

Vanguard Target Retirement Funds and Trusts

Quarterly Review | September 30, 2025

Contents



Quarterly spotlight

Quarterly perspective	3
TDF glide-path essentials: Evaluating fixed income exposure	4
About the SAAC	8



TDF industry and market overview

Industry growth and market share	10
Market environment	11



Vanguard fund construction and performance

Purposeful design and evolution	13
Vanguard fund performance and attribution	14



Competitor fund construction and performance

Beyond the glide path	20
12-month return attribution	22



Appendix

Absolute performance results	26
Standardized returns	30



Quarterly perspective

Stocks surge and rates recede in the third quarter

Brian M. Miller, CFA
Senior Investment Specialist



The third quarter saw a major shift in policy direction as the U.S. Federal Reserve enacted a long-anticipated 25-basis-point rate cut. This move reflected growing concerns about labor market softness and signaled potential for further easing. Markets responded with enthusiasm, pushing stock valuations to record highs and reinforcing investor uncertainty around the sustainability of recent equity gains.

During the quarter, U.S. and non-U.S. equities returned 8.2% and 6.9%, respectively. Fixed income markets also posted gains, with U.S. and non-U.S. bonds up 1.9% and 0.5%, respectively, benefiting from the rate environment and global monetary policy dynamics.

Against this backdrop, Vanguard Target Retirement Funds delivered strong results across the glide path. Quarterly returns ranged from 3.4% for the Income vintage to 7.2% for the 2070 vintage. Most vintages ranked in the top third to top quartile of their respective peer groups, with the 2030 and 2035 funds earning number one rankings in their Morningstar categories over the past year. These outcomes underscore the strength of Vanguard's disciplined, index-based approach, particularly in later-dated vintages, where policy-driven volatility challenged active managers.

With this edition's Quarterly Spotlight, we continue our series on target-date fund (TDF) asset allocation research topics. In TDF Glide-Path Essentials: Evaluating Fixed Income Exposure, we explore our deep-dive research into disaggregating broad fixed income exposure and explain our rationale for maintaining our current fixed income allocations, grounded in the rigorous standards that define the Vanguard Target Retirement series.

We remain optimistic about the opportunities ahead and are committed to improving investor outcomes through the thoughtful design and purposeful evolution of Vanguard Target Retirement Funds, all while continuing to be a trusted partner on the retirement journey.

Performance of key Vanguard index funds

Fund name (inception date)	4Q 2024	1Q 2025	2Q 2025	3Q 2025	1-year
Vanguard Total Stock Market Index Fund (07/07/1997)	2.63%	-4.83%	10.99%	8.24%	17.35%
Vanguard Total International Stock Index Fund (11/29/2010)	-7.40%	5.51%	12.11%	6.96%	17.16%
Vanguard Total Bond Market Index Fund (09/18/1995)	-3.04%	2.77%	1.30%	1.93%	2.89%
Vanguard Total International Bond Index Fund (05/31/2013)	0.09%	-0.16%	2.02%	0.62%	2.59%
Vanguard Short-Term Inflation-Protected Securities Index Fund (10/17/2012)	-0.10%	3.04%	0.98%	1.54%	5.55%

Source of performance figures: Vanguard, Institutional share class, as of September 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. Standard performance of the funds can be located on page 30 of the Quarterly Review.



TDF glide-path essentials: **Evaluating fixed income exposure**

At Vanguard, we are always working to make our target-date funds (TDFs) better. That means regularly reviewing our glide-path design and diving into specific asset allocation topics to ensure that our strategies evolve with the market and continue to meet our clients' needs.



We remain committed to pursuing changes that are guided by purposeful evolution rather than those that are merely cosmetic tweaks. Purposeful evolution requires more than just annual glide-path reviews. It is a continuous process of evaluating how our TDFs can better serve participants and help give them the best chance for a lasting retirement income. Given their widespread use as a qualified default investment alternative (QDIA), changes to TDFs must be carefully considered and justified as meaningful improvements for investor outcomes.

As part of our ongoing research into TDF asset allocation, we initially selected three topics for deeper analysis: (1) raising the initial equity allocation, (2) assessing inflation-hedging asset classes, and (3) evaluating our fixed income exposure across the glide path. Our preliminary findings indicated that adjusting fixed income exposure could have promising investment potential, which we address here.

Among the fixed income options studied, increasing exposure to long-duration U.S. Treasuries across the glide path showed the highest investment value before accounting for implementation factors. However, after further examining performance across various market environments and regimes, operational complexity, cost, and stakeholder feedback, we concluded that the modest investment benefit did not justify the change. Therefore, no adjustments will be made to the Target Retirement Funds glide path at this time.

This article highlights the qualitative, quantitative, and practical considerations surrounding the proposed adjustment to the fixed income allocation and our decision to maintain our existing allocation based on the rigorous standards we set for our Target Retirement series.

How we determine investment merit

In addition to annually reaffirming the appropriateness of the Target Retirement Funds glide path, Vanguard maintains a robust, ongoing TDF research agenda that spans three key areas: glide path and asset allocation, implementation, and the broader TDF ecosystem, including retirement income solutions, advice, and custom offerings.

Every research item is first evaluated for long-term investment merit using our proprietary Vanguard Life-Cycle Investing Model (VLCM), which optimizes glide paths based on utility and key parameters, such as saving rate, expected salary at age 65, and replacement ratio. Using the VLCM allows us to assess the long-term value of glide-path changes through a cost-benefit lens while also evaluating risk-return trade-offs across asset and sub-asset classes.

Any meaningful change should improve both the certainty fee equivalents (CFEs) and the probability of success:

- CFEs are an estimated annual risk-adjusted return differential between the current and alternative glide paths. CFEs greater than 10 bps are deemed to be meaningful enough to warrant further research.
- The probability of success is another key measure in our framework. A low probability suggests the glide path may need to increase equity allocation; a high probability could mean the investor is exposed to unnecessary risk.



The Strategic Asset Allocation Committee (SAAC) governs the glide-path and asset allocation methodology for the Target Retirement Funds and ultimately needs to approve any change made to investment guidelines. Following the initial research into fixed income disaggregation in 2024, the SAAC approved the investment case after review of the CFE and probability of success outcomes from the VLCM assessment. Any research idea that demonstrates sufficient investment merit then undergoes further evaluation through the lens of client needs, business impact, and implementation feasibility. This process ensures that proposed changes move beyond theory to practical application, an especially critical standard for TDFs, which often serve as the plan’s QDIA.

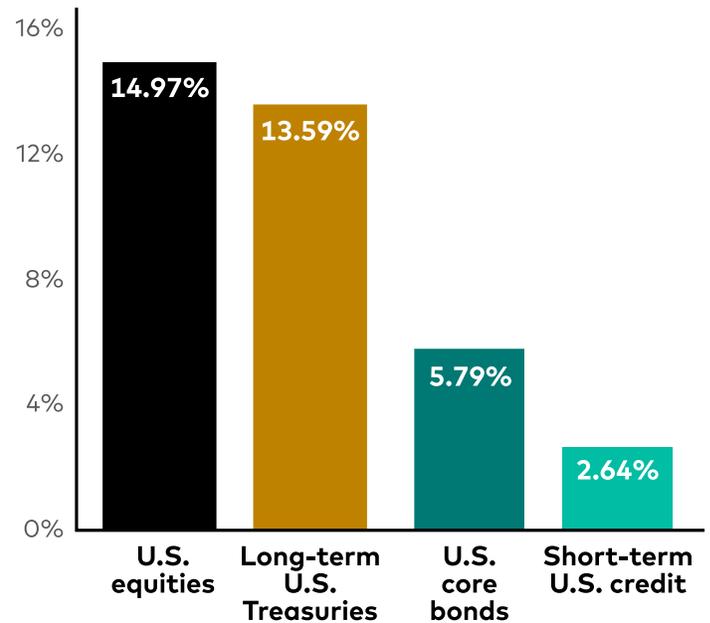
Why not disaggregate fixed income?

A defining strength of the Target Retirement series is its reliability. Its diversified investment approach is designed to support long-term goals and help investors navigate changing market conditions with confidence. This attribute influenced our decision to maintain the current glide path, which was driven by the following factors:

1 Altered portfolio characteristics

To meaningfully improve the CFE and probability of success, the required allocation to the asset class could significantly shift the risk-return profile of certain vintages based on the specific risk tolerance for the average retirement plan participant. For example, increasing exposure in near-retirement vintages might boost expected returns, but it could also introduce volatility that many participants may not be equipped to handle. Our analysis showed that such changes could compromise the reliability that defines the series, particularly for those approaching retirement. Figure 1 highlights the range of volatility for select asset classes that may be present in TDF portfolios. Specifically, it shows that despite being part of fixed income, long-term U.S. Treasuries can exhibit a similar risk profile as U.S. equities.

Figure 1. Ex ante total risk, as of December 31, 2024



Note: Total risk is estimated on an ex ante basis using the MSCI Multi-Asset Class Risk Model. Fund holdings and covariance matrix are as of December 31, 2024.

Source: Vanguard calculations, as of December 31, 2024.



② Potential for performance surprises

Disaggregating the fixed income allocation to include an overweight allocation to long-term Treasuries could introduce unexpected negative performance surprises in certain market conditions, especially for investors nearing retirement who are more sensitive to market volatility. In some market environments, such as in 2011, long-term Treasuries offered strong diversification benefits within a balanced portfolio. However, in other periods, like 2022, they declined sharply and had a notably negative impact on the performance of the TDF series that chose to allocate to them, as depicted in Figure 2. Furthermore, long-term U.S. Treasuries also carry significantly higher volatility and have historically experienced deeper drawdowns than aggregate bond exposure.

