# How Much Profit Opportunity Actually Exists in Popular Options Strategies

**By Don Fishback** 

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# How Much Profit Opportunity Actually Exists in Popular Options Strategies

# Part I

Options popularity is growing exponentially, and the one-word reason for the explosive growth is... **Opportunity**. As always, we have the numbers to prove any claims we make. This is no exception.

Options use by individuals is growing rapidly, as evidenced by statistics from some of the biggest online brokerage firms. Here's data from **E\*Trade**. You can see that, as recently as 2010, only 10% of their customers used options. That number grew to 24% by 2013.



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**TD Ameritrade** customers are even more likely to use options! Incredibly, 40% of the firm's customers use options or some other type of derivative in their trading. That's a massively high number due in large part to the firm's purchase of the options broker **ThinkOrSwim/Investools**.



Source: <u>http://www.nytimes.com/2013/05/25/business/growth-in-options-trading-helps-brokers-but-not-small-investors.html</u>

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It's not just individual investors moving towards options. The uptake by Financial Advisors has been huge. It becomes even *more interesting* when you dig into the numbers and see who is using options and who isn't. It's not the small advisor who uses options. It's the advisors with the biggest book of business. Only 36% of advisors managing assets of less than \$50 million use options. While an incredibly high 94% of advisors managing over half a billion dollar in assets use options.



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One of the reasons more and more advisors are moving to options is due to demand from clients. More than half of all clients using the services of a Financial Advisor have requested that the advisor use options as an investment tool.



Source: *Financial Advisor Benchmark Study*, Bellomy Research, Prepared for The Options Industry Council, May 21, 2014.

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There's a reason for this rising demand. Professionals are starting to see the value in options, not as a speculative vehicle, but as a basis for increasing profits and reducing risk. Here's what a couple of the largest financial firms on the planet have to say about options.

### **Russell Research**

Certain options strategies can "provide income, attractive risk-adjusted returns and the potential for a cushion during market downturns."

Source: Capturing the volatility premium through call overwriting, Russell Research, December 2010

### BlackRock

One simple options strategy "had higher returns, less volatility and smaller drawdowns."

Source: Investment Insights, Volume 16, Issue 2, June 2013

As those quotes demonstrate, the pros know the value of using options. Individuals are responding.

The thing is, Wall Street has been known to tout a strategy, only to see it go down in flames... with investors' hard earned money getting torched in the process.

And, unfortunately, Main Street isn't much better. Individual investors are known to chase returns. People start to pile in to certain investments, creating a bubble. Then, shortly thereafter, the bubble pops. We saw bubble creation and bursting in dot-com stocks (1999-2002) and in real estate (2007-2009).

History like that should cause you to be skeptical when someone claims you can get higher profits with less risk, while generating income. It's almost too good to be true.

To verify these claims, we're going to look at the honest-to-goodness performance figures for a variety of options strategies. What you'll find is, not all options strategies are created the same. Some make good money. Others lose big.

The objective of this report is to give you a straight-up, honest assessment of various options strategies so that you can see how different strategies perform over extended periods.

It's important to realize that we're measuring *strategy* performance, we are not testing trading systems.

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In other words, we will not be trying to buy puts at market peaks and calls at market bottoms, and then tabulate a track record. Instead, we're just looking at how well someone who consistently bought calls would have done. We'll compare that to the performance of someone who consistently bought puts.

And we're not going to limit ourselves to buying call/buying put strategies. We'll look at option selling as well. We'll also look at straddles, at-the-money covered calls, out-of-the-money covered calls, collars and put-sells.

We're going to be using data from several preeminent market research studies published in some of the most prestigious financial journals. These studies are performed at elite universities, using the most rigorous standards.

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### Part II

The following is a list of the research papers cited in this report:

1. Joshua D. Coval, and Tyler Shumway, Expected option returns (June 2001). The Journal of Finance, Vol. 56, Issue 3, pp. 983–1009.

Period Analyzed: 1/1990-10/1995

2. Oleg Bondarenko, Why are Put Options So Expensive? (April 2003). AFA 2004 San Diego Meetings; University of Illinois at Chicago Working Paper.

