

# Vanguard Target Retirement Funds and Trusts

Quarterly Review | December 31, 2025

# Contents



## Quarterly spotlight

Quarterly perspective	3
Introducing Vanguard Target Retirement Lifetime Income Trusts	5
About the SAAC	12



## TDF industry and market overview

Industry growth and market share	14
Market environment	15



## Vanguard fund construction and performance

Purposeful design and evolution	17
Vanguard fund performance and attribution	18



## Competitor fund construction and performance

Beyond the glide path	24
12-month return attribution	26



## Appendix

Absolute performance results	30
Standardized returns	34



## Quarterly perspective

## 2025 year in review

**Brian M. Miller, CFA, CFP**  
Head of Multi-Asset Product Management



### Market and Target Retirement Fund series performance

Equity markets maintained their upward momentum in the fourth quarter, ending the year near record highs despite growing macroeconomic uncertainty from the government shutdown, weaker labor data, and falling consumer confidence. Two late-quarter rate cuts added support, bolstering risk assets.

Broadly diversified, well-balanced investors performed well this quarter in this market environment. U.S. equities returned 2.45%, while non-U.S. equities gained 4.85%, reversing prior trends as international markets led for 2025. Fixed income also delivered positive results, with U.S. bonds returning 1.07% and hedged non-U.S. bonds returning 0.48%.

Aligned with these market dynamics, Vanguard Target Retirement Funds sustained strong performance across the glide path, with most vintages ranking in the top quartile of their respective peer groups. Benchmark-relative results met expectations and benefited from rebalancing enhancements introduced at the end of 2024. These changes have helped reduce forced trading and transaction costs, improving absolute returns and reinforcing the effectiveness of the new approach.

### Purposeful evolution

This quarter, we introduced Vanguard Target Retirement Lifetime Income Trusts, our latest innovation in the target-date space. This edition of the [Quarterly Spotlight](#) explains the rationale for adding a guaranteed-income component within target-date funds, the client needs that this offering seeks to address, and its role in strengthening retirement security.

As the defined contribution landscape evolves, we remain committed to enhancing our Target Retirement solutions to best meet client needs and help investors achieve retirement success. We value our role as a trusted partner and look forward to delivering for investors again in 2026.

### Performance of key Vanguard index funds

Fund name (inception date)	1Q 2025	2Q 2025	3Q 2025	4Q 2025	1-year
Vanguard Total Stock Market Index Fund (07/07/1997)	-4.83%	10.99%	8.24%	2.44%	17.13%
Vanguard Total International Stock Index Fund (11/29/2010)	5.51%	12.11%	6.96%	4.51%	32.23%
Vanguard Total Bond Market Index Fund (09/18/1995)	2.77%	1.30%	1.93%	0.99%	7.17%
Vanguard Total International Bond Index Fund (05/31/2013)	-0.16%	2.02%	0.62%	0.51%	3.02%
Vanguard Short-Term Inflation-Protected Securities Index Fund (10/17/2012)	3.04%	0.98%	1.54%	0.39%	6.06%

Source of performance figures: Vanguard, Institutional share class, as of December 31, 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 [vanguard.com](https://www.vanguard.com). Standard performance of the funds can be located on page 34 of the *Quarterly Review*.



## Quarterly perspective

# Research and thought leadership

## Quarterly spotlight

### [\*TDF Glide-Path Essentials: Setting the Right Starting Point\*](#)

We outline the considerations behind our decision to maintain a 90% equity weighting for our glide-path starting point.

### [\*The Case for International Equities in Target-Date Funds\*](#)

We emphasize the disadvantage of chasing outperformance at the expense of portfolio diversification for target-date funds (TDFs).

### [\*Portfolio Rebalancing: Navigating Volatility in Vanguard Target Retirement Funds\*](#)

We share the subsequent outcomes from when our target-date franchise underwent its first major rebalancing activity since the rollout of our refreshed policies in late 2024.

### [\*TDF Glide-Path Essentials: Evaluating Fixed Income Exposure\*](#)

We examine the impact of disaggregating fixed income exposure within the TDFs and discuss the rationale for maintaining our existing allocation.

## Vanguard viewpoints

### [\*Choice of Equity Landing Points Can Benefit Target-Date Fund Investors\*](#)

We analyze how for participants whose circumstances and risk tolerance allow it, the higher-equity final landing point (50%) of Vanguard Target Retirement Income and Growth Trust (TRIGT) may be more appropriate to meet retirement spending needs.

### [\*Vanguard's Life-Cycle Investing Model \(VLCM\): A General Framework for Goals-Based Investing\*](#)

We present a framework for making asset allocation decisions based on an investor's goals, preferences, and personal circumstances and factoring in the uncertainty of asset returns.

### [\*Mitigating the Impact of Life Events on Retirement Readiness\*](#)

Certain life events during a participant's accumulation phase can throw a wrench into even the most well-thought-out strategy. Our latest research offers insights into how these disruptions affect the retirement outcomes of target-date participants—and what steps they can take to get back on track.

### [\*How America Saves 2025\*](#)

Within the pages of *How America Saves 2025* is the data that sponsors and consultants need to help their participants take the right actions for a more prosperous retirement.

### [\*How America Retires\*](#)

Vanguard's new report spotlights behavioral trends, insights, and plan design best practices to help today's retirees make the life-changing transition from saving their money to spending it.

### [\*Retirement Income Strategies: Best Practices for Plan Sponsors\*](#)

Our latest research finds that taking a comprehensive approach—one that factors in plan design, products, and services—and implementing it with a strong suite of solutions equips both plan sponsors and participants to confidently navigate retirement income.



INTRODUCING

# Vanguard Target Retirement Lifetime Income Trusts

Longer life expectancies and fewer traditional defined benefit (DB) plans have made retirement security a growing concern. In 2025, more people in the U.S. turned 65 than ever before, and more of these individuals are relying on their defined contribution (DC) plan for sustainable retirement income.<sup>1</sup> With people living longer, it is not unusual for retirement to last 20 to 30 years or more. Many investors are already apprehensive about market downturns, but the risk of outliving their savings is also significant.



While the DC industry has largely settled on best practices for accumulation, there is less clarity on how to best support retirees in the decumulation phase. As participants rely more heavily on DC plans, many are turning to plan sponsors for guidance on how to navigate the complex retirement income puzzle. As shared in [Retirement Income Strategies: Best Practices for Plan Sponsors](#), because individuals enter retirement with diverse circumstances, goals, and levels of support required we believe a holistic approach encompassing best practices in plan design, products, and services can benefit both plan sponsors and their participants (see **Figure 1**).

One area within this spectrum that continues to gain traction is target-date funds (TDFs) with embedded guaranteed-income features. For clients who value or are familiar with guaranteed income, such as those with DB experience, these products can feel like a natural extension of what they already know, now delivered through a DC plan.

Given Vanguard's leadership position in the target-date space, we took note of the heightened interest and sought to develop a new product suite that

increases optionality to address evolving plan and participant needs while preserving the core strengths of our current offering.

### Introducing Target Retirement Lifetime Income Trusts

Vanguard Target Retirement Lifetime Income Trusts are the latest example of this purposeful evolution of our offer. They answer the increasing demand of plan sponsors for a guaranteed-income option within the qualified default investment alternative (QDIA) solution that is directly linked to a trusted target-date series. The new Trusts are designed to:

- Provide a structured approach to guaranteed income while preserving the strengths of the existing Target Retirement series.
- Help participants smoothly transition from saving to spending with more flexibility, supporting the decumulation phase directly through a product solution.
- Effectively balance investment outcomes both for participants who choose to annuitize and for those who do not.

**Figure 1. A holistic approach to retirement income**



Hueler Investment Services, Inc., is a nonaffiliated third party and does not compensate Vanguard. Access to annuities is offered through the Income Solutions® platform and provided on a rollover (out-of-plan) basis. All views expressed by Hueler Investment Services, Inc., are their own. Product guarantees are subject to the claims-paying ability of the issuing company. Income Solutions® is a registered trademark of Hueler Investment Services, Inc., and used under license. United States Patent No. 7,653,560.

Financial Engines is a trademark of Financial Engines, Inc. Financial Engines Advisors LLC, a federally registered investment advisor and wholly owned subsidiary of Financial Engines, Inc., provides all advisory services. Product guarantees are subject to the claims-paying ability of the issuing company.

Source: Vanguard.



In this article, we explore how Target Retirement Lifetime Income Trusts address the growing interest in embedded guaranteed-income solutions, explain the role that these products can play in achieving sustainable income in retirement, and detail how our design—built on the foundational principles of simplicity, balance, flexibility, and trust—can help participants transition from saving to spending with confidence.

## Why target-date strategies with embedded guaranteed income

A combination of trends is driving greater interest among DC plan sponsors for guaranteed-income solutions embedded within a TDF. These trends include a growing population of retirees, longer life expectancies, the decline of DB plans, and expanded regulatory support through legislation, such as the SECURE Act.

As outlined in our research, [From Theory to Practice: Guaranteed Income and Hybrid Annuity Target-Date Funds](#), these new TDF strategies can help reduce adoption barriers and broaden access to guaranteed income within DC plans. They are professionally managed products that shift automatically from growth-oriented, multiasset allocations to income-focused allocations as participants age. For many investors, these products can deliver value by supporting more stable spending across a range of market and longevity outcomes.

TDFs with embedded guaranteed-income features have the potential to offer meaningful benefits, but successful implementation requires careful consideration of several key factors:

- Participants have varied and changing needs related to guaranteed income, and the guaranteed component may not be suitable for everyone. Personalization is important, and participants should have options regarding any irrevocable guarantee.
- Guaranteed solutions can be illiquid and complex, so plan sponsors must provide participants with extensive education and communication to improve financial understanding and support engagement.
- The guaranteed component often carries additional, and sometimes less visible, costs. Understanding the drivers of cost will be essential.

Ultimately, the decision to use TDFs with embedded guaranteed-income features will depend on participants' personal circumstances and plan fiduciaries/plan sponsors to balance these trade-offs.

## Vanguard and TIAA: A powerful combination

A critical part of our research process focused on both the type of guaranteed income we would provide within the new series and the firm we would work with on this piece of the portfolio. After a robust search, we ultimately landed on Teachers Insurance and Annuity Association of America (TIAA) as the best fit for our design and our investors.

TIAA has a strong reputation as a retirement annuity provider, backed by more than 100 years of experience and established relationships. As a mission-driven organization, TIAA shares Vanguard's commitment to improving retirement outcomes. The TIAA Secure Income Account is consistent with our product design principles for Target Retirement Lifetime Income Trusts and enables us to deliver a competitive product quickly and efficiently. Additionally, TIAA has the largest general account of any U.S. life insurer.<sup>2</sup>

### What are TDFs with embedded guaranteed-income features?

They combine traditional target-date strategies with an annuity and are intended to stabilize assets as the participant approaches retirement and provide guaranteed income in retirement. Most have three components:

- **A multiasset allocation**, such as a TDF, to support asset growth.
- **An income-funding strategy** for the guaranteed-income election.
- **An annuity** for guaranteed income.



## What is the TIAA Secure Income Account<sup>3</sup>?

The TIAA Secure Income Account is a deferred fixed annuity designed for the DC market and powered by the strength and consistency of TIAA's General Account. While participants are saving, the TIAA Secure Income Account provides them with guaranteed crediting rates that, over the long term, should be similar to core fixed income yields. It provides the option, but not the obligation, to select lifetime income through TIAA.

Participants may also accrue a TIAA Loyalty Bonus<sup>®</sup>, which can increase annuity payout rates for longer-term contributors compared with those for newer contributors.<sup>4</sup> The TIAA Loyalty Bonus is an exclusive benefit for those who contribute regularly to the TIAA Secure Income Account and is made possible by TIAA's sharing-the-profits approach.<sup>5</sup>

## Target Retirement Lifetime Income Trusts product overview

Target Retirement Lifetime Income Trusts seamlessly blend Vanguard's industry-leading glide-path methodology with an embedded guaranteed-income option. Built on the foundation of our Target Retirement series, this design starts with a world-class accumulation strategy and extends into a thoughtful decumulation solution. Participants will have access to the TIAA Secure Income Account, which serves as the income-funding strategy.

As shown in **Figure 2**, participants have the option, but not the obligation, to convert a portion of their balance in Target Retirement Lifetime Income Trusts to lifetime income via an out-of-plan annuity election.

### How it works

The glide path for Target Retirement Lifetime Income Trusts begins in the accumulation phase, closely mirroring the asset allocation of our industry-leading Target Retirement series. Then, in the transition phase, at around age 55, the Trust starts allocating to the TIAA Secure Income Account, as illustrated in **Figure 2**. At retirement, participants can determine whether, when, and how much of their assets to convert into lifetime income. Target Retirement Lifetime Income Trusts reach a 40% equity landing point at age 72. This provides the highest value for participants who elect the optional guaranteed income while also minimizing differences in expected

outcomes for participants who do not elect guaranteed income.

Participants can choose to annuitize through TIAA, or another annuity provider, up to their full balance within Target Retirement Lifetime Income Trusts, keep their funds as is, take systematic withdrawals, exchange, or roll over into another solution.

