Vanguard Target Retirement 2045 Fund VTIVX

Benchmark
Morningstar Lifetime Mod 2045 TR USD

Overall Morningstar Rating™	Morningstar Return	Morningstar Risk
★★★★	Above Average	Below Average

Out of 187 Target-Date 2045 funds. **An investment's overall Morningstar Rating, based on its risk-adjusted return, is a weighted average of its applicable 3-, 5-, and 10-year Ratings. See disclosure page for details.**

Investment Objective & Strategy

From investment's prospectus

The investment seeks to provide capital appreciation and current income consistent with its current asset allocation.

The fund invests in a mix of Vanguard mutual funds according to an asset allocation strategy designed for investors planning to retire and leave the workforce in or within a few years of 2045 (the target year). The fund's asset allocation will become more conservative over time, meaning that the percentage of assets allocated to stocks will decrease while the percentage of assets allocated to bonds and other fixed income investments will increase.

Fees and Expenses as of 01-31-23

Prospectus Net Expense Ratio	0.08%
Prospectus Gross Expense Ratio	*0.08%*
Maximum Sales Charge	—
12b-1 Fee	—
Redemption Fee/Term	—

Waiver Data	Type	Exp. Date	%
—	—	—	—

Operations and Management

Fund Inception Date	10-27-03
Portfolio Manager(s)	Walter Nejman
	Michael R. Roach, CFA
Name of Issuer	Vanguard
Telephone	800-662-7447
Web Site	www.vanguard.com

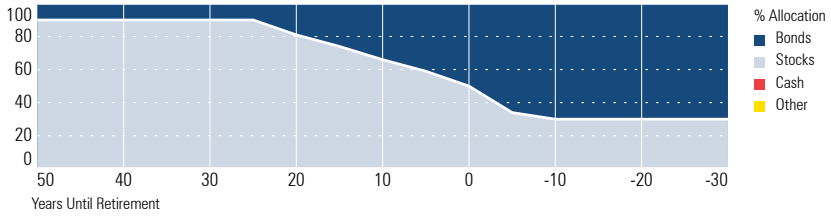
Benchmark Description: Morningstar Lifetime Mod 2045 TR USD

The index measures the performance of a portfolio of global equities, bonds and traditional inflation hedges such as commodities and TIPS. This portfolio is held in proportions appropriate for a US investor who has a target maturity date of 2045. The Moderate risk profile is for investors who are comfortable with average exposure to equity market volatility. This Index does not incorporate Environmental, Social, or Governance (ESG) criteria.

Category Description: Target-Date 2045

Target-date portfolios provide diversified exposure to stocks, bonds, and cash for those investors who have a specific date in mind (in this case, the years 2041-2045) for retirement. These portfolios aim to provide investors with an optimal level of return and risk, based solely on the target date. Management adjusts the allocation among asset classes to more-conservative mixes as the target date approaches, following a preset glide path. A target-date portfolio is part of a series of funds offering multiple retirement dates to investors.

Allocation of Assets



Performance

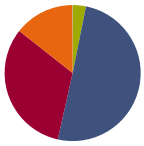
Trailing Returns	YTD	1 Year	3 Year	5 Year	10 Year	Since Inception
Investment Return %	19.48	19.48	4.68	10.76	7.91	7.97
Benchmark Return %	17.39	17.39	4.25	9.84	7.19	—
Category Average %	18.95	18.95	4.58	10.45	7.41	7.37
Morningstar Rating™	—	—	★★★★	★★★★	★★★★	—
# of Funds in Category	—	—	187	174	101	—

Quarter End Returns as of 12-31-23	YTD	1 Year	3 Year	5 Year	10 Year	Since Inception
Fund Return %	19.48	19.48	4.68	10.76	7.91	7.97
Standardized Return %	19.48	19.48	4.68	10.76	7.91	7.97

Performance Disclosure: The performance data quoted represents past performance and does not guarantee future results. The investment return and principal value of an investment will fluctuate; thus an investor's shares, when redeemed, may be worth more or less than their original cost.

