016	32%	\$1,278,201,293
NC Small/Mid Cap Index Fund	\$0	0%	\$441,409,665	100%	\$441,409,665
NC Stable Value Fund	\$424,526,030	19%	\$1,789,603,888	81%	\$2,214,129,918
<b>Totals</b>	<b>\$8,824,216,760</b>	<b>50%</b>	<b>\$8,848,877,044</b>	<b>50%</b>	<b>\$17,673,093,804</b>

Data as of Dec. 31, 2024. Data source: Empower.

# “Glidepaths” Seek to Address/Manage Multiple Risks Over a Lifetime

This analysis uses customized inputs (e.g., NCSRP participant salary and deferrals data) and Callan’s long-term capital market projections to simulate outcomes over an 80-year time horizon. Callan’s glidepath modeling evaluates four key risks.



## Shortfall Risk

- Expected real income replacement ratio
- Worse-case real income replacement ratio
- Assets / salary

## Downside Risk

- Worse-case decline in assets
- Drawdown risk
- Scenario testing

## Inflation Risk

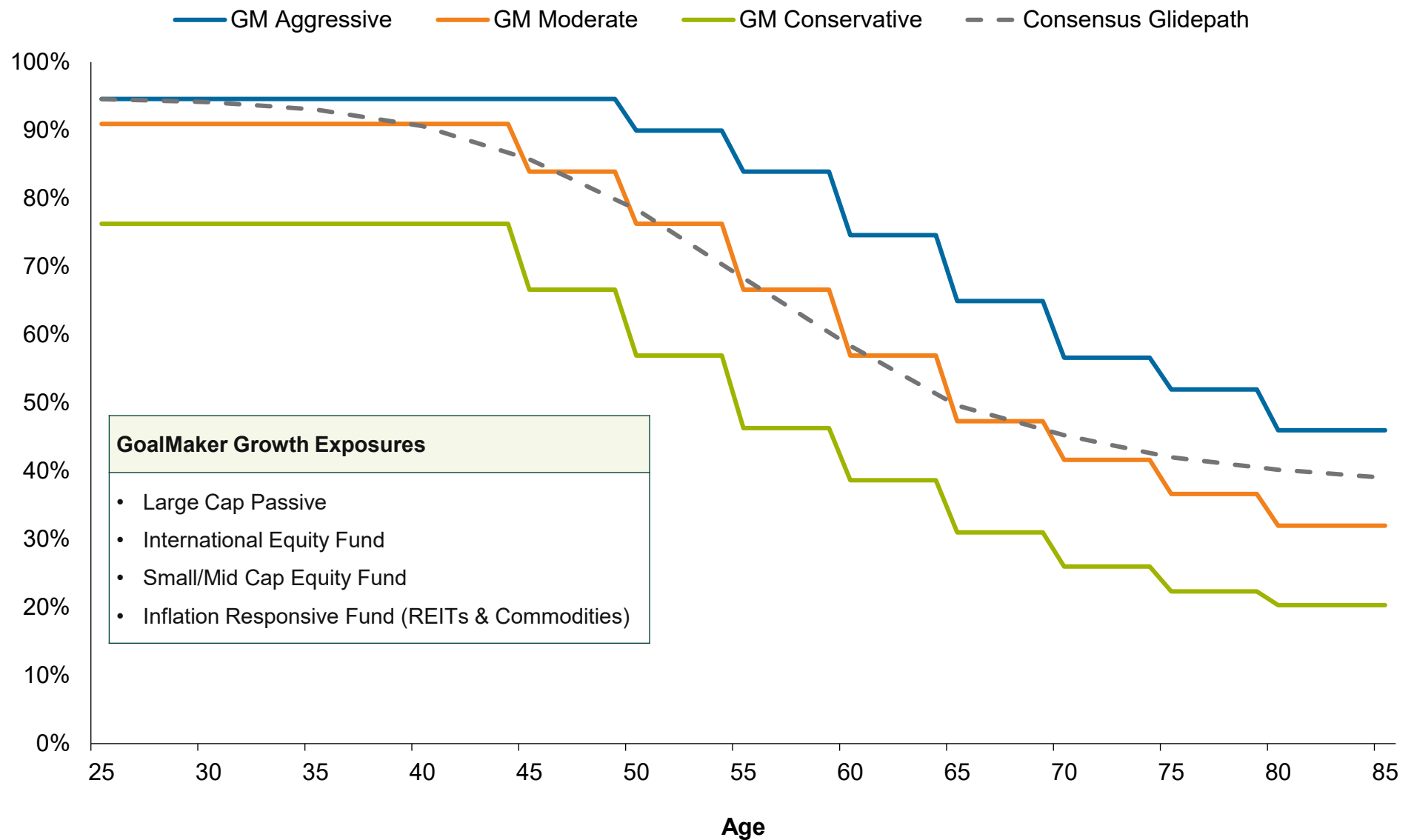
- Probability of inflation adversely impacting outcomes