*Period Analyzed: 8/1987-12/2000* 

3. Sophie X. Ni, Stock Option Returns: A Puzzle (2008).

Period Analyzed: 1/1996-6/2005

4. Pedro Santa-Clara and Alessio Saretto, Option strategies: Good deals and margin calls (August 2009). Journal of Financial Markets, Volume 12, Issue 3, August 2009, pp. 391–417.

*Period Analyzed: 1/1985-5/2001* 

5. Mark Broadie and Mikail Chernov, Understanding Index Option Returns (November 2009). The Review of Financial Studies, Vol. 22, Issue 11, pp. 4493-4529.

Period Analyzed: 8/1987-6/2005

6. Ryan McKeon, Returns from Trading Call Options (August 2013). The Journal of Investing, Vol. 22, Issue 2, pp. 64-77.

Period Analyzed: 1/1996-10/2005

Note that each one of these studies is numbered. In later sections of this paper, we'll be using those numbers as references to any statistics shown. That way, you'll know the source of the performance data.

Not to be left out, I performed a similar study. We're fortunate to have what many believe is the world's most advanced options database, with daily prices and other statistics all the way back to January 1998. Here's my citation:

7. Don Fishback, ODDS® - Options and Derivatives Decision Support (February 2015)

*Period Analyzed: 1/1998-12/2014* 

So if you see a 7 next to a performance number, you know it comes from me.

With that said, let's get started.

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# Part III: Buying Index Calls

The first thing we're going to look at is straight buying of call options on a broad-based index. The strategy is simple: buy a one-month, at-the-money call on options expiration -- the third Friday of every month. Hold till the following options expiration. Count your winnings... or losses. Several research papers have performed this analysis over different time periods. We've done our own performance analysis. The results are in the table below:

Buy Call Return	SPX Return
+0.11%	+0.51%
+1.85 to +2.00%	+0.17%
+24.8%	+1.13%
-6.44%	+0.83%
	Buy Call Return +0.11% +1.85 to +2.00% +24.8% -6.44%

The first column shows whether we're looking at monthly returns or weekly returns; all studies except one measured monthly returns. Next to that are the footnotes; they correlate to the different studies that contain the data source. The research I performed is in the top row and bolded, with a footnote of 7. It's the only study to include data from the Financial Crisis.

In the second column -- to the right of the time frame and the source footnote -- is the performance of the strategy. In the last column to the right is the performance of the stock market during the various time frames. This allows you to compare the performance of the option strategy to the performance of the stock market.

The table tells us that buying one-month, at-the-money index calls generally makes a decent amount of money if the market's trend is up strong. [Note: The data in the bottom row -- Research Paper 6 -- appears to be an outlier.]

The results shown above may surprise a lot of people: Routinely buying one-month, at-the-money S&P 500 Index call options tends to make money.

But does it do so consistently? Or are the returns "lumpy"?

To answer that question, I created two charts: one measures the cumulative profit/loss of the call buying strategy; the other shows the cumulative return of the S&P 500 Index. This allows you to compare the performance of the option strategy to movement in the stock market.

On the next page, you'll see the options strategy's cumulative performance in the top chart. The stock market's return is shown in the bottom chart.

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You can see from these detailed charts, that call buying was a very *unprofitable* endeavor through 2008. When the market went up from 1998 to 2000, call buying made a tiny profit. When the market went into bear mode during the recession of 2001-2002, call buying lost, and it lost big. When the market recovered and rallied, call buying held steady. It did *not* make money, which is kind of surprising given the magnitude of the rally. When the Financial Crisis hit in 2008, call buying got slaughtered.

For ten years, call buying lost money. Finally, beginning in 2009, the market rallied hard, and buying calls started making money, but it was just a trickle. Then, beginning in 2012, the market rallied hard and call buying became a very profitable strategy.

In the end, call buying generated profits. But it took an exceptional rally for that to happen: the rally from 2009 to 2014 is one of the biggest stock market rallies in history.

Let's look at our next strategy.

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# **Part IV: Buying Index Puts**

We just saw that buying one-month, at-the-money calls can make money over the long-term. But it takes an exceptional market rally for profits to be generated. What about buying one-month, at-the-money index puts? This table should provide some answers.

