2021 YTD factor update:

- After a challenging 2020 for many quants, Q1 2021 turned out to be one for the history books in a good way. In 2020, prominent funds at AQR & RenTech were reportedly down anywhere from -22 to -33%. While we saw the collateral damage in our Value related themes, it's noteworthy that our stat arb proxy [Reversals ESB] finished 2020 at **+109%**, Enhanced Momentum at **+40%** & our flagship Sizzling Seven combo HF signal in double digit territory.
- QMIT's Combo signals had a stellar off the charts quarter with **Val+Mo [aka GARP] leading the charge at +27.3%** followed by our flagship **Fabulous 14 at +23.5%** on an EMN basis. Clearly one does not expect to annualize +27.3% (which would be +162.6%) for a market neutral signal. This quarter was proof positive that factor investing across a diversified & judiciously chosen spanning set can pay off in spades even amidst the tumultuous hand off from Growth to Value.
- Our **Value** composite led the charge at **+20.3%** thanks to **DV at +28.9%** which has staged a dramatic turnaround after multiple horrendous years. In much the same vein, **Size** jumped up to **+18.1% YTD** (beta neutral) given the resurgence of Small Cap Value particularly amongst Energy & Financials. We may finally get the year of Small Cap Value vs Large Cap Growth that seemed likely in Q4 of 2019 before Covid upended that thesis in Feb 2020.
- The Growth-Momentum complex which was the leader last year has lagged this year at **+6.7%** (beta neutral) or **-4.9%** ($ Neutral) particularly due to EnMom which was 2nd on the leaderboard last year clocking in at **+40%** but is now flattish YTD (beta neutral) while ARS & ART are down single digits.
- **Quality** has brought up the rear at **-3% YTD due to Profitability at -23.4%** ($ Neutral).
- From a **Long Only** perspective the performance has been even more impressive with **Val+Mo** [aka GARP] leading the charge at **+32.3%** followed by our flagship **Fabulous 14 at +26.7%** trouncing the SPX at+7.43% YTD. Given that the vast majority of investors are Long Only and many others are questioning the wisdom of shorting single names, it's worth acknowledging the high octane nature of the Long side of our signals which have consistently delivered but been hamstrung by the shorts in recent years as a result of the Fed's QE inspired melt up.
- The differential performance across our flagship signals is largely attributable to the differential weighting of ESBs like DV, Size, Efficiency & EQ which have had a disproportionate contribution YTD.
- We noted (rather presciently) in Dec 2020 that "$ neutrality is likely to remain quite challenging for EMN models (like 2009) largely on the short side because the model does not yet see in the numbers that the market is looking through Covid's winter of discontent towards mass vaccinations & the resumption of normalcy." We do know from decades of collective experience that around these inflection points, market neutral quant models tends to underperform (RenTech's RIEF was down another -9.5% in Jan after -22% last year). We expected that being short the re-opening stocks [RCL AAL WYNN LVS …] would hurt as it did in the first half of Q1 till mid-Feb. This was manifest on the short side of ESBs such as EnMom, ARS & PROF which were - not surprisingly – the star performers last year. Such was the rotation out of the FANGs into deep value cyclicals as a result of the mid-Feb selloff (stemming from rate rise fears + re-opening + curve steepening) in the speculative low quality, long duration, growthy names that our Combo signals tend to be short. The damage is compounded in Jan by the Reddit/ WSB fueled speculative fervor or "short-busting" squeezes although SIRF spreads have now mostly recovered to only -1.6% (Beta neutral**)**. When the double alpha kicked in this March with our long stock selection holding up while the speculative shorts tanked (particularly Cathy Wood related names), it boosted our alpha spreads to a historic outlier.
- ESB standouts YTD are **Efficiency +39.6; DV 28.9; EQ 20.6 & Size 18.1% ($ Neutral).** Given that we provide live ex-ante Top/ Bottom picks by ESB at month end, one can not only see the sorts of names that are driving Efficiency vs Profitability spreads etc but also independently verify the spread returns from those live position files.
