



Market Internal Weekly

Intact Market Internal – Momentum, Retail, Systematic & Institutional Support

Executive Summary

Market Internal is largely unchanged this week and continues to confirm the supportive dynamics observed in our model. On one hand, with SPX gaining over 5% in the first two weeks of April to set new high, it is natural for some investors to profit take fearing of a pullback. Despite SPX +0.3% last Friday, excess flow was actually on the sell side @ \$17 bil (Chart 1). On Monday and Tuesday, with SPX -0.7% and -0.5%, we saw more excess sell flows @ \$16 bil and \$35 bil (Charts 2 & 3). The net total of \$68 bil excess sell flow is quite small after taking SPX all-time high into consideration – this orderly (not panic) selling simply reflects normal investors' portfolio adjustment and is in-line with our supportive internal dynamics observation such as "buy-the-dip" behavior.

Many investors are worried that falling liquidity means small sell \$ could drive large sell-off. First, as written last week, stock and option volume has fallen vs Q1 record high but is still in-line with the elevated 2020Q4 (Charts 5 - 8). In a nutshell, liquidity isn't bad, just not extreme anymore. Second, in a grind higher market (our core view), investors only need to adjust portfolio marginally and don't have to change positions significantly. Therefore, falling volume is expected and normal in a grind higher market.

Update of the three key market internals highlighted the last two weeks ([4/15 Market Internal Weekly: Further Confirmation of Grind Higher Setup](#) & [4/8 Market Internal Weekly: Q2 is on track for a grind higher, low volatility market \(5% to 8% upside\)](#))

- 1) **Broad-based momentum strength** (Charts 9, 10, Table 11): Over the last few weeks, we mentioned repeatedly the breadth of short-term momentum with over 80% of SPX stocks above 50-day MA on 3/16 and then over 90% on 4/8. So far, the market path of rising SPX + falling volatility continues to be in-line with July and Nov last year, following similar >80% above 50D MA conditions: 1) SPX +5% so far this month, vs a max of +11% and +7% during the 2 months after July & Nov; 2) SPX 1M realized volatility @ 11% vs a min of 8% in both comparable periods. Notice that % of SPX stocks over 50D MA never rose above 90% last July and Nov, but this time, condition did rise above 90%. This suggests that the **current momentum support is strong. As per back test since 1993, SPX average next 3M low/high range was -2.2%/+8.2%. So far, SPX +2% since 4/8.**
- 2) **Retail support** (Table 12, Charts 13, 14): UBS RMM equity buy flow has increased gradually for the 4th week with current exponentially time-weighted flow @ 2.35x std dev. Based on MTD RMM equity buying of \$3.94 bil, potential April buy flow could reach \$6.37 bil assuming same daily buy pace. In that case, April could be the 2nd largest equity buy month after March. Once again, my grind higher view only needs moderate RMM buying as long as they maintain **"buy-the-dip" behavior** on down days, so strong RMM buying will further support this view. On the two down days this week, UBS RMM flow exhibited consistent buying throughout the day especially during market weakness (Charts 13 & 14)
- 3) **Systematic buying** (Charts 15, 16): Strong Intraday Recovery Score + Retail Support + Q1 accumulation of Institutional cash buffer + Broad-based momentum strength (reluctance to sell without "cheap" alternatives to buy) are some market internals highlighted the last few weeks that support "buy-the-dip" or at least not "dump the stocks" market phenomenon. This is expected to constrain realized volatility. Current exposure is 71% with SPX daily breakeven @ 90 bps – I think **risk control funds can buy for 2 to 3 more months before exposure being vulnerable again.**

On the sell side, if SPX moves 1%, 2% and 3% for 1 day, they will not cut, cut \$20-25 bil and \$60-80 bil to 71%, 67% and 59% exposures respectively. On the buy side, if SPX moves 25 bps, 50 bps and 75 bps daily, they could add \$25-35 bil, \$20-25 bil and \$5-10 bil in 1 week, \$120-160 bil, \$80-100 bil and \$25-35 bil in 1st month, \$140-180 bil, \$70-90 bil and \$20-25 bil in 2nd month and \$150-210 bil, \$50-75 bil and \$10-15 bil in 3rd month with final exposures at 148%, 109% and 82% respectively. Historically, >90% exposure (70 bps daily breakeven) could start to create some meaningful sell flow when triggered, while >120% exposure (52 bps daily breakeven) starts to have an asymmetric rebalancing risk/reward profile given SPX needs to move less than 50 bps everyday in order for the funds to keep buying