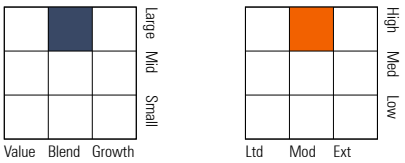
Portfolio Analysis as of 12-31-23

Composition as of 12-31-23



	% Assets
U.S. Stocks	50.4
Non-U.S. Stocks	32.1
Bonds	14.3
Cash	3.2
Other	0.1

Morningstar Style Box™ as of 12-31-23(EQ) ; 12-31-23(F-I)



Top 10 Holdings as of 12-31-23	% Assets
Vanguard Total Stock Mkt Idx Instl Pls	51.14
Vanguard Total Intl Stock Index Inv	33.15
Vanguard Total Bond Market II Idx Inv	10.32
Vanguard Total Intl Bd II Idx Insl	4.34

Total Number of Holdings	6
Annual Turnover Ratio %	1.00
Total Fund Assets ($mil)	76,283.32

Morningstar Sectors as of 12-31-23	% Fund	S&P 500 %
Cyclical	34.32	28.24
Basic Materials	4.64	2.19
Consumer Cyclical	11.04	11.01
Financial Services	15.47	12.52
Real Estate	3.17	2.52
Sensitive	45.46	50.65
Communication Services	6.83	8.58
Energy	4.55	3.89
Industrials	11.63	8.37
Technology	22.45	29.81
Defensive	20.22	21.12
Consumer Defensive	6.35	6.11
Healthcare	11.26	12.67
Utilities	2.61	2.34

Principal Risks as of 12-31-23

Hedging Strategies, Credit and Counterparty, Prepayment (Call), Currency, Foreign Securities, Loss of Money, Not FDIC Insured, Country or Region, Income, Interest Rate, Market/Market Volatility, Equity Securities, Underlying Fund/Fund of Funds, Fixed-Income Securities, Management, Target Date

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Disclosure

The performance data given represents past performance and should not be considered indicative of future results. Principal value and investment return will fluctuate, so that an investor's shares when redeemed may be worth more or less than the original investment. Fund portfolio statistics change over time. The fund is not FDIC-insured, may lose value and is not guaranteed by a bank or other financial institution.

Performance
Total return reflects performance without adjusting for sales charges or the effects of taxation, but is adjusted to reflect all actual ongoing fund expenses and assumes reinvestment of dividends and capital gains. If adjusted, sales charges would reduce the performance quoted.

The fund's performance is compared with that of an index. The index is an unmanaged portfolio of specified securities and the index does not reflect any initial or ongoing expenses. The Best Fit Index is the index that the fund has the highest correlation with. A fund's portfolio may differ significantly from the securities in the index. The index is chosen by Morningstar.

Best and Worst 3 Month Performance
Morningstar calculates best and worst 3-month period (in percentage) in-house on a monthly basis.

Best 3-month Period: The highest total return the stock has posted in a consecutive three-month period over the trailing 15 years, or if a fund does not have 15 years of history, it will go back as far as the inception date.

Worst 3-month Period: The lowest total return the stock has posted in a consecutive three-month period over the trailing 15 years, or if a fund does not have 15 years of history, it will go back as far as the inception date.

Growth of $10,000 Graph
The Growth of $10,000 graph shows a fund's performance based on how $10,000 invested in the fund would have grown over time. The returns used in the graph are not load-adjusted. The growth of $10,000 begins at the date of the fund's inception, or the first year listed on the graph, whichever is appropriate. Located alongside the fund's graph line is a line that represents the growth of $10,000 in an index. The inclusion of the index allows investors to compare the performance of the fund with the performance of a benchmark index.

