

Fundamentals of Options Part 3: Harvesting Volatility



**26th Annual
Risk Management Conference**
Naples, FL
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Paul Stephens, CBOE

Outline



I. Options Strategy Indexes

II. Volatility Indexes

III. Volatility Strategy Indexes



Options Strategy Indexes

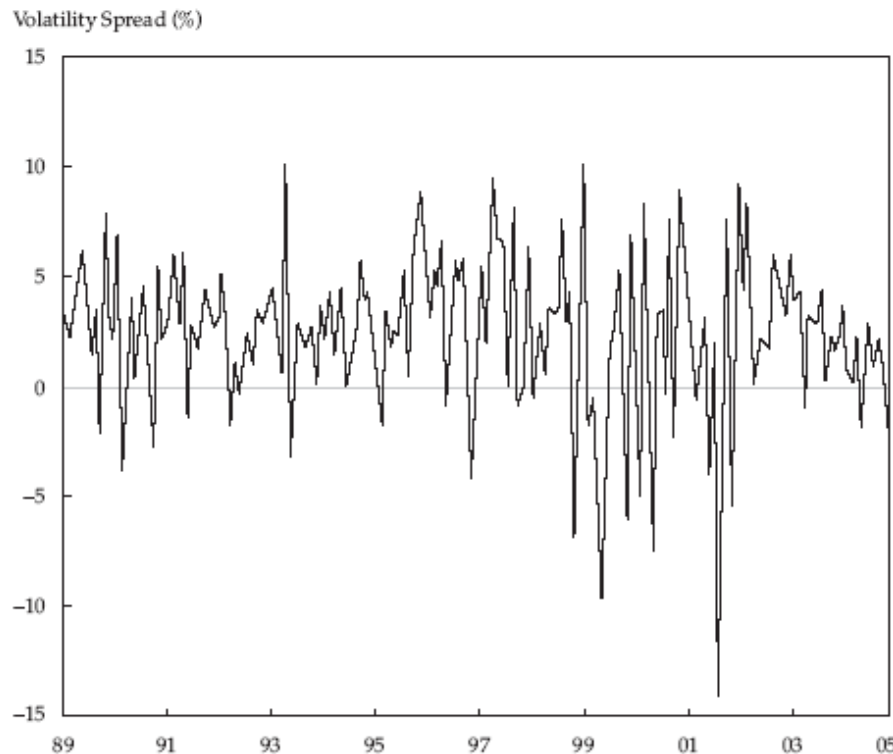
- **BXMSM:**
Short SPXTM calls over S&P 500[®] (at-the-money calls sold monthly)
- **BXDSM, BXNSM, BXRSM:**
BXM methodology utilizing DJX, NDX and RUT index options (ie, DJIASM, Nasdaq 100[®] and Russell 2000[®])
- **BXYSM:**
Short SPX 2% OTM calls over S&P 500
- **PUTSM:**
Short SPX at-the-money puts over Treasuries
- **CLLSM:**
Long SPX 3-month 5% OTM puts and short SPX 1-month 10% OTM calls over S&P 500



See www.cboe.com/buywrite for details.

Volatility Risk Premium

Figure 5. S&P 500 ATM One-Month Option: Implied vs. Realized Volatility Spread, 1 January 1990 to 31 October 2005



Note: The average spread was 2.4 percentage points; the median, 2.7 percentage points.

Source: Goldman Sachs.

**A Source of Returns:
Sell “Rich” Options**

- From: Paper by Goldman Sachs. "Finding Alpha via Covered Index Writing," Financial Analysts Journal. (September/October 2006).

Volatility Indexes



- **VIX[®]:**
Implied volatility of 30-day S&P 500
(Futures and options on VIX are available now)
- **VXD, VXN, RVX:**
VIX methodology applied to DJX, NDX and RUT index options
- **GVZ, OVX, EVZ:**
VIX methodology applied to GLD, USO and FXE options on ETFs
(ie, gold, oil and dollar/euro currency)
- **VXV:**
3-Month VIX
- **VXO[®]:**
CBOE S&P 100 Volatility Index[®]
(old ATM methodology)



See www.cboe.com/volatility.

Volatility-Related Indexes

- ▼
 - **ICJ, JCJ, KCJ:**

Implied correlation of SPX and top 50 S&P 500 stocks

➤ See www.cboe.com/IMPLIEDCORRELATION
and see tomorrow's volatility/correlation trading panel.

- **SKEW:**

Implied skewness of S&P 500

➤ Ticker not yet available.
See tomorrow's session on skew.

