ADAM WARNER

TRADING OPTION COLLARS

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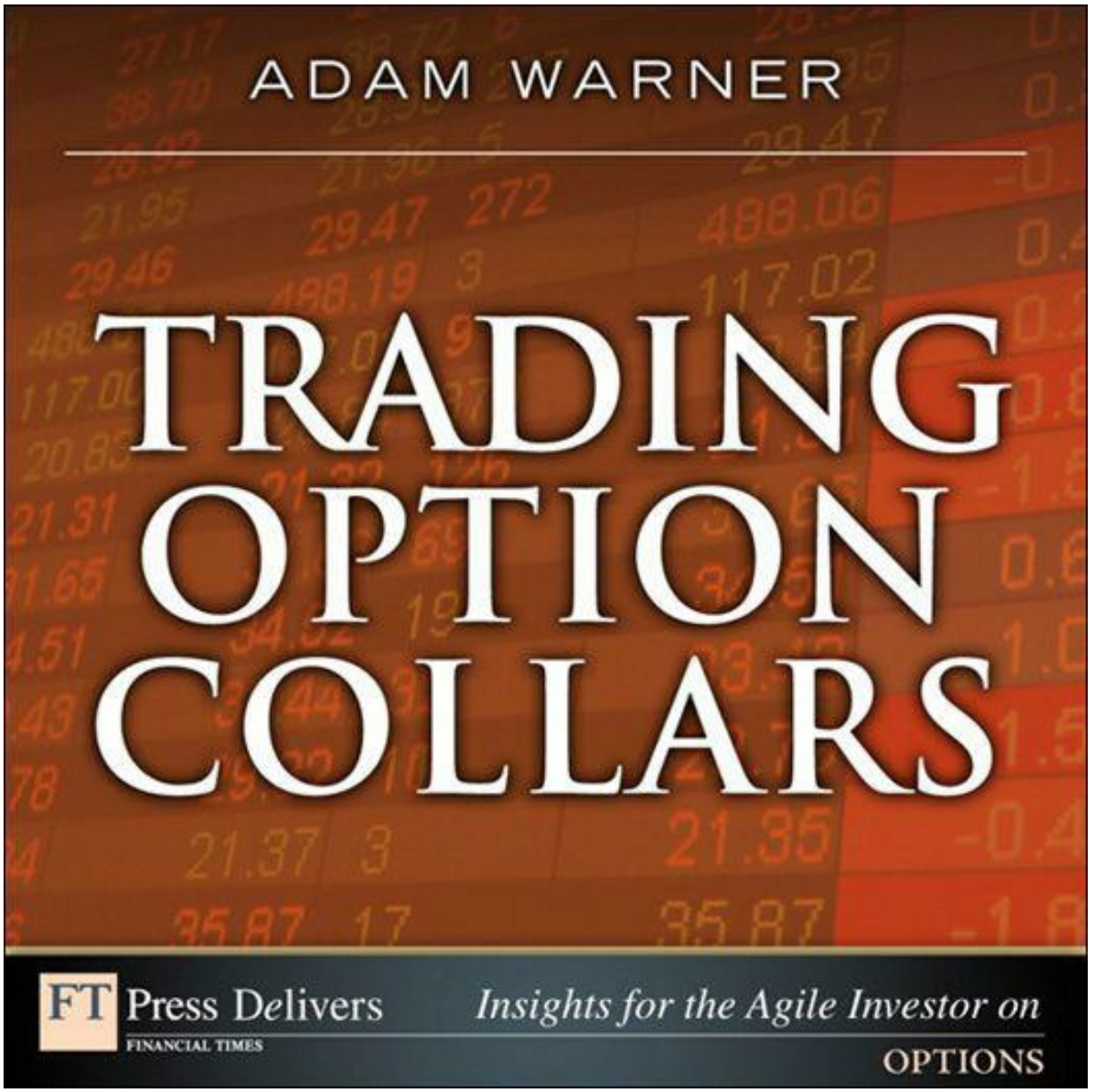


Trading Option Collars

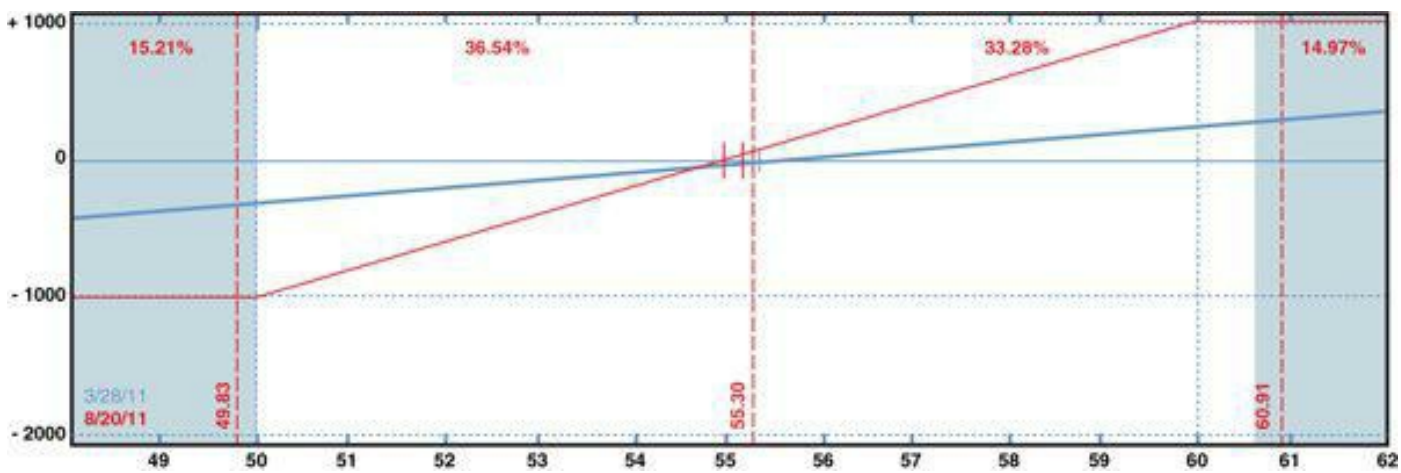
Adam Warner

Collars have achieved some degree of popularity in recent years. Investors generally use them in a simple fashion. They own a stock. Stock rallies. They want to lock in some gain but still participate in more upside. So they slap on a simple collar.

A **basic collar** involves buying a modestly out-of-the money (OTM) put and shorting a modestly OTM call in the same numbers, with quantities equal to the stock the investor already owns (one of each option for every 100 shares held long and one of each call per 100 shares). The options are opened at prices so that the premium received on the call equals or exceeds that paid for the put.

For example, a trader owns 200 shares of Freeport-McMcMoran Copper & Gold (FCX) at a basis of $45.30. The stock runs to $55.30, a tidy $10 profit. He's happy with the win and would like to insure he keeps some of it. But at the same time, he has hopes for more. So he sells two August 60 calls at 3.30, and buys two August 50 puts, at the same 3.30. He now has a collar. If FCX continues to rally and the trader does nothing more, he will participate in the gains up until FCX hits $60. Above that point, his stock gets called away.

On the downside, he will give money back down to $50, at which point he gains one dollar in intrinsic value for each dollar lost in the stock's price; losses are limited by the long puts. Graph 1 shows how this trade looks in graph form.



