

# Tax-Aware ETF Model Series

A total-return focused portfolio designed to maximize risk-adjusted after-tax returns.

- Dynamic management through select Vanguard funds, seeking intermediate- to long-term after-tax wealth accumulation.
- Allocation adjustments are implemented up to four times per year to reflect changes in Vanguard's 10-year projections.
- Uses our proprietary investment models, Vanguard Capital Markets Model® (VCMM) and Vanguard Asset Allocation Model (VAAM), accounting for changing economic drivers, valuation, risk, and other attributes that can impact returns and volatility.
- Vanguard's 50 years of experience in portfolio construction across active and index investments.
- Broad diversification, with equity and fixed income exposure to more than 13,000 global stocks and bonds.
- Remarkably low costs with an asset-weighted average expense ratio of 0.04%–0.06%,<sup>1</sup> enabling investors to keep more of their returns.

## Strategic asset allocation by product<sup>2</sup>

As of June 30, 2025

		Asset allocation (%) <sup>2</sup>									
		Equity					Fixed income				
TICKER		CONSERVATIVE		MOD. CONS.		MODERATE		MOD. AGG.		AGGRESSIVE	
<b>Target asset allocation (%)</b>		<b>30</b>	<b>70</b>	<b>40</b>	<b>60</b>	<b>60</b>	<b>40</b>	<b>70</b>	<b>30</b>	<b>80</b>	<b>20</b>
<b>Actual asset allocation (%)</b>		<b>25/75</b>		<b>35/65</b>		<b>55/45</b>		<b>65/35</b>		<b>75/25</b>	
<b>Vanguard domestic equity</b>											
Value	VTV	9.2%		13.1%		22.1%		25.0%		29.8%	
Growth	VUG	3.9%		5.7%		9.5%		10.7%		12.7%	
Small-Cap	VB	2.8%		3.6%		3.4%		5.8%		5.4%	
<b>Vanguard international equity</b>											
FTSE Developed Markets	VEA	6.6%		10.0%		16.9%		20.3%		23.6%	
FTSE Emerging Markets	VWO	2.0%		2.1%		2.0%		2.0%		2.1%	
<b>Vanguard domestic fixed income</b>											
Intermediate-Term Treasury	VGIT	2.8%		4.1%		5.0%		2.1%		2.8%	
Intermediate-Term Corp Bond	VCIT	3.9%		2.8%		2.5%		2.3%		2.6%	
Intermediate-Term Tax-Exempt Bond	VTEI	59.6%		47.3%		26.6%		22.0%		13.5%	
Short-Term Tax-Exempt Bond	VTES	7.2%		9.3%		10.0%		7.8%		5.5%	
<b>Cash</b>		<b>2.0%</b>		<b>2.0%</b>		<b>2.0%</b>		<b>2.0%</b>		<b>2.0%</b>	
Average asset weighted expense ratio <sup>1</sup>		0.06%		0.06%		0.05%		0.05%		0.04%	

<sup>1</sup> Based on expenses as reported in each fund's most recent prospectus as of June 30, 2025. The current expense ratios may be higher or lower than the figure shown.

<sup>2</sup> Allocations may not total to 100% because of rounding.

Source: Vanguard calculations using data from FactSet.

**IMPORTANT: The projections and other information generated by the VCMM regarding the likelihood of various investment outcomes are hypothetical in nature, do not reflect actual investment results, and are not guarantees of future results. Distribution of return outcomes from VCMM are derived from 10,000 simulations for each modeled asset class. Simulations as of June 30, 2025. Results from the model may vary with each use and over time. For more information, please see the last page.**

