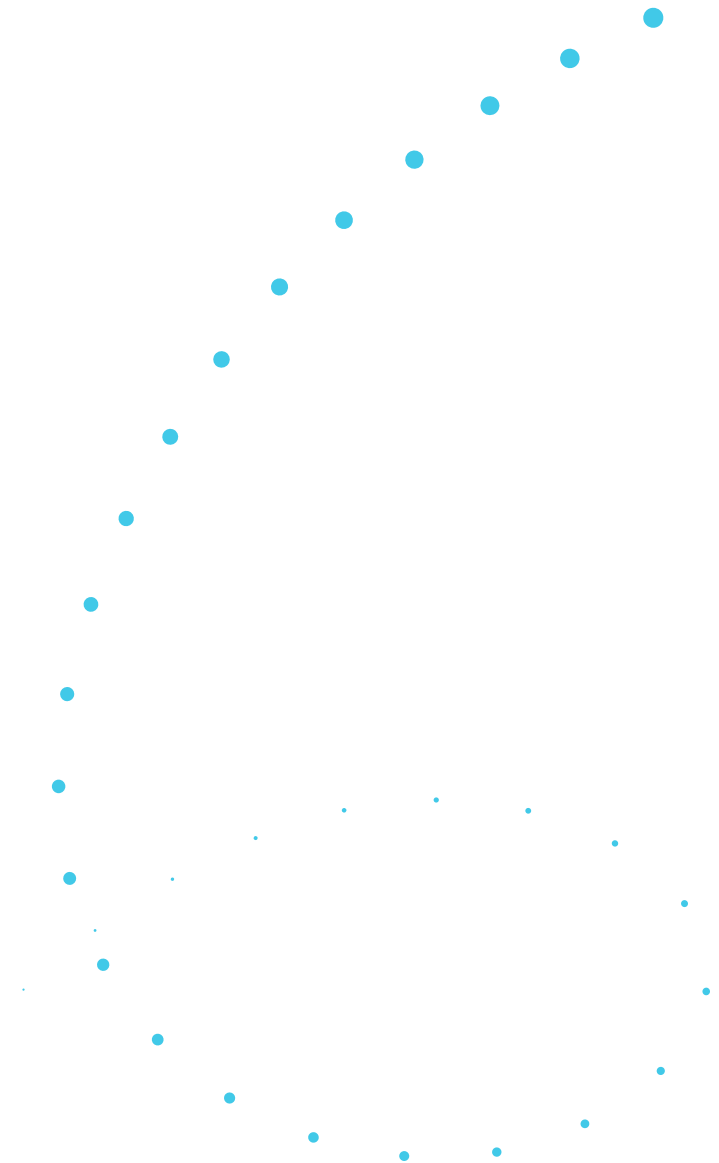


Index Protector 5 MVA Renewal History

from MassMutual Ascend Life Insurance Company

A fixed-indexed annuity offers interest crediting strategies that help protect your savings from loss while providing the opportunity for growth. Strategy rates and caps are set at the start of each term and guaranteed for that term.

Here is a closer look at the renewal history for the Index Protector 5 MVA for Third Quarter 2022-2025 (for purchase payments \$250,000 and over).