Morningstar Rating™
The Morningstar Rating™ for funds, or "star rating", is calculated for managed products (including mutual funds, variable annuity and variable life subaccounts, exchange-traded funds, closed-end funds, and separate accounts) with at least a three-year history. Exchange-traded funds and open-ended mutual funds are considered a single population for comparative purposes. It is calculated based on a Morningstar Risk-Adjusted Return measure that accounts for variation in a managed product's monthly excess performance, placing more emphasis on downward variations and rewarding consistent performance. The Morningstar Rating does not include any adjustment for sales loads. The top 10% of products in each product category receive 5 stars, the next 22.5% receive 4 stars, the next 35% receive 3 stars, the next 22.5% receive 2 stars, and the bottom 10% receive 1 star. The Overall Morningstar Rating for a managed product is derived from a weighted average of the performance figures associated with its three-, five-, and 10-year (if applicable) Morningstar Rating metrics. The weights are: 100% three-year rating for 36-59 months of total returns, 60% five-year rating/40% three-year rating for 60-119 months of total returns, and 50% 10-year rating/30% five-year rating/20% three-year rating for 120 or more months of total returns. While the 10-year overall star rating formula seems to give the most weight to the 10-year period, the most recent three-year period actually has the greatest impact because it is included in all three rating periods.
For private funds, the Morningstar Rating presented is hypothetical, because Morningstar does not independently analyze private funds. Rather, the rating is assigned as a means to compare these funds with the universe of mutual funds that Morningstar rates. The evaluation of this investment does not affect the retail mutual fund data published by Morningstar**.**

Morningstar Return
The Morningstar Return rates a fund's performance relative to other managed products in its Morningstar Category. It is an assessment of a product's excess return over a risk-free rate (the return of the 90-day Treasury Bill) in comparison with the products in its Morningstar category. In each Morningstar category, the top 10% of products earn a High Morningstar Return (High), the next 22.5% Above Average (+Avg), the middle 35% Average (Avg), the next 22.5% Below Average (-Ave), and the bottom 10% Low (Low). Morningstar Return is measured for up to three time periods (three, five, and 10 years). These separate measures are then weighted and averaged to produce an overall measure for the product. Products with less than three years of performance history are not rated.

Morningstar Risk
Morningstar Risk evaluates a fund's downside volatility relative to that of other products in its Morningstar Category. It is an assessment of the variations in monthly returns, with an emphasis on downside variations, in comparison with the products in its Morningstar category. In each Morningstar category, the 10% of products with the lowest measured risk are described as Low Risk (Low), the next 22.5% Below Average (-Avg), the middle 35% Average (Avg), the next 22.5% Above Average (+Avg), and the top 10% High (High). Morningstar Risk is measured for up to three time periods (three, five, and 10 years). These separate measures are then weighted and averaged to produce an overall measure for the product. Products with less than three years of performance history are not rated.

Risk Measures
R-squared reflects the percentage of a fund's movements that are explained by movements in its benchmark index, showing the degree of correlation between the fund and the benchmark.
Beta is a measure of a fund's sensitivity to market movements. A portfolio with a beta greater than 1 is more volatile than the market, and a portfolio with a beta less than 1 is less volatile than the market.

Alpha measures the difference between a fund's actual returns and its expected performance, given its level of risk (as measured by beta).

Sharpe ratio uses standard deviation and excess return to determine reward per unit of risk.

Standard deviation is a statistical measure of the volatility of the fund's returns.

Mean represents the annualized three-year geometric return.

Morningstar Style Box™

The Morningstar Style Box™ reveals a fund's investment strategy as of the date noted on this report.

For equity funds, the vertical axis shows the market capitalization of the long stocks owned, and the horizontal axis shows the investment style (value, blend, or growth.) A darkened cell in the style box matrix indicates the weighted average style of the portfolio.

For portfolios holding fixed-income investments, a Fixed Income Style Box is calculated. The vertical axis shows the credit quality based on credit ratings and the horizontal axis shows interest-rate sensitivity as measured by effective duration. There are three credit categories - "High", "Medium", and "Low"; and there are three interest rate sensitivity categories - "Limited", "Moderate", and "Extensive"; resulting in nine possible combinations. As in the Equity Style Box, the combination of credit and interest rate sensitivity for a portfolio is represented by a darkened square in the matrix. Morningstar uses credit rating information from credit rating agencies (CRAs) that have been designated Nationally Recognized Statistical Rating Organizations (NRSROs) by the Securities and Exchange Commission (SEC) in the United States. For a list of all NRSROs, please visit https://www.sec.gov/ocr/ocr-current-nrsros.html. Additionally, Morningstar will use credit ratings from CRAs which have been recognized by foreign regulatory institutions that are deemed the equivalent of the NRSRO designation. To determine the rating applicable to a holding and the subsequent holding weighted value of a portfolio two methods may be employed. First is a common methodology approach where if a case exists such that two CRAs have rated a holding, the lower rating of the two should be applied; if three or more CRAs have rated a holding, the median rating should be applied; and in cases where there are more than two ratings and a median rating cannot be determined, the lower of the two middle ratings should be applied.

