

New BXM & VIX Index Products --

*Investors Want Income and Higher
Risk-adjusted Returns*

Prepared for the June 9, 2004 Capital Link Forum

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Increased Interest

Institutional Investor (Sept. 2002) *BusinessWeek*, (May 21, 2001)
Wall Street Journal (Dec. 31, 2002) *Risk* (Sept. 2002)

Opt in

Investors are dusting off an old strategy — options overlay. When it works, it offers both yield enhancement and risk management. • **By Rich Blake**

How can an investor write a posi-

DECEMBER 31, 2002 THE WALL STREET JOURNAL.

Popular Strategy Eased the Pain Of Tough Year for Stock Investors

By KOPIN TAN

Dow Jones Newswires

NEW YORK—In a dreary year for stocks, investors who used options to manage their portfolios might have fared better than those who focused on stocks and were armed only with hope.

A benchmark index measuring returns from a popular option strategy will finish lower for 2002, but it will outperform the major stock index by a big enough margin to make managers take notice. ***

**OPTIONS
REPORT**

As of Friday, the Chicago Board Options Exchange's BuyWrite Index, or BXM, stood at 525.72, down 7.3% for the year. The index tracks returns for a hypothetical portfolio of Standard & Poor's 500-stock index shares where the investor systematically sells S&P 500 index calls. The performance of the BXM compares favorably with the 24% drop for the S&P 500 and the 37% decline by the Nasdaq 100 Index. The Dow Jones Industrial Average

BusinessWeek
May 21, 2001
pp. 132 - 134

Taking Cover With Covered Calls

Selling options can generate extra income on your portfolio

BY ANNE TERGESEN

The worst of the bear market is behind us, we hope, but that doesn't mean a 1990s-style bull market is ahead. A slower economy, rising energy costs, and badly beaten tech and telecom sectors are likely to keep gains in check. Such an environment is ideal for "covered call writing"—generat-



The benefits of call overwriting

Call overwriting is gaining popularity among investors. Here, JPMorgan explores the risk/reward profile and examines the historical performance of this strategy in the US and European markets during the past decade

Mutual Funds and Options

Source: Barron's June 11, 2001

- ◆ **Dobson Covered Call Fund (DBCCX)**
- ◆ **Gateway Fund (GATEX)**
- ◆ **Analytic Defensive Equity (ANDEX)**
- ◆ **Jacobs & Co. (JACOX)**
- ◆ **Kelmoore Strategy Fund (KSOIX)**
- ◆ **Olstein Financial Alert Fund (OFALX)**
- ◆ **Alliance Premier Growth Fund (APGBX)**
- ◆ **Needham Growth Fund (NEEGX)**



CBOE S&P 500 BuyWrite IndexSM

Options portfolio managers said they needed a benchmark for performance.

Prof. Robert Whaley of Duke U. was commissioned by the CBOE.

