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Options central

IN THIS SUMMER 2005 ISSUE:

**FEATURE: INSURING YOUR PORTFOLIO
WITH CROSS-HEDGING**

COMMON OPTIONS TERMS

WHAT'S NEW AT 888OPTIONS.COM

OUR FALL SEMINAR SCHEDULE

**YOUR OPTIONS QUESTIONS
ANSWERED: BID AND ASK**

Insuring Your Portfolio with Cross-Hedging

By Diane Fiddymont

Protecting the assets that you have worked so hard to earn and grow should be one of the rules that you live by. After all, you insure your home, car, health, and life. We take for granted that these things are worth protecting. Doesn't the wealth that provides for your future deserve the same consideration?

Options can be used conservatively as insurance. A purchaser of a put option has the right to sell a particular underlying at a specified price. The protective put is, in essence, an insurance policy on an investment. The strike price of the put determines when the insurance "kicks in" (i.e. the deductible). For example, if you own a stock that has gone up from \$57 to \$88, you may want to insure against a downward move greater than 10%. To accomplish this, you would purchase a put option with a strike price of

[continued inside](#)

DIANE FIDDYMENT began her career in options in 1979, when she worked on the newly formed Options Trading Floor of the Pacific Exchange (PCX). Fiddyment was an active participant at the Options Exchange and served on several committees including Ethics and Business Conduct Committee and as President of the Options Floor Trading Committee. Diane retired as a market maker at the end of 1998.

Fiddyment is also on the Board of Directors of Big Brothers Big Sisters of Marin and Napa Counties. She travels frequently to Nepal where she has founded an elementary school in the Mt. Everest region.

To simplify the computations, the examples in this article do not include commissions or transaction costs. Commissions and transaction costs will affect the outcome of all stock and options transactions and must be considered prior to entering into any transaction. Investors considering options should consult their tax advisors as to how taxes may affect the outcome of contemplated options transactions.

continued from front

80, paying \$.40 or \$40 per contract on 100 shares. If the stock should drop below \$80, you would then exercise your put, securing an effective selling price of \$79.60 (the strike price minus the cost of the put).

However, if the stock continued to rise, you would continue to benefit from the price increase. The put would expire worthless and you would lose the \$40 you paid for the put. This very conservative strategy protects you against a significant move in the stock, but still allows for upside appreciation. Trying to put this into practice on a large portfolio of stocks can become a nightmare of expense, tracking and paperwork. Is there an easier way?

Yes. It is called cross-hedging. With cross-hedging, you hedge one instrument's risk with a different instrument by taking a position in a related derivatives contract. The success of cross-hedging depends completely on how strongly correlated the hedged instrument is with the instrument underlying the derivatives contract. Additionally, the maturity of the derivatives contract must be at least as long as the maturity of the desired hedge, otherwise you will be left with an unhedged exposure for a period of time.

A more popular product in the investing world that allows for cross-hedging is the Exchange Traded Fund (ETF). ETFs are funds of stocks that track particular indexes. ETFs entered the investment scene in January 1993, when Standard & Poor's Depository Receipts® (SPY), were introduced to track the movement of the S&P 500® Index (SPX). That year, \$461 million changed hands on the ETF. In early 2004, the American Stock Exchange (AMEX) reported that the ETF market was worth \$167 billion. Today, more than 150 different ETFs are traded.

ETFs are hybrid products that offer the benefits of mutual funds along with the flexibility of stocks. They are con-

structed like mutual funds, but ETFs trade like individual securities on stock exchanges. With this product, you get the diversity of a mutual fund and the ability to trade intra-day like a conventional stock. Almost anything that can be done with a stock can be done with an ETF. In addition, there are options on Exchange Traded Funds.

Mutual funds have gained wide acceptance as a way for an investor to gain exposure to the broad markets or specific sector markets. They offer investors a proportionate share of the returns from a market index or from a group of stocks that is managed by an investment advisor with a specific investment objective in mind; for example, high-tech, emerging markets or small cap stocks funds.