③ Investment value eroded by implementation costs

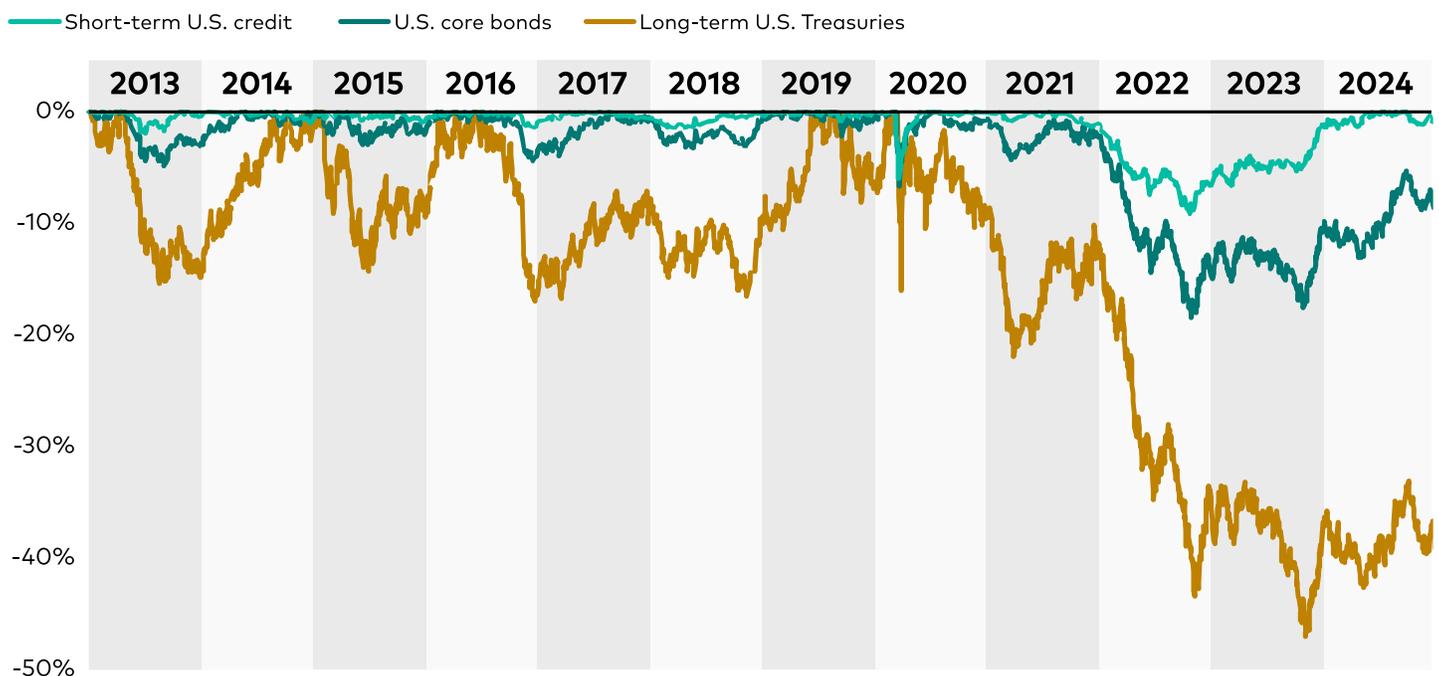
The theoretical investment benefit could be reduced by implementation costs, which can be higher in this space due to limited market size and lower liquidity. This becomes especially problematic during periods of elevated market volatility, as in April 2025, when market conditions highlighted how a change that appears beneficial in theory can lead to unexpected and adverse outcomes in practice.

Innovation and evolution within the TDF space

As we continue to deepen our research across asset classes, including fixed income to evolve our TDF offer, we are also expanding our focus to include innovation and evolution within the TDF space. While we continue to believe that the Target Retirement series is an excellent fit for plans and their participants, we realize that certain plans may also have unique needs and demographics.

For this reason, we are also exploring how additional TDF series could help meet the evolving needs of plans and participants while preserving the core features of the current Target Retirement series. Our current research includes hybrid annuity TDFs, private market exposure, and expanded use of managed accounts that may offer investors a more personalized experience. Expect more on each of these fronts in future publications as we continue to advance our research and evaluate new approaches.

Figure 2. Maximum drawdown during periods of market volatility



Note: Data spans from the beginning of 2013 through the end of 2024. The indices used are Bloomberg U.S. Aggregate Float Adjusted Index for U.S. core bonds, Bloomberg U.S. Long Treasury Index for long-term U.S. Treasuries, and Bloomberg 1-5 Year Credit Index for short-term U.S. credit.

Source: Vanguard calculations, as of December 31, 2024. **Past performance is not a guarantee of future results.**



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

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

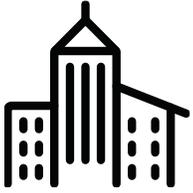
- A systematic framework for validating TDF glide paths.

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.



TDF industry and market overview

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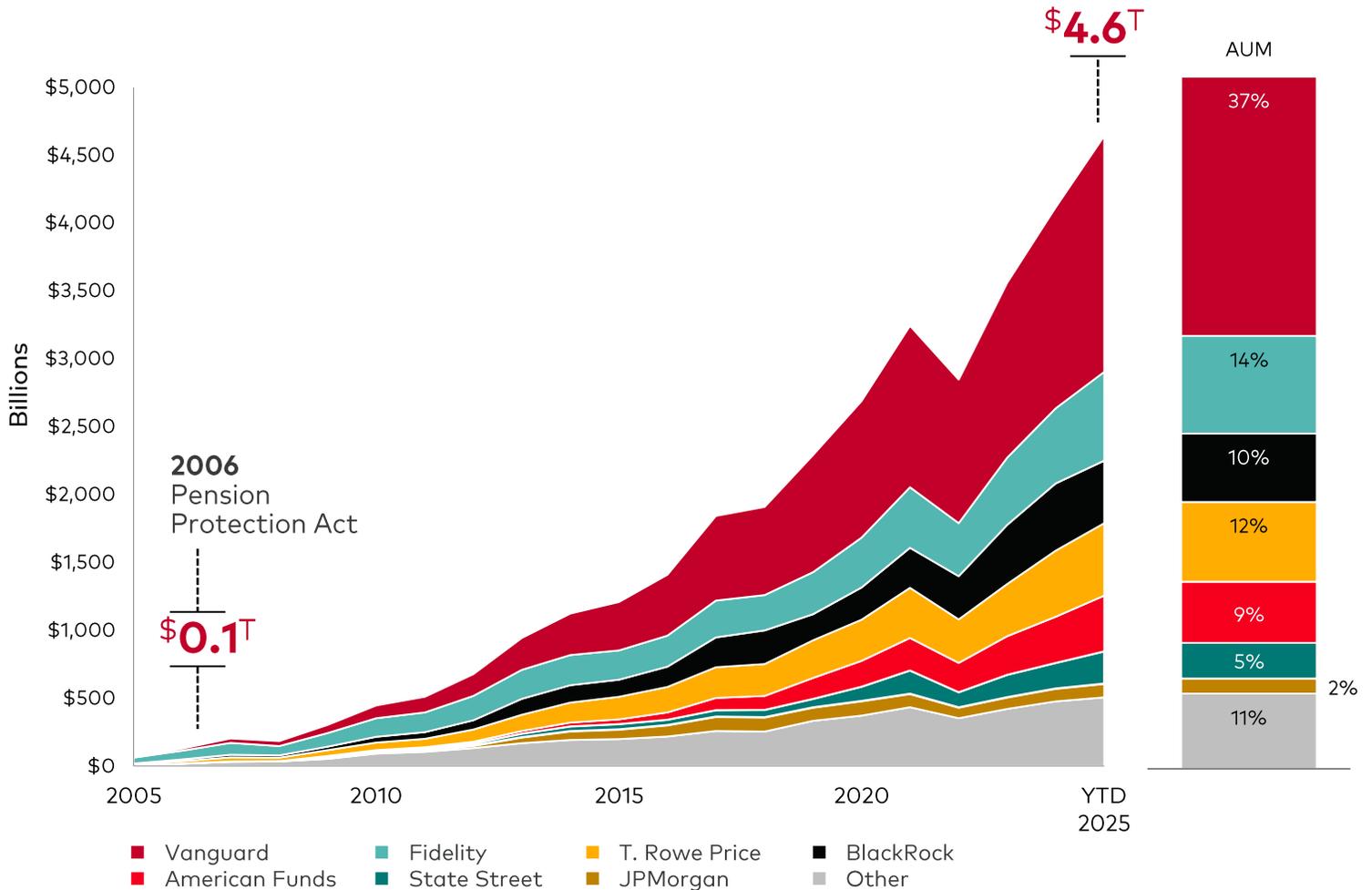
Industry growth and market share

Market environment



Industry growth and market share

Figure 10.1 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 \$4.64 trillion as of the end of Q3 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 \$4.14 trillion, as of September 30, 2025.

Sources: Vanguard, Morningstar, as of September 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 11.1 Index returns ranked by performance

2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	4Q 2024	1Q 2025	2Q 2025	3Q 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	CRSP 2.6	COM 8.9	FTSE 12.4	CRSP 8.2
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	CASH 1.2	FTSE 4.6	CRSP 11.0	FTSE 7.1
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	IAGG 0.2	STPS 3.0	HYB 3.5	REIT 4.8
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	HYB 0.2	AGG 2.8	EMB 3.2	EMB 4.3
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	STPS -0.1	EMB 2.2	IAGG 2.0	COM 3.7
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	COM -0.5	CASH 1.1	AGG 1.2	HYB 2.5
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	EMB -2.1	REIT 1.1	CASH 1.1	AGG 2.0
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	AGG -3.1	HYB 1.0	STPS 1.0	STPS 1.6
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	REIT -6.1	IAGG -0.1	REIT -1.1	CASH 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	FTSE -7.5	CRSP -4.8	COM -3.1	IAGG 0.7

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	8.24	17.37	24.08	15.66	14.67
	FTSE	FTSE Global All Cap ex U.S. Index	7.07	16.43	20.63	10.48	8.43
	AGG	Bloomberg U.S. Aggregate Bond Index	2.03	2.88	4.93	-0.45	1.84
	IAGG	Bloomberg Global Agg ex U.S. Float Adj RIC Cap Index (Hedged)	0.70	2.75	5.02	-0.01	2.26
	STPS	Bloomberg U.S. 0-5 Year TIPS Index	1.57	5.54	5.42	3.72	3.10
Other indexes	CASH	3-Month T-Bill	1.11	4.61	4.98	3.10	2.12
	HYB	Bloomberg U.S. Corporate High Yield Index	2.54	7.41	11.09	5.55	6.17
	EMB	Bloomberg USD Emerging Market Gov RIC Cap Index	4.32	7.66	11.61	2.08	4.06
	REIT	MSCI U.S. REIT Index	4.81	-1.69	10.87	9.30	6.61
	COM	Bloomberg Commodity Index	3.65	8.88	2.76	11.53	3.96

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 September 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