Index Protector 5 MVA renewal history

Start of First Term	Fixed Account (Declared Rate Strategy)					S&P 500® 1-year Point-to-Point (Indexed Strategy)					S&P 500® Risk Control 1-year Point-to-Point (Indexed Strategy)				
	Initial Rate	2022	2023	2024	2025	Initial Rate	2022	2023	2024	2025	Initial Rate	2022	2023	2024	2025
7/6/21	2.45%	2.45%	2.45%	2.45%	2.45%	5.25%	5.25%	5.25%	5.25%	5.25%	60%	60%	60%	60%	60%
7/20/21	2.45%	2.45%	2.45%	2.45%	2.45%	5.25%	5.25%	5.25%	5.25%	5.25%	60%	60%	60%	60%	60%
8/6/21	2.30%	2.30%	2.30%	2.30%	2.30%	5.00%	5.00%	5.00%	5.00%	5.00%	60%	60%	60%	60%	60%
8/20/21	2.30%	2.30%	2.30%	2.30%	2.30%	5.00%	5.00%	5.00%	5.00%	5.00%	60%	60%	60%	60%	60%
9/6/21	2.30%	2.30%	2.30%	2.30%	2.30%	5.00%	5.00%	5.00%	5.00%	5.00%	60%	60%	60%	60%	60%
9/20/21	2.30%	2.30%	2.30%	2.30%	2.30%	5.00%	5.00%	5.00%	5.00%	5.00%	60%	60%	60%	60%	60%
7/6/22	3.75%	N/A	3.75%	3.75%	3.75%	9.25%	N/A	9.25%	9.25%	9.25%	85%	N/A	85%	85%	85%
7/20/22	3.75%	N/A	3.75%	3.75%	3.75%	9.25%	N/A	9.25%	9.25%	9.25%	85%	N/A	85%	85%	85%
8/6/22	3.75%	N/A	3.75%	3.75%	3.75%	9.25%	N/A	9.25%	9.25%	9.25%	85%	N/A	85%	85%	85%
8/20/22	3.75%	N/A	3.75%	3.75%	3.75%	9.25%	N/A	9.25%	9.25%	9.25%	85%	N/A	85%	85%	85%
9/6/22	3.75%	N/A	3.75%	3.75%	3.75%	9.25%	N/A	9.25%	9.25%	9.25%	85%	N/A	85%	85%	85%
9/20/22	3.75%	N/A	3.75%	3.75%	3.75%	9.75%	N/A	9.75%	9.75%	9.75%	85%	N/A	85%	85%	85%
7/6/23	4.20%	N/A	N/A	4.20%	4.20%	10.50%	N/A	N/A	10.50%	10.50%	80%	N/A	N/A	80%	80%
7/20/23	4.70%	N/A	N/A	4.70%	4.70%	11.75%	N/A	N/A	11.75%	11.75%	90%	N/A	N/A	90%	90%
8/6/23	4.70%	N/A	N/A	4.70%	4.70%	11.75%	N/A	N/A	11.75%	11.75%	90%	N/A	N/A	90%	90%
8/20/23	4.70%	N/A	N/A	4.70%	4.70%	12.25%	N/A	N/A	12.25%	12.25%	90%	N/A	N/A	90%	90%
9/6/23	4.70%	N/A	N/A	4.70%	4.70%	12.25%	N/A	N/A	12.25%	12.25%	90%	N/A	N/A	90%	90%
9/20/23	4.70%	N/A	N/A	4.70%	4.70%	12.75%	N/A	N/A	12.75%	12.75%	90%	N/A	N/A	90%	90%
7/6/24	5.50%	N/A	N/A	N/A	5.50%	13.00%	N/A	N/A	N/A	13.00%	95%	N/A	N/A	N/A	95%
7/20/24	5.50%	N/A	N/A	N/A	5.50%	13.00%	N/A	N/A	N/A	13.00%	95%	N/A	N/A	N/A	95%
8/6/24	5.40%	N/A	N/A	N/A	5.40%	12.25%	N/A	N/A	N/A	12.25%	90%	N/A	N/A	N/A	90%
8/20/24	5.40%	N/A	N/A	N/A	5.40%	12.25%	N/A	N/A	N/A	12.25%	90%	N/A	N/A	N/A	90%
9/6/24	4.90%	N/A	N/A	N/A	4.90%	11.25%	N/A	N/A	N/A	11.25%	85%	N/A	N/A	N/A	85%
9/20/24	4.90%	N/A	N/A	N/A	4.90%	11.25%	N/A	N/A	N/A	11.25%	85%	N/A	N/A	N/A	85%

