

Market Internal Weekly

2020 Key Flow Trends Review & 2021 Outlook

Overview

Current market internal is mixed with stretched longs by hedge funds and retail investors, versus a strong internal at the beginning of 2020. Despite strong market internal in 2020, pandemic triggered a large and uncertain external shock that caused SPX to drop 34% and 1M RV to rise to 97% in Feb/Mar - the highest since 1987, only followed by the sharpest recovery in history. In order to identify change in flow leadership, we estimate market internal model \$ flow by month on a best effort basis in **Charts 1 & 2** below. Other than the 2 large sell months in Feb & Mar, there were 3 large buy months in Apr, Nov and Dec. Notice that these are only major investor types our model follows with a goal to identify significant drivers and are not intended to be exhaustive. For investor flows not followed, we supplement our analysis with intraday recovery score and excess flow to track their potential footprints when they matter.

Overall, Feb & Mar selling was mainly driven by systematic funds across risk control, CTA and risk parity funds. Apr buying was driven by broad investor types especially pensions, retail investors, corporates and & short covering (UBSSHORT +38%). Nov buying was driven by retail investors, corporates, CTA & short covering (UBSSHORT +28%). First 3 weeks of Dec buying was driven by retail investors, corporates, risk control and short covering (UBSSHORT +17%). In [12/18 Market Internal Weekly: Est Large Pension Selling vs Falling UBS RMM Buying and Corporate Buyback](#), I wrote " One challenge to the anticipated falling buy flow at year-end is that if realized volatility continues to stay low such as similar to the first 2 weeks of Dec at 7.6% or 48 bps a day, then risk control funds could add \$35-40 bil for the next 2 weeks or \$15-20 bil per week – to exactly offset the anticipated drop in corporate buyback." As it turned out, SPX volatility didn't even stay low, it dropped further with 5D RV as low as 3.4% which helped to boost systematic buying into year-end.

Five major flow trends in 2020:

- 1) **Charts 2 & 3: Systematic funds were flow drivers in Feb & Mar as well as Nov and Dec.** In Feb & Mar, sharp spike in volatility caused systematic funds to sell approximately \$650 – 750 bil in total across risk control, CTA and risk parity funds as per our estimate. In Nov, steady and strong rally boosted momentum and CTA buying. In Dec, as S&P 500 1M RV fell from 16% (in Nov) to 8%, all systematic funds turned buyers with risk control adding 15%, UBS CTA model adding 9% and UBS risk parity model adding 2% in Dec. Current risk control, CTA and risk parity equity exposures @ 55%-tile, 85%-tile and 27%-tile vs 3Y. **At this juncture, volatility spike could trigger up to a week of selling, but if volatility stays low, risk control and risk parity funds still have ample room to add exposures in 2021.**
- 2) **Charts 2 & 4: Mutual fund outflows accelerated in H2 – even more than outflows in Feb & Mar during sell-offs.** This is because of an active migration of holdings from mutual funds to ETFs, stocks and options by retail investors given zero commission. **Expect this trend to continue in 2021.**
- 3) **Charts 2, 5 – 10: Retail activity stayed strong in H2 but has started fading in late Dec.** 2020 US stock and option volume were strong all year, +56% and +49% vs 2019 respectively – mainly driven by ETFs, stock and call option buying by retail investors as average trade size shrunk. UBS RMM equity flow bought back all the \$ sold during sell-off by early June and has since accumulated \$11 bil – initially driven by stocks but switched to ETFs since October. However, since 12/9, UBS RMM exponentially time-weighted flow has fallen sharply - suggests buy trend has slowed down. Historically, this falling trend won't stop until it turned to selling. As I wrote in [1/4 Market Insight - Outsized Excess Sell Flow suggests potential weakness](#), biggest wild card to challenge this view is that retail / retirement fund buying is usually strong at the beginning of year, which may re-ignite the weakening retail flow trend. In addition, I think part of the reason for retail investors to not sell to profit take on up days in Nov & Dec like they normally do is that they may prefer to wait to sell in new year to defer capital gain tax by a year. Therefore, **multiple effects are currently at play across different retail investor types.** Lastly, retail cash % of SPX market cap is already back to 2018 level, below most of 2019 and all of 2020 levels. **This implies retail investors should have less room to add aggressively in 2021 like they did in 2020.**
- 4) **Charts 2, 11 - 12: UBS PB L/S clients net bought in Apr – Jul as well as Aug – Dec.** YTD, UBS PB L/S client net exposure +36% (including performance) and +18% (excluding performance). Current net & gross leverages at 91%-tile and 90%-tile vs 3Y respectively. In fact, net leverage is already back to Jan 2018 level, with a higher current gross exposure. Consistent with this trend, S&P 500 stock short interest remains close to at least 7-year low since we started tracking the data. This implies **L/S funds may have limited room to buy and need to continue focusing on stock alpha and factor/sector rotation in 2021.**
- 5) **Charts 2, 13: Corporate buyback helped to drive rally especially in Nov and Dec. Corporate buyback will continue to be a driver in 2021, but Jan will be a challenging month as their buying will be at seasonal low.**