## Key principles

When designing Target Retirement Lifetime Income Trusts, we took a deliberate approach informed by what we observed in the marketplace and feedback from plan sponsors and consultants. Through these conversations, we established four foundational principles that we believe set the Trusts apart:

### Simplicity

The Trusts are built on the same core philosophy as our current Target Retirement Funds, promoting a straightforward approach to both accumulation and decumulation through a highly diversified, low-cost solution. Having strategies that are easy to understand is one of our hallmarks. Our goal is to simplify how both saving and spending are supported in retirement.

### Balance

Our design seeks to optimize outcomes for all participants—those who choose lifetime income and those who do not.

### Flexibility

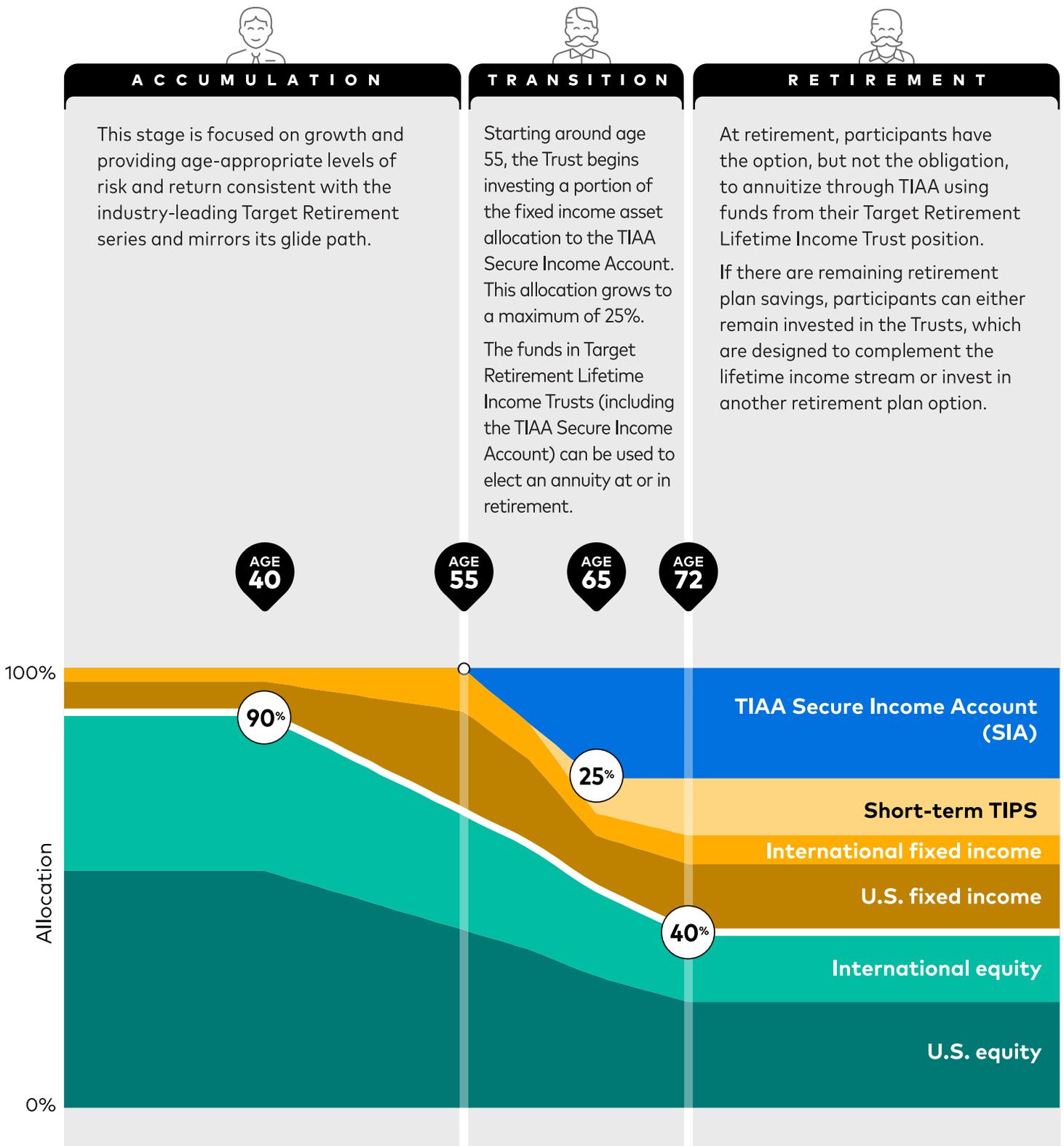
Participants can choose whether, when, how much, and how often to annuitize. Their investment in Target Retirement Lifetime Income Trusts is fully liquid before annuitization.

### Trust

We know change involves risk. Vanguard's collaboration with TIAA brings together trusted brand names with proven track records to increase confidence in a space that may be unfamiliar for many.



**Figure 2. Glide-path design with embedded guaranteed-income stream**



Source: Vanguard.

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



### Participant education and integration

The participant online experience accompanying Target Retirement Lifetime Income Trusts, as depicted in **Figure 3**, will provide valuable information, tools, and resources related to the Trusts that are designed to:

- Educate participants on the features and benefits.
- Model different retirement income scenarios.
- Help participants decide if guaranteed income is best for their financial well-being.

The participant journey is thoughtfully aligned with the glide path of Target Retirement Lifetime Income Trusts for a seamless experience that supports financial well-being. We are focused on delivering the right mix of support and simplicity to help participants make informed decisions.

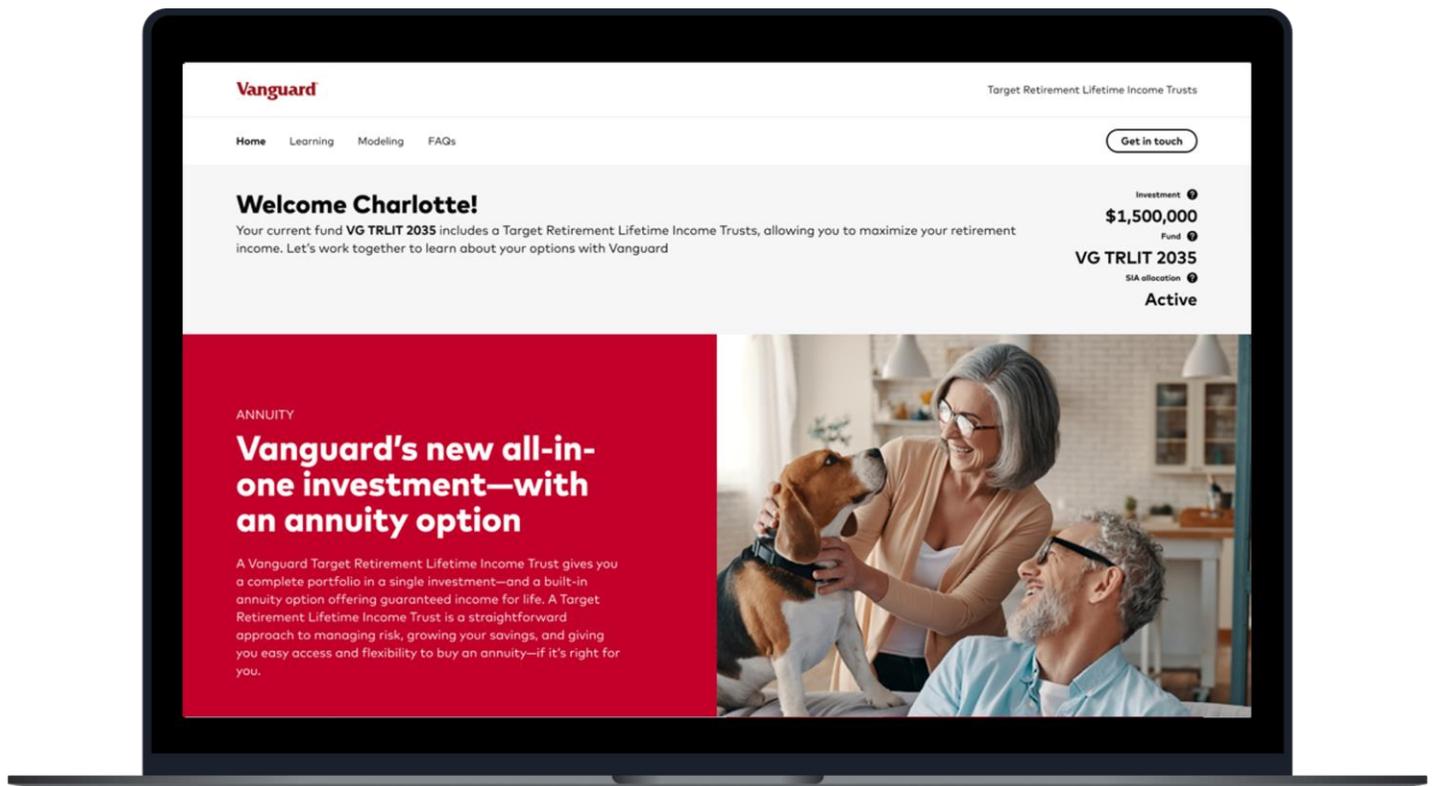
The journey begins with enrollment, when plan sponsors select the Trusts as the QDIA and participants receive communications highlighting the benefits of joining the plan. During accumulation, participants are defaulted into or choose an age-appropriate Trust and continue making contributions

while receiving timely information about its features. At age 55, when the Trusts start allocating to the TIAA Secure Income Account, participants can use the Annuity Estimator to assess their retirement readiness.

After deciding whether, when, and how much of their assets they would like to convert to guaranteed income, retiring (or retired) participants may speak to a TIAA Lifetime Income Consultant to confirm their payment options and facilitate the transaction. As mentioned earlier, annuitization with TIAA is optional, and participants may also consider other income solutions. Those who elect the optional annuitization with TIAA will begin receiving their payments and instructions for accessing their remaining assets, which would remain in the plan within the Trusts.

TIAA handles all account servicing and inquiries regarding annuity payments. Throughout the process, participants can connect with TIAA consultants for personalized support, including answers to questions about guaranteed-income benefits, guidance on

**Figure 3. Landing page for participant online experience**





payment options and how to get started, customized retirement income illustrations, and conversations tailored to those approaching or entering retirement.

## Participant considerations for embedded guaranteed income

We believe participants should ask themselves the following [consideration questions](#) when deciding on any guaranteed-income options:

- **How long do they expect to live?** Guaranteed-income products, such as income annuities, incorporate life expectancy into the payout, which can make their “yield” appear higher than those of pure fixed income investments.
- **How concerned are they with outliving their assets?** Products that provide a guaranteed-income stream for life mitigate the risk that participants will run out of money while they are still alive.
- **How flexible is their financial situation?** Products, such as income annuities, generally involve an irrevocable (and potentially sizable) transfer of assets.

## Conclusion

Target Retirement Lifetime Income Trusts represent a thoughtful evolution of our target-date lineup while preserving the core strengths of our TDFs. This new series is meant to provide plans desiring a more direct link to guaranteed income with a product solution that reflects the collective wisdom of our clients and Vanguard. It will complement, not replace, our existing Target Retirement series.

Target Retirement Lifetime Income Trusts offer a reliable, cost-effective, and highly diversified QDIA that is designed to serve a specific subset of plans and participants: those who want a more structured, product-based approach to accessing optional guaranteed income as part of a comprehensive retirement income program.

<sup>1</sup> *Welcome to the Peak 65 Zone - A New Chapter in America's Retirement Landscape.* Alliance for Lifetime Income, 2024. <https://www.protectedincome.org/peak65/>.

<sup>2</sup> Financial Strength: The TIAA General Account, September 30, 2025. Total assets \$358.8 billion. Total TIAA assets include, in addition to the General Account, separately managed accounts such as the Real Estate Account and TIAA Stable Value.

<sup>3</sup> The TIAA Secure Income Account is a group annuity contract issued by Teachers Insurance and Annuity Association of America (TIAA), New York, NY. TIAA Secure Income Account interest and income benefits include guaranteed amounts plus additional amounts as may be established on a year-by-year basis by the TIAA Board of Trustees. The additional amounts, when declared, remain in effect through the “declaration year,” which begins each March 1 for accumulating annuities and January 1 for payout annuities. Any guarantees under annuities issued by TIAA are subject to TIAA's claims-paying ability. The TIAA Secure Income Account is a guaranteed insurance contract and not an investment for federal securities law purposes. Past performance is no guarantee of future performance. Form series including but not limited to: TIAA-UQDIA-002-K, TIAA-STDFA-001-NUV and related state-specific versions. Not all contracts are available in all states or currently issued.

<sup>4</sup> Results based on averages for retirement dates each month from January 1, 1994, to October 1, 2025, comparing “long-term contributors” versus “new contributors” to highlight the difference in initial income. The long-term contributor represents a participant who has accumulated savings in TIAA Traditional, a similar product to the TIAA Secure Income Account but with a longer track record. The new contributor represents a participant who has accumulated savings outside of TIAA Traditional. The new contributor annuitizes the same dollar amount as a long-term contributor when both participants reach retirement. The new contributor deposits their savings into TIAA Traditional the day before annuity payments begin, when both the new and long-term contributors are age 67. Both select a single life annuity with a 10-year guaranteed period. 382 individual retirement month cohorts were analyzed. The long-term contributor assumes level monthly premiums over the stated investment periods. Percentage represents the average difference in initial income over each of the time periods for a long-term contributor versus a new contributor. Past performance is no guarantee of future results.