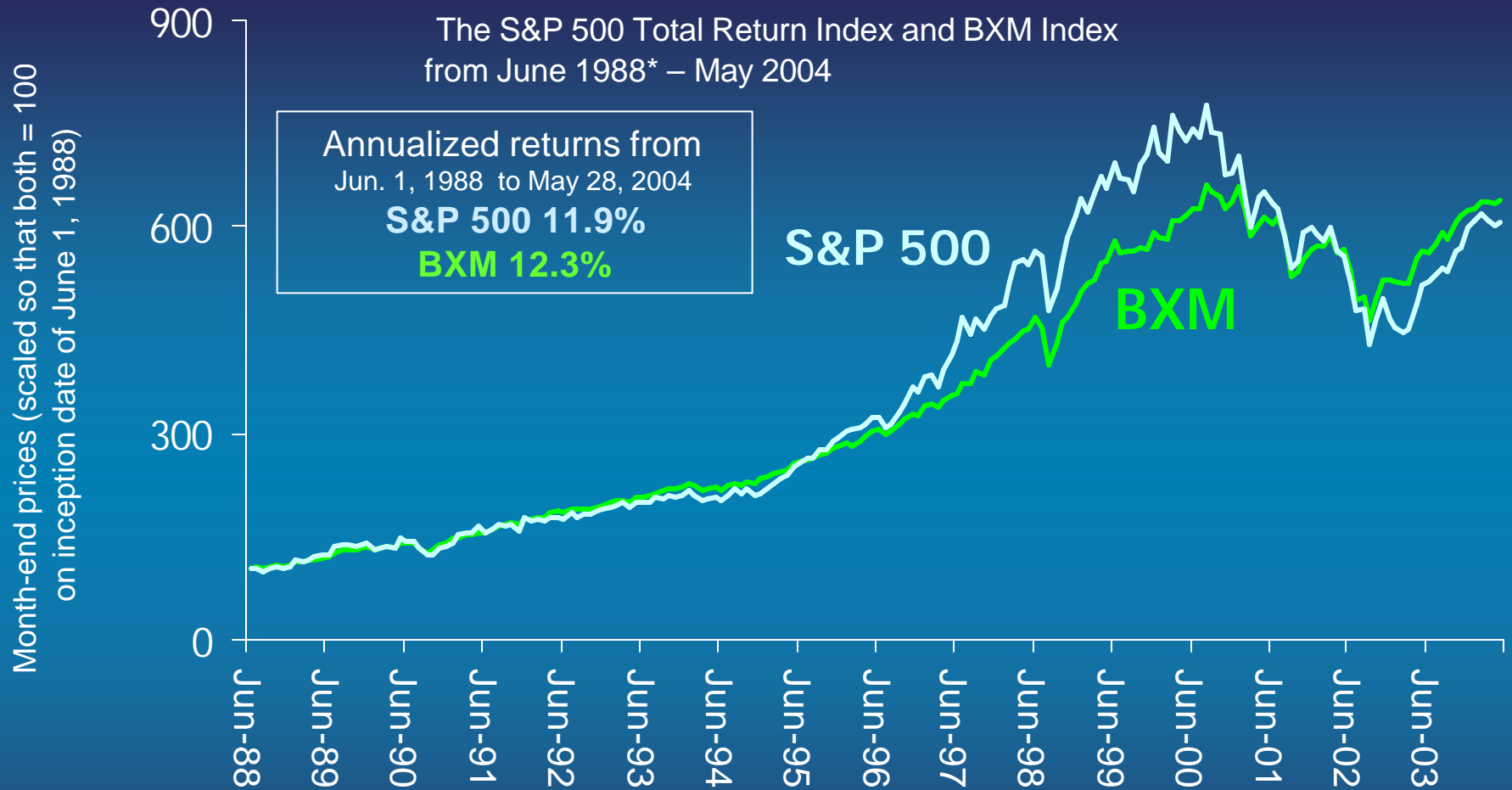
Passive buy-write strategy calculated for period from June 1, 1988 (when S&P began reporting daily dividends).

CBOE S&P 500 BuyWrite IndexSM

Methodology

- ❑ Buy and hold S&P 500 stock portfolio
- ❑ Write (sell) S&P 500 (SPX) call option 12 times a year
 - ◆ Index option has exercise price just above prevailing index level (*i.e.*, slightly out-of-the money)
 - ◆ Index option is held until expiration and cash-settled, at which time a new one-month call is written