If your portfolio consists of a fund that an ETF tracks, then your hedging job is relatively easy because the ETF can be used as a proxy for the fund. To insure a portfolio, you need to buy enough put contracts to cover your portfolio's value. In this case, you want the insurance to kick in down 10%. Choose a strike price 10% lower than the current price of the ETF. In order to calculate how large the hedge should be, divide the value of the portfolio by the price of the ETF. This will give you the number of ETF shares that would hedge your portfolio. Because option contracts cover 100 shares of the ETF, divide by 100.

$(\text{Portfolio Value} \div \text{Current Strike Price}) \div 100 = \text{number of put contracts}$

Because of the extremely strong correlation between the fund and the ETF, you will have a very effective cross-hedge.

However, you may have a portfolio that is not so neat and tidy. Your portfolio may follow a basic formula for asset allocation, but personal biases have skewed the portfolio so that it doesn't closely track any particular fund. How do you hedge a portfolio like this? With some analysis, you can achieve a

hedge that will correlate with your portfolio.

First, break down the portfolio into sectors. From the plethora of ETFs available, you will likely be able to find a sector fund that tracks your portfolio sectors reasonably well. Let's look at the sample portfolio valued at \$400,000 with the following asset allocation:

Sector	% of Portfolio	Value
Healthcare	27%	\$108,000
Financial Services	21%	\$84,000
Consumer Products	15%	\$60,000
Technology	22%	\$88,000
Utilities	15%	\$60,000
Total	100%	\$400,000

Each of these sectors has several ETFs that track their respective funds. Because each sector fund contains a different mix of stocks, you should select the one that most closely correlates to your portfolio. Again, by taking each sector portfolio's value, dividing by the price of the selected ETF, then dividing by 100, we come up with the number of puts needed to hedge each sub-portfolio and thus the entire portfolio.

Stock-specific puts will offer a precise match on the underlying security. You will know exactly where your insurance kicks in (strike price minus put premium). However, as mentioned before, this can be quite a cumbersome process. With sector puts, the hedge may be a bit less precise. This is because of the difference between the makeup of your sector portfolio and the funds. Fluctuations most likely will exist in the price correlation (inexact tracking). The benefit comes in fewer transactions.

There is another advantage to buying sector puts that may offset some of the variation caused by an inexact hedge. In general, the volatility of

the sector fund is lower than the volatility of the individual components of the fund. Lower volatility translates into lower prices. When buying ETF puts, you benefit from this discrepancy by buying the relatively less expensive put for the hedge.

A third way to establish an effective hedge would be to determine if your entire portfolio has a consistent variance in relation to a particular fund. For example, a portfolio might move approximately .8% for every 1% move in the S&P 500. It is said that the portfolio has a beta of .8. The chart below shows a portfolio with a value of \$400,000 when SPY (the ETF that tracks the S&P 500 Index) is at 115. With a beta of .8, the value of the portfolio would move accordingly. To insure against a drop greater than 10% of the portfolio, or \$360,000, which put should you buy? Referring to the table below, you can see that the appropriate strike price to purchase would be the 103 or 104 put.

Value of SPY	Portfolio Value (.8 beta)
120	\$417,391
115	\$400,000
110	\$382,609
105	\$365,217
104	\$361,739
103	\$358,260
102	\$354,782
101	\$351,304

To find the optimal number of contracts, use this formula:

$$\text{Portfolio Value} \div [(100 \times \text{Current Strike Price}) \div \text{beta}] = \text{number of put contracts}$$

As with all strategies, there is a trade-off. To have a precisely hedged portfolio, you will incur increased transaction costs, monitoring and paperwork. By cross-hedging, you give up some of the certainty where your losses stop, but

the ease and cost savings of fewer transactions may make it worthwhile. The key to effective cross-hedging is a strong correlation between the two instruments being hedged. With the vast selection of Exchange Traded Funds tracking all the aspects of the market, there is most likely an ETF, combination of ETFs, or beta of an ETF, which will work as a hedge for your portfolio.

common options terms

BETA

A measure of how closely the movement of an individual stock tracks the movement of the entire stock market.

LEAPS®

Long-term Equity Anticipation Securities also known as long-dated options. Calls and puts with an expiration as long as thirty-nine months.

STRIKE PRICE

The price at which the owner of an option can purchase (call) or sell (put) the underlying stock. Used interchangeably with striking price, strike, or exercise price.