Chart 1: Market Internal Model Est Flow \$bil vs SPX Mthly Return

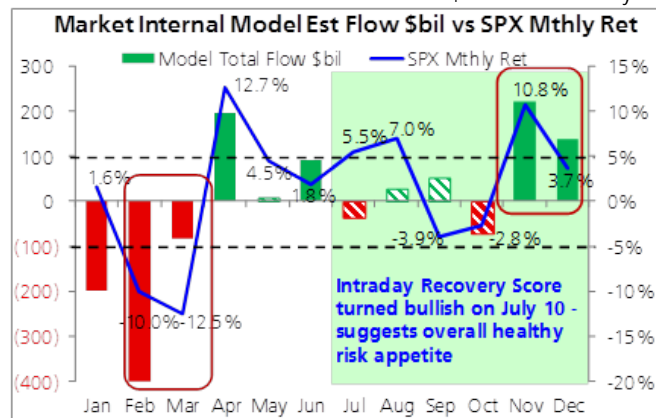


Chart 2: Market Internal Model Estimated Flow Breakdown

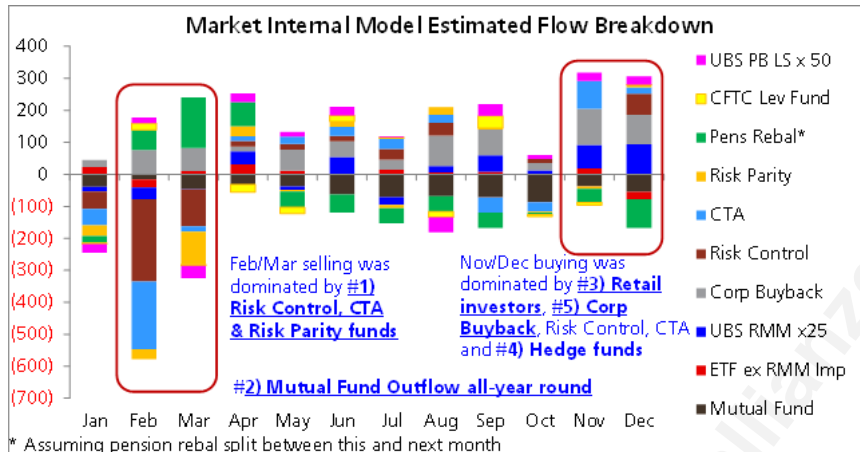


Chart 3: S&P 500 1M Realized Vol

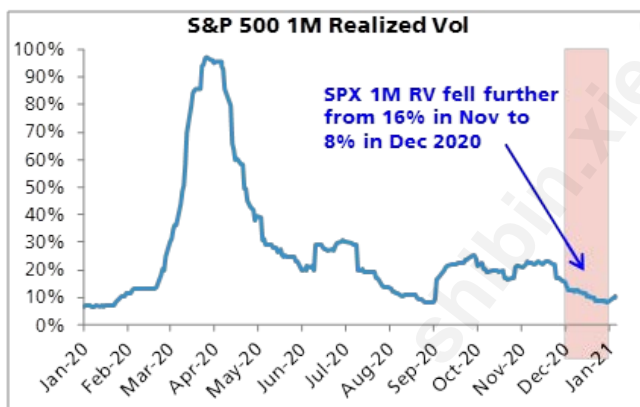


Chart 4: MF Flows in Global Equities

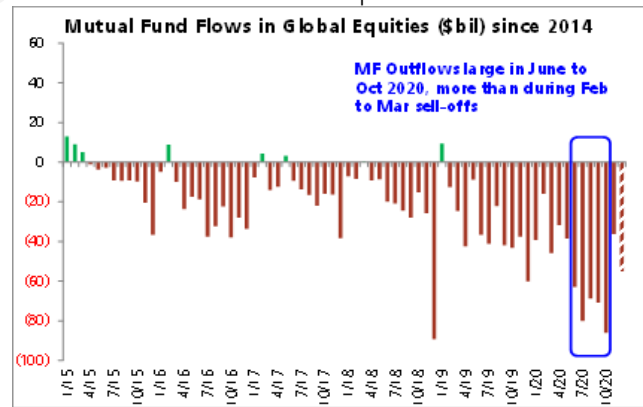


Chart 5: Stock - Avg Daily Share Volume

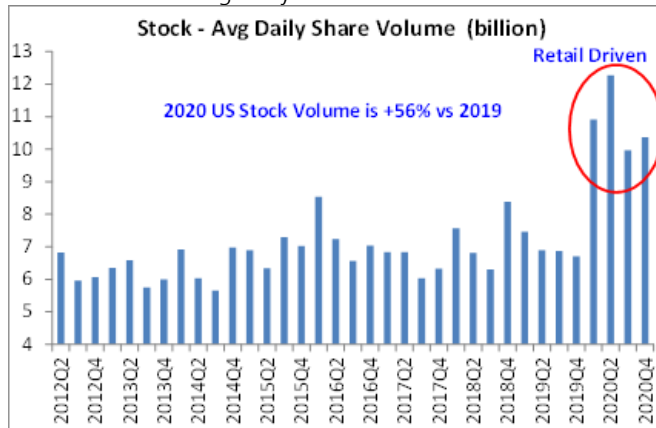


Chart 6: Total Option - Avg Daily Contract Volume

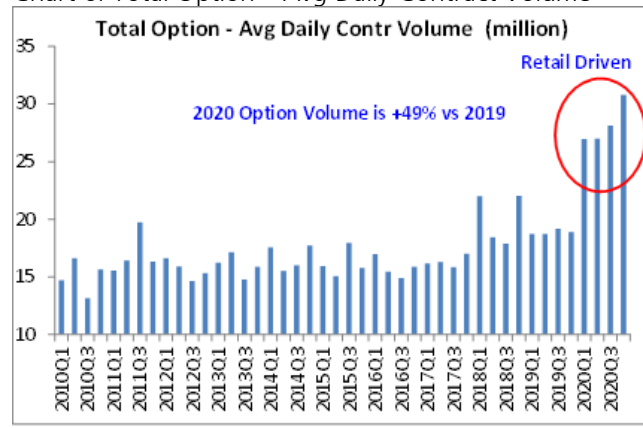


Chart 7: CBOE Equity + ETF Call vs Put Option Volume

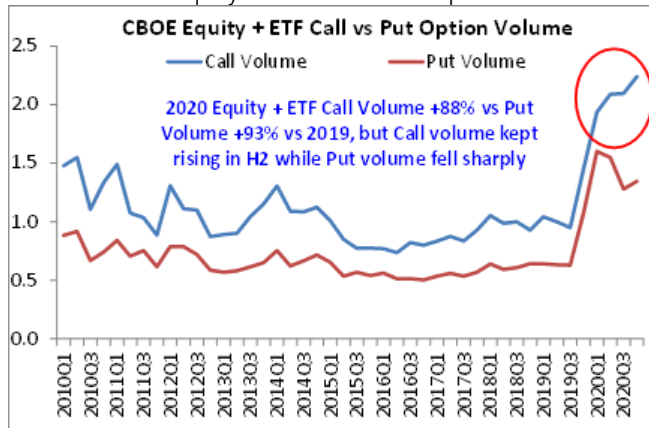


Chart 8: UBS RMM Cum Flow in Equity ETFs vs Stocks

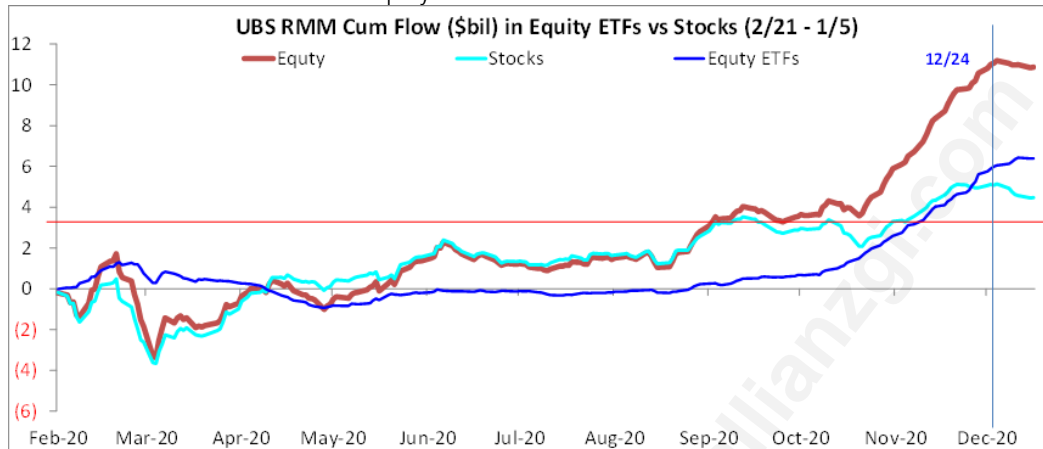


Chart 9: UBS RMM – Exponentially Time weighted Flow

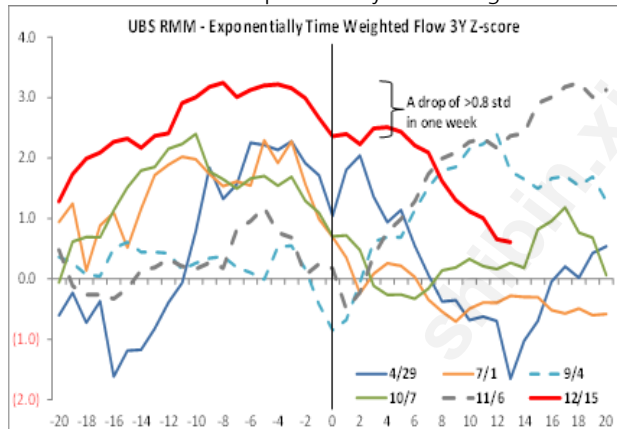


Chart 10: Retail Cash \$trillion & % of SPX Mkt Cap

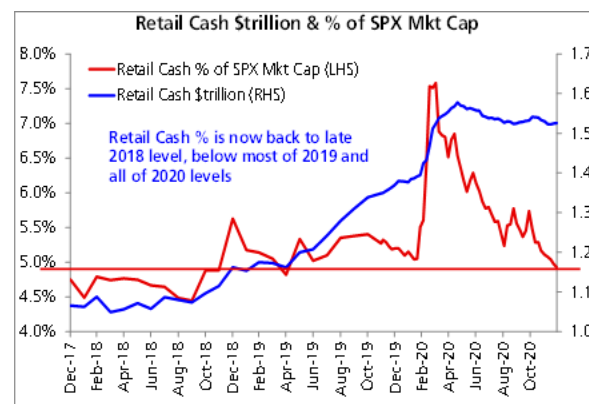


Chart 11: UBS PB L/S Clients Net Global Equity Exp YTD Change

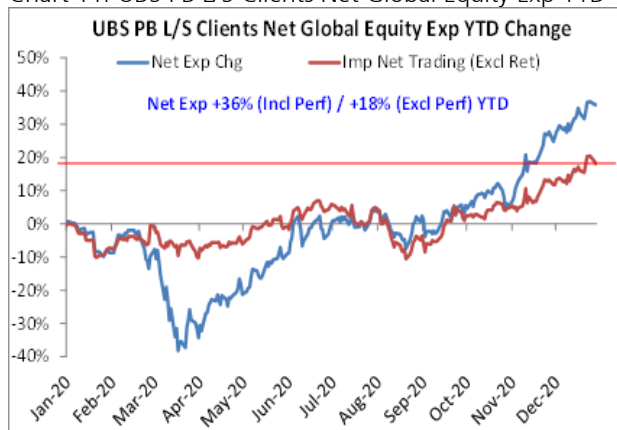


Chart 12: UBS PB L/S Clients Gross vs Net Leverages

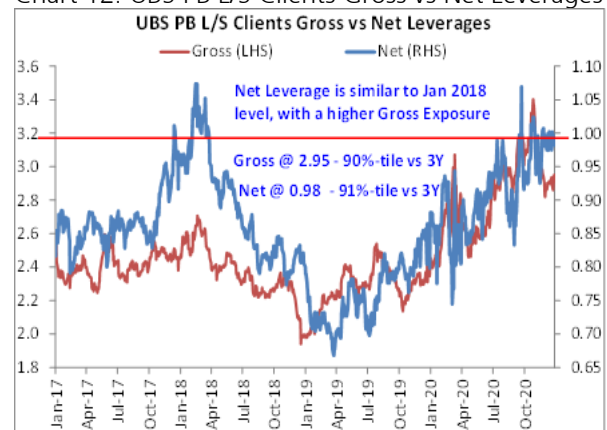
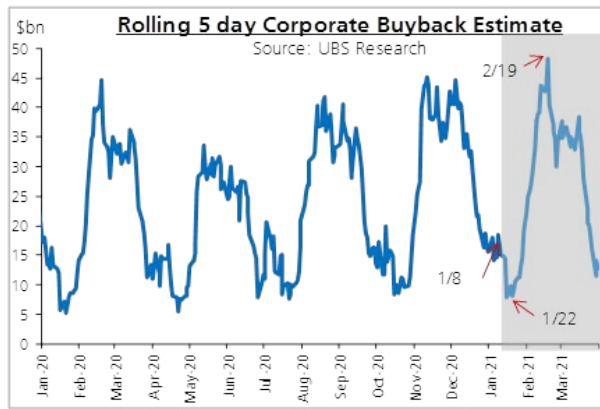


Chart 13: Rolling 5 day corporate buyback estimate



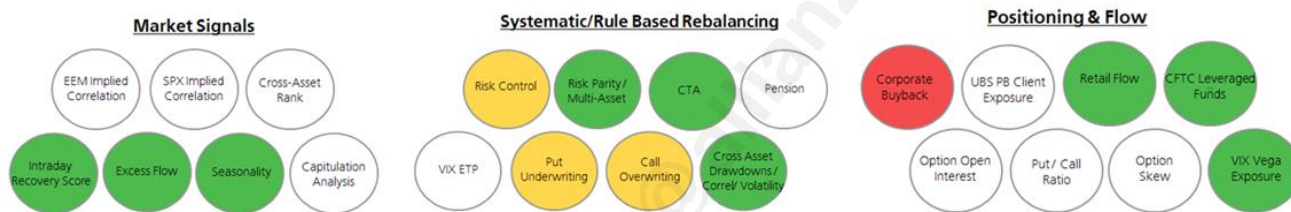
Model Overview

See [1/4 Market Insight - Outsized Excess Sell Flow suggests potential weakness](#) for Model Overview. Below is a comparison of the model "bubbles" in Jan 2021 vs Jan 2020 where our model had fewer factors but more bullish than now.