Continued on next page

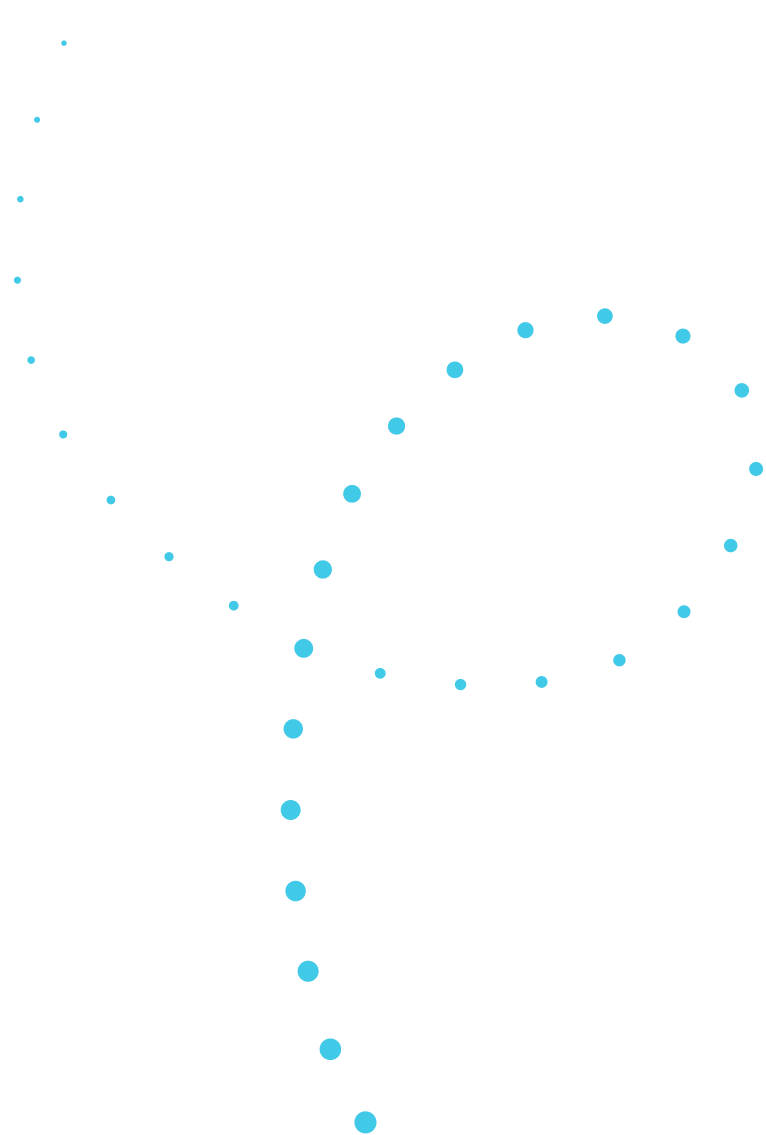
Index Protector 5 MVA renewal history (cont.)