PUT OPTION

An option contract that gives the owner the right to sell the underlying stock at a specified price (its strike price) for a certain, fixed period of time (until its expiration). For the writer of a put option, the contract represents an obligation to buy the underlying stock from the option owner if the option is assigned.

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Check out www.888options.com for a complete description and schedule of OIC seminars.

SEPTEMBER

- 13 Philadelphia, PA - Covered Calls
- 14 Philadelphia, PA - Spreads
- 14 Toronto, ON - Covered Calls
- 15 Toronto, ON - Spreads
- 20 New York Midtown, NY - Covered Calls
- 21 Long Island, NY - Basic
- 21 New York Midtown, NY - Spreads
- 22 Long Island, NY - Advanced
- 27 Alexandria, VA - Covered Calls
- 28 Cambridge, MA - Covered Calls
- 28 Alexandria, VA - Spreads
- 29 Cambridge, MA - Spreads

OCTOBER

- 11 Chicago, IL - Covered Calls
- 12 Chicago, IL - Spreads
- 13 Cleveland, OH - Spreads
- 18 Parsippany, NJ - Covered Calls
- 19 Parsippany, NJ - Spreads
- 19 San Jose, CA - Covered Calls
- 20 San Jose, CA - Spreads
- 25 San Francisco, CA - Covered Calls
- 26 San Francisco, CA - Spreads
- 27 Sacramento, CA - Advanced

NOVEMBER

- 1 New York Downtown, NY - Spreads
- 2 New York Downtown, NY - Advanced
- 2 Troy (Detroit), MI - Covered Calls
- 3 Troy (Detroit), MI - Spreads

Registration is required. All seminars are FREE and held from 6 p.m. - 9 p.m. To register for a seminar or order educational materials, call 1-888-OPTIONS (678-4667) or visit www.888options.com.

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OIC will be offering our free investor seminar series again this fall. Take advantage of these insightful classes that can advance your options knowledge beyond your expectations. OIC offers four different seminars - Basic Options, Covered Calls, Spreads and Advanced Options.

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Basic: Options Strategies for Stock Investors

- Offers an introduction to options as an investment tool.
- Requires no prior options knowledge.
- Explains fundamentals of options and how to use options as a way to participate in stock price movement.
- Demonstrates how to choose and use basic strategies in light of market expectations and volatility forecasts.



Covered Calls, strategy-specific seminar

- Requires a working knowledge of options from either our basic seminar or beginner level online classes at Options University.
- Teaches a disciplined approach to implementing the covered call strategy.
- Demonstrates how to calculate returns and how to manage covered call positions.



Spreads, strategy-specific seminar

- Identifies the benefits of vertical spreads, straddles, strangles, and spreads involving both stocks and options.
- Explains how these strategies work, and profit and risk potential.
- Discusses why these strategies are appropriate for particular market forecasts.
- Examines price behavior and option mechanics.



Advanced: Options for Experienced Investors

- Discusses option valuation and its importance in establishing performance expectations.
- Explores bullish strategies for the experienced options user and compares call buying, put selling and spreads.
- Explores the LEAPS® buy-write strategy.
- Examines position management strategies including rolls and repairs.

bid and ask

Q: WHEN DID THE EXCHANGES START TRADING OPTIONS ON SPY?

A: The exchanges listed SPY options in January 2005. They trade on all six U.S. options exchanges.

Q: SPY OPTIONS PERFORM SIMILARLY TO THE 500 COMPANIES IN THE S&P 500 INDEX, SIMILAR TO THE SPX INDEX OPTIONS. ARE THERE ANY DIFFERENCES BETWEEN THE TWO?

A: Yes. SPY options are Exchange Traded Fund (ETF) options and have contract specifications that are similar to most U.S. equity options. However, there are some major differences between SPY options and SPX index options.

First, like other ETFs, SPY options are American-style exercise. This means that they can be exercised any trading day through the third Friday of the month (provided that the third Friday is not a holiday), up to your brokerage firm's cutoff time. This is different from the European-style SPX index options which can only be exercised on that third Friday of the month.