<sup>5</sup> Lifetime income payments from the TIAA Secure Income Account may include a TIAA Loyalty Bonus<sup>®</sup> which is discretionary and determined annually. TIAA may share profits with TIAA Secure Income Account owners through higher initial annuity income and further increases in annuity income benefits during retirement. These additional amounts are not guaranteed beyond the period for which they were declared. Participants can annuitize amounts above the full allocation will earn new money rates. NOTE: Converting some or all their savings to income benefits (referred to as “annuitization”) is a permanent decision. Once income benefit payments have begun, the investor is unable to change to another option.



# 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.



### 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

### 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
- Qian Wang**, Ph.D., Chief Economist, Asia-Pacific, Investment Strategy Group
- 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.

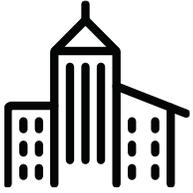
### 2022

- *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.

Source: Vanguard.



# TDF industry and market overview

IN THIS SECTION:

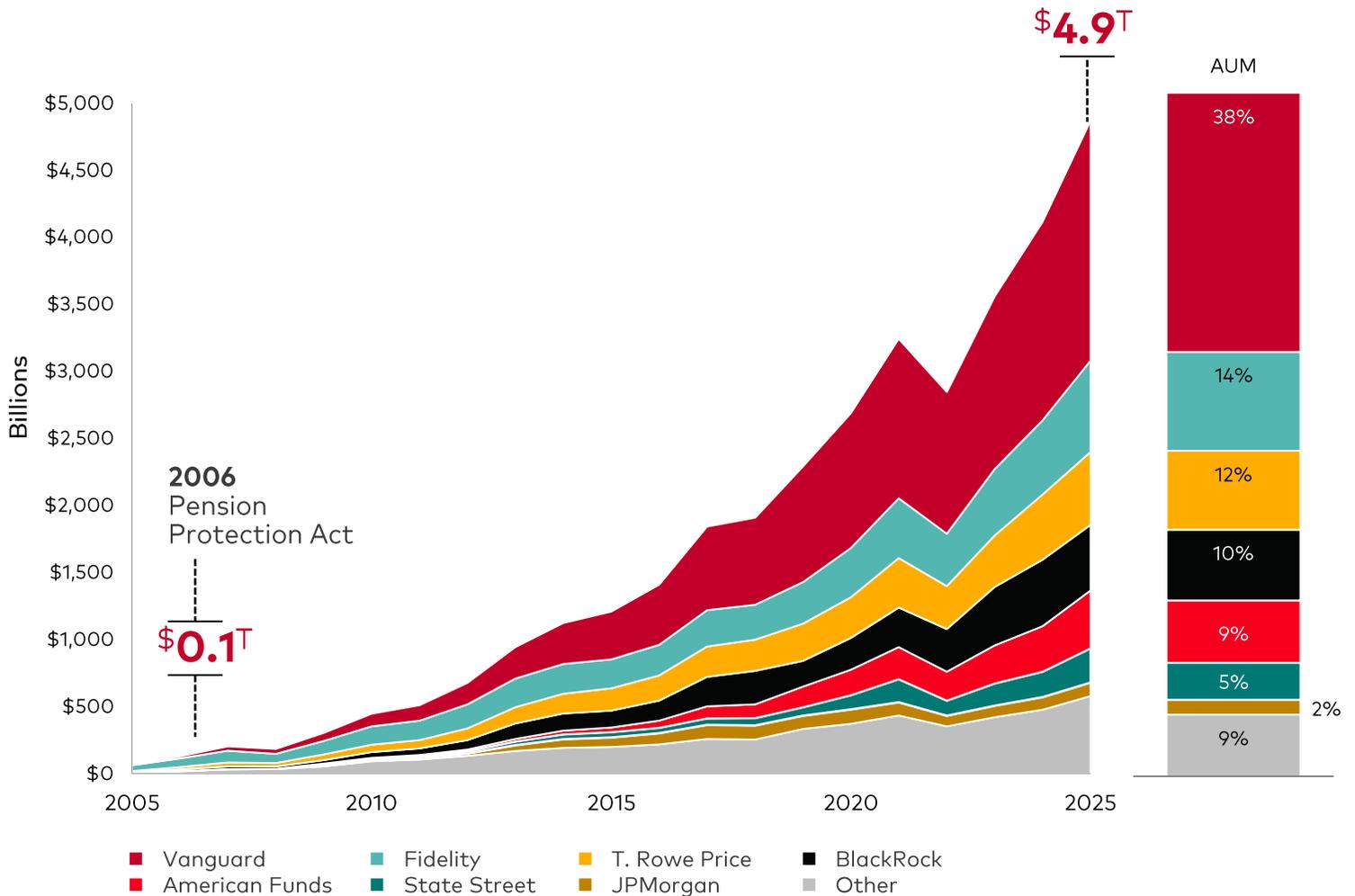
Industry growth and market share

Market environment



# Industry growth and market share

**Figure 14.1** 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 \$4.87 trillion as of the end of Q4 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 91% share of all industry assets, or more than \$4.29 trillion, as of December 31, 2025.

Sources: Vanguard, Morningstar, as of December 31, 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 15.1 Index returns ranked by performance

2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	1Q 2025	2Q 2025	3Q 2025	4Q 2025
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	FTSE 32.0	COM 8.9	FTSE 12.4	CRSP 8.2	COM 5.9
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	CRSP 17.2	FTSE 4.6	CRSP 11.0	FTSE 7.1	FTSE 4.9
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	COM 15.8	STPS 3.0	HYB 3.5	REIT 4.8	EMB 2.8
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	EMB 13.1	AGG 2.8	EMB 3.2	EMB 4.3	CRSP 2.5
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 8.6	EMB 2.2	IAGG 2.0	COM 3.7	HYB 1.3
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 7.3	CASH 1.1	AGG 1.2	HYB 2.5	AGG 1.1
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	STPS 6.1	REIT 1.1	CASH 1.1	AGG 2.0	CASH 1.0
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	CASH 4.4	HYB 1.0	STPS 1.0	STPS 1.6	IAGG 0.5
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	IAGG 3.0	IAGG -0.1	REIT -1.1	CASH 1.1	STPS 0.4
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	REIT 3.0	CRSP -4.8	COM -3.1	IAGG 0.7	REIT -1.7

		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	2.45	17.15	22.24	13.08	14.25
	FTSE	FTSE Global All Cap ex U.S. Index	4.85	31.95	17.26	8.04	8.56
	AGG	Bloomberg U.S. Aggregate Bond Index	1.10	7.30	4.66	-0.36	2.01
	IAGG	Bloomberg Global Agg ex U.S. Float Adj RIC Cap Index (Hedged)	0.48	3.03	5.16	-0.12	2.25
	STPS	Bloomberg U.S. 0-5 Year TIPS Index	0.39	6.07	5.11	3.54	3.18
Other indexes	CASH	3-Month T-Bill	1.02	4.40	5.03	3.30	2.22
	HYB	Bloomberg U.S. Corporate High Yield Index	1.31	8.62	10.06	4.51	6.53
	EMB	Bloomberg USD Emerging Market Gov RIC Cap Index	2.84	13.11	9.79	1.51	4.21
	REIT	MSCI U.S. REIT Index	-1.69	2.95	8.39	6.58	5.71
	COM	Bloomberg Commodity Index	5.85	15.77	3.96	10.64	5.73

**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 December 31, 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

IN THIS SECTION:

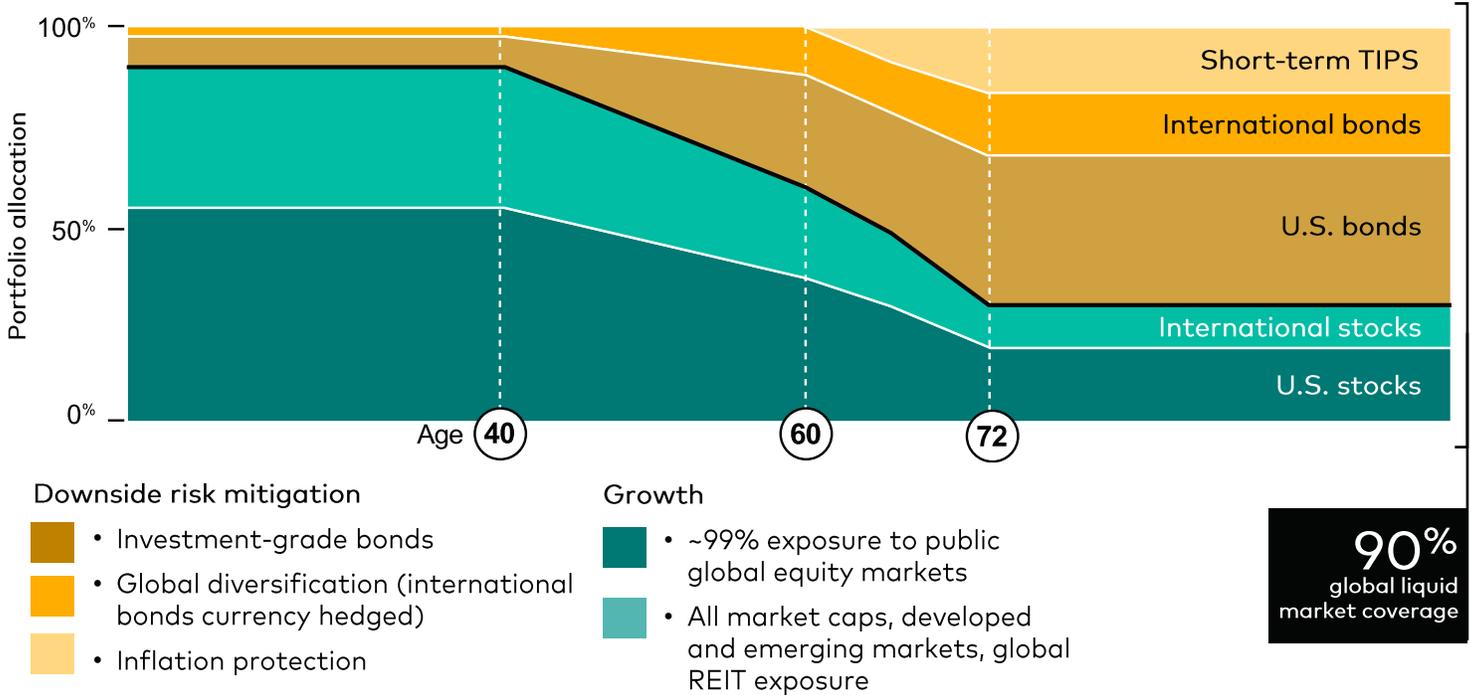
Evolution of Vanguard's glide-path design

Vanguard fund performance and attribution

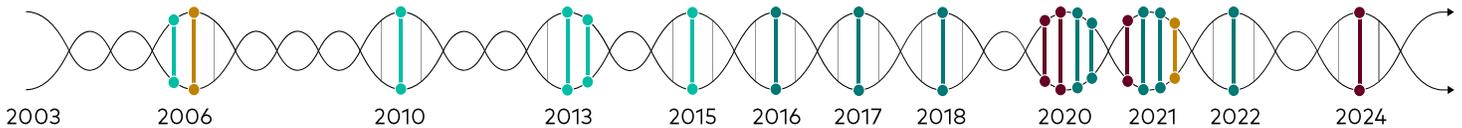


# Purposeful design and evolution

## 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).
- Merged 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 December 31, 2025

## Vanguard Target Retirement Fund and Trust performance

Portfolio/Benchmark	Expense ratio	Average annualized return as of December 31, 2025					Since inception	Inception date
		3 months	1 year	3 years	5 years	10 years		
<b>Vanguard Target Retirement Income and Growth Trust II</b>								
Trust II	0.075	2.09	14.93	12.66	—	—	6.26	1/21/2022
Target Retirement Income and Growth Composite Index		2.16	14.87	12.73	5.95	7.49	—	—
<b>Vanguard Target Retirement Income Vintage</b>								
Fund	0.08	1.55	11.31	9.52	3.82	5.33	5.23	10/27/2003
Trust II	0.075	1.54	11.33	9.53	3.84	5.36	5.05	2/29/2008
Target Retirement Income Composite Index		1.61	11.37	9.62	3.99	5.53	—	—
<b>Vanguard Target Retirement 2020 Vintage</b>								
Fund	0.08	1.63	12.15	10.78	4.77	6.87	6.31	6/7/2006
Trust II	0.075	1.66	12.20	10.81	4.81	6.92	6.24	2/29/2008
Target Retirement 2020 Composite Index		1.74	12.22	10.91	4.98	7.13	—	—
<b>Vanguard Target Retirement 2025 Vintage</b>								
Fund	0.08	2.00	14.60	12.84	5.90	7.87	7.01	10/27/2003
Trust II	0.075	2.03	14.67	12.87	5.97	7.95	6.84	2/29/2008
Target Retirement 2025 Composite Index		2.13	14.65	12.98	6.17	8.17	—	—
<b>Vanguard Target Retirement 2030 Vintage</b>								
Fund	0.08	2.30	16.24	14.27	6.83	8.66	7.25	6/7/2006
Trust II	0.075	2.31	16.31	14.30	6.89	8.72	7.28	2/29/2008
Target Retirement 2030 Composite Index		2.43	16.28	14.42	7.11	8.96	—	—
<b>Vanguard Target Retirement 2035 Vintage</b>								
Fund	0.08	2.49	17.54	15.46	7.71	9.40	7.96	10/27/2003
Trust II	0.075	2.50	17.58	15.47	7.76	9.47	7.77	2/29/2008
Target Retirement 2035 Composite Index		2.62	17.54	15.59	7.97	9.69	—	—

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, as of December 31, 2025.