Start of First Term	iShares® U.S. Real Estate 1-year Point-to-Point (Indexed Strategy)					S&P U.S. Retiree Spending 1-year Point-to-Point (Indexed Strategy)					iShares MSCI EAFE 1-year Point-to-Point (Indexed Strategy)				
	Initial Rate	2022	2023	2024	2025	Initial Rate	2022	2023	2024	2025	Initial Rate	2022	2023	2024	2025
7/6/21	5.70%	5.70%	5.70%	5.70%	5.70%	65%	65%	65%	65%	65%	5.25%	5.25%	5.25%	5.25%	5.25%
7/20/21	5.70%	5.70%	5.70%	5.70%	5.70%	65%	65%	65%	65%	65%	5.25%	5.25%	5.25%	5.25%	5.25%
8/6/21	5.70%	5.70%	5.70%	5.70%	5.70%	65%	65%	65%	65%	65%	5.25%	5.25%	5.25%	5.25%	5.25%
8/20/21	5.70%	5.70%	5.70%	5.70%	5.70%	65%	65%	65%	65%	65%	5.25%	5.25%	5.25%	5.25%	5.25%
9/6/21	5.70%	5.70%	5.70%	5.70%	5.70%	65%	65%	65%	65%	65%	5.25%	5.25%	5.25%	5.25%	5.25%
9/20/21	5.70%	5.70%	5.70%	5.70%	5.70%	65%	65%	65%	65%	65%	5.25%	5.25%	5.25%	5.25%	5.25%
7/6/22	11.00%	N/A	11.00%	11.00%	11.00%	105%	N/A	105%	105%	105%	10.00%	N/A	10.00%	10.00%	10.00%
7/20/22	11.00%	N/A	11.00%	11.00%	11.00%	105%	N/A	105%	105%	105%	10.00%	N/A	10.00%	10.00%	10.00%
8/6/22	11.00%	N/A	11.00%	11.00%	11.00%	105%	N/A	105%	105%	105%	10.00%	N/A	10.00%	10.00%	10.00%
8/20/22	11.00%	N/A	11.00%	11.00%	11.00%	105%	N/A	105%	105%	105%	10.00%	N/A	10.00%	10.00%	10.00%
9/6/22	11.00%	N/A	11.00%	11.00%	11.00%	105%	N/A	105%	105%	105%	10.00%	N/A	10.00%	10.00%	10.00%
9/20/22	11.00%	N/A	11.00%	11.00%	11.00%	105%	N/A	105%	105%	105%	10.00%	N/A	10.00%	10.00%	10.00%
7/6/23	13.50%	N/A	N/A	13.50%	13.50%	85%	N/A	N/A	85%	85%	11.00%	N/A	N/A	11.00%	11.00%
7/20/23	14.00%	N/A	N/A	14.00%	14.00%	85%	N/A	N/A	85%	85%	12.25%	N/A	N/A	12.25%	12.25%
8/6/23	14.00%	N/A	N/A	14.00%	14.00%	85%	N/A	N/A	85%	85%	12.25%	N/A	N/A	12.25%	12.25%
8/20/23	14.00%	N/A	N/A	14.00%	14.00%	85%	N/A	N/A	85%	85%	12.25%	N/A	N/A	12.25%	12.25%
9/6/23	14.00%	N/A	N/A	14.00%	14.00%	85%	N/A	N/A	85%	85%	12.25%	N/A	N/A	12.25%	12.25%
9/20/23	14.00%	N/A	N/A	14.00%	14.00%	85%	N/A	N/A	85%	85%	12.25%	N/A	N/A	12.25%	12.25%
7/6/24	16.50%	N/A	N/A	N/A	16.50%	100%	N/A	N/A	N/A	100%	13.75%	N/A	N/A	N/A	13.75%
7/20/24	16.50%	N/A	N/A	N/A	16.50%	100%	N/A	N/A	N/A	100%	13.75%	N/A	N/A	N/A	13.75%
8/6/24	16.50%	N/A	N/A	N/A	16.50%	100%	N/A	N/A	N/A	100%	13.75%	N/A	N/A	N/A	13.75%
8/20/24	16.50%	N/A	N/A	N/A	16.50%	100%	N/A	N/A	N/A	100%	13.75%	N/A	N/A	N/A	13.75%
9/6/24	16.00%	N/A	N/A	N/A	16.00%	95%	N/A	N/A	N/A	95%	12.25%	N/A	N/A	N/A	12.25%
9/20/24	16.00%	N/A	N/A	N/A	16.00%	95%	N/A	N/A	N/A	95%	12.25%	N/A	N/A	N/A	12.25%

Continued on next page

Index Protector 5 MVA renewal history (cont.)