**Sub-asset allocation by category<sup>3</sup>**

As of June 30, 2025

	CONSERVATIVE	MODERATELY CONSERVATIVE	MODERATE	MODERATELY AGGRESSIVE	AGGRESSIVE
<b>Domestic equity</b>					
Equity—U.S. large-cap	9.9%	14.2%	23.9%	27.0%	32.2%
Equity—U.S. mid-cap	4.3%	6.0%	9.0%	10.9%	12.4%
Equity—U.S. small-cap	1.7%	2.2%	2.1%	3.5%	3.3%
<b>International equity</b>					
Equity—Intl. developed markets	6.6%	9.9%	16.8%	20.2%	23.4%
Equity—Intl. emerging markets	2.0%	2.2%	2.1%	2.1%	2.3%
<b>Domestic fixed income</b>					
Fixed income—U.S. Treasury	2.8%	4.1%	5.0%	2.1%	2.8%
Fixed income—U.S. government-related	0.0%	0.0%	0.0%	0.0%	0.0%
Fixed income—U.S. corporate	3.9%	2.8%	2.5%	2.3%	2.6%
Fixed income—U.S. securitized	0.0%	0.0%	0.0%	0.0%	0.0%
Fixed income—Other	0.0%	0.0%	0.0%	0.0%	0.0%
Fixed income—International	0.0%	0.0%	0.0%	0.0%	0.0%
Fixed income—Municipal	66.8%	56.6%	36.6%	29.8%	19.0%
<b>Cash</b>	2.0%	2.0%	2.0%	2.0%	2.0%
<b>Total</b>	100.0%	100.0%	100.0%	100.0%	100.0%

<sup>3</sup> The weights for each model portfolio were determined using prior month product-level characteristic data and current month strategic allocations by product according to the "as-of" date provided, whereby a weighted average calculation is then applied in order to derive the sub-asset allocation percentage listed. Sub-asset allocations by category are provided for informational purposes only and are not intended to be utilized for constructing portfolios. Because of rounding, weights may not add up to 100%.

Source: Vanguard.

## Hypothetical model portfolio performance

As of June 30, 2025

RISK PORTFOLIO		Annualized						SINCE INCEPTION	INCEPTION DATE
		QUARTER	YTD	1 YEAR	3 YEAR	5 YEAR	10 YEAR		
<b>Conservative</b>	Gross	2.85%	3.32%	5.96%	—	—	—	5.96%	06/30/2024
	Net advisory fee	2.10%	1.82%	2.96%	—	—	—	2.96%	
	Tax-Aware ETF Benchmark	3.21%	2.18%	4.99%	—	—	—	4.99%	
<b>Moderately Conservative</b>	Gross	3.74%	4.37%	7.37%	—	—	—	7.37%	06/30/2024
	Net advisory fee	2.99%	2.87%	4.37%	—	—	—	4.37%	
	Tax-Aware ETF Benchmark	4.34%	3.16%	6.40%	—	—	—	6.40%	
<b>Moderate</b>	Gross	5.43%	6.20%	9.86%	—	—	—	9.86%	06/30/2024
	Net advisory fee	4.68%	4.70%	6.86%	—	—	—	6.86%	
	Tax-Aware ETF Benchmark	6.61%	5.10%	9.21%	—	—	—	9.21%	
<b>Moderately Aggressive</b>	Gross	6.23%	6.97%	10.97%	—	—	—	10.97%	06/30/2024
	Net advisory fee	5.48%	5.47%	7.97%	—	—	—	7.97%	
	Tax-Aware ETF Benchmark	7.76%	6.08%	10.64%	—	—	—	10.64%	
<b>Aggressive</b>	Gross	7.09%	7.84%	12.29%	—	—	—	12.29%	06/30/2024
	Net advisory fee	6.34%	6.34%	9.29%	—	—	—	9.29%	
	Tax-Aware ETF Benchmark	8.91%	7.06%	12.06%	—	—	—	12.06%	

The performance data shown represent hypothetical performance, which is not a guarantee of future results. Investment returns and principal value will fluctuate, so an investor's shares, when sold, may be worth more or less than their original cost. Actual performance may be lower or higher than the performance data cited. For performance data current to the most recent month end, visit [vanguard.com/performance](https://www.vanguard.com/performance). The performance of an index is not an exact representation of any particular investment, as you cannot invest directly in an index. Gross/Net performance results: Performance results labeled gross reflect model performance before the deduction of advisory program fees. Performance results labeled net reflect performance after the deduction of a proxy fee rate of 3%. The actual advisory fee rate applicable to an investment in this model may differ from the maximum program fee rate.