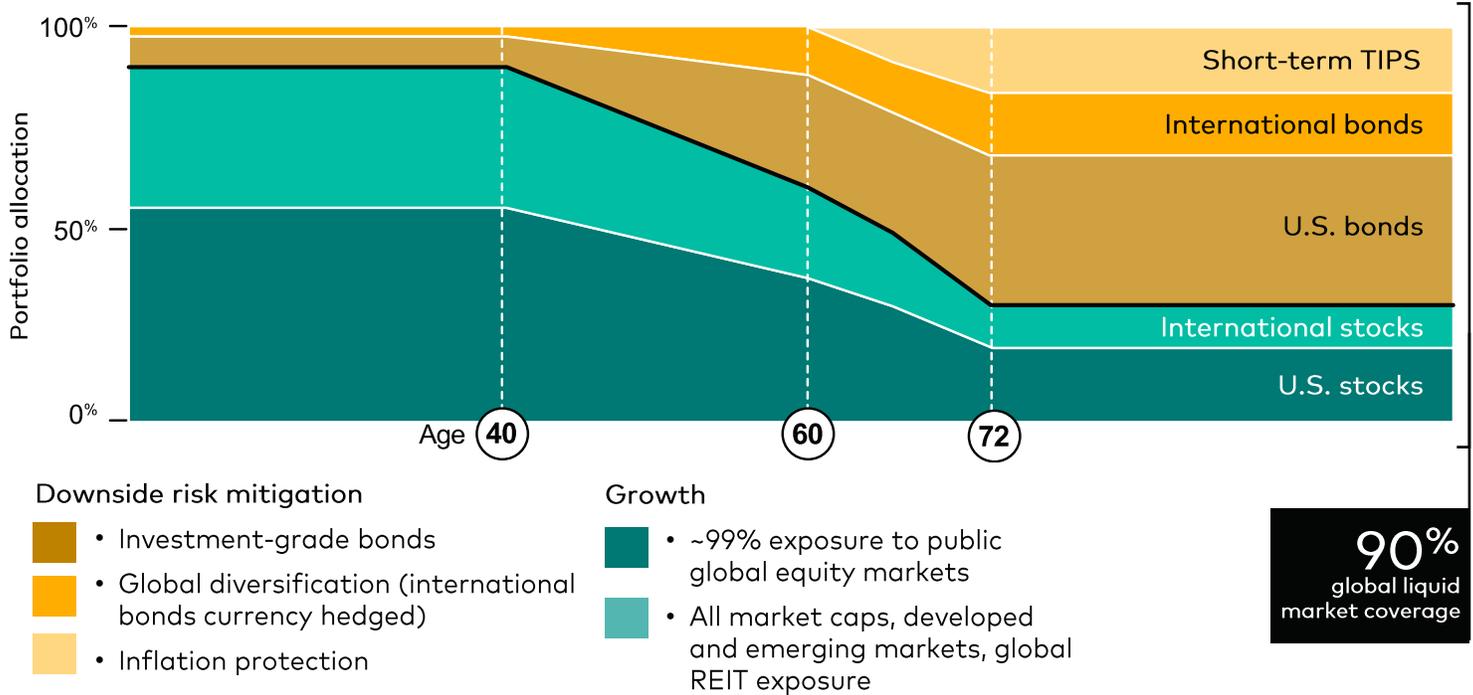
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Evolution of Vanguard's glide-path design

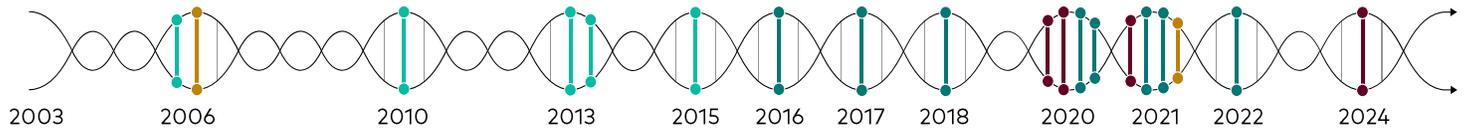
Vanguard fund performance and attribution

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 September 30, 2025

Vanguard Target Retirement Fund and Trust performance

Portfolio/Benchmark	Expense ratio	Average annualized return as of September 30, 2025						Inception date
		3 months	1 year	3 years	5 years	10 years	Since inception	
Vanguard Target Retirement Income Vintage								
Fund	0.08	3.42	7.89	10.30	4.55	5.29	5.21	10/27/2003
Trust II	0.075	3.48	7.94	10.34	4.57	5.33	5.03	2/29/2008
Target Retirement Income Composite Index		3.53	7.93	10.45	4.72	5.51	—	—
Vanguard Target Retirement 2020 Vintage								
Fund	0.08	3.80	8.59	11.98	6.03	6.99	6.31	6/7/2006
Trust II	0.075	3.79	8.63	12.01	6.05	7.03	6.23	2/29/2008
Target Retirement 2020 Composite Index		3.86	8.59	12.12	6.23	7.26	—	—
Vanguard Target Retirement 2025 Vintage								
Fund	0.08	4.69	10.52	14.31	7.38	7.99	7.00	10/27/2003
Trust II	0.075	4.67	10.55	14.33	7.45	8.06	6.82	2/29/2008
Target Retirement 2025 Composite Index		4.73	10.47	14.45	7.65	8.31	—	—
Vanguard Target Retirement 2030 Vintage								
Fund	0.08	5.31	11.70	15.92	8.50	8.78	7.22	6/7/2006
Trust II	0.075	5.31	11.76	15.94	8.56	8.85	7.25	2/29/2008
Target Retirement 2030 Composite Index		5.37	11.63	16.07	8.77	9.11	—	—
Vanguard Target Retirement 2035 Vintage								
Fund	0.08	5.77	12.84	17.29	9.56	9.55	7.93	10/27/2003
Trust II	0.075	5.79	12.85	17.32	9.63	9.62	7.73	2/29/2008
Target Retirement 2035 Composite Index		5.84	12.68	17.42	9.83	9.87	—	—
Vanguard Target Retirement 2040 Vintage								
Fund	0.08	6.23	13.90	18.67	10.62	10.30	8.03	10/27/2003
Trust II	0.075	6.25	13.92	18.69	10.67	10.36	8.20	2/29/2008
Target Retirement 2040 Composite Index		6.30	13.70	18.77	10.88	10.61	—	—

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. 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 September 30, 2025.



Fund performance through September 30, 2025

Vanguard Target Retirement Fund and Trust performance (continued)

Portfolio/Benchmark	Expense ratio	Average annualized return as of September 30, 2025						Inception date
		3 months	1 year	3 years	5 years	10 years	Since inception	
Vanguard Target Retirement 2045 Vintage								
Fund	0.08	6.72	14.94	20.02	11.66	10.89	8.71	10/27/2003
Trust II	0.075	6.72	14.95	20.03	11.71	10.94	8.51	2/29/2008
Target Retirement 2045 Composite Index		6.77	14.71	20.12	11.93	11.21	—	—
Vanguard Target Retirement 2050 Vintage								
Fund	0.08	7.17	16.08	21.03	12.20	11.16	8.49	6/7/2006
Trust II	0.075	7.19	16.15	21.08	12.26	11.22	8.67	2/29/2008
Target Retirement 2050 Composite Index		7.23	15.94	21.18	12.50	11.50	—	—
Vanguard Target Retirement 2055 Vintage								
Fund	0.08	7.18	16.07	21.03	12.20	11.15	10.77	8/18/2010
Trust II	0.075	7.18	16.11	21.08	12.26	11.23	11.11	8/31/2010
Target Retirement 2055 Composite Index		7.23	15.95	21.18	12.50	11.50	—	—
Vanguard Target Retirement 2060 Vintage								
Fund	0.08	7.17	16.05	21.03	12.20	11.15	10.65	1/19/2012
Trust II	0.075	7.19	16.14	21.09	12.27	11.24	10.41	3/1/2012
Target Retirement 2060 Composite Index		7.23	15.95	21.18	12.50	11.50	—	—
Vanguard Target Retirement 2065 Vintage								
Fund	0.08	7.17	16.02	21.02	12.20	—	10.55	7/12/2017
Trust II	0.075	7.19	16.11	21.07	12.25	—	11.05	7/17/2017
Target Retirement 2065 Composite Index		7.23	15.95	21.18	12.50	11.50	—	—
Vanguard Target Retirement 2070 Vintage								
Fund	0.08	7.16	16.00	21.03	—	—	16.39	6/8/2022
Trust II	0.075	7.17	16.06	21.10	—	—	11.08	4/7/2022
Target Retirement 2070 Composite Index		7.23	15.95	21.18	12.50	11.50	—	—

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. 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 September 30, 2025.





Underlying fund performance contribution

Figure 16.1 3-month return contribution by underlying funds

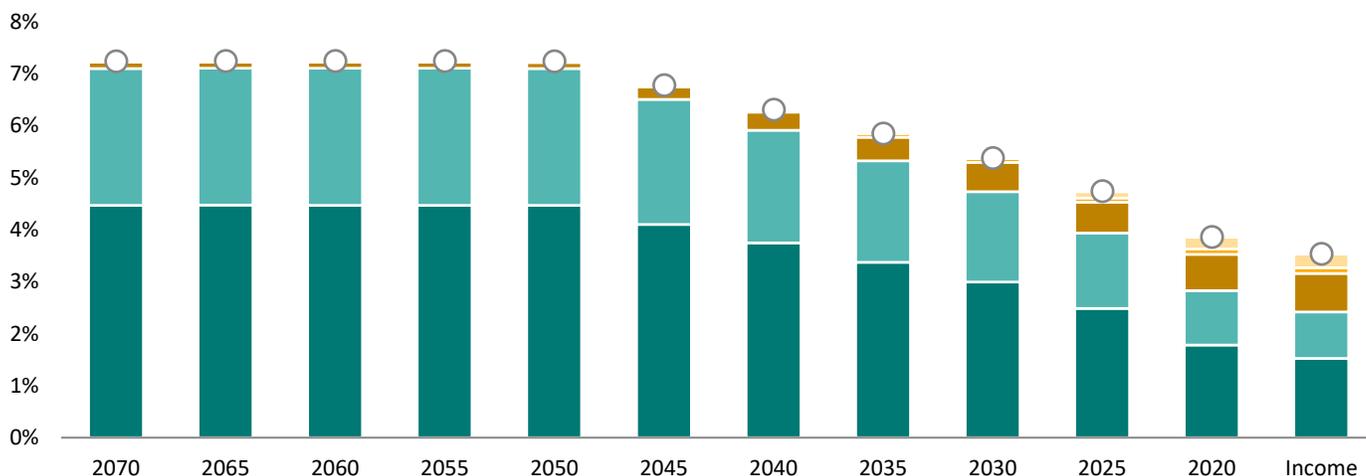
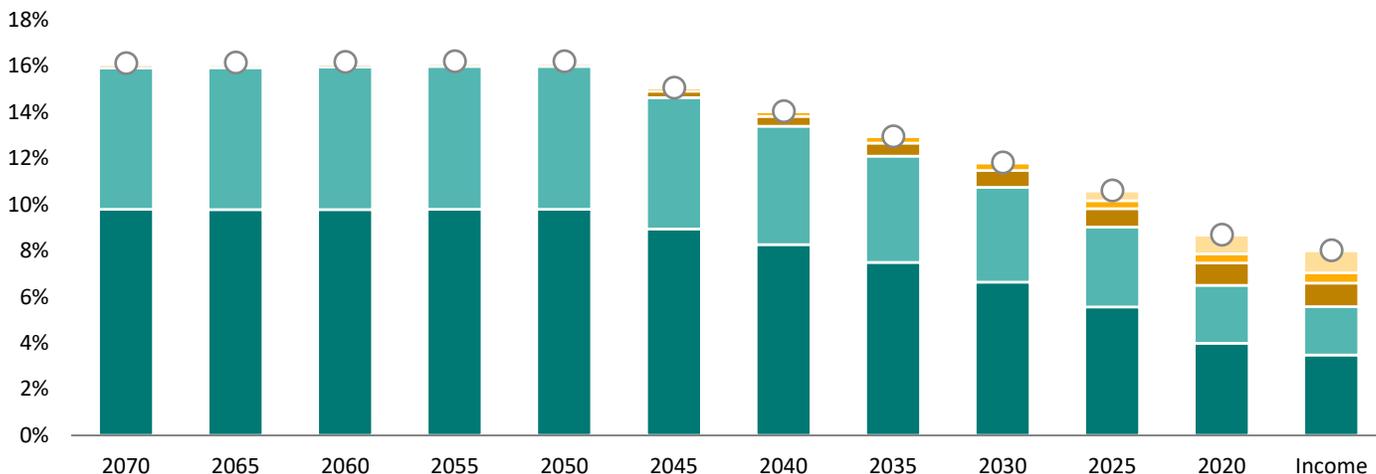


Figure 16.2 1-year return contribution by underlying funds



- 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 September 30, 2025.