Jan 2021



Jan 2020



Model Details

Market Signals

- 1) **Intraday Recovery Score** (Figure 1) – 4M intraday recovery score @ 19%; 2M intraday recovery score @ 34%. 4M score now needs 4 days of either sell-off and not recover or rally and fade to turn neutral.
- 2) **Excess Flow** (Figure 2) – So far this week, US Excess Flow was -\$82 bil to sell and then +\$54 bil and +\$71 bil to buy from Mon to Wed. Monday was the largest sell day since Oct 2020. Historically on almost all other similar large excess sell flow down days, they were associated with SPX sell offs of at least -7% except in Mar 2019 when SPX only -2%.

Systematic/Rule-based Rebalancing

- 1) **Risk Control** (Figure 3) – S&P 500 10% Risk Control fund leverage increased to 65% or 55%-tile vs 3Y, with daily breakeven @ 96 bps. If SPX moves +/-3%, 2% and 1.5% a day for one week, expect to cut \$125-180 bil, \$50-75 bil and \$20-30 bil respectively. If SPX moves +/-1% and 50 bps daily for a week, expect to add ~\$5 bil and \$20-30 bil respectively
- 2) **Risk Parity** (Figure 4) – UBS RP model equity exposure added 1%, now @ 16% or 27%-tile vs 3Y. UBS RP 1M & 2M RV is around 3.4%-4.4% while sample RP fund RV averaged around 5-8% - still above 7.5% target
- 3) **Cross-Asset Returns/Correl/Volatility** (Figure 5) – Eq/bond 3M correlation @ -21% or ~88%-tile vs 3Y. Current weak negative correlation between bond and equity should continue to limit RP fund ability to add exposures
- 4) **CTA** (Figures 6 - 11) – UBS CTA Equity Proxy has increased to 51% or 85%-tile vs 3Y. For ES1, next two close ST sell triggers @ 3700 (-1.2%) and 3647 (-2.6%); and then 4 clustered sell triggers further away starting at 3598 (-3.9%) down to 3501 (-6.5%). For NQ1, there are two close ST sell triggers @ 12367 (-2.1%) and 12346 (-2.2%) and then 4 clustered sell triggers further away starting at 12203 (-3.4%) down to 11864 (-6.1%). For RTY1, the closest sell trigger is ST @ 1964 (-4.6%); with clustering much further away starting at 1836 (-10.9%) down to 1692 (-17.8%). Noteworthy outside of equities is Gold, which has 5 sell triggers within -2% starting at 1897 (-0.7%)
- 5) **Call Overwriters & Put Underwriters** – Given SPX is flat to +2% vs Dec roll period, we don't expect significant roll up impact from overwriters and underwriters unless SPX rises sharply over the next few days
- 6) **Pensions Rebalancing** (Figure 12) – We estimate December pension rebalancing was @ 100 bil of global equity selling of which 65% in US small cap, 10% in US large cap and 12.5% each in DM and EM. Rebalancing started early last week and will continue in this first week of Jan given the large magnitude
- 7) **Option Gamma Risk Proxy using OI %** (Figures 13 - 16) – Option open interest (gamma risk proxy) differs between ETF and top stocks this week. ETF OI has dropped significantly while top stock OI remains high. SPY, QQQ & IWM total option OI @ 4%, 63%

and 70%-tile vs 3Y. SPY, QQQ top 10 & IWM top 30 stock option OI % of market cap @ 89%, 98% and 91%-tile vs 3Y

- 8) **Leveraged & Inverse ETP Rebalancing Sensitivity** (Figures 17 - 18) – ETP rebalancing sensitivity is high at \$2.3 bil per 1% asset move, or 0.61x of SPX index level. This sensitivity ratio is at 74%-tile vs 3Y history

Positioning & Flow

- 1) **Cash Level** (Figure 19) – Cash level decreased by \$23 bil last. Cash level is now up \$666 bil or 18% YTD -institutional cash level +\$510 bil or +23% YTD. Retail cash level now only up +\$156 bil or +11% YTD. Relative to S&P 500 market cap, retail cash % has fallen from a peak of 7.5% in late Mar to the current 4.9%, below 2018 level. Institutional cash % has also fallen from a peak of 14.1% in early May to the current 9%, just slightly higher than Dec 2019 level of 8.6%
- 2) **UBS PB Exposure** (Figure 20) – UBS PB Net Leverage @ 0.98x or 91%-tile vs 3Y, and Gross Leverage @ 2.95x or 90%-tile vs 3Y. In 2020, UBS PB Net Exposure rose by 36% or PB clients added 18% of exposure excluding return contribution
- 3) **Stock + ETF Short Interest** (Figures 21 - 23) – As of 12/30, S&P 500 stock short interest has risen slightly to 3%-tile vs 3Y from the lowest level in 7 years last publication. Russell 2000 median stock short interest % has also risen from the lowest level in 7 years last publication to 28%-tile vs 3Y. As of 12/15 official data, ETF short interest % for SPY and IWM has increased to 66%-tile and 94%-tile vs 3Y (vs 52%-tile and 79%-tile as of 11/30). QQQ ETF short interest % has dropped to 44%-tile (vs 46%-tile on 11/30)
- 4) **CFTC Leveraged Fund Exposures** (Figures 24 - 26) – As of 12/29, CFTC lev fund exposure is unchanged in SPX futures @ 45%-tile vs 3Y. Exposures in Nasdaq and Russell futures have increased to 3%-tile and 23%-tile vs 3Y (vs 0%-tile and 3%-tile last publication)
- 5) **VIX Exposure + Option Open Interest** (Figures 27 - 31) – VIX net vega exposure across ETFs and futures are relatively unchanged at 60%-tile vs 3Y. SPY Put & Call OI are both low at 7%-tile and 5%-tile vs 3Y – suggesting investors are currently under-hedged both downside and upside in S&P 500. In terms of top stocks, S&P 500 top 10 stock P/C ratio is low at 12%-tile, mainly driven by high Call OI @ 90%-tile
- 6) **US MF + ETF Flows** (Figures 32 - 33) – for the most part of Dec, Equity MF outflows @ \$55 bil vs Equity ETF inflows @ \$54 bil
- 7) **UBS RMM Flow** (Figures 34 - 36) – UBS RMM clients bought for 32 days in a row until 12/24. They started selling from 12/28-12/30, bought small on 12/31 and sold on 1/4 and then bought small again on 1/5. Historical collapses in strong buying trends in Apr, Jul, Sep, Oct and Nov, suggest we can expect RMM flow to remain benign and could switch to selling to profit take in the next 2 weeks
- 8) **Corporate Buyback** (Figure 37) – Corporate Buyback is estimated at \$15-20 bil this week and then drops to \$10-15 bil per week next week until end of Jan.