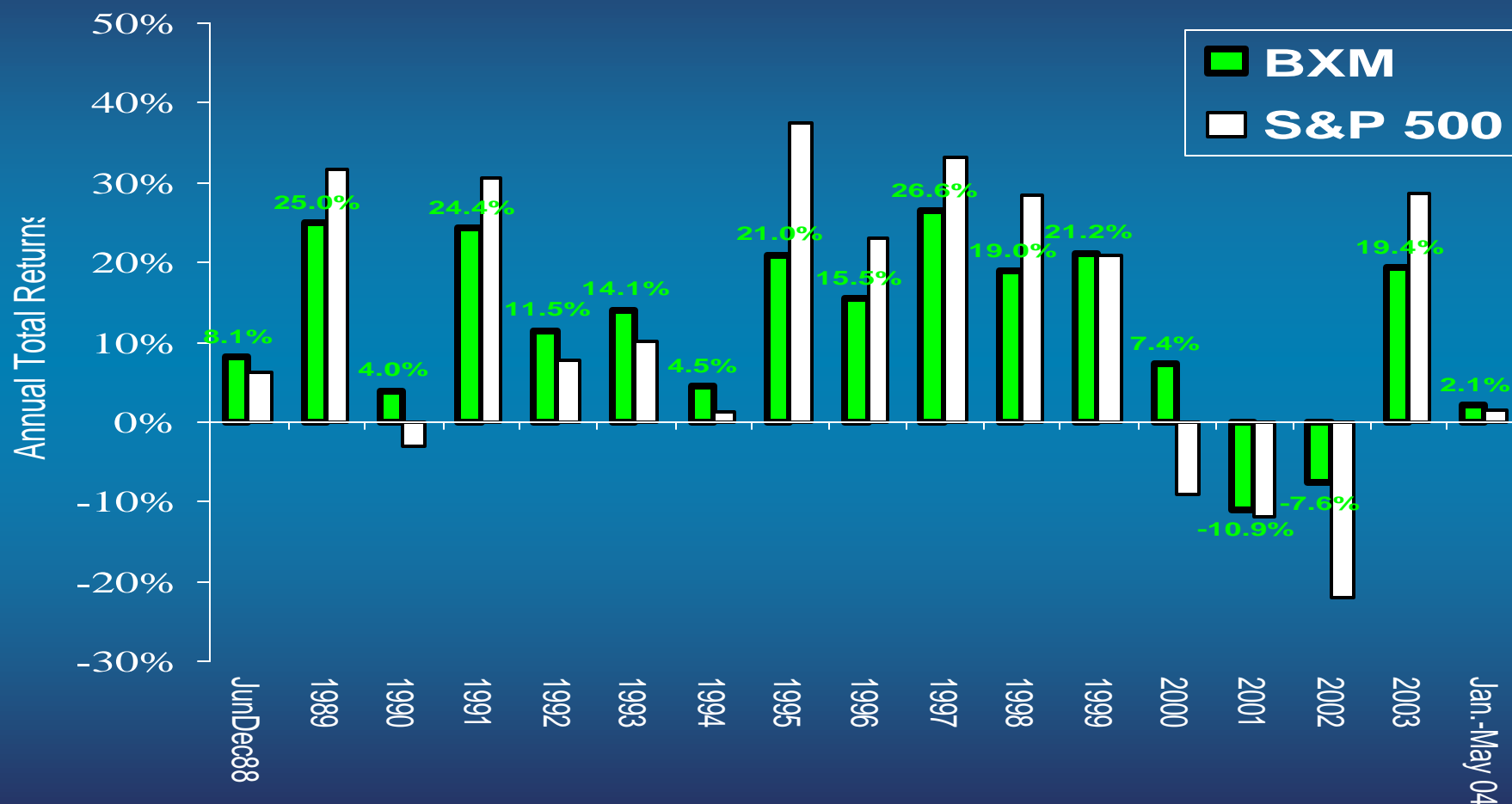
Stocks and the BXM Index – 16 Years



* June 1988 is the first month for daily prices for the SPTR and BXM indexes. The BXM Index is designed to represent a hypothetical buy-write strategy. Like many passive indexes, the BXM Index does not take into account significant factors such as transaction costs and taxes and, because of factors such as these, many or most investors should be expected to underperform passive indexes. See Risk Disclosure at last slide for more information.

