

# **Vanguard Target Retirement Funds and Trusts**

Quarterly Review | June 30, 2025



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## Quarterly perspective

### Rebalancing policy enhancements pass the first test

**Brian M. Miller, CFA**  
Senior Investment Specialist



The second quarter of 2025 started with market turbulence, largely due to the announcement of the Liberation Day tariffs. However, markets rebounded significantly in the following months, with U.S. and non-U.S. equities climbing 11.0% and 12.1%, respectively. Bond markets, while less dynamic, still saw positive returns, with U.S. and non-U.S. bonds rising 1.3% and 2.0%, respectively.

Amid this environment, Vanguard Target Retirement Funds performed well, with returns ranging from 4.6% for the Income vintage to 10.6% for the 2070 vintage. Most vintages across the Target Retirement glide path ranked in the top third to top quartile of their peer group.

Despite the volatility in April, our benchmark-relative performance remained consistent with expectations. This resilience is a testament to the enhancements made to our rebalancing policy at the end of 2024. April served as the first real test of these updates, which included:

- A revised target distance within our threshold-based rebalancing framework.
- The introduction of dynamic benchmarks that mirror the funds' own rebalancing thresholds.

The outcome was encouraging. The portfolio management team executed the rebalancing with precision, staying aligned with the policy while minimizing allocation impact. So far, the updated policy has helped reduce forced trading and transaction costs, leading to stronger absolute returns and demonstrating the effectiveness of the approach, even in volatile market conditions.

Our research has shown that the refreshed rebalancing approach can deliver a consistent value-add. In this edition of the Quarterly Spotlight, we explore our policy enhancements in depth, using April's activity as a case study, and share our outlook for the upcoming quarters.

As always, we remain committed to improving investor outcomes through the thoughtful design and purposeful evolution of Vanguard Target Retirement Funds, and we thank you for your partnership.

## Performance of key Vanguard index funds

Fund name (inception date)	3Q 2024	4Q 2024	1Q 2025	2Q 2025	1-year
Vanguard Total Stock Market Index Fund (07/07/1997)	6.17%	2.63%	-4.83%	10.99%	15.10%
Vanguard Total International Stock Index Fund (11/29/2010)	8.03%	-7.40%	5.51%	12.11%	18.33%
Vanguard Total Bond Market Index Fund (09/18/1995)	5.07%	-3.04%	2.77%	1.30%	6.05%
Vanguard Total International Bond Index Fund (05/31/2013)	4.12%	0.09%	-0.16%	2.02%	6.15%
Vanguard Short-Term Inflation-Protected Securities Index Fund (10/17/2012)	2.50%	-0.10%	3.04%	0.98%	6.55%

Source of performance figures: Vanguard, Institutional share class, as of June 30, 2025.

The performance data shown represent past performance, which is not a guarantee of future results. Investment returns and principal value will fluctuate, so investors' shares, when sold, may be worth more or less than their original cost. Current performance may be lower or higher than the performance data cited. For performance data current to the most recent month-end, visit our website at [institutional.vanguard.com](https://institutional.vanguard.com). Standard performance of the funds can be located on page 29 of the Quarterly Review.



# Rebalancing act: Navigating volatility in Vanguard Target Retirement Funds

Earlier this year, global markets experienced heightened volatility after President Trump announced sweeping tariffs. As a direct result of this announcement, our target-date franchise underwent its first major rebalancing activity since the rollout of our refreshed policies in late 2024. We are excited to share these updates, as well as the subsequent outcomes delivered over the first quarter of 2025 and during April's market volatility.



## Our approach to TDF rebalancing: A summary of recent changes

As outlined in [The Rebalancing Edge: Optimizing Target-Date Fund Rebalancing Through Threshold-Based Strategies](#), the goal of Vanguard's target-date fund (TDF) rebalancing methodology is to provide our investors with the best long-term investment outcomes. Our approach aims to strike a balance between minimizing transaction costs, which are a drag on absolute performance and erode returns, and maintaining consistent alignment with the funds' strategic asset allocation.

Vanguard's enhancements to our rebalancing policy for the Target Retirement Funds and Trusts focused on two primary objectives: (1) updating the target distance in our threshold-based policy and (2) creating dynamic benchmarks that rebalance according to the same threshold-based policy of the funds.

- 1. Updated target destination:** Our research has revalidated that a threshold of 200 basis points (bps) is suitable across our vintages, but it also determined that a destination of 175 bps (relative to the previous destination of 100 bps) should result in further transaction cost savings. The smaller distance of 25 bps back to the target, compared with 100 bps, enables our portfolio managers to execute smaller trades during volatile markets, which results in real dollar savings for our investors.
- 2. Creation of dynamic benchmarks:** Previously, the funds and trusts followed a 200/100 bps threshold-based rebalancing policy despite tracking a benchmark that rebalanced to target daily. To better reflect the portfolio management process and facilitate the evaluation of the portfolio managers' rebalancing-related performance, we have created benchmarks that follow the same rebalancing policy as our funds.



Per our analysis, we reduced the transaction costs we incurred during April by 49% relative to our previous 200/100 policy guardrails.

This change reflects our commitment to continually reviewing the numerous elements of our design and implementation to ensure that we deliver the best possible experience for our investors.

Following a smooth implementation on December 18, 2024, we are pleased to report that outcomes are in line with our expectations thus far. Of course, the true value of our rebalancing methodology becomes evident during more volatile markets that trigger rebalancing events. After the first quarter's close, when tariff announcements caused significant market volatility, our dedicated portfolio management team was ready to navigate these challenges and rebalance at more opportune times. The following case study illustrates our rebalancing philosophy in action for improved performance measurement.

### Rebalancing in action: April 2025 case study

The funds' ability to rebalance effectively in rapidly changing market conditions while maintaining tight tracking was put to the test in April. As expected, our approach held up well under pressure. The large spike in market volatility led to a significant shift in asset class exposure, which triggered two rebalances over a two-week time frame. Despite this heightened activity over the month of April, the funds' deviation from the benchmark remained small, coming in 17 bps tighter than what would have been expected under our previous policy. April's activity further substantiated our threshold-based policy and helped portfolio managers realign breaching vintages by notifying the team of funds near or at the threshold, enabling timely cash movements.

**During the month of April, “smaller, more frequent rebalances with advance notice [have resulted] in tighter tracking to our benchmark.”**

— Aurélie Denis  
TARGET RETIREMENT PORTFOLIO MANAGER



Aurélie Denis, CFA, portfolio manager, recounts the trading environment during this time:

"Last year's enhancements to our rebalancing methodology and underlying fund liquidity enabled us to respond more effectively to April's volatility by executing smaller, more frequent rebalances with advance notice—resulting in tighter tracking to our dynamic benchmark."

### Positioned for sustained success

We expect that our threshold-based approach increases the odds of long-term success for investors relative to other rebalancing options.

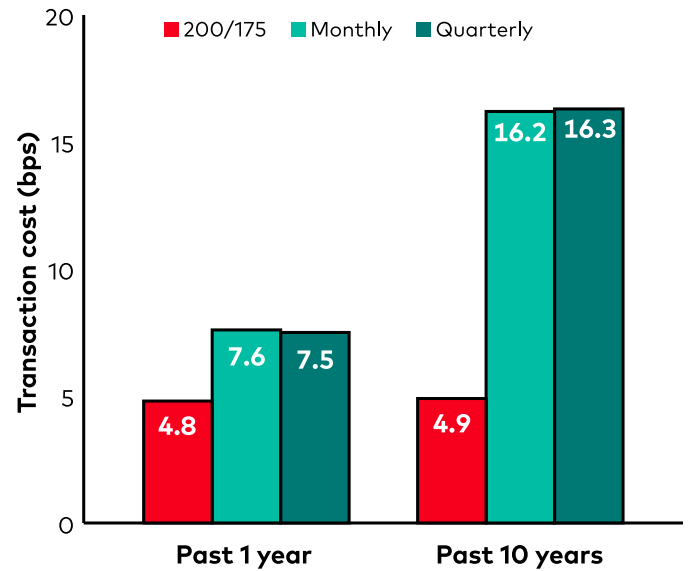
Figure 1 depicts the cost savings that participants are likely to see with our updated threshold-based approach over various time periods and against competitors.<sup>1</sup> The chart shows that the estimated transaction cost of following a 200/175 policy is lower than that of monthly policies, whether using data from the past year (May 1, 2024, to April 30, 2025) or the past 10 years (May 1, 2015, to April 30, 2025).

Notably, longer periods of time magnify this impact, which is especially relevant for investments with longer time horizons such as retirement solutions. As a secondary benefit, the updates also result in a tighter, more positive range of excess returns across the Target Retirement Funds and Trusts, driven by the matched timing of rebalances across the fund/trust and benchmark.

The care and rigor that is applied to rebalancing our target-date lineup has enabled our success, and we believe that our clients and investors will benefit from it for years to come. Looking ahead, we are confident that our enhanced approach will continue to deliver value for our participants and help us increase their chances of meeting their retirement goals. However, what is truly encouraging is the potential for compounding transaction cost savings to drive meaningful, long-term performance benefits for Vanguard Target Retirement Funds and Trusts and their investors.

<sup>1</sup> Transaction cost estimates are modeled as a function of market volatility and trade size.

**Figure 1. Comparison of estimated transaction costs incurred by rebalancing at 1-year and 10-year periods, annualized**



Notes: This figure is based on a global 60% equity and 40% fixed income portfolio using 10,000 simulations of daily returns and transaction costs over a 10-year period. The analysis assumes no cash flow nor use of futures. U.S. equities are represented by the MSCI Broad Market Index (36%), non-U.S. equities by the MSCI ACWI ex USA Index (24%), U.S. bonds by the Bloomberg Barclays U.S. Aggregate Index (28%), and non-U.S. bonds by the Bloomberg Barclays Global Aggregate ex-USD Index (12%). Transaction costs are a function of the underlying market volatility and transaction size. Transaction costs also account for simultaneous rebalancing across all target-date vintages. Data use steady-state simulations. Trade size is the amount of trading (both buying and selling) across all underlying asset classes in the rebalancing.

Source: Vanguard.

Transaction costs are expected to be higher when markets are more volatile and when larger trades are executed. Since a 200/175 approach can reduce the size of transactions, the cost advantage relative to a monthly approach can be clearly observed. Compared with monthly and quarterly rebalancing, a 200/175 policy has the lowest transaction cost per rebalancing event as well as the lowest average transaction cost.





# About the SAAC

The Vanguard Strategic Asset Allocation Committee (SAAC) is a multiasset oversight committee composed of global investment leaders from across the firm.

The members of the SAAC are responsible for the investment methodology behind our single-fund solutions, including Vanguard LifeStrategy® Funds, Target Retirement Funds, 529 plans, and model portfolios.

The SAAC meets regularly to review its investment methodology, debate investment strategies, and coordinate any changes with the Vanguard Advice Policy Committee, thereby ensuring a consistent approach in our single-fund solutions and advice offers.

## Additional perspectives from the SAAC

A primary responsibility of the SAAC is to oversee the policy allocation of Vanguard's suite of multiasset portfolios, including a formal annual review. The SAAC has also been tasked with establishing the investment methodology and portfolio construction approaches that are most appropriate for various objectives. Since its founding in 2013, the SAAC has held research meetings to discuss investment topics, seeking the best outcomes for our clients through constant debate. These meetings, often showcasing the latest research by Vanguard Investment Strategy Group, have centered on a wide range of subjects. A summary of past topics is provided below.

### 2013

- Hedging currency exposure in a multiasset portfolio.
- Role of commodity futures.
- Minimum-volatility equity strategies.

### 2014

- Equity home bias by country.
- Glide-path construction methodology.
- Inflation protection.

### 2015

- Approaches to retirement income.
- Factors and strategic asset allocation.
- Fixed income glide-path allocations.

### 2016

- Time-varying risk premia and asset allocation.
- Expansion of the Vanguard Capital Markets Model®.
- Inflation-hedging strategies over multiyear horizons.

### 2017

- Long-run equilibrium risk-free rates and the equity risk premia.
- Diversified versus concentrated active equity portfolios.
- Global methodology for non-market-cap-weighted ETF model portfolios.

### 2018

- Role of private real estate in portfolios.
- Vanguard Life-Cycle Model (VLCM) and glide-path outcomes.
- Inflation protection in a 529 college savings plan.

Source: Vanguard.



### Top row, left to right

**Joseph Davis**, Ph.D., Global Chief Economist and Global Head of Investment Strategy Group (Committee Chair)

**Roger Aliaga-Díaz**, Ph.D., Chief Economist, Americas, Global Head of Portfolio Construction (Committee Vice-Chair)

**Greg Davis**, CFA, Global Chief Investment Officer (Ex-Officio)

**Sujatha Srinivasan**, Global Head of IMG Risk Management

**Geoff Parrish**, CFA, Principal, Global Head of Fixed Income Indexing (New Member)

### Middle row

**Duncan Burns**, CFA, Head of Investments, Asia-Pacific, and of Investment Strategy Group, Asia-Pacific

**Matthew Brancato**, CFA, CPA, Chief Client Officer, Workplace Solutions

**Dan Reyes**, CFA, Head of Portfolio Review Department

**Brian Wimmer**, CFA, Head of Multi-Asset Solutions (Nonvoting Member)

### Bottom row

**Joel Dickson**, Ph.D., Head of Enterprise Advice Methodology

**Michael Roach**, CFA, Senior Manager, Head of Multi-Asset Portfolio Management

**Timothy Smart**, Chief of Staff, Investment Strategy Group (Nonvoting Member)

### 2019

- Vanguard Asset Allocation Model (VAAM) and optimal allocations to active and passive strategies.
- VAAM-based investment methodology for ETF-model portfolios.
- Return-targeting and time-varying asset allocation.

### 2020

- VLCM-derived glide paths for 529 college savings plans.
- Role of private equity in multiasset portfolios.

### 2021

- A systematic framework for validating TDF glide paths.