Start of First Term	First Trust Barclays Edge Index PTP Strategy				
	Initial Rate	2022	2023	2024	2025
7/6/21	N/A	N/A	N/A	N/A	N/A
7/20/21	N/A	N/A	N/A	N/A	N/A
8/6/21	N/A	N/A	N/A	N/A	N/A
8/20/21	N/A	N/A	N/A	N/A	N/A
9/6/21	N/A	N/A	N/A	N/A	N/A
9/20/21	N/A	N/A	N/A	N/A	N/A
7/6/22	N/A	N/A	N/A	N/A	N/A
7/20/22	N/A	N/A	N/A	N/A	N/A
8/6/22	N/A	N/A	N/A	N/A	N/A
8/20/22	N/A	N/A	N/A	N/A	N/A
9/6/22	N/A	N/A	N/A	N/A	N/A
9/20/22	N/A	N/A	N/A	N/A	N/A
7/6/23	N/A	N/A	N/A	N/A	N/A
7/20/23	N/A	N/A	N/A	N/A	N/A
8/6/23	N/A	N/A	N/A	N/A	N/A
8/20/23	N/A	N/A	N/A	N/A	N/A
9/6/23	N/A	N/A	N/A	N/A	N/A
9/20/23	N/A	N/A	N/A	N/A	N/A
7/6/24	18.00%	N/A	N/A	N/A	18.00%
7/20/24	18.00%	N/A	N/A	N/A	18.00%
8/6/24	17.25%	N/A	N/A	N/A	17.25%
8/20/24	17.25%	N/A	N/A	N/A	17.25%
9/6/24	16.00%	N/A	N/A	N/A	16.00%
9/20/24	16.00%	N/A	N/A	N/A	16.00%



Charts show the initial declared rates and indexed strategy caps and participation rates for terms that started in the third quarter and on the 6th and 20th of each month in years 2021-2024 (Chart Terms) and the corresponding declared rates, caps and participation rates when the terms renewed in years 2022-2025. Although the charts show the caps/maximum indexed interest rate for each strategy for each Chart Term, they do not show the indexed interest rate for any strategy for any Chart Term, which may be less than the cap.

Information shown is not a guarantee or representation of future renewal declared rate, cap or participation rate decisions.

When the initial rates and caps we offer for new contracts decrease, our annuity rate lock procedure allows new contracts to receive the previous, higher rate if all required steps are completed within specified time frames. For new contracts in such situations, the initial declared rates, caps or participation rates would have been higher than the relevant figures listed in the Index Protector 5 MVA Renewal History table.

For more information on the S&P 500, visit [US.SPindices.com](https://www.us.spindices.com) and search keyword S&P 500. The S&P 500 Risk Control 10% Index refers to the S&P 500 Average Daily Risk Control 10% USD Price Return Index. For more information, visit [US.SPIndices.com](https://www.us.spindices.com) and search keyword SPXAV10P. For more information on the S&P U.S. Retiree Spending Index, visit [US.SPIndices.com](https://www.us.spindices.com) and search keyword SPRETIRE. For more information on the iShares U.S. Real Estate ETF, visit [iShares.com](https://www.ishares.com) and search ticker symbol IYR. To learn more about the iShares U.S. Real Estate ETF, visit [iShares.com](https://www.ishares.com) and search ticker symbol IYR. To learn more about the iShares MSCI EAFE ETF, visit [iShares.com](https://www.ishares.com) and search ticker symbol EFA. For more information on the First Trust Barclays Edge Index, please visit ftindexingsolutions.com and search ticker symbol FTEDGE7.

The “S&P 500® Index”, the “S&P 500 Average Daily Risk Control 10% Price Return Index” and the “S&P U.S. Retiree Spending Index” are products of S&P Dow Jones Indices LLC or its affiliates (“SPDJI”) and has been licensed for use by MassMutual Ascend Life Insurance Company. S&P®, S&P 500®, S&P 500 Average Daily Risk Control 10%™, US 500, The 500, iBoxx®, iTraxx® and CDX® are trademarks of S&P Global, Inc. or its affiliates (“S&P”); Dow Jones® is a registered trademark of Dow Jones Trademark Holdings LLC (“Dow Jones”); MassMutual Ascend Life Insurance Company’s products are not sponsored, endorsed, sold or promoted by SPDJI, Dow Jones, S&P, their respective affiliates, and none of such parties make any representation regarding the advisability of investing in such products nor do they have any liability for any errors, omissions, or interruptions of the S&P 500® Index, the S&P 500 Average Daily Risk Control 10% Price Return Index and the S&P U.S. Retiree Spending Index.

