

# QUANTIFIABLE EDGES SUBSCRIBER LETTER

ASSESSING MARKET ACTION WITH INDICATORS AND HISTORY

December 14, 2020

Volume 13 Issue 242

## Market Overview



## Signals Overview

Aggregator	CBI Reading
Long	0

## Tonight's Research Points

- Opex week in December (and basically the rest of the month) has historically been bullish.
- When the market has pulled back heading into Dec opex week, the results have been even more bullish.
- The January Effect is about to kick in, where smallcaps tend to outperform largecap stocks.
- 3 down days from a 50-day high that closes < 10ma but above 10-day low suggest an upside edge.
- Down moves going into any op-ex week have consistently led to bounces.
- The Fed is continuing to pump liquidity.

## *Short-term Outlook*

### *The Bottom Line*

The Aggregator is bullish. Evidence is positive, seasonality is strong, and the SPX is oversold. I like the long side.

**Summary of Recent Active Studies (see Letters from listed dates for details)**

Study Date	Description	Time span	Bias	Avg Run-up	Avg DrawDn	Avg DrawDn - 1 Std Dev
<b>Active - Short Term</b>						
December 14, 2020	Dn 3 from 50-high. < 10ma > 10-low	1-4 days	Bullish			
December 14, 2020	3 down. Friday before opex.	1-2 days	Bullish			
December 14, 2020	December opex week bullish	1-5 days	Bullish			
<b>Active - Long Term</b>						
December 14, 2020	December opex week and more bullish	1-15 days	Bullish			
December 10, 2020	SPX 20 intra-high. NDX biggest dn 20	1-50 days	Bullish	6.20%	-2.80%	-5.40%
November 23, 2020	NASDAQ Leading	int term	Bullish			
November 16, 2020	SPX 50-day %b crosses over 100	1-50 days	Bullish	4.90%	-4.40%	-8.90%
November 2, 2020	Best 6 Months	1-6 months	Bullish			
July 9, 2020	Golden Cross	int term	Bullish			
March 23, 2020	QE4	int term	Bullish			
<b>Dropped Tonight (expired, tgt hit, or avg ddn + 1 std dev exceeded)</b>						
December 11, 2020	SPX dn & RUT up > 1%	1 day	Bullish			
September 28, 2020	4 weeks down > 40-week ma	1-10 weeks	Bullish	8.60%	-3.10%	-7.40%

**The Evidence**

Friday was a down day for the market. The SPX lost 0.1%, the NASDAQ declined 0.2%, and the Russell 2000 fell 0.6%. Breadth was negative with the NYSE Up Issues % coming in at 42% and the Up Volume % at 29%. NYSE total volume declined some from Thursday's level.

We are entering a bullish seasonal period. There are several studies about this worth discussing. The first is copied below from Thursday night's letter.

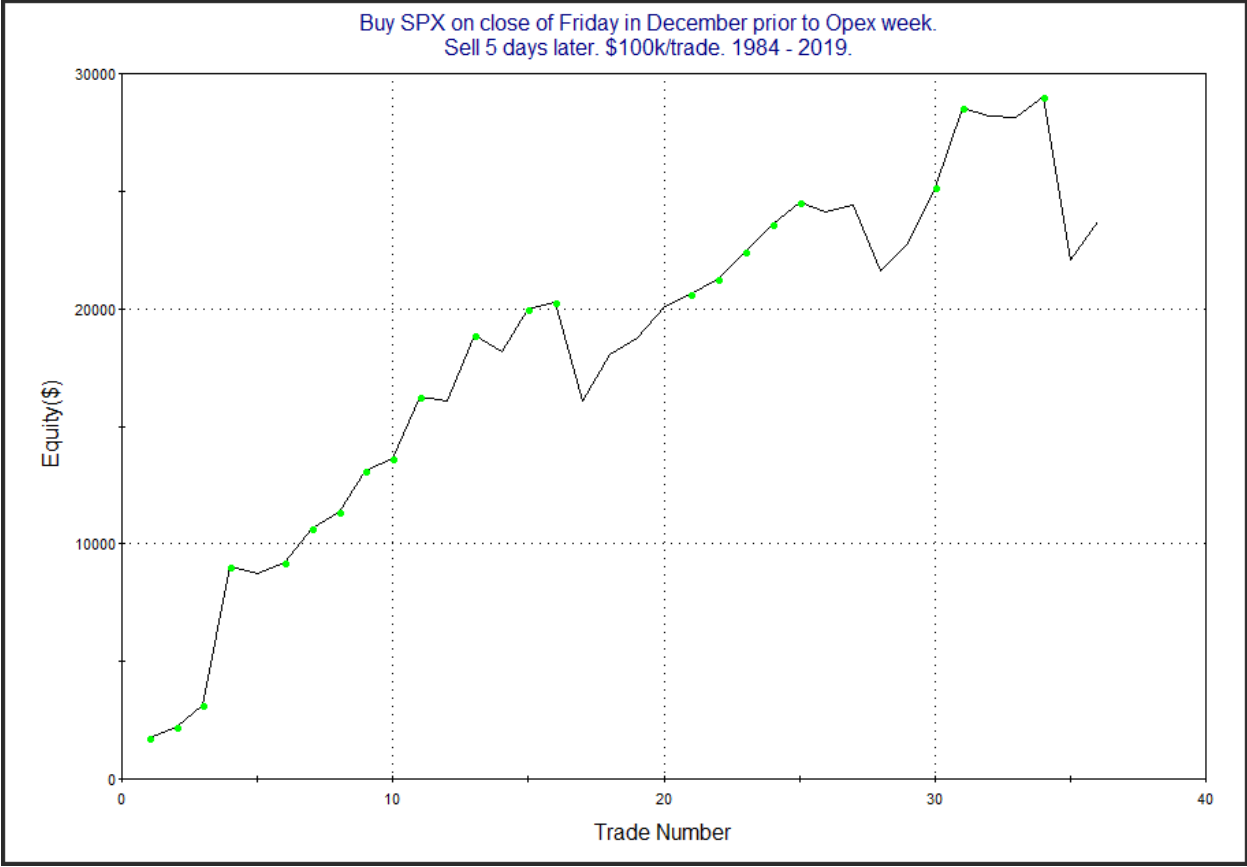
*As we begin to look towards next week, there is some bullish seasonality that will be in play. The study below looks at opex week in December back to 1984, which was the first year that SPX options traded. It also extends out to 15 days. It was last seen in the 12/16/19 letter and has been updated.*

Buy SPX on close of Friday in December prior to Opex week.  
Sell X days later. \$100k/trade. 1984 - 2019.