Stocks and CBOE S&P 500 BuyWrite Index –

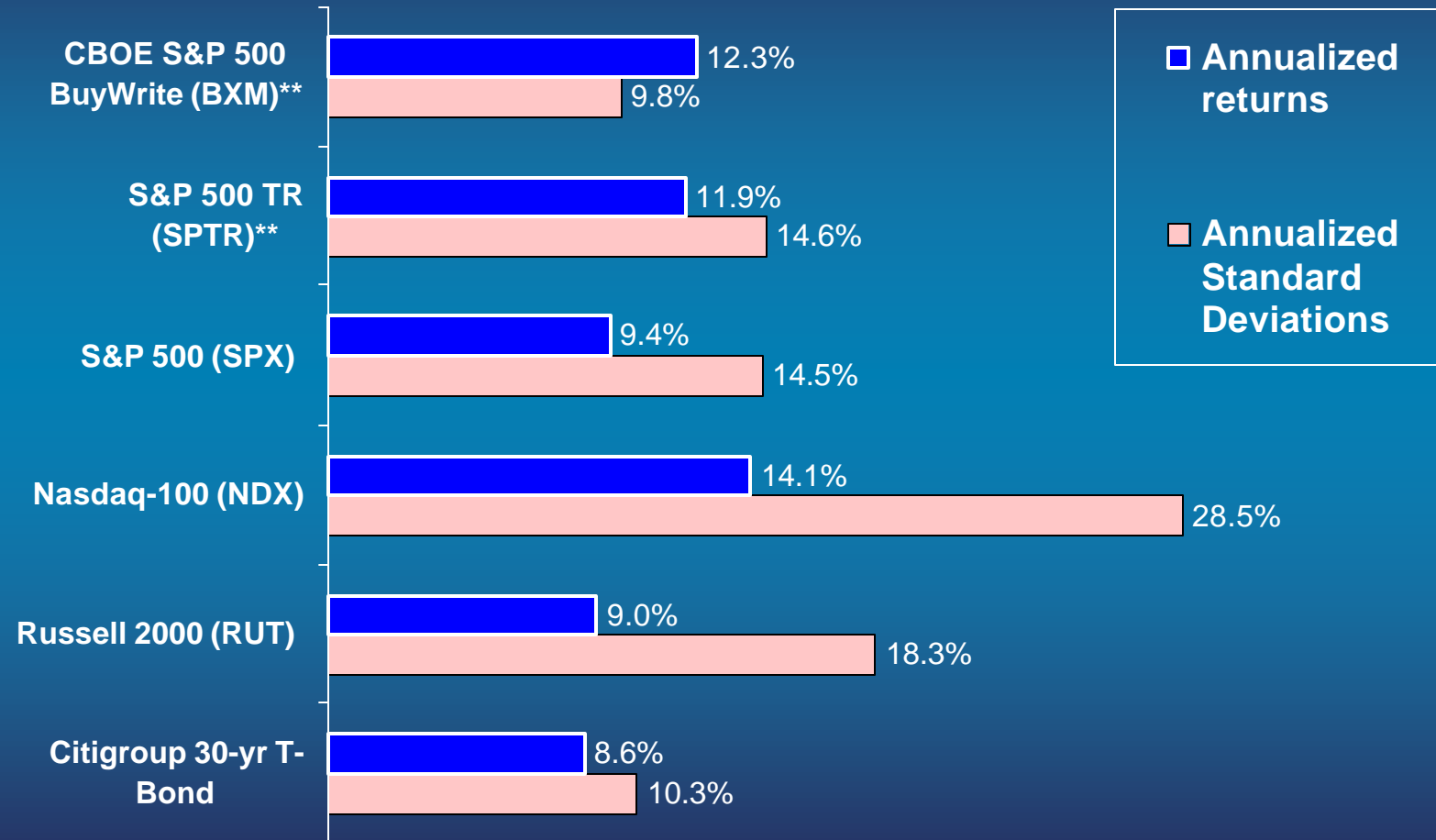
Yearly Returns for Total Return Indexes (which include reinvested dividends)
June 1988 – May 2004



The BXM Index is designed to represent a hypothetical buy-write strategy. Like many passive indexes, the BXM Index does not take into account significant factors such as transaction costs and taxes and, because of factors such as these, many or most investors should be expected to underperform passive indexes. Please see Risk Disclosure at last slide.

Returns and Standard Deviations

for Select Indexes (June 1, 1988* - May 28, 2004)