The iShares MSCI EAFE ETF and the iShares U.S. Real Estate ETF are distributed by BlackRock Investments, LLC. iShares®, BLACKROCK®, and the corresponding logos are registered and unregistered trademarks of BlackRock, Inc. and its affiliates (“BlackRock”), and these trademarks have been licensed for certain purposes by MassMutual Ascend Life Insurance Company. MassMutual Ascend Life Insurance Company annuity products are not sponsored, endorsed, sold or promoted by BlackRock, and purchasers of an annuity from MassMutual Ascend Life Insurance Company do not acquire any interest in the iShares MSCI EAFE ETF or the iShares U.S. Real Estate ETF nor enter into any relationship of any kind with BlackRock. BlackRock makes no representation or warranty, express or implied, to the owners of any MassMutual Ascend Life Insurance Company annuity product or any member of the public regarding the advisability of purchasing an annuity, nor does it have any liability for any errors, omissions, interruptions or use of the iShares MSCI EAFE ETF or the iShares U.S. Real Estate ETF or any data related thereto.

The First Trust Barclays Edge Index (“FTIS Index”) is a product of FT Indexing Solutions LLC (“FTIS”) and is administered and calculated by Bloomberg Index Service Limited and its affiliates (collectively, “BISL”). FIRST TRUST® and First Trust Barclays Edge Index are trademarks of First Trust Portfolios L.P. (collectively, with FTIS and their respective affiliates, “First Trust”). The foregoing index and trademarks have been licensed for use for certain purposes by Barclays, Bloomberg, and MassMutual Ascend Life Insurance Company (collectively, the “Licensees”) in connection with the FTIS Index and certain products utilizing the FTIS Index (collectively, the “Products”).

The Capital Strength Index (“Nasdaq Index”) is a product of Nasdaq, Inc. (collectively, with its affiliates, “Nasdaq”). NASDAQ®, CAPITAL STRENGTH INDEX™, NQCAPST™, and NQCAPSTT™ are trademarks of Nasdaq. The foregoing index and trademarks have been licensed for use for certain purposes by FTIS and Licensees in connection with the FTIS Index and the Products.

The Value Line Dividend Index (“Value Line Index”) is a product of Value Line, Inc. (“Value Line”). VALUE LINE® and VALUE LINE DIVIDEND INDEX™ are trademarks or registered trademarks of Value Line. The foregoing index and trademarks have been licensed for use for certain purposes by FTIS and Licensees in connection with the FTIS Index and the Products. The FTIS Index is not sponsored, endorsed, recommended, sold or promoted by Value Line and Value Line makes no representation regarding the advisability of investing in any product utilizing the FTIS Index.

BLOOMBERG® is a trademark and service mark of Bloomberg Finance L.P. Bloomberg Finance L.P., BISL, and their affiliates (“Bloomberg”) are not affiliated with First Trust or Barclays. Bloomberg’s relationship to First Trust and Barclays is only (1) in the licensing of the FIRST TRUST®, BARCLAYS®, and FIRST TRUST BARCLAYS EDGE INDEX™ trademarks and (2) to act as the administrator and calculation agent of the FTIS Index, which is the property of FTIS. Bloomberg does not guarantee the timeliness, accurateness, or completeness of the FTIS Index or any data or information relating thereto and shall have no liability in connection with the FTIS Index or any data or information relating thereto.

The Products are not issued, sponsored, endorsed, sold, recommended, or promoted by First Trust, Bloomberg, Nasdaq, Value Line, or their respective affiliates (collectively, the “Companies”). The Companies do not make any representation regarding the advisability of investing in the Products or products based on the FTIS Index, Barclays Indices, Nasdaq Index, or Value Line Index, do not make any warranties or bear any liability with respect to such products, and do not make any warranties or bear any liability with respect to the Products, the FTIS Index, or another party’s index.