Graph 1 P&L Graph for Basic FCX Collar

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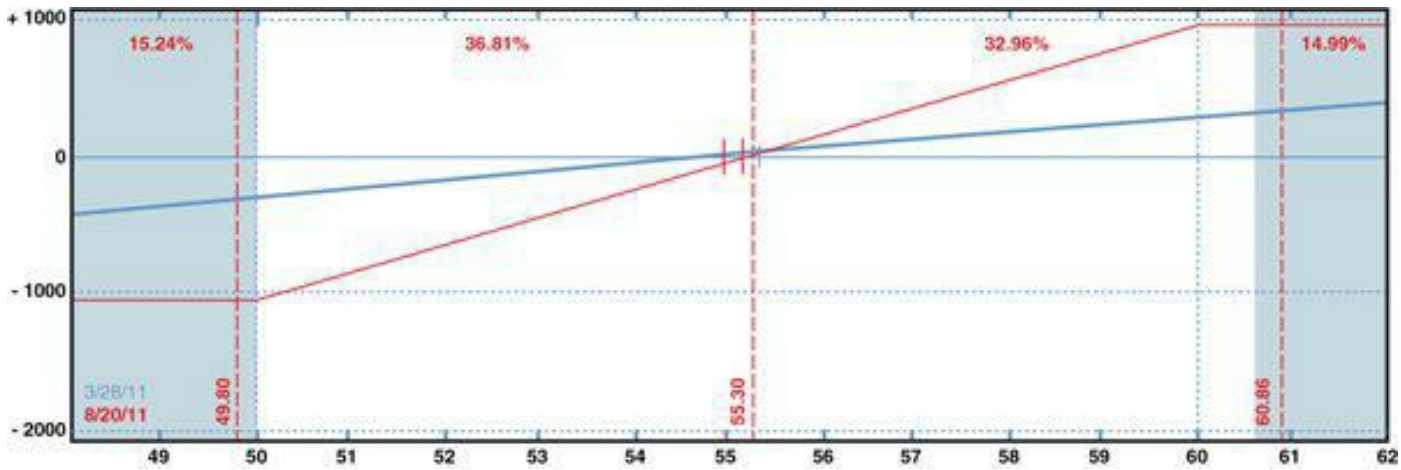
The white line (and the Y-axis) show the trader's profit and loss (P&L) on the current basis. The red line shows his P&L at option expiration. And the trader continues to win up $60.

The collar is not the only way to go. For example, the trader buys two August 50 calls in FCX for 8.30 and sells two August 60 calls at 3.30. That's known as a **bull call spread**, as shown in Graph 2.



Graph 2 P&L Graph for FCX Bull Call Spread

If you compare Graphs 1 and 2, you see they look virtually identical. That is because they are synthetically the same position. Owning 200 shares versus owning two August 50 puts gives the trader a synthetic long stock position consisting of two August 50 calls. Combine that with the two August 60 calls he sold, and this position replicates owning two August 50–60 call spreads. It uses capital more efficiently. The trader ties up 50% of the dollars spent on the original FCX stock purchase on the collar ($4,530), as opposed to putting up the cost of the two-option bull call spread ($600) as shown in Graph 2.

The tax implications of switching the collar position to a bull call spread may outweigh the more efficient capital usage. Suppose a trader had a very low cost basis for FCX and owned stock for over a year. **A straight stock sale will likely incur a tax hit on a capital gain**. Say he owned 200 FCX at $30 from 2 years ago, but then sells FCX at $50 as part of a switch to a bull call spread. He would presumably owe a capital gain tax on his 200

shares up 20 points, or $4000.

Why Collars?

Investors both lock in gains and provide an ongoing bet going forward. These strategies are appealing. You can do all this for no out-of-pocket money. You bought those FCX puts for a net cost of zero after taking in the money for the short calls.

Actually, no, you didn't get the position cost-free. Even though you had a net debit of zero, you get the puts gratis if you give up something in return. In this case, you must cede all gains over $60. That doesn't sound like a big deal when you are playing with house money, but don't discount the fact that those positions have real value.

So mentally converting a collar to a bull call spread best compares the risk/reward of each position. In this example, you morphed an FCX stock long position into a binary bet. Heads—the stock goes up, and you can earn up to $5. Tails—the stock declines, and you can lose up to $5. Bull call spreads provide a terrific way to place a bullish bet while limiting the risk.

The defensive aspect of a collar depends on the perspective you take going in. When you start with a winning stock play, the binary risk/reward sounds terrific. You have a higher target and a de facto trailing stop without having to worry about a gap down through the stop.

You may also compare the collar to other defensive trades, especially **stock replacement**. That's when you sell out your winning long stock and replace it by purchasing calls. In this example, that means you sell the two FCX and simultaneously purchase two calls. For example, you buy two August 60 calls at 3.30. You disregard the tax implications of selling a winning stock. You may also find yourself in an offsetting position, which also has tax implications. Like a collar, this position has defined risk. You have 2 x $330, or $660, left on the table, as opposed to $1,000 in the collar trade.

The reward side is very different. The collar can only gain $1,000 more on a max-out above $60 per share. But it profits from there to $60. The call long has unlimited upside, but it

won't start profiting on a closing basis until FCX gets above $63.30 ($60 plus the premium on the calls).

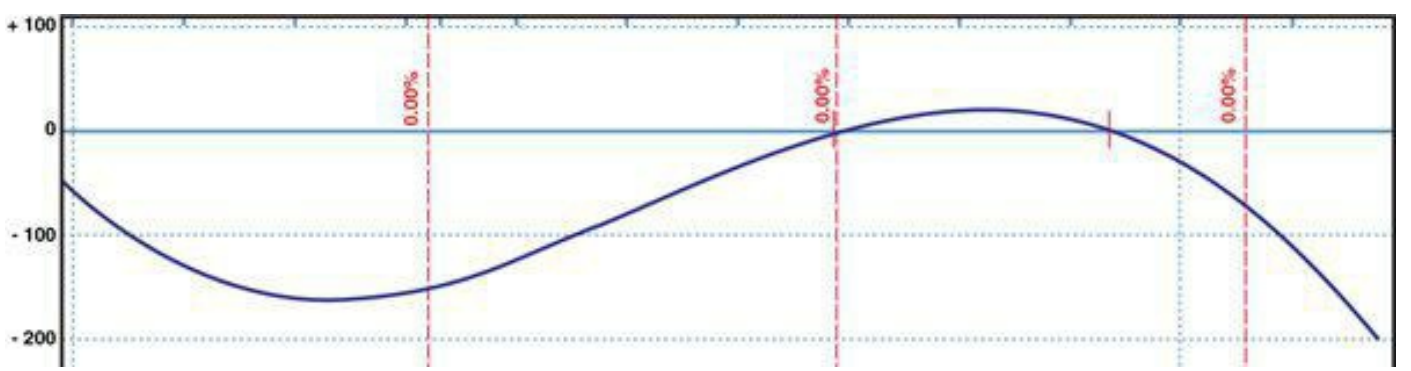
So which is better? It's all personal preference. If you expect FCX to make a move above $68.30 (about 24% higher) by August expiration, you should just go the stock replacement route. Why $68.30? Remember you pocket that extra $1,000 if the collar maxes out. Also, if you want a position you can trade against more readily, **call ownership** works better than a spread. But if your goal is locking in a winner, you probably don't anticipate FCX to rally that sharply over the next few months. So the collar better aligns with your goals in that case.

Non-Standard Collars

A collar does not have to always be replaced with a bull call spread. In fact, in 23 years of option trading, I have never only put on a 1:1:1 collar.

So you may construct a larger and more complex collar position, using Pan American Silver Corp (PAAS) as an example. You go long 600 shares of PAAS at $36.90 and simultaneously buy ten PAAS May 33 puts and sell ten May 40 calls, both sides at 1.10.

The calls carry a 33 delta and the puts a 25 delta. That means that each call you sell equates to selling 33 shares of stock, and each put you buy translates to buying 25 shares. So the combination of selling 10 calls and buying 10 puts almost perfectly offsets the 600 shares of PAAS you bought, making the trade delta neutral at the time of initiation. In other words, this starts you off flat. Graph 3 shows how your P&L looks one day out.