### 2022

- *Vanguard's Approach to Target-Date Funds.*
- *Revalidating the Case for International Bonds.*

### 2024

- *Hybrid Annuity Target-Date Funds: A New Class of Target-Date Funds Incorporating Annuities.*
- Multiasset rebalancing strategies.



# TDF industry and market overview

IN THIS SECTION:

Industry growth and market share

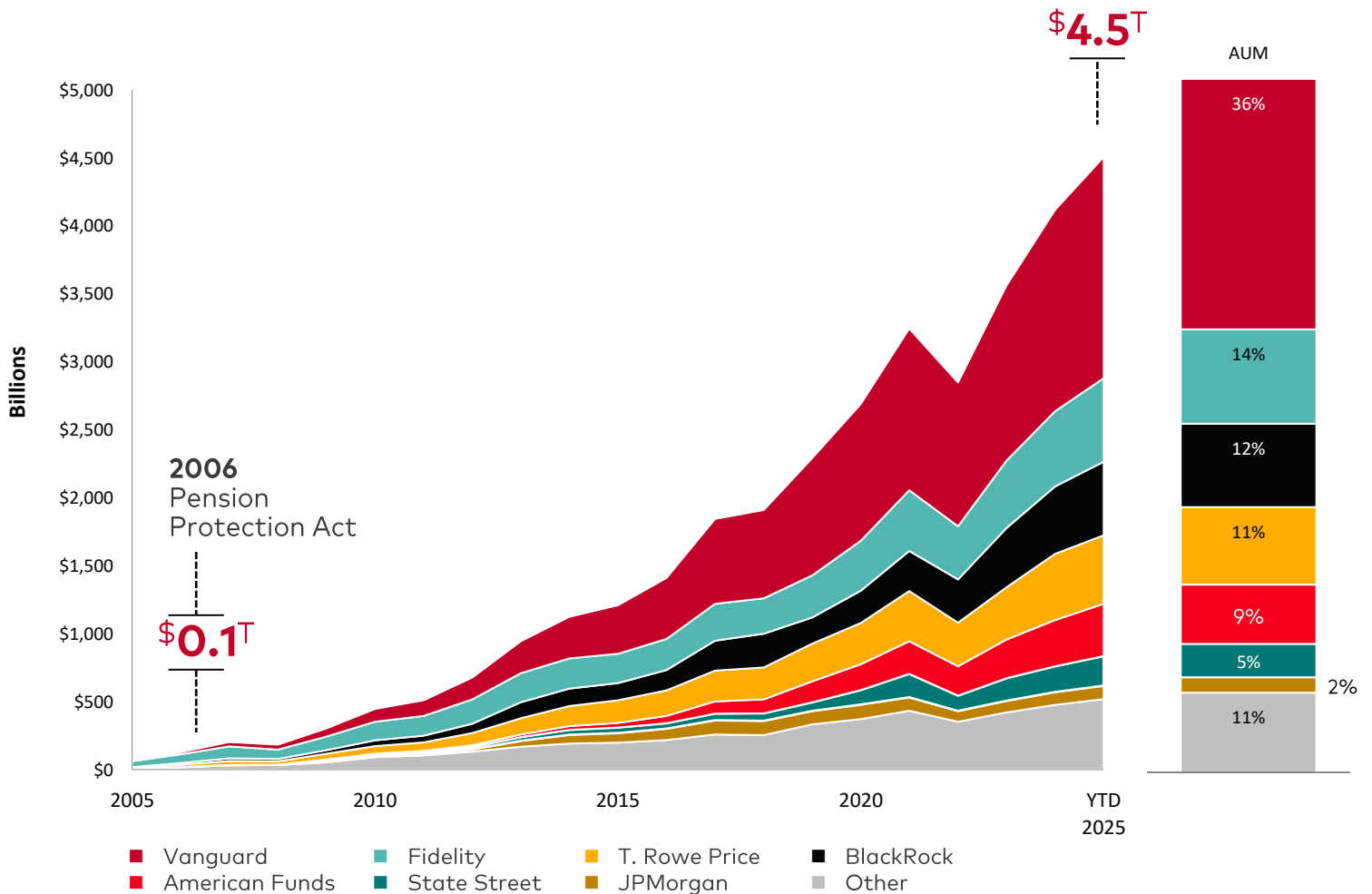
Market environment





# Industry growth and market share

**Figure 9.1** Growth of target-date fund industry assets and market share



According to Morningstar combined with Vanguard's funds and trusts data, TDF industry assets exceeded \$4.51 trillion as of the end of Q2 2025. Vanguard continued to lead the industry in cash flow and assets under management, receiving more than one-third of every dollar invested in a TDF.

The industry's top providers, Vanguard, Fidelity, BlackRock, T. Rowe Price, JPMorgan, American Funds and State Street, hold a cumulative 89% share of all industry assets, or more than \$3.99 trillion, as of June 30, 2025.

Sources: Vanguard, Morningstar, as of June 30, 2025. Industry estimates are based on mutual fund and CIT data reported in Morningstar. CIT data is self-reported and is updated in Morningstar as it is received. Public company data also used prior to 2020.

Note: Organic growth measured as current period's net new flows divided by prior period's ending assets.



# Market environment

**Figure 10.1** Index returns ranked by performance

2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	3Q 2024	4Q 2024	1Q 2025	2Q 2025
REIT 2.5	HYB 17.1	FTSE 27.4	IAGG 3.2	CRSP 30.8	CRSP 21.0	REIT 43.1	COM 16.1	CRSP 26.0	CRSP 23.8	REIT 16.1	CRSP 2.6	COM 8.9	FTSE 12.4
IAGG 1.3	CRSP 12.7	CRSP 21.2	CASH 1.9	REIT 25.8	FTSE 11.2	COM 27.1	CASH 1.5	FTSE 15.8	REIT 8.8	FTSE 8.4	CASH 1.2	FTSE 4.6	CRSP 11.0
EMB 1.3	COM 11.4	EMB 9.2	STPS 0.6	FTSE 21.8	AGG 7.5	CRSP 25.7	STPS -2.7	REIT 13.7	HYB 8.2	EMB 6.5	IAGG 0.2	STPS 3.0	HYB 3.5
AGG 0.5	EMB 9.2	HYB 7.5	AGG 0.0	HYB 14.3	HYB 7.1	FTSE 8.8	HYB -11.2	HYB 13.4	EMB 5.9	CRSP 6.2	HYB 0.2	AGG 2.8	EMB 3.2
CRSP 0.4	REIT 8.6	REIT 5.1	HYB -2.1	EMB 14.1	EMB 5.6	STPS 5.3	IAGG -12.7	EMB 10.5	FTSE 5.5	HYB 5.3	STPS -0.1	EMB 2.2	IAGG 2.0
CASH 0.0	IAGG 4.9	AGG 3.5	EMB -3.9	AGG 8.7	STPS 5.1	HYB 5.3	AGG -13.0	IAGG 8.8	CASH 5.5	AGG 5.2	COM -0.5	CASH 1.1	AGG 1.2
STPS 0.0	FTSE 4.7	IAGG 2.6	REIT -4.6	IAGG 8.1	IAGG 4.7	CASH 0.1	FTSE -16.1	AGG 5.5	COM 5.4	IAGG 3.9	EMB -2.1	REIT 1.1	CASH 1.1
FTSE -4.3	STPS 2.8	STPS 0.9	CRSP -5.2	COM 5.4	CASH 0.6	AGG -1.5	EMB -17.1	CASH 5.3	STPS 5.0	STPS 2.5	AGG -3.1	HYB 1.0	STPS 1.0
HYB -4.5	AGG 2.6	CASH 0.8	COM -13.0	STPS 4.9	COM -3.5	EMB -1.8	CRSP -19.5	STPS 4.5	IAGG 3.8	CASH 1.4	REIT -6.1	IAGG -0.1	REIT -1.1
COM -24.7	CASH 0.3	COM 0.7	FTSE -14.6	CASH 2.3	REIT -7.6	IAGG -2.1	REIT -24.5	COM -7.9	AGG 1.3	COM 0.7	FTSE -7.5	CRSP -4.8	COM -3.1

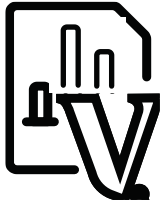
## Average annualized returns

Index returns			3 months	1 year	3 years	5 years	10 years
Target Retirement Fund building blocks	CRSP	CRSP U.S. Total Market Index	11.00	15.13	19.03	15.87	12.91
	FTSE	FTSE Global All Cap ex U.S. Index	12.43	17.86	13.98	10.40	6.34
	AGG	Bloomberg U.S. Aggregate Bond Index	1.21	6.08	2.55	-0.73	1.76
	IAGG	Bloomberg Global Agg ex U.S. Float Adj RIC Cap Index (Hedged)	1.95	6.01	3.69	0.07	2.34
	STPS	Bloomberg U.S. 0–5 Year TIPS Index	0.95	6.49	3.95	3.76	2.87
Other indexes	CASH	3-Month T-Bill	1.09	4.88	4.75	2.88	2.01
	HYB	Bloomberg U.S. Corporate High Yield Index	3.53	10.29	9.93	5.97	5.38
	EMB	Bloomberg USD Emerging Market Gov RIC Cap Index	3.15	9.93	8.44	1.72	3.40
	REIT	MSCI U.S. REIT Index	-1.14	8.92	5.40	8.63	6.33
	COM	Bloomberg Commodity Index	-3.08	5.77	0.13	12.68	1.99

**Past performance is no guarantee of future returns. The performance of an index is not an exact representation of any particular investment, as you cannot invest directly in an index.**

Sources: Vanguard, Bloomberg Live, and Morningstar, as of June 30, 2025.

Note: Beginning 3Q 2021, the benchmark shown for the EMB category changed from Bloomberg Emerging Markets Sovereign Index USD to Bloomberg USD Emerging Market Gov RIC Cap Index.



# Vanguard fund construction and performance

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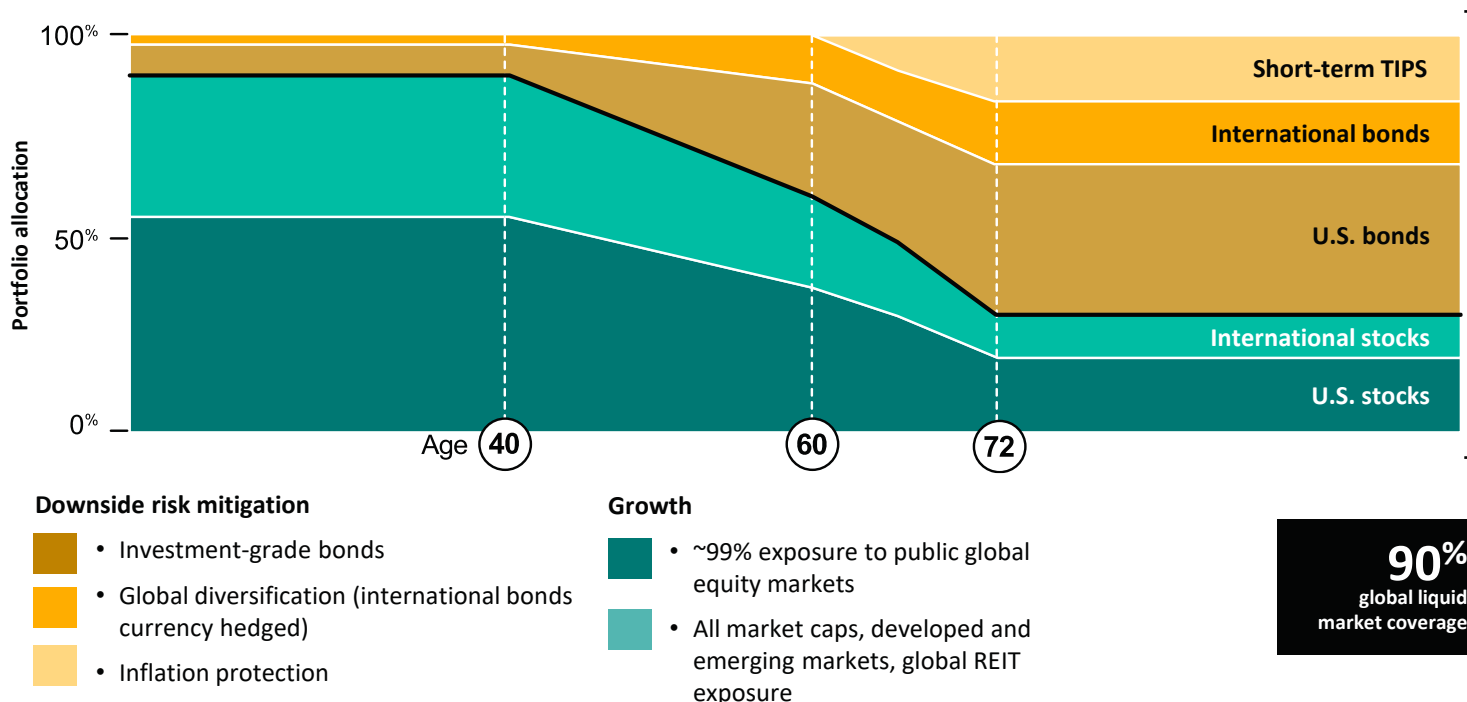
Evolution of Vanguard's glide-path design

Vanguard fund performance and attribution

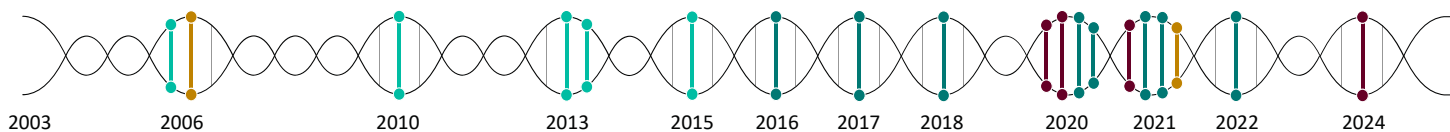


# Purposeful design and evolution

## Strategic asset allocation using high-quality building blocks



## Meaningfully improving investor outcomes since inception



### Enhanced asset allocation

- Increased equity weight in Income fund (2006).
- Added emerging markets stocks (2006).
- Added Canada and more international equity exposure (including small-caps) through Total International Stock Index replacing three regional funds (2010).
- Added international bonds (2013).
- Replaced broad TIPS fund with short-term TIPS for better responsiveness to inflation and removed money market fund (2013).
- Increased international allocations for both stocks and bonds (2015).