## Longevity Risk

- Probability of outliving assets
- Asset life expectancy

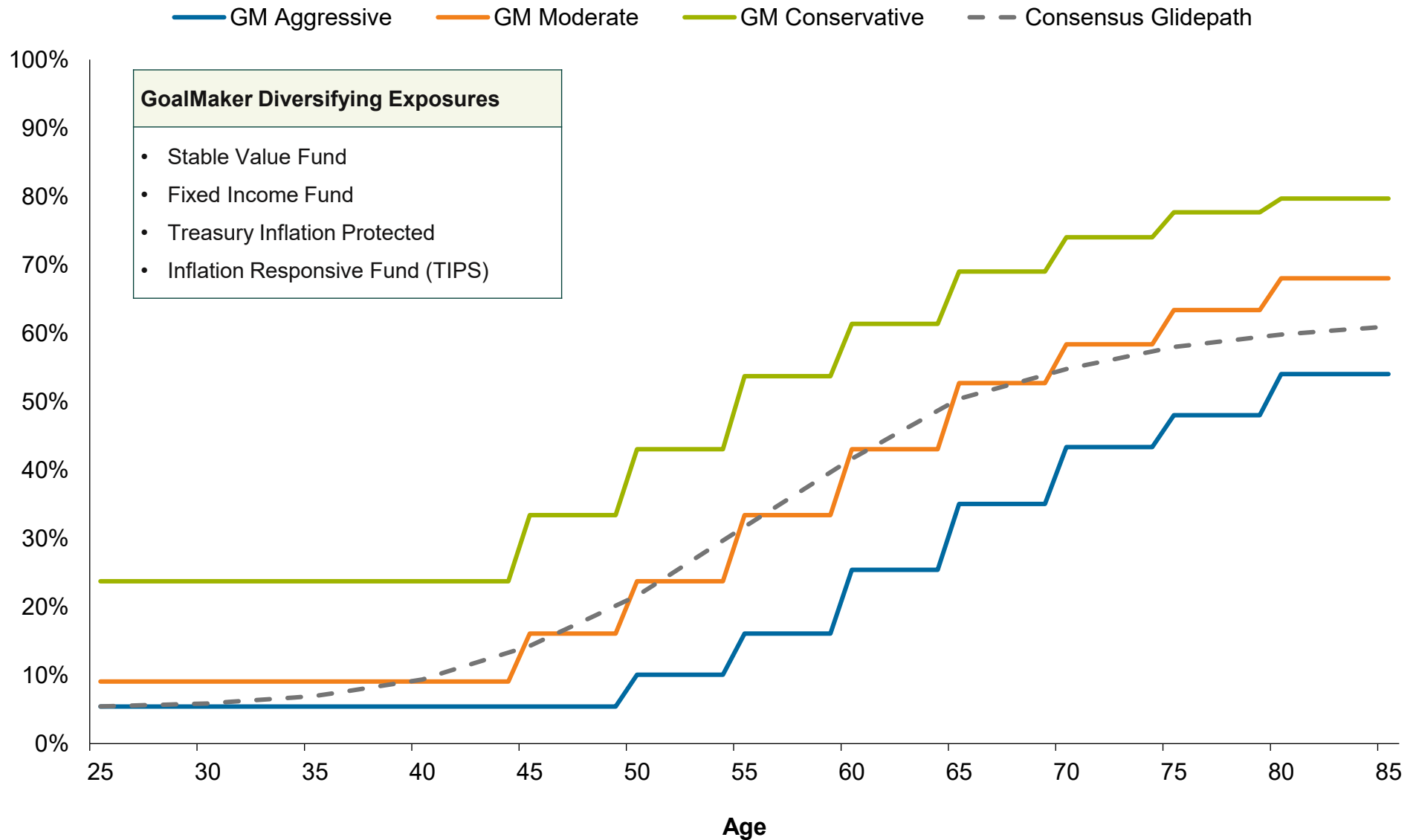
# Broad Asset Allocation

## Exposure to Growth Assets



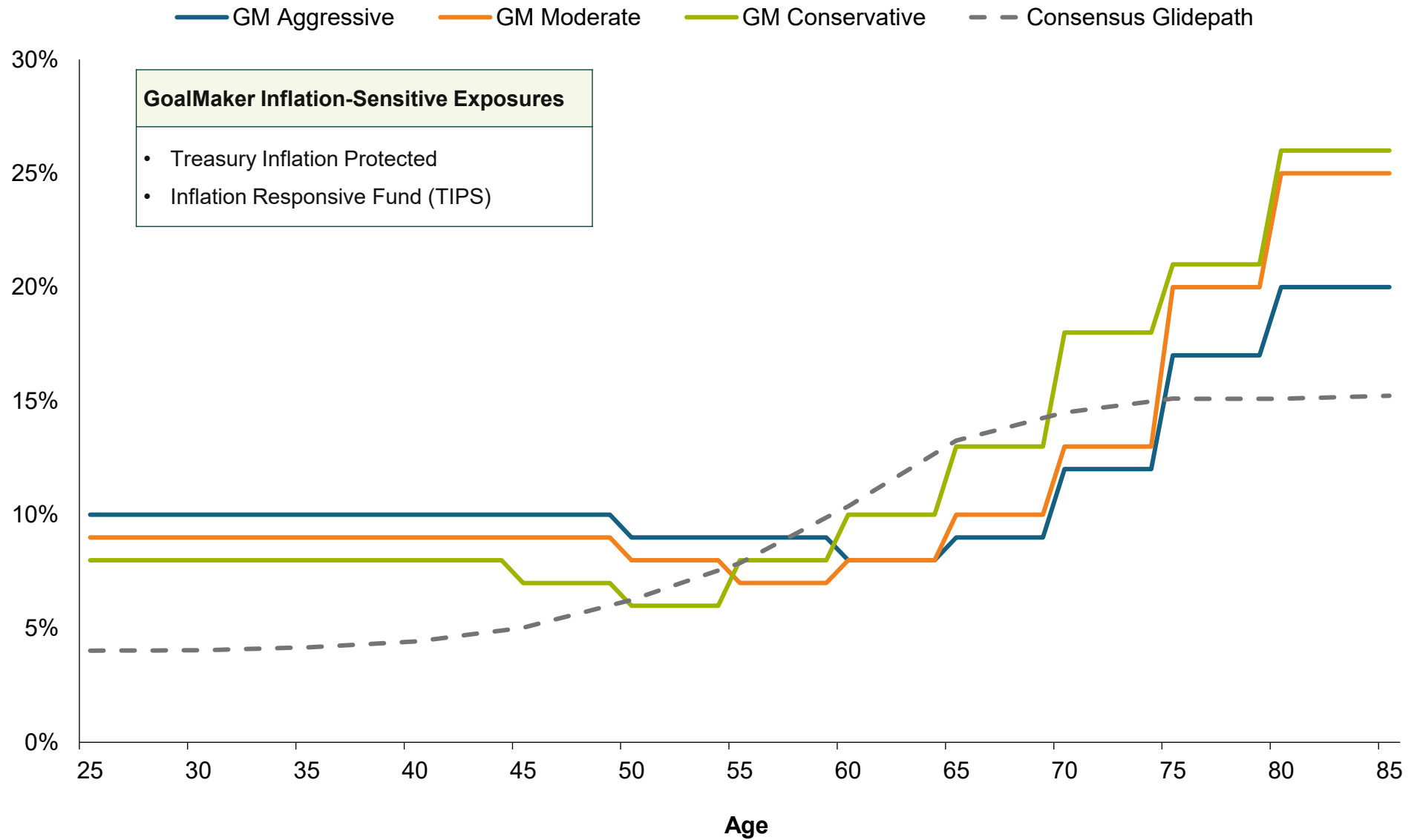
# Broad Asset Allocation

## Exposure to Diversifying Assets



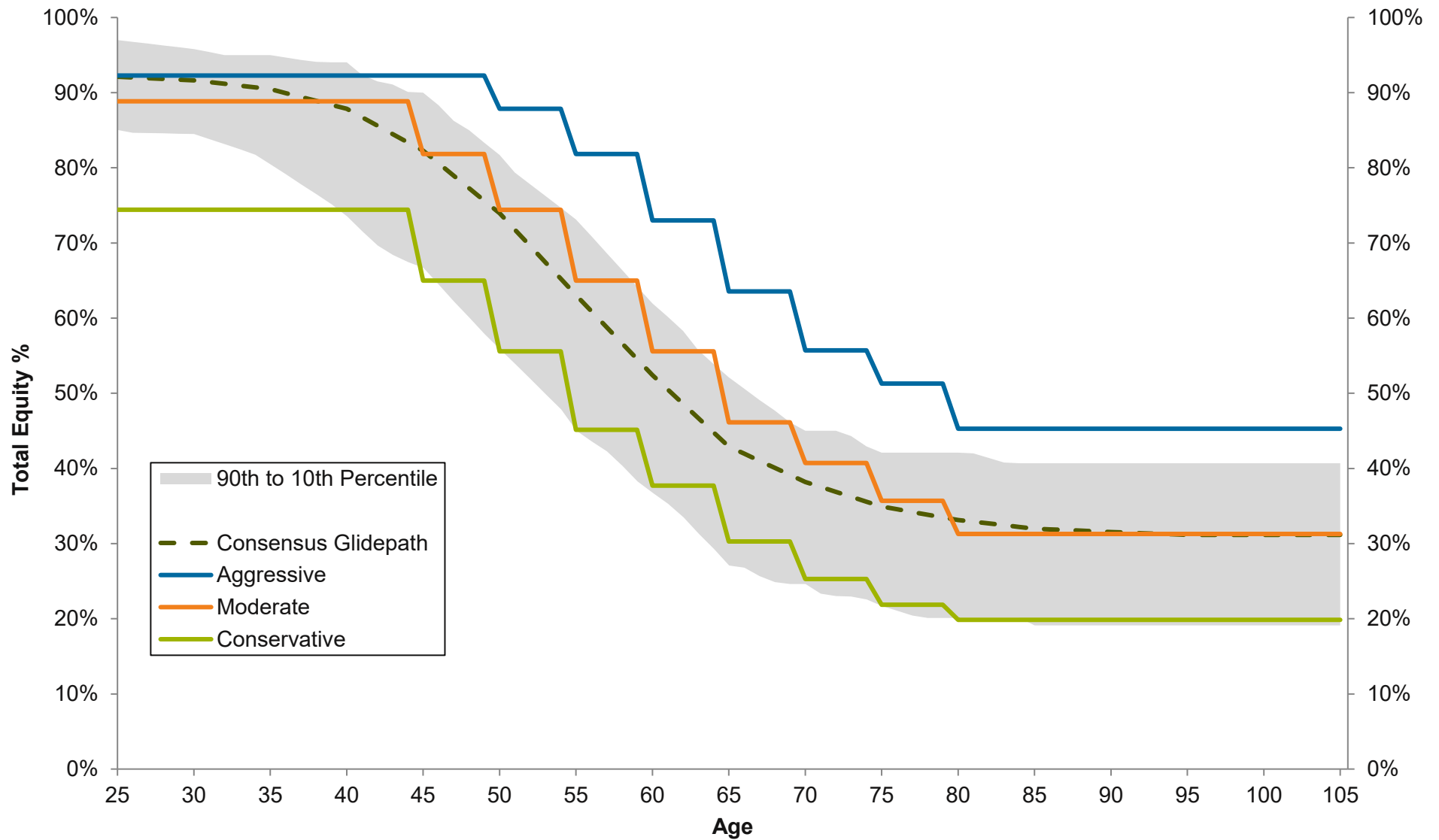