Chart 1

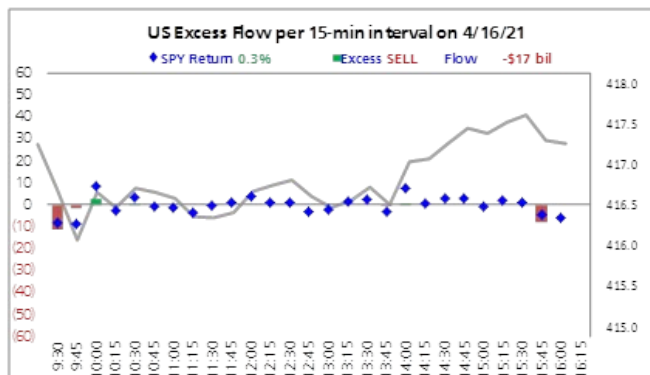


Chart 2

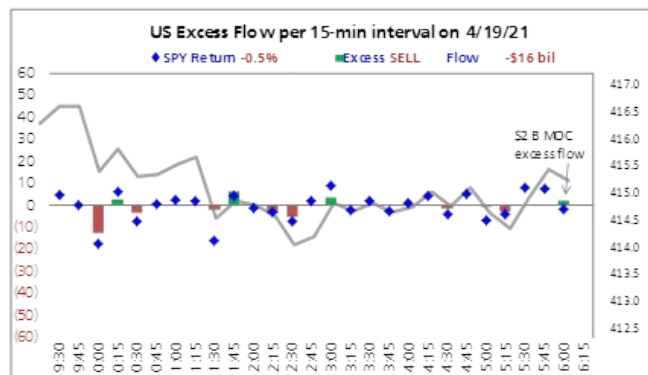


Chart 3

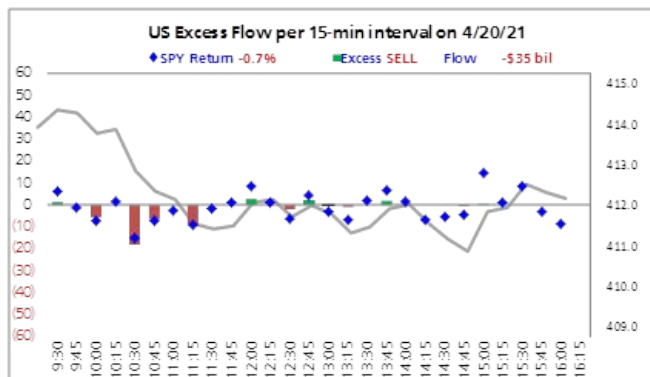


Chart 4

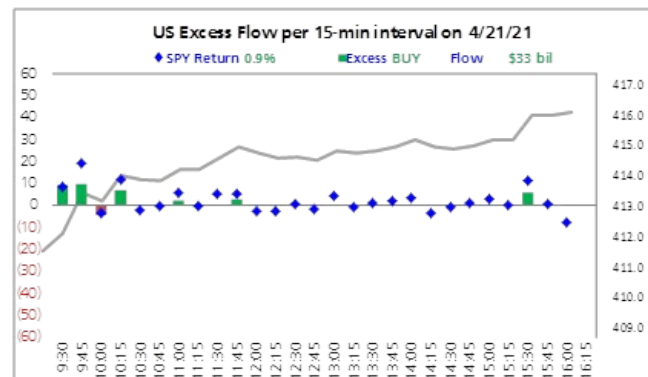


Chart 5

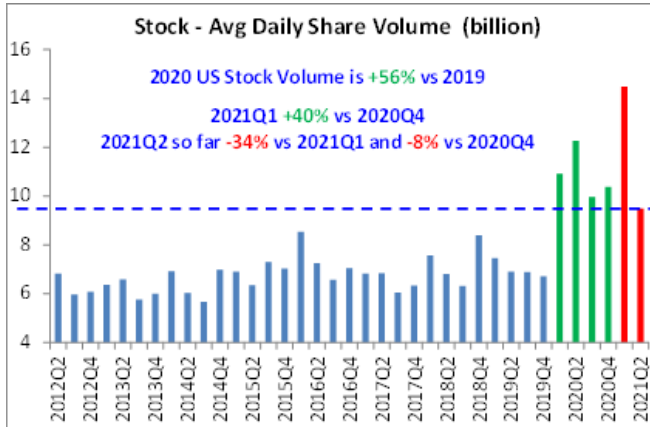


Chart 6

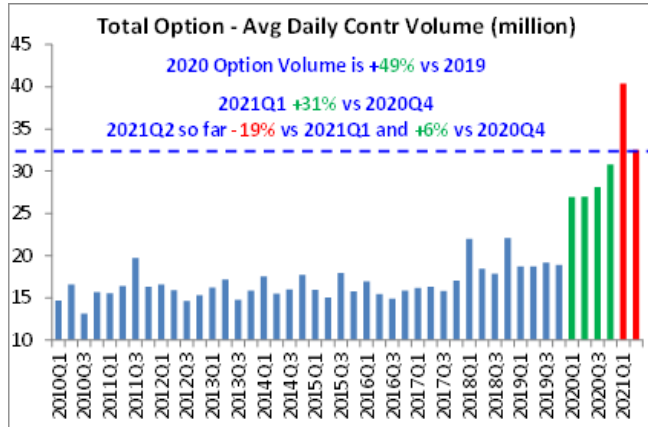


Chart 7

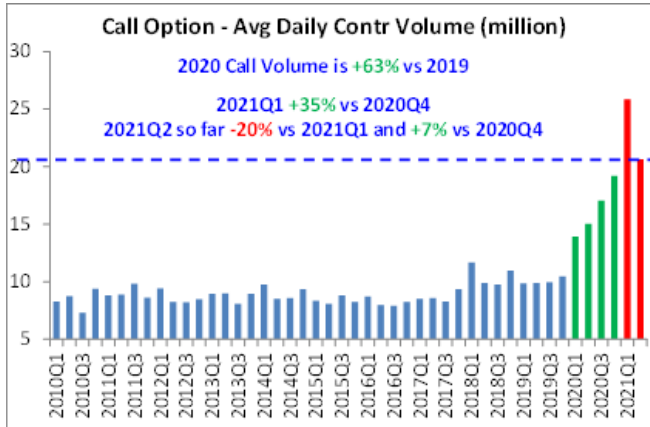


Chart 8

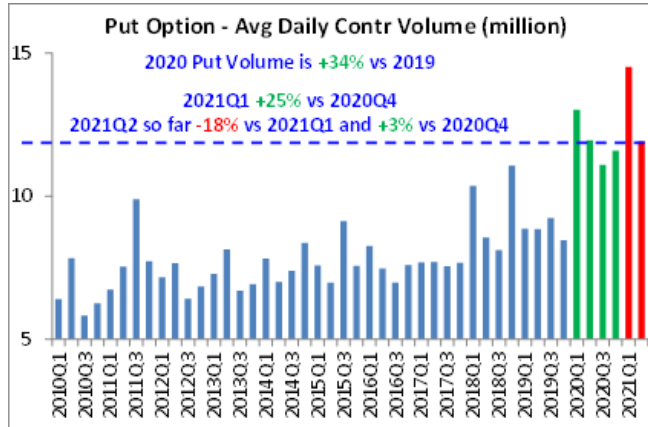


Chart 9

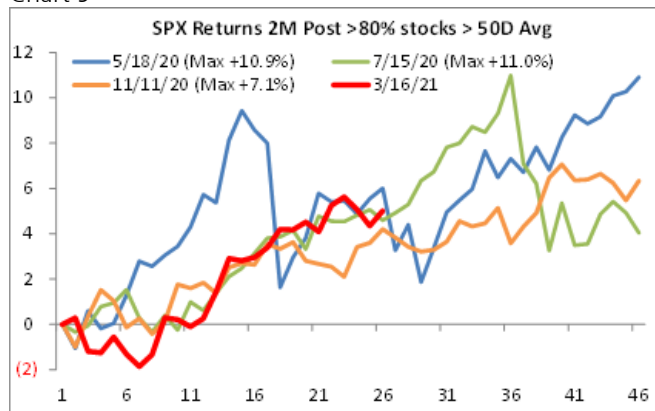


Table 11

Over 90% of SPX stocks above 50-day moving average 1st time in 1M

% Stks		Next				Next 3M	
Date	>50D MA	1D	1W	1M	3M	Min	Max
5/30/97	90.4	-0.2%	1.1%	4.3%	9.3%	-1.0%	13.2%
3/18/98	90.2	0.4%	1.5%	3.4%	1.4%	-0.8%	4.1%
11/5/98	91.4	0.6%	-1.4%	4.7%	7.9%	-1.4%	12.9%
5/2/03	90.4	-0.4%	0.4%	4.5%	3.8%	-1.1%	8.8%
11/12/04	91.0	0.0%	-1.2%	1.6%	2.2%	-1.7%	2.5%
4/29/09	90.6	-0.1%	5.3%	5.2%	13.0%	-0.1%	13.0%
8/3/09	91.2	0.3%	0.4%	-0.5%	4.3%	-2.3%	9.5%
3/17/10	90.2	0.0%	0.1%	2.2%	-4.2%	-9.9%	4.4%
10/5/10	91.2	-0.1%	0.8%	3.2%	9.7%	-0.2%	10.0%
10/24/11	91.8	-2.0%	-0.1%	-5.3%	5.0%	-7.6%	5.7%
1/4/13	90.1	-0.3%	0.4%	3.1%	8.3%	-0.6%	8.3%
5/14/13	91.2	0.5%	1.1%	-0.8%	0.7%	-4.7%	3.6%
3/16/16	90.7	0.7%	0.5%	2.6%	2.2%	0.0%	4.5%
2/15/19	92.5	0.1%	0.7%	2.1%	3.2%	-1.2%	6.1%
5/26/20	90.9	1.5%	3.0%	2.0%	16.3%	0.0%	16.3%
Average		0.1%	0.8%	2.2%	5.5%	-2.2%	8.2%

4/8/21	90.5	0.8%	1.8%	0.0%	2.2%
--------	------	------	------	------	------

As of 4/21 Close

Chart 13

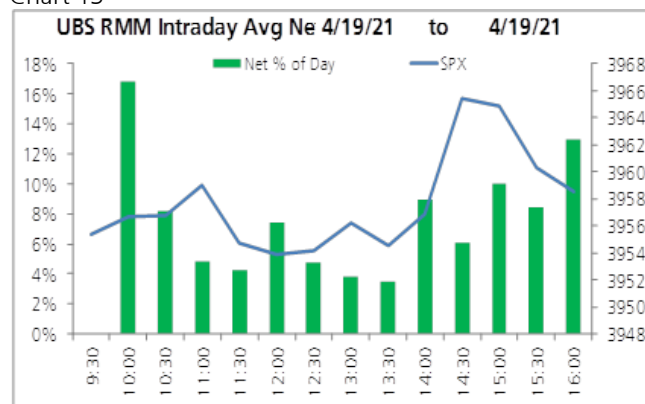


Chart 15

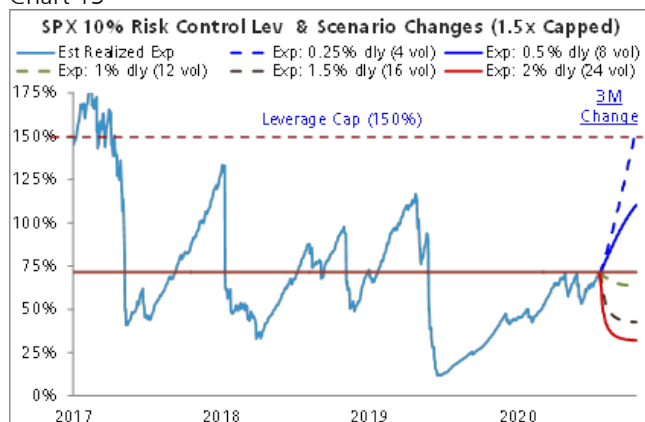


Chart 10

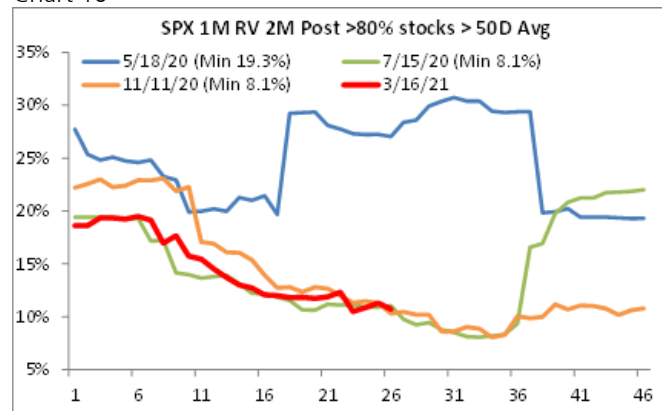


Table 12

RMM Flow	All Eq	Stock Only	ETF Only
Nov-20	2,931	483	2,448
Dec-20	3,756	704	3,053
Jan-21	2,233	597	1,636
Feb-21	5,481	2,700	2,781
Mar-21	6,681	3,141	3,539
Apr-21	3,941	2,290	1,651
Est Apr*	6,366	3,700	2,666