Figure 1: S&P 500 Intraday Recovery Scores

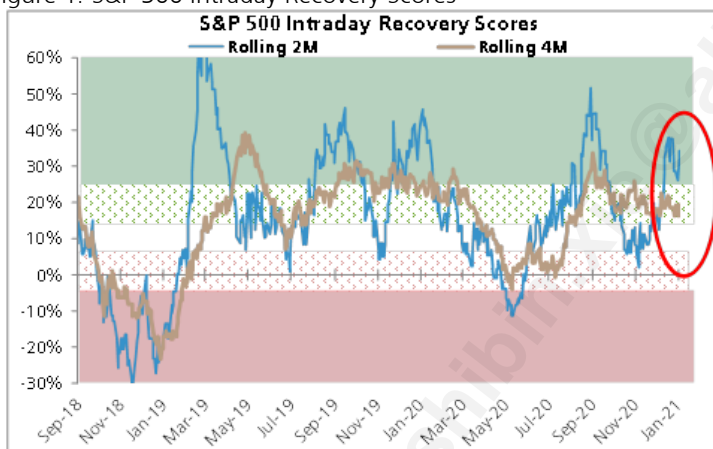


Figure 2: Recent US Daily Excess Flow

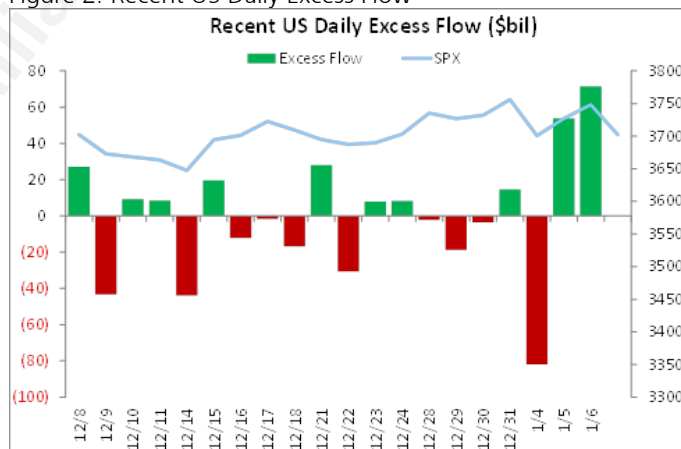


Figure 3: SPX Risk Control Leverage & Scenario Changes

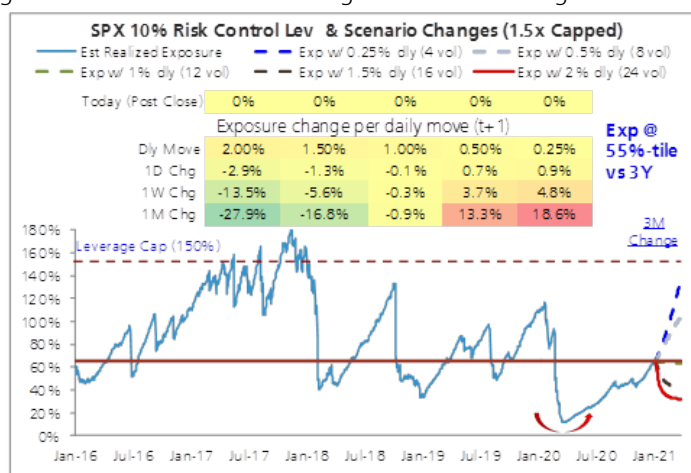


Figure 4: UBS Risk Parity Bond & Equity Model Exposures

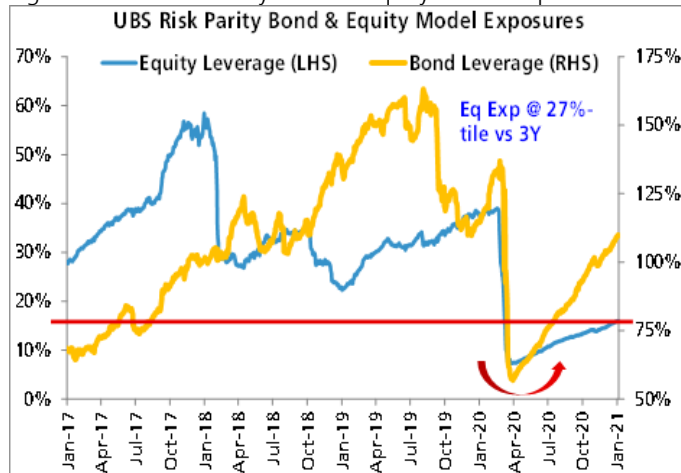


Figure 5: 10Y Bond vs SPX 2M Correl

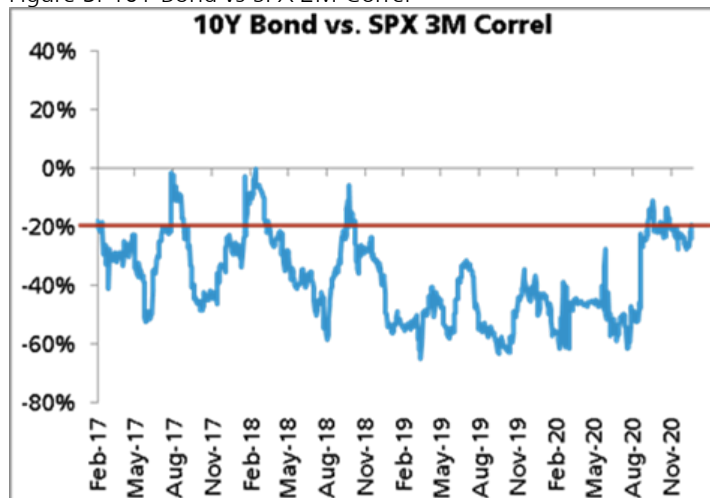


Figure 6: UBS CTA Model Equity Daily Proxy

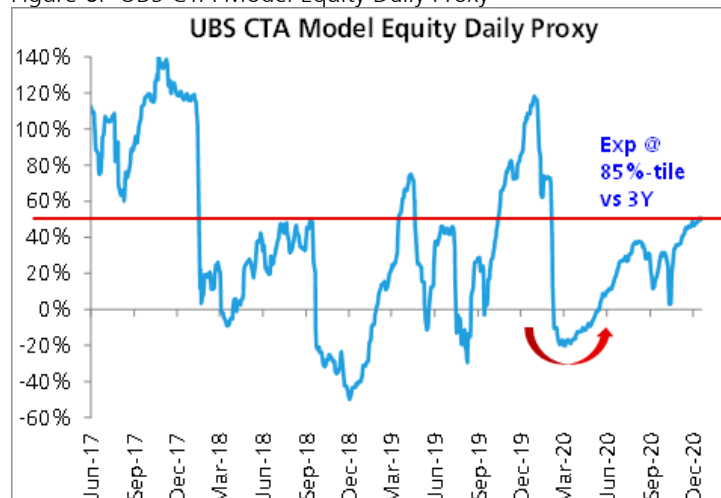


Figure 7: UBS CTA Tracker Summary

UBS CTA Tracker - % of Common Models being Triggered / Watched

As of 1/6/21

US 5Y FRN Tracker - 20 of 20 Common Assets Being Tracked - 2/26/24																	
		Proxy		L			S			BUY Watch			SELL Watch			Dys in LT Mom.	
		3Y		% Today Action			% Today Action			% Next % or			% Next % or			L/ 1Y	L/ LT
Asset	Spot	Exp +	Rank	Strat	New L	Exit L	Strat	New S	Exit S	Strat	Level	# *	Strat	Level	# *	\$ Moni	\$ MA
S&P 500	3745	5.3%	70%	92%	8%								17%	3698	-1.3%	L 161	L 124
Russell 2000	2059	3.6%	80%	92%	8%								8%	Spot	N/A	L 43	L 98
Nasdaq 100	12629	4.5%	70%	92%									17%	12343	-2.3%	L 191	L 158
S&P Midcap	2385	4.0%	67%	92%	8%								8%	Spot	N/A	L 41	L 99
Dow Jones	30751	5.1%	72%	92%	8%								17%	30156	-1.9%	L 43	L 104
Euro STOXX	3606	2.3%	73%	83%	8%		8%						8%	3527	-2.2%	S 99	L 84
FTSE 100	6810	3.1%	75%	83%	17%	8%	8%						8%	Spot	N/A	S 224	L 23
DAX	13906	3.3%	79%	83%									17%	13465	-3.2%	L 8	L 114
Nikkei 225	27330	5.4%	80%	92%									8%	26780	-2.0%	L 152	L 114
MSCI EAFE	2194	5.5%	87%	100%									8%	2120	-3.4%	L 40	L 102
HSCEI	10900	2.7%	81%	67%			8%			25%	10927	0.3%				S 11	L 26
Hang Seng	27813	4.5%	95%	92%			8%									S 15	L 29
MSCI 200	403.4	5.5%	88%	100%												L 138	L 117
MSCI Taiwan	N/A	N/A	5.9%	80%	100%											L 162	L 107
Bovespa	119200	4.0%	66%	92%									8%	117658	-1.3%	L 28	L 97
MSCI EM	1317	4.9%	90%	92%												L 128	L 113
WTI Crude	50.5	1.5%	71%	83%	8%		8%									S 181	L 85
Brent Crude	54.1	1.6%	73%	83%			8%									S 245	L 63
Natural Gas	2.72	0.6%	72%	33%			17%	8%		8%	2.8	2.1%				L 68	L 88
Gold	1921	3.4%	52%	75%			17%						42%	1897	-1.3%	L 404	L 494
Copper	365.8	6.2%	100%	100%												L 131	L 119
Silver	27.3	2.5%	79%	92%			8%									L 171	L 129
EUR	1.232	17.4%	99%	100%									17%	1.220	-1.0%	L 133	L 137
GBP	1.361	9.7%	88%	92%									25%	1.349	-0.8%	L 64	L 100
AUD	0.780	11.5%	98%	100%									8%	0.760	-2.6%	L 126	L 135
JPYUSD	103.0	16.5%	91%	100%									50%	103.5	0.5%	L 102	L 182
CADUSD	1.267	13.9%	93%	92%									25%	1.279	0.9%	L 47	L 108
US 10Y Bond	137.3	-21.7%	17%	8%			92%	33%		58%	138.1	0.6%				L 488	S 17
US 20Y Bond	169.9	-8.1%	22%	8%			83%	25%		50%	172.3	1.4%	8%	MAVG	2	L 484	S 43
US 30Y Bond	206.9	-5.2%	19%	8%			92%			25%	213.5	3.2%				L 487	S 28
Euro BTP10Y	151.9	20.5%	99%	83%						8%	152.5	0.4%	42%	150.9	-0.7%	L 413	L 115
Euro Bund 10Y	177.4	16.9%	74%	75%		8%				17%	178.7	0.7%	42%	176.2	-0.7%	L 71	L 138
Euro Bund 30Y	224.0	3.6%	38%	33%		8%	17%	17%		17%	225.8	0.8%	25%	222.1	-0.8%	L 85	L 208
JGB 10Y	151.9	0.0%	48%	25%	8%		25%	17%		17%	152.0	0.1%	50%	151.9	0.0%	L 1	S 255
Ausie 3Y	99.81	271.2%	87%	33%			8%			33%	99.84	0.0%	42%	99.81	0.0%	L 533	L 621
Ausie 10Y	98.91	-67.3%	5%	8%			67%	8%		58%	98.99	0.1%	8%	98.75	-0.2%	L 66	