# Fund performance through December 31, 2025

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

Portfolio/Benchmark	Expense ratio	Average annualized return as of December 31, 2025						Since inception	Inception date
		3 months	1 year	3 years	5 years	10 years			
<b>Vanguard Target Retirement 2040 Vintage</b>									
Fund	0.08	2.69	18.76	16.63	8.57	10.13	8.07	10/27/2003	
Trust II	0.075	2.69	18.84	16.64	8.61	10.19	8.24	2/29/2008	
Target Retirement 2040 Composite Index		2.81	18.77	16.76	8.82	10.42	—	—	
<b>Vanguard Target Retirement 2045 Vintage</b>									
Fund	0.08	2.87	19.99	17.76	9.41	10.74	8.75	10/27/2003	
Trust II	0.075	2.86	20.06	17.77	9.45	10.79	8.55	2/29/2008	
Target Retirement 2045 Composite Index		3.00	20.00	17.92	9.67	11.03	—	—	
<b>Vanguard Target Retirement 2050 Vintage</b>									
Fund	0.08	3.05	21.41	18.70	9.95	11.02	8.54	6/7/2006	
Trust II	0.075	3.04	21.47	18.75	10.02	11.09	8.73	2/29/2008	
Target Retirement 2050 Composite Index		3.19	21.47	18.92	10.24	11.34	—	—	
<b>Vanguard Target Retirement 2055 Vintage</b>									
Fund	0.08	3.06	21.43	18.71	9.96	11.02	10.81	8/18/2010	
Trust II	0.075	3.06	21.50	18.75	10.02	11.09	11.14	8/31/2010	
Target Retirement 2055 Composite Index		3.21	21.49	18.93	10.25	11.34	—	—	
<b>Vanguard Target Retirement 2060 Vintage</b>									
Fund	0.08	3.06	21.42	18.71	9.96	11.02	10.69	1/19/2012	
Trust II	0.075	3.06	21.53	18.76	10.03	11.10	10.45	3/1/2012	
Target Retirement 2060 Composite Index		3.21	21.49	18.93	10.25	11.34	—	—	
<b>Vanguard Target Retirement 2065 Vintage</b>									
Fund	0.08	3.07	21.43	18.70	9.98	—	10.62	7/12/2017	
Trust II	0.075	3.05	21.50	18.74	10.02	—	11.10	7/17/2017	
Target Retirement 2065 Composite Index		3.21	21.49	18.93	10.25	11.34	—	—	
<b>Vanguard Target Retirement 2070 Vintage</b>									
Fund	0.08	3.07	21.42	18.71	—	—	16.13	6/8/2022	
Trust II	0.075	3.05	21.50	18.75	—	—	11.19	4/7/2022	
Target Retirement 2070 Composite Index		3.21	21.49	18.93	10.25	11.34	—	—	

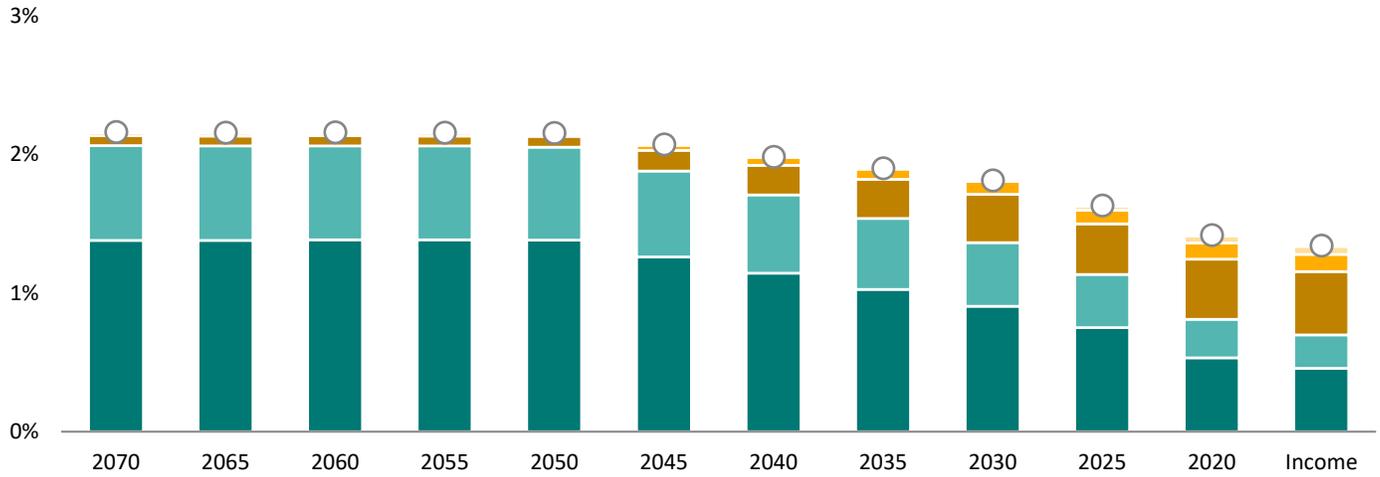
The performance data shown represent past performance. Past performance is no guarantee of future results. Investment returns and principal value will fluctuate, so investors' shares, when sold, may be worth more or less than their original cost. Current performance may be lower or higher than the performance 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, as of December 31, 2025.

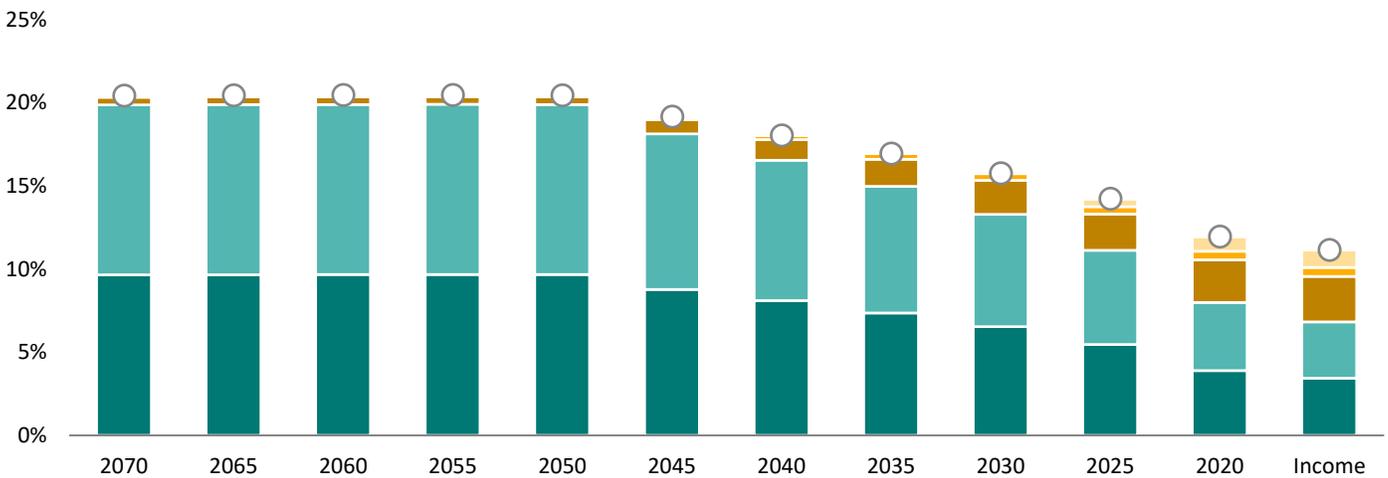


# Underlying fund performance contribution

**Figure 20.1** 3-month return contribution by underlying funds



**Figure 20.2** 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 December 31, 2025.



# Excess return attribution

Figure 21.1 3-month return attribution

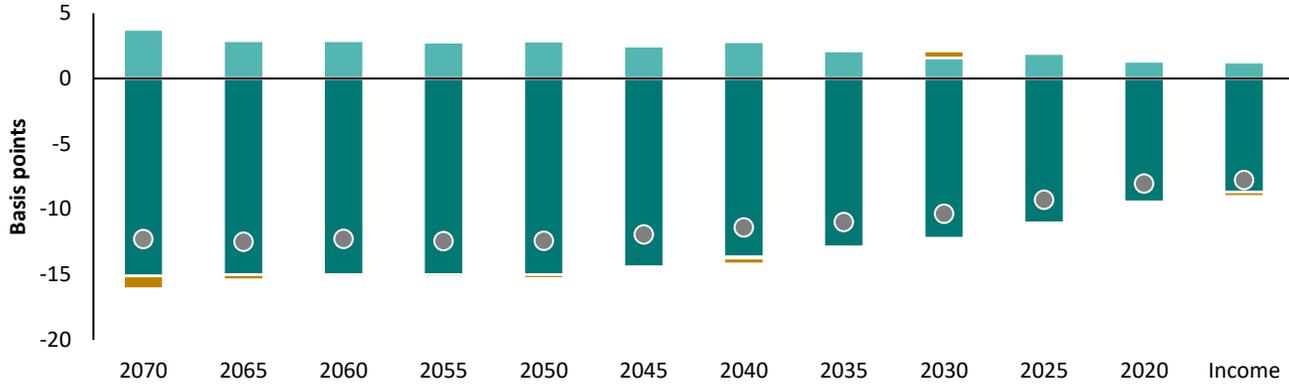
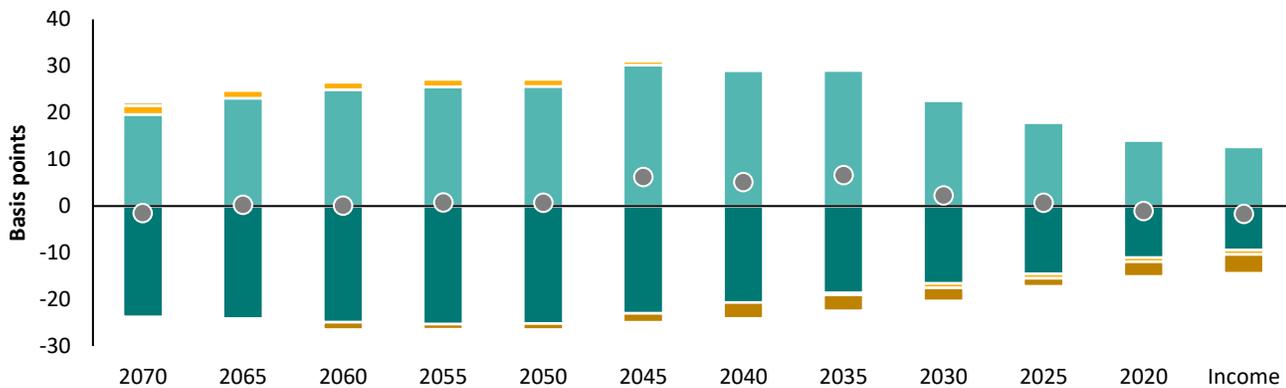


Figure 21.2 1-year return attribution



<span style="color: #008080;">■</span> 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.
<span style="color: #008080;">■</span> 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.
<span style="color: #FFD700;">■</span> 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.*
<span style="color: #8B4513;">■</span> Residual	Out/Underperformance due to factors outside of those captured above.
<span style="color: #808080;">●</span> 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.

