

## iShares MSCI EAFE 1-Year ETF Analysis

With a fixed-indexed or registered index-linked annuity from MassMutual Ascend Life Insurance Company, you can allocate funds to 1-year term indexed strategies that earn returns based on the iShares MSCI EAFE ETF. This ETF seeks to track the investment results of an index composed of equity securities issued by large- and mid-cap companies from developed markets outside of the U.S. and Canada. Let's take a closer look.

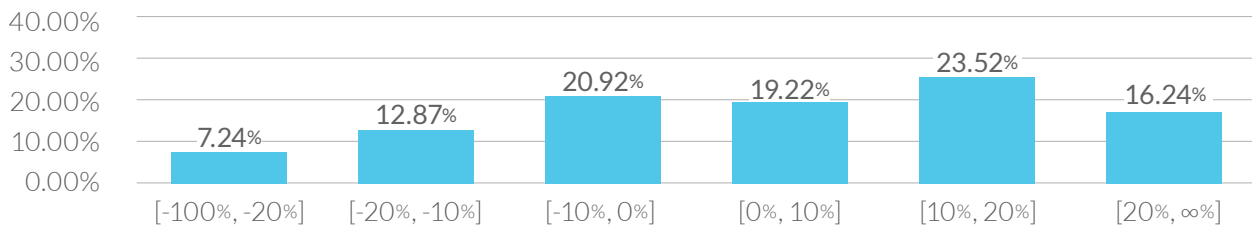
### iShares MSCI EAFE ETF returns using rolling periods

The data below uses 1-year rolling returns<sup>1</sup> of the iShares MSCI EAFE ETF from December 31, 2004 through December 31, 2024, for a total of 4,958<sup>2</sup> observations.

Average Performance			Positive Performance		Negative Performance	
Average Return	Average Gain	Average Loss	Maximum Return <sup>3</sup>	Num of Gains	Minimum Return <sup>4</sup>	Num of Losses
3.70%	15.58%	-13.33%	73.02%	2,920 (59%)	-55.85%	2,034 (41%)

### iShares MSCI EAFE ETF return distribution

Using the same data set and assumptions, the return distribution graph below illustrates how frequently the annualized returns fell into specific ranges. The table below the graph shows the average return by range.



Return Range	[-100%, -20%]	[-20%, -10%]	[-10%, 0%]	[0%, 10%]	[10%, 20%]	[20%, ∞%]
Average iShares MSCI EAFE ETF Return by Range	-35.85%	-14.50%	-4.83%	5.46%	15.09%	28.20%

<sup>1</sup> 1-year rolling returns refers to every 1-year period that started on a business day after December 30, 2004 and ended before January 1, 2025.

<sup>2</sup> Four flat years, in which the iShares MSCI EAFE ETF return was 0%, is included in the number of total observations.

<sup>3</sup> Maximum return: 1-year period ending 3/9/2010

<sup>4</sup> Minimum return: 1-year period ending 11/20/2008

**MassMutual Ascend offers several types of annuities, which have varying levels of upside potential and downside protection. Annuities also offer benefits such as tax deferral and guaranteed lifetime income. Talk with your financial professional about how an annuity can fit into your portfolio and help you reach your goals.**

The launch date of the iShares MSCI EAFE ETF was August 14, 2001. Indexed strategies are based on the price change of the ETF during the term. Returns are limited by a cap or participation rate.

MassMutual Ascend's registered index-linked annuities can only be sold through a Broker/Dealer that is contracted with MassMutual Ascend<sup>SM</sup>. This material must be preceded or accompanied by a prospectus. To obtain a copy of the prospectus, please visit [MassMutualAscend.com/RILArates](http://MassMutualAscend.com/RILArates).

Annuities are long-term investments and may not be suitable for all investors. Withdrawals from an annuity contract may have tax consequences.

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**Principal Underwriter/Distributor: MM Ascend Life Investor Services, LLC, member FINRA and an affiliate of MassMutual Ascend.**

Annuities issued by MassMutual Ascend Life Insurance Company<sup>SM</sup> (Cincinnati, Ohio), a wholly owned subsidiary of Massachusetts Mutual Life Insurance Company (MassMutual) under contract forms ICC20-P1144420NW, ICC20-P1144420NW-NoMVA, ICC20-P1144520NW, ICC20-P1144520NW-NoMVA, ICC20-P1474420NW, ICC20-P1474420NW-NoMVA, ICC21-P1152021NW, ICC21-P1152121NW, ICC21-P1476721NW, P1074514NW, P1074514OR, P1074514ID, P1110416NW, P1110416OR, P1110416ID, P1112916NW, P1112916OR, P1112916ID, P1129918NW, P1129918OR, P1129918ID, P1129918ID-NoMVA, P1134618NW, P1134618OR, P1134618ID, P1134618ID-NoMVA, P1140119NW, P1140119OR, P1140119ID, P1140219NW, P1140219OR, P1140219ID, P1146620NW, P1146620OR, P1146620ID, P1470017NW, P1470017OR, P1470017ID, P1825218NW, P1825218ID, P1833621NW, P1833621ID, P1841622NW, P1841622ID, P1841722NW and P1841722ID. All guarantees subject to the claims-paying ability of MassMutual Ascend.

This content does not apply in the state of New York.

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