# Broad Asset Allocation

## Exposure to Inflation-Sensitive Assets



# Asset Allocation

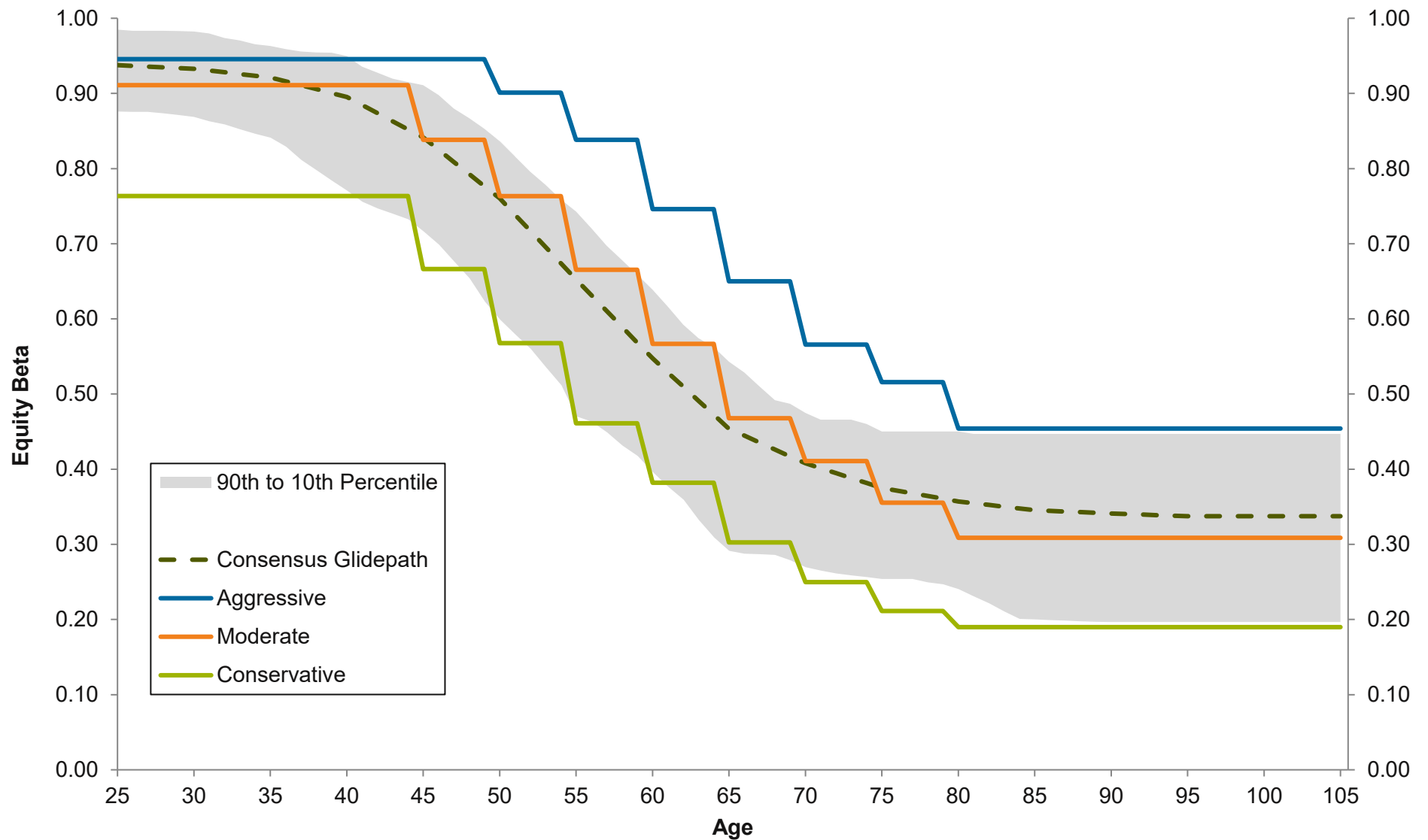
## Equity Exposure





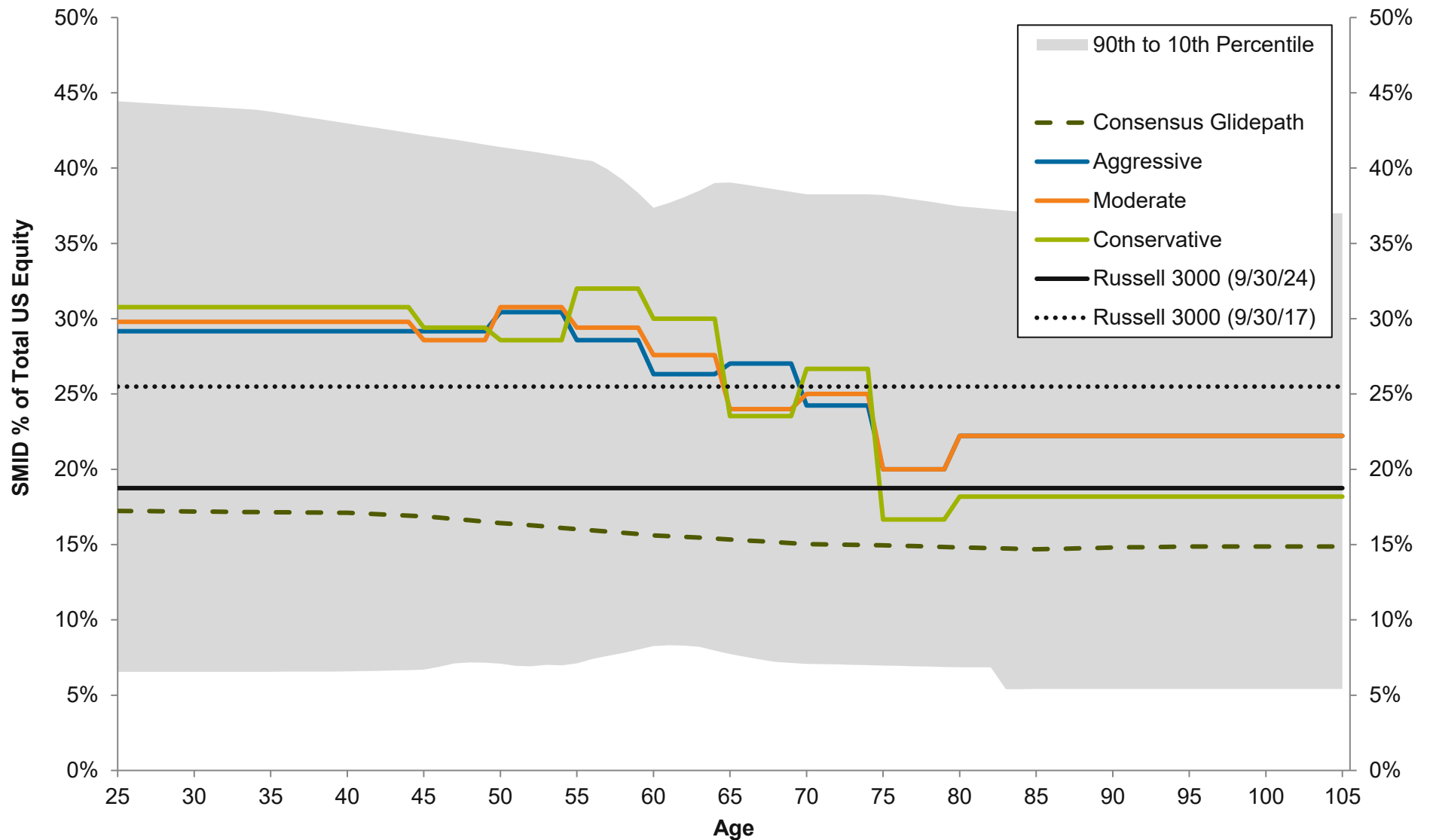
# Asset Allocation

## Equity Beta



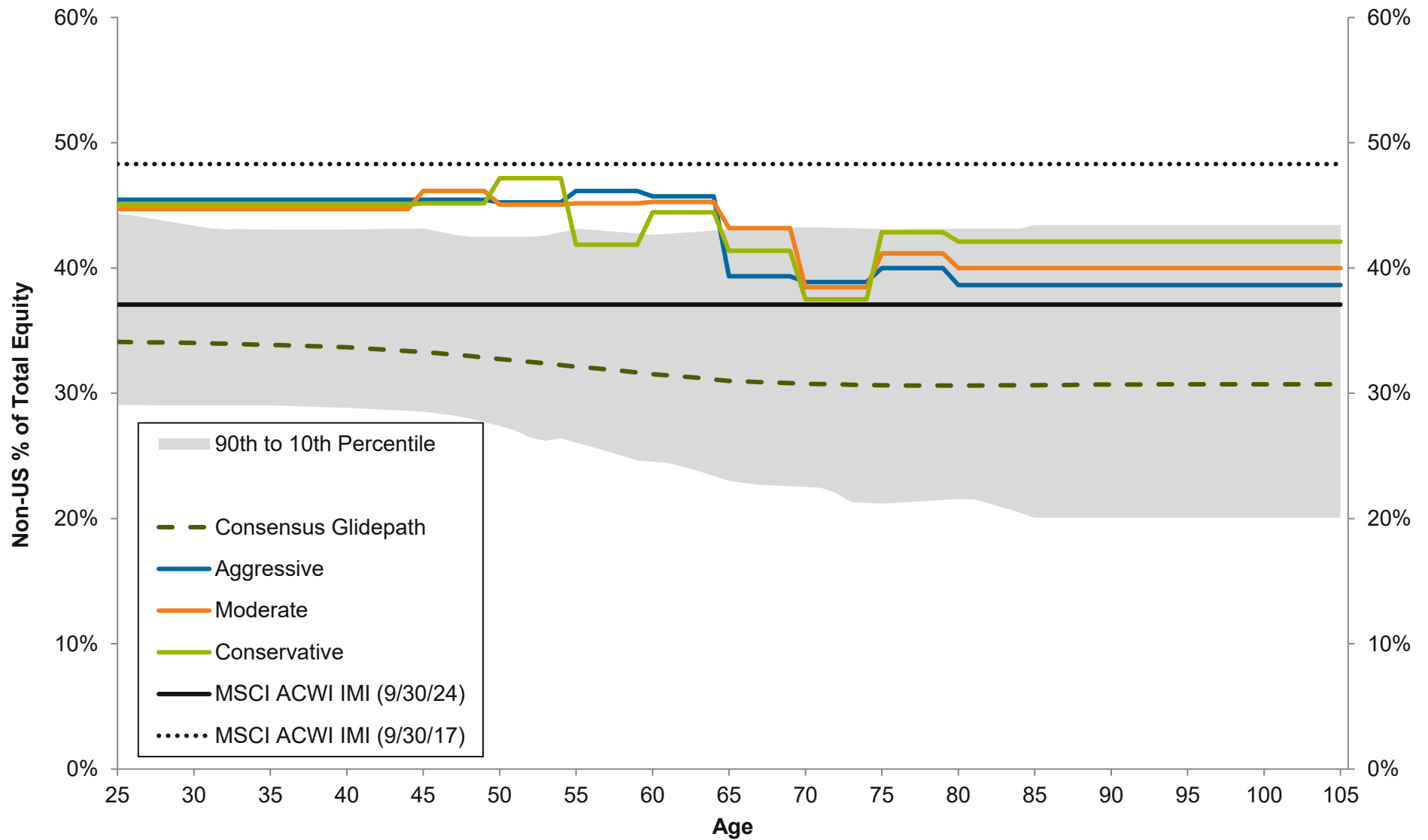
# Asset Allocation

## SMID-Cap Equity as % of Total U.S. Equity



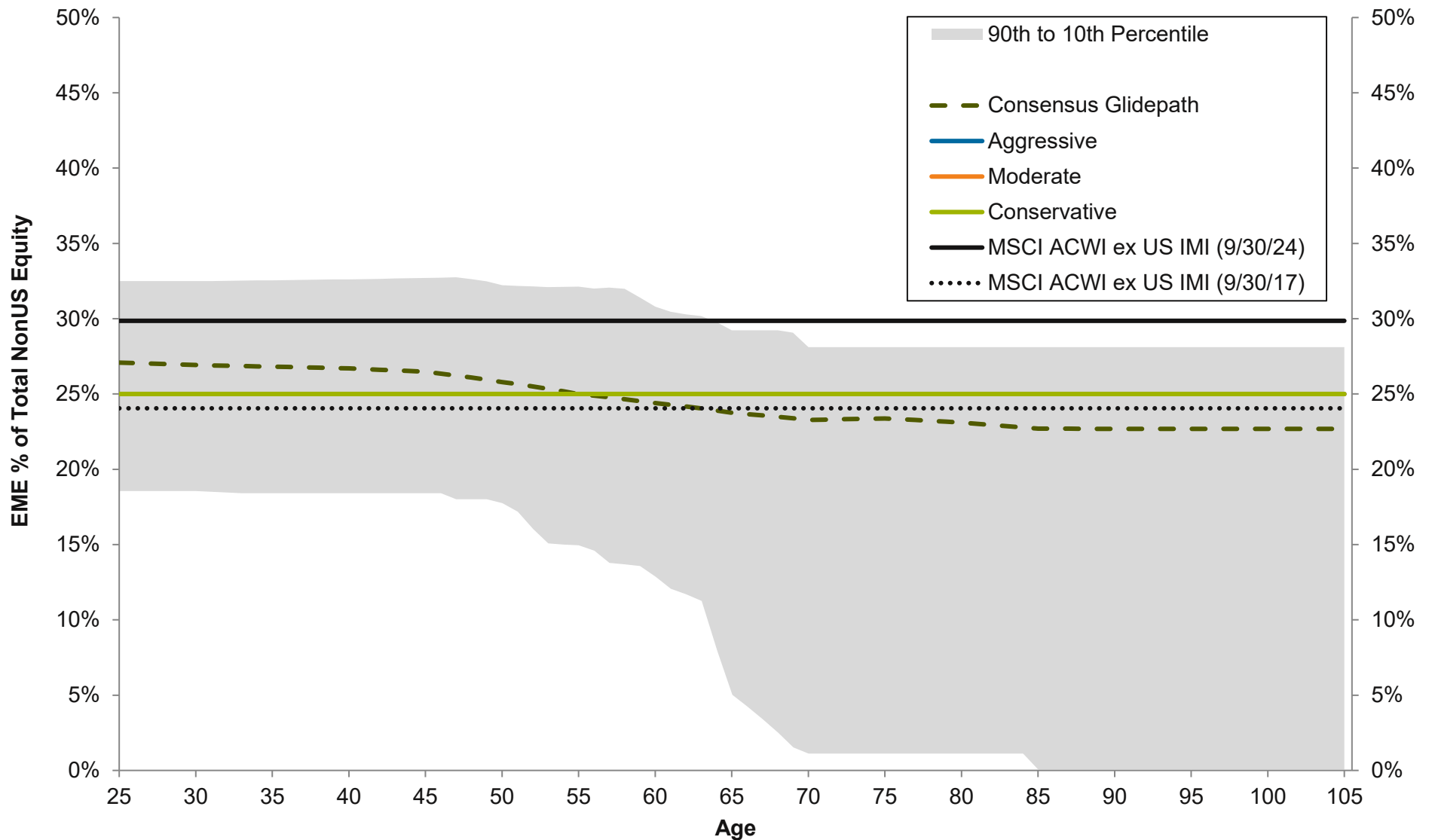