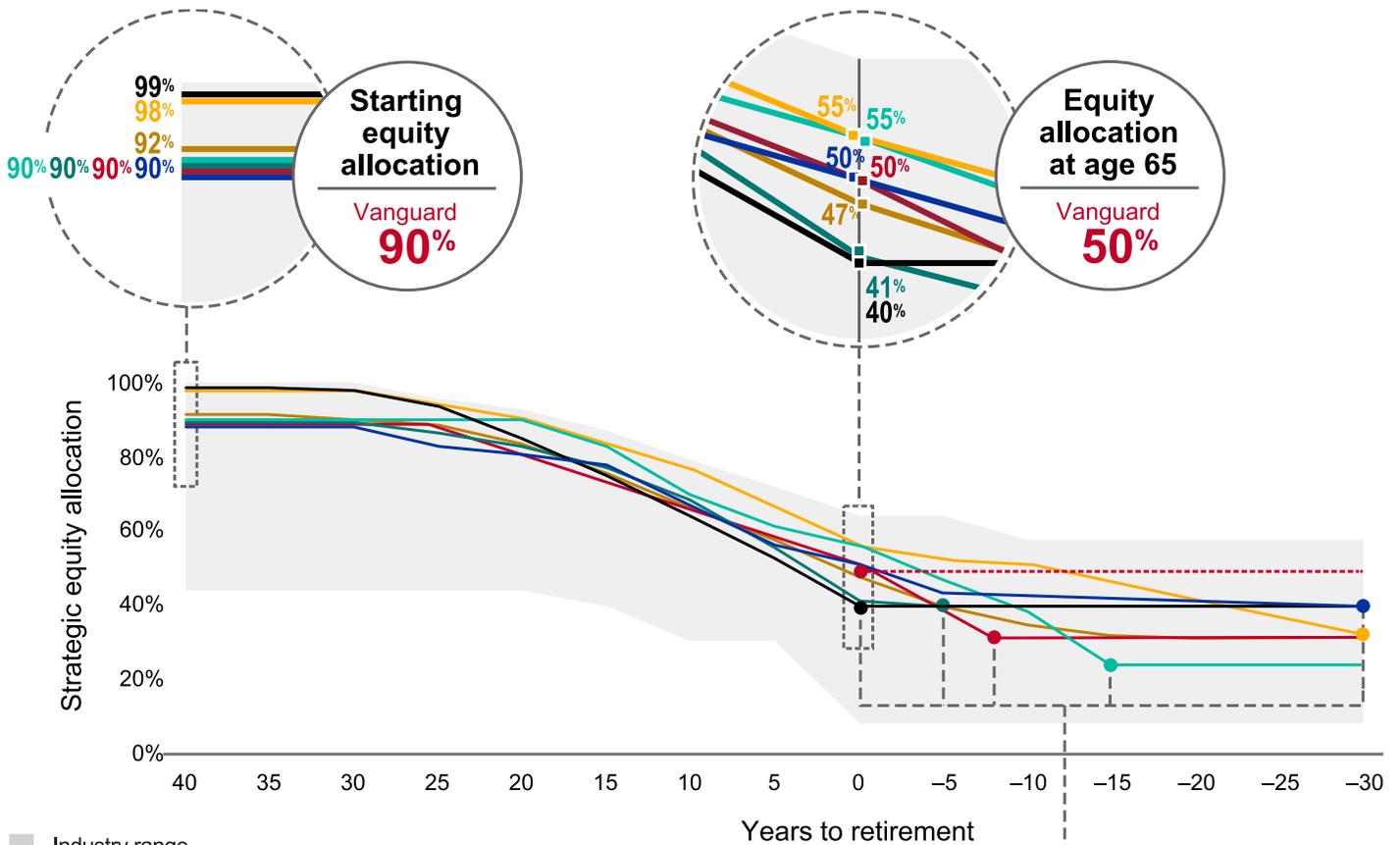
**Past performance is not a guarantee of future results.**

Sources: Vanguard and Morningstar, as of December 31, 2025.

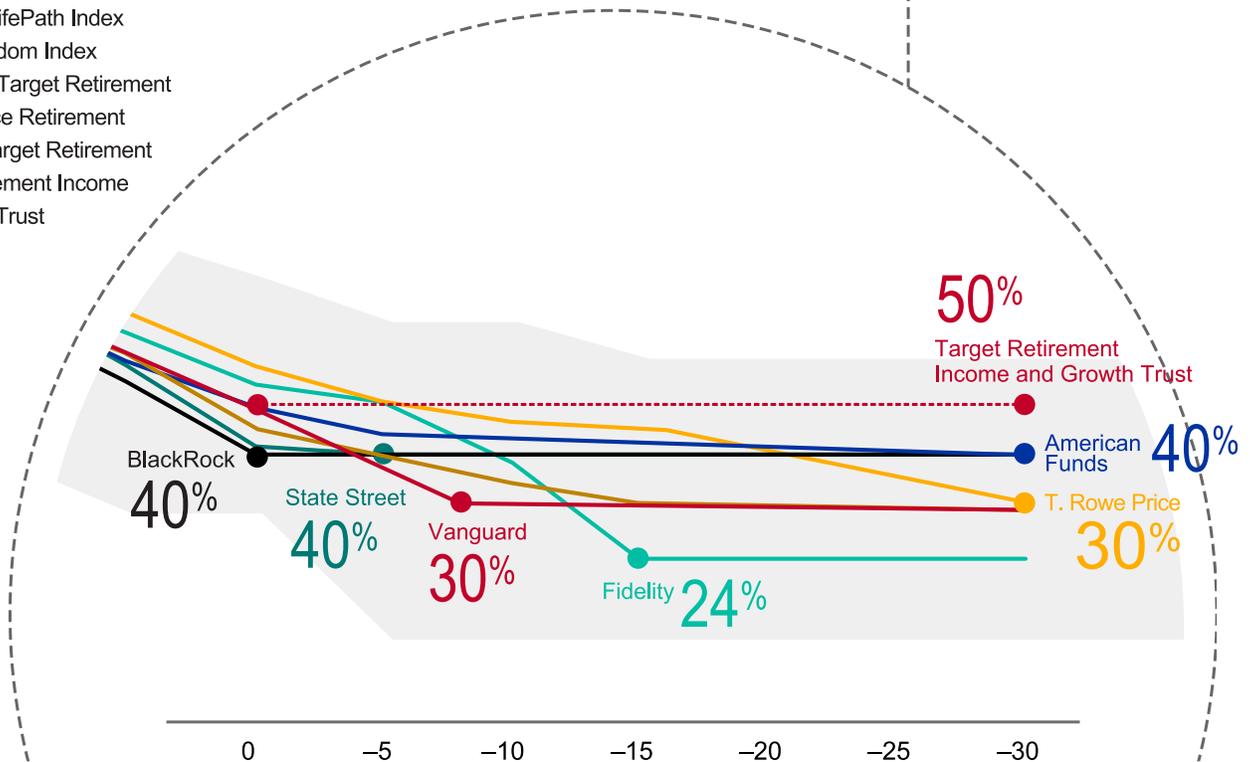
\* On January 14, 2021, Bloomberg changed its index pricing time from 3 p.m., Eastern time, to 4 p.m., Eastern time. The time change affects the 1- and 3-year figures.



# Glide path comparison



- Industry range
- Industry average
- American Funds Target Date Retirement
- BlackRock LifePath Index
- Fidelity Freedom Index
- State Street Target Retirement
- T. Rowe Price Retirement
- Vanguard Target Retirement
- Target Retirement Income and Growth Trust



Sources: Morningstar; data as of December 31, 2025; Vanguard calculation for industry average.



# Competitor fund construction and performance

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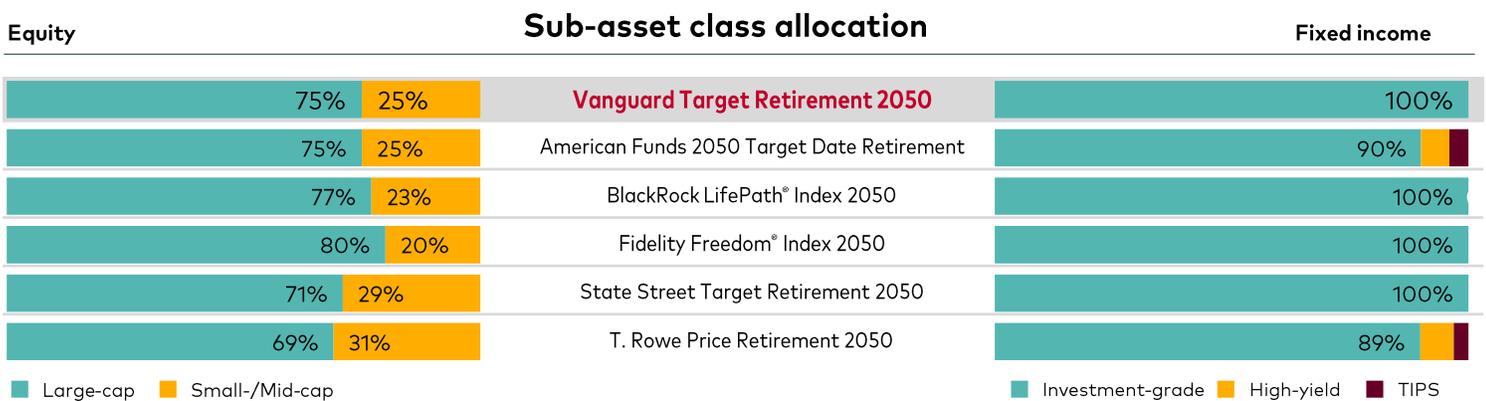
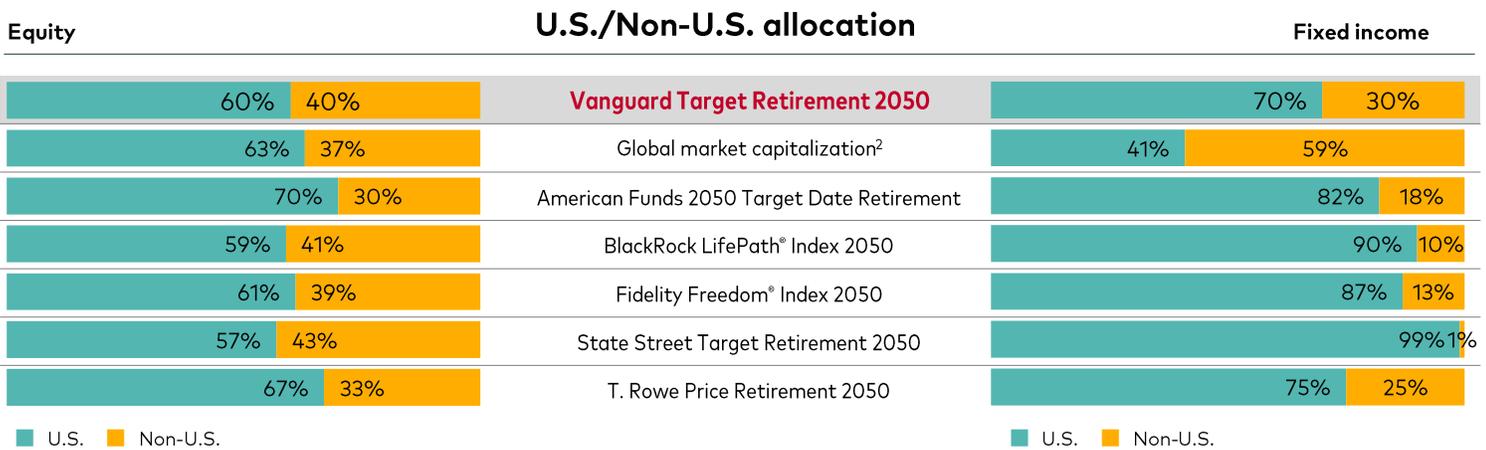
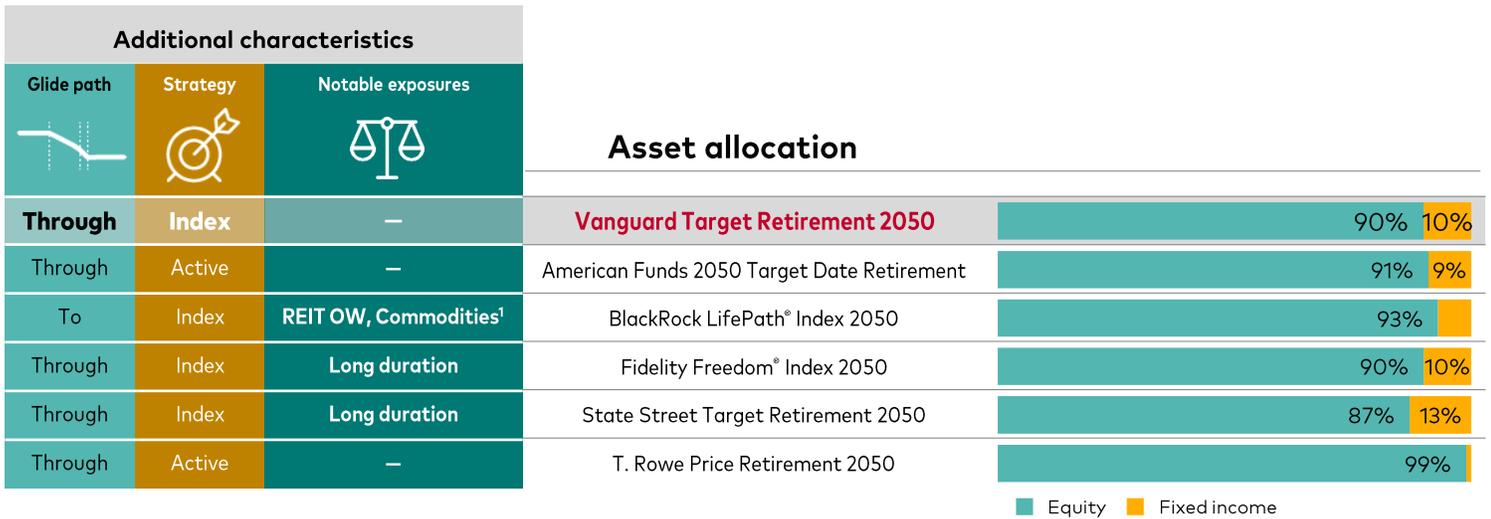
Beyond the glide path

12-month return attribution



# 2050 vintage: Beyond the glide path

Figure 24.1 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 December 31, 2025.