Performance of the model components is based on net asset value (NAV) return. Performance figures assume the reinvestment of dividends and capital gains distributions; the figures are pre-tax and net of expenses (except advisory fee) of the underlying funds. The hypothetical model portfolio is rebalanced quarterly to the new asset allocation.

The model portfolio performance data are calculated by obtaining the asset-weighted monthly returns of the strategy component holdings for each period and are based upon the historical asset allocations at the beginning of each month during the periods shown, which may differ from the current allocation. The holdings making up the strategies and the allocations to those holdings have changed over time and may change in the future. The historical model performance has not been adjusted to reflect current allocations. Model performance does not reflect any transaction costs that an investor may incur in implementing the models.

Source: Vanguard calculations, using data from FactSet.

## Underlying fund performance

As of June 30, 2025

VANGUARD ETF OR FUND	TICKER	EXPENSE RATIO <sup>4</sup>		QUARTER	YEAR-TO-DATE	Annualized <sup>5</sup>					INCEPTION DATE
						1-YEAR	3-YEAR	5-YEAR	10-YEAR	SINCE INCEPTION	
<b>Domestic equity</b>											
Value	VTV	0.04%	NAV	2.90%	5.60%	12.65%	13.10%	14.93%	10.61%	8.87%	01/26/2004
			Market price	2.87%	5.58%	12.67%	13.08%	14.92%	10.60%	8.86%	
Growth	VUG	0.04%	NAV	18.36%	7.12%	17.93%	26.08%	17.46%	16.19%	11.78%	01/26/2004
			Market price	18.36%	7.08%	17.93%	26.07%	17.45%	16.18%	11.78%	
Small-Cap	VB	0.05%	NAV	7.29%	-0.62%	10.15%	12.17%	11.85%	8.58%	9.03%	01/26/2004
			Market price	7.22%	-0.64%	10.14%	12.16%	11.83%	8.57%	9.02%	
<b>International equity</b>											
FTSE Developed Markets	VEA	0.03%	NAV	13.10%	20.81%	19.27%	15.42%	11.33%	6.81%	3.86%	07/20/2007
			Market price	13.06%	20.73%	18.94%	15.30%	11.37%	6.82%	3.84%	
FTSE Emerging Markets	VWO	0.07%	NAV	9.52%	11.86%	15.70%	9.44%	7.51%	4.81%	6.10%	03/04/2005
			Market price	9.60%	12.75%	16.58%	9.50%	7.76%	4.89%	6.11%	
<b>Domestic fixed income</b>											
Intermediate-Term Treasury	VGIT	0.03%	NAV	1.66%	4.80%	6.66%	2.37%	-0.75%	1.48%	2.18%	11/19/2009
			Market price	1.67%	4.78%	6.67%	2.37%	-0.75%	1.48%	2.18%	
Intermediate-Term Corp Bond	VCIT	0.03%	NAV	2.57%	5.30%	8.48%	5.32%	0.86%	3.22%	4.31%	11/19/2009
			Market price	2.62%	5.30%	8.53%	5.35%	0.75%	3.19%	4.30%	
Intermediate-Term Tax-Exempt Bond	VTEI	0.08%	NAV	0.57%	0.47%	2.10%	—	—	—	1.68%	01/26/2024
			Market price	0.49%	0.41%	2.21%	—	—	—	1.72%	
Short-Term Tax-Exempt Bond	VTES	0.06%	NAV	1.17%	1.94%	3.85%	—	—	—	3.13%	03/07/2023
			Market price	1.11%	1.86%	3.84%	—	—	—	3.13%	
<b>Cash<sup>6</sup></b>				1.09%	2.21%	4.88%	4.75%	2.88%	2.01%	—	

The underlying fund performance is shown to illustrate the impact of each individual fund's performance to the overall strategy. It is the investment advisor's responsibility to determine the appropriateness of the model portfolios, or any of the securities included therein, for any client.

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

Effective July 15, 2024, the market price returns are calculated using the official closing price as reported by the ETF's primary exchange. Prior to July 15, 2024, the market price returns were calculated using the midpoint between the bid and ask prices as of the closing time of the New York Stock Exchange (typically 4 p.m., Eastern time). The returns shown do not represent the returns you would receive if you traded shares at other times.