# Asset Allocation

## Non-U.S. Equity as % of Total Equity



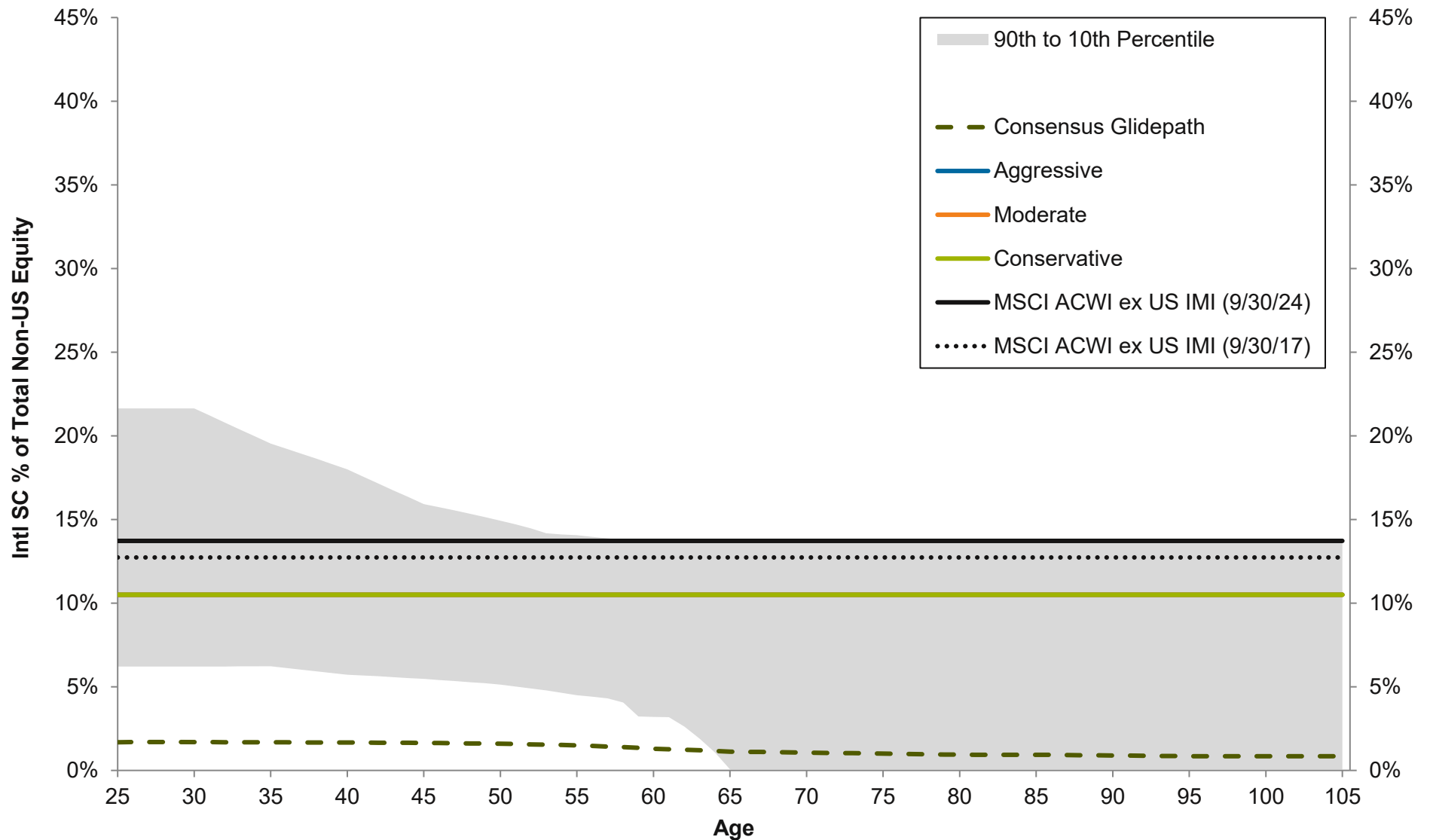
# Asset Allocation

## Emerging Markets Equity as % of Total Non-U.S. Equity



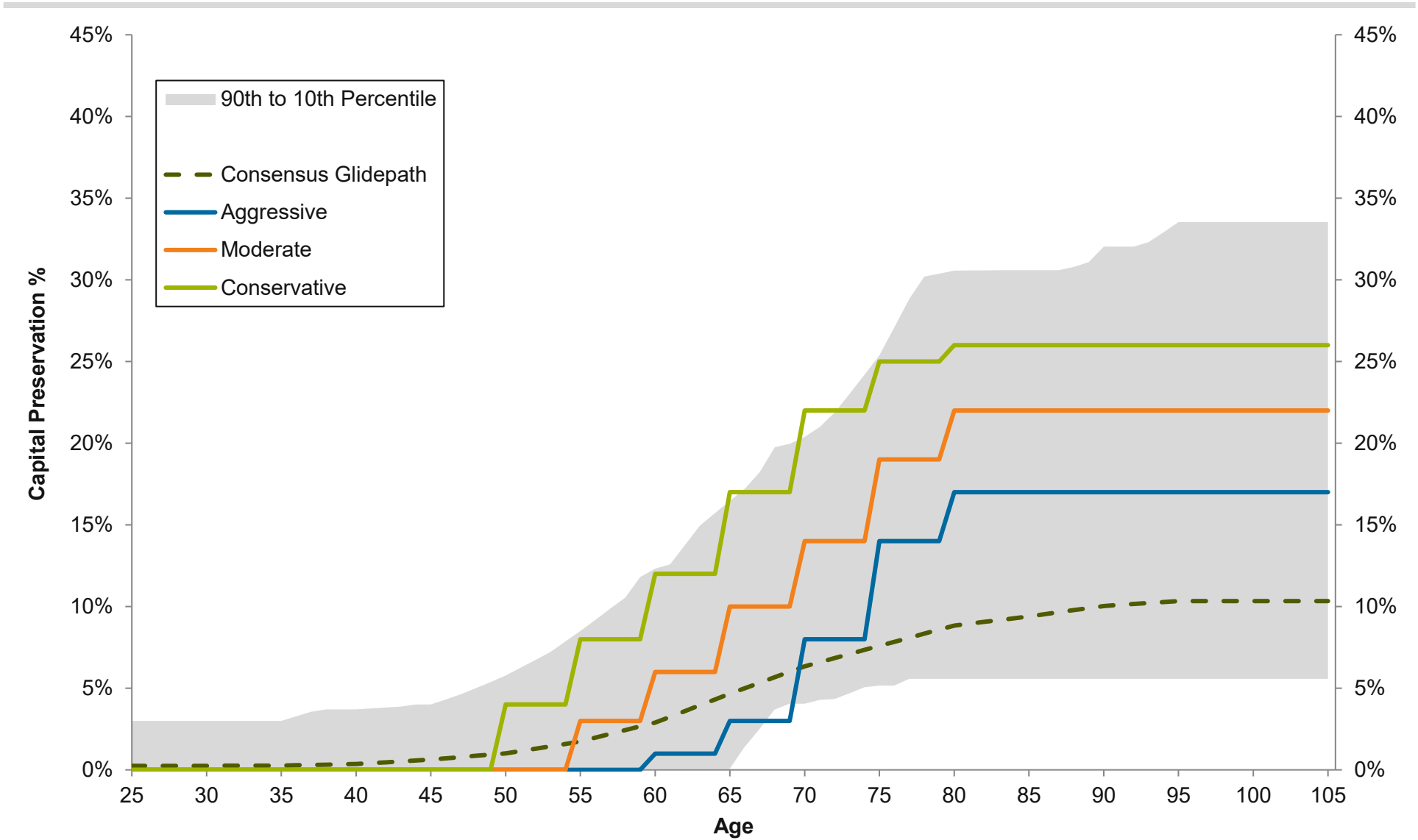
# Asset Allocation

## Non-U.S. Small-Cap Equity as % of Total Non-U.S. Equity



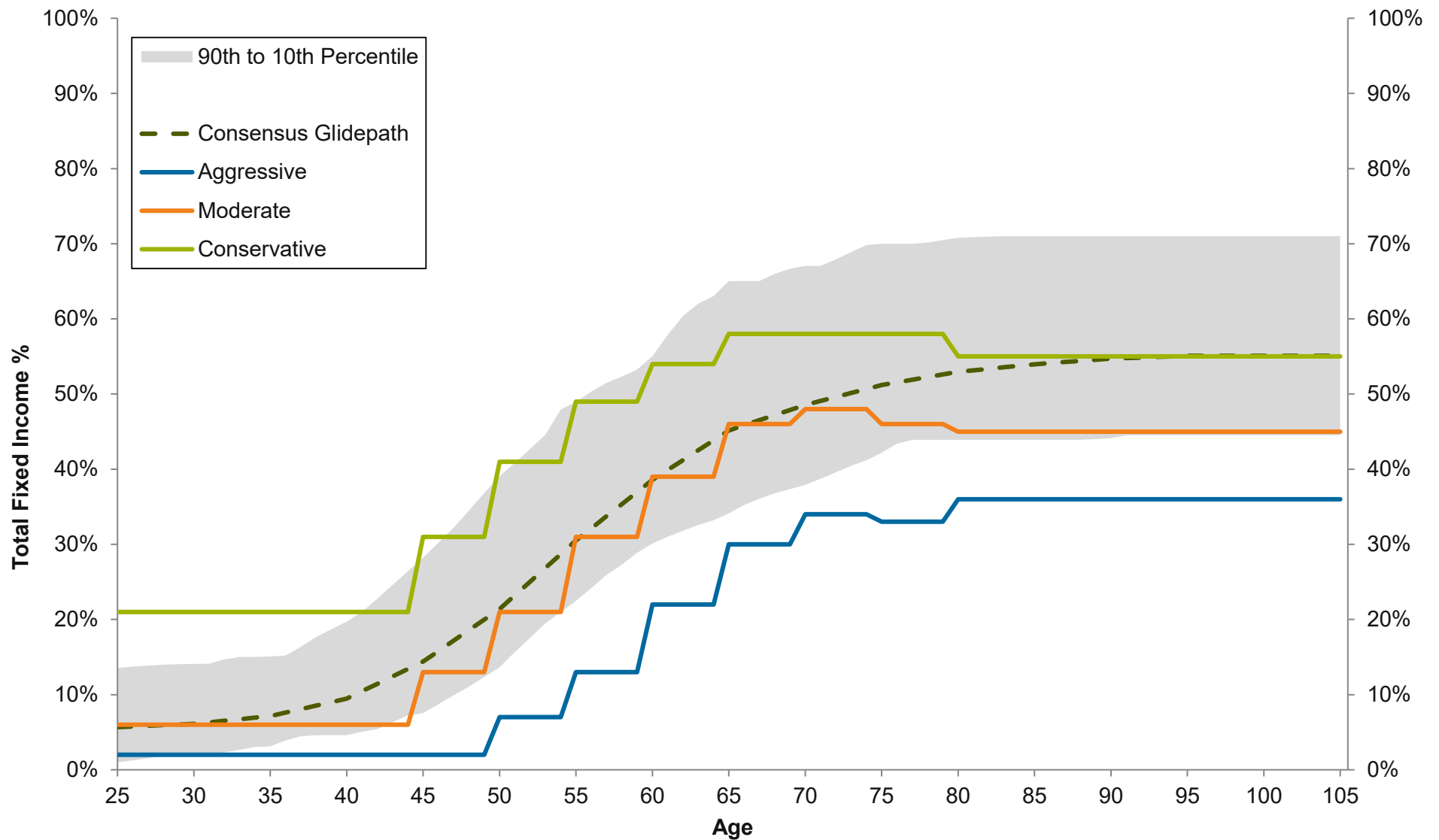