### Lowered fees, increased access

- Lowered expense ratios (2016, 2017, 2018, 2020, and 2021).
- Reduced minimum for Institutional Target Retirement Funds (2020).
- Reduced minimum for Target Retirement Trusts (2021).
- Merging Institutional Target Retirement Funds into Target Retirement Funds (2022).

### Improved fund/trust lineup

- Launched five-year vintage increments (2006).
- Added optional trust with a 50/50 allocation landing point and added enhanced retirement income services (2021).

### Reduced implementation costs and tax drag

- Moved from quarterly to monthly glide path roll down (2020).
- Across trust vintages, replaced underlying international fund with an international trust, minimizing foreign tax withholdings (2021).
- Enhanced rebalancing policies to reduce transaction costs and improve performance measurement (2024).

Sources: FactSet, Fidelity, BlackRock. Stock market measured by FactSet data derived from MSCI US Broad Market Free Float and MSCI ACWI ex USA IMI Indexes. Bond market measured by FactSet data derived from Bloomberg Global Aggregate ex-USD, U.S. Aggregate Float Adjusted, Global High Yield, and EM Hard Currency Aggregate indexes. Commodities market measured by FactSet data. Data as of December 31, 2024.



# Fund performance through June 30, 2025

## Vanguard Target Retirement Fund and Trust performance

Portfolio/Benchmark	Expense ratio	3 months	1 year	Average annualized return as of June 30, 2025				Inception date
				3 years	5 years	10 years	Since inception	
Vanguard Target Retirement Income Vintage								
Fund	0.08	4.55	9.66	7.36	4.49	4.71	5.11	10/27/2003
Trust II	0.075	4.56	9.63	7.35	4.50	4.74	4.90	2/29/2008
Target Retirement Income Composite Index		4.61	9.60	7.50	4.65	4.92	—	—
Vanguard Target Retirement 2020 Vintage								
Fund	0.08	5.12	10.23	8.67	6.16	6.06	6.19	6/7/2006
Trust II	0.075	5.14	10.28	8.70	6.20	6.12	6.10	2/29/2008
Target Retirement 2020 Composite Index		5.19	10.22	8.86	6.38	6.32	—	—
Vanguard Target Retirement 2025 Vintage								
Fund	0.08	6.65	11.74	10.43	7.48	6.89	6.86	10/27/2003
Trust II	0.075	6.65	11.75	10.46	7.55	6.96	6.64	2/29/2008
Target Retirement 2025 Composite Index		6.71	11.69	10.66	7.76	7.18	—	—
Vanguard Target Retirement 2030 Vintage								
Fund	0.08	7.67	12.61	11.64	8.58	7.52	7.02	6/7/2006
Trust II	0.075	7.67	12.65	11.68	8.64	7.59	7.04	2/29/2008
Target Retirement 2030 Composite Index		7.74	12.58	11.90	8.86	7.82	—	—
Vanguard Target Retirement 2035 Vintage								
Fund	0.08	8.38	13.41	12.73	9.67	8.13	7.75	10/27/2003
Trust II	0.075	8.39	13.38	12.75	9.72	8.21	7.50	2/29/2008
Target Retirement 2035 Composite Index		8.47	13.32	12.97	9.94	8.43	—	—
Vanguard Target Retirement 2040 Vintage								
Fund	0.08	9.09	14.12	13.80	10.74	8.73	7.80	10/27/2003
Trust II	0.075	9.09	14.13	13.82	10.78	8.80	7.94	2/29/2008
Target Retirement 2040 Composite Index		9.18	14.02	14.03	11.01	9.03	—	—

The performance data shown represent past performance. Past performance is no guarantee of future results. Investment returns and principal value will fluctuate, so investors' shares, when sold, may be worth more or less than their original cost. Current performance may be lower or higher than the performance data cited. For performance data current to the most recent month-end, visit our website at [vanguard.com/performance](https://www.vanguard.com/performance). Some funds assess purchase, redemption, and/or account maintenance fees. The performance data shown do not reflect deduction of these fees. If they did, performance would be lower. Details on these fees and adjusted performance figures can be found in the fund detail section.

Sources: Vanguard and Morningstar, as of June 30, 2025.



# Fund performance through June 30, 2025

## Vanguard Target Retirement Fund and Trust performance (continued)

Portfolio/Benchmark	Expense ratio	3 months	1 year	Average annualized return as of June 30, 2025				Inception date
				3 years	5 years	10 years	Since inception	
Vanguard Target Retirement 2045 Vintage								
Fund	0.08	9.75	14.78	14.84	11.80	9.27	8.49	10/27/2003
Trust II	0.075	9.77	14.80	14.85	11.83	9.32	8.23	2/29/2008
Target Retirement 2045 Composite Index		9.87	14.71	15.08	12.08	9.56	—	—
Vanguard Target Retirement 2050 Vintage								
Fund	0.08	10.55	15.57	15.59	12.24	9.48	8.21	6/7/2006
Trust II	0.075	10.59	15.61	15.64	12.30	9.54	8.37	2/29/2008
Target Retirement 2050 Composite Index		10.76	15.60	15.89	12.56	9.80	—	—
Vanguard Target Retirement 2055 Vintage								
Fund	0.08	10.54	15.58	15.59	12.24	9.47	10.45	8/18/2010
Trust II	0.075	10.59	15.60	15.64	12.30	9.54	10.79	8/31/2010
Target Retirement 2055 Composite Index		10.76	15.60	15.89	12.56	9.80	—	—
Vanguard Target Retirement 2060 Vintage								
Fund	0.08	10.56	15.57	15.59	12.24	9.47	10.29	1/19/2012
Trust II	0.075	10.57	15.62	15.65	12.31	9.55	10.05	3/1/2012
Target Retirement 2060 Composite Index		10.76	15.60	15.89	12.56	9.80	—	—
Vanguard Target Retirement 2065 Vintage								
Fund	0.08	10.53	15.55	15.59	12.24	—	9.94	7/12/2017
Trust II	0.075	10.58	15.59	15.65	12.30	—	10.46	7/17/2017
Target Retirement 2065 Composite Index		10.76	15.60	15.89	12.56	9.80	—	—
Vanguard Target Retirement 2070 Vintage								
Fund	0.08	10.55	15.54	15.62	—	—	15.20	6/8/2022
Trust II	0.075	10.56	15.59	15.67	—	—	9.62	4/7/2022
Target Retirement 2070 Composite Index		10.76	15.60	15.89	12.56	9.80	—	—

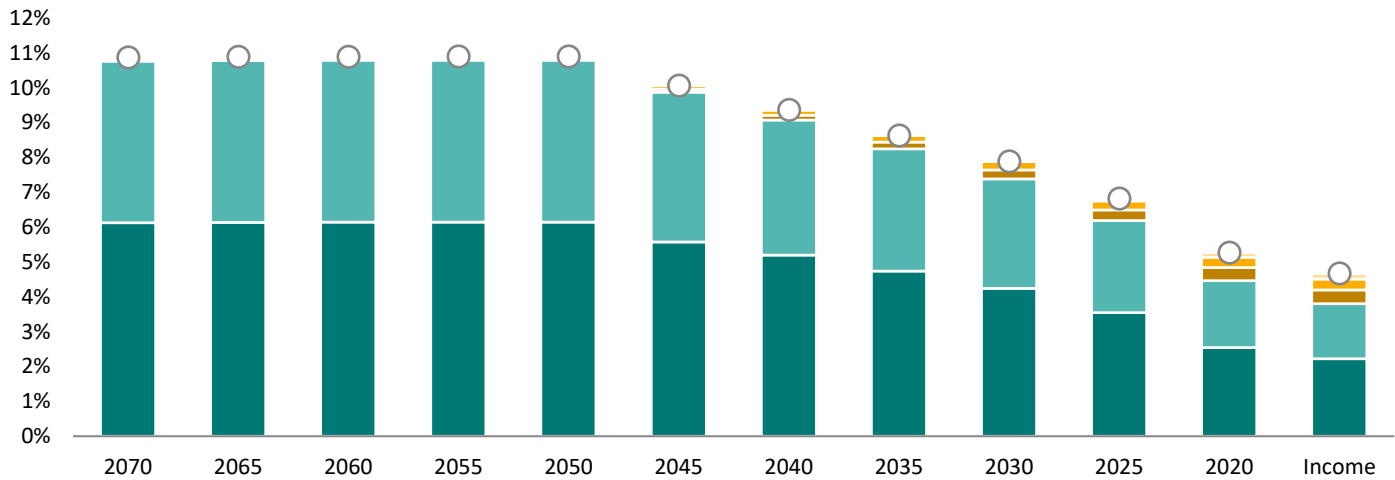
The performance data shown represent past performance. Past performance is no guarantee of future results. Investment returns and principal value will fluctuate, so investors' shares, when sold, may be worth more or less than their original cost. Current performance may be lower or higher than the performance data cited. For performance data current to the most recent month-end, visit our website at [vanguard.com/performance](https://www.vanguard.com/performance). Some funds assess purchase, redemption, and/or account maintenance fees. The performance data shown do not reflect deduction of these fees. If they did, performance would be lower. Details on these fees and adjusted performance figures can be found in the fund detail section.

Sources: Vanguard and Morningstar, as of June 30, 2025.

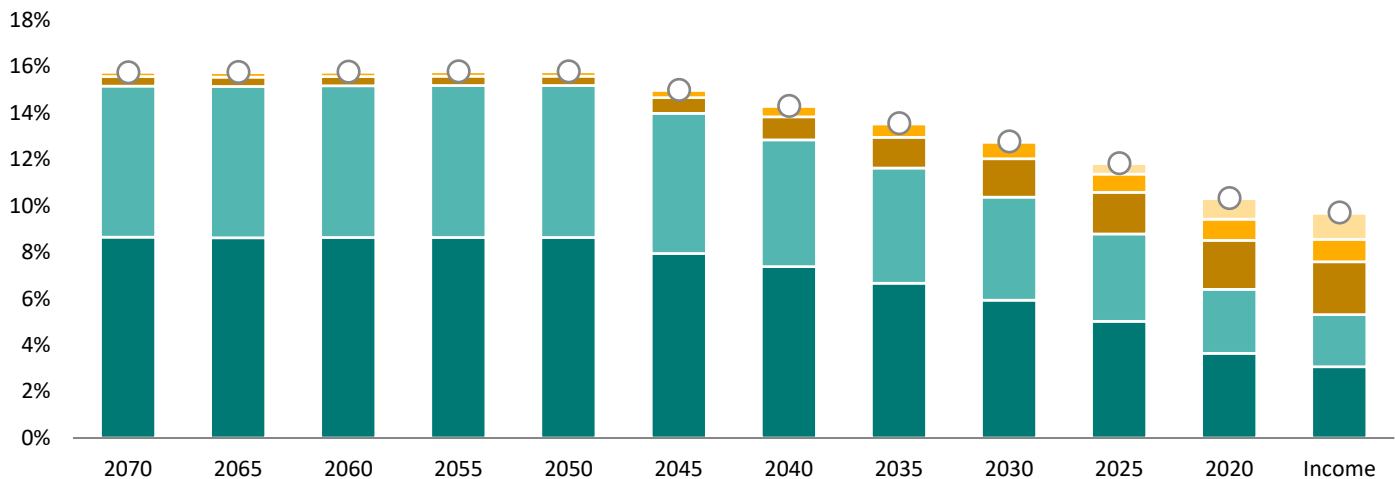


# Underlying fund performance contribution

**Figure 15.1** 3-month return contribution by underlying funds



**Figure 15.2** 1-year return contribution by underlying funds



■ Total Stock Market Index

■ Total International Stock Index

○ Total return

■ Total Bond Market II Index

■ Total International Bond Index

■ Short-Term Inflation-Protected Securities Index

■ Cash

**Past performance is not a guarantee of future results.**

Sources: Vanguard and Morningstar, as of June 30, 2025.

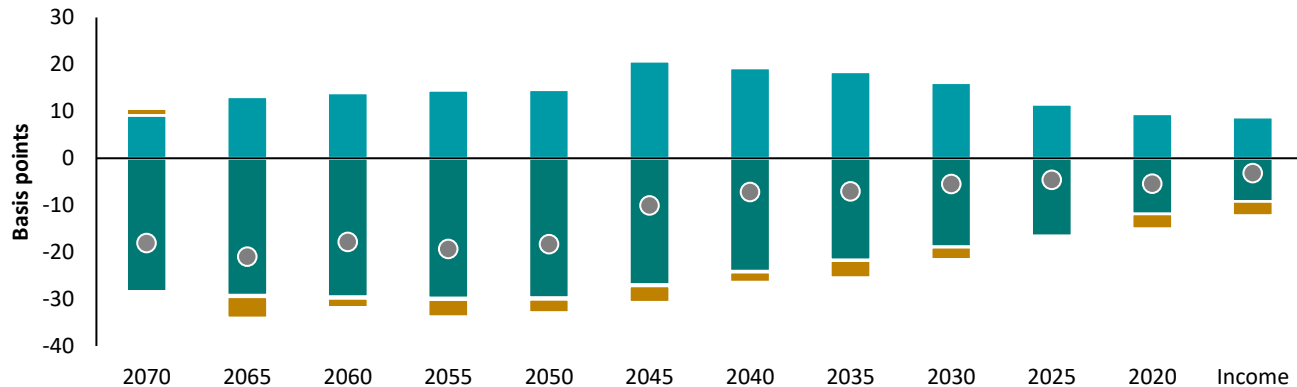
For institutional investor use only. Not for distribution to retail investors.



