

About the Index

The Cboe S&P 500 Enhance and Buffer Index (the “Index”; symbol “SUPDN”) is designed to provide target outcome returns linked to the U.S. large-capitalization stock market. The Index measures the performance of a portfolio of exchange-traded Flexible Exchange® Options (“FLEX® Options”) that are based on the S&P 500 Index. The SUPDN Index was launched on November 1, 2017. The Index is designed to track the returns of an investment that has two components:

- 1. The payout from the FLEX Options, which provides, over a period of approximately one month:
 - Two times (“2x”) enhanced returns on appreciation of the S&P 500 up to a capped level of 5.0%
 - Buffer protection against the first 3.5% of losses, and
 - 2x enhanced exposure on losses of more than 3.5%.
- 2. The net premium, which is the sum of the premiums paid for or received from the FLEX Options on each monthly roll date.

Index - Key Highlights

TARGET OUTCOME RETURNS

Part of an outcome-based approach that is designed to target return payoffs based on the price return of the underlying index.

ALTERNATIVE BETA

Designed to outperform the S&P 500 over a range of upside and downside price returns without the risk of factor underperformance found in traditional smart beta strategies.

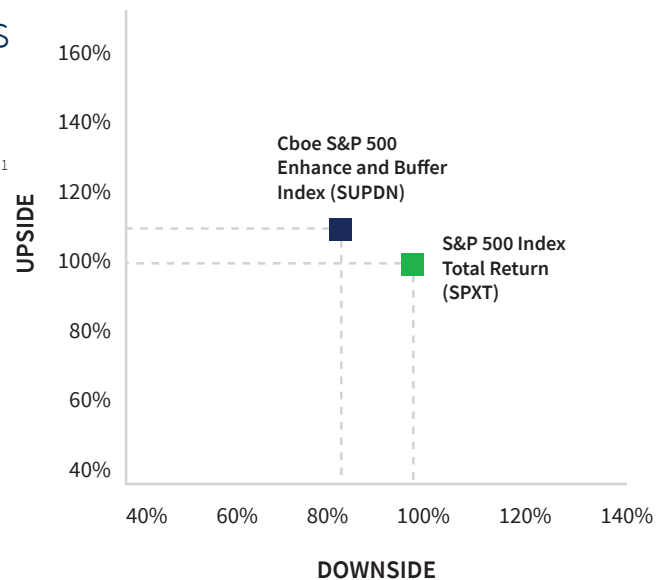
AMPLIFIED UPSIDE AND BUFFERED DOWNSIDE

2x S&P 500 monthly price returns up to a 5% cap. Buffer protection against the first 3.5% of losses.

Potential for Better Risk-Adjusted Returns

The Cboe S&P 500 Enhance and Buffer Index has provided returns over time that capture:

- 107% of the upside of the S&P 500 Total Return Index (ticker: SPXT)¹
- 84% of the downside of the SPXT²

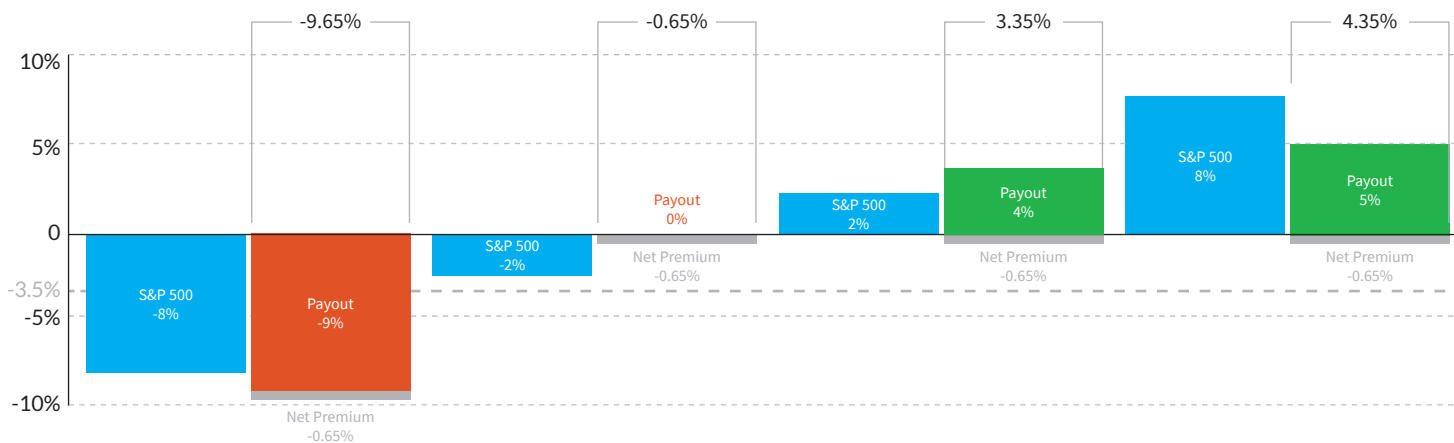


¹ Calculated as the average of ratios of SUPDN performance to SPXT performance when positive over a one-year period, rolling daily from 12/30/2005 through 12/31/2018. Excludes periods where the SPXT return was between -1% and 1%.