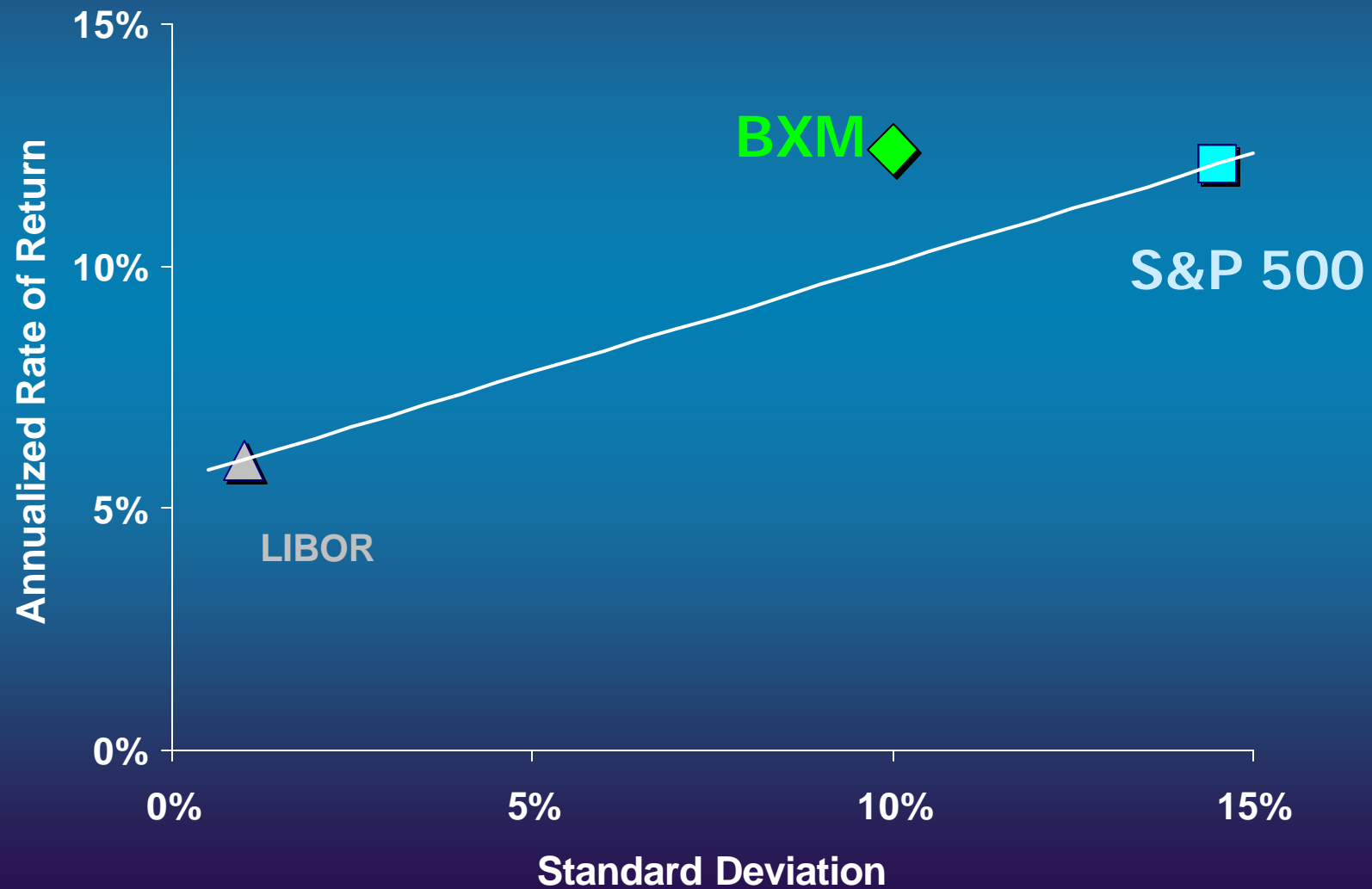


* Time period starts in June 1988 because that is the 1st month for SPTR & BXM prices. Please see risk disclosures. Past performance is not a guarantee of future returns.

** Two of the indexes are total return indexes that include dividends.

BXM and S&P 500 Indexes

(Efficient Frontier June 1988 – Dec. 2003 See also disclosures below)



Possible Source of Returns

Implied volatility usually exceeded realized volatility for index options during the period studied –

Conclusion reached by –

- *Morgan Stanley (1990)*
- *UMass (2001)*
- *Duke U. (2002)*

Duke U. Professor Whaley

8-page paper in the Winter 2002 Journal of Derivatives

Return and Risk of CBOE Buy Write Monthly Index

ROBERT E. WHALEY

Recently, the CBOE introduced its Buy Write Monthly index in an effort to provide option portfolio managers with a benchmark for gauging the performance of buy-write option strategies and the investment community with an understanding of a particular option trading strategy and its performance through time. This study describes the construction of the index, examines the properties of its return

people still think options are difficult-to-understand instruments and always risk-enhancing. A buy-write strategy by contrast is straightforward and risk-reducing.