Footnote * If MA condition is met, then watch spot within 4%, else watch spot within 2%; If Spot condition is

met & MA cross-over within 5 days, then show # of days, else N/A

+ Proxy Exposure = 1% vol target Exposure

Figure 8: ES1 CTA Triggers 12/17

Signal Method	Current		BUY / SELL Watch						
	L/S	# Dys	Buy/Sell	Action	Spot*	vs Cur	vs Hi-Lo	MA X-over**	
			B/S	# Dys				Action # Dys	
New High / Low ST	L	36	S	3	Exit	3646.50	-2.6%	-1.1%	
New High / Low MT	L	122							
1Y Momentum LT	L	161	S		Exit	3260.25	-12.9%	-11.5%	
Bollinger Band ST	L	1	S		Exit	3700.46	-1.2%	0.4%	
Bollinger Band MT	L	40	S		Exit	3597.84	-3.9%	-2.4%	
Bollinger Band LT			B		Long	4155.45	11.0%	10.1%	
Bollinger Band ST	L	43	S		Exit	3575.61	-4.5%	-3.0%	
Bollinger Band MT	L	43	S		Exit	3519.53	-6.0%	-4.5%	
Bollinger Band LT	L	43	S		Exit	3500.71	-6.5%	-5.0%	
MA Crossover ST	L	37							
MA Crossover MT	L	148							
MA Crossover LT	L	124							

Figure 9: NQ1 CTA Triggers for 12/17

NQ1		12628.5		UBS CTA Tracker		As of 1/6/21		
Signal Method	Current		BUY / SELL Watch					
	Current		Buy/Sell	Spot*				MA X-over**
	L/S	# Dys	B/S # Dys	Action	Level	vs Cur	vs Hi-Lo	Action # Dys
New High / Low ST	L	29	S 1	Exit	12367.0	-2.1%	-1.0%	
New High / Low MT	L	148						
1Y Momentum LT	L	191	S		8944.5	-29.2%	-28.4%	
Bollinger Band ST			S 2	Short	12346.1	-2.2%	-1.2%	
Bollinger Band MT	L	25	S	Exit	12203.0	-3.4%	-2.3%	
Bollinger Band LT	L	147	S	Exit	10726.2	-15.1%	-14.1%	
Bollinger Band ST	L	38	S	Exit	12138.4	-3.9%	-2.8%	
Bollinger Band MT	L	43	S	Exit	11924.6	-5.6%	-4.5%	
Bollinger Band LT	L	43	S	Exit	11863.5	-6.1%	-5.0%	
MA Crossover ST	L	36						
MA Crossover MT	L	169						
MA Crossover LT	L	158						

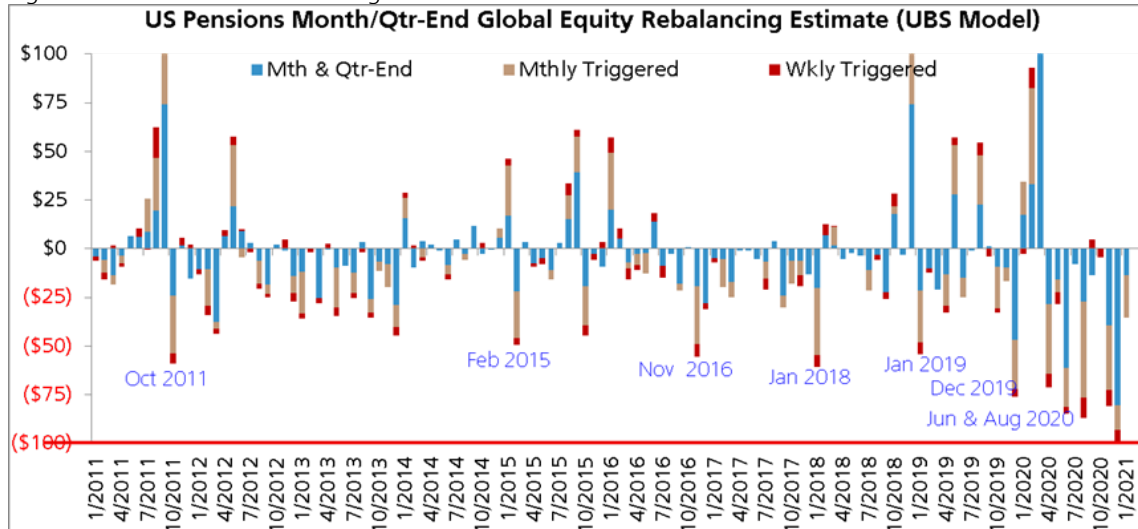
Figure 10: RTY1 CTA Triggers for 12/17

RTY1	2059.20		UBS CTA Tracker		As of		1/6/21		
Signal Method	Current		BUY / SELL Watch						
	Current	Buy/Sell	Spot*				MA X-over*		
	L/S # Dys	B/S # Dys	Action	Level	vs Cur	vs Hi-Lo	Action # Dys		
New High / Low ST	L 63	S	Exit	1835.50	-10.9%	-6.9%			
New High / Low MT	L 107								
1Y Momentum LT	L 43	S							
Bollinger Band ST	L 1	S	Exit	1964.41	-4.6%	-0.3%			
Bollinger Band MT	L 40	S	Exit	1824.54	-11.4%	-7.4%			
Bollinger Band LT		B	Long	2183.51	6.0%	4.9%			
Bollinger Band ST	L 42	S	Exit	1791.50	-13.0%	-9.1%			
Bollinger Band MT	L 44	S	Exit	1726.97	-16.1%	-12.4%			
Bollinger Band LT	L 65	S	Exit	1692.47	-17.8%	-14.1%			
MA Crossover ST	L 39								
MA Crossover MT	L 142								
MA Crossover LT	L 98								

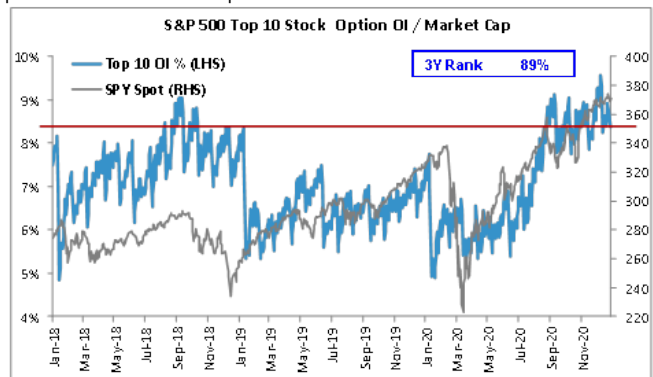
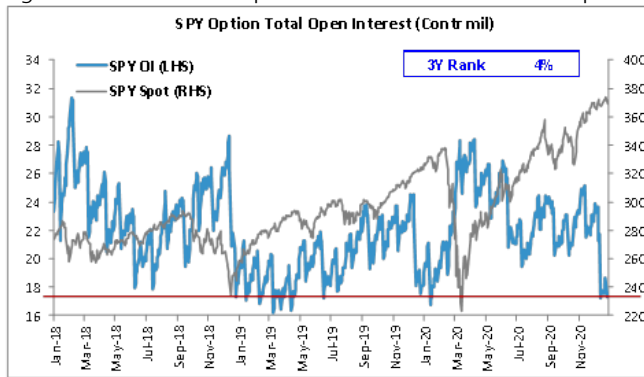
Figure 11: GC1 CTA Triggers for 12/16

GC1	1921.1					UBS CTA Tracker				As of 1/6/21 16:36			
Signal Method	Current Positioning					BUY / SELL Watch							
	Current		Triggered Today			Buy/Sell		Spot*		MA X-over*			
	L/S	# Dys	Cond	Level	Time	B/S	# Dys	Action	Level	vs Cur	vs Hi-Lo	Action	# Dys
New High / Low ST	L	2				S		Exit	1775.70	-7.6%	-6.7%		
New High / Low MT	S	32											
1Y Momentum LT	L	404				S		Exit	1562.00	-18.7%	-17.9%		
Bollinger Band ST	L	13				S	1	Exit	1874.87	-2.4%	-1.5%		
Bollinger Band MT	L	3				S	1	Exit	1869.66	-2.7%	-1.7%		
Bollinger Band LT						B		Long	2091.35	8.9%	6.6%		
Bollinger Band ST	L	3				S	1	Exit	1876.03	-2.3%	-1.4%		
Bollinger Band MT	L	3				S	1	Exit	1883.85	-1.9%	-1.0%		
Bollinger Band LT	L	3				S	1	Exit	1896.54	-1.3%	-0.3%		
MA Crossover ST	L	10											
MA Crossover MT	S	27											
MA Crossover LT	L	494											