	Buy Put Return	SPX Return
Monthly Average (1998-2014) <sup>7</sup>	-20.01%	+0.51%
Weekly Average (1990-1995) <sup>1</sup>	-9.50 to -7.71%	+0.17%
Monthly Average (1987-2000) <sup>2</sup>	-39.0%	+0.97%
Monthly Average (1985-2001) <sup>4</sup>	-31.7%	+1.13%
Monthly Average (1987-2005) <sup>5</sup>	-29.92%	+0.70%

In this table that we are using data from sources 1, 2, 4, 5 & 7. Like before, Source 1 in the second row measures *weekly* data, not monthly. My research is in the top row with a footnote of 7. It's the only one to include data from the Financial Crisis in 2008.

Not unexpectedly, with the average return of S&P 500 positive in all five of the study periods, buying puts led to huge losses. It's no surprise that buying puts lost money. What is surprising is how much money puts lost. Those are not annual returns. That -39% per month in the third row is simply horrific.

How bad is -39% per month, you might ask? Think about this. Let's say you started with a nice nest egg of \$1,000,000.00. If you suffered losses of -39% a month, in two years you'd have just \$7.80. Minus 39% turns a million dollars into lunch at McDonald's in just two years.

There are two implications here:

Where is the logic in buying puts? Is there ever a period in which put buying is justified?
 If put buyers are getting crushed that badly, what does that mean for put sellers?

The first factor -- Is there any logical reason to buy puts? -- is even questioned by one of the research authors. The title of Oleg Bondarenko's paper (2) asks the question, "Why are Put Options So Expensive?" The fact that put buyers continue to overpay for put protection goes against all logic. According to accepted economic theory, rational investors are expected to see how badly puts perform and adjust their behavior by no longer paying so much for those overpriced puts. But they don't. The fact that they continue in their irrational buying is unexplainable.

Some believe that traders overpay for puts because of what's called the "Peso Problem". That's where an asset makes an unanticipated massive Crash. Something like that happened in the U.S. in 1987.

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The following charts, taken from our research, shows the cumulative profit/loss generated by buying puts starting back in 1998. It allows us to see how the performance of a put buying strategy compares to the stock market on an ongoing basis.



There's a clear pattern here: <u>all downhill</u> except two brief periods of exceptional bear market action. What's especially interesting to me is magnitude of the put buying returns during the two bear markets. The 2001-2002 bear market was the most severe bear market since 1974. The bear market in 2008-2009 was even worse. Yet profits generated via put buying in 2008 were *smaller*.

That's because put prices in 2008 jumped fast and stayed high. Traders adjusted to the financial crisis quickly. Option prices exploded higher. That made it very difficult for put buyers to earn a profit, even though the stock market got hammered. In fact, from the third Friday in October 2008 till the third Friday in March 2009, the S&P 500 fell -18.1%. That's a massive drop. Yet buyers of puts during this time frame actually lost money!

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Another thing to notice is the scale on the left of the S&P 500 Put Buy chart. When losses occur, they're not small. They are ginormous!

All of these factors lead to two conclusions:

- 1. Consistently buying puts is a way to certain doom. You need a rapid market meltdown to generate profits.
- 2. Consistently selling puts is a way to certain profits... as long as you can survive the handful of market meltdowns.

The numbers don't lie. Put *buyers* lose money like crazy. That has important, positive implications for those who choose to *sell* puts.

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### **Part V: Buying Index Straddles**

A straddle trade is one that involves options with the same strike price and same expiration month. You can either buy a straddle or sell a straddle. These are pure volatility plays. You don't care if the market goes up or down. Your only two concerns are magnitude and time. In this section, we're going to investigate the performance of a strategy that involves buying one-month, at-the-money straddles on the S&P 500 Index options. The expectation for this strategy is that volatility will be higher than generally expected. [FYI: Selling straddles, which profit if volatility is lower than expected, has a high probability of success. But it's very risky. Consequently, the margin requirements and Approval/Authority Level are extremely high.]

