

Index Frontier® 7

OVERVIEW

ISSUE AGES	<p>0–80 (qualified); 0–80 (non-qualified); 0–75 (inherited IRA); 0–75 (inherited non-qualified)</p> <p>Issue age is the owner’s age at last birthday. For joint owners, the oldest age will be used as the issue age. If the owner is a non-natural person, the age of the eldest annuitant will be treated as the age of the owner for all purposes under this contract.</p>
PURCHASE PAYMENTS	<p>This product accepts a single purchase payment for the following tax qualifications:</p> <ul style="list-style-type: none">• Non-qualified and inherited non-qualified• IRA (traditional, Roth, SEP, SIMPLE, and inherited)• 401(a) (including 401(k) traditional and Roth)• 403(b) (traditional and Roth)• Governmental 457(b) (traditional and Roth) <p>Additional purchase payments allowed during the first two months of the contract only. Terms begin only on the 6th and 20th of each month. Purchase payments received prior to the beginning of a term will be held in the purchase payment account until the beginning of the next term. Additional purchase payments have their own crediting terms.</p> <p>Minimum: Initial purchase payment: \$25,000; additional purchase payments: \$10,000</p> <p>Maximum: \$1 million for ages 0–80</p> <p>Maximums apply to the total purchase payments made to all annuities from MassMutual Ascend with the same owners or the same annuitants.</p>
FEES	<p>There are no upfront or recurring fees.</p>
ACCOUNT VALUE	<p>The account value equals the sum of the following values:</p> <p>Purchase payment account value: The purchase payment account value equals the purchase payments received, less any applicable premium tax or other applicable tax, less withdrawals and applicable early withdrawal charges, and plus interest credited.</p> <p>Declared rate strategy value: A declared rate strategy value equals the amount applied to the declared rate strategy, less withdrawals and applicable early withdrawal charges, and plus interest credited at the declared interest rate.</p>

ACCOUNT VALUE (CONT)

Indexed strategy value: An indexed strategy value equals the investment base for that term (which is the amount applied to the strategy at the start of the term), minus the portion of the investment base taken from the strategy to pay for each withdrawal and related early withdrawal charge during the term, and plus or minus the vested gain or loss for that term on the remaining portion of the investment base. The portion of the investment base taken to pay for a withdrawal or charge will be less than the withdrawal or charge if there is a vested gain and more than the withdrawal or charge if there is a vested loss. A withdrawal or charge reduces the indexed strategy value by an amount equal to the withdrawal or charge, but the reduction in the investment base to pay for such withdrawal or charge is proportional to the reduction in the indexed strategy value.

CREDITING STRATEGIES

Upon issue, the owner selects from two types of crediting strategies: a **declared rate strategy** and **indexed strategies**. At the end of each term, the owner has the opportunity to reallocate funds among the available strategies. To reallocate funds, the owner must submit a strategy selection form prior to the end of that term. Unless the owner reallocates funds at the end of a term, funds are automatically applied to the same strategy for the next term. Available strategies are subject to change at any time for new sales.

DECLARED RATE STRATEGY

Interest is credited daily on amounts held under a declared rate strategy based on the applicable declared rate. The declared rate for a term will not change during that term and is guaranteed to never be below the guaranteed minimum interest rate set out in the strategy endorsement.

INDEXED STRATEGIES

Indexed strategies include:

S&P 500®

- 10% Buffer Indexed Strategy
- -10% Floor Indexed Strategy
- 0% Floor Indexed Strategy

iShares MSCI EAFE

- -10% Floor Indexed Strategy
- 0% Floor Indexed Strategy

iShares U.S. Real Estate

- -10% Floor Indexed Strategy
- 0% Floor Indexed Strategy

SPDR Gold Shares

- -10% Floor Indexed Strategy
- - 0% Floor Indexed Strategy

The indexed strategies provide returns based, in part, on the change in the value of one of these indexes: the S&P 500® Index (SPX), the iShares MSCI EAFE ETF, the iShares U.S. Real Estate ETF or the SPDR Gold Shares ETF.