* Estimated based on 4/1 - 4/20 Flow

Chart 14

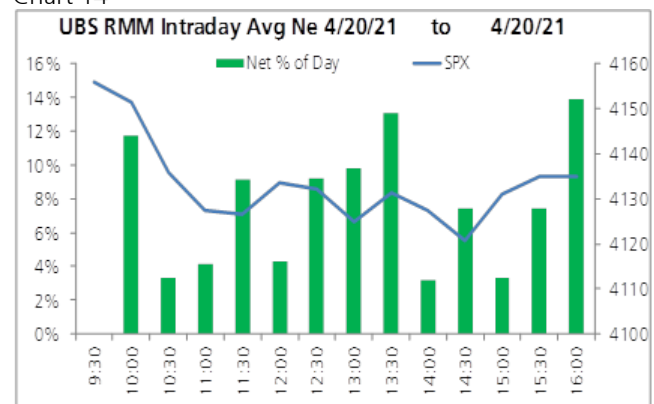
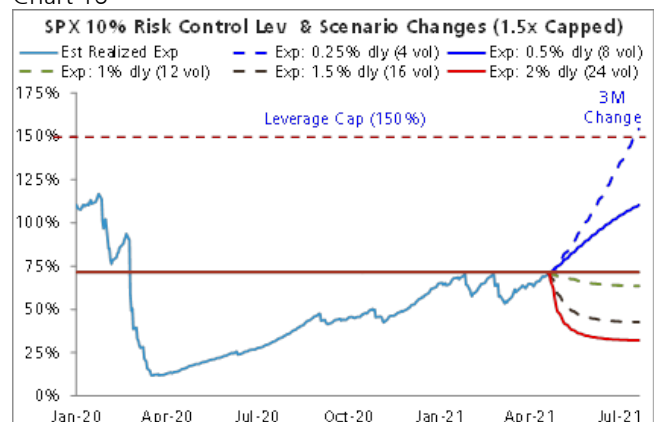


Chart 16



Model Overview

More components of the Market Internal Dynamic Model are no longer extreme with 21 of 36 (58%) bubbles being in white color. The remaining bubbles are biased to be bullish across all three pillars.

Within **market signals**, 4M intraday recovery score @ 21% with 2M score @ 1%. Currently, 80% of SPX stocks are above 50D moving averages – a bullish indicator since a month ago. Excess flow has increased in both directions with a slightly imbalance to sell @ \$30 bil

Within **systematic/rule-based rebalancing**, risk control, risk parity and CTA equity exposures @ 66%-tile, 30-35%-tile and 78%-tile vs 3Y. If SPX moves 2%, 1.5% or 1% for one day, RC is estimated to sell \$20-25 bil, \$10 bil and no change respectively. With eq/bond 2M correlation being positive for 8 weeks and is still high @ 32%, RP funds continue to be at risk of cutting bond exposures. In terms of CTA rebalance, their clustered sell triggers are quite far away @ -5.9% to -7.3% for ES1, -4.3% to -5.9% for NQ1 and -3.9% to -4.6% for RTY1

Within **flow/positioning**, UBS RMM flows bought equities in 54 of last 56 days and for the last 31 days straight. Exponentially time-weighted equity flow remains strong @ 2.4x std dev pace globally. Although cash (money market funds) has been drawn down by institutional investors for the 2nd week at a total of \$28 bil, there is still large cash buffer for them to deploy as they accumulated \$226 bil cash for 8 consecutive weeks in Feb and Mar



Model Details

Market Signals

- 1) **Intraday Recovery Score** (Figure 1) – Remains bullish with 4M intraday recovery score @ 21% while 2M recovery score fell slightly to 1%
- 2) **50D MA** (Figure 2) – Over 80% of S&P 500 names rose above 50-Day Moving Averages on 3/16 and 3/26, then over 90% of names rose above their 50D MA on 4/8 and 4/13. Currently 80% of stocks are above their 50D MA
- 3) **Excess Flow** (Figures 3 & 4) – US Equity excess flow volume has increased in both directions in the last week, with net excess sell flow @ -\$30 bil. On the other hand, US Treasury excess flow has continued to have buy flows, this week totaling \$41 bil, after \$65 bil of buy flows the previous two weeks.

Systematic/Rule-based Rebalancing

- 1) **Risk Control** (Figure 5) – S&P 500 10% Risk Control fund leverage rose to 71% or 66%-tile vs 3Y. Daily breakeven is @ 88 bps. Scenario rebalancing:
 - 1-day move: If SPX moves +/-3%, 2%, 1.5%, 1% and 50 bps, expect to cut \$55-75 bil, \$20-25 bil, \$10 bil, no change and add \$5 bil respectively
 - 2-day moves: If SPX moves +/-3%, 2%, 1.5%, 1% and 50 bps for two days, expect to cut \$100-140 bil, \$45-55 bil, \$20-25 bil, \$5 bil and add \$10 bil respectively
- 2) **Risk Parity** (Figure 6) – Estimated RP equity exposure is relatively unchanged this week @ 20-25% or 25-35%-tile vs 3Y and bond exposure @ 120-130% or 40-50%-tile vs 3Y. UBS RP model current 1M & 2M RV @ ~6-9% - slightly above 7.5% volatility target. However, sample RP funds 1M RV is higher @ ~8-10%. Given 2-3M RV has stabilized, pressure to cut should be reduced
- 3) **Cross-Asset Returns/Correl/Volatility** (Figures 7) – Eq/bond 2M correlation has been positive for 8 weeks and is still high @ 32%
- 4) **CTA** (Figures 8 - 12) – UBS CTA Equity Proxy has decreased slightly in the last week to 49% or 78%-tile vs 3Y. For ES1 there is one close sell trigger: ST @ 4066 (-2.2%), clustering sell risk further away @ -5.9% through -7.3%. For NQ1 there is one close buy trigger: MT @ 14194 (+2.1%); one close sell trigger: ST @ 13542 (-2.6%); clustered selling risk further away @ -4.3% through -5.9%. For RTY1 there are no close buy/sell triggers within +/- 3% in futures; clustered sell risk further away: MT @ 2145 (-3.9%), LT @ 2138 (-4.2%) and ST @ 2130 (-4.6%).
- 5) **Pensions & Target Date Fund Rebalancing** (Figure 13) – As of 4/21 close, pension fund rebalance estimate is very small @ \$9 bil of global equities to sell/bonds to buy, of which ~\$14 bil of US large cap to sell and +\$3 bil of US Small cap to buy. In terms of bond buying split, estimate about 60% in government bonds and 40% in others
- 6) **Option Gamma Risk Proxy using OI %** (Figures 14 - 19) – ETF option gamma has dropped after expiration last Friday; SPY, QQQ and IWM OI @ 5%-tile, 60%-tile and 62%-tile vs 3Y (from 18%-tile, 92%-tile and 70%-tile vs 3Y last week). S&P 500, Nasdaq 100 and Russell 2000 Top stock option OI have also decreased @ 36%-tile, 63%-tile and 76%-tile vs 3Y (from 58%-tile, 75%-tile and 87%-tile vs 3Y last week)
- 7) **Leveraged & Inverse ETP Rebalancing Sensitivity** (Figures 20 & 21) – ETP rebalancing sensitivity dropped this week but still remains high at \$2.83 bil per 1% asset move, or 0.0077% of S&P 500 Market Cap. This sensitivity ratio is high at 87%-tile vs 3Y history

Positioning & Flow

- 1) **Cash Level** (Figures 22 & 23) – Investors reduced cash last week again by \$30 bil (2nd week of reduction after consistent adding for 8 weeks prior). Retail investors put money to work again last week @ \$9 bil, now 11 out of the last 15 weeks – current exposure remains close to 10Y low @ 4.3% of S&P 500 market cap. On the other hand, institutional investors have started to use

cash the last two weeks (\$28 bil) after accumulating \$226 bil cash for 8 consecutive weeks in Feb and Mar – this large cash buffer implies they have more room to buy on weakness and have less room to cut exposure sharply

