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Professional Options Trading Masterclass POTM

Video 11 Index Options & Portfolio Hedges

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Index Options and Portfolio Hedges

“Black Swan” Events Explained

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Index Options and Portfolio Hedges

“Black Swan” Events Explained

Once we thought all the Swans in the World were white, until Australia was discovered..., then we realized that Black Swans existed.

A “Black Swan” in financial markets is an event that has not occurred in the past, thus rendering risk management models based on historic data useless.

Such a risk model would assume that all Swans were White. [Email : rehabes57@gmail.com](mailto:rehabes57@gmail.com)

In this Video we will explore Portfolio hedges for Retail Traders and concentrate on the Long Only Portfolio choices for Options Hedges.

This is because the vast majority of Retail Traders have a Long Bias to Financial Markets overall because they have pensions AND even within their trading accounts, being Long is generally always favoured as a directional bias due to unlimited returns.

This is one of the main reasons we teach Long / Short Portfolio Management in the PTM Video Series

Returns need to be risk adjusted. How much risk do you take to make the return that you achieve?

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“Black Swan” Events Explained

Is it better to have a 25% return with an annualized risk of 50% as a trader or is better to have a 15% return with 12% annualized risk?

Clearly it is better to have the latter..., why? ..., because you are achieving a higher return to the risk you are taking.

When we calculate returns we look at a trader's portfolio and ask the question..., how much was the trader up or down in the last year?

When we calculate risk we look at what risk they took to achieve those returns?

We are looking at historical data and looking backwards.

When we look at a 10, 15 or 20 stock portfolio we look at the risk they are taking generally on a 3-6 month rolling annualized basis. So we are looking at the level of risk they are taking now and for the last 3 or 6 months average and annualize it.

Risk is measured by the Annualized Standard Deviation of the traders Portfolio or the Volatility of the Portfolio based on historical Stock movements.

“Black Swan” Events Explained

If you are Long Only in Mega Caps and Large Caps (typical pension) you are one way. The Volatility of your Portfolio will be close to or at the market level i.e. the S&P500. If the market goes down you will lose money and if the market goes up you will make money.

In having a Long / Short mandate, the aim is to reduce the risk in your portfolio and get a higher return than the risk you take.

If the market falls, then Long Only Retail Traders (Pension fund holders) or Retail Traders with a large Long Bias in the Market will lose money and likely get the market return in that year or worse. Long / Short Portfolios or Hedged Portfolios will outperform.

If you can predict every market fall, congratulations..., but we know that not to be true of anyone.

This is why learning Long / Short Portfolio management is so important. Yes you may “underperform” in some years in the Stock Market. But in the times when the market falls, Long / Short Portfolios should always outperform Long Only Portfolio’s.

The Short side of a Portfolio reduces the overall Volatility of returns in a Portfolio and Portfolio Hedges using Options have the same effect.

Hedges against unforeseen “Black Swan” events are absolutely necessary to reduce Portfolio / Volatility Risk even when the likelihood of a market collapse is very low.

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Index Options as a Portfolio Hedge

Buying OTM Puts on the S&P500 Index ETF the SPY.

Let's assume your Portfolio is Long Only (typical pension) and is broadly representative of the Index i.e. you are Long a lot of Mega Cap and Large Cap Stocks in your Portfolio.

You are essentially Long the Market and you have Market Risk, Sector Risk and Stock Risk in your Portfolio. If the Market goes up 20% in a year you will likely make 15-25%. If it goes down by 20% in a year you will likely be down 20%-30%.

What % of your Portfolio would you pay each year to ensure that you can eliminate this risk?

Index Options and Portfolio Hedges

Index Options as a Portfolio Hedge

Suppose in the last 7 months your \$87K portfolio (marked on July 1st 2017) is now up 15% i.e. \$100K

You are still Long Only and you are worried about a 10, 15, 20% fall in the Market because your portfolio is broadly representative of the S&P500

By going Long OTM SPY Puts (Long Dated) you can spend some of the performance in your portfolio made so far, reduce the Volatility of your Portfolio and be Hedged against a Market fall.

