

News Release

For Immediate Release

STUDY ANALYZES PERFORMANCE OF CBOE S&P 500 (SPX) OPTIONS-SELLING INDEXES

- Compares Six CBOE Benchmarks – BXM, PUT, BFLY, BXMD, CMBO, CNDR – with Traditional Stock and Bond Indexes
 - Includes Benchmark Indexes that Incorporate Iron Condor and Iron Butterfly Strategies

CHICAGO, IL -- February 23, 2016 -- The Chicago Board Options Exchange® (CBOE®) today announced the release of a new study that examines six benchmark indexes that write Standard & Poor's 500 Index (SPX) options, comparing their performances with those of traditional stock, bond and commodity indexes. The options-selling indexes generally had returns that were similar to those of the S&P 500 Index, but with lower volatility and lower maximum drawdowns.

The report, "Performance Analysis of CBOE S&P 500 Options-Selling Indices," is the first comprehensive study that examines the performance of options-strategy benchmark indexes that incorporate iron condor and iron butterfly strategies.

Commissioned by CBOE and co-authored by Keith Black, Ph.D., CAIA, CFA, managing director of the Chartered Alternative Investment Analyst Association, and Edward Szado, Ph.D., CFA, assistant professor of finance at Providence College and director of research at the Institute for Global Asset and Risk Management (INGARM), the study analyzed benchmark index performances for the 29½-year period from mid-1986 to the end of 2015.

The options-based benchmarks indexes studied were the CBOE S&P 500 BuyWrite Index (BXM); CBOE S&P 500 PutWrite Index (PUT); CBOE S&P 500 Iron Butterfly Index (BFLY); CBOE S&P 500 30-Delta BuyWrite Index (BXMD); CBOE S&P 500 Covered Combo Index (CMBO); and CBOE S&P 500 Iron Condor Index (CNDR).

Key findings of the study included:

- **Returns and volatility.** In comparing the performance of a number of benchmark indexes over a 29½-year-period, the indexes with the highest annualized returns were the BXMD (10.66 percent) and the PUT (10.13 percent) indexes. The indexes with the lowest annualized standard deviation were the CNDR (7.23 percent) and PUT (10.16 percent) indexes.
- **Risk-adjusted returns and rich pricing for index options.** Indexes such as the PUT and BXMD indexes recorded relatively strong risk-adjusted returns. A key source of that strength was the fact that the SPX options usually were richly priced.

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- **Tail Risk.** A histogram analysis reflected a lower occurrence of large losses or large gains (less tail risk) for the options-selling indices than for the S&P 500 Index. Looking at monthly returns in the 29½ years between July 1986 and December 2015, the authors found the S&P 500 Index posted 15 months of losses worse than 6 percent during the period, while the CNDR Index logged 10 months of losses worse than 6 percent and the BFLY index two months of losses worse than 6 percent.
- **Capacity and Notional Value.** The average daily notional value for volume on the SPX options rose to more than \$190 billion in 2015. Fund managers examine trading liquidity and capacity when considering investment vehicles.

About CBOE Benchmarks

For more than a decade, CBOE has been a worldwide leader in creating benchmark indexes designed to help investors track the performance of investment strategies that use options or volatility products to help manage risk and enhance yield. CBOE currently publishes data on more than two dozen strategy performance benchmark indexes, including the CBOE S&P 500 BuyWrite Index (BXM), the CBOE S&P 500 PutWrite Index (PUT) and the CBOE VIX Tail Hedge Index (VXTH). Links to the new paper, as well as additional information on all of CBOE's strategy performance benchmark indexes, can be found at www.cboe.com/benchmarks. Manager testimonials and a 2015 study on funds' use of options can be found at www.cboe.com/funds.

About CBOE

CBOE, the largest U.S. options exchange and creator of listed options, continues to set the bar for options and volatility trading through product innovation, trading technology and investor education. CBOE Holdings offers equity, index and ETP options, including proprietary products such as options and futures on the CBOE Volatility Index (VIX Index) and S&P 500 options (SPX), the most active U.S. index option. Other products engineered by CBOE include equity options, security index options, Weeklys options, FLEX options and benchmark products such as the CBOE S&P 500 BuyWrite Index (BXM). CBOE Holdings is home to the world-renowned Options Institute, Livevol options analytics and data tools, and www.cboe.com, the go-to place for options and volatility trading resources.

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