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

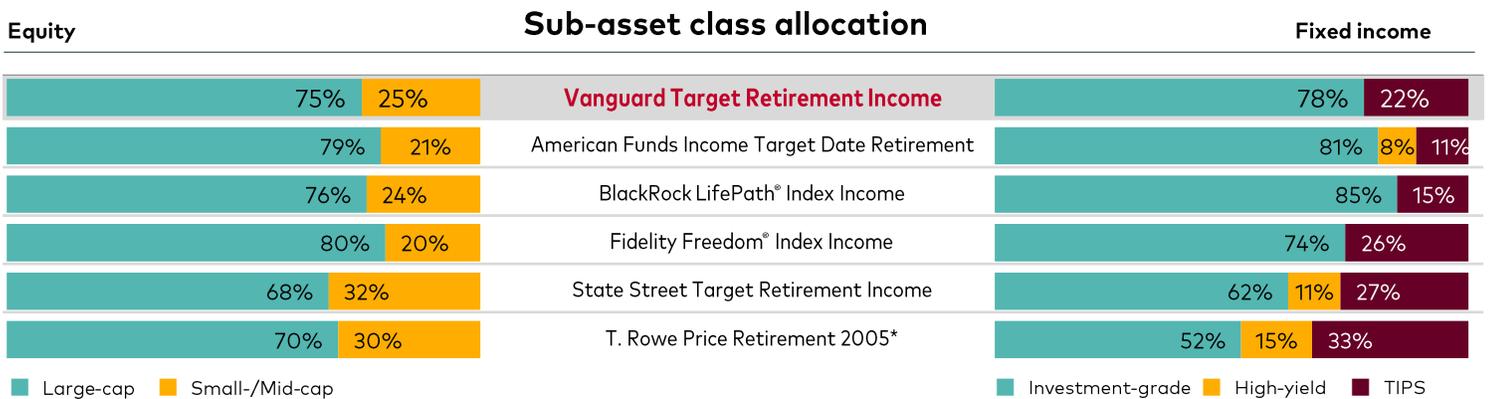
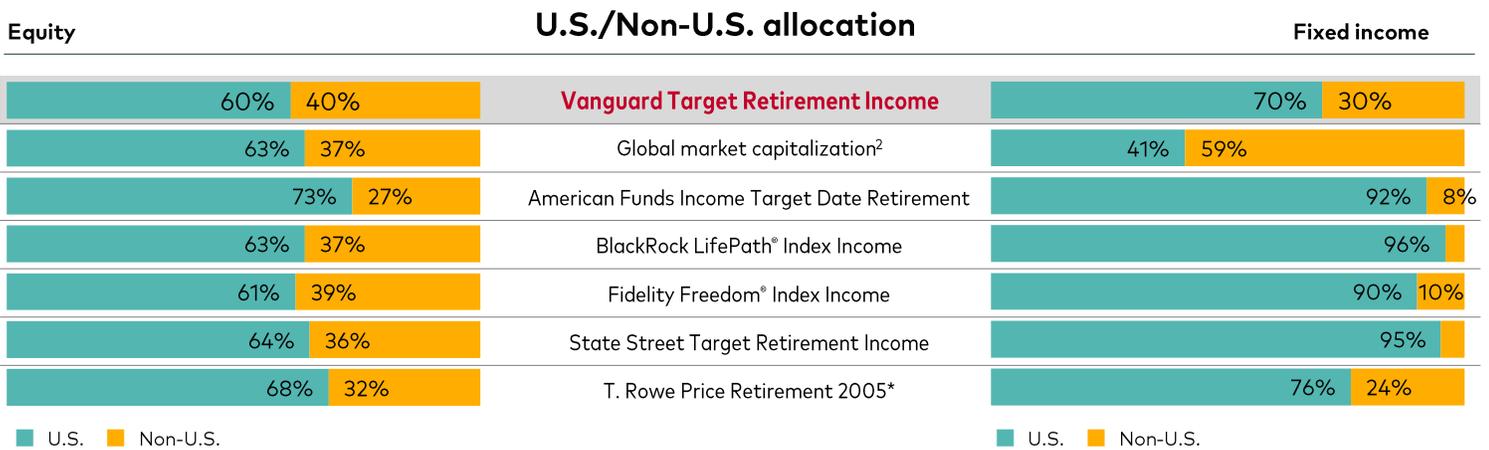
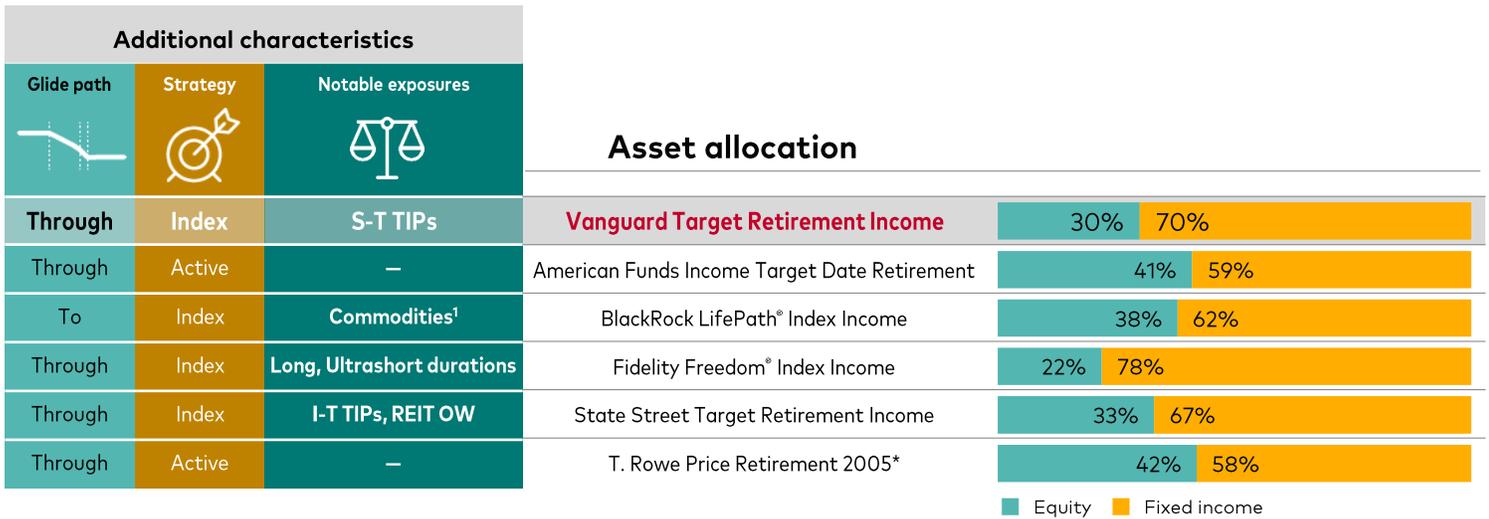
<sup>2</sup>Global market capitalization calculated using FTSE All Country Equity Index and Bloomberg Barclays Global Aggregate Bond Index.

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 25.1 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 December 31, 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.

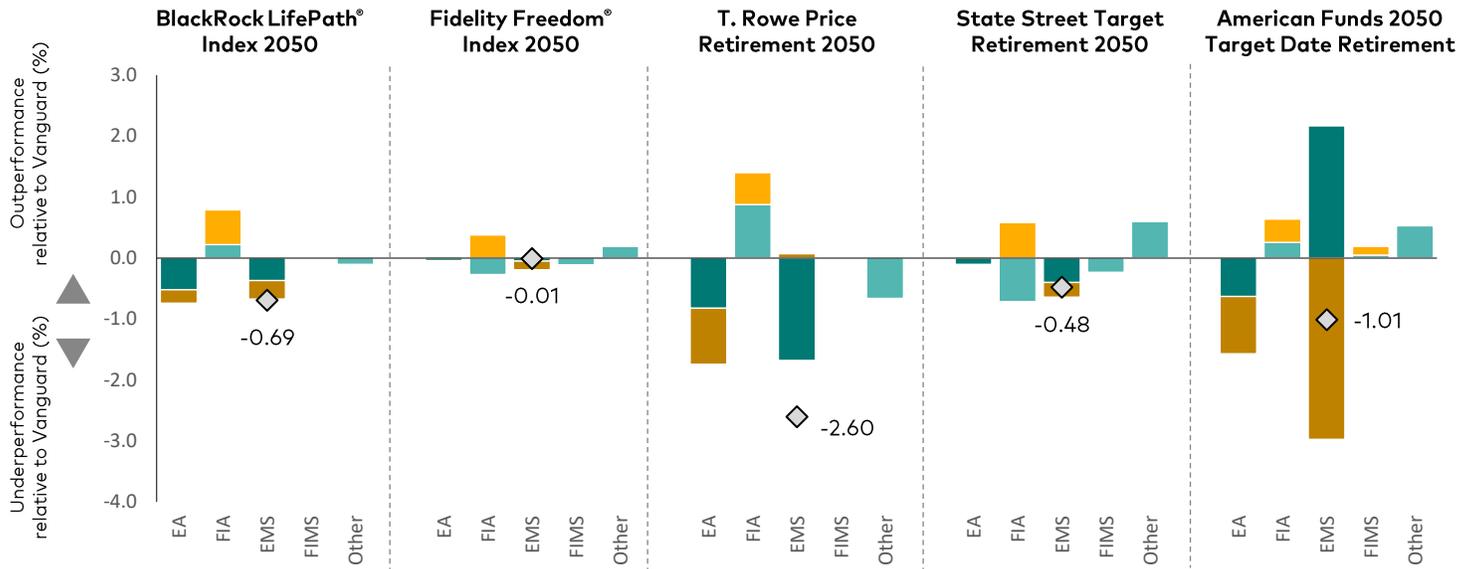
\* No explicit income vintage in lineup. 2005 represents the most conservative asset allocation, as a proxy.

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 26.1 Relative to top five industry 2050 funds



Element	Description
Equity allocation (EA)	Vintage allocation to asset classes and sub-asset allocation to U.S. vs. non-U.S.
Fixed income allocation (FIA)	
Equity manager selection (EMS)	Benchmark construction differences (cap and/or style tilts), securities lending, fair-value pricing, building block expense ratios
Fixed income manager selection (FIMS)	
Other	Compounding effect (residual) due to nondaily holdings availability
Total excess return	The sum of the above relative performance differences between Vanguard Target Retirement Fund and competitors' similar vintage

■ U.S. equity     
 ■ Foreign equity     
 ◇ Total relative return  
■ U.S. fixed income     
 ■ Foreign fixed income

- **BlackRock's** underperformance relative to Vanguard was driven by a higher weight to U.S. equities.
- **Fidelity's** performance was relatively inline with Vanguard, though underlying fixed income performance drivers differed.
- **T. Rowe Price's** underperformance relative to Vanguard was driven by poor security selection within the U.S. equity allocation.
- **State Street's** underperformance relative to Vanguard was driven by a higher allocation to fixed income, further compounded by an overweight to long-term Treasuries.
- **American Funds'** underperformance was driven by weak security selection within the international equity allocation and a higher U.S. equity weight relative to Vanguard.

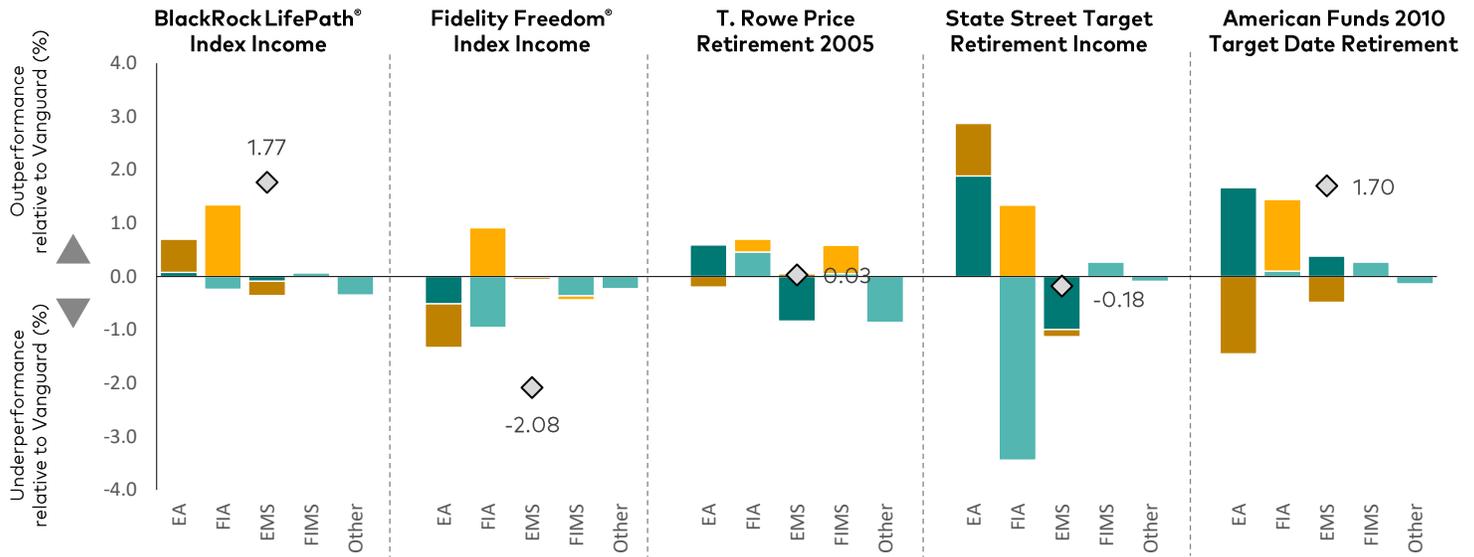
**Past performance is not a guarantee of future results.**

Sources: Vanguard and Morningstar, as of December 31, 2025.