Excess return attribution

Figure 17.1 3-month return attribution

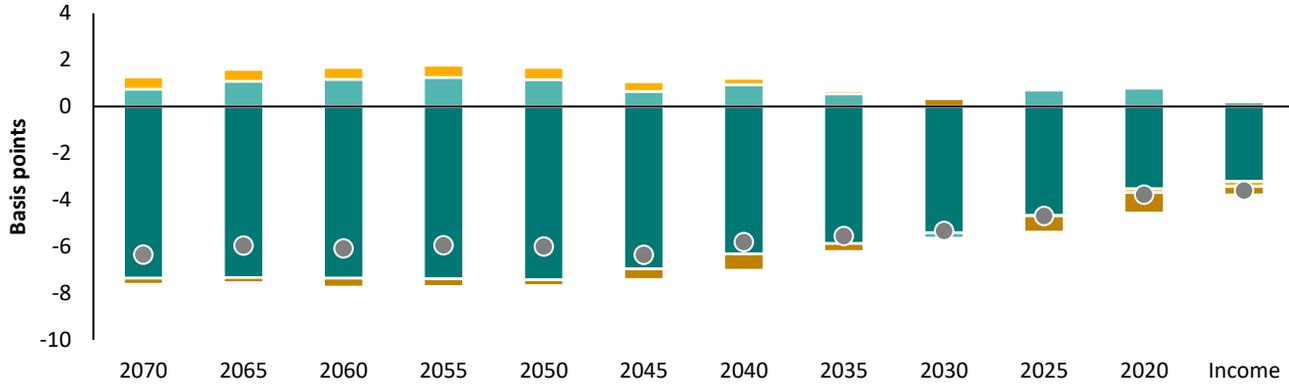
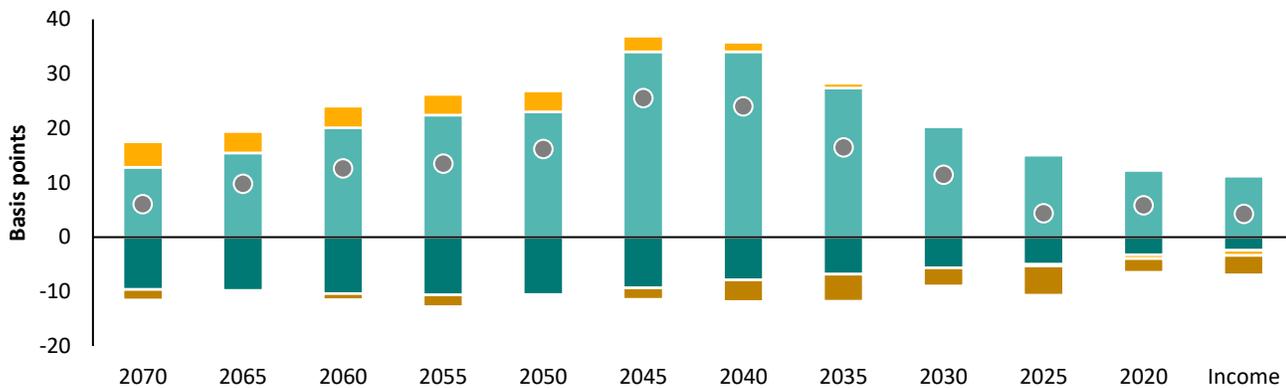


Figure 17.2 1-year return attribution



■ 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.

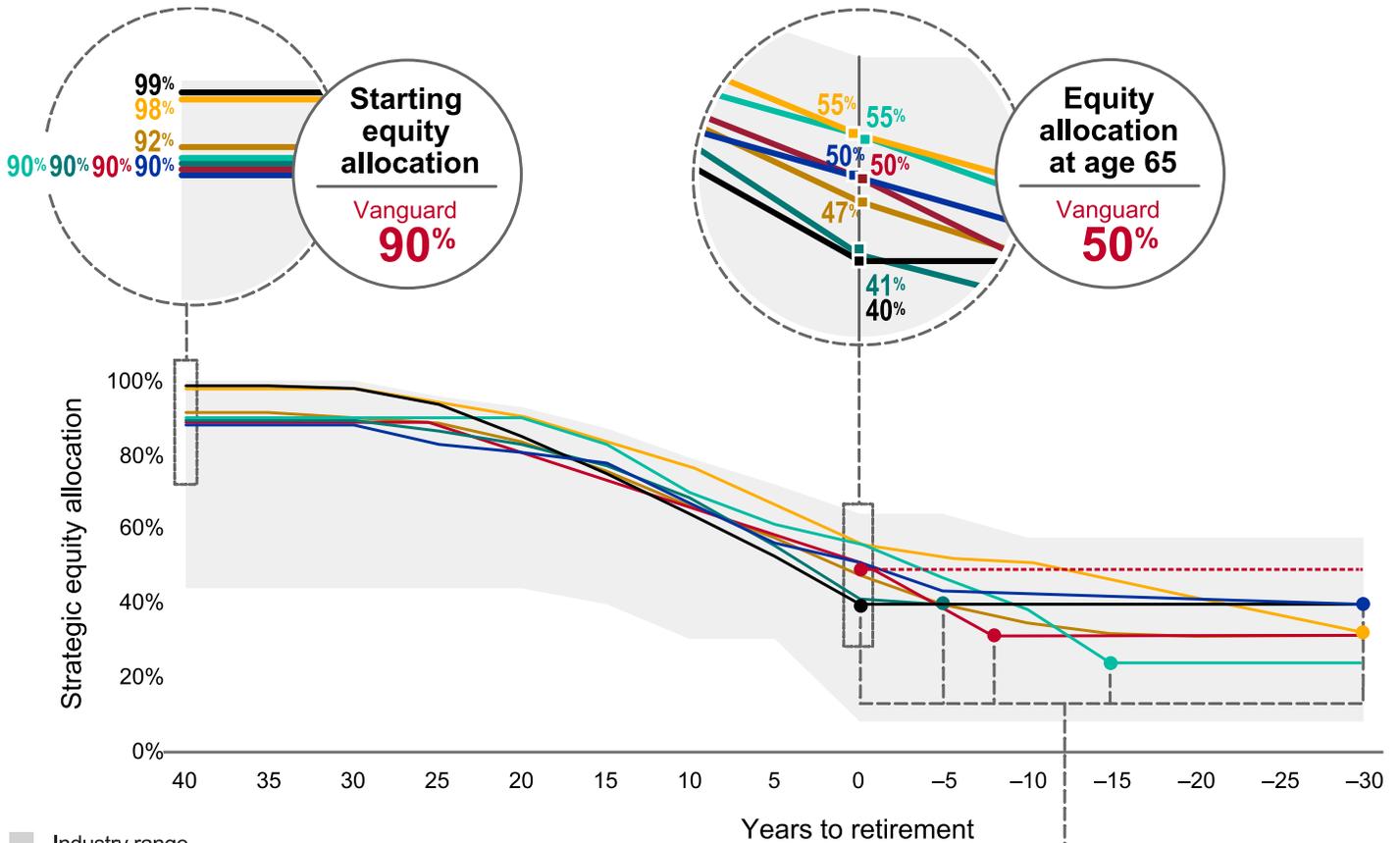
Past performance is not a guarantee of future results.

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

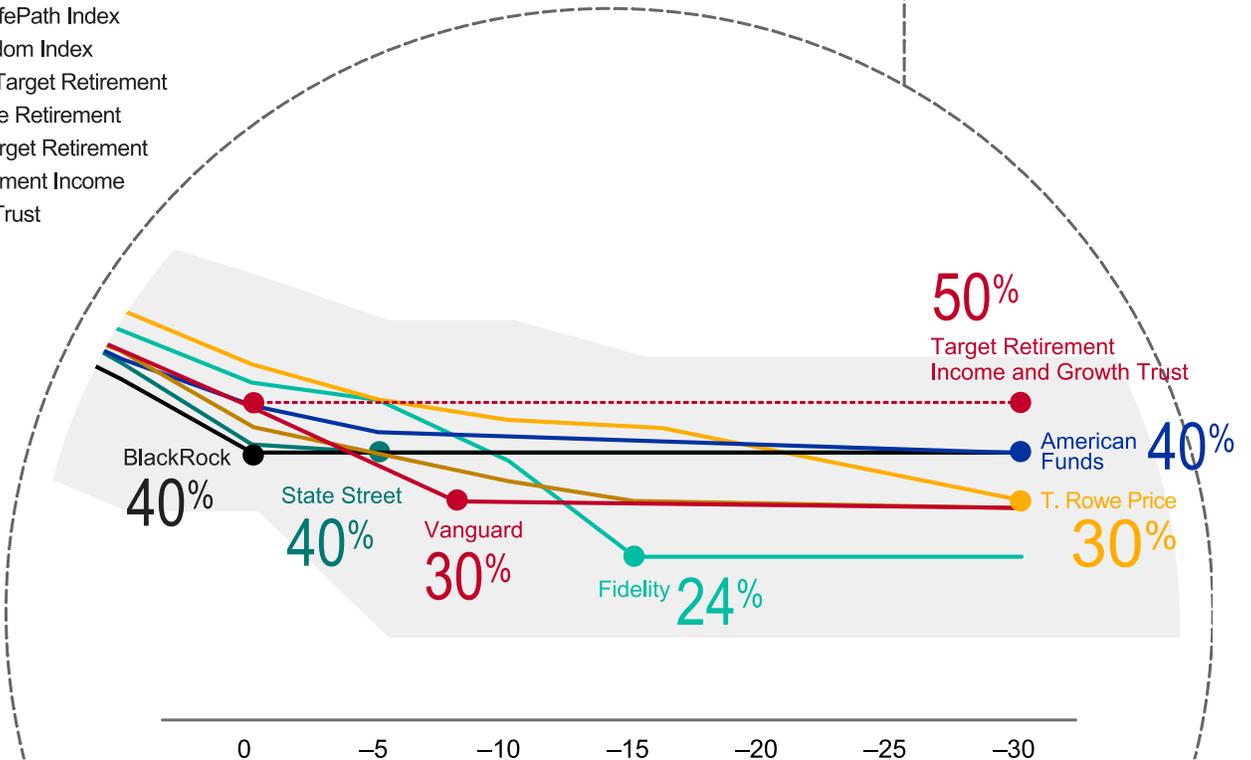
* On January 14, 2021, Bloomberg changed its index pricing time from 3 p.m., Eastern time, to 4 p.m., Eastern time. The time change affects the 1- and 3-year figures.



