

West Chester Capital Advisors

Options Based Portfolio Management Strategies - OBPMS

May, 2009

Timeless Truths - New Perspectives

Options Based Portfolio Management Strategies

An Idea Whose Time Has Arrived

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Introduction

Options Based Portfolio Management Strategies (OBPMS) are an idea whose time has arrived. After the last year or so in the capital markets, risk is quite evident. Risk can be a very abstract concept with many institutional and private investors, until it actually materializes. In 2008 and early 2009, risk materialized almost as never before. As a result, risk is not so abstract anymore. As it turns out, options are the perfect tool to manage portfolio risk. They can be used to augment income, enhance return potential and limit portfolio risk. As such, they have never been more viable investment tools, especially within an asset allocation and portfolio construct. For investors, they make most sense within the portfolio context. The returnsets of several OBPMS we will examine in this paper, based on more than twenty years of data, compare very favorably to traditional long only exposures.

This is intended to be a brief and practical paper. A quick and accessible read... no formulas, and just enough data to make the case. These are investing strategies, not trading strategies. Investing is the economic activity, trading merely establishes the combined, hedged portfolio position(s). However, the attractive return and risk characteristics of these strategies merit serious attention from institutional and private investors alike. There should be a place within most investors' asset allocation, for one or more of these strategies. This brief also assumes that readers have a basic working knowledge of options, and options terminology. If not, the Options Industry Council (OIC) website (www.optioneducation.org) has extensive tutorials and research available.

The Indices

The strategies we will examine are based on indices created and monitored by the Chicago Board Options Exchange (CBOE):

The CBOE S&P 500 BuyWrite Index – BXM

The CBOE S&P 500 2% Out-of the Money (OTM) BuyWrite Index – BXY

The CBOE S&P 500 PutWrite Index – PUT

The CBOE S&P 500 95-110 Collar Index – CLL

Each of these indices has over twenty years of daily return data and follow a consistent methodology for re-establishing or rolling the option hedge upon or just prior to expiration.

We will also look at three additional option based portfolio management strategies

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that merit consideration by investors, but for which there is not as much return information. It is important to note that these OBPMS maintain a strict and fully invested profile, holding both the long position in the index and the option position(s) at all times. This is portfolio management, not trading. These are all passive strategies. However, it is possible to pursue an active approach to each of these strategies. The active approach offers multiple sources of excess return.

The Portfolio Position

The BXM is an index based on a portfolio which is long the S&P 500 index and short the near month, at-the-money call option on the S&P 500. The BXY is a portfolio which is long the S&P 500 index and short the near month, 2% out-of-the money (OTM) call option on the S&P 500. The PUT is a portfolio which holds cash as collateral for a short at-the-money put position on the S&P 500. The CLL is a collared option position on the S&P 500 which is long a three month put on the index at approximately 5% out-of-the money and short a near month call at approximately 10% out of the money. Complete definitions and monthly roll protocols of each strategy are available at: www.cboe.com

CBOE and OIC

The Chicago Board Options Exchange (CBOE) has compiled daily return data on a handful of passive OBPMS, with data going back more than twenty years. This time period is more than ample to understand the return and risk characteristics of these strategies. The CBOE makes the data available for download on their website. The data can easily be imported into a return and allocation analysis tool such as Zephyr's Style Advisor. From there, the Style Analyzer easily produces all the pertinent returnset characteristics and portfolio statistics for evaluation: average return, standard deviation, correlation, Sharpe Ratio, tracking error, upmarket or downmarket capture, and more. The CBOE and the Options Industry Council also make available some of the published research on these strategies from their own sponsored reports as well as studies from firms such as: Ibbotson and Associates, Callan & Associates, and Ennis, Knupp.

These papers are constructive on the OBPMS generally and their results are supported by the returnset data and analysis they conducted. It should be noted that all of the papers referenced treat the combination of securities (long index-short option, or long cash-short put) as a single portfolio and returnset. The portfolio characteristics are thus a result of analyzing the net returns of the strategies, not their separate components. That is how we evaluate them as well.

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Numerous Supporting Studies

Over the past several years, multiple studies of OBPMs have been published--both by independent consulting firms and industry organizations. While the studies are careful not to tacitly endorse the strategies, the data regarding the average returns and low standard deviation of returns speak for themselves. West Chester Capital recently conducted our own return and risk analysis and the results continue to hold up very well compared to both long-only equity strategies and fixed income strategies. When the risk and return points from these strategies are plotted on the efficient frontier, they dominate.

The Options Industry Council (OIC)

The OIC is the leading industry education, awareness and knowledge organization, dedicated to promoting the responsible and appropriate use of options by both institutional and private investors. They have released several studies on OBPMs with a constructive conclusion on their results.