- 1) **Margin % of SPX Market Cap** (Figure 24) – March monthly report isn't out yet
- 2) **UBS PB L/S Exposures** (Figures 25 & 26) – UBS PB L/S clients have stayed relatively the same in last week, with net exposure change since Jan 2020 @ +30% incorporating asset return vs +3% implied trading (excludes return)
- 3) **Stock & ETF Short Interest** (Figures 27 - 29) – As of 4/15, S&P 500 and Russell 2000 stock short interest continue to be very low @ 6%-tile and 1%-tile vs 3Y respectively. As of 3/31 official data, ETF short interest % for SPY, QQQ and IWM @ 70%-tile, 80%-tile and 89%-tile vs 3Y
- 4) **CFTC Leveraged Fund Exposures** (Figures 30 - 32) – As of 4/13, CFTC leveraged fund exposure trend the same as prior week; exposure dropped in S&P 500 futures @ 18%-tile vs 3Y, unchanged in Russell futures @ 31%-tile vs 3Y, and rose in Nasdaq futures @ 47%-tile vs 3Y
- 2) **SPX Top 50 Call Skew** (Figure 33) – S&P 500 Top 50 stocks positive call skew still high @ +5% on average for 1M 110C with 72% of the stock skew being positive
- 5) **VIX Exposure + Option Open Interest** (Figures 34 - 40) – VIX net vega exposure dropped slightly to \$26 mil or 56%-tile vs 3Y. ETF Put/Call ratios for SPY, QQQ and IWM are relatively unchanged @ 84%-tile, 79%-tile and 68%-tile vs 3Y. S&P 500 and Nasdaq top stock P/C ratios are relatively unchanged @ 17%-tile and 3%-tile vs 3Y. Russell 2000 top stock P/C ratio rose to 43%-tile vs 3Y (from 22%-tile vs 3Y last week)
- 6) **US MF + ETF Flows** (Figures 41 & 42) – Official flows for March are not out yet. So far for April, MFs are on track to have outflows again this month, currently @ 4 bil and ETF inflows on pace of recent months, already @ 28 bil.
- 7) **UBS RMM Flow** (Figures 43 - 45) – **Bought equities for the last 54 out of 56 days and for the last 31 days straight.** Exponentially time-weighted equity flow remains strong @ 2.4x std dev pace globally, while fixed income flow remains weak at only 0.5x
- 8) **Corporate Buyback** (Figure 46) – Corporate Buyback (Corporate Payment minus Dividend forecast) is estimated @ \$5-10 bil per week for the rest of April and the first week of May.