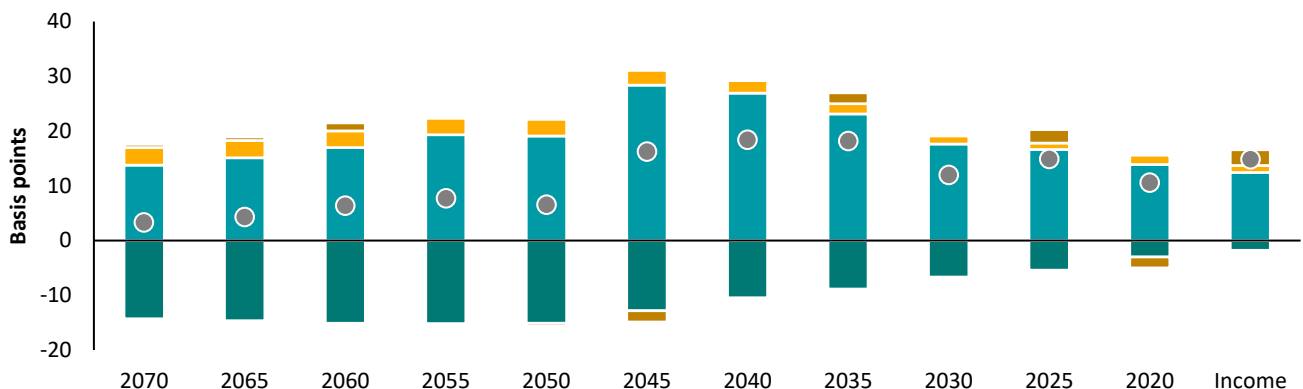


# Excess return attribution

**Figure 16.1** 3-month return attribution



**Figure 16.2** 1-year return attribution



Allocation impact	Out/Underperformance due to differences in the strategic asset allocation of the funds versus their benchmarks. These differences can be particularly notable at times of significant market volatility as portfolio managers work to balance transaction costs against a daily rebalanced benchmark.
Fair-value pricing	Out/Underperformance due to the adjustment of the prices of non-U.S. equities for changes in their fair value that occur after the close of their local market but before the net asset value is calculated for each U.S. mutual fund as of 4 p.m., Eastern time. This impact is attributed to accounting and pricing policies that are outside of portfolio management control and is generally artificial and temporary.
Underlying fund tracking differences ex-FV	Out/Underperformance of the underlying portfolios versus their relative benchmarks. Figure is shown after controlling for fair-value pricing but is inclusive of the securities-lending impact, transaction costs associated with rebalancing the fund-of-funds portfolio, and pricing difference driven by Bloomberg (BB) indexes pricing at 4 p.m., Eastern time.*
Residual	Out/Underperformance due to factors outside of those captured above.
Total excess return	Indicates the total amount of fund returns that were higher or lower than benchmark returns. Calculated as the sum of the individual impacts of each of the five above drivers of benchmark-related excess return. Effect of expense ratios not included.

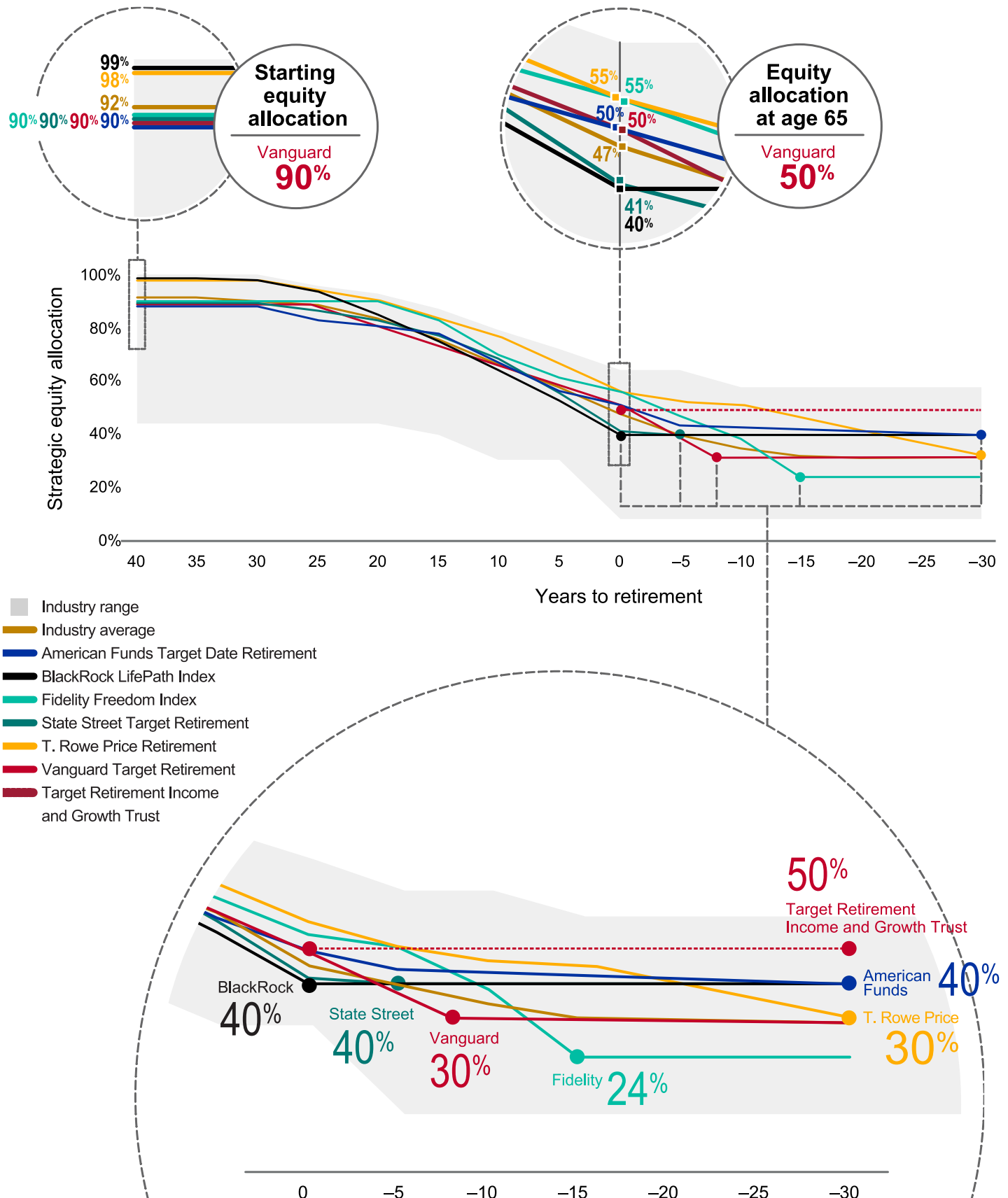
**Past performance is not a guarantee of future results.**

Sources: Vanguard and Morningstar, as of June 30, 2025.

\* On January 14, 2021, Bloomberg changed its index pricing time from 3 p.m., Eastern time, to 4 p.m., Eastern time. The time change affects the 1- and 3-year figures.



# Glide path comparison



Sources: Morningstar; data as of June 30, 2025; Vanguard calculation for industry average.

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# Competitor fund construction and performance

IN THIS SECTION:

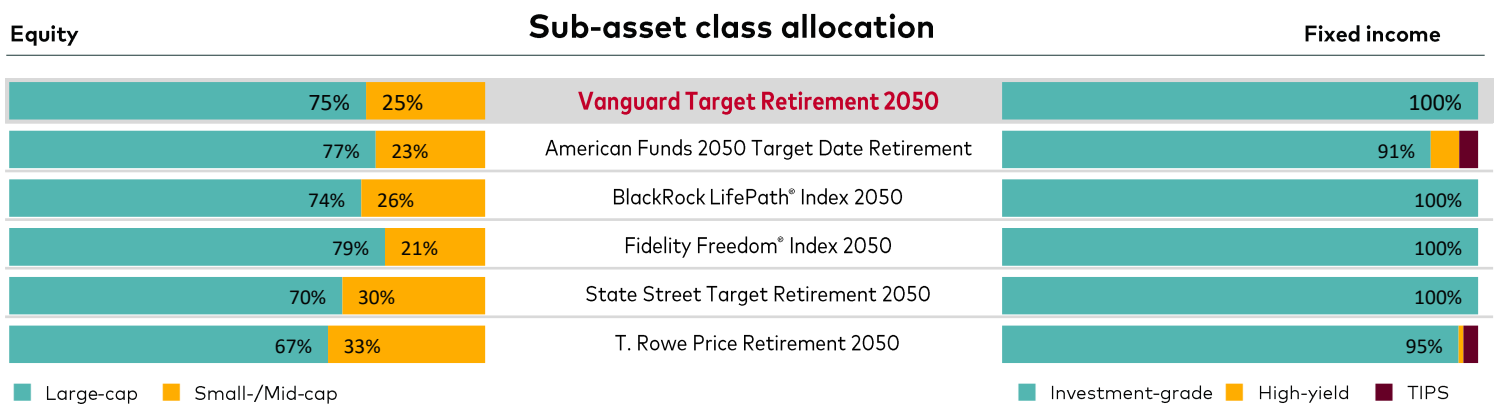
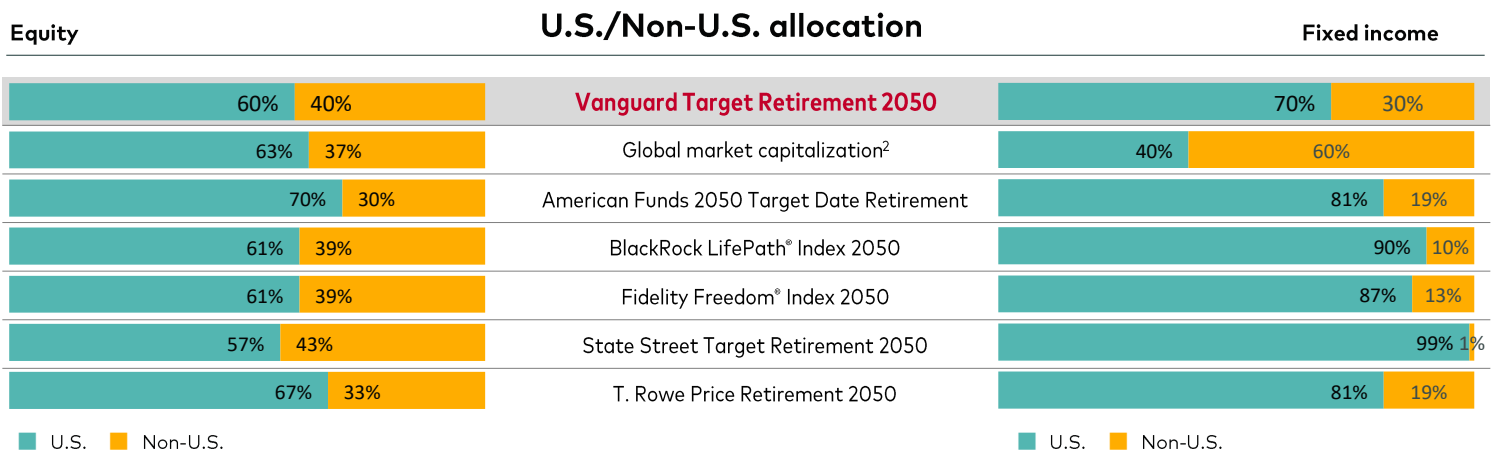
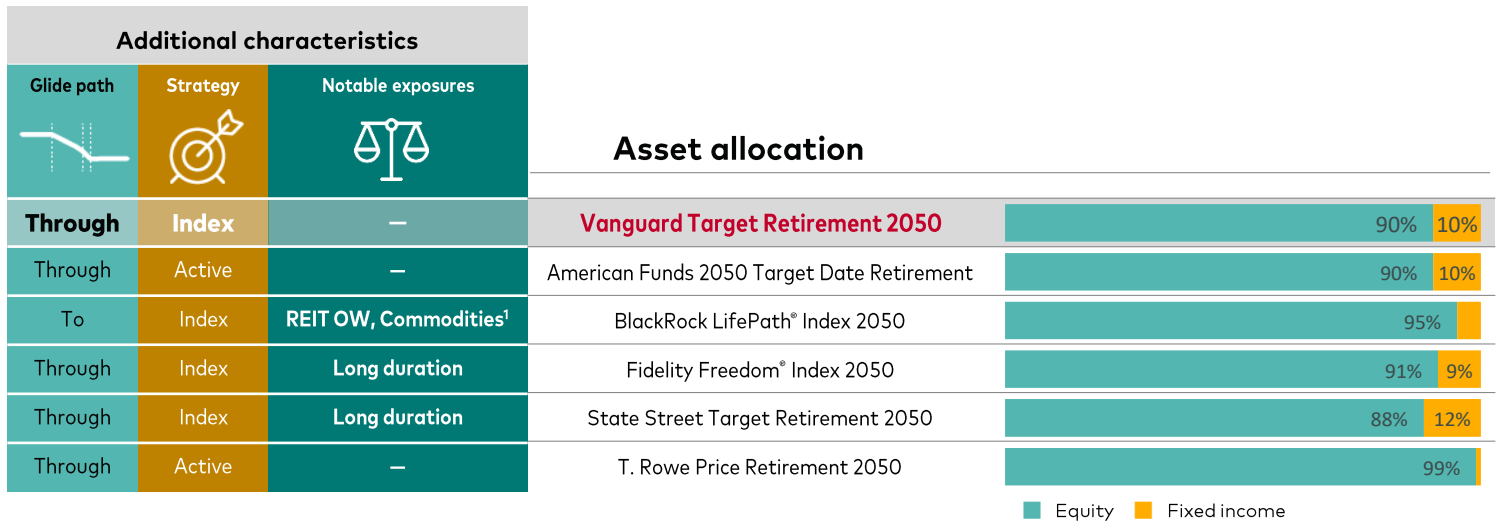
Beyond the glide path

12-month return attribution



# 2050 vintage: Beyond the glide path

Figure 19.1 Industry peer group asset allocation comparison



There may be other material differences between products that must be considered prior to investing.

Sources: Morningstar data, based on most recent holdings disclosure for each fund included in the calculation. As-of dates may vary depending on the timing and frequency of data made available to Morningstar. Data as of June 30, 2025.