Finally, even those who understand the buy write strategy may not have the resources to see how well a particular implementation of the strategy has performed in the past. While BXM

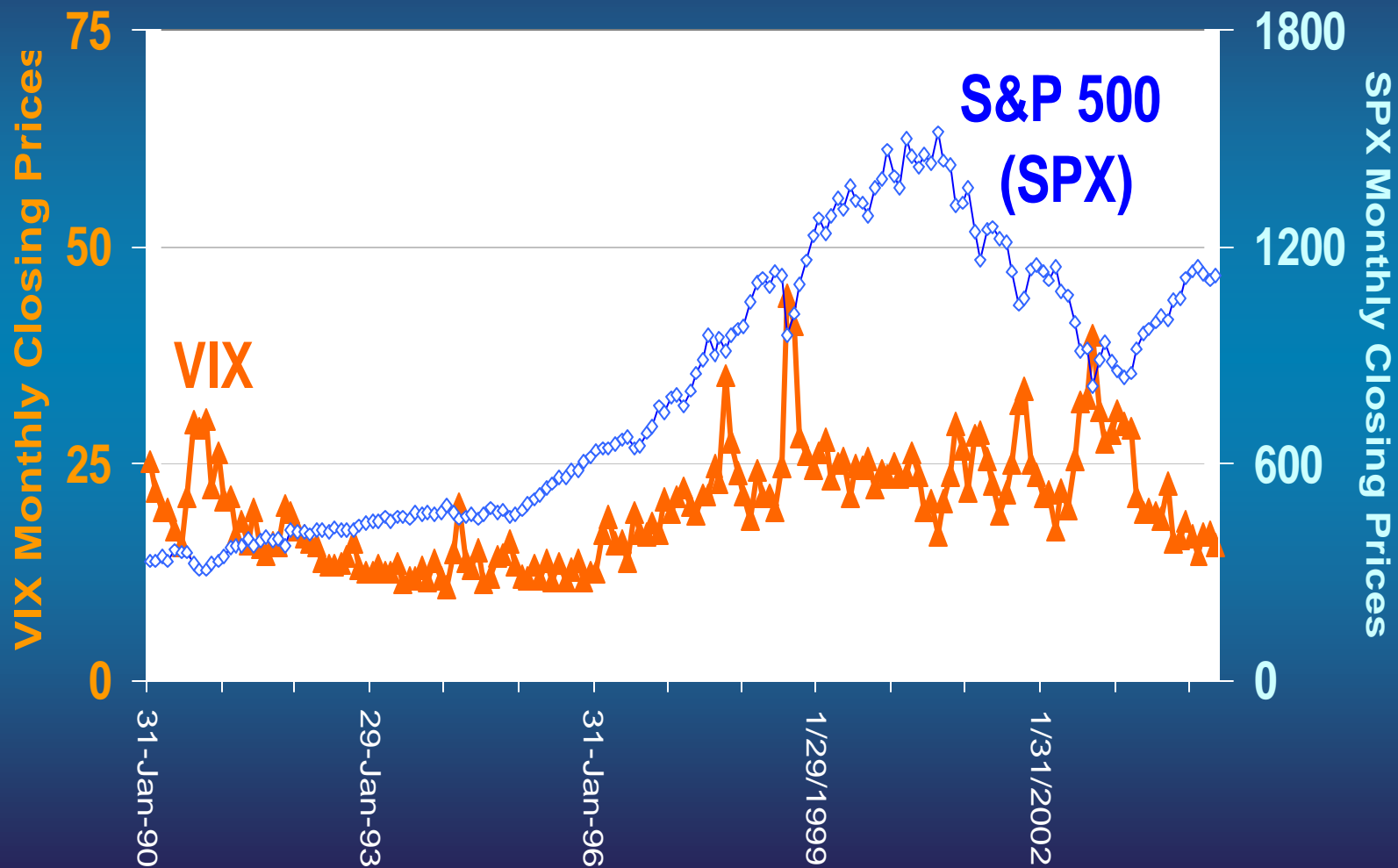
- ◆ “BXM outperformed the S&P 500 by about 0.2% per month on a risk-adjusted basis” over 13-plus years
- ◆ Possible explanation for out-performance – “volatilities implied by (S&P) index option prices are too high relative to realized volatility” due to demands for portfolio protection



CBOE Volatility Index[®] (VIX[®])