Figure 1: S&P 500 Intraday Recovery Scores

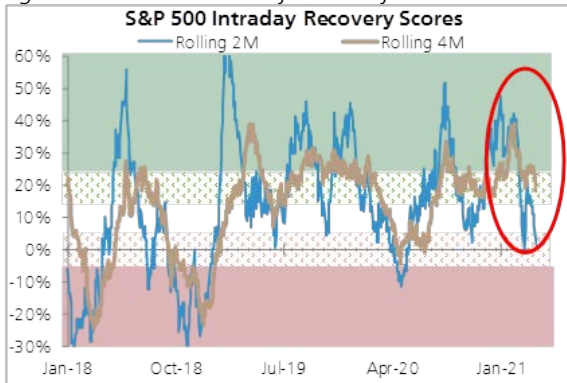


Figure 2: SPX % Stocks > 50-Day Moving Averages

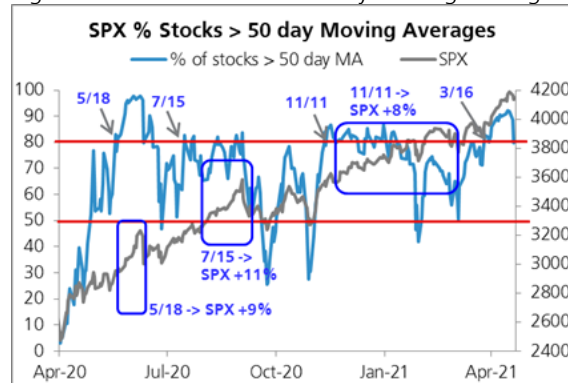


Figure 3: Recent US Equity Daily Excess Flow

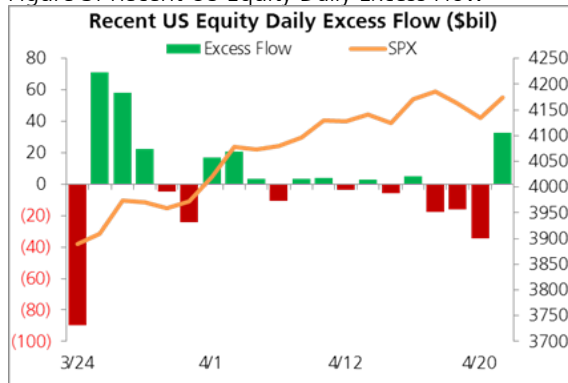


Figure 4: Recent US Treasury Daily Excess Flow

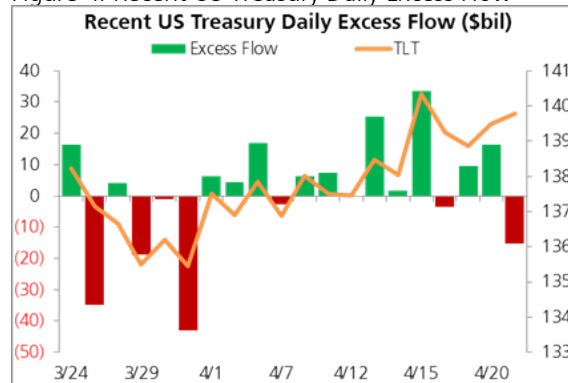


Figure 5: SPX Risk Control Leverage & Scenario Changes

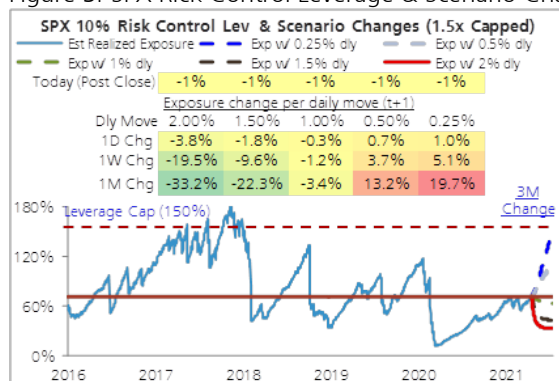


Figure 6: UBS Risk Parity Bond & Equity Model Exposures

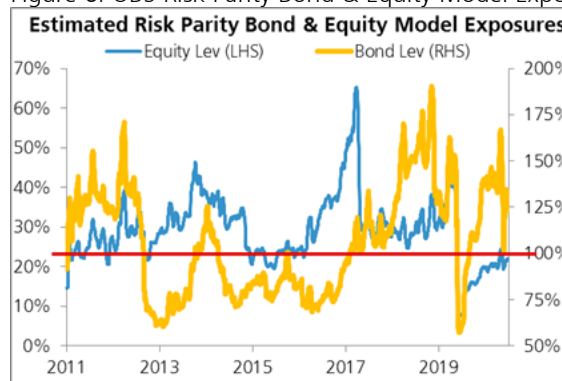


Figure 7: 10Y Bond vs SPX 2M Correl

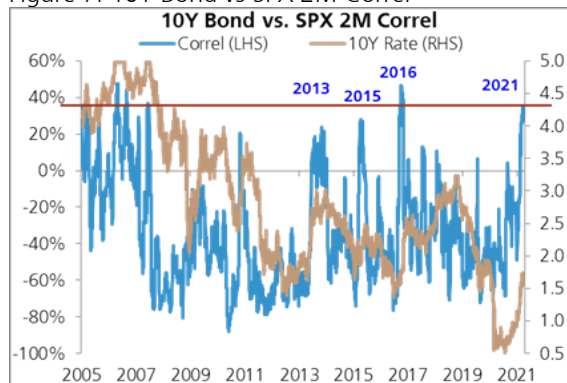


Figure 8: UBS CTA Model Equity Daily Proxy

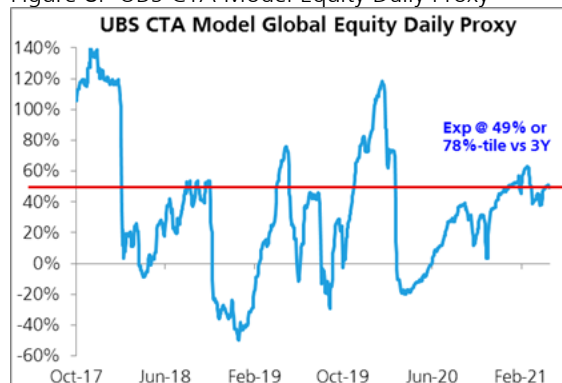


Figure 9: UBS CTA Tracker Summary

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

As of 4/21/21

				L				S				BUY Watch				SELL Watch				Dys in LT Mom.			
		Proxy	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	# *	S	Mom.	S	MA		
S&P 500	4159	5.5%	69%	92%											8%	4052	-2.6%	L	234	L	197		
Russell 2000	2233	2.1%	61%	42%						8%					25%	2145	-3.9%	L	116	L	171		
Nasdaq 100	13901	3.8%	53%	92%								8%	14179	2.0%	8%	13487	-3.0%	L	264	L	231		
S&P Midcap	2704	3.9%	63%	83%								8%	2743	1.4%				L	114	L	172		
Dow Jones	34017	6.3%	72%	92%											8%	33316	-2.1%	L	116	L	177		
Euro STOXX	3950	5.7%	87%	92%											8%	3880	-1.8%	L	41	L	157		
FTSE 100	6893	6.9%	93%	100%											17%	6790	-1.5%	L	38	L	97		
DAX	15280	5.9%	88%	92%											8%	15064	-1.4%	L	81	L	187		
Nikkei 225	28880	1.5%	45%	42%			17%	25%	25%			25%	29325	1.5%	17%	28190	-2.4%	L	224	L	186		
MSCI EAFE	2271	7.4%	90%	100%											33%	2235	-1.5%	L	115	L	177		
HSCEI	10889	1.2%	68%	33%				25%							17%	10812	-0.7%	L	64	L	96		
Hang Seng	28695	2.1%	77%	50%				17%	8%			25%	29149	1.6%	8%	27901	-2.8%	L	63	L	100		
KOSPI 200	425.7	4.8%	87%	100%											25%	420.9	-1.1%	L	210	L	189		
Bovespa	120442	3.4%	62%	83%														L	33	L	167		
MSCI EM	1339	1.5%	59%	33%				8%				17%	1357	1.4%	8%	1314	-1.8%	L	203	L	188		
WTI Crude	61.1	2.1%	80%	75%											17%	60.8	-0.4%	L	57	L	158		
Brent Crude	65.0	2.2%	79%	75%											17%	64.2	-1.3%	L	60	L	137		
Natural Gas	2.70	0.6%	67%	33%	8%			8%			8%	25%	1800.5	0.5%				L	141	L	161		
Gold	1792	-2.4%	22%	17%				42%		8%		25%	1800.5	0.5%				L	477	S	43		
Copper	429.1	3.8%	77%	100%														L	204	L	192		
Silver	26.7	0.8%	47%	42%	8%			8%				25%	27	1.1%				L	244	L	202		
EUR	1.203	4.2%	72%	33%				17%				33%	1.210	0.6%	17%	1.192	-1.0%	L	208	L	212		
GBP	1.393	10.9%	93%	67%								17%	1.408	1.1%	33%	1.384	-0.6%	L	139	L	175		
AUD	0.775	7.0%	79%	58%	8%	17%						8%	0.790	1.9%	25%	0.768	-1.0%	L	201	L	210		
JPYUSD	108.1	-15.1%	8%	8%				67%		8%	8%	33%	107.5	-0.5%	8%	109.5	1.3%	S	26	S	25		
CADUSD	1.250	8.9%	69%	50%	8%	17%		8%	8%			25%	1.256	0.5%	17%	1.262	1.0%	L	122	L	183		
US 10Y Bond	132.6	-20.9%	18%					92%				50%	132.8	0.2%				S	38	S	90		
US 20Y Bond	158.2	-11.0%	16%	8%				83%				25%	159.0	0.5%	8%	156.5	-1.1%	S	43	S	116		
US 30Y Bond	187.6	-5.8%	17%	8%				67%				8%	190.7	1.7%	8%	184.8	-1.5%	S	43	S	101		
Euro BTP 10Y	148.3	-4.7%	18%	17%				75%				50%	149.0	0.5%				L	486	L	188		
Euro Bund 10Y	171.0	-20.1%	0%					100%				50%	171.5	0.3%				S	7	S	24		
Euro Buxl 30Y	205.4	-11.0%	0%					100%				25%	206.4	0.5%				S	42	S	37		
JGB 10Y	151.5	-31.8%	33%	17%	17%			42%		17%		42%	151.6	0.1%	17%	151.3	-0.1%	S	57	S	327		
Aussie 3Y	99.72	-136.3%	2%	8%				50%	17%			42%	99.74	0.0%	33%	99.71	0.0%	S	1				
Aussie 10Y	98.31	-81.4%	10%					75%				58%	98.34	0.0%	8%	98.09	-0.2%	S	65	S	41		

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 10: ES1 CTA Triggers

ES1	4159.25		UBS CTA Tracker				As of		4/21/21	
Signal Method	Current		BUY / SELL Watch							
	L/S	# Dys	Buy/Sell	# Dys	Action	Spot*			MA X-over*	
						Level	vs Cur	vs Hi-Lo	Action	# Dys
New High / Low ST	L	54	S		Exit	3880.80	-6.7%	-5.6%		
New High / Low MT	L	195								
1Y Momentum LT	L	234	S		Exit	2780.75	-33.1%	-32.4%		
Bollinger Band ST	L	14	S	2	Exit	4066.00	-2.2%	-1.1%		
Bollinger Band MT	L	15	S		Exit	3962.90	-4.7%	-3.6%		
Bollinger Band LT			B		Long	4441.70	6.8%	6.6%		
Bollinger Band ST	L	19	S		Exit	3938.99	-5.3%	-4.2%		
Bollinger Band MT	L	33	S		Exit	3899.68	-6.2%	-5.2%		
Bollinger Band LT	L	116	S		Exit	3855.48	-7.3%	-6.3%		
MA Crossover ST	L	25								
MA Crossover MT	L	221								
MA Crossover LT	L	197								

Figure 11: NQ1 CTA Triggers

NQ1	13901.3	UBS CTA Tracker				As of 4/21/21				
Signal Method	Current		BUY / SELL Watch							
	L/S	# Dys	Buy/Sell		Spot*			MA X-over**		
			B/S	# Dys	Action	Level	vs Cur	vs Hi-Lo	Action	# Dys
New High / Low ST	L	9	S		Exit	12770.5	-8.1%	-6.8%		
New High / Low MT	L	221								
1Y Momentum LT	L	264								
Bollinger Band ST	L	15	S	2	Exit	13542.0	-2.6%	-1.2%		
Bollinger Band MT			B	10	Long	14194.1	2.1%	1.9%		
Bollinger Band LT	L	220	S		Exit	12234.8	-12.0%	-10.7%		
Bollinger Band ST	L	13	S		Exit	13296.8	-4.3%	-2.9%		
Bollinger Band MT	L	14	S		Exit	13222.3	-4.9%	-3.5%		
Bollinger Band LT	L	14	S		Exit	13086.0	-5.9%	-4.5%		
MA Crossover ST	L	14								
MA Crossover MT	L	242								
MA Crossover LT	L	231								

Figure 12: ES1 CTA Triggers

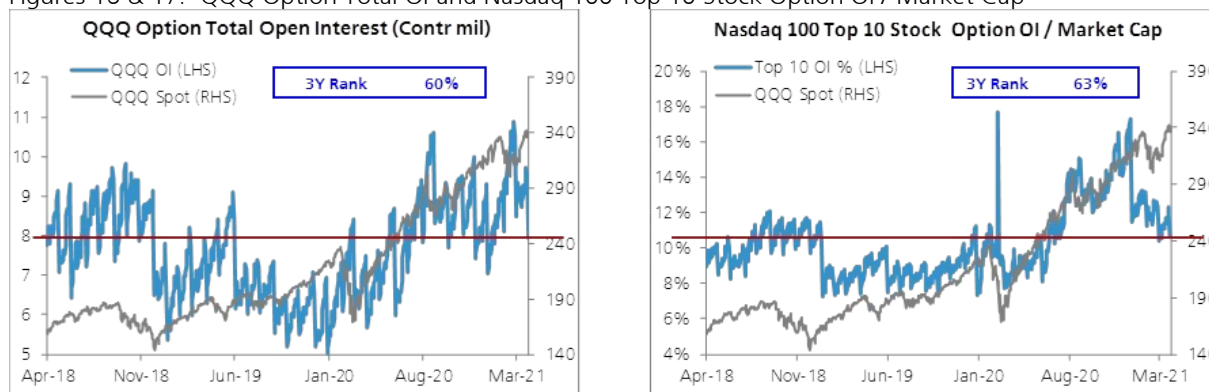
RTY1		2232.60		UBS CTA Tracker		As of		4/21/21			
Signal Method		Current		BUY / SELL Watch							
		Current		Buy/Sell		Spot*			MA X-over**		
		L/S	# Dys	B/S	# Dys	Action	Level	vs Cur	vs Hi-Lo	Action	# Dys
New High / Low ST				S	2	Short	2130.20	-4.6%	-1.7%		
New High / Low MT		L	180								
1Y Momentum LT		L	116	S		Exit	1204.80	-46.0%	-44.4%		
Bollinger Band ST				B	2	Long	2286.55	2.4%	2.1%		
Bollinger Band MT				S	2	Short	2144.50	-3.9%	-1.0%		
Bollinger Band LT				B		Long	2809.77	25.9%	25.5%		
Bollinger Band ST		ES	1								
Bollinger Band MT				B		Long	2285.90	2.4%	2.1%		
Bollinger Band LT		L	138	S	2	Exit	2138.22	-4.2%	-1.3%		
MA Crossover ST					3						
MA Crossover MT		L	215								
MA Crossover LT		L	171								