# Asset Allocation

## Capital Preservation Exposure



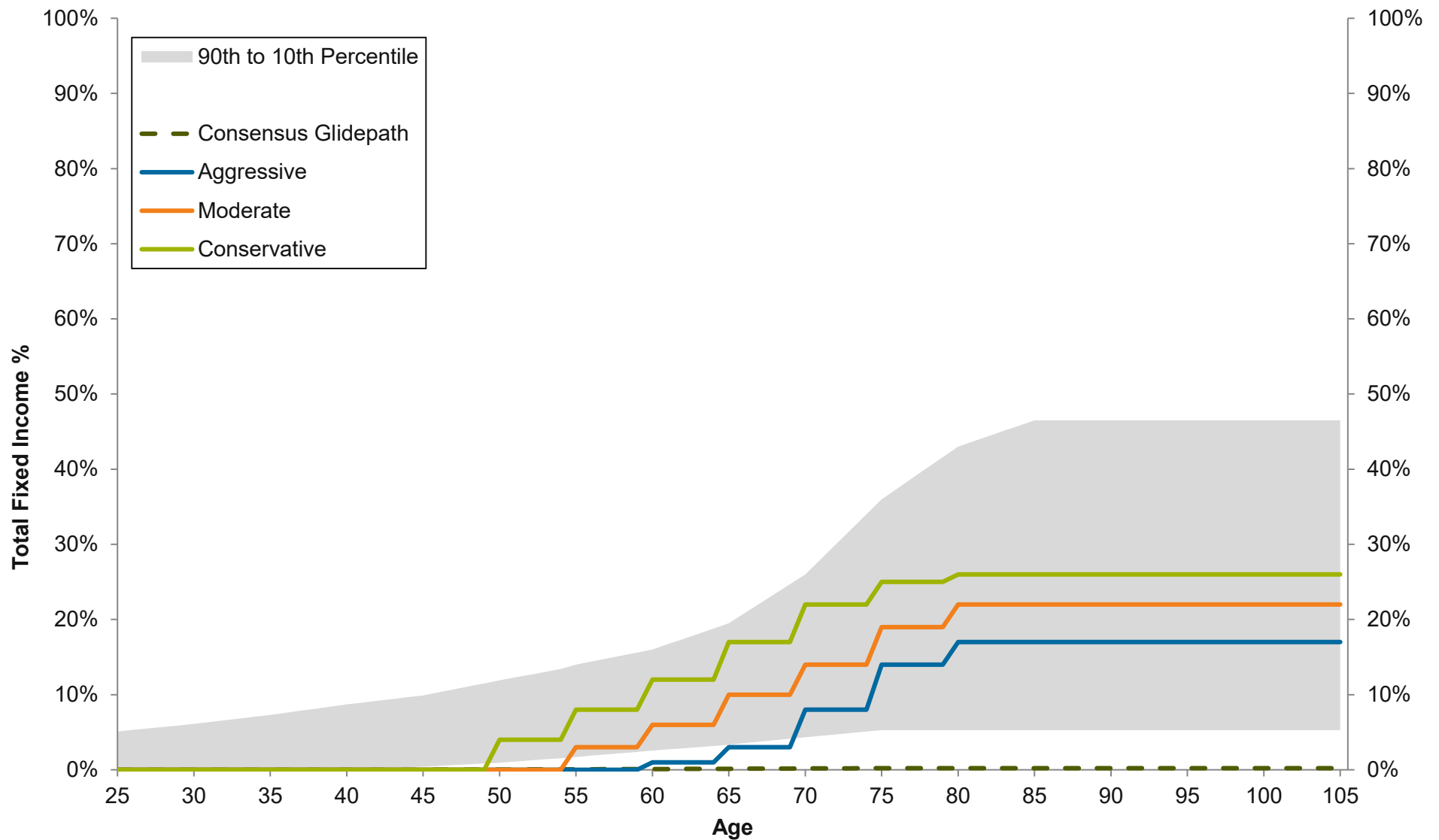
# Asset Allocation

## Fixed Income Exposure



# Asset Allocation

## Stable Value Exposure

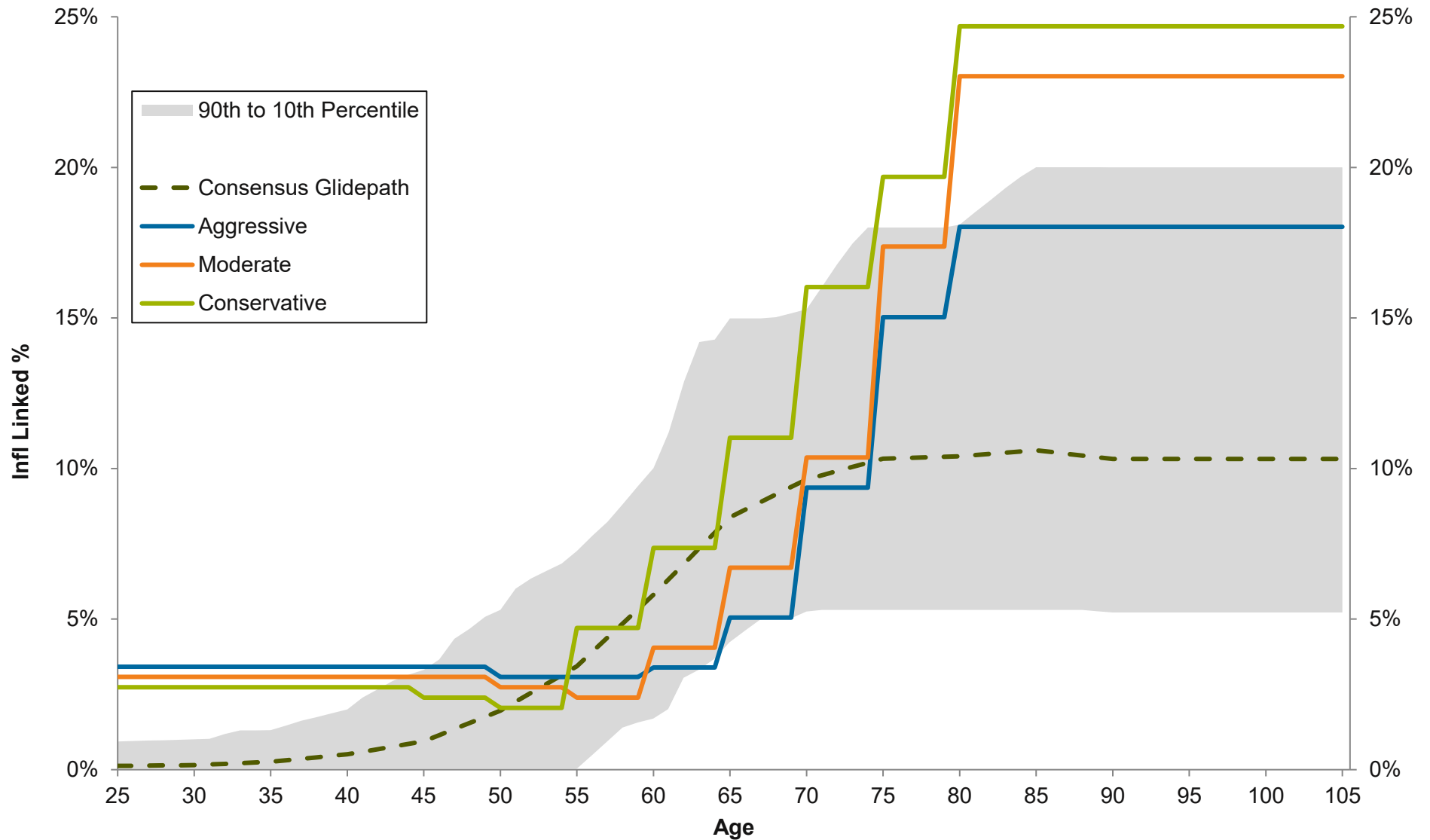




# Asset Allocation

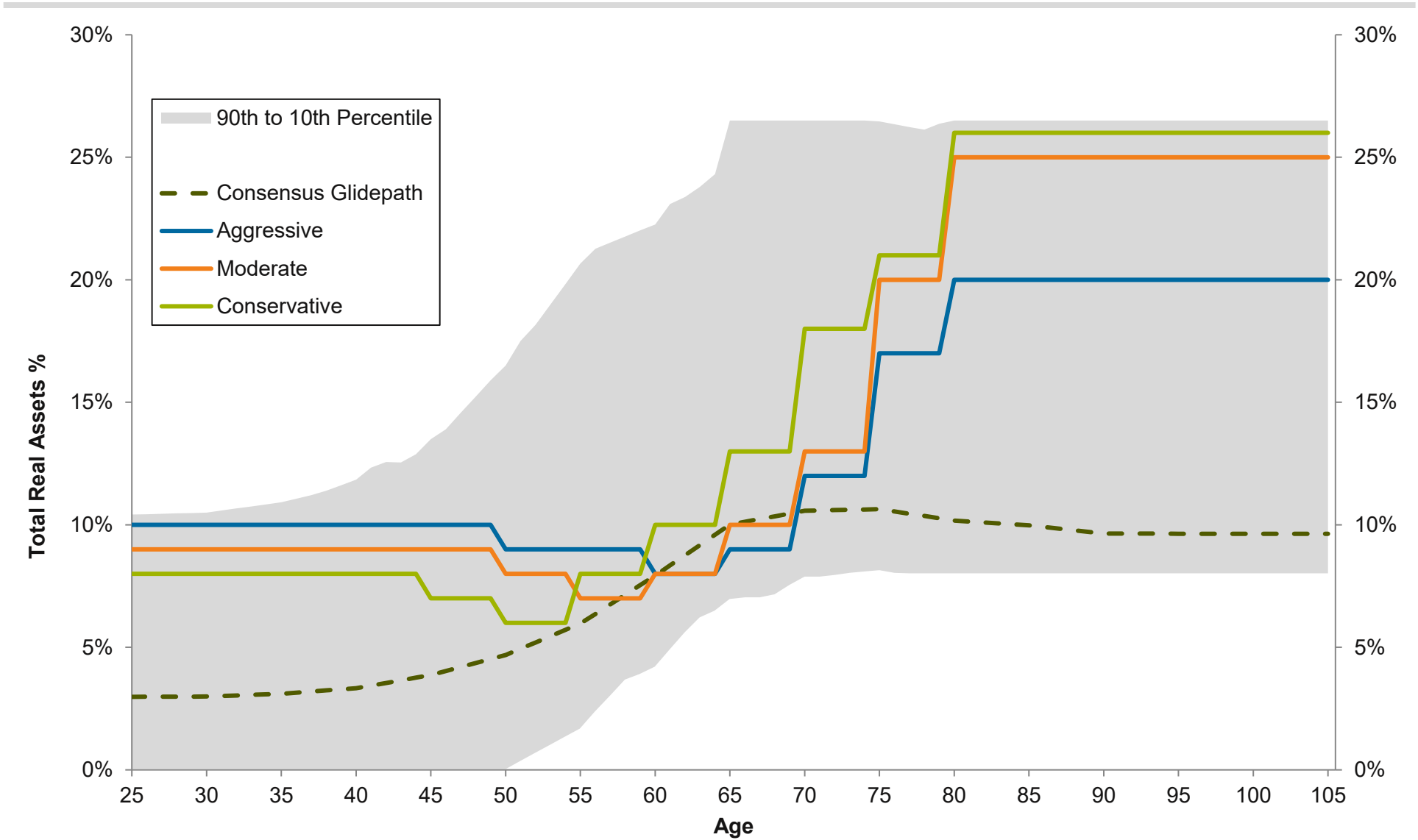