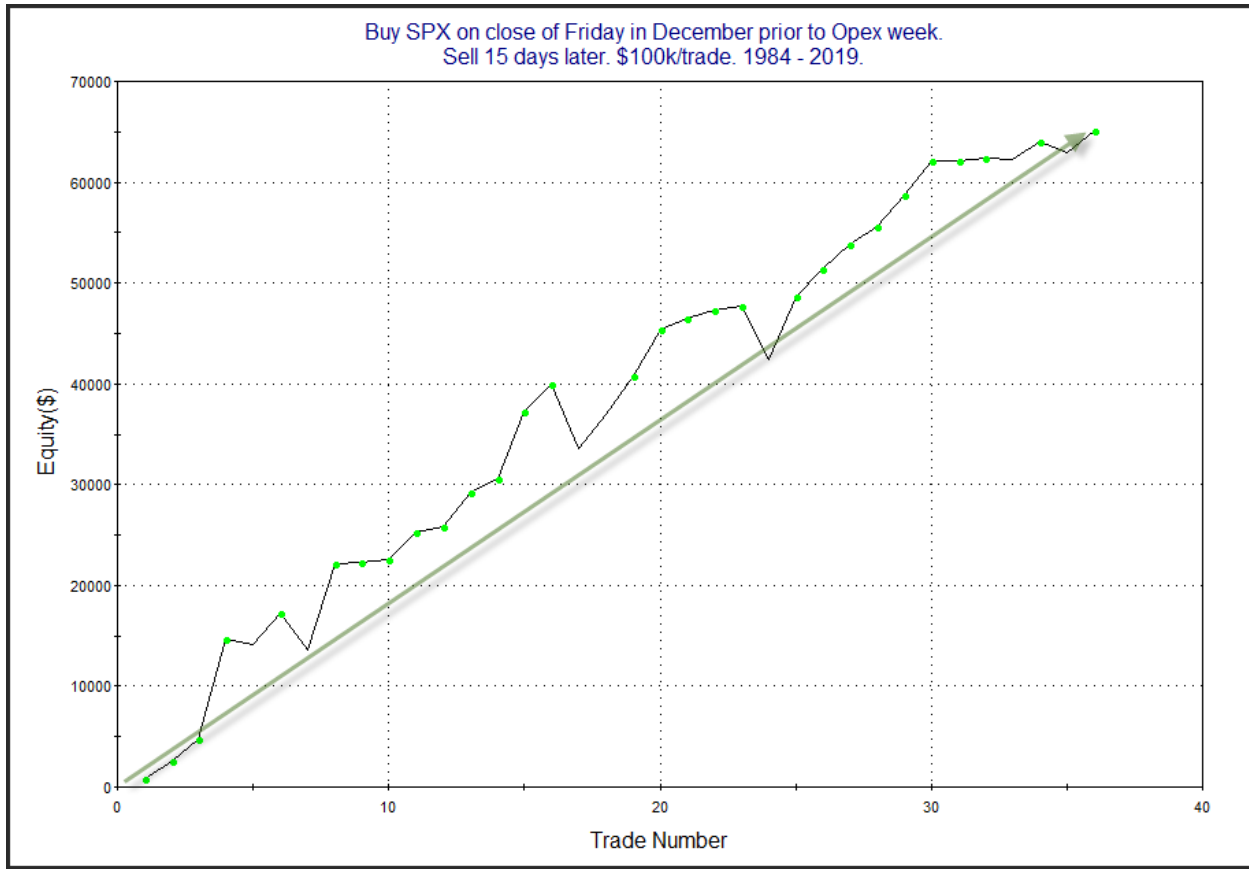
X Days	All: Net Profit	All: Total Trades	All: Winning Trades	All: Losing Trades	All: % Profitable	All: Max Winning Trade	All: Max Losing Trade	All: Avg Winning Trade	All: Avg Losing Trade	All: Win/Loss Ratio	All: ProfitFactor	All: Avg Trade
15	65,103.92	36	30	6	83.33	9,879.20	-6,297.71	2,733.11	-2,814.87	0.97	4.85	1,808.44
14	60,360.36	36	29	7	80.56	8,742.88	-3,579.92	2,581.99	-2,073.92	1.24	5.16	1,676.68
13	58,307.50	36	28	8	77.78	9,068.80	-3,830.44	2,529.63	-1,565.25	1.62	5.66	1,619.65
12	51,484.98	36	26	10	72.22	8,528.00	-5,778.28	2,570.85	-1,535.70	1.67	4.35	1,430.14
11	52,393.82	36	26	10	72.22	8,483.80	-3,966.09	2,513.16	-1,294.82	1.94	5.05	1,455.38
10	46,826.05	36	28	8	77.78	7,974.20	-4,640.61	2,130.07	-1,601.99	1.33	4.65	1,300.72
9	39,677.71	36	24	12	66.67	7,080.80	-6,909.45	2,439.82	-1,573.16	1.55	3.10	1,102.16
8	34,369.90	36	27	9	75.00	7,564.16	-7,650.40	2,060.96	-2,364.01	0.87	2.62	954.72
7	30,324.74	36	27	9	75.00	6,198.88	-5,025.50	1,811.11	-2,063.90	0.88	2.63	842.35
6	23,056.61	36	29	7	80.56	6,025.04	-9,456.30	1,537.18	-3,074.51	0.50	2.07	640.46
5	23,690.73	36	27	9	75.00	5,868.16	-6,968.06	1,464.22	-1,760.35	0.83	2.50	658.08
4	15,669.92	36	25	11	69.44	3,243.60	-5,036.14	1,196.07	-1,293.81	0.92	2.10	435.28
3	19,366.98	36	23	13	63.89	5,410.24	-3,533.62	1,359.50	-915.50	1.48	2.63	537.97
2	18,167.60	36	25	11	69.44	3,779.85	-2,327.34	1,106.66	-863.53	1.28	2.91	504.66
1	4,857.57	36	21	15	58.33	2,912.88	-2,147.10	782.89	-772.21	1.01	1.42	134.93

**2018 was the only year where the market tumbled and never made a higher close in the next 3 weeks. All other years did it within 10 days.**

*The stats here are very strong. Below is an equity curve using a 5-day holding period.*



*The strong upslope was very impressive until the 2018 December drop. Next let's look at the 15-day curve.*