The value of an indexed strategy will increase if there is a positive change in the applicable index value during a term. Any increase during a term is subject to an upper limit called the cap. We can change the cap for each new term of an indexed strategy. Before the end of the term, any increase is also subject to a vesting factor.

The value of a 0% floor strategy will not decrease, even if there is a negative change in the applicable index value during a term.

The value of a -10% floor strategy will decrease if there is a negative change in the applicable index value during a term. This strategy protects against losses in excess of 10%, meaning any decrease during a term is limited to -10%.

The value of a 10% buffer strategy may decrease if there is a negative change in the applicable index value during a term. At maximum, this strategy protects against the first 10% of index losses at the end of a term. Clients assume any losses in excess of the buffer.

Strategies may not be available in all states.

VESTED GAINS OR LOSSES

Each day of a term, the value of an indexed strategy is adjusted for the vested gain or loss since the start of that term. The vested gain is any positive index change for the term (but not exceeding the cap set for that term), multiplied by the applicable vesting factor for that day, and then multiplied by the remaining investment base for the current term.

VESTING FACTOR

Within first six months of term	25%
Within final six months of term, but before final market day of term	50%
On or after reaching final market day of term	100%

The vested loss is equal to any negative index change for the term (after taking into account the buffer or floor), multiplied by the remaining investment base for the current term.

INDEXED STRATEGY CAP

A **cap** is the largest positive index change used to determine the vested gain. In the Index Frontier 7 contract and prospectus, we refer to a cap as a maximum gain.

INDEXED STRATEGY BUFFER

A **buffer** is the portion of a negative index change that is disregarded when determining a vested loss. The 10% buffer indexed strategy provides protection against the first 10% of index losses. The buffer varies depending on the day of the term. The buffer at the end of a term is 10% and provides protection against the first 10% of index losses. Before the end of a term, the buffer is calculated daily as a prorated share of the annual 10% buffer and provides less protection against index losses.

INDEXED STRATEGY FLOOR

A **floor** is the largest negative index change used to determine a vested loss each term. -10% floor and 0% floor strategies are available. In the Index Frontier 7 contract and prospectus, we refer to a floor as a maximum loss.

WITHDRAWALS

Withdrawals are allowed any time prior to the annuity payout initiation date. All withdrawals are subject to IRS regulations and early withdrawal charges. Withdrawals will be taken first proportionally from funds that then qualify for a waiver of the early withdrawal charge pursuant to the bailout right, then from the purchase payment account, then proportionally from the declared rate strategies until all declared rate strategies are exhausted, and then proportionally from indexed strategies.

Minimum withdrawal: \$500;
Minimum account value following withdrawal: \$5,000

PENALTY-FREE WITHDRAWAL ALLOWANCE

During the first contract year, 10% of the purchase payments may be withdrawn without an early withdrawal charge. After the first contract year, 10% of the account value on the most recent contract anniversary may be withdrawn without an early withdrawal charge. The sum of all previous withdrawals during the same contract year will be subtracted to determine the amount available. This free withdrawal allowance is not cumulative, and unused amounts do not carry over to the next contract year. It is important to remember that withdrawals prior to the end of a term are subject to a vesting factor and a proportional adjustment to the investment base. Withdrawals from an annuity contract may have tax consequences.

EARLY WITHDRAWAL CHARGE

An early withdrawal charge is applied to surrenders and withdrawals that exceed the penalty-free withdrawal allowance during the first seven contract years.