Glide path comparison



- 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 September 30, 2025; Vanguard calculation for industry average.



Competitor fund construction and performance

IN THIS SECTION:

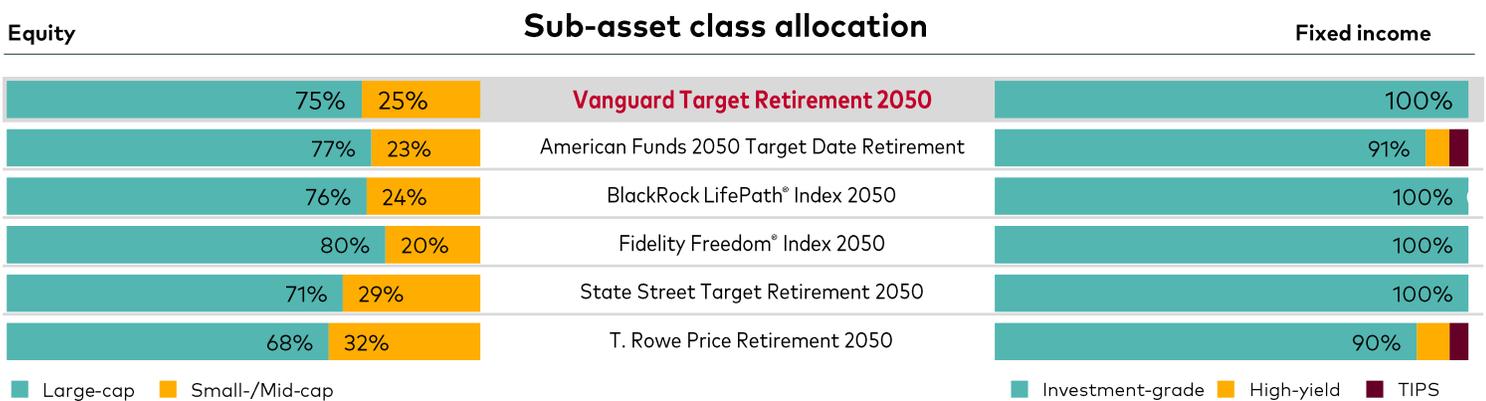
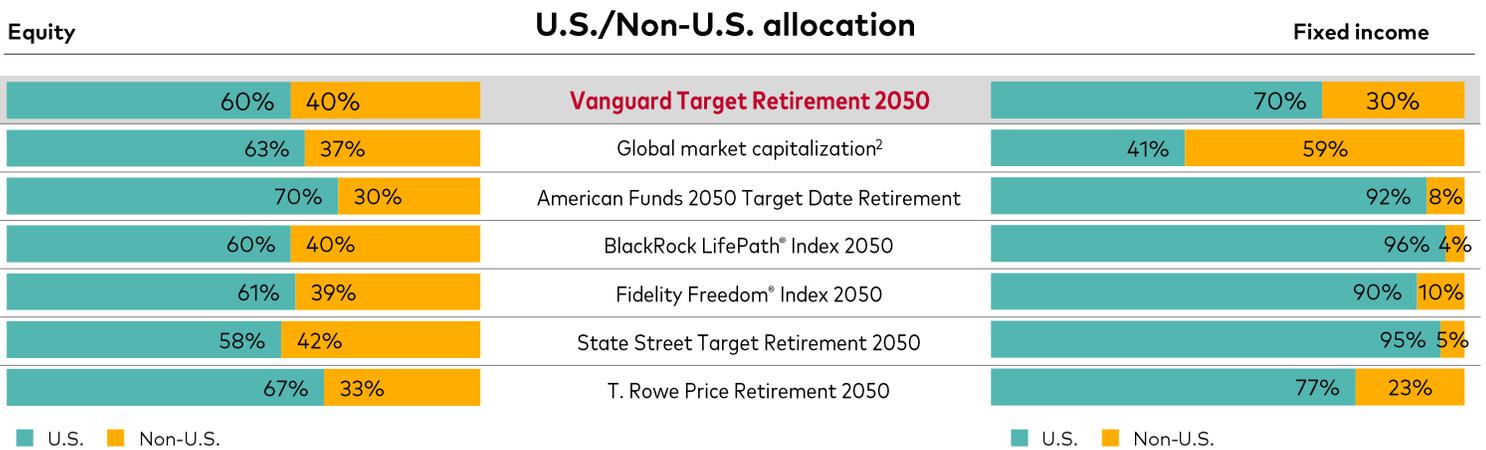
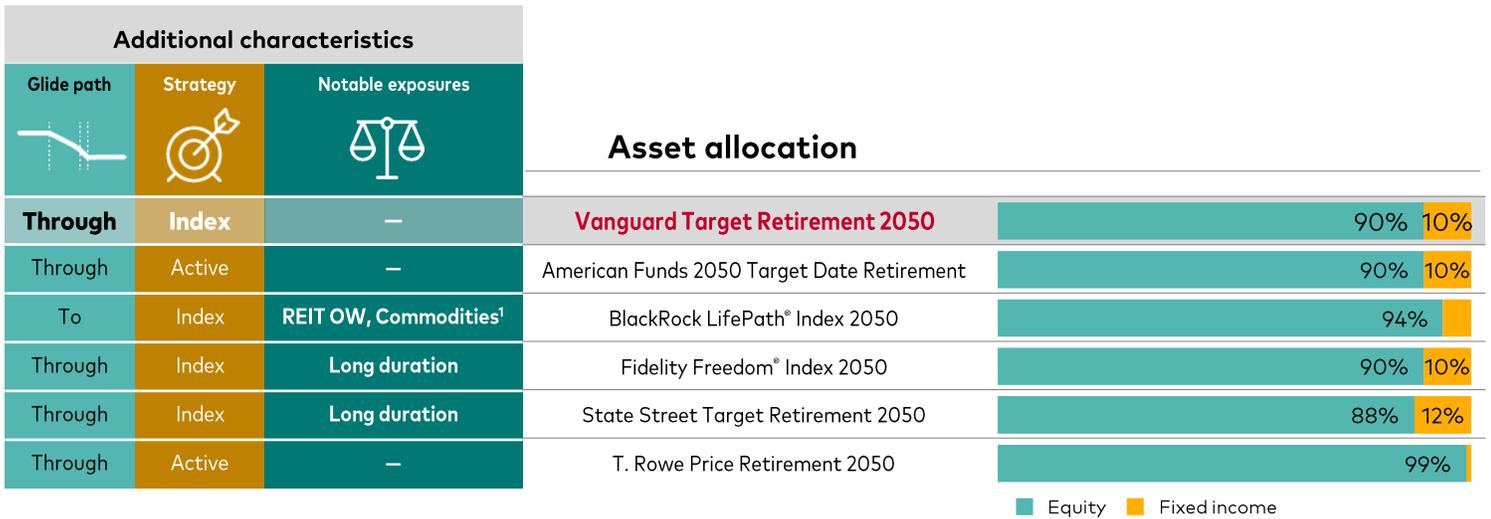
Beyond the glide path

12-month return attribution



2050 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 September 30, 2025.

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

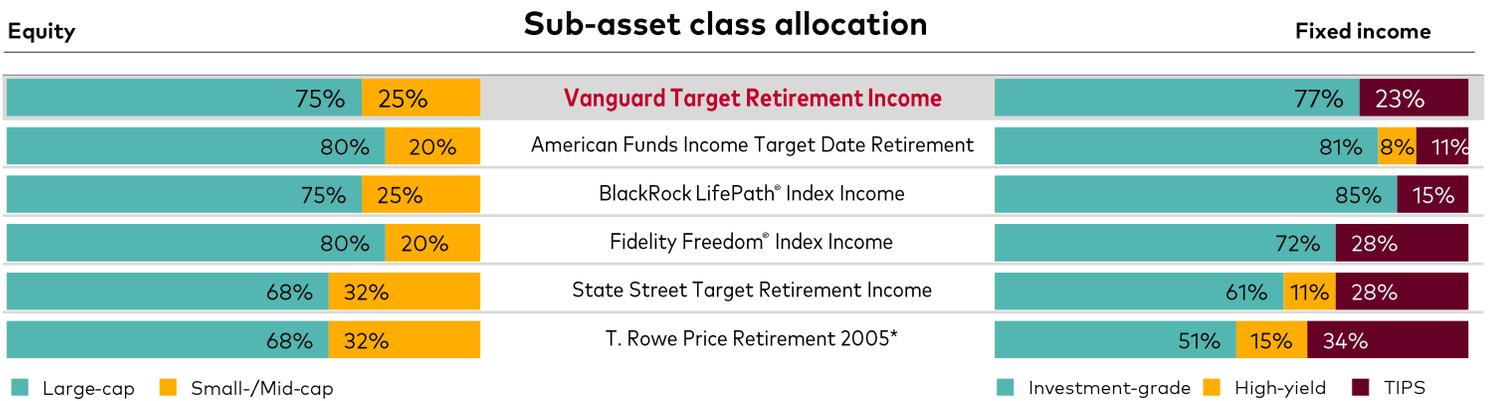
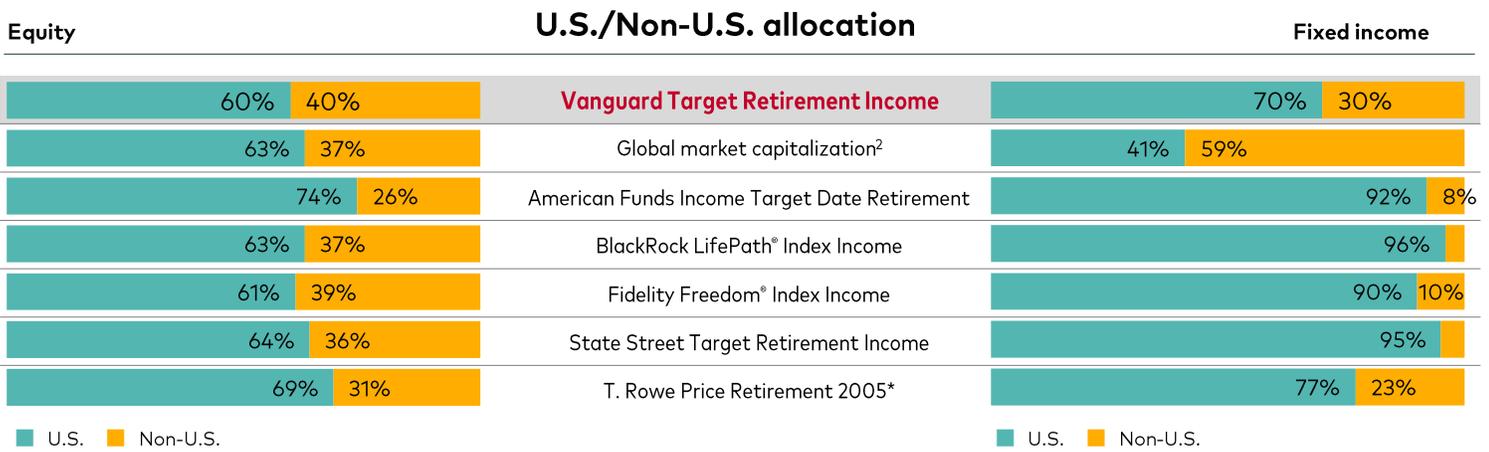
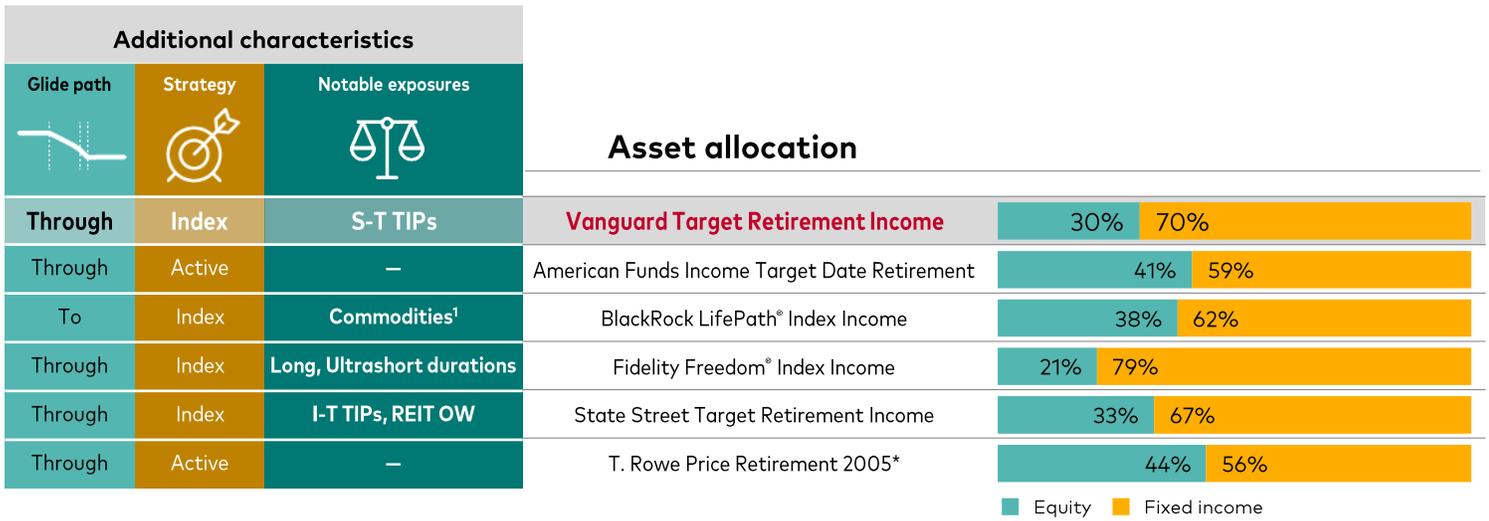
²Global market capitalization calculated using FTSE All Country Equity Index and Bloomberg Barclays Global Aggregate Bond Index.