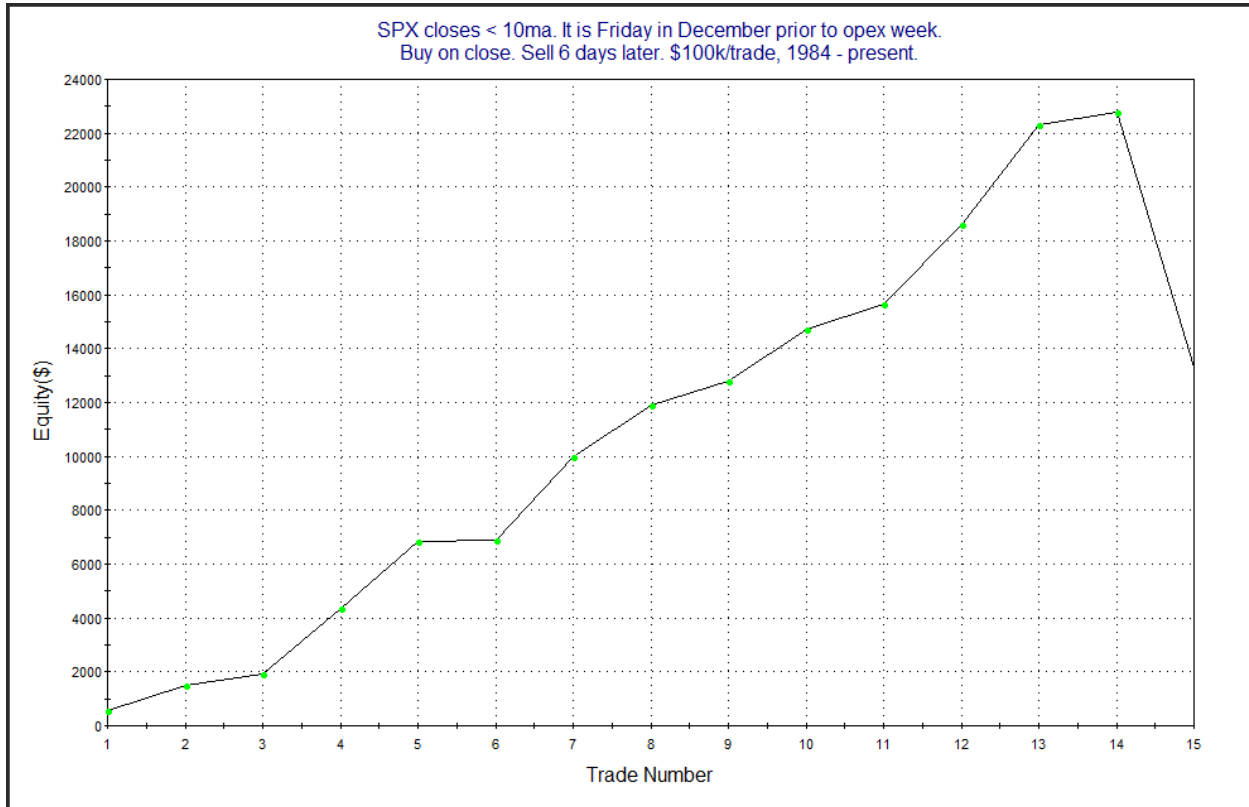
*They don't get much better looking than that. Even the 2018 mini-crash is barely noticeable, and the curve got back to a new high in 2019.*

In the 12/17/18 letter I showed how December opex week has done when the SPX closed below its 10-day moving average on the Friday before opex week. Those results are updated below.

SPX closes < 10ma. It is Friday in December prior to opex week.  
Buy on close. Sell X days later. \$100k/trade, 1984 - present.

X Days	All: Net Profit	All: Total Trades	All: Winning Trades	All: Losing Trades	All: % Profitable	All: Max Winning Trade	All: Max Losing Trade	All: Avg Winning Trade	All: Avg Losing Trade	All: Win/Loss Ratio	All: ProfitFactor	All: Avg Trade
6	13,303.21	15	14	1	93.33	3,734.29	-9,456.30	1,625.68	-9,456.30	0.17	2.41	886.88
5	12,925.72	15	12	3	80.00	3,347.68	-6,968.06	1,743.07	-2,663.72	0.65	2.62	861.71
4	9,917.03	15	10	5	66.67	2,886.10	-5,036.14	1,643.04	-1,302.67	1.26	2.52	661.14
3	8,740.56	15	11	4	73.33	2,974.30	-3,533.62	1,283.74	-1,345.15	0.95	2.62	582.70
2	6,517.05	15	9	6	60.00	2,324.70	-2,044.02	1,304.90	-871.18	1.50	2.25	434.47
1	332.64	15	9	6	60.00	2,343.04	-2,147.10	882.80	-1,268.76	0.70	1.04	22.18

These stats are very impressive. Below is a profit curve that assumes a 6-day exit.



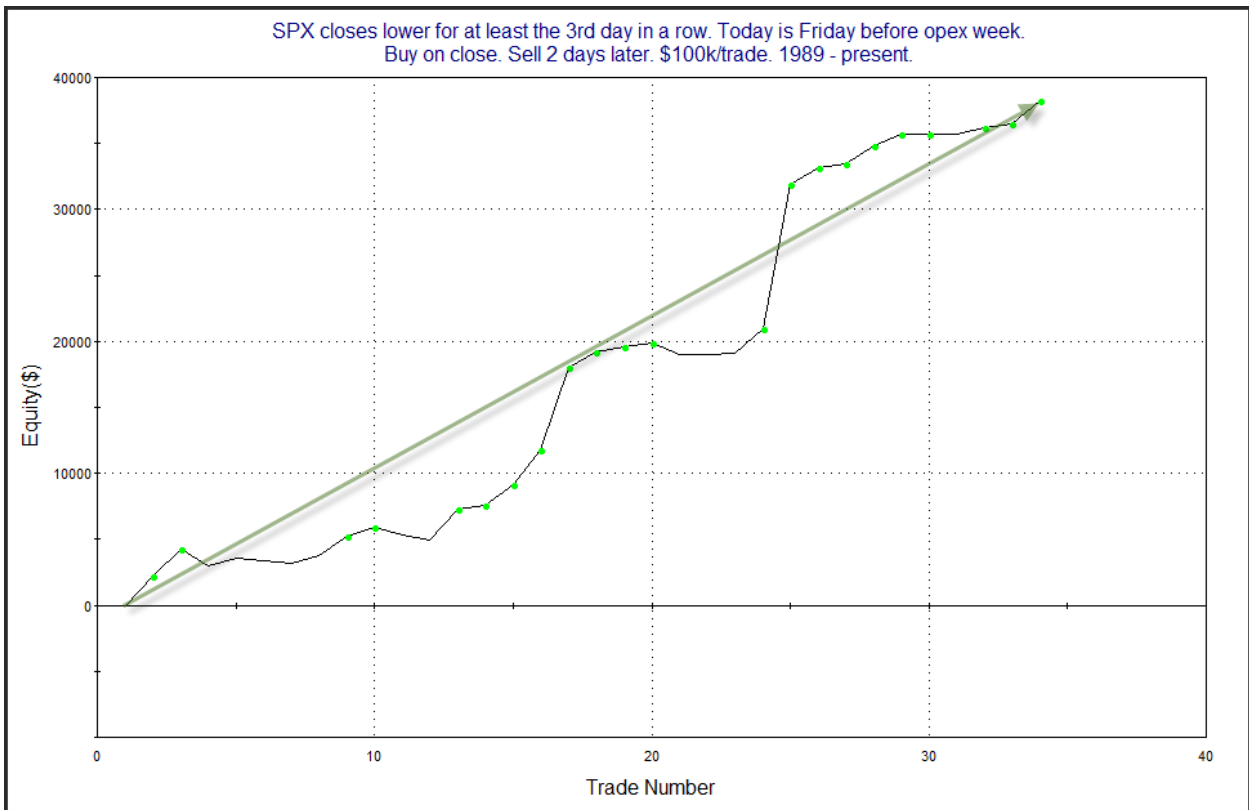
Two things: 1) Oversold going into a strong seasonal period is often a good setup. 2) Nothing works all the time. 2018 was a nice reminder of #2.

