

UBS's YES Was Not Same Iron Condor Product as at Credit Suisse

By Craig McCann, Regina Meng and Edward O'Neal¹

In a previous study of the UBS YES option program, we wrote:

The YES Team moved from Credit Suisse to UBS in early 2016, bringing with them a strategy they claimed to have successfully run since 2004. The UBS-branded marketing materials in 2016 and 2017 claim YES was market-neutral and had generated monthly returns for 12 years that had been uncorrelated with the stock and bond markets. As you will see below, either the prior returns reported in the UBS marketing materials were false or the strategy implemented at UBS in 2016, 2017 and 2018 differed markedly from what had been implemented at Credit Suisse. [emphasis added]

Recently, we were asked by a friend, for our basis for the emphasized sentence above. While the remainder of our 2019 note provides good support for the assertion that UBS was doing something very different than had been done at Credit Suisse, we have developed additional analyses which conclusively demonstrate the correctness of our statement.

Our previously published paper documented that YES's 2018 losses resulted from directional stock market bets – sometimes long the market, sometimes short the market - placed or maintained by UBS. In communications with clients and in other public statements, UBS has attributed YES' 2018 losses to unusual market volatility alternatively reflected in 1) unusually large stock market drops, 2) unusually large intraday swings in the stock market, 3) jumps in volatility, or 4) high historical volatility.

Monthly returns from the Credit Suisse and UBS time periods - including for subperiods of similar characteristics UBS blames for the 2018 losses - show these two programs were very different and that UBS's program was much riskier and had much more directionality than the Credit Suisse program. We find market conditions in 2018 when YES lost 18.44% were much less dramatic than in 2008 when Credit Suisse lost only 2.42%. *See* Exhibit 1 and Exhibit 2 below.

¹ © Securities Litigation and Consulting Group, Inc., 2021. Craig McCann can be reached at 703-246-9381 or <u>craigmccann@slcg.com</u>. Edward O'Neal can be reached at 336-655-8718 or <u>eddieoneal@slcg.com</u>.



1) Stock Market Drops

UBS claims the YES Team implemented non-directional iron condors that subsequently lost money because unusual stock market declines in 2018 caused index levels to drop below the short put option strike prices in the iron condors. We can test this assertion by comparing the number of days with stock market drops greater than various thresholds in 2018 with prior years when Credit Suisse managed and supervised the YES program. Table 1 reports the number of days in 2008, 2009, 2011 and 2018 with daily stock declines greater than 2%, 3%, 4%, 5% and 6%. On average in 2008, 2009 and 2011 there were twice as many days with greater than two and three percentage point declines in the S&P 500 than there were in 2018.

			Threshold	l		YES	
Year	<-2%	<-3%	<-4%	<-5%	<-6%	Return	Firm
2008	40	23	15	11	8	-2.4%	Credit Suisse
	-4.1%	-5.3%	-6.3%	-7.0%	-7.6%		
2009	28	12	6	1	0	2.9%	Credit Suisse
	-3.0%	-4.0%	-4.7%	-5.3%	n/a		
2011	21	6	4	1	1	-1.0%	Credit Suisse
	-3.0%	-4.5%	-5.1%	-6.7%	-6.7%		
Average	30	14	8	4	3	-0.2%	Credit Suisse
	-3.4%	-4.6%	-5.3%	-6.3%	-7.1%		
2018	16	5	1	0	0	-18.4%	UBS
	-2.6%	-3.5%	-4.1%	n/a	n/a		

Table 1: 2018 One-day declines were small compared to 2008, 2009 and 2011

For more extreme declines, the contrast is even more stark. 2008, 2009 and 2011 all experienced many larger daily stock price declines than the worst one-day decline in 2018. In 2018, the biggest one-day drop in the S&P 500 was -4.10% on February 5. There were 14 days in 2008, 6 days in 2009 and 4 days in 2011 with 1-day declines greater than -4.1%. The average decline on these 24 days was -5.77%.

The February 5, 2018 decline was smaller than the largest 24 one-day declines across three years during which time the Credit Suisse product had annual returns of -2.42%, +2.94% and -1.00%.



The largest two-week decline in 2018 was -10.87% from December 10, 2018 to December 24, 2018. Table 2 counts the number of two-week declines greater than various thresholds in 2008, 2009, 2011 and 2018. There were 15 two-week periods in 2008, 8 two-week periods in 2009 and 3 two-week periods in 2011 with declines greater than the largest two-week decline in 2018. The average decline during these 26 two-week periods with larger declines than the -10.76% decline in December 2018 was -15.04%.