Figure 13: US Pensions Rebalancing Estimate

US Pensions Rebalancing Estimate in \$B (as of Apr 21, 21)

	US Public Pensions						US Corporate Pensions						
Estimated AUM	\$ 5,310						\$ 3,521						
	US Large	US Small	DM	EM	US Bonds	Oth	US Large	US Small	DM	EM	US Bonds	Oth	
Target Weight	35%	5%	10%	5%	25%	20%	35%	5%	10%	5%	25%	20%	
Proxy Index	SPX	RTY	EFA	EEM	TLT/AGG		SPX	RTY	EFA	EEM	AGG		
MTD Total Ret	5.1%	0.9%	3.5%	1.3%	2.1%		5.1%	0.9%	3.5%	1.3%	1.0%		
Pre-rebal Mth Wgt	35.6%	4.9%	10.0%	4.9%	24.7%		35.7%	4.9%	10.0%	4.9%	24.5%		
Rebal Mth \$	(7.5)	1.7	(0.0)	1.4	4.4		(6.1)	1.0	(0.3)	0.8	4.7		
Rebalancing \$bil	(7.5)	1.7	(0.0)	1.4	4.4		(6.1)	1.0	(0.3)	0.8	4.7		
						(4.4)			(9.1)			(4.7)	
Triggered Rebalancing						GL Eq:	0.0	=> ME:		0.0	Wkly:		0.0
TOTAL							(9.1)						

Figures 16 & 17: QQQ Option Total OI and Nasdaq 100 Top 10 Stock Option OI / Market Cap



Figures 18 & 19: IWM Option Total OI and Russell 2000 Top 30 Stock Option OI / Market Cap