<sup>1</sup>Commodity exposure is present in CIT product only. Mutual fund product does not include commodity exposure.

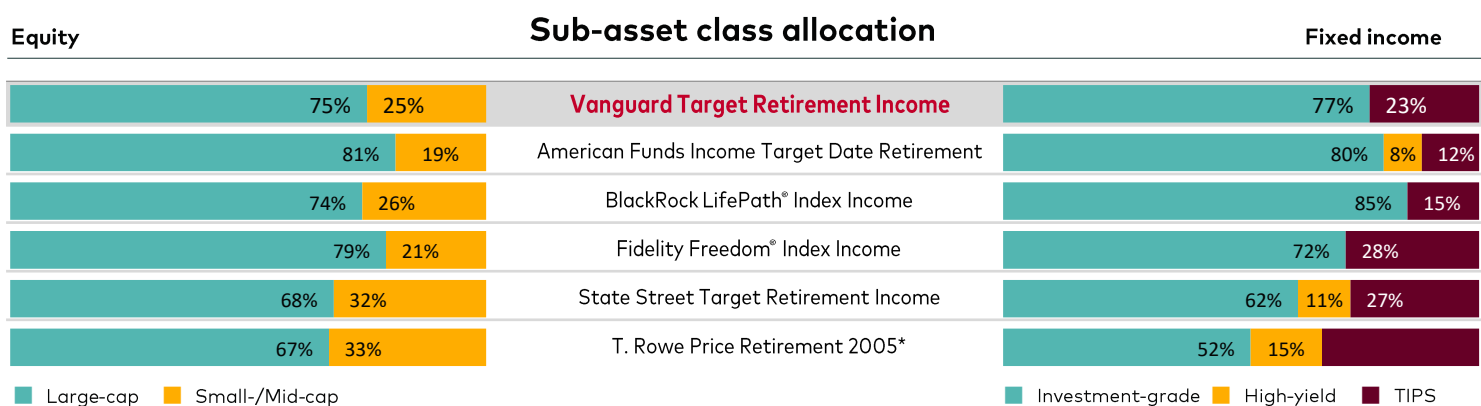
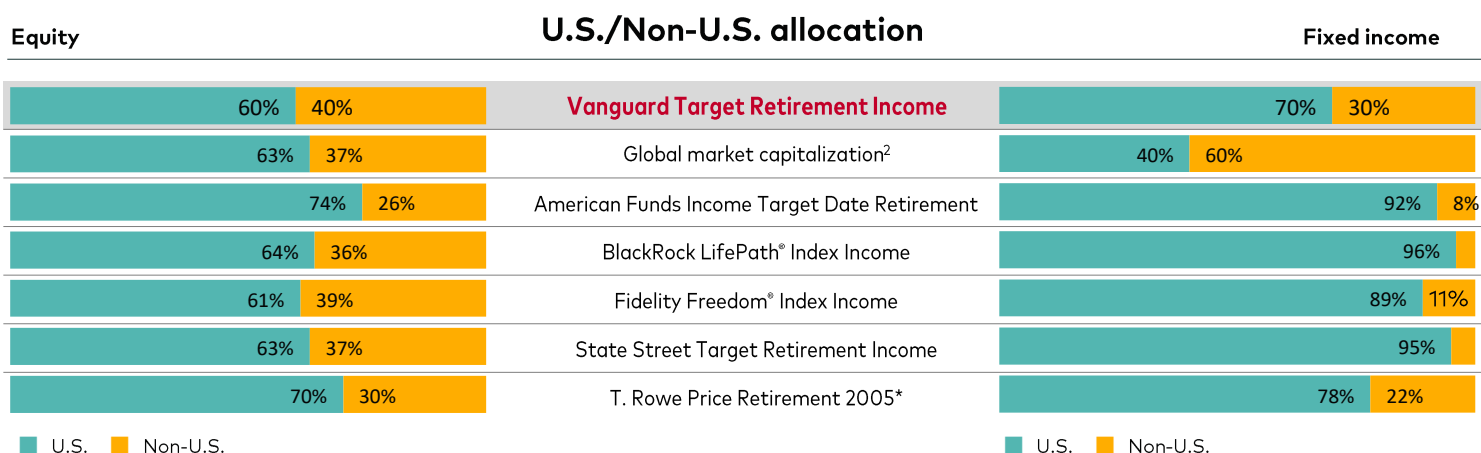
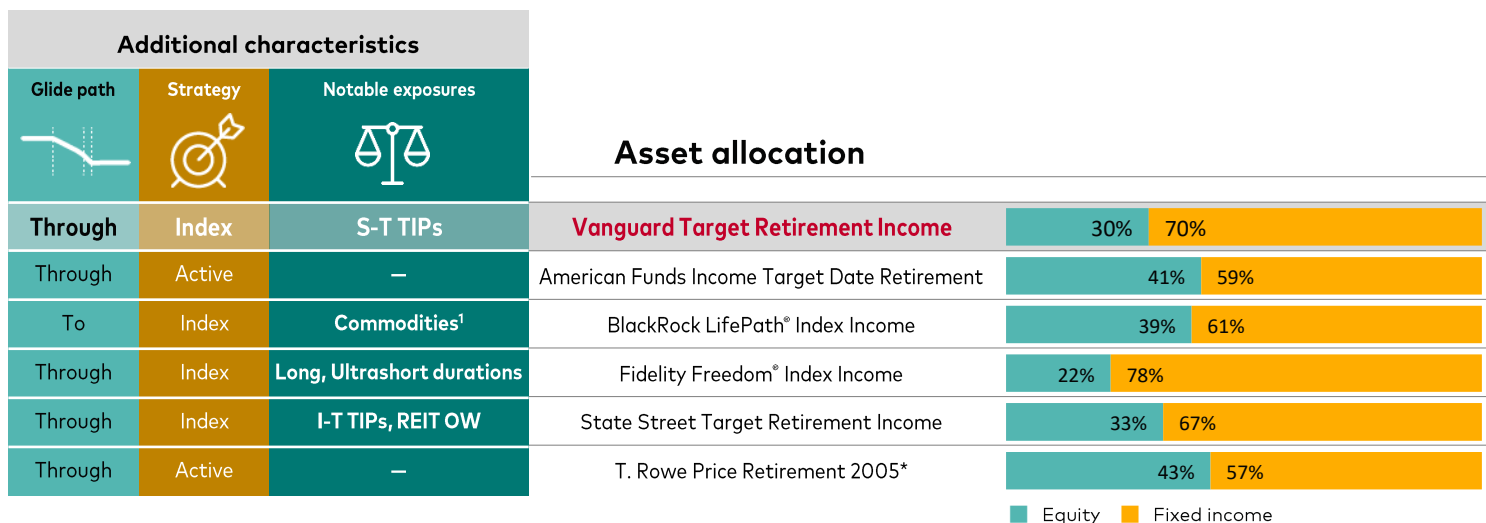
<sup>2</sup>Global market capitalization calculated using FTSE All Country Equity Index and Bloomberg Barclays Global Aggregate Bond Index.

Note: Due to spacing issues, data labels below 7% are not displayed. Due to rounding, values may not total to 100%.



# Income vintage: Beyond the glide path

Figure 20.1 Industry peer group asset allocation comparison



There may be other material differences between products that must be considered prior to investing.

Sources: Morningstar data, based on most recent holdings disclosure for each fund included in the calculation. As-of dates may vary depending on the timing and frequency of data made available to Morningstar. Data as of June 30, 2025.

<sup>1</sup>Commodity exposure is present in CIT product only. Mutual fund product does not include commodity exposure.

<sup>2</sup>Global market capitalization calculated using FTSE All Country Equity Index and Bloomberg Barclays Global Aggregate Bond Index.

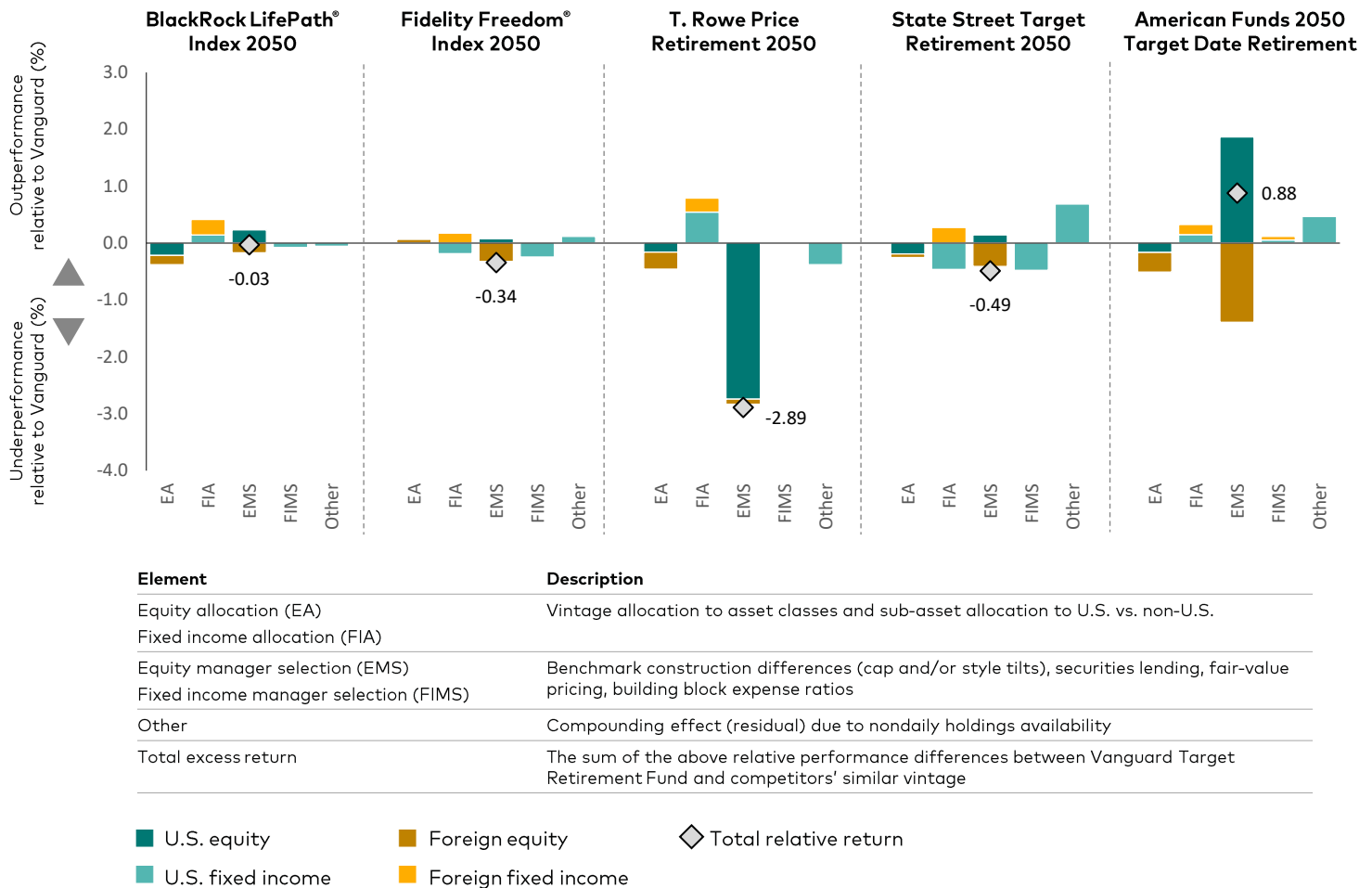
\* No explicit income vintage in lineup. 2005 represents the most conservative asset allocation, as a proxy.

Note: Due to spacing issues, data labels below 7% are not displayed. Due to rounding, values may not total to 100%.



# 12-month return attribution

**Figure 21.1** Relative to top five industry 2050 funds



- **BlackRock's** underperformance relative to Vanguard was primarily driven by a higher allocation to U.S. equity and lower allocation to international equity. This was partially offset by the higher aggregate equity weight.
- **Fidelity's** underperformance relative to Vanguard was driven by a lower weight to international fixed income and a higher allocation to U.S. long term treasuries.
- **T. Rowe Price's** underperformance relative to Vanguard was driven by poor security selection within the U.S. equity allocation stemming from overweight allocations to small, mid-cap and emerging markets.
- **State Street's** underperformance relative to Vanguard was driven by a higher allocation to fixed income, further compounded by the overweight long-term treasuries.
- **American Funds'** outperformance relative to Vanguard was driven by a higher allocation to equity, coupled with strong security selection within the U.S equity portion of the portfolio.