## TIPS Exposure

TIPS exposure via standalone Treasury Inflation Protected Fund (tracks Bloomberg 1-10 Year TIPS Index, effective duration = ~2.5 years as of 9/30/24) and TIPS sleeve of Inflation Responsive Fund (~34% weighting, tracks Bloomberg U.S. TIPS Index, effective duration = ~3.8 years as of 9/30/24).

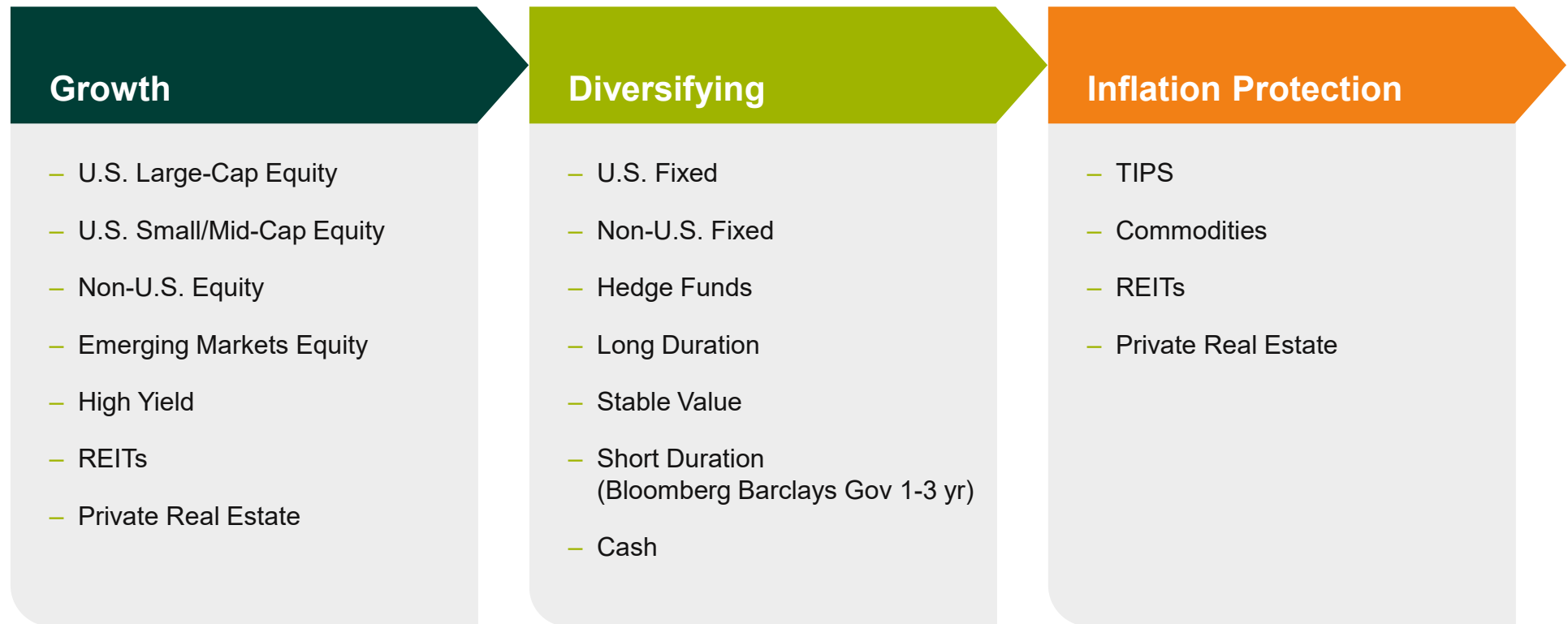


# Asset Allocation

## Real Assets Exposure



# Asset Class Groupings



Callan's glidepath model projects returns and volatility for 24 asset classes. The broad asset classes are detailed above, while the actual simulations occur at the sub-asset class level (e.g., U.S. vs. global REITs).

Asset classes are categorized as growth assets, diversifying assets, or inflation-sensitive assets.