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Index Options as a Portfolio Hedge

Symbol	Description	Last	Net Chg	Bid	Ask	High	Low	Volume	Hist Volatility	Position	Account
SPY	SPDR S&P 500 ETF	273.11	0.08	273.21	273.34	275.32	272.27	160,420,135	13.57 %		All Accounts

CALLS						PUTS					
Pos	Open Int	Delta	Bid	Ask	Strike	Bid	Ask	Delta	Open Int	Pos	
29 Mar 18 (38d) Quarterly									18.92%	(±13.45)	
20 Apr 18 (60d)									17.04%	(±15.18)	
18 May 18 (88d)									16.90%	(±18.21)	
15 Jun 18 (116d)									19.85%	(±24.56)	
29 Jun 18 (130d) Quarterly									18.37%	(±24.06)	
	426	0.67	16.48	16.65	264	6.86	6.98	-0.34		131	
	5,249	0.66	15.70	15.92	265	7.12	7.23	-0.35		14,548	
	33	0.65	14.99	15.16	266	7.39	7.50	-0.36		3,508	
	17	0.63	14.23	14.45	267	7.66	7.77	-0.37		229	
	47	0.62	13.52	13.73	268	7.94	8.06	-0.39		170	
	11	0.61	12.81	13.01	269	8.25	8.37	-0.40		919	
	13,637	0.59	12.12	12.32	270	8.56	8.69	-0.41		10,914	
	106	0.58	11.47	11.63	271	8.90	9.01	-0.43		459	
	190	0.56	10.78	10.97	272	9.23	9.36	-0.44		387	
	5	0.54	10.13	10.31	273	9.57	9.72	-0.46		206	
	0	0.53	9.52	9.68	274	9.97	10.10	-0.47		169	
	7,954	0.51	8.88	9.06	275	10.37	10.50	-0.49		1,869	
	44	0.49	8.29	8.47	276	10.78	10.92	-0.50		130	
	5	0.47	7.73	7.88	277	11.20	11.36	-0.52		152	
	3	0.45	7.18	7.33	278	11.67	11.82	-0.54		86	
	3	0.44	6.64	6.79	279	12.14	12.30	-0.55		0	
	6,682	0.42	6.13	6.28	280	12.63	12.81	-0.57		4,075	
	20	0.40	5.65	5.79	281	13.14	13.33	-0.59		10	
	14	0.38	5.19	5.32	282	13.69	13.90	-0.60		10	
	112	0.36	4.88	5.01	283	14.25	14.47	-0.62		123	
20 Jul 18 (151d)									18.62%	(±26.28)	
21 Sep 18 (214d)									18.18%	(±30.56)	
28 Sep 18 (221d) Quarterly									17.26%	(±29.47)	
21 Dec 18 (305d)									17.81%	(±35.76)	
31 Dec 18 (315d) Quarterly									15.84%	(±32.29)	
18 Jan 19 (333d)									17.83%	(±37.42)	
15 Mar 19 (389d)									18.51%	(±42.03)	

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19:32 / 48:32 You decide to buy 4X June 29th 2018 3.5% OTM Put Options for 6.85 to protect your portfolio

Index Options and Portfolio Hedges

Index Options as a Portfolio Hedge

Current SPY price (February 16th 2018) = 273.11

96.5% of current SPY price = $(273.11 \times 0.965) = 263.55$

June 29th 2018 Put Contract current mid price approximately 6.85

To Hedge your Portfolio you buy 4X 264 Strike SPY Puts for 6.85

Notional \$ Exposure of Puts = 4×100 (Multiplier) $\times 264 = \$105,600$

Cost = $4 \times 100 \times 6.85 = \$2,740$

If the market sells off by 3.5% or more before June 29th 2018 (5 Months away) your Puts will be In the Money

You start making money on the Puts when the Market goes below $(264 - 6.85) = 257.15$

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Index Options as a Portfolio Hedge



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$$\{1 - (257.15 / 273.11) \times 100\} = 5.84\%$$

Now if the market collapses for whatever reason more than 5.84%, your Portfolio of Longs that will lose \$X if the market sells off will be either partially or fully offset by the gains you make on the Puts position.