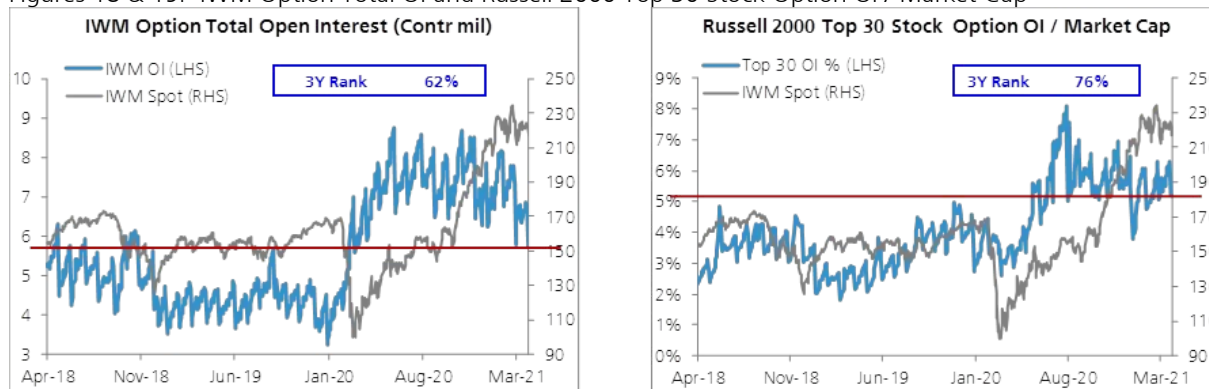


Figure 20: US Equity ETF Rebalancing per 1% ETF move



Figure 21: US Equity ETF Rebalancing Sensitivity / SPX Index

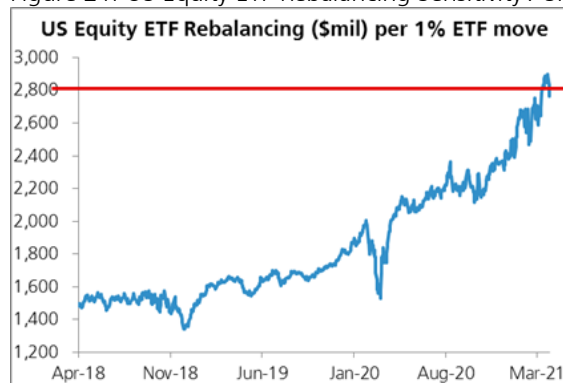


Figure 22: Money Market Funds AUM / SPX Market Cap

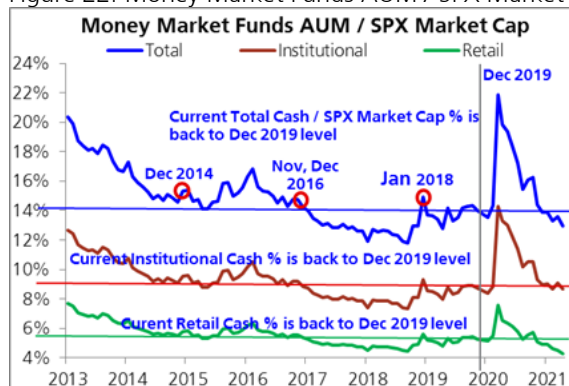


Figure 23: Retail Cash \$ trillion & % of SPX Mkt Cap

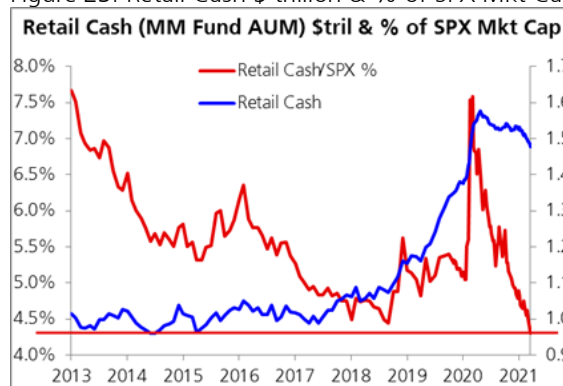


Figure 24: Margin % of S&P 500 Market Cap

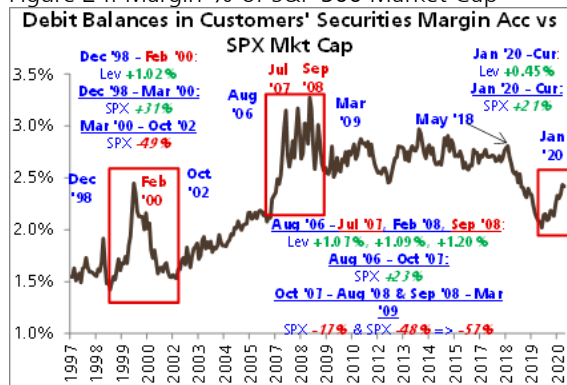


Figure 25: UBS PB L/S Clients Gross vs Net Leverages

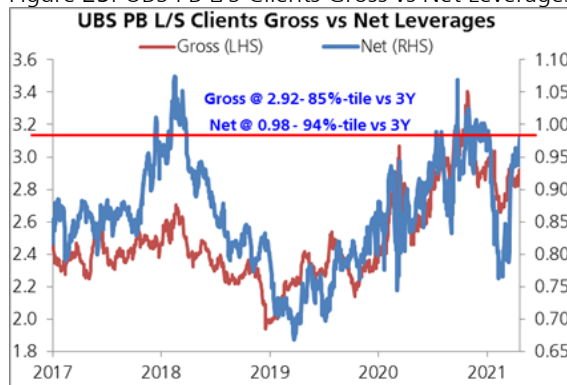


Figure 26: UBS PB L/S Clients NET Global Eq Exp Chg since Jan '20



Figure 27: S&P 500 Total Short Interest

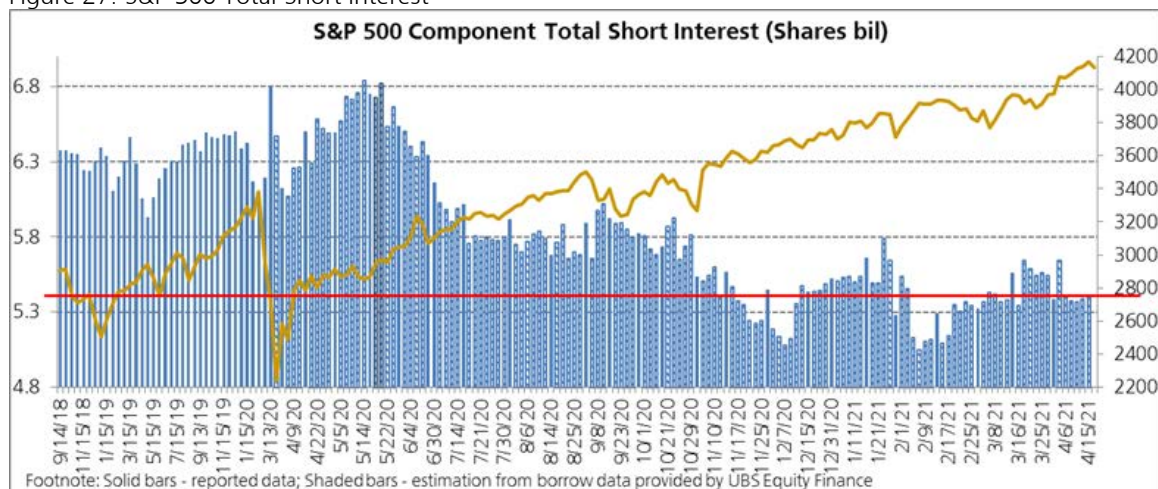


Figure 28: Russell 2000 Short Interest % of Market Cap

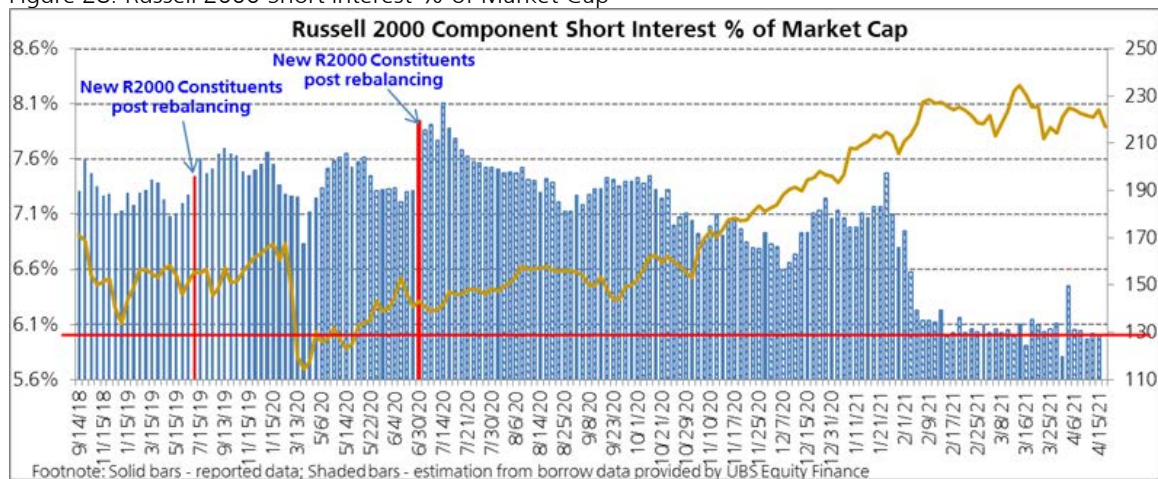


Figure 29: ETF Short Interest % of Shares

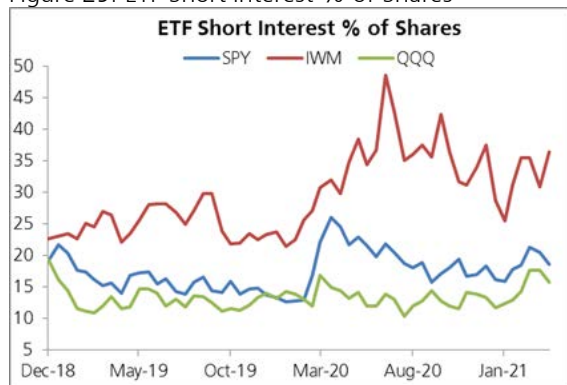


Figure 30: CFTC Leveraged Fund Exp in SPX Futures

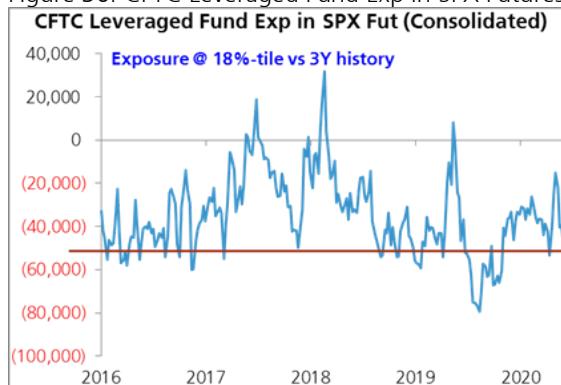


Figure 31: CFTC Leveraged Fund Exp in Russell 2000 Futures

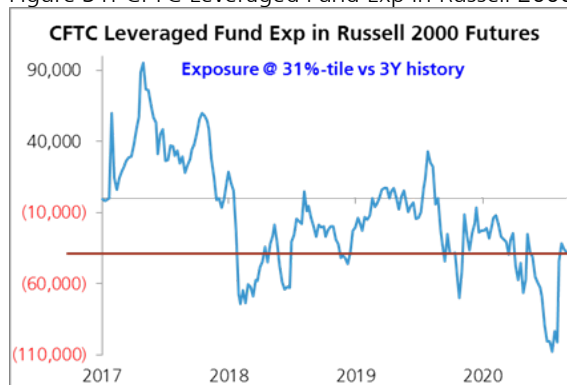


Figure 32: CFTC Leveraged Fund Exp in Nasdaq Futures

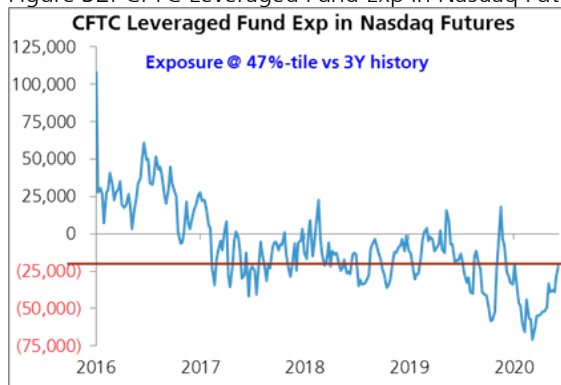


Figure 33: Top 50 Stocks 1M 110C Skew %

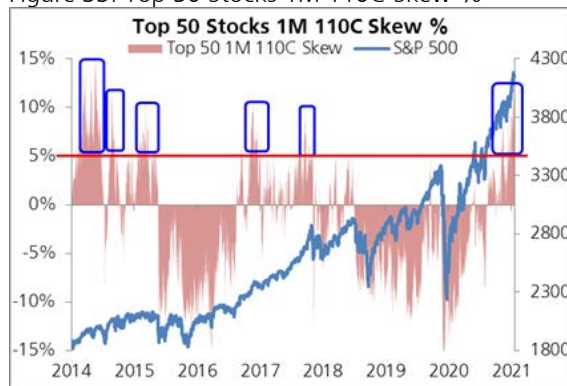
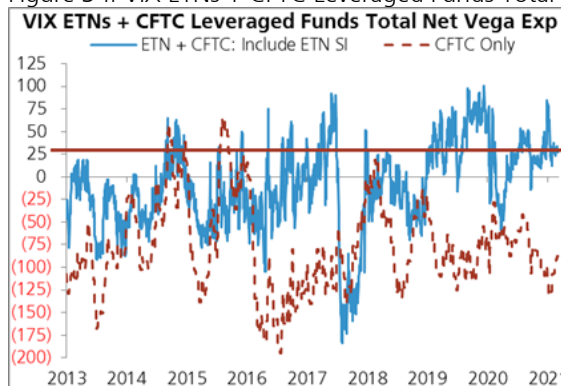


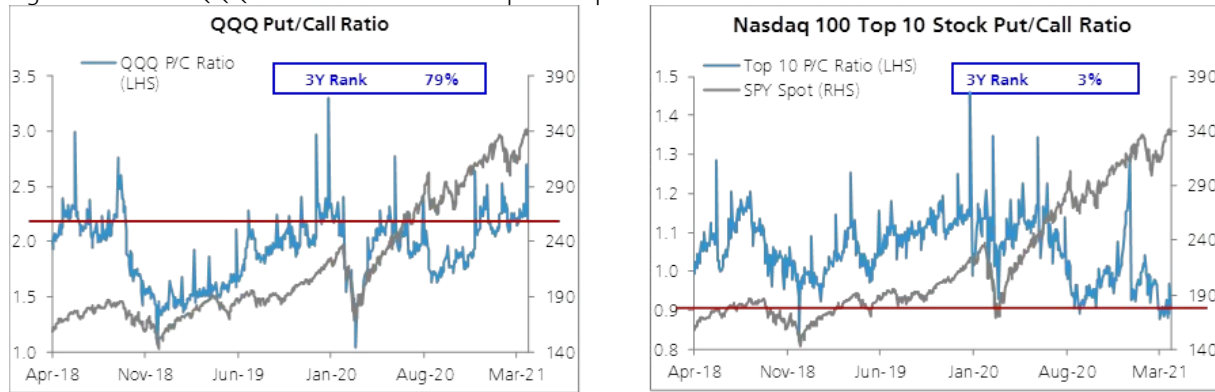
Figure 34: VIX ETNs + CFTC Leveraged Funds Total Net Vega Exp