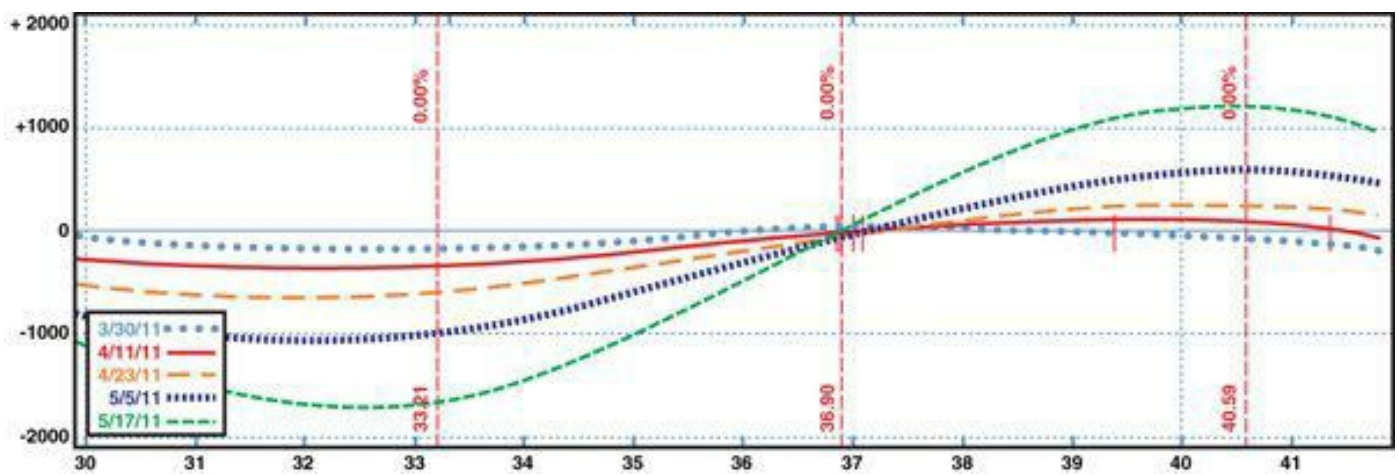


Graph 3 1 Day P&L on PAAS Ratio Collar

Graph 3 covers about one standard deviation, and you most likely will win or lose very little. Go beyond that and you win on a crash thanks to owning three extra puts; conversely, you have undefined loss potential on the upside thanks to the three extra shorted calls. Both have very low probability events, especially in one day.

So what's the point?

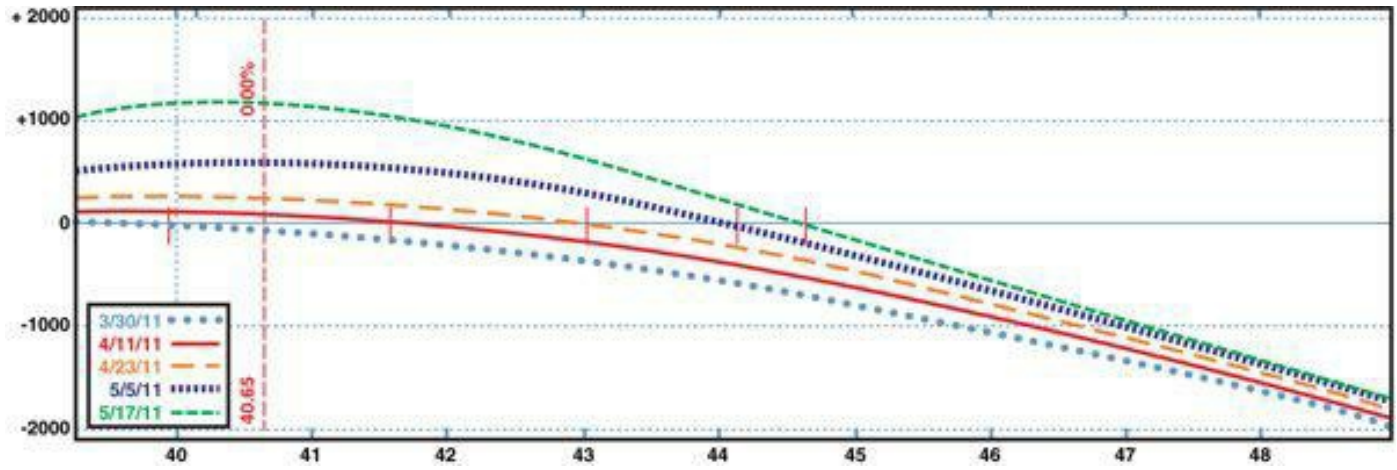
It doesn't remain flat. Over the course of time, you have made a bet that wins on two distinct outcomes in the stock. On the upside, you have shorted the 40 May call. Any time you short a call, no matter what else you have in the position, you stand to benefit if the stock hovers as close to that strike as possible. And in that case, the nearer to expiration, the better. So a slow climb toward 40 works wonders. Graph 4 shows how it looks on a graph of 12 windows between the end of March and just before the May expiration.



Graph 4 Multi Timeframe P&L on PAAS Ratio Collar

The last date shown, May 17, maxes out on the upside just above 40. On expiration itself (May 20), you want the stock exactly at 40. The slower the grind toward 40, the better. But it's tricky, thanks to those three shorted calls. Graph 5 shows

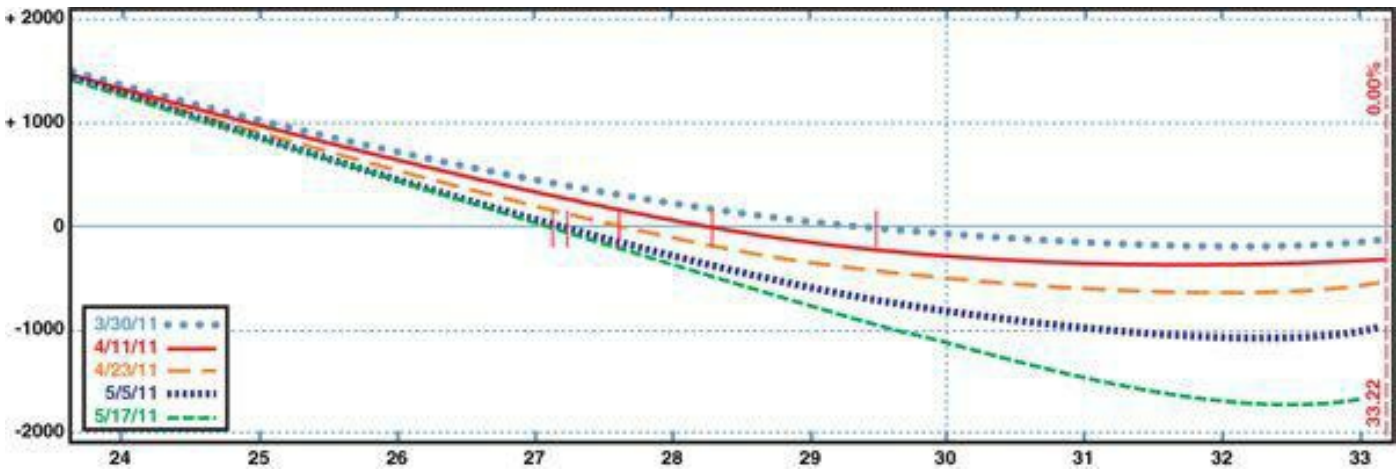
how it looks above 40.



Graph 5 Multi Timeframe P&L on Bull Move on PAAS Ratio Collar

It gets worse as the price moves up further.

On the downside, you root for the opposite. Whereas we have bet on a slow grind up, we have also bet on a quick and volatile shot down. Graph 6 shows your PAAS ratio collar at $33 and below.