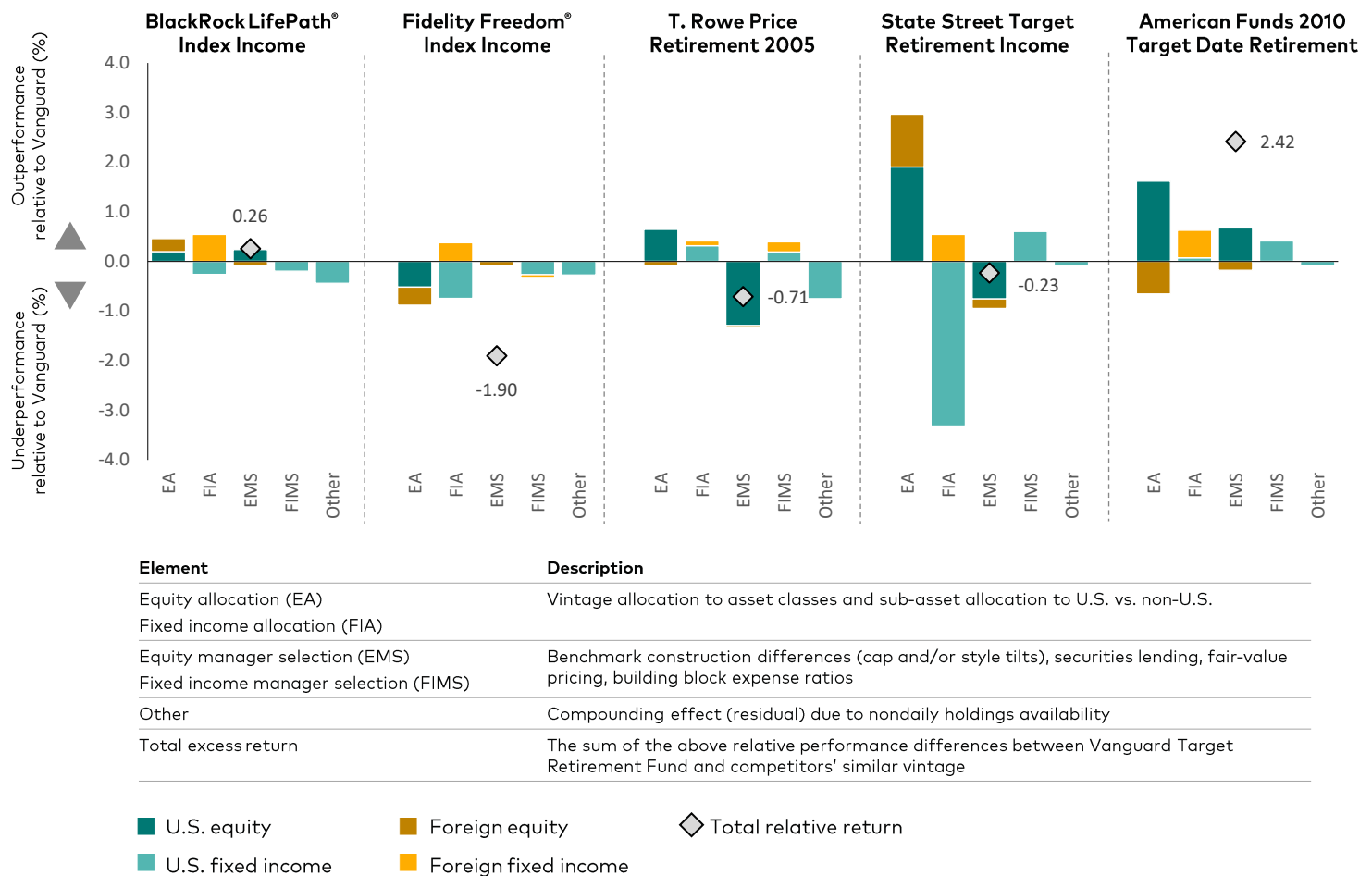
**Past performance is not a guarantee of future results.**

Sources: Vanguard and Morningstar, as of June 30, 2025.



# 12-month return attribution (continued)

**Figure 22.1** Relative to top five industry income (or equivalent) funds\*



- **BlackRock's** outperformance was driven by a higher aggregate allocation to equity.
- **Fidelity's** underperformance was driven by a lower aggregate allocation to equity, coupled with lower allocations to both international fixed income and international equity relative to Vanguard.
- **T. Rowe Price's** underperformance was driven by poor security selection within U.S. equity, despite a higher aggregate equity weight adding value.
- **State Street's** underperformance was driven by an overweight to U.S. fixed income relative to Vanguard, coupled with an overweight allocation to small and mid-cap securities in the equity sleeve of the portfolio.
- **American Funds'** outperformance relative to Vanguard was driven by a higher aggregate allocation to equity, coupled with strong security selection in the U.S equity sleeve of the portfolio.

**Past performance is not a guarantee of future results.**

Sources: Morningstar and Vanguard calculations; data as of June 30, 2025.

\* The 2005 fund is used as a proxy for T. Rowe Price and the 2010 fund is used as a proxy for American Funds, as there is no terminal income fund currently.

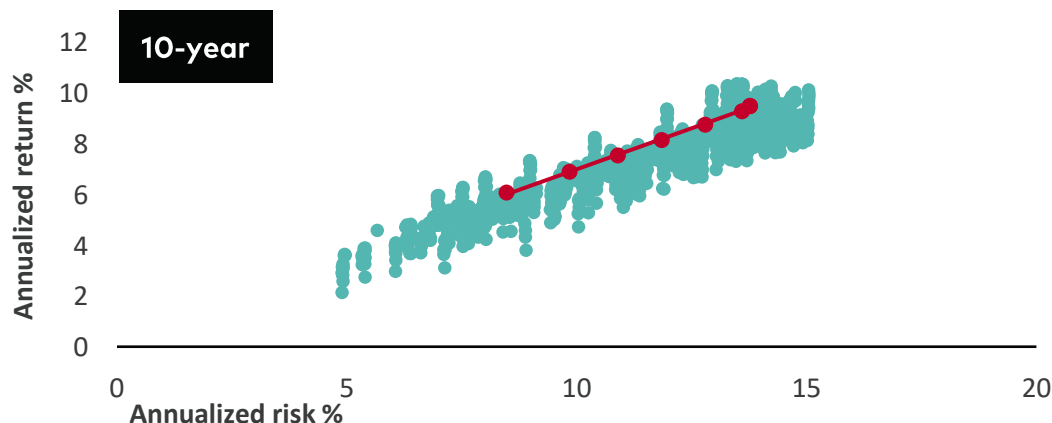
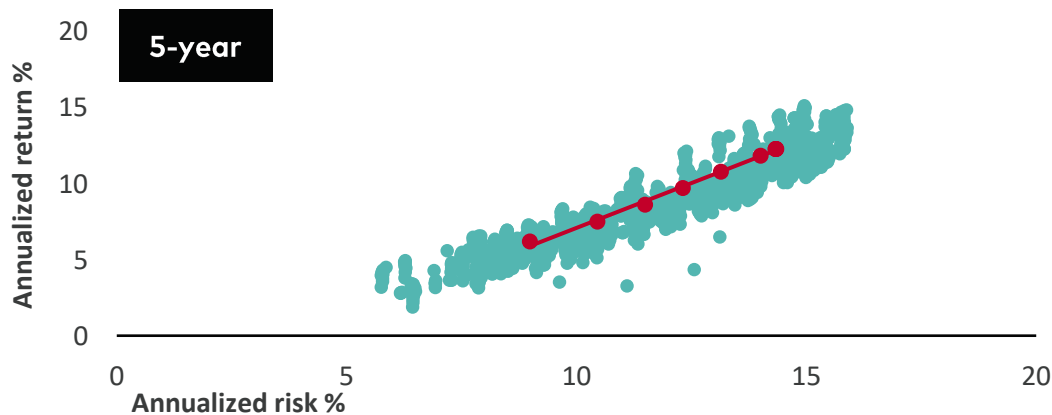
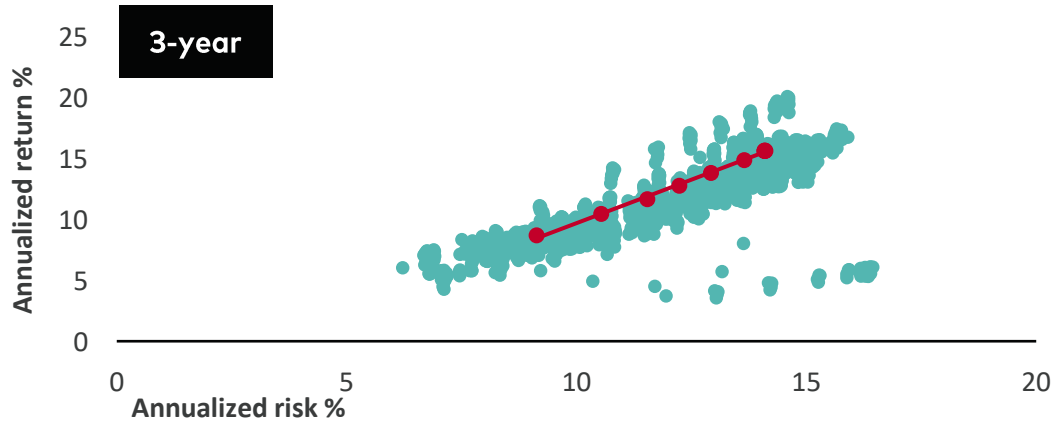




# A history of consistently strong risk-adjusted performance

● TDF peers in Morningstar universe

● Vanguard Target Retirement Funds



Investors may be in TDFs for decades.

Consistent performance across all market environments is critical.

Standard deviation was used for annualized risk. Results will vary for other time periods. All funds in the Morningstar peer group with a minimum 3-, 5-, or 10-year history, respectively, were included in the comparison. There may be other material differences between products that must be considered before investing. **Note that the competitive performance data shown represent past performance, which is not a guarantee of future results, and that all investments are subject to risks. Investment returns and principal value will fluctuate, so investors' shares, when sold, may be worth more or less than their original cost. Current performance may be lower or higher than the performance data cited. For the most recent performance, visit our website at [vanguard.com/performance](https://vanguard.com/performance).**

Sources: Vanguard and Morningstar, Inc., as of June 30, 2025.  
Vanguard Target Retirement Funds highlighted.



# Appendix

IN THIS SECTION:

Absolute performance results

Standardized returns



# Absolute performance results

Average annualized return  
as of June 30, 2025

Fund	Expense ratio	3 months	Year- to-date	1 year	3 years	5 years	10 years	Since inception	Inception date
<b>Vanguard Target Retirement Income Fund</b>	0.08	4.55	5.98	9.66	7.36	4.49	4.71	5.11	10/27/2003
Target Retirement Income Composite Index	—	4.61	5.87	9.60	7.50	4.65	4.92	—	—
Lipper Target Target Consrv Funds Average	—	4.11	5.51	8.61	7.12	4.48	4.30	—	—
Fidelity Freedom Income	0.46	3.56	5.87	8.12	5.60	3.27	3.78	4.53	10/17/1996
Fidelity Freedom Index Income Investor	0.12	2.94	4.91	7.76	5.52	2.78	3.59	3.74	10/2/2009
T. Rowe Price Retirement 2005	0.49	4.12	5.60	8.95	8.39	5.85	5.49	5.70	2/27/2004
American Funds 2010 Trgt Date Retire R5	0.34	4.59	7.36	12.08	8.33	6.47	5.90	5.33	2/1/2007
BlackRock LifePath Index Retire K	0.12	4.65	6.25	9.92	7.88	4.96	5.24	5.36	5/31/2011
State Street Target Retirement K	0.26	4.03	5.58	9.43	7.74	5.51	5.11	4.92	9/30/2014
JPMorgan SmartRetirement® Income R5	0.48	5.08	6.24	9.55	8.79	5.44	4.86	5.13	5/15/2006
JPMorgan SmartRetirement® Blend IncomeR5	0.50	5.07	6.41	10.39	8.81	5.44	5.00	5.15	7/2/2012
Nuveen Lifecycle 2010	0.52	4.59	5.53	8.66	8.20	5.59	5.50	5.37	1/17/2007
<b>Vanguard Target Retirement 2020 Fund</b>	0.08	5.12	6.31	10.23	8.67	6.16	6.06	6.19	6/7/2006
Target Retirement 2020 Composite Index	—	5.19	6.20	10.22	8.86	6.38	6.32	—	—
Lipper Target 2020 Funds Average	—	5.16	6.60	10.06	8.56	5.91	5.28	—	—
Fidelity Freedom 2020	0.55	6.10	7.87	10.46	9.19	6.64	6.23	6.64	10/17/1996
Fidelity Freedom Index 2020 Investor	0.12	5.39	6.79	10.24	8.78	5.89	6.03	6.81	10/2/2009
T. Rowe Price Retirement 2020	0.52	4.78	6.02	9.61	9.56	7.36	6.74	8.03	9/30/2002
American Funds 2020 Trgt Date Retire R5	0.35	5.57	7.99	12.63	9.47	7.20	6.63	5.94	2/1/2007
Nuveen Lifecycle 2020 R6	0.53	5.29	5.96	9.04	9.04	6.47	6.17	5.71	1/17/2007
<b>Vanguard Target Retirement 2025 Fund</b>	0.08	6.65	7.33	11.74	10.43	7.48	6.89	6.86	10/27/2003
Target Retirement 2025 Composite Index	—	6.71	7.18	11.69	10.66	7.76	7.18	—	—
Lipper Target 2025 Funds Average	—	5.36	6.46	9.94	8.86	6.29	5.77	—	—
Fidelity Freedom 2025	0.59	6.97	8.54	11.25	10.25	7.56	6.78	6.60	11/6/2003
Fidelity Freedom Index 2025 Investor	0.12	6.18	7.44	11.06	9.75	6.76	6.59	7.51	10/2/2009
T. Rowe Price Retirement 2025	0.54	5.14	6.22	9.87	10.27	8.12	7.30	7.25	2/27/2004
American Funds 2025 Trgt Date Retire R5	0.36	5.98	8.07	12.62	10.16	7.72	7.28	6.57	2/1/2007
JPMorgan SmartRetirement 2025 R5	0.47	5.29	6.30	9.66	9.54	6.67	5.94	5.88	7/31/2007
JPMorgan SmartRetirement® Blend 2025 R5	0.48	5.38	6.48	10.62	9.67	6.76	6.18	7.02	7/2/2012
Nuveen Lifecycle 2025 R6	0.55	5.85	6.17	9.36	9.87	7.30	6.71	6.00	1/17/2007
State Street Target Retirement 2025 K	0.22	5.29	6.52	10.82	9.71	7.41	7.05	6.89	9/30/2014

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Sources: Vanguard and Morningstar.