In the 8/13/18 subscriber letter I looked at other times SPX closed down at least 3 days in a row and it was the Friday before opex week. Similar concept – a pullback headed into opex. This was a bit stricter, but did not focus just on December. I have updated those results below.

SPX closes lower for at least the 3rd day in a row. Today is Friday before opex week.  
Buy on close. Sell X days later. \$100k/trade. 1989 - present.

X Days	All: Net Profit	All: Total Trades	All: Winning Trades	All: Losing Trades	All: % Profitable	All: Max Winning Trade	All: Max Losing Trade	All: Avg Winning Trade	All: Avg Losing Trade	All: Win/Loss Ratio	All: ProfitFactor	All: Avg Trade
5	37,558.69	34	24	10	70.59	5,393.97	-2,348.40	1,987.34	-1,013.75	1.96	4.70	1,104.67
4	38,004.66	34	24	10	70.59	5,731.96	-2,266.11	1,845.60	-628.98	2.93	7.04	1,117.78
3	33,894.77	34	24	10	70.59	5,215.85	-1,651.00	1,687.92	-661.53	2.55	6.12	996.91
2	38,199.49	34	26	8	76.47	10,965.69	-1,306.06	1,609.61	-456.31	3.53	11.46	1,123.51
1	29,253.31	34	26	8	76.47	11,558.43	-1,075.29	1,297.32	-559.64	2.32	7.53	860.39

Numbers here are strong. Below is a look at the 2-day profit curve.



The 25<sup>th</sup> instance was a sizable outlier but the curve has sloped higher on a pretty consistent basis anyway. And 12 of the last 13 instances have closed higher, so we have not seen it weaken at all to this point.

In past years I discussed the January Effect, which is a tendency that I believe was first published in the Stock Traders Almanac. It suggests that from mid-December into early January smallcap stocks tend to outperform largecaps. My past research has looked back to 1988 and used the Russell 2000 versus the SPX. I found that the bulk of this tendency was realized in the end of December and the 1st day of January. I measured from the 15th of December (or the 1st trading day afterwards if the 15th was a weekend) through the 1st trading day in January. This tendency has remained strong. Since 1988 we have now seen the Russell outperform 24 of 32 years, or 75% of the time. And years of outperformance have greatly outsized years when the Russell underperformed. Gains in the years of outperformance have totaled 41.12%, while the 6 years of underperformance have only totaled 6.94% in losses. That's 6 to 1. And the only losing years to post a loss of greater than 1% was 1991 when the SPX outperformed the Russell by 2.82%, and last year when SPX outperformed by 1.06%. Below is a table that breaks it all down by year.

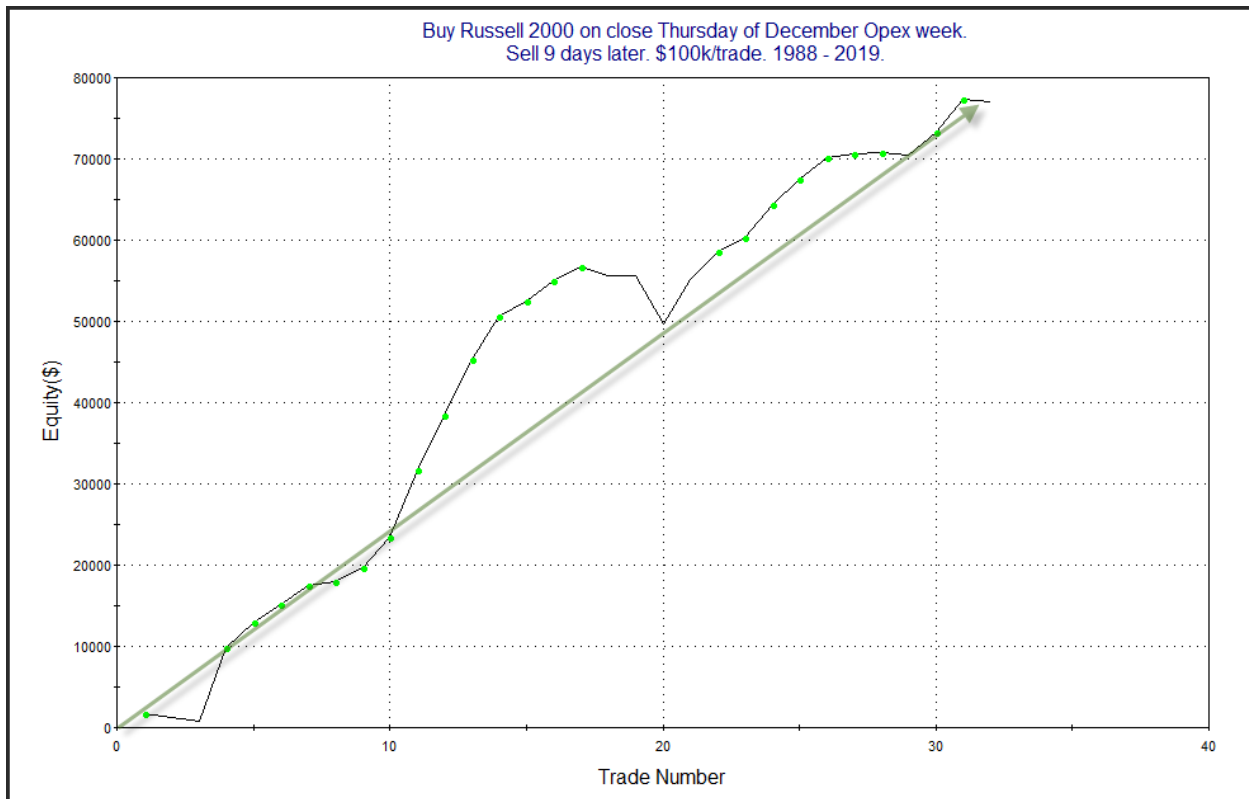
	<b>Dec 15 - 1st Trading Day of Jan</b>		
	<i>SPX</i>	<i>Rut</i>	<i>RUT - SPX</i>
<i>Year</i>	<i>% Return</i>	<i>% Return</i>	<i>% Difference</i>
1988	0.38%	2.53%	<b>2.15%</b>
1989	2.73%	2.08%	<b>-0.65%</b>
1990	0.13%	1.96%	<b>1.83%</b>
1991	8.53%	5.71%	<b>-2.82%</b>
1992	0.65%	2.83%	<b>2.18%</b>
1993	0.78%	2.68%	<b>1.90%</b>
1994	0.83%	2.50%	<b>1.67%</b>
1995	0.71%	2.06%	<b>1.35%</b>
1996	2.22%	2.42%	<b>0.20%</b>
1997	1.21%	3.75%	<b>2.54%</b>
1998	5.61%	8.60%	<b>2.99%</b>
1999	2.96%	7.61%	<b>4.65%</b>
2000	-2.21%	0.97%	<b>3.18%</b>
2001	1.79%	1.51%	<b>-0.28%</b>
2002	-0.15%	-0.59%	<b>-0.44%</b>
2003	3.79%	4.78%	<b>0.99%</b>
2004	-0.30%	-1.26%	<b>-0.96%</b>
2005	-0.17%	-0.10%	<b>0.07%</b>
2006	-0.74%	-0.68%	<b>0.06%</b>
2007	0.09%	1.94%	<b>1.85%</b>
2008	7.28%	11.65%	<b>4.37%</b>
2009	2.26%	5.53%	<b>3.27%</b>
2010	2.97%	3.89%	<b>0.92%</b>
2011	5.04%	5.08%	<b>0.04%</b>
2012	2.24%	4.60%	<b>2.36%</b>
2013	2.54%	2.76%	<b>0.22%</b>
2014	3.45%	5.13%	<b>1.68%</b>
2015	-1.50%	-2.03%	<b>-0.53%</b>
2016	-0.19%	-0.07%	<b>0.12%</b>
2017	0.75%	1.28%	<b>0.53%</b>
2018	-1.41%	-1.61%	<b>-0.20%</b>
2019	2.08%	1.02%	<b>-1.06%</b>
<b>Total</b>	<b>54.35%</b>	<b>88.53%</b>	<b>35.24%</b>