	Buy Straddle Return	SPX Return
Monthly Average (1998-2014) <sup>7</sup>	-10.30%	0.51%
<i>Weekly</i> Average (1990-1995) <sup>1</sup>	-3.15%	0.17%
Monthly Average (1985-2001) <sup>4</sup>	-14.0%	1.13%
Monthly Average (1987-2005) <sup>5</sup>	-15.74%	0.70%

In this table that we are using data from sources 1, 4, 5 & 7. Like before, Source 1 in the second row measures *weekly* data, not monthly. My research is in the top row with a footnote of 7. It's the only one to include data from the Financial Crisis in 2008.

While the numbers are not as severely negative as they were with the put buying, there's still nothing good whatsoever in those performance figures. Routinely buying straddles on stock indexes still appears as though it is a certain way to ruin yourself financially.

That's one of the reasons why we avoid buying straddles on stock indexes.

Let's take a look at the time series charts.

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What's interesting about the top chart is how smooth and persistent the decline is. No matter what the bottom chart does, the general trend of the top chart is down, except in the most extreme stock market moves -- down in 2002 and 2008, and up in 2013.

To investors -- these two charts and the four preceding charts -- provide visual confirmation of vitally important information. They provide clear pictures of how difficult it is for options *buyers* to make money. They also show why options *selling* tends to be a *consistently profitable strategy*.

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### Part VI: Buying calls on the cross section

Have you ever wondered how much money you could make if you had an unlimited wallet and could buy a one-month, at-the-money call option on every single liquid stock with listed options?

We have the answer... actually Sophie X. Ni has the answer.

In her paper, Stock Option Returns: A Puzzle, the author performs a massive analysis to get what's called the "Cross Section".

	Buy Call Return	SPX Return
Cross-Sectional Average (1996-2005) <sup>3</sup>	1.98%	0.69%

What Xi found is that, had you purchased one-month, at-the-money calls on every stock with listed options, and held the calls till expiration one month later, you would have earned just under 2% per month. While that may not sound very good, realize 1.98% per month is nearly triple the stock market's return during this time frame, which was quite bullish for the most part.

Also, 1.98% per month turns into 26.5% compounded annual return, which is better than Warren Buffett's 22% compounded annual return since 1965!

In other words, blindly buying calls on stocks, where the only selection criteria is to make sure that the options are liquid, appears to generate higher profits when the market is in an uptrend.

### Review

Up to this point, all we've looked at is buying options: buying index calls, buying index puts, buying index straddles, and buying calls on all stocks. The results are mixed to say the least. Anything that involves buying index puts -- whether it's a straight put purchase or buying the put as part of a straddle -- tends to be a massive money loser over time.

At the other end of the spectrum, we have seen that buying index calls and buying calls on individual equities actually made money. We must note, however, that the profits from buying calls did not offset the massive losses from buying puts. We should also note that in all of these tests, the overall stock market moved up, and in some cases it moved up quite a bit.

We're now going to change our focus from buying to selling. After all, if buying options was bad, then perhaps selling options would have been a money maker. To see if that's true, we're going to look at various options strategy indexes provided by the Chicago Board Options Exchange.

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# Part VII: Covered call index BXM

Here's a trick question... Do individual investors who use options tend to make money or lose money? Actually, the answer will probably surprise you. <u>Individual investors who use options tend to make money!</u>

"But how", you might ask? "The charts you just showed us indicated that buying options was a doomed strategy. Buying puts caused massive losses. Buying straddles cause massive losses. And buying calls did not make enough profits to offset those huge losses."

The answer lies in the strategy most individuals use.

By and large, individual investors are net sellers of options, not buyers. That's because the strategy individuals use more than any other is the Covered Call, or Buy Write. As discussed extensively in the course, Covered Calls involve buying stock and selling a call. You can sell an at-the-money call or an out-of-the-money call. You can also sell an in-the-money covered call, but that might subject you to early exercise, so we don't recommend you do that. [*If you want to learn more about Covered Calls -- what they are and how they work -- check out our video course, What Are Options?*]

While we don't have any tabular statistics from research papers on this strategy, we have some amazing graphics we put together using data from the Chicago Board Options Exchange (sources: CBOE and Bloomberg).

The first chart we're going to look at is a one-month, at-the-money Covered Call on the S&P 500 Index. This Covered Call strategy actually has its own ticker symbol: BXM. Covered Calls are also sometimes called Buy Writes, which explains why the ticker symbol begins with "B".