Alternatively, if there is more than one rating available an average can be calculated from all and applied.

Please Note: Morningstar, Inc. is not an NRSRO nor does it issue a credit rating on the fund. Credit ratings for any security held in a portfolio can change over time.

Morningstar uses the credit rating information to calculate a weighted-average credit quality value for the portfolio. This value is based only upon those holdings which are considered to be classified as "fixed income", such a government, corporate, or securitized issues. Other types of holdings such as equities and many, though not all, types of derivatives are excluded. The weighted-average credit quality value is

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represented by a rating symbol which corresponds to the long-term rating symbol schemas employed by most CRAs. Note that this value is not explicitly published but instead serves as an input in the Style Box calculation. This symbol is then used to map to a Style Box credit quality category of "low," "medium," or "high". Funds with a "low" credit quality category are those whose weighted-average credit quality is determined to be equivalent to the commonly used High Yield classification, meaning a rating below "BBB", portfolios assigned to the "high" credit category have either a "AAA" or "AA+" average credit quality value, while "medium" are those with an average rating of "AA-" inclusive to "BBB-". It is expected and intended that the majority of portfolios will be assigned a credit category of "medium".

For assignment to an interest-rate sensitivity category, Morningstar uses the average effective duration of the portfolio. From this value there are three distinct methodologies employed to determine assignment to category. Portfolio which are assigned to Morningstar municipal-bond categories employ static breakpoints between categories. These breakpoints are: "Limited" equal to 4.5 years or less, "Moderate" equal to 4.5 years to less than 7 years; and "Extensive" equal to more than 7 years. For portfolios assigned to Morningstar categories other than U.S. Taxable, including all domiciled outside the United States, static duration breakpoints are also used: "Limited" equals less than or equal to 3.5 years, "Moderate" equals greater than 3.5 years but less than or equal to 6 years, and "Extensive" is assigned to portfolios with effective durations of more than 6 years.

Note: Interest-rate sensitivity for non-U.S. domiciled portfolios (excluding those in Morningstar convertible categories) may be assigned using average modified duration when average effective duration is not available.

For portfolios Morningstar classifies as U.S. Taxable Fixed-Income, interest-rate sensitivity category assignment is based on the effective duration of the Morningstar Core Bond Index (MCBI). The classification assignment is dynamically determined relative to the benchmark index value. A "Limited" category will be assigned to portfolios whose average effective duration is between 25% to 75% of MCBI average effective duration, where the average effective duration is between 75% to 125% of the MCBI the portfolio will be classified as "Moderate", and those portfolios with an average effective duration value 125% or greater of the average effective duration of the MCBI will be classified as "Extensive".

Investment Risk

Foreign Securities Funds/Emerging Markets Funds: The investor should note that funds that invest in foreign securities involve special additional risks. These risks include, but are not limited to, currency risk, political risk, and risk associated with varying accounting standards. Investing in emerging markets may accentuate these risks.

Specialty/Sector Funds: The investor should note that funds that invest exclusively in one sector or industry involve additional risks. The lack of industry diversification subjects the investor to increased industry-specific risks.

Non-Diversified Funds: The investor should note that funds that invest more of their assets in a single issuer involve additional risks, including share price fluctuations, because of the increased concentration of investments.

Small Cap Funds: The investor should note that funds that invest in stocks of small companies involve additional risks. Smaller companies typically have a higher risk of failure, and are not as well established as larger blue-chip companies. Historically, smaller-company stocks have experienced a greater degree of market volatility than the overall market average.

Mid Cap Funds: The investor should note that funds that invest in companies with market capitalizations below $10 billion involve additional risks. The securities of these companies may be more volatile and less liquid than the securities of larger companies.

High-Yield Bond Funds: The investor should note that funds that invest in lower-rated debt securities (commonly referred to as junk bonds) involve additional risks because of the lower credit quality of the securities in the portfolio. The investor should be aware of the possible higher level of volatility, and increased risk of default.

Tax-Free Municipal Bond Funds: The investor should note that the income from tax-free municipal bond funds may be subject to state and local taxation and the Alternative Minimum Tax.

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