Going forward I may consider using IWM (the Russell 2000 etf) instead of SPY for some long index trades to take advantage of the probable Russell outperformance.

Next is a study I last showed in the 12/16/19 subscriber letter that looks at buying the Russell 2000 on opex Thursday in December and holding for up to 2 weeks.

Buy Russell 2000 on close Thursday of December Opex week. Sell X days later. \$100k/trade. 1988 - 2019.												
X Days	All: Net Profit	All: Total Trades	All: Winning Trades	All: Losing Trades	All: % Profitable	All: Max Winning Trade	All: Max Losing Trade	All: Avg Winning Trade	All: Avg Losing Trade	All: Win/Loss Ratio	All: ProfitFactor	All: Avg Trade
10	78,224.94	32	24	8	75.00	10,279.71	-5,643.30	3,852.72	-1,780.04	2.16	6.49	2,444.53
9	77,009.25	32	26	6	81.25	9,009.63	-5,973.50	3,290.51	-1,423.98	2.31	10.01	2,406.54
8	64,037.07	32	26	6	81.25	7,115.85	-2,948.40	2,658.16	-845.84	3.14	13.62	2,001.16
7	60,300.62	32	27	5	84.38	7,790.58	-1,809.60	2,416.17	-987.18	2.45	13.22	1,884.39
6	45,688.09	32	24	8	75.00	6,599.88	-2,720.64	2,184.77	-843.29	2.59	7.77	1,427.75
5	34,165.21	32	23	9	71.88	4,892.25	-3,194.64	1,948.08	-1,182.30	1.65	4.21	1,067.66
4	27,329.69	32	23	9	71.88	4,413.75	-3,892.32	1,759.89	-1,460.86	1.20	3.08	854.05
3	23,029.68	32	22	10	68.75	3,814.20	-2,650.68	1,629.22	-1,281.31	1.27	2.80	719.68
2	8,106.30	32	19	13	59.38	3,495.70	-4,431.00	1,341.83	-1,337.57	1.00	1.47	253.32
1	9,354.22	32	18	14	56.25	2,299.70	-2,543.25	917.94	-512.05	1.79	2.30	292.32

Results here are outstanding. But a look at the max loss column shows you that it has not been without risk. Below is an equity curve that assumes a 9-day exit strategy.

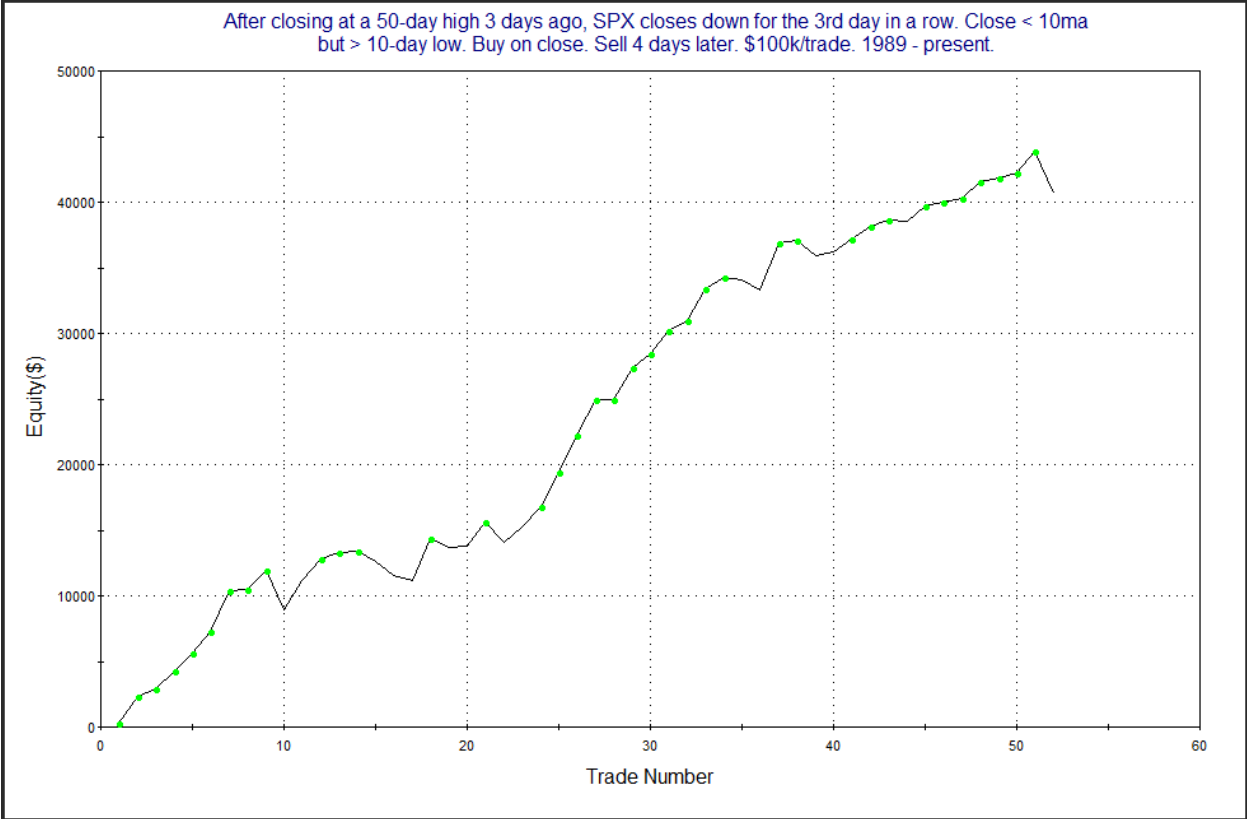


That is a strong looking curve. I'll re-post this study again Thursday night when it actually triggers.

Pullbacks from high levels like we have seen in the SPX over the last 3 days will often suggest a bullish edge. The 3-day pullback study below is one I found compelling. It required that the pullback was deep enough to put it below the 10ma, but *not* deep enough to see it at a 10-day closing low. It was last seen in the 8/13/18 subscriber letter, and I have updated the stats.