² Calculated as the average of ratios of SUPDN performance to SPXT performance when negative over a one-year period, rolling daily from 12/30/2005 through 12/31/2018. Excludes periods where the SPXT return was between -1% and 1%.

Enhanced and Buffered Strategy: An Illustration of How It Works

S&P 500 Down 8%	S&P 500 Down 2%	S&P 500 Up 2%	S&P 500 Up 8%
<ul style="list-style-type: none"> First 3.5% of losses are buffer protected 2x the return below -3.5% Net premium of -0.65% <p>Since the S&P 500 was down 8% (4.5% below the -3.5% buffer), the Index return would reflect a payout of -9% (2x a return of -4.5%) and a -0.65% net premium.</p>	<ul style="list-style-type: none"> First 3.5% of losses are buffer protected Net premium of -0.65% <p>Since the S&P 500 was down 2% (within the -3.5% buffer), the Index return would reflect a payout of 0% and a -0.65% net premium.</p>	<ul style="list-style-type: none"> 2x enhanced returns up to 5% Net premium of -0.65% <p>Since the S&P 500 was up 2% (below the +5% cap), the Index return would reflect a payout of 4% (2x a return of +2%) and a -0.65% net premium.</p>	<ul style="list-style-type: none"> 2x enhanced returns up to 5% Net premium of -0.65% <p>Since the S&P 500 was up 8% (3% above the +5% cap), the Index return would reflect a payout of 5% and a -0.65% net premium.</p>

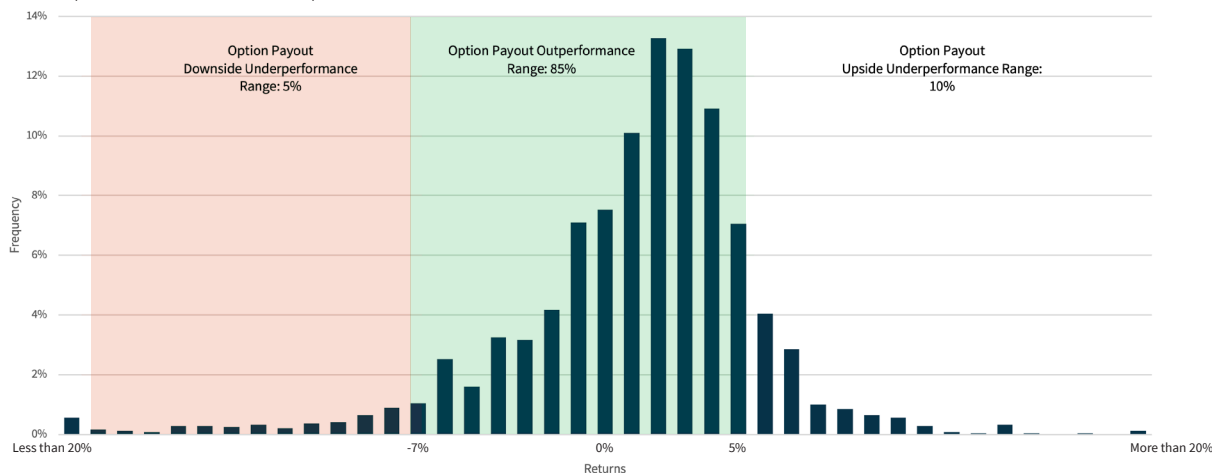


Distribution of Monthly Rolling Price Returns of the S&P 500

(Dec. 30, 2005 – Dec. 31, 2018)