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 21.1 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 September 30, 2025.

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

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

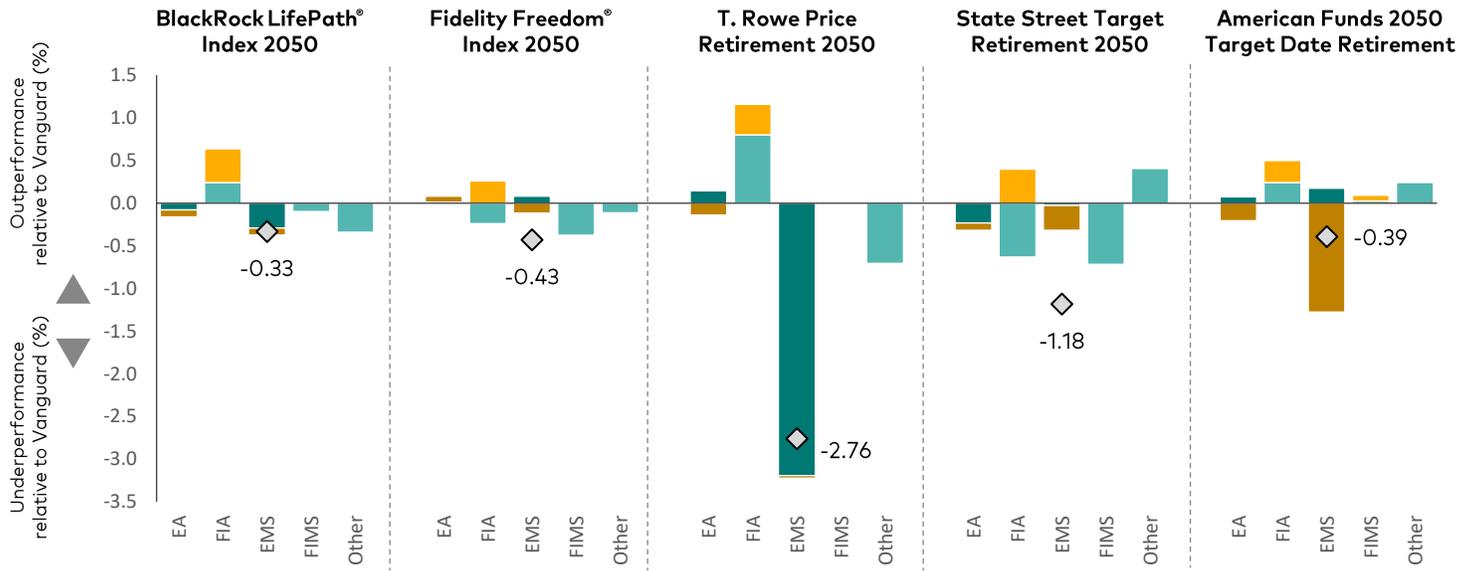
* No explicit income vintage in lineup. 2005 represents the most conservative asset allocation, as a proxy.

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 22.1 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 primarily driven by selection within the equity sub-asset allocation.
- **Fidelity's** underperformance relative to Vanguard was driven by a higher allocation to U.S. long term treasuries relative to Vanguard, in addition to a higher aggregate fixed income weight.
- **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 to long-term treasuries.
- **American Funds'** underperformance relative to Vanguard was driven by weak security selection within the international equity allocation.

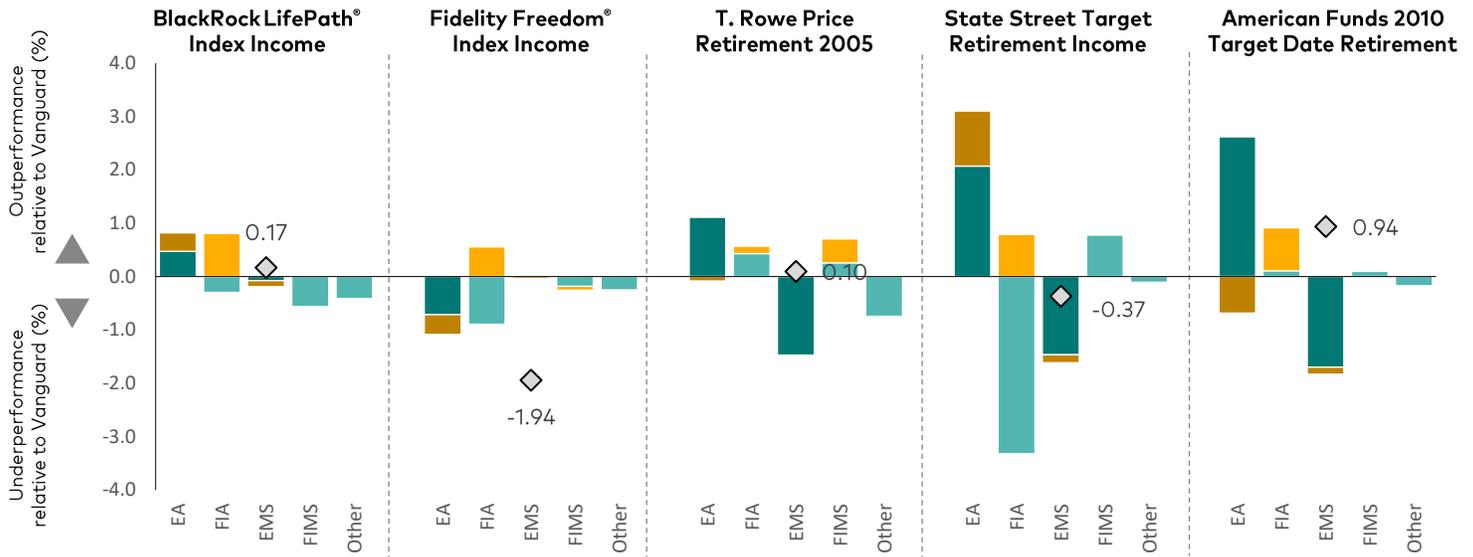
Past performance is not a guarantee of future results.

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



12-month return attribution (continued)

Figure 23.1 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
 ◇ Total relative return
■ U.S. fixed income
 ■ Foreign fixed income

- **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, partially offset by an underweight to international fixed income relative to Vanguard.
- **T. Rowe Price's** outperformance was driven by the higher aggregate equity weight but was largely offset by challenged selection in 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 but was partially offset by weak selection within the US equity allocation.