# Absolute performance results *(continued)*

Average annualized return  
as of June 30, 2025

Fund	Expense ratio	3 months	Year- to-date	1 year	3 years	5 years	10 years	Since inception	Inception date
<b>Vanguard Target Retirement 2030 Fund</b>	0.08	7.67	7.89	12.61	11.64	8.58	7.52	7.02	6/7/2006
Target Retirement 2030 Composite Index	—	7.74	7.73	12.58	11.90	8.86	7.82	—	—
Lipper Target 2030 Funds Average	—	6.13	6.89	10.62	10.11	7.60	6.57	—	—
Fidelity Freedom 2030	0.61	7.79	9.07	11.97	11.36	8.70	7.59	7.13	10/17/1996
Fidelity Freedom Index 2030 Investor	0.12	6.87	7.82	11.79	10.75	7.82	7.41	8.21	10/2/2009
T. Rowe Price Retirement 2030	0.56	5.88	6.75	10.52	11.46	9.11	7.93	8.96	9/30/2002
American Funds 2030 Trgt Date Retire R5	0.38	7.58	8.63	13.48	11.78	9.00	8.18	7.28	2/1/2007
JPMorgan SmartRetirement 2030 R5	0.47	6.59	7.11	10.65	11.15	8.16	6.79	6.74	5/15/2006
JPMorgan SmartRetirement® Blend 2030 R5	0.45	6.66	7.40	11.79	11.29	8.25	7.07	7.94	7/2/2012
Nuveen Lifecycle 2030 R6	0.57	6.65	6.54	9.92	11.00	8.29	7.32	6.31	1/17/2007
BlackRock Lifepath Index 2030 K	0.13	5.97	7.03	11.24	10.17	7.67	7.01	7.07	5/31/2011
State Street Target Retirement 2030 K	0.19	7.12	8.03	12.43	11.44	8.39	7.81	7.62	9/30/2014
<b>Vanguard Target Retirement 2035 Fund</b>	0.08	8.38	8.42	13.41	12.73	9.67	8.13	7.75	10/27/2003
Target Retirement 2035 Composite Index	—	8.47	8.22	13.32	12.97	9.94	8.43	—	—
Lipper Target 2035 Funds Average	—	7.46	7.63	11.76	11.93	9.23	7.58	—	—
Fidelity Freedom 2035	0.64	8.85	9.68	12.95	13.29	10.65	8.64	7.57	11/6/2003
Fidelity Freedom Index 2035 Investor	0.12	7.87	8.38	12.81	12.54	9.68	8.47	9.12	10/2/2009
T. Rowe Price Retirement 2035	0.59	6.80	7.40	11.30	12.84	10.16	8.54	8.01	2/27/2004
American Funds 2035 Trgt Date Retire R5	0.39	8.96	9.25	14.62	13.69	10.59	9.30	7.90	2/1/2007
JPMorgan SmartRetirement 2035 R5	0.51	7.58	7.85	11.76	12.85	10.06	7.74	7.01	7/31/2007
JPMorgan SmartRetirement® Blend 2035 R5	0.47	7.76	7.99	12.76	12.79	9.85	7.90	8.77	7/2/2012
Nuveen Lifecycle 2035 R6	0.60	7.52	7.02	10.47	12.35	9.39	7.98	6.73	1/17/2007
BlackRock Lifepath Index 2035 K	0.13	7.23	7.74	12.46	11.84	9.31	7.93	7.82	5/31/2011
State Street Target Retirement 2035 K	0.17	8.27	8.82	13.33	12.37	9.12	8.26	8.06	9/30/2014
<b>Vanguard Target Retirement 2040 Fund</b>	0.08	9.09	8.86	14.12	13.80	10.74	8.73	7.80	6/7/2006
Target Retirement 2040 Composite Index	—	9.18	8.68	14.02	14.03	11.01	9.03	—	—
Lipper Target 2040 Funds Average	—	8.87	8.36	12.85	13.55	10.54	8.19	—	—
Fidelity Freedom 2040	0.66	10.48	10.76	14.42	15.45	12.38	9.43	5.74	9/6/2000
Fidelity Freedom Index 2040 Investor	0.12	9.39	9.44	14.39	14.55	11.36	9.26	9.66	10/2/2009
T. Rowe Price Retirement 2040	0.60	7.49	7.92	11.95	14.00	11.08	9.06	9.58	9/30/2002
American Funds 2040 Trgt Date Retire R5	0.41	11.13	10.27	16.06	15.72	11.89	10.02	8.32	2/1/2007
JPMorgan SmartRetirement 2040 R5	0.51	8.48	8.38	12.45	14.07	11.26	8.40	7.74	5/15/2006
JPMorgan SmartRetirement® Blend 2040 R5	0.48	8.64	8.50	13.54	13.97	11.02	8.55	9.38	7/2/2012
Nuveen Lifecycle 2040 R6	0.63	8.82	7.64	11.20	13.84	10.66	8.68	7.23	1/17/2007
BlackRock Lifepath Index 2040 K	0.13	8.37	8.37	13.59	13.46	10.85	8.76	8.51	5/31/2011
State Street Target Retirement 2040 K	0.15	9.00	9.23	13.91	13.14	9.86	8.62	8.42	9/30/2014

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Sources: Vanguard and Morningstar.



# Absolute performance results *(continued)*

Average annualized return  
as of June 30, 2025

Fund	Expense ratio	3 months	Year- to-date	1 year	3 years	5 years	10 years	Since inception	Inception date
<b>Vanguard Target Retirement 2045 Fund</b>	0.08	9.75	9.30	14.78	14.84	11.80	9.27	8.49	10/27/2003
Target Retirement 2045 Composite Index	—	9.87	9.11	14.71	15.08	12.08	9.56	—	—
Lipper Target 2045 Funds Average	—	9.63	8.83	13.53	14.41	11.39	8.70	—	—
Fidelity Freedom 2045	0.68	11.45	11.53	15.30	16.16	12.80	9.62	7.57	6/1/2006
Fidelity Freedom Index 2045 Investor	0.12	10.25	10.04	15.22	15.23	11.74	9.45	9.82	10/2/2009
T. Rowe Price Retirement 2045	0.61	8.07	8.31	12.50	14.81	11.79	9.43	8.59	5/31/2005
American Funds 2045 Trgt Date Retire R5	0.42	11.82	10.56	16.44	16.26	12.16	10.23	8.43	2/1/2007
JPMorgan SmartRetirement 2045 R5	0.52	9.10	8.70	12.88	14.93	12.20	8.82	7.73	7/31/2007
JPMorgan SmartRetirement® Blend 2045 R5	0.46	9.30	8.86	14.07	14.86	11.96	8.94	9.67	7/2/2012
Nuveen Lifecycle 2045 R6	0.65	9.74	8.10	11.71	14.83	11.65	9.20	7.23	11/30/2007
BlackRock Lifepath Index 2045 K	0.14	9.37	8.78	14.52	14.94	12.16	9.45	9.07	5/31/2011
State Street Target Retirement 2045 K	0.16	9.57	9.57	14.49	13.82	10.51	8.96	8.72	9/30/2014
<b>Vanguard Target Retirement 2050 Fund</b>	0.08	10.55	9.93	15.57	15.59	12.24	9.48	8.21	6/7/2006
Target Retirement 2050 Composite Index	—	10.76	9.78	15.60	15.89	12.56	9.80	—	—
Lipper Target 2050 Funds Average	—	9.96	8.95	13.68	14.83	11.69	8.81	—	—
Fidelity Freedom 2050	0.68	11.40	11.40	15.24	16.16	12.78	9.62	7.46	6/1/2006
Fidelity Freedom Index 2050 Investor	0.12	10.27	10.06	15.23	15.24	11.74	9.44	9.85	10/2/2009
T. Rowe Price Retirement 2050	0.63	8.28	8.45	12.68	15.08	11.93	9.50	7.97	12/29/2006
American Funds 2050 Trgt Date Retire R5	0.42	12.13	10.58	16.45	16.56	12.21	10.30	8.47	2/1/2007
JPMorgan SmartRetirement 2050 R5	0.53	9.50	8.92	13.15	15.30	12.38	8.90	7.79	7/31/2007
JPMorgan SmartRetirement® Blend 2050 R5	0.45	9.71	9.14	14.48	15.22	12.16	9.07	9.77	7/2/2012
Nuveen Lifecycle 2050 R6	0.66	10.20	8.31	11.98	15.28	11.95	9.38	7.32	11/30/2007
BlackRock Lifepath Index 2050 K	0.14	10.43	9.38	15.54	16.03	13.02	9.87	9.44	5/31/2011
State Street Target Retirement 2050 K	0.16	10.14	9.92	15.08	14.47	10.99	9.16	8.89	9/30/2014
<b>Vanguard Target Retirement 2055 Fund</b>	0.08	10.54	9.93	15.58	15.59	12.24	9.47	10.45	8/18/2010
Target Retirement 2055 Composite Index	—	10.76	9.78	15.60	15.89	12.56	9.80	—	—
Lipper Target 2055+ Funds Average	—	10.14	9.10	13.93	15.08	11.90	8.99	—	—
Fidelity Freedom 2055	0.68	11.43	11.43	15.29	16.17	12.77	9.62	9.31	6/1/2011
Fidelity Freedom Index 2055 Investor	0.12	10.22	10.02	15.22	15.25	11.74	9.45	9.08	6/1/2011
T. Rowe Price Retirement 2055	0.64	8.33	8.50	12.73	15.09	11.94	9.48	7.96	12/29/2006
American Funds 2055 Trgt Date Retire R5	0.44	12.65	10.65	16.42	16.84	12.19	10.28	10.88	2/1/2010
JPMorgan SmartRetirement 2055 R5	0.53	9.47	8.90	13.15	15.28	12.38	8.92	9.95	1/31/2012
JPMorgan SmartRetirement® Blend 2055 R5	0.47	9.68	9.07	14.42	15.21	12.18	9.06	9.73	7/2/2012
Nuveen Lifecycle 2055 R6	0.67	10.37	8.39	12.11	15.45	12.10	9.48	9.35	4/29/2011
BlackRock Lifepath Index 2055 K	0.14	11.01	9.72	16.13	16.50	13.29	10.01	9.62	5/31/2011
State Street Target Retirement 2055 K	0.17	10.33	10.05	15.28	14.58	11.04	9.19	8.92	9/30/2014

The performance data shown represent past performance. Past performance is no guarantee of future results. Investment returns and principal value will fluctuate, so investors' shares, when sold, may be worth more or less than their original cost. Current performance may be lower or higher than the performance data cited. For performance data current to the most recent month-end, visit our website at [vanguard.com/performance](http://vanguard.com/performance). Some funds assess purchase, redemption, and/or account maintenance fees. The performance data shown do not reflect deduction of these fees. If they did, performance would be lower. Details on these fees and adjusted performance figures can be found in the fund detail section.

Sources: Vanguard and Morningstar.



# Absolute performance results *(continued)*

				Average annualized return as of June 30, 2025					
Fund	Expense ratio	3 months	Year- to-date	1 year	3 years	5 years	10 years	Since inception	Inception date
Vanguard Target Retirement 2060 Fund	0.08	10.56	9.93	15.57	15.59	12.24	9.47	10.29	1/19/2012
Target Retirement 2060 Composite Index	—	10.76	9.78	15.60	15.89	12.56	9.80	—	—
Lipper Target 2060+ Funds Average	—	10.49	9.42	14.25	15.39	12.19	—	—	—
Fidelity Freedom 2060	0.68	11.47	11.47	15.31	16.19	12.79	9.61	9.47	8/5/2014
Fidelity Freedom Index 2060 Investor	0.12	10.27	10.02	15.24	15.24	11.74	9.44	9.12	8/5/2014
T. Rowe Price Retirement 2060	0.64	8.37	8.50	12.70	15.10	11.93	9.48	8.97	6/23/2014
American Funds 2060 Trgt Date Retire R5	0.44	12.81	10.60	16.47	16.92	12.18	10.27	10.10	3/27/2015
JPMorgan SmartRetirement 2060 R5	0.56	9.48	8.95	13.19	15.33	12.40	—	10.07	8/31/2016
JPMorgan SmartRetirement® Blend 2060 R5	0.51	9.77	9.17	14.51	15.27	12.21	—	9.87	8/31/2016
Nuveen Lifecycle 2060 R6	0.69	10.49	8.51	12.22	15.62	12.26	9.59	9.45	9/26/2014
BlackRock Lifepath Index 2060 K	0.14	11.07	9.74	16.13	16.51	13.28	—	11.86	2/29/2016
State Street Target Retirement 2060 K	0.19	10.35	10.07	15.35	14.57	11.06	9.19	8.91	9/30/2014
Vanguard Target Retirement 2065 Fund	0.08	10.53	9.93	15.55	15.59	12.24	—	9.94	7/12/2017
Target Retirement 2065 Composite Index	—	10.76	9.78	15.60	15.89	12.56	9.80	—	—
Lipper Target 2060+ Funds Average	—	10.49	9.42	14.25	15.39	12.19	—	—	—
Fidelity Freedom 2065	0.68	11.45	11.45	15.31	16.18	12.77	—	11.05	6/28/2019
Fidelity Freedom Index 2065 Investor	0.12	10.25	10.02	15.22	15.22	11.72	—	10.32	6/28/2019
T. Rowe Price Retirement 2065	0.64	8.31	8.48	12.70	15.06	—	—	10.28	10/13/2020
American Funds 2065 Trgt Date Retire R5	0.44	12.78	10.58	16.44	16.92	12.19	—	15.67	3/27/2020
JPMorgan SmartRetirement® Blend 2065 R5	2.79	9.50	8.96	13.98	—	—	—	17.34	11/1/2022
Nuveen Lifecycle 2065 R6	0.96	10.62	8.58	12.28	15.73	—	—	11.29	9/30/2020
BlackRock Lifepath Index 2065 K	0.14	11.07	9.75	16.15	16.54	13.29	—	11.37	10/30/2019
State Street Target Retirement 2065 K	0.24	10.30	9.86	15.13	14.53	10.86	—	13.74	3/30/2020
Vanguard Target Retirement 2070 Fund	0.08	10.55	9.93	15.54	15.62	—	—	15.20	6/28/2022
Target Retirement 2070 Composite Index	—	10.76	9.78	15.60	15.89	12.56	9.80	—	—
Lipper Target 2060+ Funds Average	—	10.49	9.42	14.25	15.39	12.19	—	—	—
Fidelity Freedom 2070	0.68	11.28	11.17	15.01	—	—	—	14.93	6/28/2024
Fidelity Freedom Index 2070 Investor	0.12	10.22	10.11	15.30	—	—	—	15.22	6/28/2024
T. Rowe Price Retirement 2070	0.64	—	—	—	—	—	—	2.90	6/18/2025
American Funds 2070 Trgt Date Retire R5	0.44	12.83	10.65	16.58	—	—	—	18.19	5/3/2024
BlackRock Lifepath® Index 2070 K	0.33	11.04	10.48	—	—	—	—	9.64	9/24/2024
State Street Target Retirement 2070 K	0.32	10.31	12.30	—	—	—	—	12.30	12/31/2024

The performance data shown represent past performance. Past performance is no guarantee of future results. Investment returns and principal value will fluctuate, so investors' shares, when sold, may be worth more or less than their original cost. Current performance may be lower or higher than the performance data cited. For performance data current to the most recent month-end, visit our website at [vanguard.com/performance](https://www.vanguard.com/performance). Some funds assess purchase, redemption, and/or account maintenance fees. The performance data shown do not reflect deduction of these fees. If they did, performance would be lower. Details on these fees and adjusted performance figures can be found in the fund detail section.