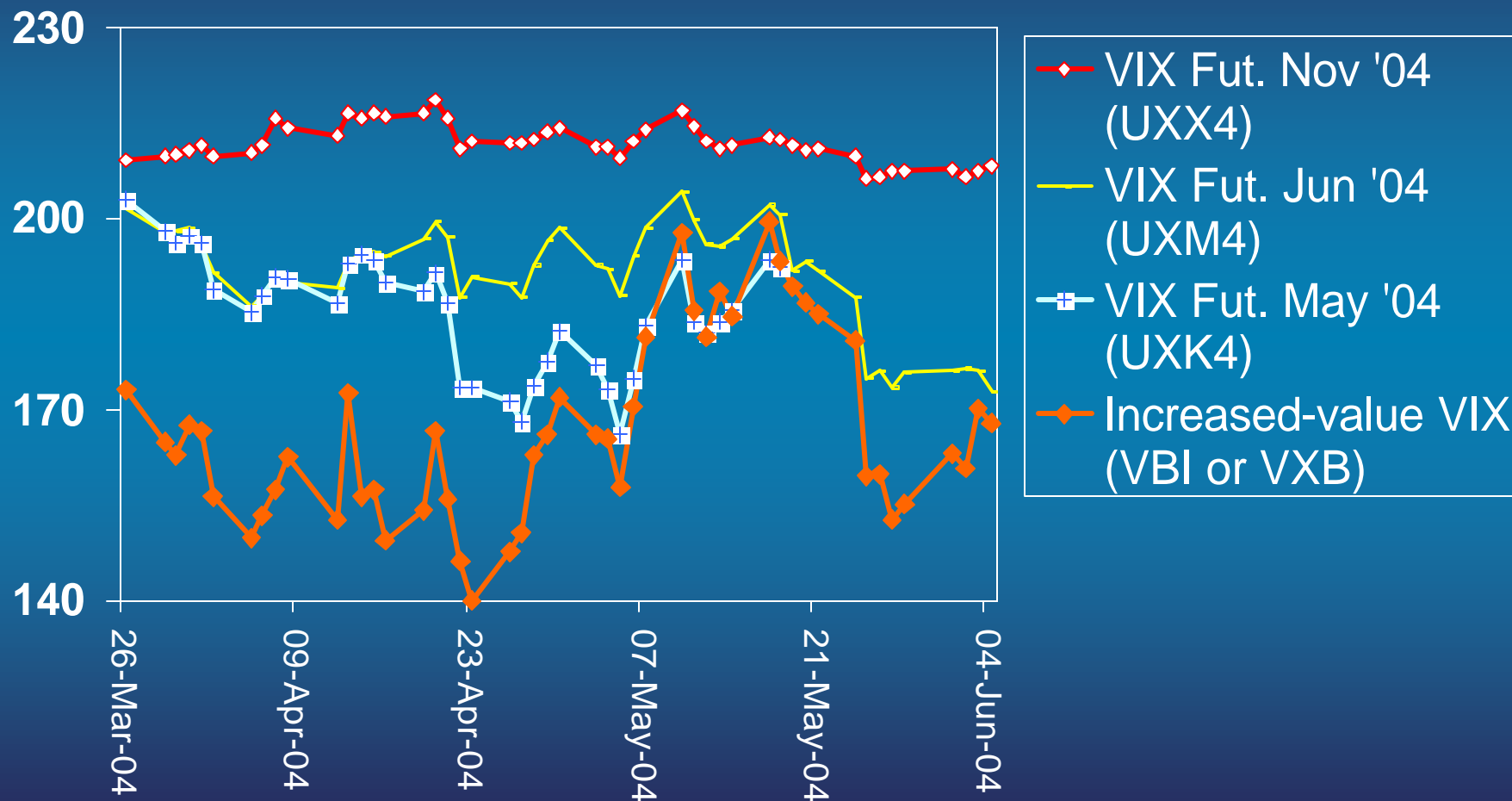
- ◆ Since 1993 a premier barometer of investor sentiment and market volatility
- ◆ In Sept. 2003 new VIX methodology
- ◆ VIX futures introduced in March 2004, with settlement date on the 3rd Wednesday of each month
- ◆ www.cboe.com/vix

VIX and S&P 500 Since 1990



VIX Futures Prices

Daily Closing Prices for Select VIX Futures, with Bloomberg ticker symbols
Mar. 26 – June 4, 2004



