

S&P 500: Comparing Positive And Negative Return Frequency Over Time

With an Index Frontier® annuity from MassMutual Ascend Life Insurance Company, you can allocate money to an S&P 500® 10% Buffer strategy, -10% Floor strategy or 0% Floor strategy – each of which provide index-linked earning potential up to a cap while providing a level of protection against loss. Let’s take a closer look at the 10% Buffer strategy.

The 10% Buffer strategy protects against the first 10% of index losses each term, which means:

- During terms of negative returns between 0% and -10%, the 10% buffer strategy would provide complete protection against loss.
- During terms of negative returns in excess of -10%, the 10% buffer strategy would protect against the first 10% of losses.

The S&P 500 Index (SPX), which is a common benchmark of the U.S. stock market, has experienced a wide range of positive and negative returns since its inception in 1957. Let’s take a closer look at how the Index Frontier buffer strategy would have fared when applied to calendar years of varying performance from January 1, 1957 to December 31, 2022.

Frequency Of S&P 500 Returns Since 1957

0% to 10%		10% to 20%		20%+	
		1971: 10.78%		1967: 20.09%	
		2014: 11.39%		1982: 14.76%	
		1979: 12.30%		1996: 20.26%	
		1972: 15.63%		2021: 26.89%	
2011: 0.00%	1992: 4.46%	1979: 12.30%	1972: 15.63%	1961: 23.12%	1989: 27.25%
1970: 0.09%	1993: 7.05%	1988: 12.40%	2020: 16.25%	2009: 23.45%	2019: 28.87%
1978: 1.06%	1968: 7.66%	2010: 12.78%	1983: 17.27%	1980: 25.77%	2013: 29.60%
1984: 1.40%	1959: 8.47%	1964: 12.96%	1963: 18.89%	1991: 26.30%	1997: 31.00%
1987: 2.02%	2004: 8.99%	2012: 13.40%	1976: 19.14%	1985: 26.33%	1975: 31.54%
2005: 3.00%	1965: 9.06%	2006: 13.61%	2017: 19.41%	2003: 26.38%	1995: 34.11%
2007: 3.52%	2016: 9.53%	1986: 14.62%	1999: 19.52%	1998: 26.66%	1958: 38.05%

48 years positive performance

buffer strategy would have provided growth potential up to a cap

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2008: -38.48%	2002: -23.36%	2022: -19.44%	1962: -11.80%	1981: -9.73%	1960: -2.97%
1974: -29.71%		1973: -17.36%	1977: -11.50%	1990: -6.55%	1994: -1.53%
		1957: -14.31%	1969: -11.36%	2018: -6.23%	2015: -0.72%
		1966: -13.09%	2000: -10.13%		
		2001: -13.04%			

In 72% of 18 down years

buffer strategy would have limited losses to less than -5%

-20%+

-20% to -10%

-10% to 0%

At the end of a term, the buffer is 10%. Before the end of a term, it is calculated daily as a prorated share of 10%.

Strategy returns are based on the S&P 500 Price Return Index (SPX), which does not include dividends paid by the stocks in the index. Actual returns for a strategy will be based on index changes over one-year terms, which begin on the 6th and 20th of a month. Historical information specific to the strategies available through Index Frontier annuities is not available prior to the first offering in May 2018. Past performance does not guarantee future results. Performance can vary significantly over time.

Talk with your financial professional to determine which strategies align with your goals and risk tolerance.

MassMutual Ascend's registered index-linked annuities 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. In the prospectus, a cap is referred to as a maximum gain, and a floor is referred to as a maximum loss. To obtain a copy of the prospectus, please visit [MassMutualAscend.com/RILArates](https://www.MassMutualAscend.com/RILArates).

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.

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