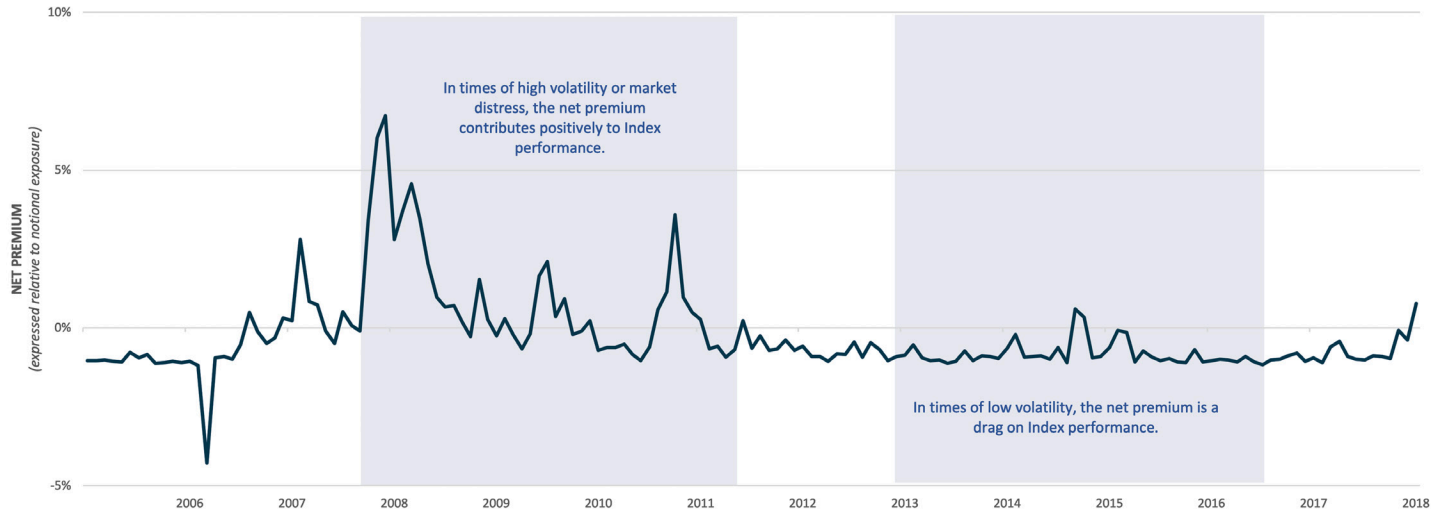
Outperformance Range

85% of the monthly returns of the S&P 500 Price Return Index are between -7% and +5%. In this range, the payout from the options within the index outperforms the S&P 500 price returns.



Underperformance and outperformance of the strategy relative to the S&P 500 Index ignores the impact of net premium.

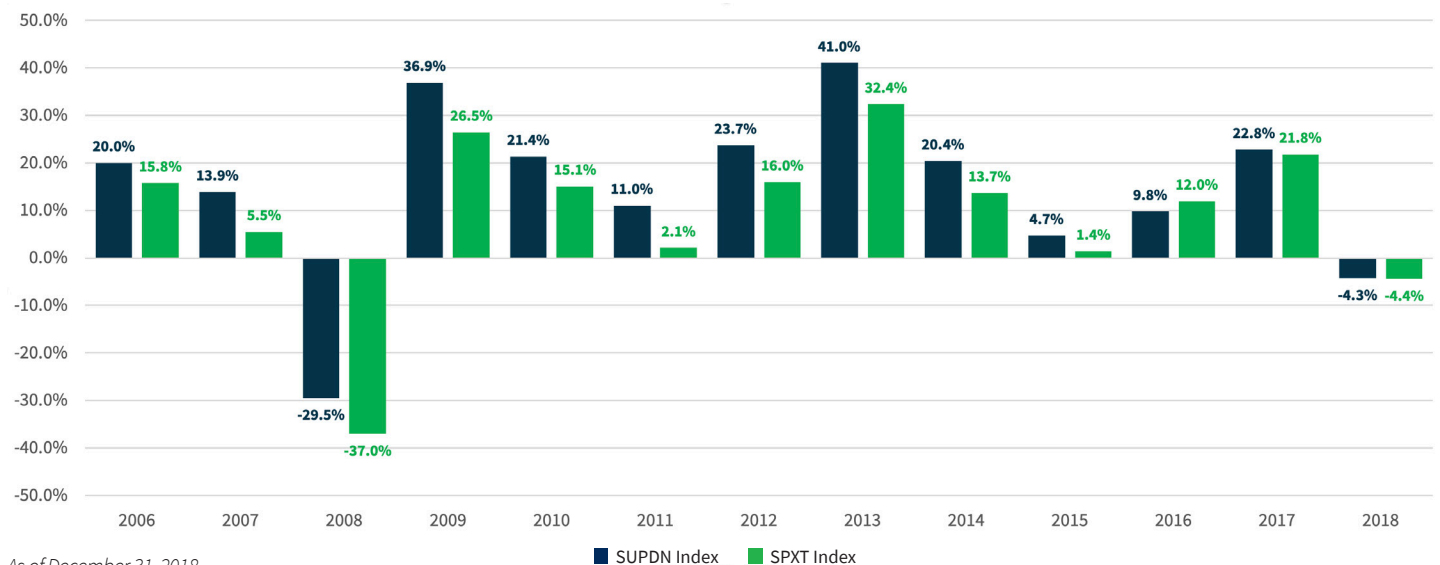
Net Premiums (Monthly, Dec. 30, 2005 - Dec. 31, 2018)



A negative number reflects a net premium that is higher than the notional exposure, while a positive number reflects a net premium that is lower than notional exposure.