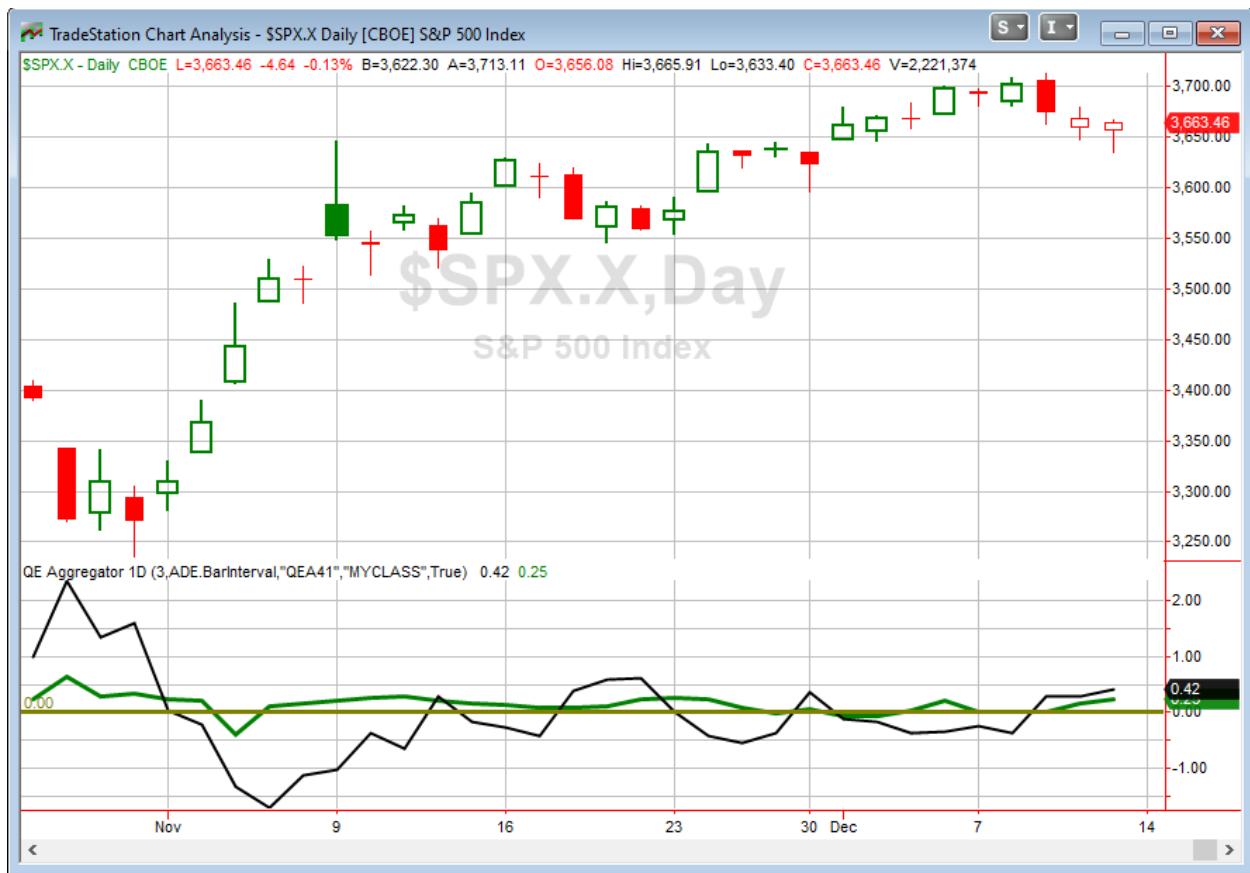
After closing at a 50-day high 3 days ago, SPX closes down for the 3rd day in a row. Close < 10ma but > 10-day low. Buy on close. Sell X days later. \$100k/trade. 1989 - present.												
X Days	All: Net Profit	All: Total Trades	All: Winning Trades	All: Losing Trades	All: % Profitable	All: Max Winning Trade	All: Max Losing Trade	All: Avg Winning Trade	All: Avg Losing Trade	All: Win/Loss Ratio	All: ProfitFactor	All: Avg Trade
5	35,141.50	52	35	17	67.31	3,522.94	-3,453.71	1,585.95	-1,198.05	1.32	2.73	675.80
4	40,651.52	52	41	11	78.85	3,543.50	-3,235.68	1,306.32	-1,173.43	1.11	4.15	781.76
3	23,710.73	52	34	18	65.38	3,543.50	-4,572.96	1,256.02	-1,055.23	1.19	2.25	455.98
2	13,186.29	52	35	17	67.31	2,332.48	-2,781.35	874.18	-1,024.12	0.85	1.76	253.58
1	9,680.05	52	33	19	63.46	2,060.16	-2,031.09	712.31	-727.69	0.98	1.70	186.15

Under these circumstances, it appears bounces have been reliable. The 1<sup>st</sup> four days show some impressive stats. Below is a look at the profit curve assuming a 4-day exit technique.



Despite faltering on the most recent instance (7/31/19), the curve appears to provide confirmation of the bullish tendency suggested by the stats table.

I have updated [the Aggregator chart](#) below.



With tonight's evidence considered, the green Aggregator Line remained above zero. Positive readings mean net expectations are for upside over the next few days. Meanwhile the black Differential Line also held above 0. The positive Differential Line reading means that SPX is oversold versus recent expectations. So expectations are positive and SPX is oversold. This is considered a bullish configuration. Bullish configurations are visible on the chart whenever both lines close above zero. Therefore, the Aggregator signal stayed long at the close.

Based on the current list of studies, expectations are slated to remain positive on Monday. There is a small chance this could change if new bearish evidence emerges. Meanwhile, the Differential Pivot will be 3673.44 on Monday. That is 0.3% above Friday's close. Therefore, SPX will need to close up at least 0.3% on Monday to flip from oversold to overbought vs expectations.

So the Aggregator is bullish. I like the combination of price action and seasonality studies I am seeing. I already have some long index exposure, but I intend to get more aggressive on the long side on Monday. I believe there is a good chance of a bounce in the coming days.