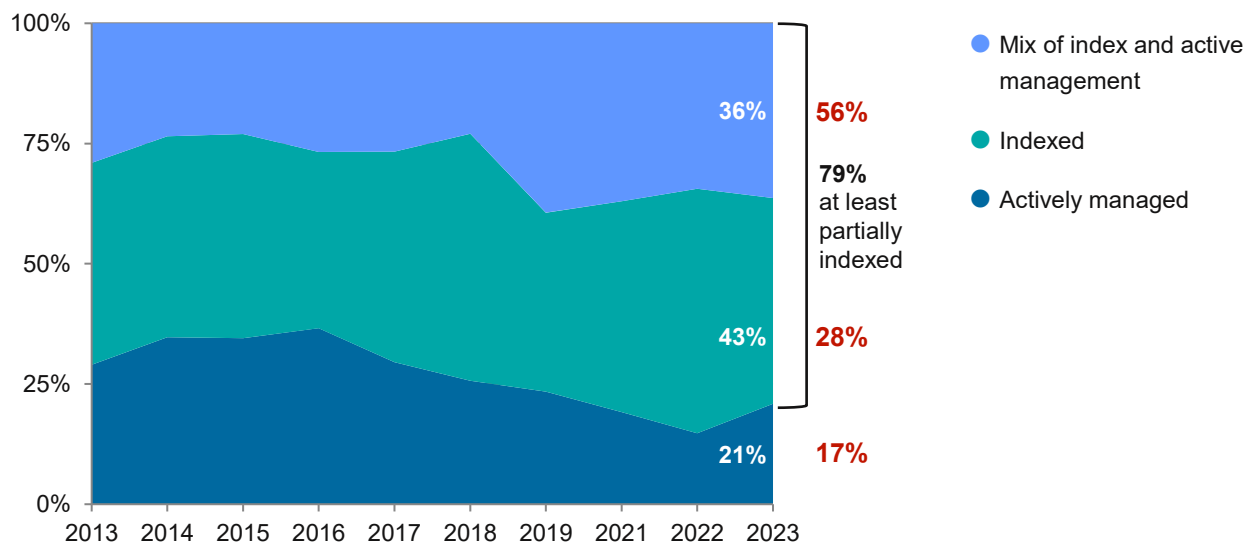
- REITs and private real estate are categorized as both growth assets and inflation-sensitive assets as these asset classes can serve multiple roles within a glidepath.

# Target Date Fund Landscape

Among those that offer target date funds, nearly 8 in 10 used an implementation that was at least partially indexed.

The share of active-only strategies rose to 21% in 2023 from 15% in 2022, its lowest point in our survey's history.

Target date fund investment approach



Figures in red denote responses from public organizations. Source: 2024 Callan DC Trends Survey.

# Target Date Fund Approaches

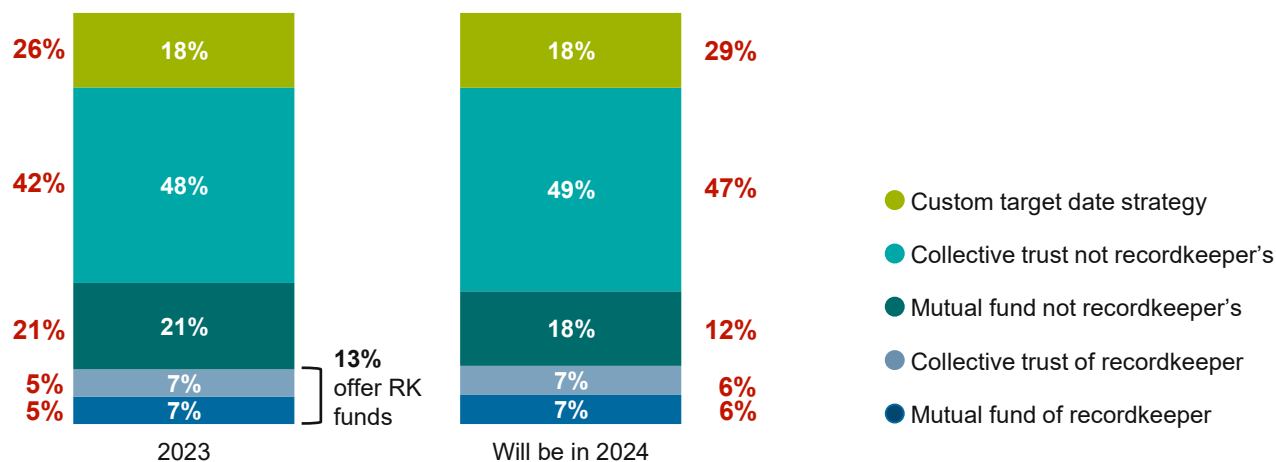
The use of recordkeepers' proprietary target date vehicles in DC plans continued to drop over time.

Only 13% of respondents used their recordkeeper's target date option in 2023, a small decrease from the 16% reported in 2022, but a sharp drop from 48% a decade ago. That number is projected to remain relatively steady in 2024.

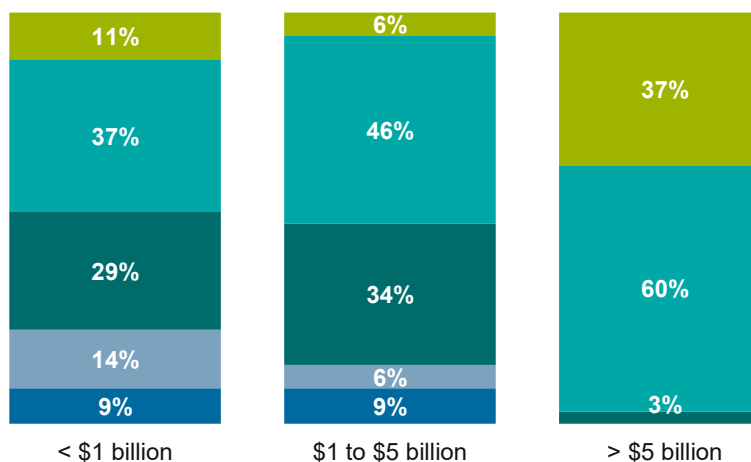
The prevalence of mutual funds for the target date fund continued its decline as well. In 2010, 67% of plans used a mutual fund for their target date fund compared to 42% in 2020. This decreased noticeably further in 2023 to 28%.

Unsurprisingly, plans with more than \$5 billion in assets were the most likely to use a custom strategy (37%) compared to those with fewer than \$5 billion in plan assets.

## Target date fund approach: in place and will be in place



## Target date fund approach by size



Figures in red denote responses from public organizations. Source: 2024 Callan DC Trends Survey.

# Asset Class Prevalence

## Off-the-Shelf Target Date Funds

GoalMaker provides exposure to the asset classes that tend to be most prevalent in off-the-shelf target date fund series.

Asset Category	Asset Class	GoalMaker	Prevalence*
<b>Growth Assets</b> (+ Commodities, REITs, Private Real Estate, and Natural Resource Equity)	U.S. Large-Cap Equity	✓	100%
	Developed Non-U.S. Equity	✓	100%
	Emerging Markets Equity	✓	98%
	U.S. Small/Mid-Cap Equity	✓	96%
	High Yield	✗	53%
	Emerging Markets Debt	✗	28%
	Non-U.S. Small-Cap Equity	✓	13%
	Bank Loans	✗	13%
<b>Diversifying Assets</b> (+ TIPS)	U.S. Core/Core Plus Fixed Income	✓	98%
	Short Duration	✗	51%
	Cash & Cash Equivalents	✗	38%
	Non-U.S. Fixed Income (Unhedged)	✗	28%
	Long Government	✗	28%
	Non-U.S. Fixed Income (Hedged)	✗	23%
	Stable Value	✓	2%
	Intermediate/Long-Term TIPS	✓	77%
<b>Dedicated Inflation-Sensitive Assets</b>	Global REITs	✓	36%
	Commodities	✓	32%
	Short-Term TIPS	✗	23%
	Natural Resource Equity	✗	11%
	Private Real Estate	✗	9%

\*Among Callan Consensus glidepaths

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Callan was founded as an employee-owned investment consulting firm in 1973. Ever since, we have empowered institutional investor with creative, customized investment solutions backed by proprietary research, exclusive data, and ongoing education. Today, Callan provides advisory services to institutional investor clients with more than \$3 trillion in total assets, which makes it among the largest independently owned investment consulting firms in the U.S. Callan uses a client-focused consulting model to serve pension and defined contribution plan sponsors, endowments, foundations, independent investment advisers, investment managers, and other asset owners. Callan has six offices throughout the U.S. For more information, please visit [www.callan.com](http://www.callan.com).



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