Once again, the worst two-week period in 2018 doesn't make it into the worst 25 such periods in 2008, 2009 and 2011 when the Credit Suisse product effectively broke even and yet UBS claims to have lost 18.44% in 2018 following the same strategy as Credit Suisse had implemented.

			Threshold	l		YES	
Year	<-6%	<-8%	<-10%	<-12%	<-14%	Return	Firm
2008	30	19	15	14	12	-2.4%	Credit Suisse
	-12.0%	-14.9%	-16.5%	-16.8%	-17.5%		
2009	21	14	8	4	2	2.9%	Credit Suisse
	-9.7%	-11.1%	-12.7%	-14.0%	-14.9%		
2011	14	8	5	2	2	-1.0%	Credit Suisse
	-9.3%	-11.4%	-12.8%	-15.2%	-15.2%		
Average	22	14	9	7	5	-0.2%	Credit Suisse
	-10.4%	-12.5%	-14.0%	-15.3%	-15.9%		
2018	13	6	1	0	0	-18.4%	UBS
	-7.8%	-9.0%	-10.9%	n/a	n/a		

Table 2: 2018	Two-week de	clines were small	l compared to	o 2008, 2009	and 2011
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We could use many other time periods over which to measure stock market returns UBS claims caused the 2018 YES losses and all yield the same unambiguous conclusion: stock market declines in 2018 were modest, not extraordinary compared to the recent past when Credit Suisse's YES program had minimal losses.

Biasing the analysis strongly in UBS's favor, consider the largest drop over consecutive days in 2018: From December 3, 2018 to December 24, 2018 the S&P 500 declined 15.74%. There were 14, 4 and 1 periods of similar length in 2008, 2009 and 2011 with greater declines than experienced in 2018. The average decline over these 19 14-trading day periods was -20.02%.



Thus even, heavily biasing the test in UBS's favor, 2018 had far fewer large stock market declines than 2008, 2009 and 2011 when the Credit Suisse product effectively broke even.

2) Large Intraday Swings

Intraday S&P 500 index swings (difference between high and low levels for the day) provides an alternative measure of stock market fluctuations which might cause losses in an option-based strategy. The largest intraday S&P 500 index swing in 2018 was 5.16% and occurred on December 26. There were 28 days in 2008, 5 days in 2009 and 4 days in 2011 during which the intraday swing was greater than the largest intraday swing in 2018. The average intraday swing across these 37 days was 7.42%.

Table 3 reports intraday swings greater than various thresholds.

			Threshold	l		YES	
Year	>2%	>3%	>4%	>5%	>6%	Return	Firm
2008	131	19	13	7	5	-2.4%	Credit Suisse
	4.1%	5.5%	6.5%	7.5%	8.9%		
2009	104	42	16	5	1	2.9%	Credit Suisse
	3.1%	4.0%	4.9%	5.8%	6.6%		
2011	66	23	10	5	2	-1.0%	Credit Suisse
	3.0%	4.2%	5.2%	5.9%	6.8%		
Average	100	28	13	6	3	-0.2%	Credit Suisse
	3.4%	4.6%	5.5%	6.4%	7.4%		
2018	39	17	5	1	0	-18.4%	UBS
	3.0%	3.8%	4.5%	5.2%	n/a		

Table 3: 2018 Intraday swings were small compared to 2008, 2009 and 2011

3) Monthly Returns 1928 to 2018

Calendar monthly stock market returns are often used to present simple illustrations of historical returns but can be misleading. In Figure 3 we plot the 10th and 90th percentiles of monthly returns from 1928 to 2018. Without including 2008 and 2009 the graphic might prompt someone to conclude that 2018 "broke a historical trend" or was unusual in some way compared to prior years since two of the 2018 orange diamond markers (for February



and October) are at the bottom of the $10^{\text{th}}/90^{\text{th}}$ percentile range and one marker (December) is substantially below the bottom of the $10^{\text{th}}/90^{\text{th}}$ percentile range.

Adding the three recent years in my examples above corrects this incorrect inference. Many months in 2008 saw similar stock market losses as - and October 2008 was far worse - the worst month in 2018. Albeit less visually dramatic, 2009 and 2011 also had larger losses than 2018.

Figure 1: 2018 monthly returns were smooth compared to 2008, 2009 and 2011



4) Stock Market Volatility

Implied Volatility

Option values are determined by underlying index levels or asset prices, strike price, time to expiration, expected volatility over the term of the option, dividend yield, and the risk-free rate.