Source: Bloomberg

Papers on Volatility and VIX

- ◆ Antognelli, Ferreira, McArdle, and Traub. "Fear and Greed in Global Asset Allocation." The Journal of Investing. (Spring 2000), pp. 27 - 32. VIX "is a good indicator of the level of fear or greed in U.S. and global capital markets. When investors are fearful, the VIX level is significantly higher than normal. Market participants require additional compensation in the form of above-average excess returns for riskier assets. ... Using implied volatility as an asset allocation factor would have added significant value over the last thirteen years."
- ◆ Rattray and Balasubramanian. "The New VIX[®] as a Market Signal – It Still Works!" Goldman Sachs Options and Volatility Report. (Sept. 5, 2003). (1) A high level of the New VIX has a similar power in predicting the market's subsequent direction as the Old VIX. On average, the S&P 500 has risen after the New VIX reached extreme levels, with a more frequent positive return the more extreme the New VIX level. (2) A low level of the New VIX has not been a consistently successful indicator of subsequent market weakness. (3) A reversion of the New VIX occurs both after upside and downside extremes. ...

More Papers on Volatility and VIX

- ◆ Connors, Larry. "A Volatile Idea." Futures (Jul 1999): p. 36-37. The best market indicator "to capture the pulse of the market is the VIX ... Extreme VIX readings and reversals often signal quick reversals in the stock market, making it an effective tool" for short-term trading strategies.
- ◆ Copeland, Maggie. "Market Timing: Style and Size Rotation Using the VIX." Financial Analysts Journal, (Mar/Apr 1999); pp. 73-82. Changes in VIX are "statistically significant leading indicators of daily market returns. ... The implication is that market timing may be feasible-at least for portfolio yield enhancement." ...

www.cboe.com/vix

Options involve risk and are not suitable for all investors. Prior to buying or selling an option, a person must receive a copy of **Characteristics and Risks of Standardized Options**, <http://www.cboe.com/Resources/Intro.asp> which is available from your broker, by calling 1-888-OPTIONS, or from The Options Clearing Corporation, One North Wacker Drive, Suite 500, Chicago, IL 60606. The information in these slides is provided solely for general education and information purposes and therefore should not be considered complete, precise, or current. Past performance is not a guarantee of future returns. Many of the matters discussed are subject to detailed rules, regulations, and statutory provisions which should be referred to for additional detail and are subject to changes that may not be reflected in these materials. No statement within these materials should be construed as a recommendation to buy or sell a security or to provide investment advice. Any strategies discussed, including examples, do not include commissions, dividends, margin, taxes, and other transaction costs. However, these costs will affect the outcome of transactions and should be considered. For further information regarding the tax effects of transactions, consult your tax advisor. The CBOE BuyWrite Monthly IndexSM (BXM) is designed to represent a proposed hypothetical buy-write strategy. Like many passive indexes, the BXM Index does not take into account significant factors such as transaction costs and taxes and, because of factors such as these, many or most investors should be expected to underperform passive indexes. Buy-Writes have truncated upside potential and often will underperform stocks in times of rising stock markets. Investors attempting to replicate the BXM Index should discuss with their brokers possible issues regarding timing, costs, and after-tax returns. Transaction costs for a buy-write strategy such as the BXM could be significantly higher than transaction costs for a passive strategy of buying-and-holding stocks. The BXM Index was developed by the CBOE in cooperation with Standard & Poor's. CBOE, not S&P, calculates and disseminates the BXM Index. The methodology of the BXM Index is owned by CBOE and may be covered by one or more patents or pending patent applications. Supporting documentation for claims, comparisons, statistics or other technical data is available by calling 1-888-OPTIONS, sending an e-mail to help@cboe.com, or by visiting www.cboe.com/bxm. S&P 100TM and S&P 500TM are registered trademarks of McGraw Hill, Inc. and are licensed for use by the Chicago Board Options Exchange, Inc. LEAPS[®], FLEX[®], FLEXible EXchange[®], CBOE[®], Chicago Board Options Exchange[®], CBOE Volatility Index[®], VIX[®], and OEX[®] are registered trademarks and Long-term Equity Anticipation SecuritiesTM, VXNTM and SPXTM are trademarks of the Chicago Board Options Exchange, Inc. Copyright © Chicago Board Options Exchange[®], Incorporated, 2004. All Rights Reserved.