<sup>4</sup> Based on expenses as reported in each fund's most recent prospectus as of September 30, 2024. The current expense ratio may be higher or lower than the figure shown.

<sup>5</sup> Returns for periods ended June 30, 2025.

<sup>6</sup> The cash allocation represents a typically required allocation by advisors to short-term reserves in order to pay for platform and advisory fees. The allocation to cash is illustrated by the performance of the FTSE 3-Month US T-Bill Index.



**For more information on Vanguard funds and Vanguard ETFs, visit [advisors.vanguard.com](https://advisors.vanguard.com) or call 800-997-2798 to obtain a prospectus or, if available, a summary prospectus. Investment objectives, risks, charges, expenses, and other important information are contained in the prospectus; read and consider it carefully before investing.**

*Vanguard ETF Shares are not redeemable with the issuing Fund other than in very large aggregations worth millions of dollars. Instead, investors must buy and 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.*

All investing is subject to risk, including the possible loss of the money you invest.

London Stock Exchange Group companies include FTSE International Limited ("FTSE"), Frank Russell Company ("Russell"), MTS Next Limited ("MTS"), and FTSE TMX Global Debt Capital Markets Inc. ("FTSE TMX"). All rights reserved. "FTSE", "Russell", "MTS", "FTSE TMX" and "FTSE Russell" and other service marks and trademarks related to the FTSE or Russell indexes are trademarks of the London Stock Exchange Group companies and are used by FTSE, MTS, FTSE TMX and Russell under license. All information is provided for information purposes only. No responsibility or liability can be accepted by the London Stock Exchange Group companies nor its licensors for any errors or for any loss from use of this publication. Neither the London Stock Exchange Group companies nor any of its licensors make any claim, prediction, warranty or representation whatsoever, expressly or impliedly, either as to the results to be obtained from the use of the FTSE Indexes or the fitness or suitability of the Indexes for any particular purpose to which they might be put.

Be aware that fluctuations in the financial markets and other factors may cause declines in the value of your account. 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.

Vanguard does not, and will not, make any representations about whether a model portfolio is in the best interest of any investor; is not, and will not be, responsible for the determination of whether a model portfolio is in the best interests of any investor; and is not acting as an investment advisor to any investor. It is the investment advisor's responsibility to determine the appropriateness of the model portfolios, or any of the securities included therein, for any client.

Although the income from a municipal bond fund is exempt from federal tax, you may owe taxes on any capital gains realized through the fund's trading or through your own redemption of shares. For some investors, a portion of the fund's income may be subject to state and local taxes, as well as to the federal Alternative Minimum Tax.

*Model performance results are hypothetical and may have inherent limitations, some of which are noted here. No representation is being made that any account will or is likely to achieve profits or losses similar to those shown. There are numerous other factors related to the markets in general or to the implementation of any specific trading strategy which cannot be fully accounted for in the preparation of model performance results and all of which can adversely affect actual trading results.*

**IMPORTANT: The projections or other information generated by the Vanguard Capital Markets Model®(VCMM) 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 importantly, 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 data from 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.

The Vanguard model portfolios are provided for illustrative and educational purposes only. The Vanguard model portfolios do not constitute research, are not personalized investment advice or an investment recommendation from Vanguard to any client of a third party financial professional and are intended for use only by a third party financial professional, with other information, as a resource to help build a portfolio or as an input in the development of investment advice for its own clients. Such financial professionals are responsible for making their own independent judgment as to how to use the Vanguard model portfolios.

**Vanguard has prepared this material for financial professional use. It is the responsibility of the end-user advisor to have policies and procedures in place for presenting this material to any eligible retail audience.**

© 2025 The Vanguard Group, Inc.  
All rights reserved.  
Vanguard Marketing Corporation,  
Distributor.  
FATXMDFS 072025

**Investment Products: Not a Deposit • Not FDIC Insured • Not Guaranteed by the Bank • May Lose Value • Not Insured by Any Federal Government Agency**