What happens if the Market sells off by 20%?

$$\text{SPY will now be } (273.11 \times 0.8) = 218.48$$

$$\text{Your Puts will be roughly 14\% In The Money or } (264 - 6.85 - 218.48) \times 400 = \$15,468$$

So if the rest of your portfolio lost 15.5% the \$ loss in the portfolio would be fully negated / hedged.

The reason why we show this is that for the Retail Trader Mandate, Long Puts on single Stocks is Useful as is Long Puts for Portfolio Insurance.

Don't initiate these types of positions with the intention to trade out of them should they start making \$.

You made the decision to spend \$2,740 in this example to be close to or as fully hedged as possible.

Like when buying Fire Insurance on your home, you buy it with the intention & hope of never having to use it.

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Index Options as a Portfolio Hedge

If you make money from it treat it as a Bonus.

Also think of it in relative terms i.e. against all other Long Only portfolios in the market.

When their portfolio value goes from \$100K to \$80K or even \$70K i.e. 20%-30% drawdown, yours goes to \$95K-\$100K or 5% to 0% drawdown.

If the market continued going up you would underperform them by a few percent each year, but you could do this for 5,7,10 years and all the time your Portfolio would have significantly lower Volatility and therefore risk adjusted returns especially in the year you massively outperform.

If the market rallied 20% for the next year and you were up 17% because you bought downside protection who cares?

You are a more efficient investor / trader. They took 20% risk to achieve 20% return and you likely took 10%-13% risk to achieve 17% return.

Also, if the market went down 20% you would be down 0%-5% while everyone else is down 20%-30%

Index Options and Portfolio Hedges

Call Overwriting as a Portfolio Hedge

Let's say for example you calculate that your Long Only Portfolio is 35% weighted to FAANG Stocks (Facebook, Apple, Amazon, Netflix, Google)

... and you are worried about the dispersion of tech Stock contribution to overall market performance and to your portfolio.

You decide to overwrite your entire \$100K Portfolio by selling 5% OTM Call Options on the NASDAQ Index (QQQ ETF).

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Index Options and Portfolio Hedges

Call Overwriting as a Portfolio Hedge

Symbol	Description	Last	Net Chg	Bid	Ask	High	Low	Volume	Hist Volatility	Position	Account
QQQ	PowerShs QQQ Trust Series 1	165.13	-0.57	165.05	165.14	166.76	164.68	62,256,291	16.75 %		All Accounts