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Out chart actually has two performance statistics displayed: the Covered Call/Buy Write strategy (BXM) and the S&P 500 Total Return (SPTR). The SPTR provides us with a graphical way to track the performance of the stock market, taking into account dividends. So it's a truer portrayal of market performance.

As you can see, BXM tends to be somewhat smoother. It doesn't move up as much when the market is in bull mode. And it doesn't move down as much when the market is in bear mode.

In fact, until the middle of 2012, BXM was actually beating a buy and hold strategy. When the stock market made its huge move higher in 2013, however, BXM lagged badly.

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# Part VIII: Covered call index BXY

We just completed a quick analysis of Covered Calls using at-the-money options. Recall that we also mentioned you can implement Covered Calls using out-of-the-money options. When you do that, you are implementing a strategy known as "**Call Overwriting**". Call Overwriting is the strategy mentioned in the **Russell Research** paper referenced on page 5.

To help people evaluate the performance of this type of strategy, the CBOE created the 2% OTM BuyWrite Index; the ticker symbol is BXY. The BXY index tracks the performance of a covered call where the strike price of the call sold is 2% above the index value.



As with the prior chart, we've added the S&P 500 Total Return. The BXY is blue line, the SPTR is the white line. As you can clearly see, BXY tends to keep up with the stock market when it's in bull mode. Plus, it also tends to provide a cushion when the stock market is in bear mode. In other words, it does everything that Russell Research said in their report...

Call Overwriting strategies can "provide income, attractive risk-adjusted returns and the potential for a cushion during market downturns."

It's only when the market makes a ballistic move higher that this strategy underperforms. One of those years just happened to be 2013, when the S&P 500's total return was 32.39%.

# Part IX: Collar Index CLL

Collars are strategies where you buy stock, and then build a protective collar around it by selling a call and using the proceeds to buy a protective put. [If you need a more comprehensive explanation of collars, check out our video course, What Are Options? where collars are discussed in great detail.]

Collars are very popular with Financial Advisors because they supposedly offer protection at little to no cost. The problem is, that's not entirely true. Collars do come with a cost: Opportunity.

When the stock market heads higher -- which it tends to do almost all the time because of economic growth and inflation -- collars underperform drastically. When the market heads lower, collars do offer some partial protection -- the key word being partial.

Here's another one of the CBOE Indexes; this one is a chart of the 95-110 Collar Index. That is, the index assumes you sell a call with a strike price 10% above the current price of the S&P 500 and you use the proceeds to by a put with a strike price 5% below the current price of the index. The term of the options in this index is three months.



Basically, this index suffers from a symptom we've already diagnosed. Anything involving put purchases is going to have problems. The good news is that, at least this index isn't losing -39% per month!

In fact, had you cherry-picked and selected a different term, you'd get a completely different picture. Here's how the CLL performed during the so-called Lost Decade, from January 2000 till March 2009.

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Here you can clearly see that CLL did what it was designed to do, provide *partial* protection in a bear market. The damage the collar strategy suffered wasn't nearly as bad that experienced by the stock market itself. But it certainly isn't something you'd want to do all the time, particularly when the previous strategy performed so well over such an extended time frame.

Bottom line is that collars are something that you can use sporadically. But it's not a full-time strategy. And they don't provide complete protection... ever.

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### **Put Sale Index PUT**

Earlier, we looked at the performance of buying puts. Put bluntly, it was terrible.

Logically, if buying puts is so bad, then you'd think selling puts would be good. If that's what you thought, you would be right! And your opinion would coincide with the largest money management firm on the planet.

As noted on page 5 of this report, BlackRock stated that selling one-month, at-the-money index puts -- automatically each and every month no matter what -- "had higher returns, less volatility and smaller drawdowns" than the vaunted buy and hold strategy.



You can see from this image that put selling beat the market from 1988 through 1996. It then lagged when stocks exploded higher in the late-1990s. The strategy's market-beating performance resumed in 2000 and lasted through 2011. At that point, the strategy began to lag once again when the market began its parabolic ascent upward.

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### **Summary**

As you can tell from all of these performance statistics, the strategies that make the most money involve selling options. Buying options is a very hard way to consistently make money. It's not impossible. But you have to be selective. Whereas, selling options can be more of a full-time endeavor.