With an option pricing model, we can solve for the volatility value – the *implied* volatility – that makes observed option prices consistent with observed or assumed values



for the other five factors. The sensitivity of option values to the underlying index level or asset value and to perceived volatility are common risk measurements. These sensitivities can be estimated numerically or empirically. Figure 2 reports the CBOE VIX level which approximate implied volatilities for at-the-money S&P 500 options with 30 days to expiration.



Figure 2: VIX – 2008, 2009 and 2011 volatility was much higher than 2018 volatility

UBS stated that YES may not perform well in periods of high stock market volatility. The VIX, which reflects the market's continuously updated consensus of market volatility, was much higher in 2008, 2009 and 2011 when Credit Suisse' YES effectively broke even than in 2018 when UBS's YES lost 18.44%. Clearly UBS was doing something different than Credit Suisse or the 2018 losses were not caused by the market conditions to which UBS now points.

Historical Volatility

While typically not relevant for valuing options or assessing the riskiness of options unless implied volatilities are not readily available, historical volatility is sometimes casually used to illustrate market conditions over time. For completeness, Figure 3 plots historical volatility for the four years in our examples. As with our other measures, market



conditions in 2018 when UBS YES lost 18.44% were mild compared to market conditions in 2008, 2009 and 2011 when Credit Suisse YES effectively broke even.



Figure 3: Historical Volatility was Much Higher in 2008, 2009 and 2011 Than 2018

Summary

YES lost 18.44% in 2018. The similarly described product run by the same management team effectively broke even in 2008, 2009 and 2011 when stock market declines, intraday swings and volatility were all much greater. UBS was doing something very different than Credit Suisse or UBS YES's 2018 losses were not caused by the market conditions to which UBS now points.

The 2015 Credit Suisse report below illustrate strike prices centered over current index levels and put spreads equal to call spreads. UBS's graphical illustration of YES shows index levels closer the short call strike prices than the short put option prices and much larger put spreads than call spreads. These two reports and the discussion above demonstrate that UBS implemented a far more directional strategy than the Credit Suisse product – with disastrous results for UBS's clients. ###



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Year	Jan	Feb	Mar	Apr	May	Jun	lut	Aug	Sep	0ct	Nov	Dec	YTD		
2016		0.06%	0.13%	0.42%	1.11%	0.43%	-0.37%	0.51%	1.32%	1.67%	0.93%	0.02%	6.39%		16.006
2017 (0.36%	0.17%	0.31%	1.01%	0.76%	0.06%	0.44%	0.96%	0.05%	-0.47%	0.64%	0.07%	4.43%		14.0%
2018	-1.44%	-2.15%	-1.08%	-0.34%	1.17%	0.06%	0.34%	-0.86%	0.52%	-4.43%	2.62%	-8.11%	-13.27%		12.0%
2019	-4.86%	-0.52%	-2.46%	0.30%	-1.21%	1.99%	-1.44%	0.45%	1.26%	1.29%	-0.19%	-2.20%	-7.51%		- 10.0%
2020	-1.00%	-3.84%	-2.15%	-9.25%	2.06%								-13.72%	S \	6.0%
					Monthly N	Vet Margin	nal Return								4.0%
Year	Jan	Feb	Mar	Apr	May	Jun	R	Aug	Sep	Oct	Nov	Dec	YTD		2.0%
2016		0.35%	-0.03%	0.35%	1.49%	0.04%	-0.68%	0.88%	1.44%	1.75%	0.81%	-0.32%	6.22%		-2.0%
2017	0.72%	-0.64%	1.10%	1.14%	0.55%	0.29%	0.14%	0.93%	-0.03%	-0.93%	-0.16%	-0.23%	2.89%		-4.0%
2018	-0.42%	-2.96%	-1.85%	1.85%	1.27%	-0.09%	0.54%	-1.40%	1.22%	-6.85%	3.03%	-13.35%	-18.44%	02- 61- 61- 81- 81- 81- 81- 21- 21- 21- 91- 91- 91- 91-	-6.0%
2019	1.40%	-2.08%	-1.25%	-1.82%	0.06%	1.76%	-0.32%	0.95%	1.38%	0.98%	-1.05%	-1.89%	-1.97%	net not not not not not not not not not no	-10.0%
2020	-0.79%	-8.40%	-6.06%	-0.34%	0.85%								-14.21%		12.0%
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Apr 2016 - May 2020		Realized	Marginal	CNDR			Realized	Marginal				Realized	Marginal	77	
Cumulative Return		-23.10%	-25.05%	-12.98%	Sharpe Ratic		-0.91	-0.79	Positive Mon	ths		32	27		
Ann Net ITD (Apr 16)		-6.18%	-6.77%	-3.32%	Correlation t	0 S&P 500	0.14	0.60	Total Month:			52	52		
YTD Net Return		-13.72%	-14.21%	-10.13%	Strategy Bet	q	0.08	0.40	% Months P	ositive		61.54%	51.92%	Asua	
Average Monthly Net Retu	E	-0.48%	-0.51%	-0.03%	Jensen's Alp.	ha	-7.53%	-10.78%	Average Gai	_		0.73%	1.01%	ednee	
Annualized Volatility		7.71%	9.47%	2.15%					Average Los	5		-2.42%	-2.16%	Ч	
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Exhibit 1: UBS May 2020 YES Monthly Report Shows 18.44% Loss in 2018