Graph 6 Multi Timeframe P&L on Bear Move in PAAS Ratio Collar

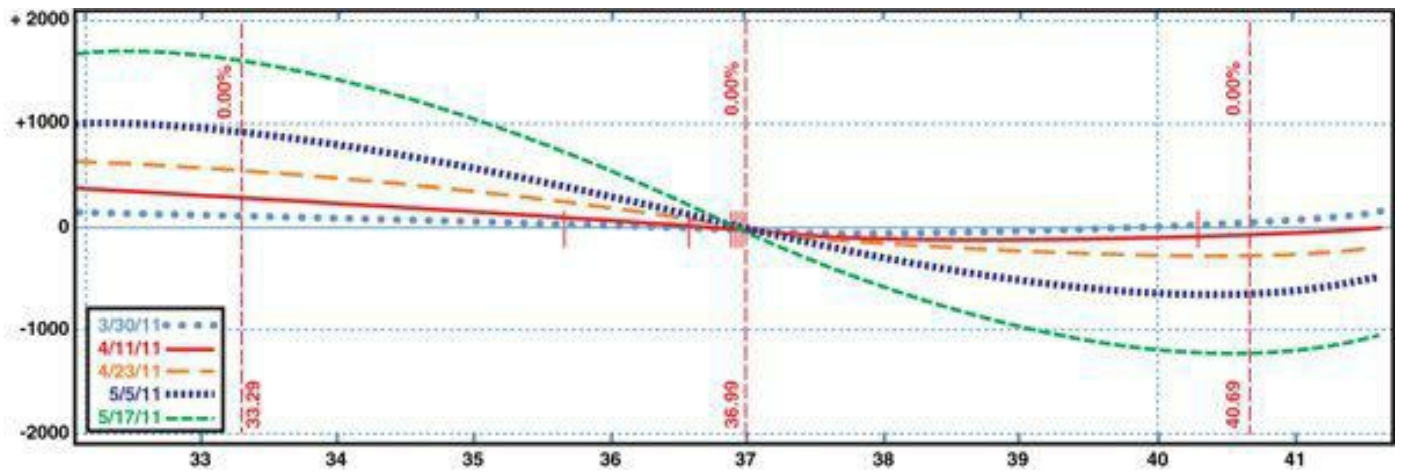
It's the mirror image. The quicker and lower it goes, the better. What's the appeal of a position like this? It self-adjusts your volatility exposure to the typical path volatility takes. Many stocks tend to rally in a slow, measured pace of decreasing

stocks tend to rally in a slow, measured pace of decreasing volatility, and, conversely, tend to decline abruptly and with increasing volatility. If you have this position, you are long downside volatility and short upside volatility.

But that's not to say this one size fits all—far from it. Not every stock sees a volatility drop as it lifts. In fact, PAAS itself didn't. From the end of March 2010 to the end of March 2011, PAAS rose about 55%. Over the same year, 30-day normalized implied volatility rose about 10%.

So maybe you have all this backward. You have an uptrending stock in PAAS and you want a position that gets you long if the stock breaks out, while on the flip side, you don't mind the risk of getting long if the stock dips.

You can do this trade in reverse. Go long ten May 40 calls, short ten May 33 puts, and short 600 shares of stock. Even though you have the opposite position on, it still acts like a collar (see Graph 7).



Graph 7 P&L Inverted PAAS Ratio Collar

You just turned Graph 4 upside down.

I am partial to this second variation of the collar. I spent 13 years as a market maker on the American Stock Exchange, from 1988 to 2001. The job entailed taking the other side of public order flow and then hedging my trading positions into manageable positions. If Morgan Stanley, Goldman Sachs, or Merrill Lynch wanted to sell calls in an option in which I made markets, I was obligated to purchase them. And by and large, the public order

flow wanted to sell us OTM calls and buy OTM puts, forcing me and my fellow market makers to short stock as a hedge. And that left us with larger variations of positions like the PAAS collar.

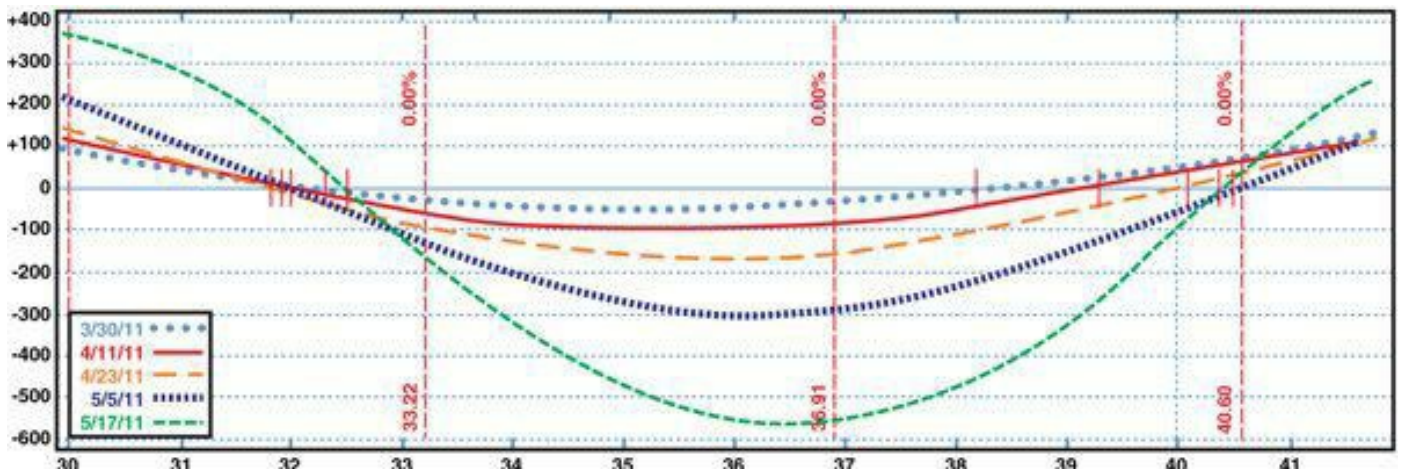
As a floor trader, I benefitted from utilizing market maker margin. Our positions could balloon. In the real world, though, spreads and combos like these tie up an outsized amount of capital relative to the risk and reward potential, due to the margin requirement of 50% on the exposed calls or puts.

However, you can make it more capital-efficient. You can convert a stock/call combo to a put position or a stock/put combo to a call position. So in Graph 4, instead of long 600 shares, long ten May 33 puts and short ten May 40 calls, you can go long four May 33 puts and six July 33 calls, and short ten May 40 calls and have the same risk/reward. And in the inverse position, you short four May 33 puts and six May 33 calls, and long 10 May 40 calls.

Managing Collars

Beyond these defensive FCX collars used to lock in a stock winner, PAAS collars initiated on their own require some tending. And it's not so simple because the outcome depends on the direction, magnitude, and timing on moves in the underlying stock.

Take a look at the Greeks. Graph 8 shows the inverted PAAS collar, but instead of showing the P&L at different price and time points, it shows the deltas (share equivalent).