**Intermediate-term Outlook (2 weeks – 2 months) – updated 12/14 – slightly bullish**

Combo #1	Combo #2	Combo #3
Long	Long	Long

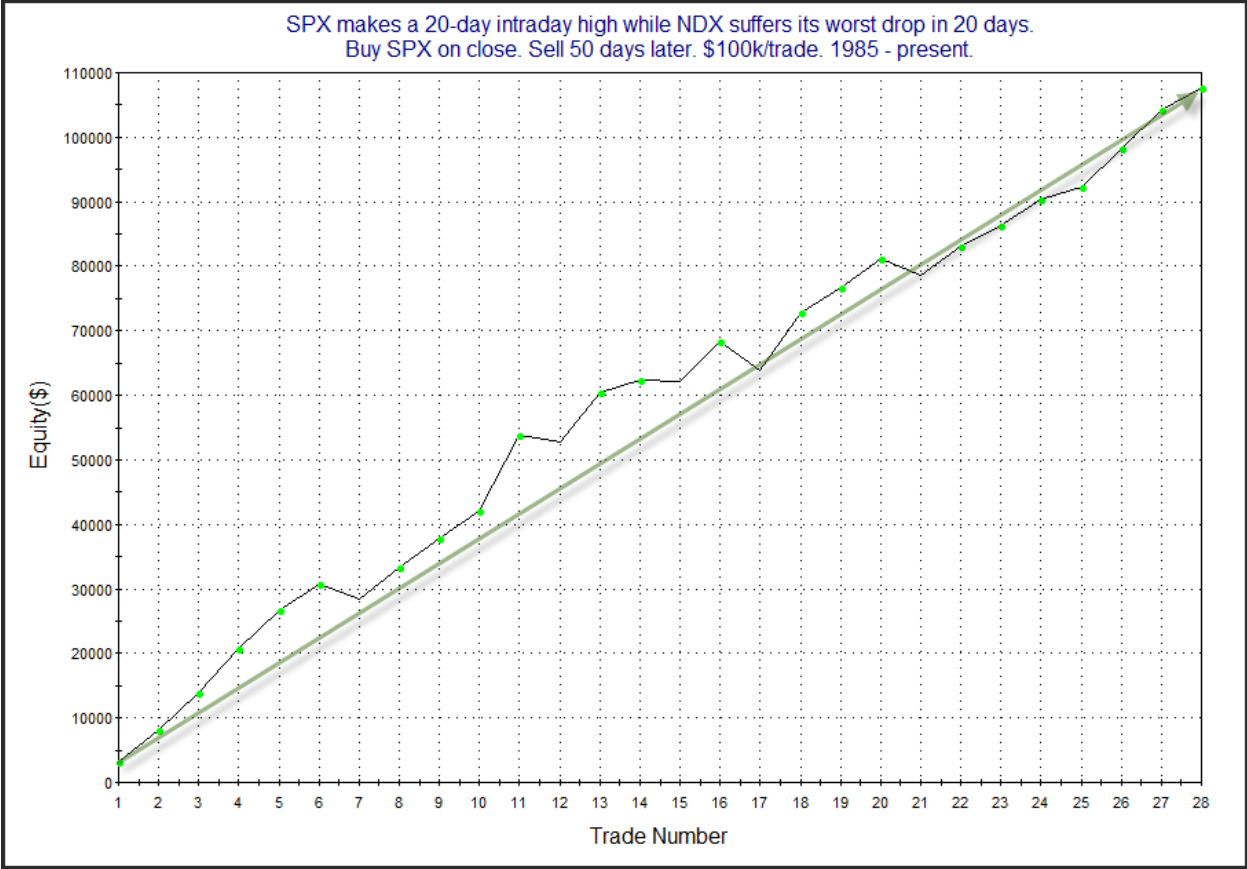
Above is the status of the different Combination Signals from the Quantifiable Edges Market Timing Course. Signals are long-term in nature. All 3 can be either flat or long. None of them look to short. More information on these signals can be found in the [Quantifiable Edges Market Timing Course](#), which is included with all annual subscriptions. Detailed descriptions of these combination approaches [can be found in Lesson 8](#). Subscribers may also download detailed hypothetical historical performance reports covering 12/31/71 – 3/7/14 in [Lesson 11, Course Downloads](#). (You must go through the course first in order to access the Downloads.) *This week all 3 Combo Systems remained “Long”.*

This past week saw mixed action for the market. The SPX declined 1.0%, the NASDAQ lost 0.7%, and the Russell 2000 rallied 1.0%. The longer-term trends all still appear to be up. There was one study with intermediate-term implications that triggered on Wednesday. I have copied it below.

*But there was one study that suggested a possible intermediate-term impact. It noted that SPX made a 20-day intraday high on a day where NDX had its worst decline in the last 20 days. Interestingly, I also looked at this setup in the 7/24/20 letter, and have updated the results below.*

SPX makes a 20-day intraday high while NDX suffers its worst drop in 20 days. Buy SPX on close. Sell X days later. \$100k/trade. 1985 - present.												
X Days	All: Net Profit	All: Total Trades	All: Winning Trades	All: Losing Trades	All: % Profitable	All: Max Winning Trade	All: Max Losing Trade	All: Avg Winning Trade	All: Avg Losing Trade	All: Win/Loss Ratio	All: ProfitFactor	All: Avg Trade
50	107,633.80	28	23	5	82.14	11,736.48	-4,474.24	5,147.77	-2,152.97	2.39	11.00	3,844.06
45	84,128.14	28	22	6	78.57	10,640.84	-5,533.44	4,605.28	-2,864.66	1.61	5.89	3,004.58
40	67,523.94	29	22	7	75.86	9,682.40	-9,804.11	4,122.86	-3,311.29	1.25	3.91	2,328.41
35	59,492.72	30	21	9	70.00	8,919.96	-5,508.07	4,088.19	-2,928.81	1.40	3.26	1,983.09
30	56,454.80	30	22	8	73.33	9,146.60	-9,849.67	4,125.95	-4,289.51	0.96	2.65	1,881.83
25	53,779.70	32	23	9	71.88	7,466.70	-9,670.78	3,738.32	-3,577.97	1.04	2.67	1,680.62
20	43,660.21	32	23	9	71.88	7,296.33	-5,098.24	2,830.80	-2,383.13	1.19	3.04	1,364.38
15	40,183.19	32	24	8	75.00	7,393.84	-3,229.81	2,238.32	-1,692.07	1.32	3.97	1,255.72
10	28,274.80	33	23	10	69.70	4,119.18	-2,561.28	1,602.65	-858.62	1.87	4.29	856.81
5	12,984.60	34	20	14	58.82	4,189.92	-2,618.20	1,210.38	-801.64	1.51	2.16	381.90

*The numbers here look impressive over the intermediate-term. Below is a look at the 50-day profit curve.*