# 12-month return attribution (continued)

Figure 27.1 Relative to top five industry income (or equivalent) funds\*



Element	Description
Equity allocation (EA)	Vintage allocation to asset classes and sub-asset allocation to U.S. vs. non-U.S.
Fixed income allocation (FIA)	
Equity manager selection (EMS)	Benchmark construction differences (cap and/or style tilts), securities lending, fair-value pricing, building block expense ratios
Fixed income manager selection (FIMS)	
Other	Compounding effect (residual) due to nondaily holdings availability
Total excess return	The sum of the above relative performance differences between Vanguard Target Retirement Fund and competitors' similar vintage

- U.S. equity
- Foreign equity
- U.S. fixed income
- Foreign fixed income
- ◇ Total relative return

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

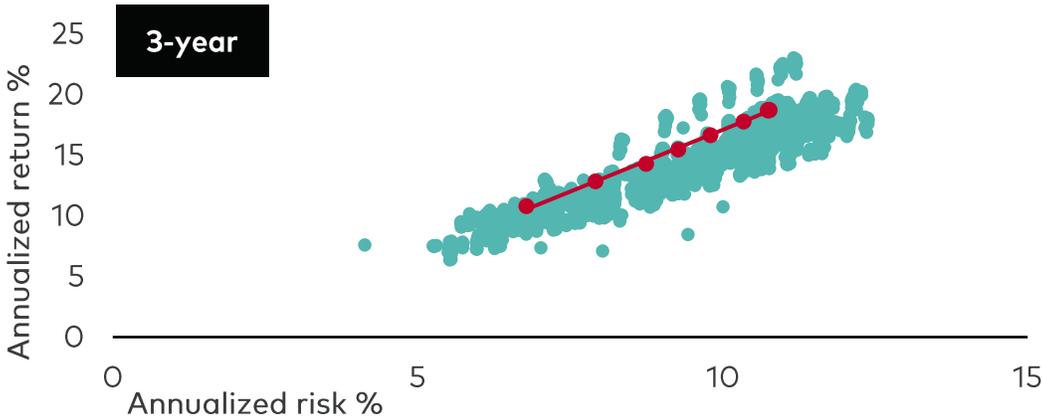
**Past performance is not a guarantee of future results.**

Sources: Morningstar and Vanguard calculations; data as of December 31, 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



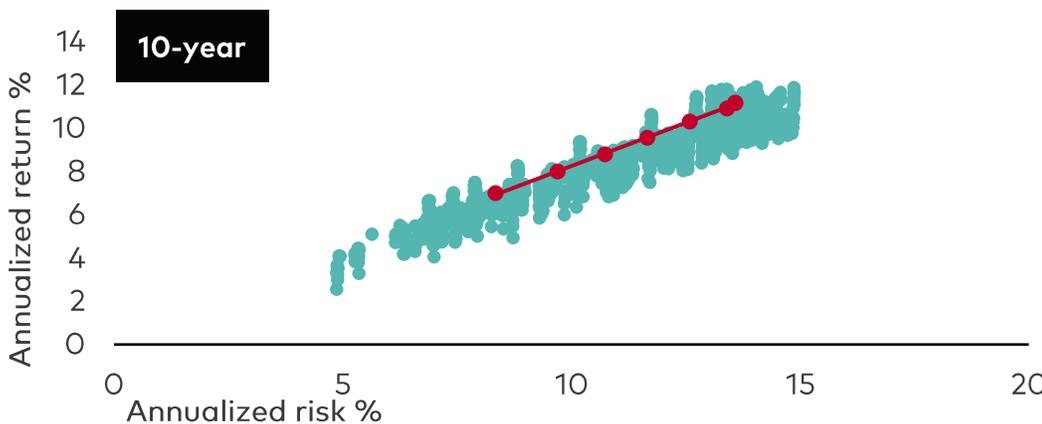
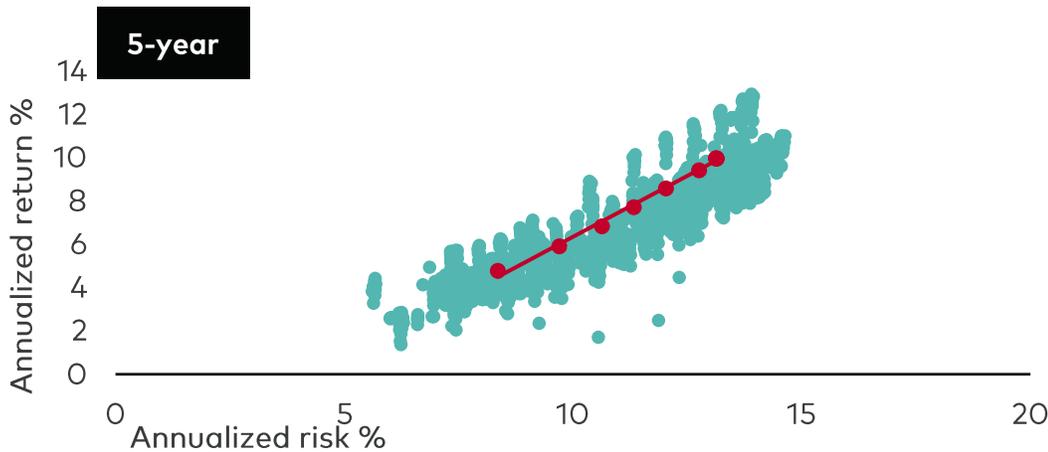
Investors may be in TDFs for decades.

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](http://vanguard.com/performance).**

Sources: Vanguard and Morningstar, Inc., as of December 31, 2025. Vanguard Target Retirement Funds highlighted.





# Appendix

IN THIS SECTION:

Absolute performance results

Standardized returns

# Absolute performance results

Average annualized return  
as of December 31, 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	1.55	11.31	11.31	9.52	3.82	5.33	5.23	10/27/2003
Target Retirement Income Composite Index	—	1.61	11.37	11.37	9.62	3.99	5.53	—	—
Lipper Target Target Consvr Funds Average	—	1.51	10.75	10.75	9.02	3.66	5.04	—	—
Fidelity Freedom Income	0.46	1.43	10.42	10.42	7.62	2.65	4.38	4.60	10/17/1996
Fidelity Freedom Index Income Investor	0.12	1.25	9.23	9.23	7.47	2.55	4.10	3.88	10/2/2009
T. Rowe Price Retirement 2005	0.49	1.58	11.34	11.34	10.42	4.66	6.27	5.82	2/27/2004
American Funds 2010 Trgt Date Retire R5	0.34	2.01	13.01	13.01	9.93	5.68	6.58	5.47	2/1/2007
BlackRock LifePath Index Retire K	0.12	1.75	12.48	12.48	10.34	4.02	6.00	5.58	5/31/2011
State Street Target Retirement K	0.26	1.58	11.13	11.13	9.71	4.60	5.81	5.17	9/30/2014
JPMorgan SmartRetirement® Income R5	0.46	1.65	12.29	12.29	10.77	4.38	5.68	5.29	5/15/2006
JPMorgan SmartRetirement® Blend IncomeR5	0.49	1.97	13.12	13.12	11.01	4.61	5.79	5.43	7/2/2012
Nuveen Lifecycle 2010	0.56	1.88	11.42	11.42	9.99	4.49	6.29	5.52	1/17/2007
<b>Vanguard Target Retirement 2020 Fund</b>	0.08	1.63	12.15	12.15	10.78	4.77	6.87	6.31	6/7/2006
Target Retirement 2020 Composite Index	—	1.74	12.22	12.22	10.91	4.98	7.13	—	—
Lipper Target 2020 Funds Average	—	1.74	12.76	12.76	10.62	4.75	6.18	—	—
Fidelity Freedom 2020	0.55	2.11	14.87	14.87	11.64	4.93	7.22	6.75	10/17/1996
Fidelity Freedom Index 2020 Investor	0.12	1.76	13.35	13.35	11.23	4.63	6.93	6.98	10/2/2009
T. Rowe Price Retirement 2020	0.51	1.76	12.53	12.53	11.70	5.61	7.69	8.12	9/30/2002
American Funds 2020 Trgt Date Retire R5	0.35	2.12	14.21	14.21	11.14	6.19	7.35	6.09	2/1/2007
Nuveen Lifecycle 2020 R6	0.58	1.99	12.41	12.41	10.92	5.06	7.07	5.89	1/17/2007
<b>Vanguard Target Retirement 2025 Fund</b>	0.08	2.00	14.60	14.60	12.84	5.90	7.87	7.01	10/27/2003
Target Retirement 2025 Composite Index	—	2.13	14.65	14.65	12.98	6.17	8.17	—	—
Lipper Target 2025 Funds Average	—	1.83	12.95	12.95	10.97	4.94	6.73	—	—
Fidelity Freedom 2025	0.59	2.36	16.46	16.46	12.87	5.69	7.88	6.78	11/6/2003
Fidelity Freedom Index 2025 Investor	0.12	1.94	14.84	14.84	12.37	5.33	7.61	7.71	10/2/2009
T. Rowe Price Retirement 2025	0.53	1.85	12.98	12.98	12.40	6.02	8.30	7.38	2/27/2004
American Funds 2025 Trgt Date Retire R5	0.36	2.14	14.47	14.47	11.86	6.34	8.05	6.71	2/1/2007
JPMorgan SmartRetirement 2025 R5	0.47	1.71	12.57	12.57	11.53	4.92	6.87	6.04	7/31/2007
JPMorgan SmartRetirement® Blend 2025 R5	0.47	2.02	13.42	13.42	11.84	5.24	7.05	7.25	7/2/2012
Nuveen Lifecycle 2025 R6	0.58	2.05	13.00	13.00	11.72	5.59	7.69	6.19	1/17/2007
State Street Target Retirement 2025 K	0.22	1.77	13.17	13.17	11.90	5.62	8.05	7.14	9/30/2014

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Sources: Vanguard and Morningstar.



# Absolute performance results *(continued)*

Average annualized return  
as of December 31, 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	2.30	16.24	16.24	14.27	6.83	8.66	7.25	6/7/2006
Target Retirement 2030 Composite Index	—	2.43	16.28	16.28	14.42	7.11	8.96	—	—
Lipper Target 2030 Funds Average	—	1.91	13.73	13.73	12.18	5.83	7.63	—	—
Fidelity Freedom 2030	0.61	2.59	17.68	17.68	14.04	6.54	8.82	7.28	10/17/1996
Fidelity Freedom Index 2030 Investor	0.12	2.15	15.89	15.89	13.46	6.13	8.58	8.43	10/2/2009
T. Rowe Price Retirement 2030	0.55	2.08	14.38	14.38	13.77	6.78	9.04	9.08	9/30/2002
American Funds 2030 Trgt Date Retire R5	0.38	2.33	15.69	15.69	13.61	7.23	9.10	7.43	2/1/2007
JPMorgan SmartRetirement 2030 R5	0.46	1.88	14.33	14.33	13.27	6.08	7.86	6.92	5/15/2006
JPMorgan SmartRetirement® Blend 2030 R5	0.45	2.33	15.55	15.55	13.66	6.48	8.10	8.22	7/2/2012
Nuveen Lifecycle 2030 R6	0.60	2.30	14.18	14.18	12.96	6.35	8.43	6.52	1/17/2007
BlackRock Lifepath Index 2030 K	0.13	1.93	14.19	14.19	12.65	5.89	7.95	7.29	5/31/2011
State Street Target Retirement 2030 K	0.19	2.12	16.15	16.15	13.92	6.46	8.96	7.96	9/30/2014
<b>Vanguard Target Retirement 2035 Fund</b>	0.08	2.49	17.54	17.54	15.46	7.71	9.40	7.96	10/27/2003
Target Retirement 2035 Composite Index	—	2.62	17.54	17.54	15.59	7.97	9.69	—	—
Lipper Target 2035 Funds Average	—	2.20	15.55	15.55	14.16	7.09	8.78	—	—
Fidelity Freedom 2035	0.64	2.84	19.16	19.16	15.90	7.95	10.00	7.80	11/6/2003
Fidelity Freedom Index 2035 Investor	0.12	2.43	17.32	17.32	15.23	7.47	9.77	9.36	10/2/2009
T. Rowe Price Retirement 2035	0.58	2.36	16.10	16.10	15.36	7.68	9.77	8.20	2/27/2004
American Funds 2035 Trgt Date Retire R5	0.39	2.51	17.07	17.07	15.53	8.30	10.33	8.07	2/1/2007
JPMorgan SmartRetirement 2035 R5	0.50	2.03	15.61	15.61	14.98	7.47	8.91	7.21	7/31/2007
JPMorgan SmartRetirement® Blend 2035 R5	0.48	2.63	17.25	17.25	15.35	7.80	9.06	9.10	7/2/2012
Nuveen Lifecycle 2035 R6	0.61	2.37	15.30	15.30	14.33	7.19	9.18	6.97	1/17/2007
BlackRock Lifepath Index 2035 K	0.13	2.21	16.09	16.09	14.52	7.23	9.01	8.09	5/31/2011
State Street Target Retirement 2035 K	0.17	2.47	18.09	18.09	15.17	7.07	9.55	8.47	9/30/2014
<b>Vanguard Target Retirement 2040 Fund</b>	0.08	2.69	18.76	18.76	16.63	8.57	10.13	8.07	6/7/2006
Target Retirement 2040 Composite Index	—	2.81	18.77	18.77	16.76	8.82	10.42	—	—
Lipper Target 2040 Funds Average	—	2.47	17.33	17.33	15.94	8.22	9.53	—	—
Fidelity Freedom 2040	0.66	3.36	22.00	22.00	18.37	9.56	10.95	6.03	9/6/2000
Fidelity Freedom Index 2040 Investor	0.12	2.77	19.88	19.88	17.49	8.98	10.70	9.96	10/2/2009
T. Rowe Price Retirement 2040	0.59	2.60	17.46	17.46	16.68	8.44	10.39	9.76	9/30/2002
American Funds 2040 Trgt Date Retire R5	0.41	2.96	19.46	19.46	17.79	9.47	11.19	8.55	2/1/2007
JPMorgan SmartRetirement 2040 R5	0.50	2.13	16.75	16.75	16.24	8.38	9.66	7.94	5/15/2006
JPMorgan SmartRetirement® Blend 2040 R5	0.47	2.84	18.62	18.62	16.67	8.76	9.83	9.73	7/2/2012
Nuveen Lifecycle 2040 R6	0.64	2.65	17.02	17.02	16.03	8.28	10.05	7.51	1/17/2007
BlackRock Lifepath Index 2040 K	0.13	2.43	17.66	17.66	16.27	8.48	9.95	8.82	5/31/2011
State Street Target Retirement 2040 K	0.15	2.58	19.22	19.22	16.10	7.64	10.03	8.87	9/30/2014

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Sources: Vanguard and Morningstar.