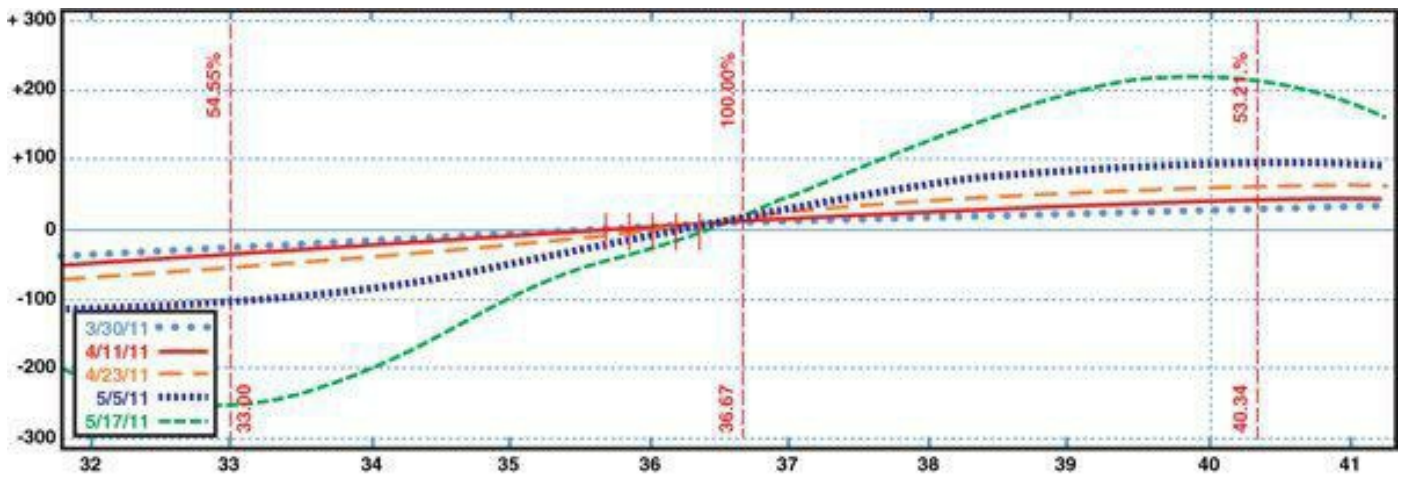
Graph 8 Inverted PAAS Ratio Collar, Delta

The sample trade was entered at a near-flat delta. You can call this the Seinfeld trade. It's a spread about nothing. Other than for a big move in the stock, you need to take little to no action.

As time ticks away though, it all changes. The simplest case is a rally over 40. You own ten calls against short 600 shares, so you hold a net of 400 shares synthetically long. You might want to scale them out on price levels of $41 and up. But you can also use trailing stops. It's a good position to be in when you have gamma late in the cycle at little cost. You lost money on PAAS from the shorted price, but you offset the cost of the calls with your now-worthless put short.

If PAAS hovers and later expires between 33 and 40, the two strikes will expire worthless. That leaves you with the stock position—in this case, short 600 shares. As little to nothing happens, you get shorter and shorter each day.

But you can't just buy stock, especially into weakness. That's because you still have those open short puts. Look at gamma on the trade in Graph 9, the rate the delta changes per 1 point move in PAAS.



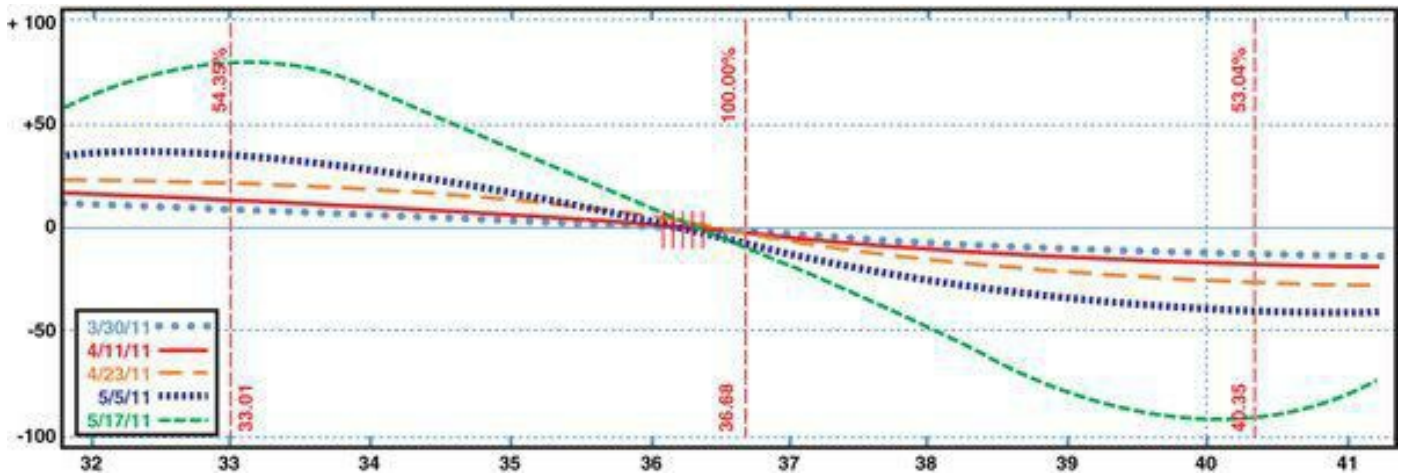
Graph 9 Inverted PAAS Ratio Collar, Gamma

The positive gamma above 40 allowed you to sell shares of PAAS into strength. Once you do that, you also have

ammunition to buy shares to close into weakness. That's a very important part of the overall trade, maximizing your positive gamma when you have the chance.

It gets tricky in the opposite direction. You will have to start buying stock at some juncture if the price sits in the mid 30s, lest you risk a late rally toward 40. But those short puts give you the negative gamma (and positive delta into weakness).

If you leave everything on, you may find yourself buying PAAS into weakness around the 35 price level, and then selling it under 33 as the short puts suddenly get you long. But all is not lost. Your short gamma earns you money each day in the form of time decay. Here arises theta, shown in Graph 10, the dollar value of time decay per day.



Graph 10 Inverted PAAS Ratio Collar, Theta

Near expiration, you have to start looking at this PAAS position as two separate trades. You have a negative gamma/positive decay trade if PAAS sits anywhere near 33, and a positive gamma/negative decay trade near 40.

Then the rules are simple. With negative gamma/positive decay, you need to defend your position by buying strength and selling weakness. In order to profit on it, you need to lose less on poor stock trading than you earn each day on your positive decay (theta).

In the example, you earn an average of about $100 decay daily in the last weeks before expiration (less than that earlier in the two-week window, and more than that later). That's your

cushion to trade stock poorly. Sounds easy, right? You have the wind at your back in the form of time decay. You just need to root against any violent action in the PAAS price.

Rising PAAS presents the opposite scenario. You can now put your finger over the PAAS puts (possibly by simply closing them out...more on that later). But now you have the wind in your face. You love the fact that you get longer into strength, but it costs money in the form of time decay. So you must "beat your sheets." That is, you must earn more buying and selling PAAS profitably than you pay in daily decay.

Depending on the circumstances, you may consider closing the position, or rolling out to a future cycle as the best way to manage if the shorts get too near the 40 strike. You may as well cover the puts when they get dollar cheap. Why?

Late in the cycle, this has become a long-gamma-around-strike play if it sits too near 40. If you want to go long-near-month-option-gamma as expiration fast approaches, don't bother putting on a collar.

You initially placed this bet because you expected one of two outcomes, an exciting rally or a meandering decline. If neither happened, you got it wrong. And now time has elapsed on the bet. You can hang in longer by rolling, or you can just close and move on. But you always want to assiduously avoid placing unintentional bets. It's a serious danger when a collar goes against you.

Mix and Match

You have expanded your collars to use them with long and short stock, and you are delta neutral instead of 1:1:1. But you can do more. How about different call and put quantities? Or different expiration cycles? Or more than one strike?