Figure 12: US Pension Rebalancing Estimate



Figures 13 & 14: SPY Option Total OI and S&P 500 Top 10 Stock Option OI / Market Cap



Figures 15 & 16: QQQ Option Total OI and Nasdaq 100 Top 10 Stock Option OI / Market Cap

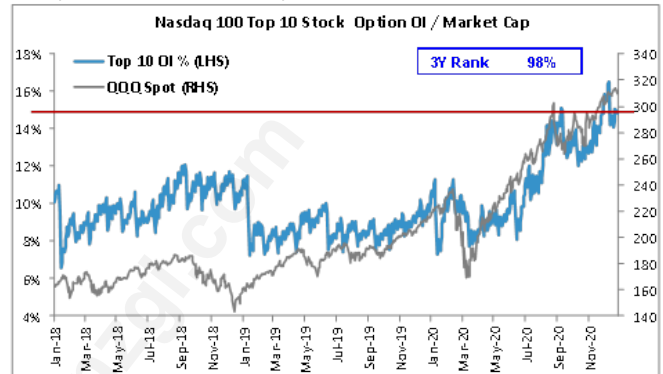
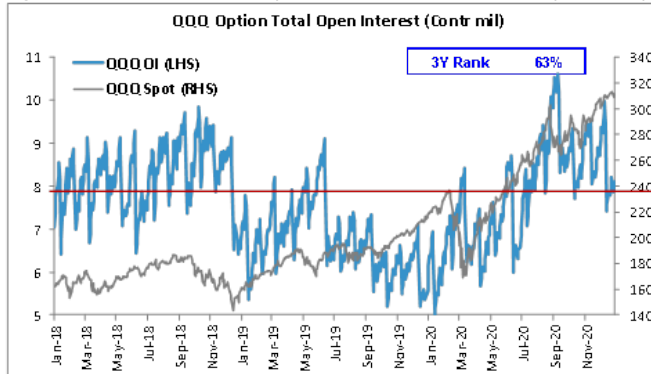