Generally, in times of market stress and elevated volatility, the net premium can contribute positively to Index returns. Conversely, in times of low volatility, the net premium can be a drag on returns.

Index Calendar Returns Against The S&P 500 Index Total Return (Dec. 30, 2005 - Dec. 31, 2018)

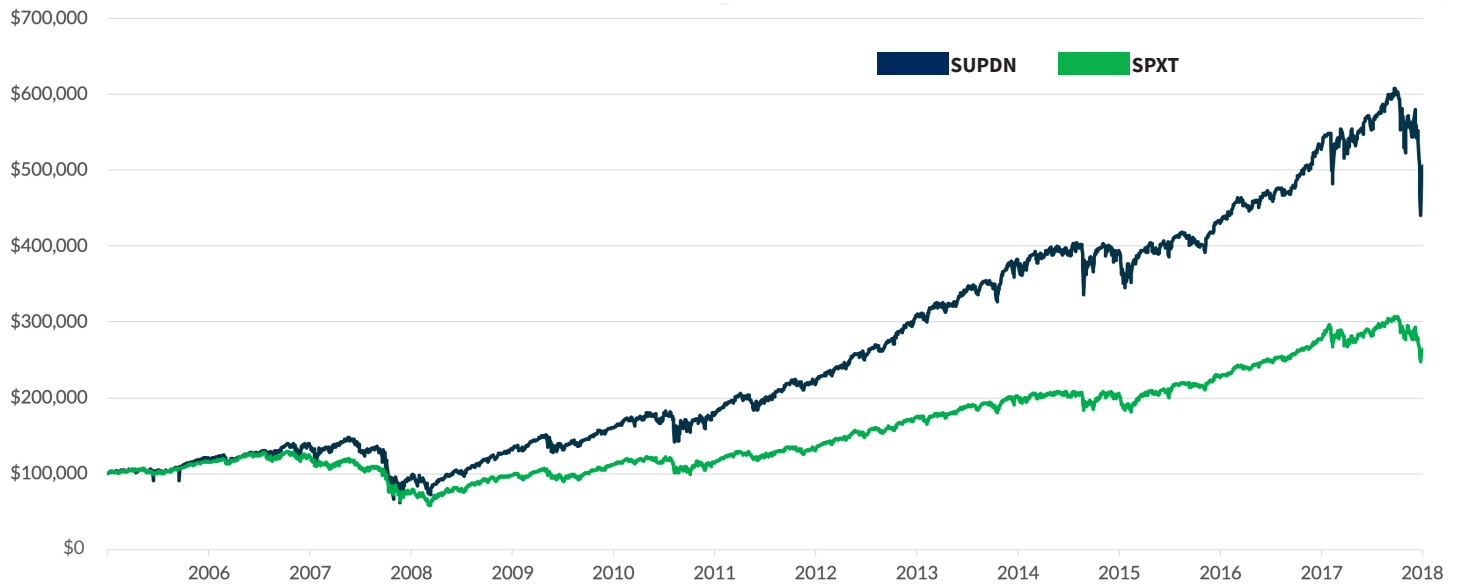


As of December 31, 2018

Index Performance

(Dec. 30, 2005 - Dec. 31, 2018)

Cboe S&P 500 Enhance and Buffer Index (SUPDN) Compared to S&P 500 Total Return Index (SPXT)



Annualized returns of the Cboe S&P 500 Enhance and Buffer Index and comparison to the S&P 500 Index Total Return and annualized historical volatility.

	SUPDN INDEX		SPXT INDEX		Return Difference
	Annual Return	Historical Volatility	Annual Return	Historical Volatility	
2018	-4.28%		-4.38%		0.11%
1 YEAR	-4.28%	24.88%	-4.38%	17.03%	0.11%
3 YEAR	8.88%	17.88%	9.26%	12.99%	-0.38%
5 YEAR	10.22%	17.36%	8.49%	13.23%	1.73%
10 YEAR	18.00%	20.24%	13.12%	16.64%	4.88%
SINCE 12/30/05	13.25%	29.11%	7.75%	19.24%	5.50%

As of December 31, 2018

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