CALLS										PUTS			
Pos	Open Int	Delta	Bid	Ask	Strike	Bid	Ask	Delta	Open Int	Pos			
29 Mar 18 (38d) Quarterly									22.41%	(±9.63)			
20 Apr 18 (60d)									20.29%	(±10.93)			
18 May 18 (88d)									21.10%	(±13.75)			
15 Jun 18 (116d)									23.15%	(±17.33)			
29 Jun 18 (130d) Quarterly									20.00%	(±15.84)			
	630	0.71	13.77	14.22	156	4.23	4.46	-0.30		487			
	1,082	0.70	13.02	13.47	157	4.47	4.69	-0.31		200			
	558	0.68	12.31	12.72	158	4.72	4.95	-0.33		1,855			
	3,281	0.66	11.57	11.99	159	5.24	5.24	-0.34		182			
	2,164	0.64	10.87	11.27	160	5.30	5.55	-0.36		543			
	107	0.63	10.19	10.57	161	5.59	5.85	-0.38		205			
	170	0.61	9.53	9.89	162	5.92	6.18	-0.40		70			
	209	0.59	8.88	9.24	163	6.23	6.54	-0.42		77			
	333	0.57	8.25	8.60	164	6.61	6.90	-0.44		147			
	4,655	0.54	7.64	7.97	165	6.99	7.30	-0.46		452			
	344	0.52	7.06	7.39	166	7.39	7.71	-0.48		96			
	758	0.50	6.50	6.81	167	7.82	8.15	-0.50		71			
	480	0.48	5.97	6.27	168	8.27	8.61	-0.52		68			
	269	0.45	5.44	5.74	169	8.80	9.10	-0.54		21			
	3,414	0.43	4.95	5.25	170	9.30	9.61	-0.57		95			
	224	0.41	4.49	4.77	171	9.75	10.15	-0.59		20			
	379	0.38	4.04	4.32	172	10.26	10.72	-0.61		0			
	388	0.36	3.63	3.90	173	10.87	11.31	-0.63		0			
	21	0.33	3.24	3.50	174	11.44	11.95	-0.66		0			
	25,776	0.31	2.87	3.14	175	12.08	12.61	-0.68		486			
21 Sep 18 (214d)									20.64%	(±20.99)			
28 Sep 18 (221d) Quarterly									22.22%	(±22.99)			
21 Dec 18 (305d)									20.69%	(±25.16)			
31 Dec 18 (315d) Quarterly									21.70%	(±26.84)			
18 Jan 19 (333d)									21.59%	(±27.45)			
17 Jan 20 (697d)									20.59%	(±38.11)			

Options Analysis Manage Search

Trade

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Call Overwriting as a Portfolio Hedge

Current QQQ Price = \$165.13

105% OTM is $(\$165.13 \times 1.05) = 173.38$

On Feb 16th 2018 the June 29th 174 Call Option is bid at \$3.24 and offered at \$3.50 – Let's assume we get the mid price of \$3.37

Against your \$100K portfolio you sell 6X \$174 Strike Calls at 3.37 for June 29th Expiry

Notional 6X 100 (multiplier) X \$174 Strike = \$104,400

Premium Collected = $(6 \times 100 \times \$3.37) = \$2,022$

You have collected \$2,022 as “income” and you want the QQQ to settle at 174 or below by the close on June 29th.

If the 35% of your Portfolio in Tech Stocks goes lower it slightly helps to soften the blow.

However remember with the Covered Call Options Strategy on single Stocks, that the \$ upside is limited to the Premium you collect and your max gain in \$ is limited to the Strike of the Call Option you have written.

We have included it here as a “Useful” Portfolio Hedge Strategy in the same way as it is for single Stocks

Index Options and Portfolio Hedges

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Call Overwriting as a Portfolio Hedge

i.e. in the 4 scenarios;-

Hedge against Long Stock Position that is positive P/L and collect Premium.

Hedge against Long Stock Position that is Negative P/L and collect Premium.

Hedge against Long Stock Position in a Dividend paying Stock that is going ex-Dividend very soon and collect Premium.

Getting a “better” execution price on an intended Long Stock Position.

For Example not many Tech Stocks pay substantial Dividends but let's say because you knew all the big weighted companies that pay big dividends in the SPY are all going ex-Dividend in the next few weeks. You might write an SPY Call (neutral) and collect some income.

As a hedge though it is not as effective as buying an outright Put or a Covered Call Collar because you get no protection on the downside if the market does indeed fall.

In this example you collected \$2,022 in premium. If your Portfolio fell by more than 2% you would not be protected beyond that.

In Bear Markets, Volatility is higher across the Market and Selling Calls works better as a Hedging Strategy because you collect higher premiums versus a Low Volatility Bull Market environment where premiums are lower.

In Bear Markets the short term rallies / short squeezes tend to be bigger in magnitude than the sell offs (bleeding), so there is usually an excessive demand for OTM Calls. Basically the exact opposite of Bull Markets.