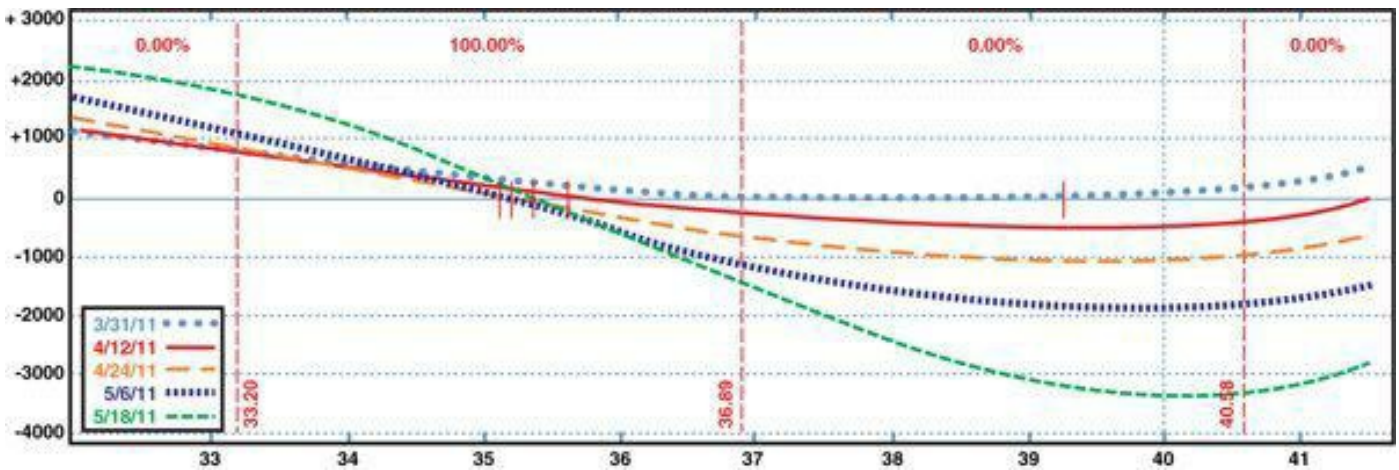
You can make it more of a long volatility bet. You will still short ten May 33 puts at 1.10, but will now go long 20 May 40 calls and short 1,000 shares of PAAS.

This gets you long volatility and gamma to the upside thanks to the 2 by 1 long calls versus short stock parts of the position. On

the downside, you shorted an identical number of shares to your short put position, so you have clearly defined risk. In fact, you earn the net credit you took in on the trade. You can convert the 1,000 short shares at $36.90 and the ten puts sold at 1.10 to a sale of ten May 33 calls. And if you disregard cost of carry (not a silly assumption with microscopic interest rates), you can say you shorted those ten calls at 5, or a total of $5,000. Against that you bought 20 May 40 calls for 1.10, or a total of $2,200. So if PAAS expires in May at $33 or anywhere below, you will earn $2,800 on this trade.

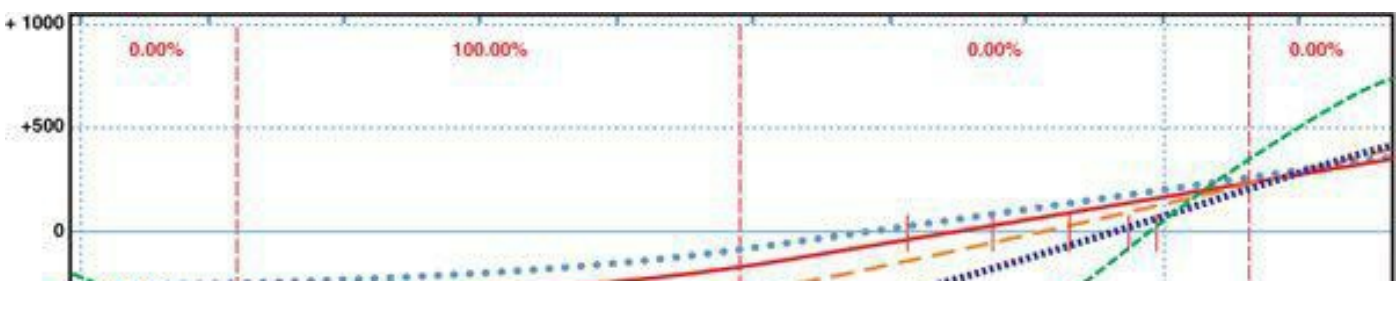
That all sounds great, right? Win on the downside with no unhedged risk and win on the upside with a windfall on a PAAS explosion. You might like the trade, but do have a tradeoff. And this tradeoff is just like the Inverted PAAS Collar starting in Graph 4 where you risked a slow move to $40. Only it's worse this time because you own a greater quantity of option paper.

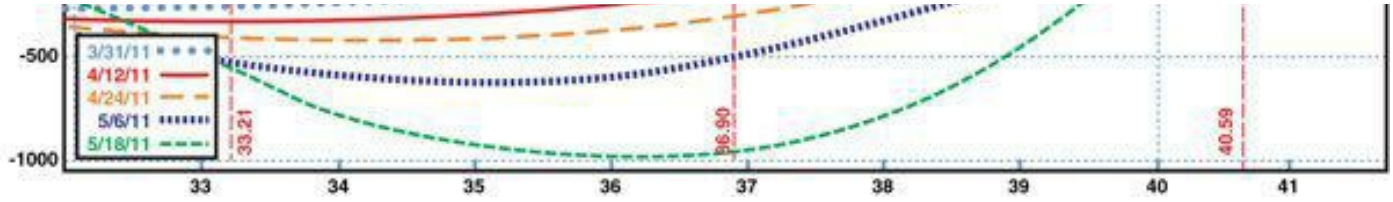
Graph 11 shows the P&L of the position; each line represents different dates as you get closer to expiration.



Graph 11 P&L, Inverted PAAS Ratio Collar

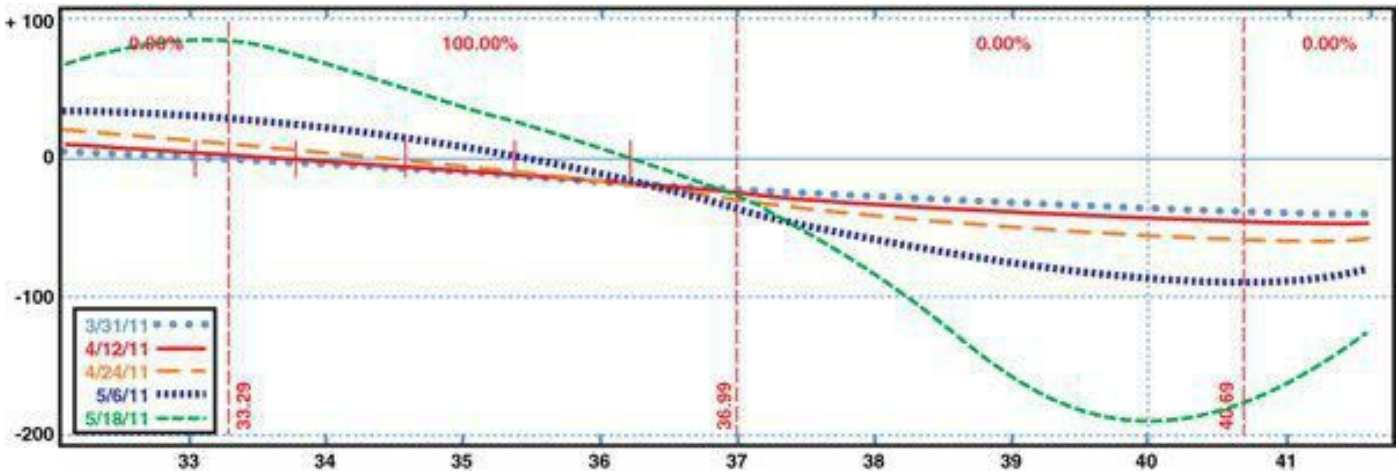
The delta is shown in Graph 12.





Graph 12 Inverted PAAS Ratio Collar, Delta

Graph 13 shows the theta.



Graph 13 Inverted PAAS Ratio Collar, Theta

You get longer and longer on the way up, but around 40, the daily cost of maintaining the position gets prohibitive, and exponentially more so as you approach expiration.