Figure 17: US Equity ETF Rebalancing per 1% ETF move

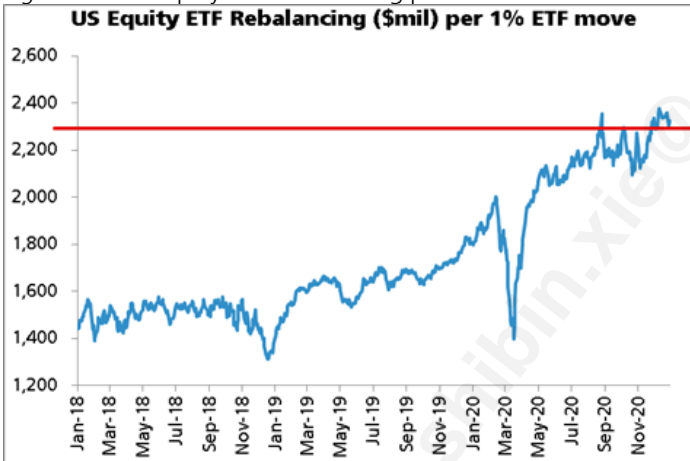


Figure 18: US Equity ETF Rebalancing Sensitivity / SPX Index

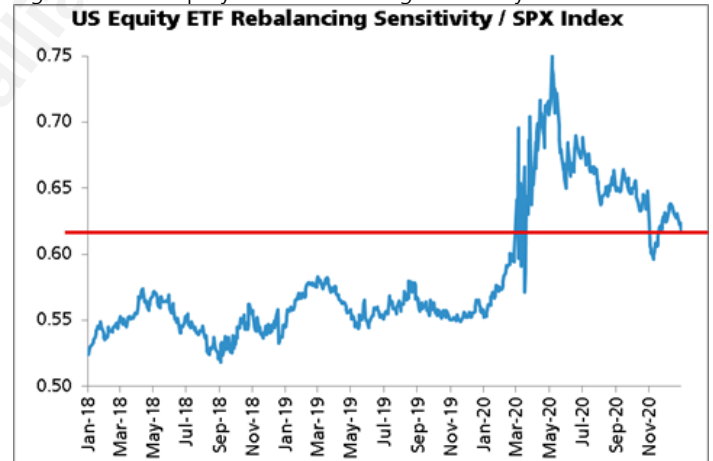


Figure 19: Money Market Funds AUM / SPX Market Cap

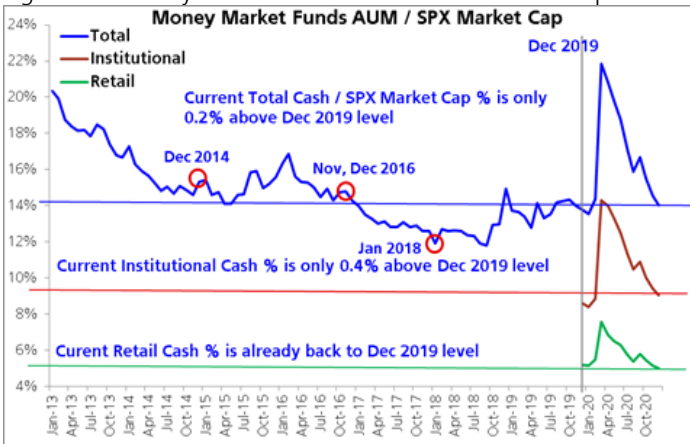


Figure 20: UBS PB L/S Clients Gross vs Net Leverages

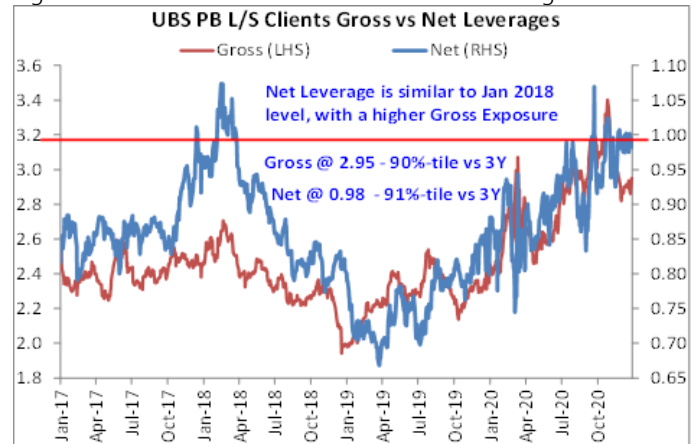


Figure 21: S&P 500 Total Short Interest

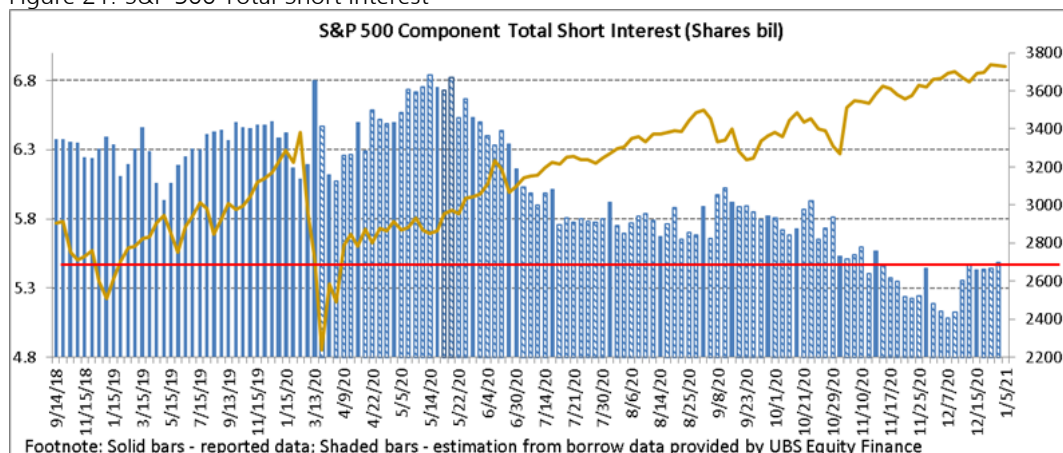


Figure 22: Russell 2000 Short Interest % of Market Cap

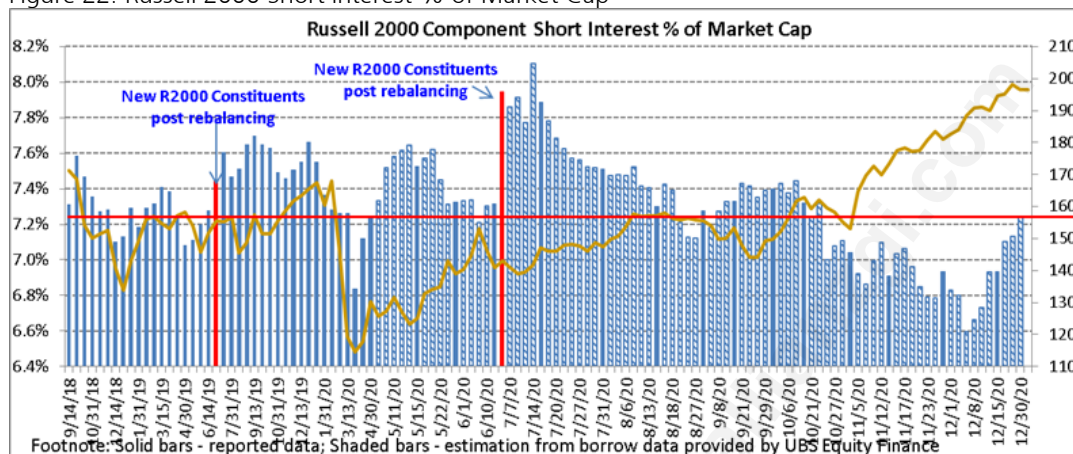


Figure 23: ETF Short Interest % of Shares

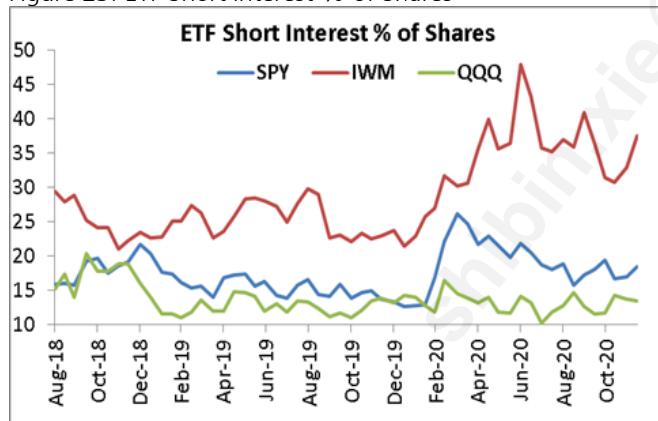


Figure 24: CFTC Leveraged Fund Exp in SPX Futures

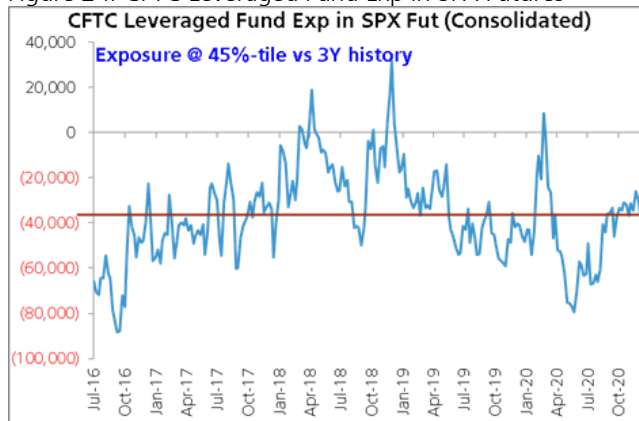


Figure 25: CFTC Leveraged Fund Exp in Russell 2000 Futures

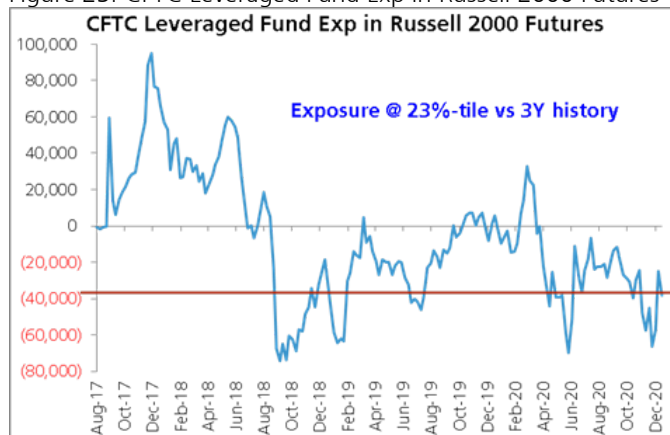


Figure 26: CFTC Leveraged Fund Exp in Nasdaq Futures

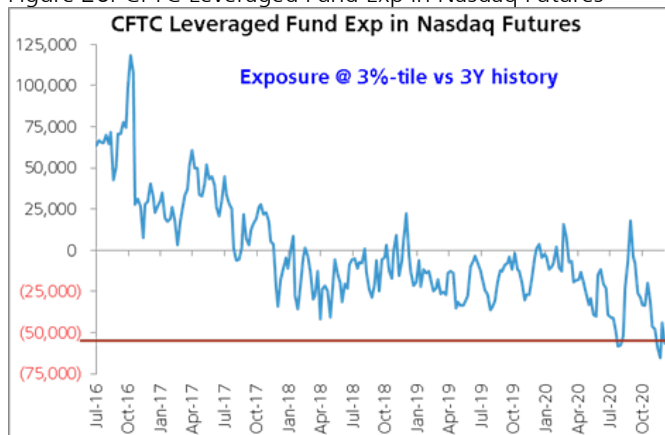
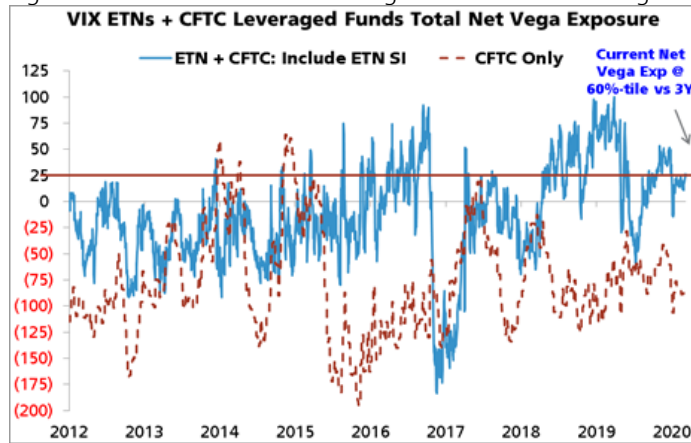
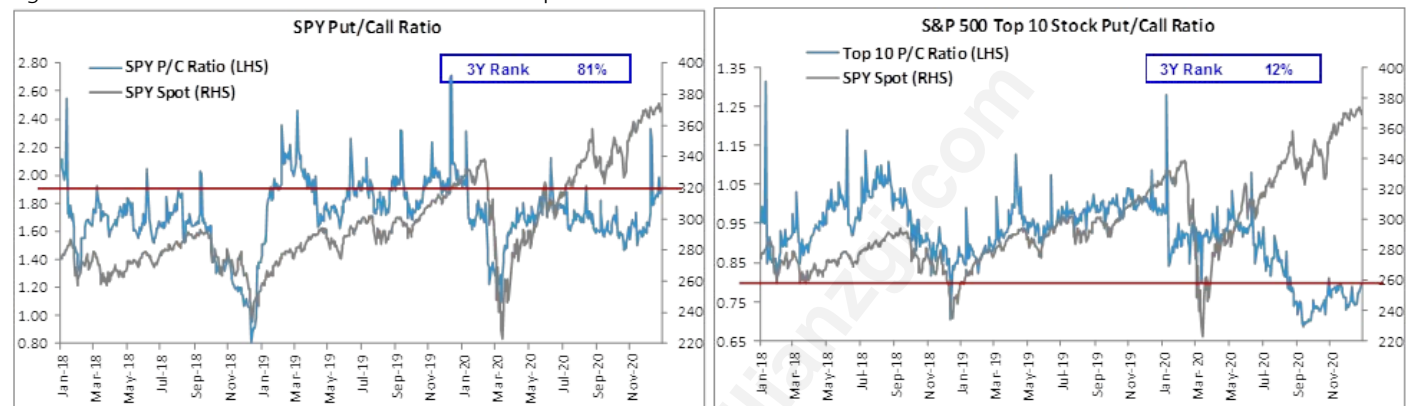