Long Puts should be a core Strategy in Bull Markets and Short Calls (Overwriting) should be a core strategy in a Bear Market

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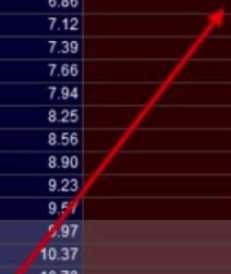
Index Options and Portfolio Hedges

Introduction to Put Spreads as a Portfolio Hedge

Symbol	Description	Last	Net Chg	Bid	Ask	High	Low	Volume	Hist Volatility	Position	Account
SPY	SPDR S&P 500 ETF	273.11	0.08	273.21	273.34	275.32	272.27	160,420,135	13.57 %		All Accounts

CALLS						PUTS					
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	17	0.63	14.23	14.45	267	7.66	7.77	-0.37		229	
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	11	0.61	12.81	13.01	269	8.25	8.37	-0.40		919	
	13,637	0.59	12.12	12.32	270	8.56	8.69	-0.41		10,914	
	106	0.58	11.47	11.63	271	8.90	9.01	-0.43		459	
	190	0.56	10.78	10.97	272	9.23	9.36	-0.44		387	
	5	0.54	10.13	10.31	273	9.57	9.72	-0.46		206	
	0	0.53	9.52	9.68	274	9.97	10.10	-0.47		169	
	7,954	0.51	8.88	9.06	275	10.37	10.50	-0.49		1,869	
	14	0.49	8.29	8.47	276	10.78	10.92	-0.50		130	
	5	0.47	7.73	7.88	277	11.20	11.36	-0.52		152	
	3	0.45	7.18	7.33	278	11.67	11.82	-0.54		86	
	3	0.44	6.64	6.79	279	12.14	12.30	-0.55		0	
	6,682	0.42	6.13	6.28	280	12.63	12.81	-0.57		4,075	
	20	0.40	5.65	5.79	281	13.14	13.33	-0.59		10	
	14	0.38	5.19	5.32	282	13.69	13.90	-0.60		10	
	112	0.36	4.76	4.88	283	14.25	14.47	-0.62		123	
20 Jul 18 (151d)									18.62% (±26.28)		
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31 Dec 18 (315d) Quarterly									15.84% (±32.29)		
18 Jan 19 (333d)									17.83% (±37.42)		
15 Mar 19 (389d)									18.51% (±42.03)		

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▶ 39:27 / 48:32 Example: We looked at buying 4X June 29th 2018 3.5% OTM Put Options for \$6.85 to protect a \$100K portfolio



Index Options and Portfolio Hedges

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Introduction to Put Spreads as a Portfolio Hedge

Symbol	Description	Last	Net Chg	Bid	Ask	High	Low	Volume	Hist Volatility	Position	Account
SPY	SPDR S&P 500 ETF	273.11	0.08	273.21	273.34	275.32	272.27	160,420,135	13.57 %		All Accounts