The OIC has released a paper authored by Nikunj Kapadia and Edward Szado of the University of Massachusetts Isenberg School of Management and the Center for International Securities and Derivatives Markets entitled "*Buy-Write Strategies for Fund Managers*" - *Risk and Return Characteristics of the Buy-Write Strategy on the Russell 2000 Index*. They have also released a paper by Szado and Hossein Kazemi entitled "*Collar Strategy for Fund Managers--Collaring the Cube: Protection Options for a QQQ ETF Portfolio*". These papers are available, along with ample additional research and white papers, on the OIC institutional website, address below. To be sure, options are a versatile and complex security, and fully informed use within a portfolio or trading construct is a necessity. As such, the OIC has an important mission.

<http://www.optionseducation.org/institutional/research/default.jsp>

The CBOE has sponsored numerous studies also, including several well publicized OBPMs strategy endorsements. These include the Ibbotson & Associates study from 2004 tacitly endorsing the buy-write strategy. They also make available studies from Callan and Associates and Ennis, Knupp. These studies are available on the CBOE website: www.cboe.com.

Prudence, Theory and Practice

Our thesis is very simple: it is no longer fully prudent to ignore the potential benefits to a portfolio from exposure to these strategies, because they bring both solid returns

and risk reduction characteristics to a properly and well diversified portfolio. In the aftermath of the worst market in many years, anything that enhances return or reduces risk, and which can be cost effectively accessed should potentially earn an allocation. OBPMS sit squarely in this sweet spot. We believe that in an environment where many investors still need exposure to risk to meet their required returns, and risk is no longer abstract, that many investors will trade-off some return potential to increase the certainty of a positive return, to collect income or to reduce or limit risk. All of the strategies we examine in this paper provide one or more of the aforementioned characteristics.

Asset Allocation World

We live in an asset allocation world. In the wake of the 2008 and early 2009 market sell-off, many investors, both institutions and private, have seen their account balances diminished, some severely. Investor complacency is replaced with angst and concern. Even well allocated and diversified portfolios were down 30%, an unimaginable figure. In one year, market action alone made investment goals significantly harder to attain.

The investment calculus reduces to a very few inputs: beginning balance, funding, returns and time. Institutional and private investors alike will need to sharpen their pencils, re-evaluate their goals and objectives, review their investment program and vendors, cut costs and ultimately, examine the inputs to the investment equation. Some will lower their goals. Some will increase their funding or time horizon. Some will look for enhanced returns. And everybody should understand the costs of their investment program. Lower is always better in the investment equation.

Regarding returns, investors of all stripes should be willing to consider these OBPMS. The return and risk data is compelling. More return with less risk is the holy grail of investing. These OBPMS deliver just that. We believe that investors should be willing to consider an allocation to virtually any asset class or strategy so long as it brings some beneficial return or risk characteristic to a well allocated portfolio. We expect these strategies to become mainstream in the years ahead for just this reason: they improve returns with reduced risk. With the events of the past 1 ½ years, there should be great demand for that.

Our view of these strategies derives from the fact that asset allocation dominates the investment decision hierarchy. Properly organized, an investment program rests upon the asset allocation foundation. Accordingly, investors allocate assets to strategies that enhance returns or mitigate risk. This is done through a formal allocation

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and Investment Policy Statement (IPS). This is also what makes ad hoc option overlays or trading so tactically challenging. Without being formally addressed in the IPS, adding option positions informally introduces serious timing issues as well as potentially serious disruption to the formal asset allocation. In our view, when OBPMS are formally examined and considered, investors can and should make permanent allocations to them because of their superlative long term risk and return characteristics.

The Data

The table below shows a simple array of return and risk characteristics of these strategies over a twenty (20) year period, from 1988 through March 2009.

Thru 3-2009	BXM	BXY	PUT	CLL	S&P 500	Agg. Bond
Average Annual Return	8.76	9.29	10.05	6.89	7.68	7.30
Standard Deviation	10.44	12.28	9.71	10.83	14.77	3.97
Up Market Capture	64.5	83.4	59.8	71.9	100.0	19.4
Down market Capture	54.5	74.9	39.9	73.6	100.0	-12.7
Sharpe Ratio	.4192	.3988	.5838	.2310	.2229	.7329
Correlation to S&P 500	0.89	0.94	0.84	0.87	1.00	0.26

This is compelling data indeed, yet the returns are skewed downward by including the results of 2008, which was an unfortunate year for the returns of most asset classes. Even so, the average annual investment performance of three of the four of the options based strategies, exceeds the average annual return on the S&P 500, with roughly one third less risk, as measured by standard deviation.

When the time period examined ends in 2007, the data continues to be very attractive. Average annual returns climb sharply for the OBPMS, while risk as measured by standard deviation decreases.