You put this on partly to get long some upside option gamma, so you have to know that if the stock gets above 40, you better start trading it a bit. As expiration approaches, your time decay curve will bend sharply.

Graphs on Greeks on this particular position have value; they tell us when and where you need to start trading stock. But you can't know your P&L ahead of the fact since you don't when, if, or how well you will trade the underlying PAAS stock. That's the good news, not losing as much as Graph 13 indicates.

The flip side? You will likely not sit and watch the stock drift quietly into the night when it starts declining, especially late in the trade. You get short in the mid 30s over time and can't risk that PAAS will not make a U-turn at some point and head back

toward 40.

You will almost surely start buying PAAS and will probably turn your defined risk trade into a short gamma play around 33. And in a mirror image of the PAAS-rally case, you will probably underperform the P&L projections shown on Graph 13.

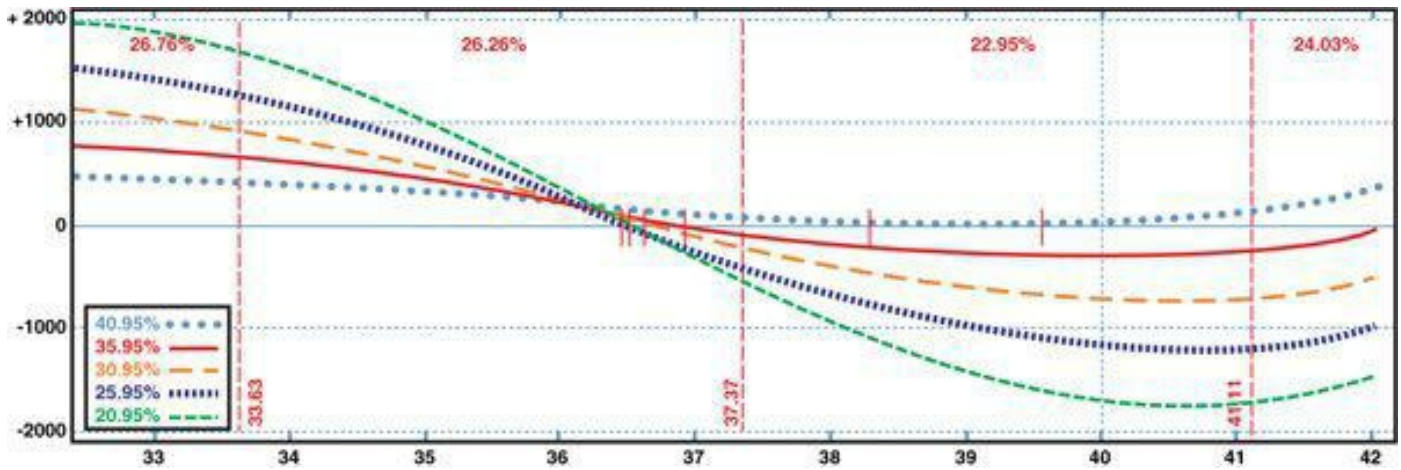
Net–net, you will still win on most slow declines and most large advances, so will still root the same way as the initial position suggests. You just won't win as much on the downside or lose as much on a meandering upside as you might think.

Volatility Exposure

It's an important point that playing with ratios on collars may put you into a bet on implied volatility on the underlying stock that you may or may not realize.

Let's go back to the original inverse PAAS collar but with double the size for positions. You short 1,200 PAAS shares versus going long 20 May 40 calls and short 20 May 33 puts.

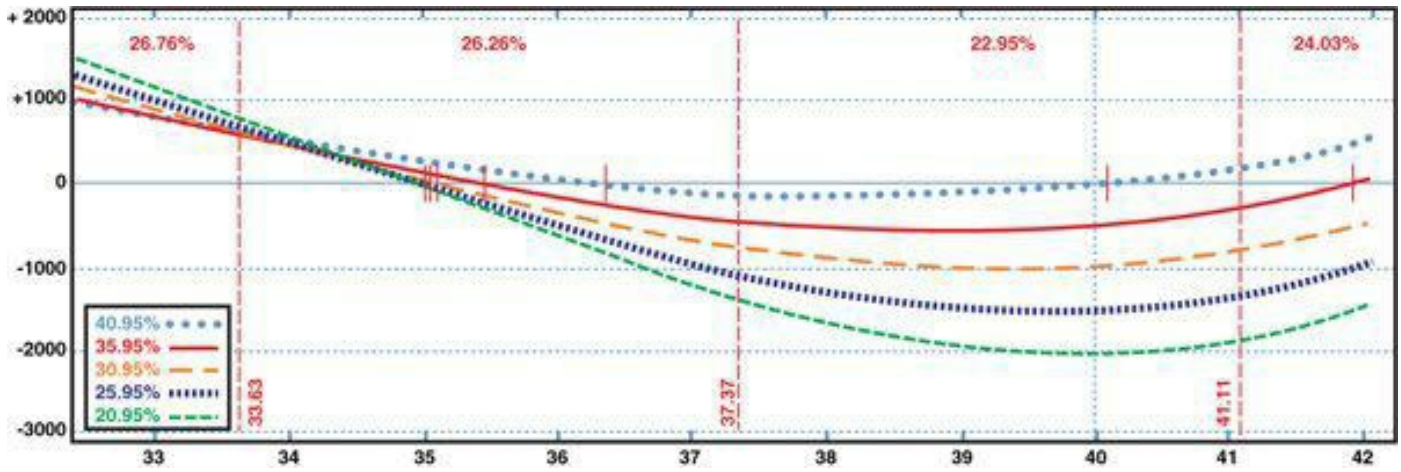
Graph 13 shows the exposure to volatility, in five-point increments. What happens to your P&L today (about seven weeks until expiration) at various price points and at different (and lower) volatility levels?



Graph 14 P&L On Inverted PAAS Ratio Collar

Now compare that PAAS position to Graph 14, but for your ratio PAAS collar, short 1,000 shares of PAAS versus short 10

May 33 puts and long 20 May 40 calls, as shown in Graph 15.



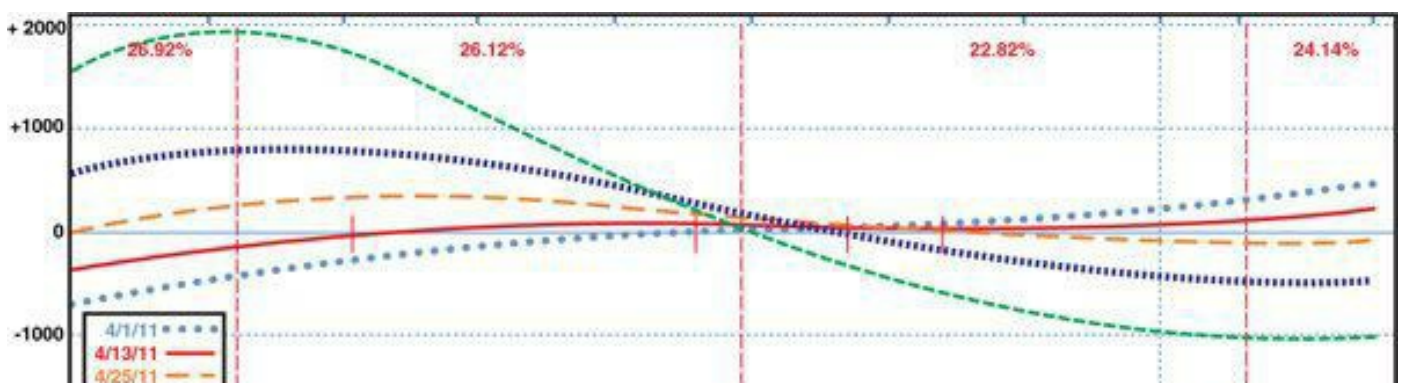
Graph 15 P&L On Inverted PAAS Ratio Collar, Call Size Equals Put Size

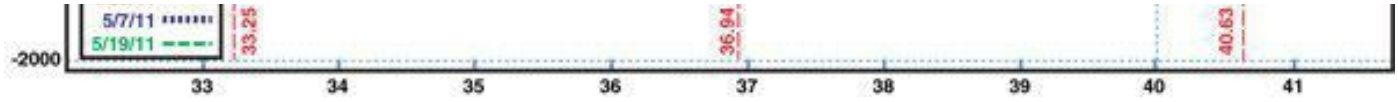
This has significantly more exposure to a decline in volatility at PAAS prices in the high 30s.