Exhibit 2: Credit Suisse May 2015 Monthly Report Shows 2.42% Loss in 2008

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		Y	ield E	nnanc	ement s	strate	gy Usi	ng Sø	P Inde	ex Optic	ons		
					Mont	hly Net I	Realized	Return					
Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	YTD
2004	-1.63%	0.58%	0.67%	-0.60%	-0.26%	4.71%	1.56%	1.78%	a 1.62%	0.90%	-4.12%	-1.01%	8 399
2005	1.38%	1.41%	1.26%	1.53%	0.61%	1.65%	2.08%	-1.18%	6 0.71%	-0.38%	0.14%	-1.41%	8.01%
2007	1.49%	1.98%	0.80%	-3.88%	0.27%	0.48%	1.32%	0.95%	0.42%	1.15%	0.97%	2.67%	8.81%
2008	-0.18%	0.52%	2.57%	2.27%	1.84%	1.39%	0.18%	0.75%	0.52%	0.75%	-8.77%	1.03%	-0.16%
2009	0.94%	0.77%	0.22%	-0.73%	-5.62%	-2.55%	0.79%	-0.55%	0.71%	0.25%	0.68%	0.77%	-1.029
2011	0.65%	0.64%	0.70%	0.73%	0.76%	0.45%	-0.33%	-1.96%	6.45%	1.89%	1.05%	2.66%	0.46%
2012	1.08%	0.95%	1.03%	0.75%	0.81%	1.34%	1.11%	0.96%	0.69%	0.19%	1.01%	0.36%	10.73%
2013	0.80%	0.17%	-0.05%	-0.41%	-0.70%	0.72%	0.10%	0.64%	0.63%	0.74%	0.46%	0.63%	3.779
2015	0.54%	0.20%	0.90%	1.59%	1.2570	0.5170	0.2078	0.057	0.01/	-0.1478	0.1078	-0.3578	3.27%
					Mont	hly Net I	Marginal	Return					
Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	YTD
2004	0.58%	2.79%	3.55%	1.82%	3.17%	3.27%	1.51%	0.52%	1.99%	1.06%	-2.75%	0.58%	19.47%
2005	1.78%	0.02%	1.28%	0.79%	0.40%	1.53%	-0.39%	1.55%	0 1.47%	-0.39%	-1.82%	0.98%	7.389
2000	1.35%	0.16%	1.05%	-4.74%	-0.02%	1.16%	-0.24%	2.55%	b 0.20%	1.08%	-2.36%	5.77%	6.829
2008	-3.55%	2.34%	3.14%	2.10%	1.65%	-1.37%	1.14%	2.45%	-3.71%	-5.76%	-3.09%	2.79%	-2.42%
2009	0.37%	0.24%	-1.29%	0.06%	0.57%	1.48%	-2.45%	0.23%	-0.41%	0.46%	2.15%	1.59%	2.94%
2010	-0.36%	2.13%	0.56%	0.25%	-11.93%	-0.41%	-2.05%	-5.70%	0.40%	-0.65%	2.98%	2 94%	-2.419
2012	1.67%	0.65%	1.25%	1.16%	0.41%	1.09%	0.82%	0.80%	0.29%	1.00%	-0.17%	0.61%	9.98%
2013	0.40%	0.44%	-0.14%	0.08%	-1.37%	0.56%	1.26%	0.00%	0.82%	0.59%	0.01%	-0.72%	1.92%
2014	0.32%	0.43%	1.42%	0.4/%	1.02%	0.32%	-0.71%	1.85%	0.65%	-2.20%	0.38%	-0.04%	5 139
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