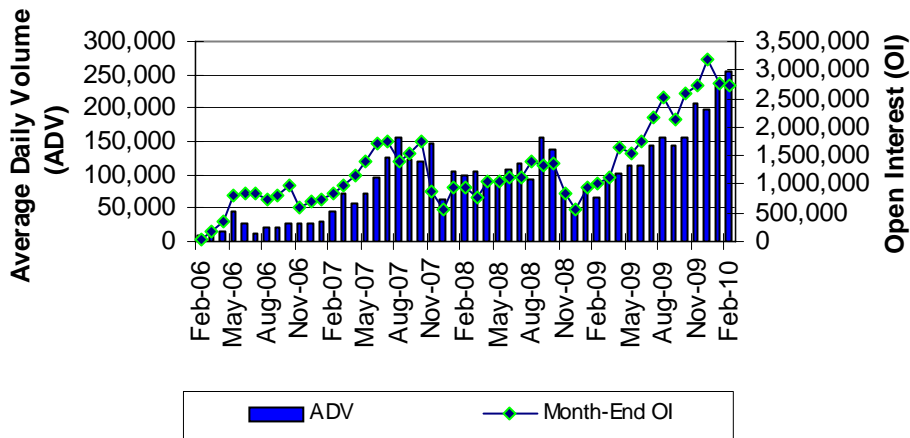
Volatility Strategy Indexes



- **VTY:**
Short S&P 500 variance over treasuries
- **VPD:**
Short VIX futures over treasuries
- **VPN:**
Short VIX futures over treasuries and long VIX calls

VIX Options and Futures

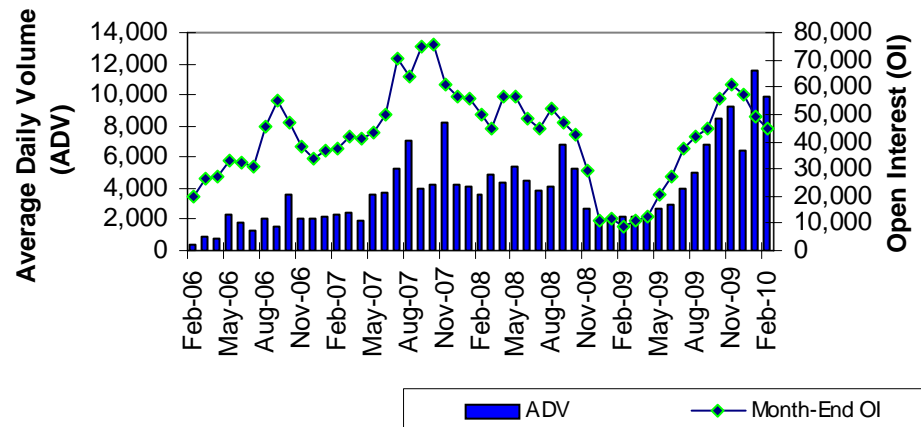
VIX Options: Volume and Open Interest



Introduced in 2006, VIX options are now the second most active index options contract in the U.S. after CBOE's S&P 500 options

Launched in 2004, VIX futures trading volume is less than VIX options, but the contract size is 10 times larger

VIX Futures: Volume and Open Interest



Disclaimers

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Futures and options on the CBOE's volatility indexes have **several UNIQUE FEATURES** that distinguish them from most equity and index options, and investors are **strongly ENCOURAGED TO CLOSELY READ AND UNDERSTAND THE VIX OPTIONS FAQ** at <http://www.cboe.com/micro/vix/vixoptionsfaq.aspx> and other informational materials before investing. CBOE®, Chicago Board Options Exchange®, CBOE Volatility Index®, and VIX® are registered trademarks of Chicago Board Options Exchange, Incorporated (CBOE). BXM, BXD, BXN, BXR, BXY, VXD, VXN, RVX and SPX are service marks of CBOE. CFE® is a registered trademark of CBOE Futures Exchange, LLC. Dow Jones®, DJIA®, and Dow Jones Industrial AverageSM are trademarks of Dow Jones & Company, Inc. and have been licensed for use for certain purposes by CBOE. CBOE's Options on the Dow based on the Dow Jones indexes and financial products based on the CBOE DJIA BuyWrite Index and the CBOE DJIA Volatility Index are not sponsored, endorsed, marketed or promoted by Dow Jones and Dow Jones makes no representations regarding the advisability of investing in such products. S&P® and S&P 500® are registered trademarks of the McGraw-Hill Companies, Inc. and are licensed for use by CBOE. The Russell 2000® Index is a registered trademark of The Frank Russell Company, used under license. Nasdaq®, Nasdaq-100® and Nasdaq-100 Index are trademarks of The Nasdaq Stock Market, Inc. (with which its affiliates are the "Corporations"). The CBOE Nasdaq-100 BuyWrite Index, and the CBOE Nasdaq-100 Volatility Index ("Indexes") are not derived, maintained, published, calculated or disseminated by the Corporations. Neither the Indexes nor any Derivative Product based on the Indexes has been passed on by the Corporations as to its legality or suitability. Such Derivative Products are not issued, endorsed, sold, sponsored, marketed or promoted by the Corporations. The Corporations make no warranties and bear no liability with respect to the Indexes. The methodologies of the CBOE BuyWrite Indexes and the CBOE Volatility Indexes are owned by CBOE and may be covered by one or more patents or pending patent applications. CBOE's BuyWrite Indexes are designed to represent a proposed hypothetical buy-write strategy. Supporting documentation for claims, comparisons, recommendations, statistics or other technical data is available by calling 1-888-OPTIONS, sending an e-mail to institutional@cboe.com, or by visiting www.cboe.com. This document contains comparisons, assertions, and conclusions regarding the performance of index based on backtesting, i.e., calculations of how the index might have performed in the past if it had existed. Backtested performance information is purely hypothetical and is provided in this document solely for informational purposes. Backtested performance does not represent actual performance, and should not be interpreted as an indication of actual performance. Past performance does not guarantee future results.

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