Thru 12-2007	BXM	BXY	PUT	CLL	S&P 500	Agg. Bond
Average Annual Return	11.41	12.26	12.50	9.33	11.45	7.49
Standard Deviation	9.05	10.92	8.19	10.53	13.59	3.85
Up Market Capture	63.7	81.8	58.7	73.8	100.0	19.2
Down market Capture	47.4	71.0	31.1	77.0	100.0	-15.8
Sharpe Ratio	.7552	.7034	.9672	.4514	.5056	.7578
Correlation to S&P 500	0.87	0.93	0.80	0.89	1.00	0.16

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Investability

These are highly investable strategies that bring much to the asset allocation party. Vast sums of investor monies has gone into far more esoteric, opaque, illiquid, expensive and risky strategies—primarily through hedge funds—over the past ten years. Vast sums of investor money has also gone into market neutral strategies, where the main attraction is no correlation to the equity markets and the benchmark is T-bills plus X. With T-bills currently yielding near zero, the plus X will have to be very large to justify an allocation to this strategy. This is a tall order indeed. In contrast, these OBPMS are liquid investments, with well understood return characteristics, available in vehicles that offer daily liquidity. They should be able to compete successfully on their own merits and the qualities they bring to an asset allocation. We believe they will do so.

Portfolio Construct

These are portfolio strategies. They all follow a strict protocol for maintaining a fully invested and hedged profile at all times. As such, investors contemplating an exposure to one of these strategies can be assured that they will get the fully hedged exposure promised by the strategy. In turn, investors should be able to earn the average returns of the strategy over time, with the historic risk profile. There are no guarantees, of course. But over long periods of time and returns examined, it is possible to understand what the return distribution looks like, and that is the basic data that is used in a portfolio optimization tool such as Zephyr Associates Style and Allocation Advisor.

Liquidity

The Options Industry Council (OIC) reported that option volume totaled more than 346 million contracts in March of 2009, and more than 800 million for the first quarter of 2009. That extrapolates into an annual run rate of anywhere from 3.2 billion to nearly 4.0 billion contracts for 2009. Clearly, there is tremendous liquidity and open interest across the option markets, although not in every single issue. Compare that to the total contract volume traded for 1998, when 329 million contracts traded for the entire year. As OBPMS strategies proliferate, this liquidity will be more and more valuable to keep markets deep, tight and efficient.

And as liquidity begets liquidity, more is better, for all of the option market constituents: portfolio managers, market makers, institutional and private investors, hedgers, speculators, and others. For more information about strategies, research and trading volumes, visit the OIC website at: www.optioneducation.org/institutional.

The Seven Strategies Every Institutional Investor, Private Investor and Investment Consultant Should Be Aware of:

The Basic Four

The Buy-Write: Long stocks or the index and short near term at-the-money call options on the underlying.

The 2% OTM Buy-Write: Long stocks or the index and short near term 2% out-of-the money calls on the underlying.

The Put-Write: Short at-the money, or slightly out of the money puts with cash reserved to buy the entire portfolio, if put.

The Collar: Long an out-of-the money put and short an out-of the money call, at strike prices roughly collaring an underlying stock or index position and roughly cash flow neutral.

The indices examined earlier in the paper are highly appropriate benchmarks for these strategies. These strategies can also be pursued on an active basis.

Three Additional OBPMS

The 1x2x3: Long 100 shares of underlying, long 2 at-the-money calls and short 3 out-of-the money calls. Ideally, the call positions should be established for no net cash outlay. This strategy assumes the same risk as only holding 100 shares of stock, yet offers magnified upside profits. This strategy outperforms long only stock or indices on the upside until the short calls are well into the money.

ITM Calls + Cash: By buying long term in deep in the money options on a stock or index, you can get essentially full exposure to upside participation for half price. You can invest the unspent cash in a risk-free investment.

VIX: the VIX is the volatility index...literally measuring investor fear. It is almost perfectly inversely correlated to the market movement, increasing when markets drop and decreasing as markets climb. Exposure to the VIX should be a very robust hedge for traditional long only portfolios.

Summary

After the past 18 months many investors are underfunded. Institutional and private investors will need to wrest every possible basis point of return from the markets in the years ahead, both through better investing and cost management. They will need to do this with the least possible exposure to risk. Options Based Portfolio Management Strategies will help do just that. There is ample historical return data to examine. The results are compelling: better returns than equities with less risk. Moreover, adding these strategies to a well allocated portfolio reduces overall risk.

Historically, all of these strategies are less risky than traditional long-only stock or index portfolios. If you are willing to accept the risk of a long only portfolio, you should be more than willing to accept the risk of an OBPMS, and to consider making an allocation to one or more of them. As in every other area of the capital markets, this is probably best accomplished through an investment in a mutual fund, closed end fund, ETF, or large separate account. When you do that you will get investment management, diversification and a strict adherence to a portfolio discipline. As hard as the do-it-yourself route is for traditional investing, managing a portfolio of underlying stocks, indices or cash coupled with the short call, short put or long put positions, which have to be rolled monthly, can be even more challenging for the non-professional or the investment advisor with myriad other duties to fulfill.

Resources and References:

The Options Industry Council - optionseducation.org/institutional

Chicago Board Options Exchange - cboe.com

ZEPHYR Associates Style Advisor and Allocation Advisor - styleadvisor.com

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