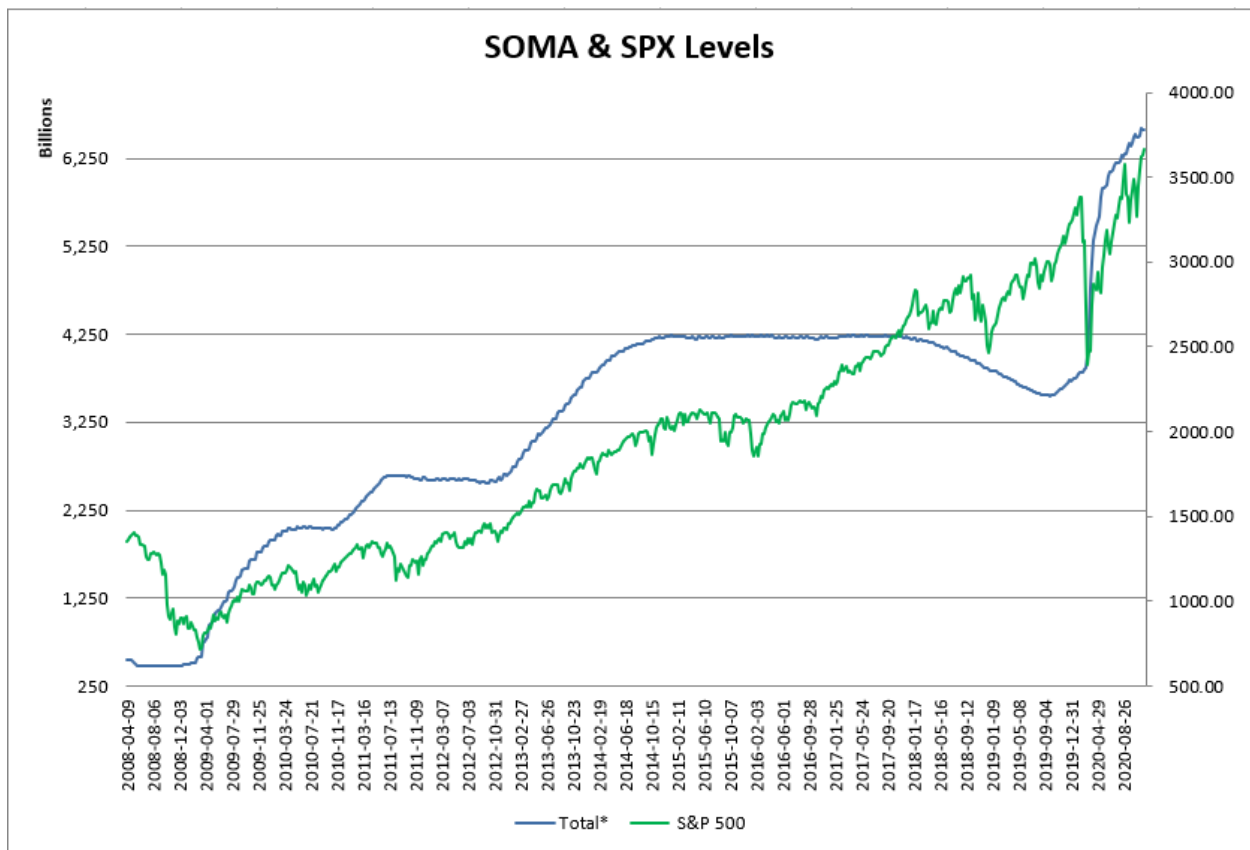
*The curve does not disappoint, since it is a straight shot from lower left to upper right. I have added this study to the intermediate-term active list.*

The Fed posted the latest update to the SOMA holdings after the close on Thursday. It can be found below.

Domestic Security Holdings as of  
[◀ Previous](#) **December 9, 2020** 📅  
*Posted December 10, 2020 at 4:30 P.M*

Security Type	Total (\$Thousands)
US Treasury Bills (T-Bills)	326,044,000.0
US Treasury Notes and Bonds (Notes/Bonds)	3,935,383,181.0
US Treasury Floating Rate Notes (FRNs)	17,269,242.7
US Treasury Inflation-Protected Securities (TIPS)*	308,426,439.6
Federal Agency Securities**	2,347,000.0
Agency Mortgage-Backed Securities***	1,993,835,250.4
Agency Commercial Mortgage-Backed Securities***	9,820,676.5
Total SOMA Holdings	6,593,125,790.3
Change From Prior Week	15,905,320.1

This past week saw the SOMA rise by a moderate \$16 billion. That is ordinary for what we have seen the last several months. Below is an updated SOMA/SPX chart from 2008 – present.



The SOMA is in the midst of the largest expansion in history, and the expansion is expected to continue for the foreseeable future. We have seen some wiggles in the SOMA in the last couple of months, as not every week has seen strong buying. This past week is an example. That is normal calendar-induced wiggling, similar to what we saw with earlier QE expansions. You'll note on the chart the same type of pattern during 2009 and 2013-14. To this point, the Fed has indicated they will remain aggressive in their efforts to stimulate the economy. And that is good for the market for as long as it lasts.

My intermediate-term outlook remains very similar to last week. Breadth is favorable, momentum is solid, the NASDAQ is leading, seasonality should be strong through the end of the year, and I am not seeing any major red flags from a technical perspective. The Fed's continued pumping is also a large plus for the bulls. The bears should be on the lookout for economic and business impacts of further COVID restrictions. Overall, I remain somewhat bullish, and do not see a reason to change. That basically means I will be a bit more cautious when considering short positions than with long positions.

### **Catapult and Capitulative Breadth Statistics**

[Catapult & CBI Presentation Link](#)

#### ***OpenCatapult Triggers***

**None**

***Broad Market Large Cap CBI – 0***

### **Additional New Trade Ideas**

*A full listing of system triggers can be found at the [numbered systems page](#) each night. I will cherry pick some of my favorite setups from the S&P 100 and ETF lists along with occasional other trade ideas to track below.*

**SPY – Buy ¼ index position at \$366.00 LIMIT.** Based on the short-term outlook above, I will add a 2<sup>nd</sup> lot if SPY moves down a small amount below Friday's close at some point during the day.

**SPY – Buy ¼ index position at \$366.00 LIMIT ON CLOSE.** Based on the short-term outlook above, I add a 3<sup>rd</sup> lot near the close if SPY manages another down day and closes at \$366.00 or lower.

## Current Open Trade Ideas

Symbol	Entry Date	Entry Price	Current Price	% Gain/Loss	Stop	Notes
SPY(1/4)	12/11/2020	\$364.90	\$366.30	0.38%		bought on open

The author of Quantifiable Edges (QE), Mr. Robert Hanna, is separately affiliated with a registered investment adviser in the States of Washington, California, Colorado, Michigan, Texas, Massachusetts, and Louisiana, Eastsound Capital Advisors, LLC (ECA) d.b.a. Hanna Capital Management, LLC. ECA may not transact business in states where it is not appropriately registered, excluded or exempted from registration. Individualized responses to persons that involve either the effecting of transaction in securities, or the rendering of personalized investment advice for compensation, will not be made without registration or exemption. Advisory clients of ECA utilizing the approaches developed by Mr. Hanna will receive the QE newsletter at no charge. ECA is not otherwise affiliated with QE, and neither endorses nor warrants the content of this site, the QE newsletter(s), any embedded advertisement, nor any linked resource herein.

This report has been prepared by Quantifiable Edges, LLC and is provided for information purposes only. Under no circumstances is it to be used or considered as an offer to sell, or a solicitation of any offer to buy securities. While information contained herein is believed to be accurate at the time of publication, we make no representation as to the accuracy or completeness of any data, studies, or opinions expressed and it should not be relied upon as such. Robert Hanna, Quantifiable Edges, LLC or clients of Quantifiable Edges, LLC may have positions or other interests in securities (including derivatives) directly or indirectly which are the subject of this report. This report is provided solely for the information of Quantifiable Edges, LLC clients and prospects who are expected to make their own investment decisions without reliance upon this report. Neither Quantifiable Edges, LLC nor any officer or employee of Quantifiable Edges, LLC accepts any liability whatsoever for any direct or consequential loss arising from any use of this report or its contents. This report may not be reproduced, distributed or published by any recipient for any purpose without the prior express consent of Quantifiable Edges, LLC.

Copyright © 2020 Quantifiable Edges, LLC.