

# RiskDex®

NATIONS®

INDEXES

## A RULES-BASED MEASURE OF THE EQUITY MARKET'S PERCEPTION OF RISK

The Nations® family of RiskDex® Indexes provide the best available measures of the U.S. equity market's perceptions of risk and potential direction. The Nations RiskDex Indexes compare the Nations CallDex® index of call option prices to the Nations PutDex® index of put option prices to distill market concerns about potential direction of equity prices over the next 30 calendar days. RiskDex Indexes are robust from a theoretical point of view and are the best indication of fear and expectations for equity market direction.

### What is RiskDex?

RiskDex uses SPY options, the most liquid options in the world, to calculate the ratio of the price of a 1 standard deviation out-of-the-money put option with precisely 30 days to expiration to that of a 1 standard deviation out-of-the-money call option with an identical expiration. This ratio provides a unique measure of the equity market's expectations for potential direction and volatility over the next 30 calendar days.

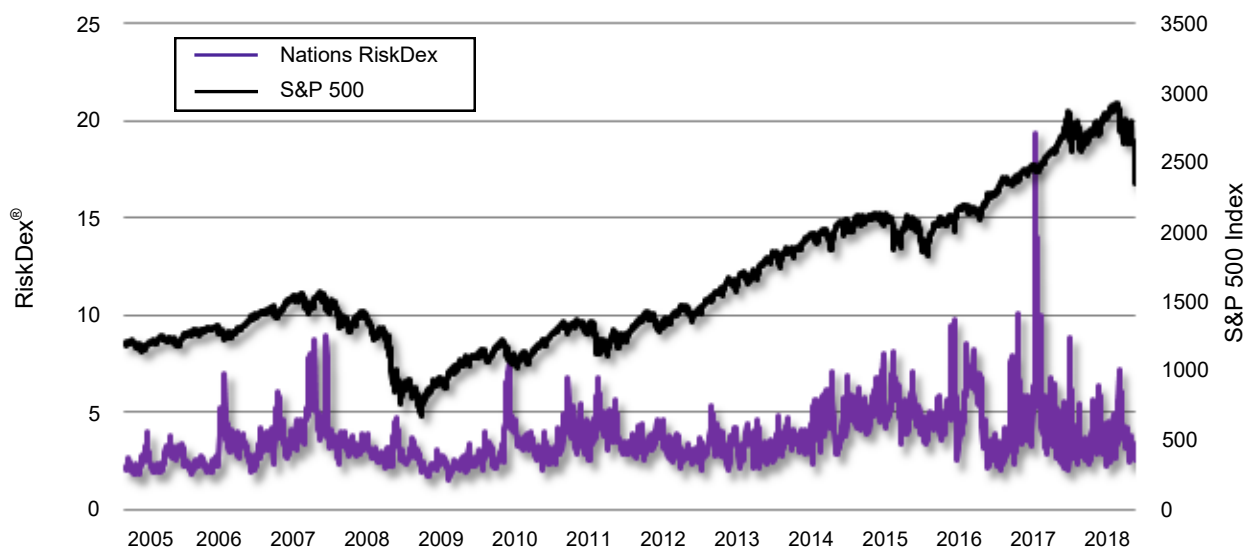
### Index Description

The Nations family of RiskDex Indexes provide an improved measure of the equity market's expectations, or fears, for direction and volatility over the next 30 calendar days.

Nations Indexes calculates the Nations Large Cap RiskDex using options on SPY, the leading S&P 500 index ETF. SPY options are the most liquid options in the world with bid/ask spreads which are much tighter than other S&P 500-based option markets including SPX options.

Nations calculates RiskDex on a variety of other domestic and international equity indexes as well as on other products and asset classes including fixed income and commodity markets.

### Historical Comparative Results



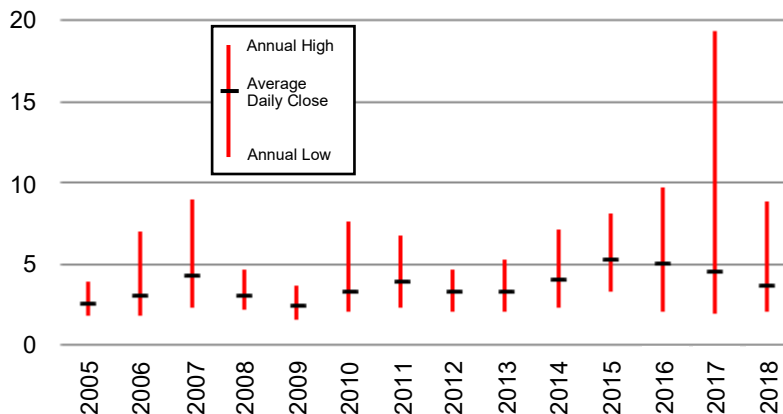
Better Ideas. Better Indexes.®

## Nations RiskDex Indexes

Many existing volatility gauges measure the potential for volatility without regard to potential direction. RiskDex distills normalized call option and put option prices to express the equity market's expectations for direction over the next 30 calendar days.

By comparing put option prices to call option prices RiskDex expresses expectations for market direction rather than simply volatility. While existing volatility indexes tend to rise when investors think the equity market will fall, RiskDex is the first straightforward measure of expectations for the primary concern for investors - direction.

### RiskDex Annual Range and Average Daily Close



### Historical Values<sup>1</sup>

Nations RiskDex Index	
Average Daily Closing Value	3.638
Median Daily Closing Value	3.351
Standard Deviation of Daily Change	10.982%
Correlation to S&P 500	-11.462%
Closing High	19.375 (August 11, 2017)
Closing Low	1.619 (July 24, 2009)

Performance of an index is not illustrative of any particular investment or vehicle. Index results quoted represent past performance, which is no guarantee of future results.

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### Flagging Extremes<sup>1</sup>

RiskDex flags extremes in sentiment in the SPY option markets which are often inflection points for the underlying markets which investors can take advantage of.

RiskDex	Average S&P 500 Return - Next 20 Trading Days
< 3.00	0.592%
< 4.00	0.540%
< 5.00	0.501%
> 8.00	1.834%
> 9.00	2.242%
> 10.00	1.230%

When RiskDex is high it is often signaling capitulation or a market bottom; the average return of the S&P 500 index over the next 20 trading days when RiskDex is above 8.00 is 1.834%. Conversely, when RiskDex is low it often signals complacency. The average return of the S&P 500 index over the next 20 trading days when RiskDex is below 5.00 is just 0.501%.

### Structure of RiskDex

Equity index options exhibit skew which is the tendency for out-of-the-money put options to be more expensive than out-of-the-money call options. This phenomenon is due to put buying by hedgers and covered call selling.

This also means RiskDex will have a natural lower bound somewhat above 1.00. The upper bound is less definite but an extremely high RiskDex can signal opportunities for volatility arbitrage.

<sup>1</sup> From inception (1/30/2005) to 12/31/2018