Sources: Vanguard and Morningstar.



# Standardized returns

Average annualized return  
as of June 30, 2025

	Expense ratio	3 months	Year- to-date	1 year	3 years	5 years	10 years	Since inception	Inception date
Vanguard Total Stock Market Index Fund Institutional Shares	0.03	10.99	5.64	15.10	19.03	15.86	12.91	9.16	7/7/1997
Vanguard Total International Stock Index Fund Institutional Shares	0.06	12.11	18.29	18.33	13.84	10.31	6.31	5.95	11/29/2010
Vanguard Total Bond Market Index Fund Institutional Shares	0.025	1.30	4.10	6.05	2.61	-0.73	1.77	4.24	9/18/1995
Vanguard Total International Bond Index Fund Institutional Shares	0.06	2.02	1.86	6.15	3.60	0.02	2.22	2.48	5/31/2013
Vanguard Short-Term Inflation-Protected Securities Index Fund Institutional Shares	0.03	0.98	4.05	6.55	3.98	3.76	2.86	2.14	10/17/2012

The performance data shown represent past performance. Past performance is no guarantee of future results. Investment returns and principal value will fluctuate, so investors' shares, when sold, may be worth more or less than their original cost. Current performance may be lower or higher than the performance data cited. For performance data current to the most recent month-end, visit our website at [vanguard.com/performance](https://www.vanguard.com/performance). Some funds assess purchase, redemption, and/or account maintenance fees. The performance data shown do not reflect deduction of these fees. If they did, performance would be lower. Details on these fees and adjusted performance figures can be found in the fund detail section.

Sources: Vanguard and Morningstar.



# Notes

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# Important information

**For more information, visit [institutional.vanguard.com](https://institutional.vanguard.com) or call 800-523-1036 for Vanguard funds and 800-992-8327 for non-Vanguard funds offered through Vanguard Brokerage Services® to obtain a prospectus, or if available, a summary prospectus. Visit our website, call 866-499-8473, or contact your broker to obtain a prospectus for Vanguard ETF® Shares. Investment objectives, risks, charges, expenses, and other important information are contained in the prospectus; read and consider it carefully before investing.**

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Investments in Target Retirement Funds and Trusts are subject to the risks of their underlying funds. The year in the fund or trust name refers to the approximate year (the target date) when an investor in the fund or trust would retire and leave the workforce. The fund/trust will gradually shift its emphasis from more aggressive investments to more conservative ones based on its target date. The Income Trust/Fund and Income and Growth Trust have fixed investment allocations and are designed for investors who are already retired. An investment in a Target Retirement Fund or Trust is not guaranteed at any time, including on or after the target date.

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The Vanguard Capital Markets Model<sup>®</sup> is a proprietary financial simulation tool developed and maintained by Vanguard's primary investment research and advice teams. The model forecasts distributions of future returns for a wide array of broad asset classes. Those asset classes include U.S. and international equity markets, several maturities of the U.S. Treasury and corporate fixed income markets, international fixed income markets, U.S. money markets, commodities, and certain alternative investment strategies. The theoretical and empirical foundation for the Vanguard Capital Markets Model is that the returns of various asset classes reflect the compensation investors require for bearing different types of systematic risk (beta). At the core of the model are estimates of the dynamic statistical relationship between risk factors and asset returns, obtained from statistical analysis based on available monthly financial and economic Sources: as early as 1960. Using a system of estimated equations, the model then applies a Monte Carlo simulation method to project the estimated interrelationships among risk factors and asset classes as well as uncertainty and randomness over time. The model generates a large set of simulated outcomes for each asset class over several time horizons. Forecasts are obtained by computing measures of central tendency in these simulations. Results produced by the tool will vary with each use and over time.

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**Target Income Composite Index:** An index derived by applying the fund's target asset allocation to the results of the following benchmarks: for international stocks of developed markets, the MSCI EAFE Index through December 15, 2010, the MSCI ACWI ex USA IMI Index through June 2, 2013, and the FTSE Global All Cap ex U.S. Index thereafter; for emerging-market stocks, the Select Emerging Markets Index through August 23, 2006, the MSCI Emerging Markets Index through December 15, 2010, the MSCI ACWI ex USA IMI Index through June 2, 2013, and the FTSE Global All Cap ex U.S. Index thereafter; for U.S. bonds, the Bloomberg U.S. Aggregate Bond Index through December 31, 2009, and the Bloomberg U.S. Aggregate Float Adjusted Index thereafter, as well as the Bloomberg U.S. Treasury Inflation-Protected Securities Index through June 2, 2013, and the Bloomberg U.S. Treasury Inflation-Protected Securities (TIPS) 0-5 Year Index thereafter; for short-term reserves, the Citigroup Three-Month Treasury Bill Index through June 2, 2013; for international bonds, the Bloomberg Global Aggregate ex-USD Float Adjusted RIC Capped Index; and for U.S. stocks, the Dow Jones U.S. Total Stock Market Index (formerly known as the Dow Jones Wilshire 5000 Index) through April 22, 2005, the MSCI U.S. Broad Market Index through June 2, 2013, and the CRSP U.S. Total Market Index thereafter. International stock benchmark returns are adjusted for withholding taxes.

**Target 2015 Composite Index:** An index derived by applying the fund's target asset allocation to the results of the following benchmarks: for international stocks of developed markets, the MSCI EAFE Index through December 15, 2010, the MSCI ACWI ex USA IMI Index through June 2, 2013, and the FTSE Global All Cap ex U.S. Index thereafter; for emerging-market stocks, the Select Emerging Markets Index through August 23, 2006, the MSCI Emerging Markets Index through December 15, 2010, the MSCI ACWI ex USA IMI Index through June 2, 2013, and the FTSE Global All Cap ex U.S. Index thereafter; for U.S. bonds, the Bloomberg U.S. Aggregate Bond Index through December 31, 2009, and the Bloomberg U.S. Aggregate Float Adjusted Index thereafter, as well as the Bloomberg U.S. Treasury Inflation-Protected Securities Index through June 2, 2013, and the Bloomberg U.S. Treasury Inflation-Protected Securities (TIPS) 0-5 Year Index thereafter; for international bonds, the Bloomberg Global Aggregate ex-USD Float Adjusted RIC Capped Index; and for U.S. stocks, the Dow Jones U.S. Total Stock Market Index (formerly known as the Dow Jones Wilshire 5000 Index) through April 22, 2005, the MSCI U.S. Broad Market Index through June 2, 2013, and the CRSP U.S. Total Market Index thereafter.

**Target 2020, 2030, 2040, and 2050 Composite Indexes:** Indexes derived by applying the fund's target asset allocation to the results of the following benchmarks: for international stocks of developed markets, the MSCI EAFE Index through December 15, 2010, the MSCI ACWI ex USA IMI Index through June 2, 2013, and the FTSE Global All Cap ex U.S. Index thereafter; for emerging-market stocks, the Select Emerging Markets Index through August 23, 2006, the MSCI Emerging Markets Index through December 15, 2010, the MSCI ACWI ex USA IMI Index through June 2, 2013, and the FTSE Global All Cap ex U.S. Index thereafter; for U.S. bonds, the Bloomberg U.S. Aggregate Bond Index through December 31, 2009, and the Bloomberg U.S. Aggregate Float Adjusted Index thereafter; for international bonds, the Bloomberg Global Aggregate ex-USD Float Adjusted RIC Capped Index; and for U.S. stocks, the MSCI U.S. Broad Market Index through June 2, 2013, and the CRSP U.S. Total Market Index thereafter. International stock benchmark returns are adjusted for withholding taxes.

**Target 2025, 2035, and 2045 Composite Indexes:** Indexes derived by applying the fund's target asset allocation to the results of the following benchmarks: for international stocks of developed markets, the MSCI EAFE Index through December 15, 2010, the MSCI ACWI ex USA IMI Index through June 2, 2013, and the FTSE Global All Cap ex U.S. Index thereafter; for emerging-market stocks, the Select Emerging Markets Index through August 23, 2006, the MSCI Emerging Markets Index through December 15, 2010, the MSCI ACWI ex USA IMI Index through June 2, 2013, and the FTSE Global All Cap ex U.S. Index thereafter; for U.S. bonds, the Bloomberg U.S. Aggregate Bond Index through December 31, 2009, and the Bloomberg U.S. Aggregate Float Adjusted Index thereafter; for international bonds, the Bloomberg Global Aggregate ex-USD Float Adjusted RIC Capped Index; and for U.S. stocks, the Dow Jones U.S. Total Stock Market Index (formerly known as the Dow Jones Wilshire 5000 Index) through April 22, 2005, the MSCI U.S. Broad Market Index through June 2, 2013, and the CRSP U.S. Total Market Index thereafter. International stock benchmark returns are adjusted for withholding taxes.

# Important information

**Target 2055 Composite Index:** An index derived by applying the fund's target asset allocation to the results of the following benchmarks: for international stocks of developed markets, the MSCI EAFE Index through December 15, 2010, the MSCI ACWI ex USA IMI Index through June 2, 2013, and the FTSE Global All Cap ex U.S. Index thereafter; for emerging-market stocks, the MSCI Emerging Markets Index through December 15, 2010, the MSCI ACWI ex USA IMI Index through June 2, 2013, and the FTSE Global All Cap ex U.S. Index thereafter; for U.S. bonds, the Bloomberg U.S. Aggregate Float Adjusted Index; for international bonds, the Bloomberg Global Aggregate ex-USD Float Adjusted RIC Capped Index beginning June 3, 2013; and for U.S. stocks, the MSCI U.S. Broad Market Index through June 2, 2013, and the CRSP U.S. Total Market Index thereafter. International stock benchmark returns are adjusted for withholding taxes.

**Target 2060 Composite Index:** An index derived by applying the fund's target asset allocation to the results of the following benchmarks: for international stocks of developed markets, the MSCI ACWI ex USA IMI Index through June 2, 2013, and the FTSE Global All Cap ex U.S. Index thereafter; for emerging market stocks, the MSCI ACWI ex USA IMI Index through June 2, 2013, and the FTSE Global All Cap ex U.S. Index thereafter; for U.S. bonds, the Bloomberg U.S. Aggregate Float Adjusted Index; for international bonds, the Bloomberg Global Aggregate ex-USD Float Adjusted RIC Capped Index beginning June 3, 2013; and for U.S. stocks, the MSCI U.S. Broad Market Index through June 2, 2013, and the CRSP U.S. Total Market Index thereafter. International stock benchmark returns are adjusted for withholding taxes.

**Target 2065 Composite Index:** An index derived by applying the fund's target asset allocation to the results of the following benchmarks: the FTSE Global All Cap ex U.S. Index for international stocks, the Bloomberg U.S. Aggregate Float Adjusted Index for U.S. bonds, the Bloomberg Global Aggregate ex-USD Float Adjusted RIC Capped Index for international bonds, and the CRSP U.S. Total Market Index for U.S. stocks. International stock benchmark returns are adjusted for withholding taxes.

**Target 2070 Composite Index:** An index derived by applying the fund's target asset allocation to the results of the following benchmarks: the FTSE Global All Cap ex US Index for international stocks, the Bloomberg U.S. Aggregate Float Adjusted Index for U.S. bonds, the Bloomberg Global Aggregate ex-USD Float Adjusted RIC Capped Index Hedged for international bonds, and the CRSP US Total Market Index for U.S. stocks. International stock benchmark returns are adjusted for withholding taxes.

Product guarantees are subject to the claims-paying ability of the issuing insurance company.

Deferred variable annuities are long-term vehicles designed for retirement purposes and contain underlying investment portfolios that are subject to investment risk, including possible loss of principal.

Immediate variable annuities contain underlying investment portfolios that are subject to investment risk, including possible loss of principal.

The Vanguard Life-Cycle Investing Model (VLCM) is designed to identify the product design that represents the best investment solution for a theoretical, representative investor who uses the target-date funds to accumulate wealth for retirement. The VLCM generates an optimal custom glide path for a participant population by assessing the trade-offs between the expected (median) wealth accumulation and the uncertainty about that wealth outcome, for thousands of potential glide paths. The VLCM does this by combining two set of inputs: the asset class return projections from the VCMM and the average characteristics of the participant population. Along with the optimal custom glide path, the VLCM generates a wide range of portfolio metrics such as a distribution of potential wealth accumulation outcomes, risk and return distributions for the asset allocation, and probability of ruin, such as the odds of participants depleting their wealth by age 95.

The VLCM inherits the distributional forecasting framework of the VCMM and applies to it the calculation of wealth outcomes from any given portfolio.

The most impactful drivers of glide path changes within the VLCM tend to be risk aversion, the presence of a defined benefit plan, retirement age, savings rate and starting compensation. The VLCM chooses among glide paths by scoring them according to the utility function described and choosing the one with the highest score. The VLCM does not optimize the levels of spending and contribution rates. Rather, the VLCM optimizes the glide path for a given customizable level of spending, growth rate of contributions and other plan sponsor characteristics.

A full dynamic stochastic life-cycle model, including optimization of a savings strategy and dynamic spending in retirement is beyond the scope of this framework.

## ACKNOWLEDGMENTS

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