THE COMPANIES DO NOT GUARANTEE THE ADEQUACY, ACCURACY, TIMELINESS, COMPLETENESS, AND/OR UNINTERRUPTED CALCULATION OF THE PRODUCTS, FTIS INDEX, BARCLAYS INDICES, NASDAQ INDEX, VALUE LINE INDEX, OR ANY DATA INCLUDED THEREIN OR ANY COMMUNICATION WITH RESPECT THERETO, INCLUDING, ORAL, WRITTEN, OR ELECTRONIC COMMUNICATIONS. THE COMPANIES SHALL HAVE NO LIABILITY FOR ANY ERRORS, OMISSIONS, OR INTERRUPTIONS IN THE PRODUCTS, FTIS INDEX, BARCLAYS INDICES, NASDAQ INDEX, OR VALUE LINE INDEX. THE COMPANIES MAKE NO WARRANTY, EXPRESS OR IMPLIED, AS TO THE RESULTS TO BE OBTAINED BY LICENSEES, OWNERS OF THE PRODUCTS OR OF PRODUCTS BASED ON THE FTIS INDEX, BARCLAYS INDICES, NASDAQ INDEX, OR VALUE LINE INDEX, OR BY ANY OTHER PERSON OR ENTITY FROM THE USE OF THE FTIS INDEX, BARCLAYS INDICES, NASDAQ INDEX, OR VALUE LINE INDEX, OR ANY DATA INCLUDED THEREIN.

Neither Barclays Bank PLC (“**BB PLC**”) nor any of its affiliates (collectively “**Barclays**”) is the issuer or producer of MassMutual Ascend’s products and Barclays has no responsibilities, obligations or duties to investors in MassMutual Ascend’s products. The Barclays US 2Y Treasury Futures Index, Barclays US 5Y Treasury Futures Index, Barclays US 10Y Treasury Note Index, and Barclays Switch USD Signal Index (collectively, the “**Indices**”), together with any Barclays indices that are components of the Indices, are trademarks owned by Barclays and, together with any component indices and index data, are licensed for use by FTIS in connection with the First Trust Barclays Edge Index.

Barclays’ only relationship with the MassMutual Ascend in respect of the Indices is the licensing of the Indices to FTIS, which are administered, compiled and published by BB PLC in its role as the index sponsor (the “**Index Sponsor**”) without regard to MassMutual Ascend’s products or investors in MassMutual Ascend’s products. Additionally, MassMutual Ascend as issuer or producer of MassMutual Ascend’s products may for itself execute transaction(s) with Barclays in or relating to the Indices in connection with MassMutual Ascend’s products. Investors acquire MassMutual Ascend’s products from MassMutual Ascend and investors neither acquire any interest in the Indices nor enter into any relationship of any kind whatsoever with Barclays upon making an investment in MassMutual Ascend’s products. MassMutual Ascend’s products are not sponsored, endorsed, sold or promoted by Barclays and Barclays makes no representation regarding the advisability of MassMutual Ascend’s products or use of the Indices or any data included therein. Barclays shall not be liable in any way to MassMutual Ascend, investors or to other third parties in respect of the use or accuracy of the Indices or any data included therein.

When you buy a fixed-indexed annuity, you own an insurance contract. You are not buying shares of any stock or index. All guarantees are backed by the claims-paying ability of the issuing insurance company. For amounts held under the declared rate strategy, interest is credited daily at the declared rate. For amounts held under an indexed strategy, interest is credited on the last day of a term at the applicable indexed interest rate, which will never be higher than the cap for that strategy for that term. The guaranteed minimum declared rate and guaranteed minimum caps are set out on the contract specifications page. For each indexed strategy, the guaranteed minimum indexed interest rate for a term is 0%.

MassMutual AscendSM is not an investment adviser and the information provided in this document is not investment advice. You should consult your investment professional for advice based on your personal circumstances and financial situation.

Product issued under contract form numbers P1140219NW, P1140219OR and P1140219ID by MassMutual Ascend Life Insurance CompanySM (Cincinnati, Ohio), a wholly owned subsidiary of Massachusetts Mutual Life Insurance Company (MassMutual). Form number and features may vary by state. Products not available in all states.

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

NOT A BANK OR CREDIT UNION DEPOSIT OR OBLIGATION • NOT FDIC OR NCUA-INSURED • NOT INSURED BY ANY
FEDERAL GOVERNMENT AGENCY • MAY LOSE VALUE • NOT GUARANTEED BY ANY BANK OR CREDIT UNION