CALLS												PUTS	
Pos	Open Int	Delta	Bid	Ask	Strike	Bid	Ask	Delta	Open Int	Pos			
	44	0.95	57.03	57.48	218	1.53	1.58	-0.07		434			
	0	0.94	56.08	56.53	219	1.58	1.63	-0.07		286			
	56	0.94	55.13	55.58	220	1.63	1.68	-0.08		717			
	13	0.94	54.19	54.63	221	1.68	1.74	-0.08		2,590			
	69	0.94	53.25	53.69	222	1.73	1.79	-0.08		1,665			
	496	0.93	52.31	52.77	223	1.79	1.84	-0.08		514			
	54	0.93	51.37	51.80	224	1.84	1.90	-0.09		761			
	139	0.93	50.43	50.86	225	1.90	1.96	-0.09		2,610			
	235	0.92	49.49	49.92	226	1.96	2.02	-0.09		508			
	1	0.92	48.56	48.99	227	2.02	2.09	-0.10		1,094			
	230	0.92	47.63	48.05	228	2.09	2.15	-0.10		141			
	47	0.91	46.70	47.12	229	2.15	2.22	-0.10		82			
	148	0.91	45.77	46.19	230	2.22	2.29	-0.11		1,773			
	21	0.91	44.84	45.26	231	2.29	2.36	-0.11		57			
	313	0.90	43.92	44.33	232	2.37	2.43	-0.11		425			
	138	0.90	43.00	43.41	233	2.44	2.51	-0.12		3,340			
	130	0.90	42.08	42.52	234	2.52	2.59	-0.12		4,407			
	1,248	0.89	41.17	41.57	235	2.60	2.67	-0.13		2,697			
	114	0.89	40.25	40.65	236	2.68	2.76	-0.13		4,330			
	117	0.88	39.34	39.74	237	2.77	2.84	-0.13		1,706			
	235	0.88	38.43	38.83	238	2.86	2.94	-0.14		742			
	151	0.87	37.53	37.92	239	2.95	3.03	-0.14		102			
	1,673	0.87	36.63	36.94	240	3.05	3.12	-0.15		18,359			
	391	0.86	35.73	36.11	241	3.15	3.23	-0.15		113			
	306	0.86	34.84	35.21	242	3.25	3.34	-0.16		4,155			
	453	0.85	33.95	34.32	243	3.36	3.44	-0.16		2,047			
	813	0.85	33.06	33.35	244	3.47	3.55	-0.17		2,702			
	234	0.84	32.18	32.54	245	3.58	3.67	-0.18		2,398			
	907	0.83	31.30	31.65	246	3.70	3.79	-0.18		784			
	815	0.83	30.41	30.78	247	3.83	3.92	-0.19		1,661			
	468	0.82	29.56	29.90	248	3.95	4.05	-0.19		2,522			
	584	0.81	28.70	29.03	249	4.09	4.18	-0.20		2,136			

Now imagine if you bought 4X the \$264 Strike Puts for \$6.85 and sold 4X the \$244 Strike Puts for \$3.50



Index Options and Portfolio Hedges

Introduction to Put Spreads as a Portfolio Hedge

You would spend \$6.85 on the 264 Strike Puts (Debit) and receive \$3.50 by selling the \$244 Puts (Credit)

You would spend $(6.85 - 3.50) \times 400 = \$1,340$ instead of \$2,740

The Maximum Profit on this trade is if the SPY Index ETF closes on the 29th Jun at \$244 i.e. the lower Strike Put

$$\{264 - 244 - (6.85 - 3.50) \times 400\} = \$6,660$$

The \$ upside on the trade is \$16.65 and the downside is \$3.35 or 5X ..., or $\$16.65 / \$3.35 = 5X$

You bet on this Hedge \$1,340 or 1.3% of your Portfolio instead of \$2,740 or 2.74% of your portfolio to make a \$6,660 or 6.66% Max Gain

This is very good risk / reward

You have cheapened your hedge by Selling the same amount of 10% OTM Puts whilst owning 3.5% OTM Puts for the same expiration.

In doing so you have cheapened your Hedge but you have capped your gains. If the market fell 20% in the time period, you would not be protected beyond a drop below the \$244 Strike.

Index Options and Portfolio Hedges

Introduction to Put Spreads as a Portfolio Hedge

So you could buy an outright Put and spend \$2,740 and if the Market drops significantly in the time period, your \$ upside is only limited by the fact that the Market can only go to Zero.

If you thought that it couldn't go down by more than 10% in that period and you wanted to get an effective Hedge on with good Risk-Reward then it is likely that your Stocks will be down around 10% or \$10,000..., you can get a Max Gain from a Put Spread with 5X the Reward \$6,660 versus what you Risk (\$1,340).

So if the Market did fall 10% your Stocks would probably be down 10%, your Put Spread would add 6.66% performance back to the portfolio and you would likely be down overall 3.34%

Not bad if everyone else who has Long Only Portfolios is down 10-15%

You could go and buy 6X contracts instead of 4 and Sell 6X contracts instead of 4 and spend $(\$3.35 \times 600) = \$2,010$ to make $(\$16.65 \times 600) = \$9,990$ and make sure you are as close to or bang on Fully Hedged for a 10% move down in the markets!

... you have still spent less than buying outright Puts! – This is what we mean by Marginal Benefit!