CONTRACT YEAR	1	2	3	4	5	6	7	8+
EARLY WITHDRAWAL CHARGE	8%	7%	6%	5%	4%	3%	2%	0%

BAILOUT RIGHT	This feature allows the client to withdraw money without penalty from an indexed strategy at the end of a term if the cap for the next term of the indexed strategy is below its bailout trigger. The bailout trigger will always be below the initial cap for the strategy. If the bailout feature is triggered, we will send a letter and give the client 30 days to withdraw the money from that strategy with no penalty.
EXTENDED CARE WAIVER RIDER	To help ease the strain of certain unforeseen events, an extended care waiver is available for no additional charge. If the owner is confined to a nursing home or other long-term care facility after the completion of the first contract year for at least 90 consecutive days, early withdrawal charges may be waived on withdrawals up to a full surrender. <i>Not available in Massachusetts. In California, the Extended Care Waiver Rider has been replaced with the Waiver of Early Withdrawal Charges for Facility Care or Home Care or Community-Based Services Rider, which provides for a waiver of early withdrawal charges under an expanded variety of circumstances.</i>
TERMINAL ILLNESS WAIVER RIDER	Provided that the diagnosis is rendered more than one year after the contract effective date, up to 100% of the account value can be withdrawn without deduction of an early withdrawal charge if the owner or joint owner is diagnosed by a physician as having a terminal illness with a prognosis of 12 months or less. <i>This waiver may be used only once. Not available in Massachusetts.</i>
SURRENDER VALUE	The surrender value equals the account value, less any applicable early withdrawal charges.
PAYOUT OPTIONS	The following options are available following the first contract year: fixed period payout, life payout, life payout with payments for at least a fixed period, and joint and one-half survivor payout.
DEATH BENEFIT VALUE	The death benefit amount is the greater of the account value or the purchase payments, reduced proportionally for all withdrawals, but not including amounts applied to pay early withdrawal charges. In either case, it is reduced by premium tax or other taxes not previously deducted.
PREMIUM TAX	If the owner elects to take an annuity payout benefit, premium tax will be deducted if the owner lives in a state that has a premium tax on annuitizations. If a death benefit is paid under a payout option, premium tax will be deducted if the beneficiary lives in a state that has a premium tax on annuitizations.
STATE VARIATIONS	Missouri: The declared rate strategy is not available.

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

This product can only be sold through a Broker/Dealer that is contracted with MassMutual Ascend Life Insurance Company. Any sales solicitation must be accompanied or preceded by a prospectus. To obtain a copy of the prospectus, please visit [MassMutualAscend.com/RILArates](https://www.massmutualascend.com/RILArates). The prospectus contains important information about the Index Frontier 7 annuity and MassMutual Ascend. Read it carefully to learn more about the features of the Index Frontier 7 annuity.

The S&P 500 Index is a product of S&P Dow Jones Indices LLC or its affiliates ("SPDJI") and has been licensed for use by MassMutual Ascend. Standard & Poor's®, SPDR® and S&P® are registered trademarks of Standard & Poor's Financial Services LLC ("S&P"); Dow Jones® is a registered trademark of Dow Jones Trademark Holdings LLC ("Dow Jones"); and these trademarks have been licensed for use by SPDJI and sublicensed for certain purposes by MassMutual Ascend. MassMutual Ascend's products are not sponsored, endorsed, sold or promoted by SPDJI, Dow Jones, S&P, or their respective affiliates, and none of such parties makes 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 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. MassMutual Ascend annuity products are not sponsored, endorsed, sold or promoted by BlackRock, and purchasers of an annuity from MassMutual Ascend 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 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.

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

Product issued by MassMutual Ascend Life Insurance Company (Cincinnati, Ohio), a wholly owned subsidiary of Massachusetts Mutual Life Insurance Company (MassMutual), under contract form P1822317NW and rider forms R1462316NW and R1462416NW (not available in Massachusetts). Form numbers, features and availability may vary by state.

This marketing material is intended only to provide a summary of this annuity product. In order to obtain a complete understanding, please read the contract provisions carefully as this is not intended to be a substitute for the contract.

All guarantees subject to the claims-paying ability of MassMutual Ascend.

For producer use only. Not for use in sales solicitation.

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

∴ MassMutual Ascend