Figure 27: VIX ETNs + CFTC Leveraged Funds Total Net Vega Exp



Figures 28 & 29: SPY Put/Call Ratio & S&P 500 Top 10 Stock Put/Call Ratio



Figures 30 & 31: SPY Option Put OI & SPY Option Call OI

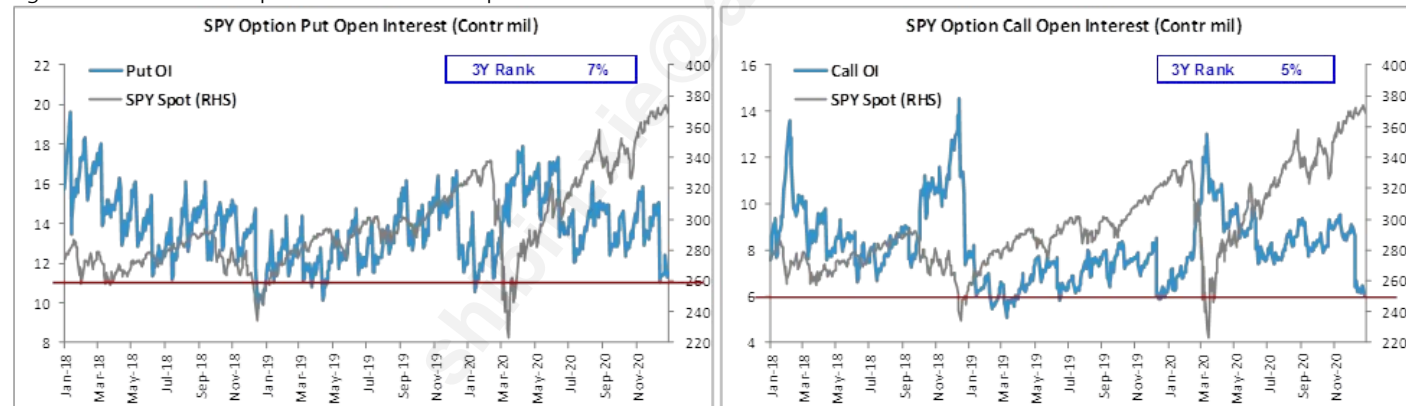


Figure 32: MF Flows in Global Equities

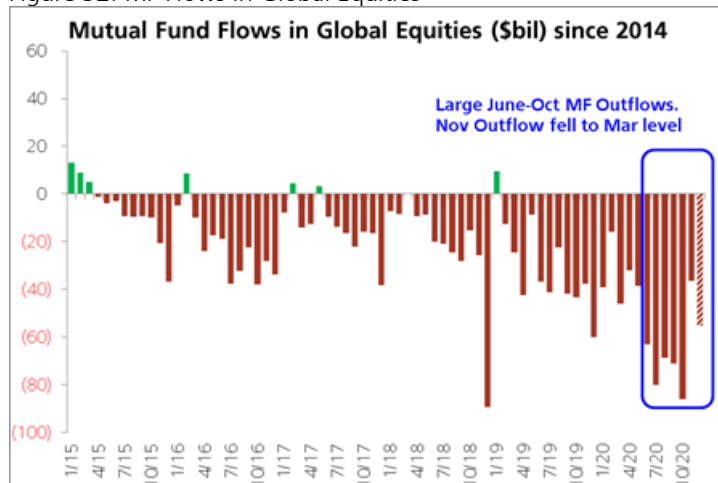


Figure 33: ETF Flows in Global Equities

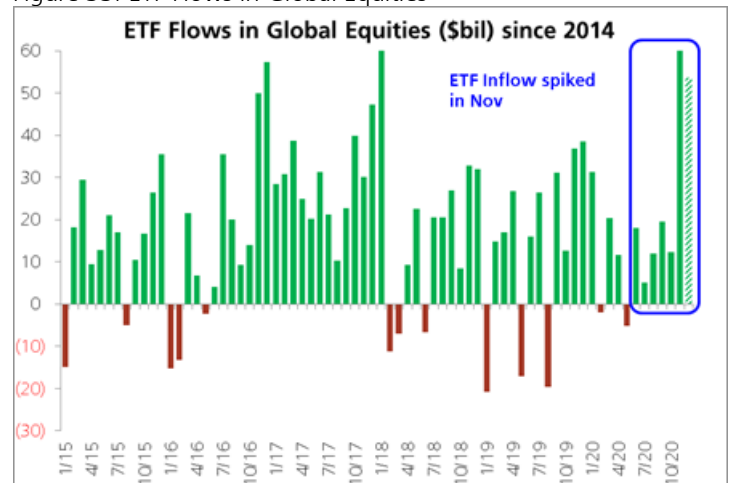


Figure 34: UBS RMM 3M Daily Equity Flow

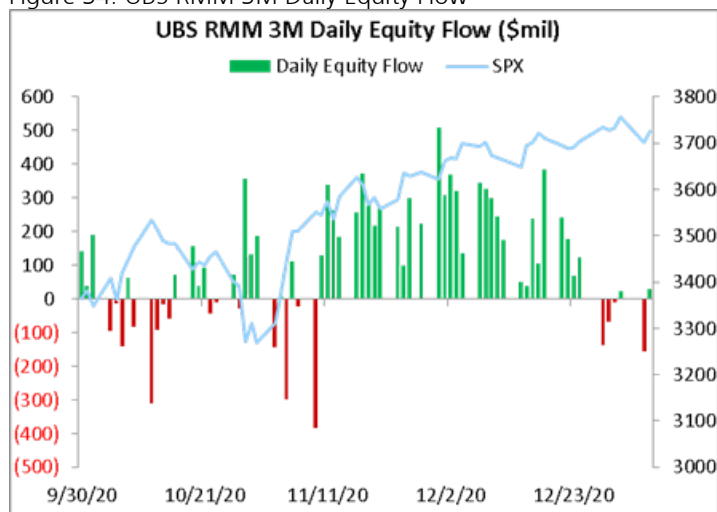


Figure 35: UBS RMM Exponentially Time Weighted Flow

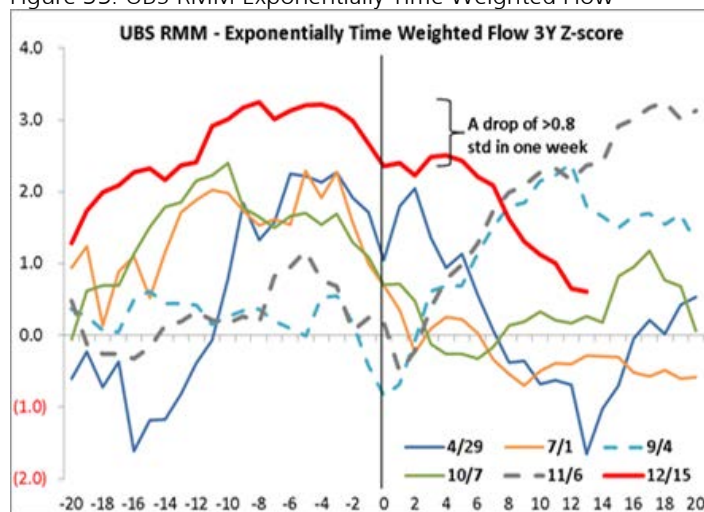


Figure 36: UBS RMM Daily Flows in Equities

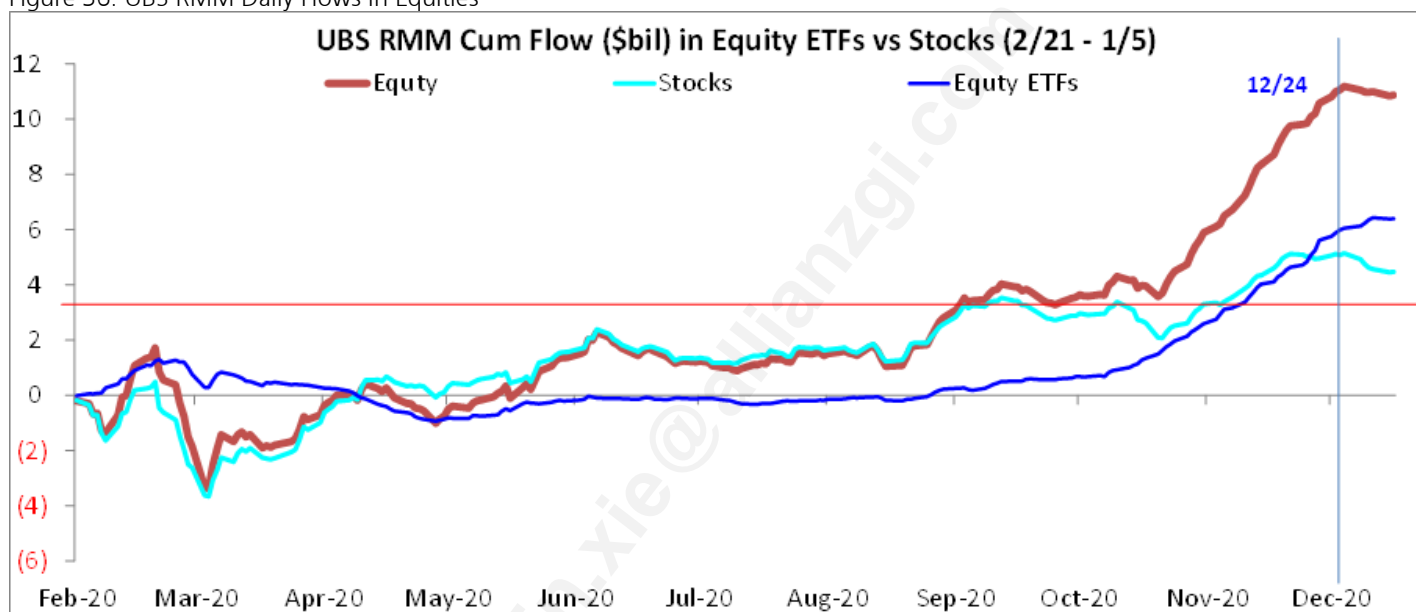
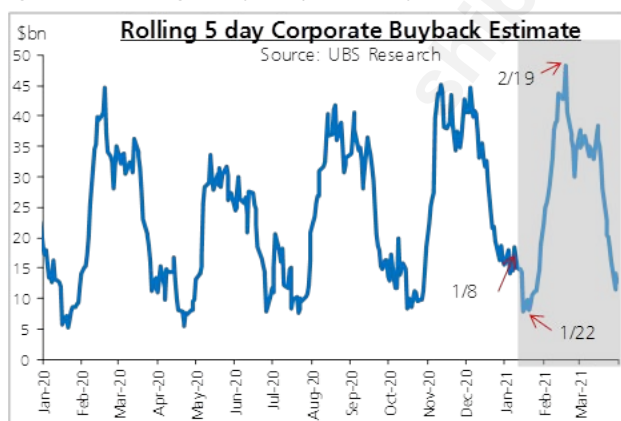


Figure 37: Rolling 5 day Corporate Buyback Estimate



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Sources: UBS Equity Derivatives Strategy, UBS Research, UBS Global Financing Services, UBS RMM Services, ICI, Bloomberg

*Please contact Data Solutions at ol-global-data-solutions@ubs.com for the underlying data for US Retail Market Maker Flow and Global Financing Services.

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