There's nothing wrong with making a bet on implied volatility of the underlying stock. You do that on most option plays. The difference here is that your bet can sneak up on you on what feels like a volatility-neutral trade.

Mixed Cycle Collars

Another example: You buy July 40 calls in PAAS instead of May 40 calls. Here's the position. You own 20 PAAS July 40 calls for $2.20, you shorted 20 May 33 puts at $1.10, and shorted 1,200 shares of PAAS at $36.90. The P&L looks like Graph 16.



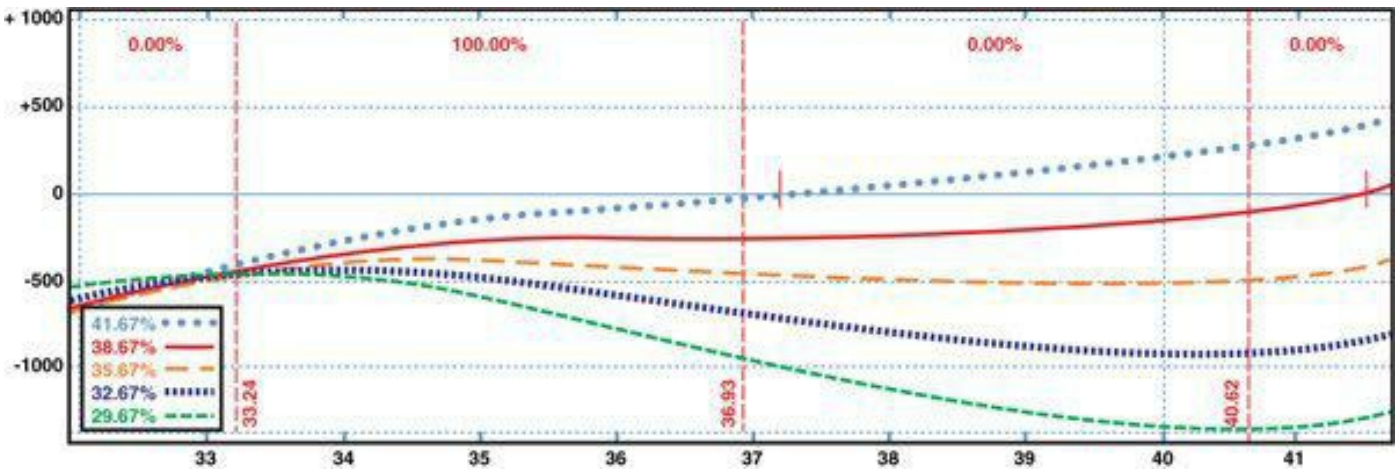


Graph 16 P&L, Mixed Cycle PAAS Collar

I like the concept. You get long a bit of time and it loosely resembles a calendar spread. You also acquire some upside gamma via the extra July calls, with the May puts you sold cutting into the overall cost.

It's not different from using May options on both sides. You still want either a fast lift or a slow decline. The slow lift does not hurt you as much. But if you use May, you have a different risk. Implied volatility could decline, and that impacts the longer-dated July options more than it dents the shorter-dated May options. Whatever you save on reducing your daily decay, you could lose on vega, the sensitivity of your P&L to moves in implied volatility.

Graph 17 shows what happens to your P&L as PAAS drops volatility in three-point increments.



Graph 17 P&L On Volatility Moves, Mixed Cycle PAAS Collars

This offsets gains you make by paying less daily decay on the July options.

Picking Stocks to Collar

I used PAAS for most of my examples for reasons that have more to do with illustrating various collars than actually ones I trade. I wanted a lower dollar value name so I could increase the quantities enough in the examples without getting a position limited by capital requirements. Imagine a 20 by 20 collar in Apple (AAPL) that requires you to go long or short 1,200 shares of a $350 stock. Very few have enough to allocate to such a position. And even those that do have enough should not play a collar that big in AAPL anyway. It's very inefficient use of capital on a stock in that price range.

I like to trade options on stocks in the $30 to $60 range. Anything lower and I feel like I need too many contracts. Higher (and not particularly volatile) and I can't allocate enough to get the trade to work.

I also like that PAAS has strikes $1 apart. That's a new feature in many issues, and a great one if you're looking for a multiple strike strategy. If you want to tailor it so you can use identical quantities and make it dollar neutral, dollar-wide strikes always allow for that.

What I don't love about a stock like PAAS is that if I put on a collar on something other than a 1:1:1 ratio, I want windfall potential. Depending on which way you go, you have either extra downside puts or extra upside calls. I want to occasionally get lucky and have the stock gap well above the strike of my long calls or below the strike of my long puts.

Could a plain-vanilla silver miner like PAAS ever gap up? Of course it could. Any stock can at some point. But I would probably look more for trending names, something making new highs with increasing volatility. Part of what you're doing here is getting long some option volatility in one direction at little to no initial cost.

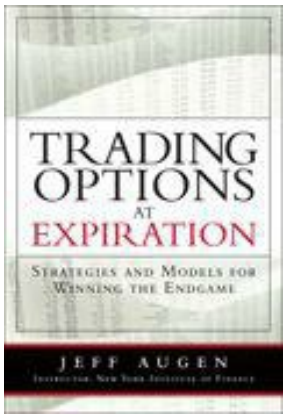
So look for stocks at reasonable price levels and high or uptrending volatility. And of course, look for liquid stocks. PAAS fits some, but not all of these criteria.

Summing It Up

You started with a small collar trade that locked in some accrued profits on the stock trade. You then ventured out into initiating the trade as a collar. You then expanded the size to make the collar a base position to trade against. You also inverted it to create a better fit for your opinion on the volatility of the underlying stock. And finally, you saw how to use more than one expiration cycle, combining the concepts of collars and calendar spreads into one trade.

Standard collars work great when you want to realize a win on a pre-existing position. Ratio collars work great as a trading position. You can set the collar up for active position management, or just as easily set it for more passive monitoring. And you can tailor all of them to greater capital efficiency.

And I believe somewhere in that spectrum lies a position or a trade for almost everyone.



If you liked this Short, you might like the book by Jeff Augen, *Trading Options at Expiration: Strategies and Models for Winning the Endgame* (ISBN: 978-0-13-505872-5).

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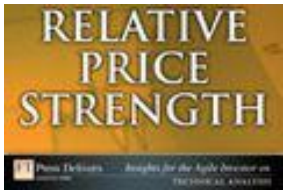

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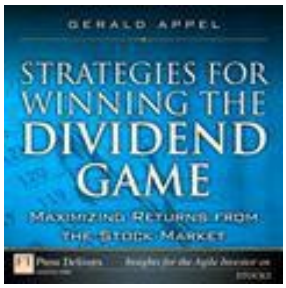

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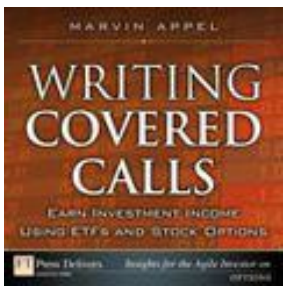

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