The strategy with the most consistent profitability is the one where you sell index puts. Looking at the statistics on buying puts, it should come as no surprise that selling puts would be so consistent and profitable.

It also makes sense. Puts -- at their most basic level -- are a form of insurance. When you sell a put, you are essentially going into the insurance business. You are the insurance company selling insurance on a stock price.

And as we all know, insurance companies tend to make money. Yes, every now and then, insurance companies have to pay a claim. It's the same way with selling puts.

But over the long-term, selling insurance tends to be a profitable endeavor.

Buying insurance -- although it distributes risk and gives us peace of mind -- tends to be unprofitable in aggregate. So it's no surprise that buying options also tends to be unprofitable.

It's not that you can never make money buying options. It's just that it's hard to do with regularity. You must be selective.

One final thought. Earlier we discussed how buying straddles was unprofitable. But selling straddles has its own set of negative factors. Selling straddles may have a high probability of profit, but they're risky. One way to alleviate the high level of risk is to use a strategy called a credit spread

# Appendix

To make it easier for you to get a reading on how each of these strategies performed, we've included two very handy sheets summarizing the various performance figures. You can find them in the Appendix on the following two pages.

### Please Read Page 25 for Important Disclosure Information.

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# Annual Performance Measures of CBOE Options Strategy Indexes

PUT	BXM	BXY	CLL	Year	SPTR
17.60%	19.27%		4.54%	1988	12.57%
24.58%	25.01%	32.58%	26.04%	1989	31.69%
8.88%	3.99%	1.93%	-0.05%	1990	-3.10%
21.32%	24.39%	22.93%	13.60%	1991	30.47%
13.80%	11.52%	11.04%	4.25%	1992	7.62%
14.14%	14.10%	11.02%	6.19%	1993	10.08%
7.10%	4.50%	4.60%	-2.02%	1994	1.32%
16.88%	20.97%	33.20%	34.41%	1995	37.58%
16.40%	15.50%	19.83%	18.46%	1996	22.96%
27.68%	26.64%	29.75%	23.93%	1997	33.36%
18.54%	18.95%	21.24%	18.76%	1998	28.58%
21.01%	21.17%	19.68%	8.98%	1999	21.04%
13.06%	7.40%	1.96%	-9.10%	2000	-9.10%
-10.63%	-10.92%	-11.41%	3.77%	2001	-11.89%
-8.58%	-7.64%	-12.25%	-11.09%	2002	-22.10%
21.77%	19.37%	24.91%	17.86%	2003	28.68%
9.48%	8.30%	9.74%	4.94%	2004	10.88%
6.71%	4.25%	4.41%	2.01%	2005	4.91%
15.16%	13.33%	17.14%	11.66%	2006	15.79%
9.51%	6.59%	6.11%	0.91%	2007	5.49%
-26.77%	-28.65%	-31.23%	-23.65%	2008	-37.00%
31.51%	25.91%	32.07%	17.65%	2009	26.46%
9.02%	5.86%	9.82%	4.12%	2010	15.06%
6.17%	5.72%	7.20%	-8.84%	2011	2.11%
8.14%	5.20%	10.24%	6.79%	2012	16.00%
12.28%	13.26%	20.79%	23.77%	2013	32.39%
6.38%	5.64%	5.49%	9.24%	2014	13.69%



# Performance Summary of Option Strategies

	ATM Call Return	ATM Put Return	ATM Straddle Return	SPX Return
Monthly Average (1998-2014) <sup>7</sup>	0.11%	-20.01%	-10.30%	0.51%
<i>Weekly</i> Average (1990-1995) <sup>1</sup>	+1.85 to +2.00%	-9.50 to -7.71%	-3.15%	0.17%
Monthly Average (1987-2000) <sup>2</sup>		-39.0%		0.97%
Cross-Sectional Average (1996-2005) <sup>3</sup>	1.98%			0.69%
Monthly Average (1985-2001) <sup>4</sup>	24.8%	-31.7%	-14.0%	1.13%
Monthly Average (1987-2005) <sup>5</sup>		-29.92%	-15.74%	0.70%
Monthly Average (1996-2005) <sup>6</sup>	-6.44%			0.83%

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