Figures 35 & 36: SPY Put/Call Ratio & S&P 500 Top 10 Stock Put/Call Ratio



Figures 37 & 38: QQQ Put/Call Ratio & Nasdaq 100 Top 10 Stock Put/Call Ratio



Figures 39 & 40: IWM Put/Call Ratio & Russell 2000 Top 30 Stock Put/Call Ratio

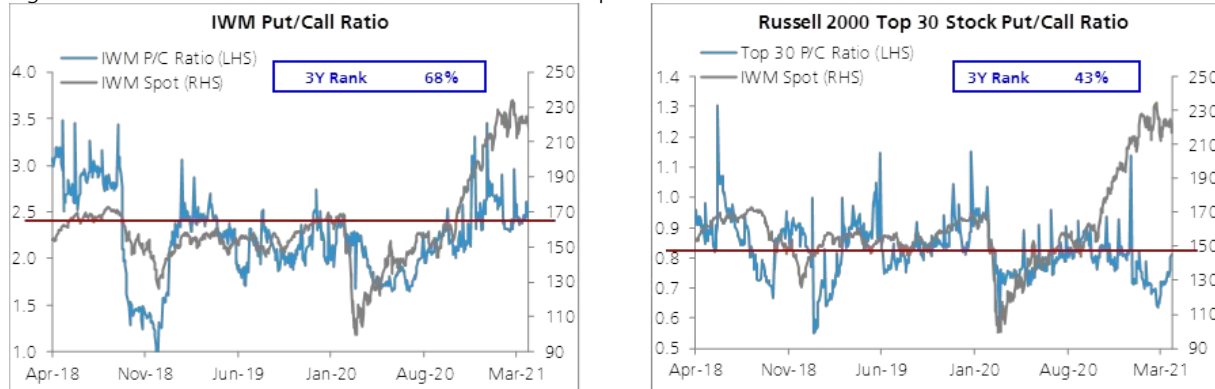


Figure 41: MF Flows in Global Equities

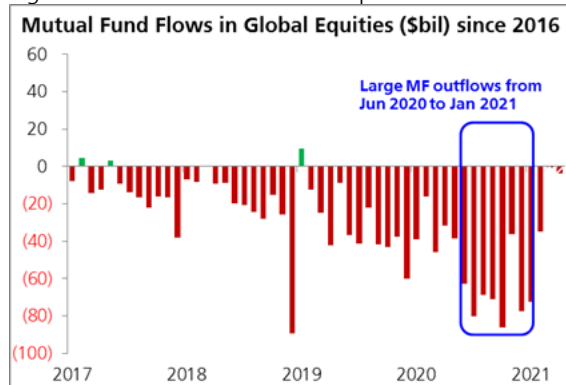


Figure 42: ETF Flows in Global Equities

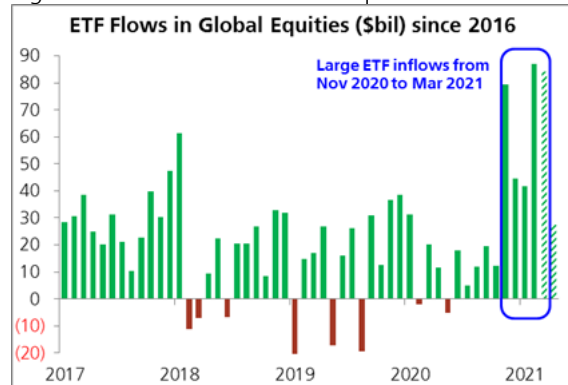


Figure 43: UBS RMM 3M Daily Equity Flow

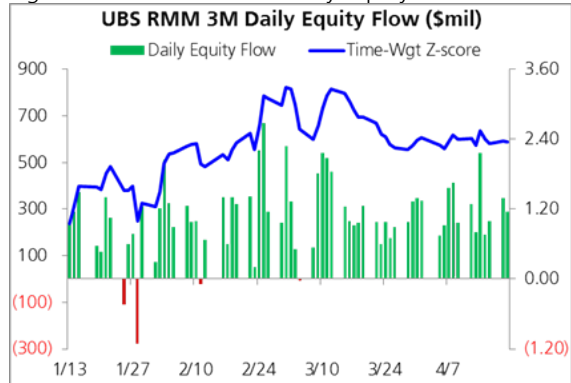


Figure 44: UBS RMM 3M Daily Fixed Income Flow

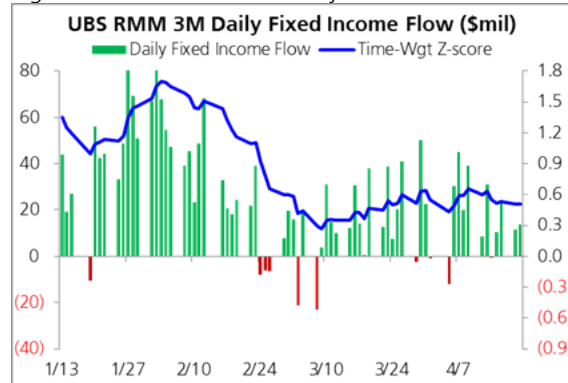


Figure 46: UBS RMM Cum Flow in Equity ETFs vs Stocks

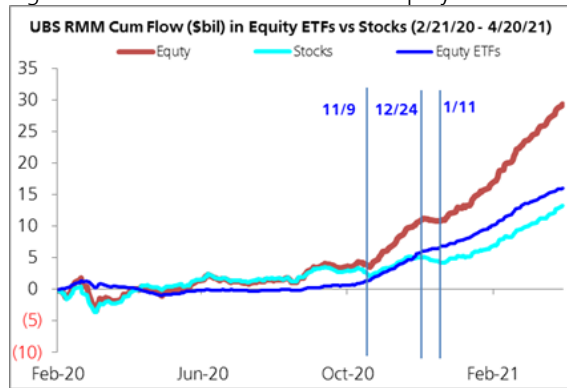
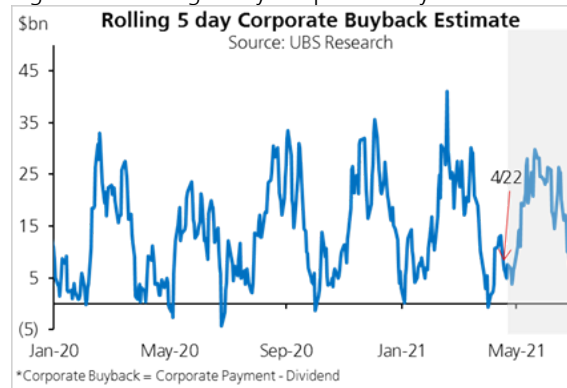


Figure 47: Rolling 5 day Corporate Buyback Estimate



Sources: UBS Equity Derivatives Strategy, UBS Research, UBS Global Financing Services, UBS RMM Services, ICI, CFTC, FINRA, SEC, 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.

Issued by UBS AG or affiliates to professional and institutional investors only. Product of a sales/trading desk and not the Research Department. Opinions expressed may differ from those of other divisions of UBS, including Research.

UBS may trade as principal in securities and instruments identified herein and may accumulate/have accumulated a long/short position in securities and instruments or derivatives thereof. UBS has policies designed to manage conflicts of interest. This e-mail is not an official confirmation of terms and unless stated, is not a recommendation, offer or solicitation to buy or sell. This material constitutes an invitation to consider entering into a derivatives transaction under U.S. CFTC Regulations 1.71 and 23.605, where applicable, but is not a binding offer to buy/sell any financial instrument. Any prices or quotations contained herein are indicative only and not for valuation purposes. Communications may be monitored.

Refer to the attached web link for important legal and regulatory information: <http://www.ubs.com/ussalestradingdisclaimer>

This material contains data derived as a result of back-testing of data and is provided by us in good faith using our standard methodology for information of this kind. That methodology relies on proprietary models, empirical data, assumptions and such other information that we believe to be accurate and reasonable. The current data that we selected for preparation of this material may be substantially different than if the data was selected from a different time period and this may have a substantial impact on the back-testing results.

We make no representation as to the accuracy, completeness or appropriateness of such methodology and accept no liability for your use of the information. There is no assurance that other banks or brokers would derive the same results for the back-test period or that such results would have been achieved in practice.

Prospective investors should also note that back-testing results may project unrealistic expectations on the performance of the relevant Instrument. Past performance is not necessarily indicative of future results. The back-testing results do not account for the risks involved in investing in the relevant Instrument, including but not limited to the credit risk of the issuer of the Instrument. These risks may lead to the loss of any investors' investment in the relevant Instrument.

Intended for recipient only and not for further distribution without the consent of UBS.