Secondly, while SPY options have a physical deliverable of shares of SPDR® (Standard & Poor's Depository Receipts), SPX options are cash settled. The cash settlement amount is determined based on the settlement calculation that is obtained from the opening prices of all 500 component securities on the third Friday of the month. Therefore, the last trading day for SPX index options is the Thursday before

the third Friday of the month.

Finally, the contract size for SPY options is roughly 1/10 the size of the SPX.

Q: WHAT EXCHANGE TRADED FUNDS CURRENTLY OFFER OPTIONS?

A: Check www.888options.com to find a current list of ETFs offering options. You can also reference the six options exchanges' Web sites to find ETFs offering options (please reference exchange Web sites for individual contract specifications as well). Exchange Web sites are listed on the back of Options Central (page 6).

Q: WHEN ARE THE EXCHANGES GOING TO LIST 2008 LEAPS®?

A: Notice that January expirations for Cycle 1 were listed after the May options expiration. Since January 2007 LEAPS® are already trading, the following schedule is used to introduce a new series of LEAPS®:

(REMINDER: To meld is to change the symbol on a LEAPS® option to that of a 'normal' option. The terms of the option itself do not change.)

Cycle 1:

Monday, May 16: January 2006 LEAPS® meld

Monday, May 23: Regular January Cycle 1 expirations listed

Tuesday, May 31: January 2008 LEAPS® listed (May 30th is Memorial Day holiday)

Cycle 2:

Monday, June 13: January 2006 LEAPS® meld

Monday, June 20: February expirations listed

Monday, June 27: January 2008 LEAPS® listed

Cycle 3:

Monday, July 11: January 2006 LEAPS® meld

Monday, July 18: March expirations listed

Monday, July 25: January 2008 LEAPS® listed

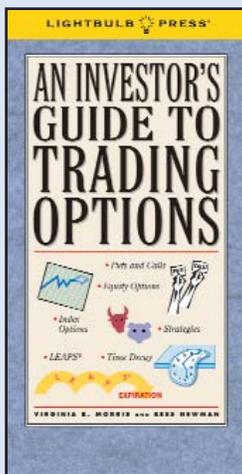
Please note that for Cycle 2 and Cycle 3 options, after the new LEAPS® have been listed there will be an extra month available (2 short-term expirations, 2 cycle expirations, 2 LEAPS® expirations, AND the January expiration that was originally a LEAPS®).

Q: I BUY A CALL OPTION FOR COMPANY XYZ AT A STRIKE PRICE OF \$30 AND THE STOCK PRICE RISES TO \$45 BEFORE EXPIRATION. I HAVE A COUPLE OF OPTIONS AT THIS POINT: I CAN EXERCISE THE OPTION AND BUY THE 100 SHARES AT THE STRIKE PRICE AND THEN SELL THEM AND MAKE A PROFIT, OR I CAN TURN AROUND AND SIMPLY SELL THE CALL. THERE MAY STILL BE SOME TIME PREMIUM ATTACHED THAT I MIGHT NOT BE ABLE TO CAPTURE IF I WERE TO EXERCISE. BUT IF I SELL THE CALL, AM I THEN OBLIGATING MYSELF TO BUY THE SHARES ANYWAY IF THEY KEEP RISING IN PRICE AND THE PERSON WHO BOUGHT IT EXERCISES HIS RIGHT TO BUY?

A: No, as the call option holder, once you sell your previously purchased option contract, your right to purchase the underlying stock at the strike price in question is extinguished. Since you are offsetting or "closing" your position when you sell the (previously purchased) call, you would not have an "open" short position in the call. Therefore, you are not obligated to deliver stock to a call exerciser. When a call option is sold to establish an opening position, (e.g. a "covered" call-long stock, or short a call), the option seller is then obligated to deliver the stock at any time during the life of the option contract if he is assigned. Option holders have rights, and option sellers have obligations.

You may see your options questions answered in *Options Central*. Send them to OIC at: options@theocc.com or One North Wacker Drive, Suite 500, Chicago, IL 60606.

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For More Information

Call 1-888-OPTIONS or write The Options Industry Council. If you have additional questions about options, call your financial advisor or one of the Exchanges listed here.