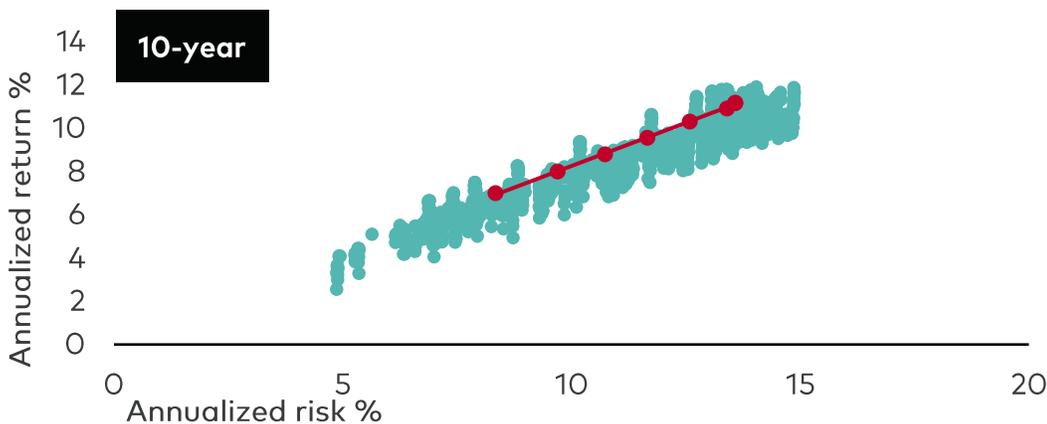
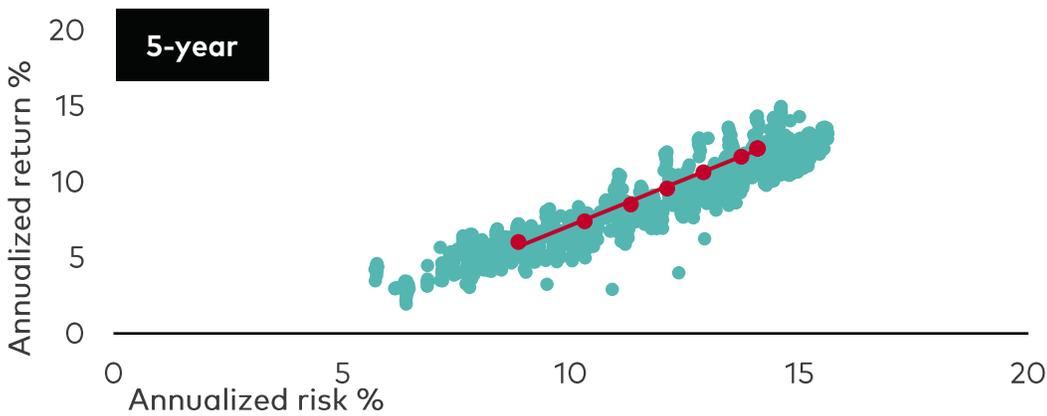
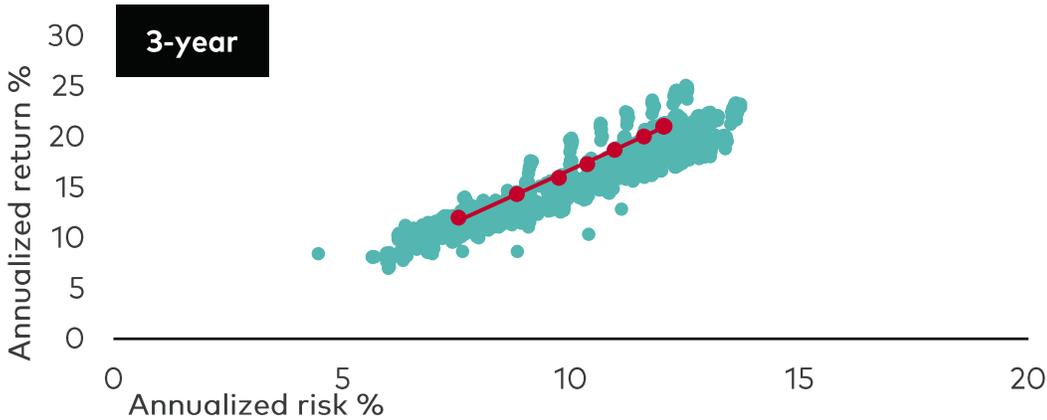
Past performance is not a guarantee of future results.

Sources: Morningstar and Vanguard calculations; data as of September 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.

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



Appendix

IN THIS SECTION:

Absolute performance results

Standardized returns

Absolute performance results

Average annualized return
as of September 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 Income Fund	0.08	3.42	9.61	7.89	10.30	4.55	5.29	5.21	10/27/2003
Target Retirement Income Composite Index	—	3.53	9.61	7.93	10.45	4.72	5.51	--	—
Lipper Target Target Consvr Funds Average	—	3.40	9.10	6.88	9.97	4.54	4.97	--	—
Fidelity Freedom Income	0.46	2.83	8.86	6.25	8.28	3.27	4.33	4.59	10/17/1996
Fidelity Freedom Index Income Investor	0.12	2.84	7.89	5.94	8.08	2.94	4.05	3.86	10/2/2009
T. Rowe Price Retirement 2005	0.49	3.80	9.61	7.98	11.53	5.84	6.29	5.81	2/27/2004
American Funds 2010 Trgt Date Retire R5	0.34	3.19	10.79	8.83	11.46	6.47	6.60	5.43	2/1/2007
BlackRock LifePath Index Retire K	0.12	4.04	10.54	8.05	11.42	5.02	5.99	5.56	5/31/2011
State Street Target Retirement K	0.26	3.61	9.40	7.51	10.75	5.55	5.79	5.14	9/30/2014
JPMorgan SmartRetirement® Income R5	0.48	3.98	10.47	8.12	11.76	5.48	5.63	5.27	5/15/2006
JPMorgan SmartRetirement® Blend IncomeR5	0.50	4.26	10.93	8.88	11.95	5.56	5.74	5.38	7/2/2012
Nuveen Lifecycle 2010	0.56	3.62	9.36	7.85	10.94	5.48	6.31	5.49	1/17/2007
Vanguard Target Retirement 2020 Fund	0.08	3.80	10.35	8.59	11.98	6.03	6.99	6.31	6/7/2006
Target Retirement 2020 Composite Index	—	3.86	10.29	8.59	12.12	6.23	7.26	--	—
Lipper Target 2020 Funds Average	—	3.97	10.82	8.49	11.94	5.95	6.19	--	—
Fidelity Freedom 2020	0.55	4.29	12.49	9.25	13.11	6.45	7.30	6.74	10/17/1996
Fidelity Freedom Index 2020 Investor	0.12	4.31	11.39	8.78	12.64	5.88	7.03	6.98	10/2/2009
T. Rowe Price Retirement 2020	0.52	4.31	10.59	8.82	13.04	7.20	7.84	8.14	9/30/2002
American Funds 2020 Trgt Date Retire R5	0.35	3.56	11.83	9.74	12.85	7.16	7.44	6.06	2/1/2007
Nuveen Lifecycle 2020 R6	0.58	4.02	10.21	8.55	12.08	6.30	7.15	5.86	1/17/2007
Vanguard Target Retirement 2025 Fund	0.08	4.69	12.36	10.52	14.31	7.38	7.99	7.00	10/27/2003
Target Retirement 2025 Composite Index	—	4.73	12.26	10.47	14.45	7.65	8.31	--	—
Lipper Target 2025 Funds Average	—	4.19	10.92	8.54	12.31	6.24	6.81	--	—
Fidelity Freedom 2025	0.59	4.83	13.78	10.35	14.50	7.38	7.99	6.75	11/6/2003
Fidelity Freedom Index 2025 Investor	0.12	4.85	12.65	9.76	13.93	6.76	7.73	7.71	10/2/2009
T. Rowe Price Retirement 2025	0.54	4.44	10.94	9.11	13.90	7.87	8.50	7.37	2/27/2004
American Funds 2025 Trgt Date Retire R5	0.36	3.70	12.07	10.02	13.65	7.56	8.21	6.68	2/1/2007
JPMorgan SmartRetirement 2025 R5	0.47	4.12	10.68	8.29	12.83	6.52	6.98	6.03	7/31/2007
JPMorgan SmartRetirement® Blend 2025 R5	0.48	4.41	11.17	9.07	13.17	6.69	7.16	7.23	7/2/2012
Nuveen Lifecycle 2025 R6	0.58	4.29	10.73	9.08	13.11	7.04	7.81	6.16	1/17/2007
State Street Target Retirement 2025 K	0.22	4.40	11.20	9.11	13.48	7.22	8.16	7.14	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. 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 September 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 2030 Fund	0.08	5.31	13.62	11.70	15.92	8.50	8.78	7.22	6/7/2006
Target Retirement 2030 Composite Index	—	5.37	13.52	11.63	16.07	8.77	9.11	--	—
Lipper Target 2030 Funds Average	—	4.41	11.60	9.25	13.81	7.45	7.74	--	—
Fidelity Freedom 2030	0.61	5.17	14.71	11.35	15.78	8.45	8.99	7.25	10/17/1996
Fidelity Freedom Index 2030 Investor	0.12	5.22	13.45	10.74	15.16	7.76	8.76	8.42	10/2/2009
T. Rowe Price Retirement 2030	0.56	4.97	12.05	9.99	15.49	8.85	9.26	9.09	9/30/2002
American Funds 2030 Trgt Date Retire R5	0.38	4.08	13.06	11.29	15.52	8.73	9.32	7.40	2/1/2007
JPMorgan SmartRetirement 2030 R5	0.47	4.76	12.21	9.63	14.92	7.98	8.01	6.91	5/15/2006
JPMorgan SmartRetirement® Blend 2030 R5	0.45	5.13	12.92	10.71	15.29	8.20	8.23	8.19	7/2/2012
Nuveen Lifecycle 2030 R6	0.60	4.77	11.62	9.99	14.56	8.01	8.58	6.48	1/17/2007
BlackRock Lifepath Index 2030 K	0.13	4.67	12.03	9.55	14.30	7.50	8.12	7.28	5/31/2011
State Street Target Retirement 2030 K	0.19	5.29	13.75	11.14	15.80	8.25	9.08	7.94	9/30/2014
Vanguard Target Retirement 2035 Fund	0.08	5.77	14.68	12.84	17.29	9.56	9.55	7.93	10/27/2003
Target Retirement 2035 Composite Index	—	5.84	14.54	12.68	17.42	9.83	9.87	--	—
Lipper Target 2035 Funds Average	—	5.05	13.06	10.82	16.05	9.03	8.94	--	—
Fidelity Freedom 2035	0.64	5.64	15.87	12.81	18.04	10.29	10.19	7.75	11/6/2003
Fidelity Freedom Index 2035 Investor	0.12	5.68	14.53	12.08	17.27	9.49	9.97	9.35	10/2/2009
T. Rowe Price Retirement 2035	0.59	5.61	13.43	11.14	17.31	9.94	10.01	8.18	2/27/2004
American Funds 2035 Trgt Date Retire R5	0.39	4.54	14.21	12.78	17.64	10.21	10.57	8.04	2/1/2007
JPMorgan SmartRetirement 2035 R5	0.51	5.07	13.32	10.94	16.95	9.74	9.09	7.20	7/31/2007
JPMorgan SmartRetirement® Blend 2035 R5	0.47	5.80	14.25	12.16	17.25	9.80	9.20	9.06	7/2/2012
Nuveen Lifecycle 2035 R6	0.61	5.24	12.63	10.93	16.24	9.08	9.37	6.93	1/17/2007
BlackRock Lifepath Index 2035 K	0.13	5.43	13.58	11.24	16.46	9.13	9.20	8.08	5/31/2011
State Street Target Retirement 2035 K	0.17	5.91	15.25	12.33	17.11	9.03	9.67	8.43	9/30/2014
Vanguard Target Retirement 2040 Fund	0.08	6.23	15.64	13.90	18.67	10.62	10.30	8.03	6/7/2006
Target Retirement 2040 Composite Index	—	6.30	15.53	13.70	18.77	10.88	10.61	--	—
Lipper Target 2040 Funds Average	—	5.67	14.50	12.47	18.06	10.37	9.66	--	—
Fidelity Freedom 2040	0.66	6.57	18.04	15.19	20.75	12.10	11.08	5.95	9/6/2000
Fidelity Freedom Index 2040 Investor	0.12	6.58	16.65	14.36	19.88	11.23	10.86	9.94	10/2/2009
T. Rowe Price Retirement 2040	0.60	6.09	14.49	12.15	18.81	10.86	10.64	9.75	9/30/2002
American Funds 2040 Trgt Date Retire R5	0.41	5.23	16.03	14.95	19.97	11.53	11.40	8.50	2/1/2007
JPMorgan SmartRetirement 2040 R5	0.51	5.47	14.31	11.98	18.49	10.91	9.86	7.93	5/15/2006
JPMorgan SmartRetirement® Blend 2040 R5	0.48	6.30	15.34	13.34	18.82	10.97	9.98	9.69	7/2/2012
Nuveen Lifecycle 2040 R6	0.64	5.91	14.00	12.41	18.13	10.37	10.24	7.46	1/17/2007
BlackRock Lifepath Index 2040 K	0.13	6.00	14.86	12.73	18.49	10.63	10.18	8.80	5/31/2011
State Street Target Retirement 2040 K	0.15	6.40	16.22	13.34	18.20	9.77	10.16	8.83	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. 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 September 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 2045 Fund	0.08	6.72	16.65	14.94	20.02	11.66	10.89	8.71	10/27/2003
Target Retirement 2045 Composite Index	—	6.77	16.50	14.71	20.12	11.93	11.21	--	—
Lipper Target 2045 Funds Average	—	6.10	15.48	13.45	19.19	11.21	10.27	--	—
Fidelity Freedom 2045	0.68	7.01	19.35	16.46	21.75	12.60	11.32	7.84	6/1/2006
Fidelity Freedom Index 2045 Investor	0.12	7.09	17.84	15.65	20.81	11.71	11.10	10.12	10/2/2009
T. Rowe Price Retirement 2045	0.61	6.47	15.32	13.00	19.81	11.57	11.05	8.81	5/31/2005
American Funds 2045 Trgt Date Retire R5	0.42	5.52	16.66	15.58	20.67	11.85	11.66	8.63	2/1/2007
JPMorgan SmartRetirement 2045 R5	0.52	5.77	14.98	12.73	19.60	11.83	10.31	7.95	7/31/2007
JPMorgan SmartRetirement® Blend 2045 R5	0.46	6.69	16.14	14.18	19.99	11.91	10.42	10.01	7/2/2012
Nuveen Lifecycle 2045 R6	0.65	6.31	14.93	13.39	19.40	11.30	10.82	7.50	11/30/2007
BlackRock Lifepath Index 2045 K	0.14	6.68	16.05	14.13	20.36	11.96	10.99	9.40	5/31/2011
State Street Target Retirement 2045 K	0.16	6.77	16.98	14.19	19.05	10.42	10.58	9.16	9/30/2014
Vanguard Target Retirement 2050 Fund	0.08	7.17	17.82	16.08	21.03	12.20	11.16	8.49	6/7/2006
Target Retirement 2050 Composite Index	—	7.23	17.71	15.94	21.18	12.50	11.50	--	—
Lipper Target 2050 Funds Average	—	6.37	15.89	13.87	19.77	11.56	10.40	--	—
Fidelity Freedom 2050	0.68	7.05	19.25	16.45	21.73	12.58	11.33	7.74	6/1/2006
Fidelity Freedom Index 2050 Investor	0.12	7.07	17.84	15.65	20.81	11.71	11.10	10.16	10/2/2009
T. Rowe Price Retirement 2050	0.63	6.57	15.58	13.31	20.14	11.75	11.14	8.23	12/29/2006
American Funds 2050 Trgt Date Retire R5	0.42	5.56	16.73	15.68	20.97	11.87	11.73	8.66	2/1/2007
JPMorgan SmartRetirement 2050 R5	0.53	6.00	15.46	13.26	20.09	12.06	10.42	8.02	7/31/2007
JPMorgan SmartRetirement® Blend 2050 R5	0.45	6.93	16.71	14.81	20.48	12.16	10.58	10.13	7/2/2012
Nuveen Lifecycle 2050 R6	0.66	6.59	15.45	13.91	20.03	11.64	11.02	7.60	11/30/2007
BlackRock Lifepath Index 2050 K	0.14	7.29	17.35	15.74	21.78	12.88	11.47	9.81	5/31/2011
State Street Target Retirement 2050 K	0.16	7.03	17.64	14.90	19.86	10.91	10.82	9.35	9/30/2014
Vanguard Target Retirement 2055 Fund	0.08	7.18	17.82	16.07	21.03	12.20	11.15	10.77	8/18/2010
Target Retirement 2055 Composite Index	—	7.23	17.72	15.95	21.18	12.50	11.50	--	—
Lipper Target 2055+ Funds Average	—	6.45	16.14	14.13	20.07	11.75	10.60	--	—
Fidelity Freedom 2055	0.68	7.01	19.24	16.42	21.70	12.58	11.32	9.66	6/1/2011
Fidelity Freedom Index 2055 Investor	0.12	7.07	17.79	15.63	20.79	11.72	11.09	9.43	6/1/2011
T. Rowe Price Retirement 2055	0.64	6.63	15.69	13.33	20.22	11.77	11.12	8.22	12/29/2006
American Funds 2055 Trgt Date Retire R5	0.44	5.68	16.94	15.89	21.27	11.89	11.73	11.08	2/1/2010
JPMorgan SmartRetirement 2055 R5	0.53	5.99	15.43	13.24	20.07	12.05	10.43	10.23	1/31/2012
JPMorgan SmartRetirement® Blend 2055 R5	0.47	6.92	16.63	14.73	20.47	12.19	10.55	10.09	7/2/2012
Nuveen Lifecycle 2055 R6	0.68	6.62	15.57	14.08	20.23	11.79	11.13	9.67	4/29/2011
BlackRock Lifepath Index 2055 K	0.14	7.54	17.99	16.57	22.36	13.20	11.65	10.00	5/31/2011
State Street Target Retirement 2055 K	0.17	7.18	17.95	15.18	20.05	10.99	10.87	9.39	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. 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 September 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	7.17	17.81	16.05	21.03	12.20	11.15	10.65	1/19/2012
Target Retirement 2060 Composite Index	—	7.23	17.72	15.95	21.18	12.50	11.50	--	—
Lipper Target 2060+ Funds Average	—	6.58	16.63	14.59	20.44	12.06	--	--	—
Fidelity Freedom 2060	0.68	7.00	19.27	16.44	21.72	12.60	11.32	9.91	8/5/2014
Fidelity Freedom Index 2060 Investor	0.12	7.08	17.81	15.65	20.80	11.72	11.10	9.57	8/5/2014
T. Rowe Price Retirement 2060	0.64	6.61	15.68	13.32	20.20	11.77	11.12	9.38	6/23/2014
American Funds 2060 Trgt Date Retire R5	0.44	5.70	16.91	15.98	21.34	11.89	11.72	10.42	3/27/2015
JPMorgan SmartRetirement 2060 R5	0.56	5.97	15.46	13.27	20.08	12.07	—	10.48	8/31/2016
JPMorgan SmartRetirement® Blend 2060 R5	0.51	6.93	16.74	14.86	20.50	12.22	—	10.40	8/31/2016
Nuveen Lifecycle 2060 R6	0.70	6.68	15.76	14.24	20.41	11.94	11.24	9.87	9/26/2014
BlackRock Lifepath Index 2060 K	0.14	7.61	18.09	16.66	22.42	13.23	—	12.39	2/29/2016
State Street Target Retirement 2060 K	0.19	7.18	17.97	15.28	20.06	11.01	10.85	9.39	9/30/2014
Vanguard Target Retirement 2065 Fund	0.08	7.17	17.82	16.02	21.02	12.20	--	10.55	7/12/2017
Target Retirement 2065 Composite Index	—	7.23	17.72	15.95	21.18	12.50	11.50	--	—
Lipper Target 2060+ Funds Average	—	6.58	16.63	14.59	20.44	12.06	--	--	—
Fidelity Freedom 2065	0.68	7.05	19.31	16.47	21.72	12.61	—	11.79	6/28/2019
Fidelity Freedom Index 2065 Investor	0.12	7.08	17.81	15.59	20.80	11.71	—	11.09	6/28/2019
T. Rowe Price Retirement 2065	0.64	6.67	15.71	13.38	20.19	—	—	11.17	10/13/2020
American Funds 2065 Trgt Date Retire R5	0.44	5.69	16.88	15.93	21.32	11.89	—	16.06	3/27/2020
JPMorgan SmartRetirement® Blend 2065 R5	2.79	6.82	16.40	14.28	—	—	—	18.38	11/1/2022
Nuveen Lifecycle 2065 R6	0.96	6.70	15.86	14.35	20.54	12.13	—	12.13	9/30/2020
BlackRock Lifepath Index 2065 K	0.14	7.57	18.06	16.71	22.41	13.21	—	12.23	10/30/2019
State Street Target Retirement 2065 K	0.24	7.25	17.83	15.20	20.01	10.93	—	14.52	3/30/2020
Vanguard Target Retirement 2070 Fund	0.08	7.16	17.80	16.00	21.03	--	--	16.39	6/28/2022
Target Retirement 2070 Composite Index	—	7.23	17.72	15.95	21.18	12.50	11.50	--	—
Lipper Target 2060+ Funds Average	—	6.58	16.63	14.59	20.44	12.06	--	--	—
Fidelity Freedom 2070	0.68	6.89	18.83	16.19	—	—	—	17.86	6/28/2024
Fidelity Freedom Index 2070 Investor	0.12	7.04	17.86	15.56	—	—	—	18.22	6/28/2024
T. Rowe Price Retirement 2070	0.64	6.71	—	—	—	—	—	9.80	6/18/2025
American Funds 2070 Trgt Date Retire R5	0.44	5.64	16.90	15.92	—	—	—	19.27	5/3/2024
BlackRock Lifepath® Index 2070 K	0.33	7.55	18.82	17.33	—	—	—	17.62	9/24/2024
State Street Target Retirement 2070 K	0.32	7.21	20.40	—	—	—	—	20.40	12/31/2024

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Sources: Vanguard and Morningstar.



Standardized returns

	Average annualized return as of September 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	8.24	14.34	17.35	24.09	15.66	14.67	9.39	7/7/1997
Vanguard Total International Stock Index Fund Institutional Shares	0.06	6.96	26.53	17.16	20.82	10.41	8.35	6.33	11/29/2010
Vanguard Total Bond Market Index Fund Institutional Shares	0.025	1.93	6.11	2.89	4.92	-0.47	1.84	4.27	9/18/1995
Vanguard Total International Bond Index Fund Institutional Shares	0.06	0.62	2.49	2.59	4.98	-0.08	2.14	2.48	5/31/2013
Vanguard Short-Term Inflation-Protected Securities Index Fund Institutional Shares	0.03	1.54	5.65	5.55	5.45	3.72	3.07	2.22	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. 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

Notes

Important information

For more information, visit 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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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 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.

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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.

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