# Absolute performance results *(continued)*

Fund	Expense ratio	Average annualized return as of December 31, 2025							
		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	2.87	19.99	19.99	17.76	9.41	10.74	8.75	10/27/2003
Target Retirement 2045 Composite Index	—	3.00	20.00	20.00	17.92	9.67	11.03	—	—
Lipper Target 2045 Funds Average	—	2.66	18.55	18.55	16.94	8.92	10.12	—	—
Fidelity Freedom 2045	0.68	3.70	23.77	23.77	19.36	10.11	11.23	7.94	6/1/2006
Fidelity Freedom Index 2045 Investor	0.12	3.02	21.40	21.40	18.44	9.52	10.96	10.16	10/2/2009
T. Rowe Price Retirement 2045	0.60	2.77	18.51	18.51	17.60	9.05	10.83	8.85	5/31/2005
American Funds 2045 Trgt Date Retire R5	0.42	3.13	20.31	20.31	18.48	9.76	11.45	8.68	2/1/2007
JPMorgan SmartRetirement 2045 R5	0.50	2.20	17.51	17.51	17.13	9.11	10.12	7.97	7/31/2007
JPMorgan SmartRetirement® Blend 2045 R5	0.45	2.96	19.59	19.59	17.65	9.53	10.28	10.06	7/2/2012
Nuveen Lifecycle 2045 R6	0.65	2.79	18.13	18.13	17.11	9.01	10.63	7.55	11/30/2007
BlackRock Lifepath Index 2045 K	0.14	2.63	19.10	19.10	17.89	9.61	10.75	9.42	5/31/2011
State Street Target Retirement 2045 K	0.16	2.74	20.19	20.19	16.86	8.10	10.45	9.21	9/30/2014
<b>Vanguard Target Retirement 2050 Fund</b>	0.08	3.05	21.41	21.41	18.70	9.95	11.02	8.54	6/7/2006
Target Retirement 2050 Composite Index	—	3.19	21.47	21.47	18.92	10.24	11.34	—	—
Lipper Target 2050 Funds Average	—	2.74	19.06	19.06	17.45	9.22	10.28	—	—
Fidelity Freedom 2050	0.68	3.75	23.72	23.72	19.37	10.12	11.24	7.84	6/1/2006
Fidelity Freedom Index 2050 Investor	0.12	3.02	21.40	21.40	18.45	9.51	10.96	10.19	10/2/2009
T. Rowe Price Retirement 2050	0.62	2.80	18.81	18.81	17.89	9.22	10.91	8.27	12/29/2006
American Funds 2050 Trgt Date Retire R5	0.42	3.14	20.40	20.40	18.79	9.76	11.52	8.72	2/1/2007
JPMorgan SmartRetirement 2050 R5	0.51	2.24	18.04	18.04	17.62	9.33	10.23	8.04	7/31/2007
JPMorgan SmartRetirement® Blend 2050 R5	0.44	3.06	20.29	20.29	18.13	9.80	10.44	10.18	7/2/2012
Nuveen Lifecycle 2050 R6	0.66	2.85	18.74	18.74	17.65	9.33	10.84	7.66	11/30/2007
BlackRock Lifepath Index 2050 K	0.14	2.87	20.72	20.72	19.22	10.44	11.27	9.84	5/31/2011
State Street Target Retirement 2050 K	0.16	2.79	20.93	20.93	17.56	8.49	10.69	9.40	9/30/2014
<b>Vanguard Target Retirement 2055 Fund</b>	0.08	3.06	21.43	21.43	18.71	9.96	11.02	10.81	8/18/2010
Target Retirement 2055 Composite Index	—	3.21	21.49	21.49	18.93	10.25	11.34	—	—
Lipper Target 2055+ Funds Average	—	2.82	19.41	19.41	17.74	9.39	10.46	—	—
Fidelity Freedom 2055	0.68	3.77	23.73	23.73	19.37	10.11	11.23	9.76	6/1/2011
Fidelity Freedom Index 2055 Investor	0.12	3.06	21.40	21.40	18.46	9.51	10.97	9.49	6/1/2011
T. Rowe Price Retirement 2055	0.63	2.81	18.94	18.94	17.96	9.23	10.90	8.26	12/29/2006
American Funds 2055 Trgt Date Retire R5	0.43	3.20	20.68	20.68	19.14	9.79	11.54	11.12	2/1/2010
JPMorgan SmartRetirement 2055 R5	0.51	2.26	18.04	18.04	17.60	9.34	10.25	10.21	1/31/2012
JPMorgan SmartRetirement® Blend 2055 R5	0.45	3.07	20.20	20.20	18.11	9.82	10.42	10.14	7/2/2012
Nuveen Lifecycle 2055 R6	0.68	2.87	18.88	18.88	17.84	9.44	10.95	9.71	4/29/2011
BlackRock Lifepath Index 2055 K	0.14	3.05	21.59	21.59	19.80	10.79	11.45	10.05	5/31/2011
State Street Target Retirement 2055 K	0.17	2.84	21.30	21.30	17.74	8.58	10.75	9.45	9/30/2014

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Sources: Vanguard and Morningstar.



# Absolute performance results *(continued)*

Fund	Expense ratio	3 months	Year-to-date	Average annualized return as of December 31, 2025					
				1 year	3 years	5 years	10 years	Since inception	Inception date
<b>Vanguard Target Retirement 2060 Fund</b>	0.08	3.06	21.42	21.42	18.71	9.96	11.02	10.69	1/19/2012
Target Retirement 2060 Composite Index	—	3.21	21.49	21.49	18.93	10.25	11.34	—	—
Lipper Target 2060+ Funds Average	—	2.86	19.96	19.96	18.08	9.59	—	—	—
Fidelity Freedom 2060	0.68	3.76	23.75	23.75	19.36	10.12	11.23	10.04	8/5/2014
Fidelity Freedom Index 2060 Investor	0.12	3.03	21.38	21.38	18.44	9.51	10.96	9.64	8/5/2014
T. Rowe Price Retirement 2060	0.64	2.84	18.97	18.97	17.97	9.24	10.89	9.43	6/23/2014
American Funds 2060 Trgt Date Retire R5	0.44	3.22	20.67	20.67	19.24	9.78	11.52	10.49	3/27/2015
JPMorgan SmartRetirement 2060 R5	0.53	2.23	18.04	18.04	17.58	9.35	—	10.45	8/31/2016
JPMorgan SmartRetirement® Blend 2060 R5	0.47	3.07	20.32	20.32	18.14	9.86	—	10.46	8/31/2016
Nuveen Lifecycle 2060 R6	0.70	2.87	19.08	19.08	18.00	9.55	11.06	9.91	9/26/2014
BlackRock Lifepath Index 2060 K	0.14	3.06	21.71	21.71	19.86	10.81	—	12.40	2/29/2016
State Street Target Retirement 2060 K	0.19	2.83	21.31	21.31	17.75	8.60	10.72	9.44	9/30/2014
<b>Vanguard Target Retirement 2065 Fund</b>	0.08	3.07	21.43	21.43	18.70	9.98	—	10.62	7/12/2017
Target Retirement 2065 Composite Index	—	3.21	21.49	21.49	18.93	10.25	11.34	—	—
Lipper Target 2060+ Funds Average	—	2.86	19.96	19.96	18.08	9.59	—	—	—
Fidelity Freedom 2065	0.68	3.72	23.75	23.75	19.37	10.12	—	11.94	6/28/2019
Fidelity Freedom Index 2065 Investor	0.12	3.09	21.45	21.45	18.45	9.51	—	11.16	6/28/2019
T. Rowe Price Retirement 2065	0.64	2.77	18.91	18.91	17.95	9.38	—	11.18	10/13/2020
American Funds 2065 Trgt Date Retire R5	0.44	3.26	20.69	20.69	19.24	9.80	—	15.96	3/27/2020
JPMorgan SmartRetirement® Blend 2065 R5	0.87	3.04	19.94	19.94	17.76	—	—	17.91	11/1/2022
Nuveen Lifecycle 2065 R6	0.86	2.87	19.19	19.19	18.14	9.71	—	12.12	9/30/2020
BlackRock Lifepath Index 2065 K	0.14	3.10	21.72	21.72	19.87	10.83	—	12.26	10/30/2019
State Street Target Retirement 2065 K	0.24	2.79	21.12	21.12	17.71	8.58	—	14.39	3/30/2020
<b>Vanguard Target Retirement 2070 Fund</b>	0.08	3.07	21.42	21.42	18.71	—	—	16.13	6/28/2022
Target Retirement 2070 Composite Index	—	3.21	21.49	21.49	18.93	10.25	11.34	—	—
Lipper Target 2060+ Funds Average	—	2.86	19.96	19.96	18.08	9.59	—	—	—
Fidelity Freedom 2070	0.68	3.81	23.36	23.36	—	—	—	17.54	6/28/2024
Fidelity Freedom Index 2070 Investor	0.12	3.03	21.43	21.43	—	—	—	17.26	6/28/2024
T. Rowe Price Retirement 2070	0.64	2.74	—	—	—	—	—	12.81	6/18/2025
American Funds 2070 Trgt Date Retire R5	0.44	3.32	20.78	20.78	—	—	—	18.43	5/3/2024
BlackRock Lifepath® Index 2070 K	0.33	3.08	22.48	22.48	—	—	—	16.64	9/24/2024
State Street Target Retirement 2070 K	0.32	2.81	23.78	23.78	—	—	—	23.78	12/31/2024

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Sources: Vanguard and Morningstar.



# Standardized returns

	Average annualized return as of December 31, 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	2.44	17.13	17.13	22.24	13.07	14.25	9.39	7/7/1997
Vanguard Total International Stock Index Fund Institutional Shares	0.06	4.51	32.23	32.23	17.13	7.97	8.54	6.53	11/29/2010
Vanguard Total Bond Market Index Fund Institutional Shares	0.025	0.99	7.17	7.17	4.68	-0.41	2.00	4.27	9/18/1995
Vanguard Total International Bond Index Fund Institutional Shares	0.06	0.51	3.02	3.02	5.16	-0.18	2.13	2.47	5/31/2013
Vanguard Short-Term Inflation-Protected Securities Index Fund Institutional Shares	0.03	0.39	6.06	6.06	5.14	3.54	3.16	2.20	10/17/2012

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Sources: Vanguard and Morningstar.

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# Important information

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# Important information

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**IMPORTANT: The projections and other information generated by the Vanguard Capital Markets Model regarding the likelihood of various investment outcomes are hypothetical in nature, do not reflect actual investment results, and are not guarantees of future results. VCMM results will vary with each use and over time.**

The VCMM projections are based on a statistical analysis of historical data. Future returns may behave differently from the historical patterns captured in the VCMM. More important, the VCMM may be underestimating extreme negative scenarios unobserved in the historical period on which the model estimation is based.

The Vanguard Capital Markets Model® 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.

**Vanguard ETF® Shares are not redeemable with the issuing fund other than in very large aggregations worth millions of dollars. Instead, investors must buy or sell Vanguard ETF Shares in the secondary market and hold those shares in a brokerage account. In doing so, the investor may incur brokerage commissions and may pay more than net asset value when buying and receive less than net asset value when selling.**

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All investing is subject to risk, including the possible loss of the money you invest. There is no guarantee that any particular asset allocation or mix of funds will meet your investment objectives or provide you with a given level of income. Diversification does not ensure a profit or protect against a loss.

Investments in bond portfolios are subject to interest rate, credit, and inflation risk.

Investments in stocks or bonds issued by non-U.S. companies are subject to risks including country/regional risk and currency risk.

Investments in bond funds are subject to the risk that an issuer will fail to make payments on time and that bond prices will decline because of rising interest rates or negative perceptions of an issuer's ability to make payments.

## ACKNOWLEDGMENTS

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