- A consequence of thematic & factor plays dominating this year has been that our **REVs** (aka stat arb) ESB - which more than doubled last year to ring in +109% - has lost considerable steam but is still at a respectable **+7.6%** YTD **(beta neutral).**
- Larger firms are often justifiably skeptical about their ability to monetize our daily rebalanced spreads which are more amenable to smaller & nimbler hedge funds. To drive the point home about the attractiveness of returns even at the low **monthly rebalancing frequency** we highlight that the record outlier results we have been discussing above are based entirely on monthly rebalancing where transactions costs are de minimus at today's institutional commissions. In fact our longer term LTD spreads for the first 19y from 2000-18 (which are still quite impressive) are based entirely on monthly rebalancing which is fairly consistent with out-sample live data published since 2019. Shockingly, our out-sample live results are often significantly higher than in-sample for ESBs because higher turnover ESBs such as ARS, ART, EnMom & Reversals are significantly disadvantaged at the monthly rebalancing horizon. Take for instance EnMom which compounded +40% last year or Reversals at +109% but for which we only show LT mean returns of +5.6% & +10.5% respectively (both Beta neutral**)**.
- **Beta vs $ neutrality** continues to be topical in a generally bullish tape & we shall continue to harp on that particularly since for ESBs like Risk [aka Low Vol] & Stability it makes no sense to look at it any way other than in terms of Beta neutrality given the substantial beta mismatch.
- **Sector rotation based on QMIT's Combo Signals:** We used to show the Sector ranks based only by ESBs before & leave the more explicit sector rotation based on combo signals to the imagination. With the addition of this latest feature it's now easy to visualize how one may implement a Sector Rotation model based on our flagship combo signals. E.g., Fabulous 14 now shows Financials percolating up to the top followed by Industrials & Discretionary while IT, Healthcare & Utilities bring up the rear. In stark contrast to last year we see that Energy has moved up to the middle from the bottom; Industrials & Materials have risen several notches while IT & Healthcare have moved down several notches. Clearly, the bottom up aggregation of model scores seems to capture the zeitgeist.
- **RORO spreads:** By tracking the mean returns of the 7 Risk On vs 11 Risk Off ESBs we can succinctly capture the sentiment spread YTD which happens to lean **+18.2%** in favor of Risk On at **+12%** vs Risk Off at **-6.1%** thereby embodying the frothy tape in contrast to the what we saw during the Covid crash last year. A regime based approach has always been the holy grail of factor investing & the litmus test for our ex-ante RORO labels came about during the Covid crash when our Risk Off vs On ESBs registered **~+23% spread**. Double validation of this approach was provided in the subsequent rebound (following the Fed's actions on 3/23/20) during which period the RORO spreads rather predictably flipped strongly in favor of Risk On vs Off.
- The decisive moment igniting the **Great Val-Mo rotation** came about with the announcement of **Pfizer's vaccine** on Nov 9th, 2020. As one can see from the heatmap, this single day -24% crash in the Momentum factor was truly unprecedented (although our Enhanced mom fared better at -17.8% as designed to do). The +8.4% for Deep Value & +5.4% for our Value composite (which combines both Deep & Relative Value ESBs) were noteworthy in the positive direction. This GrowthMo ==> Value factor rotation of historic proportions was driven by a massive short squeeze amongst the Covid epicenter stocks like airlines, casinos, cruise lines etc. Our Risk ON ESBs led Risk OFF by **+7%** on this single day with most of the carnage coming from the short side of Risk OFF (due to the +7.8% short squeeze). The seminal factor moves of Nov 9th presaged the rotation that has continued since then into Value sectors such as Energy + Financials as well as the heavily shorted Covid epicenter names.
- **Dampened oscillator** – the magnitude of the short squeeze episodes substantially attenuated on successive vaccine Mondays in Nov 2020 as the rising case counts & vaccine news got priced in as per Tables below. The RORO single day spread response dropped from +7% to 2.8% for the Mon 11/16/20 episode instigated by Moderna's vaccine news. The RORO return spread had completely fizzled out by the last Monday in Nov. Nov was a double whammy for many EMN signals in that even the long side of Risk OFF factors lagged significantly while the epicenter shorts were getting squeezed. Such an environment is often challenging for EMN in general as was witnessed by prominent fund failures last year.

- The -24% Momentum crash on 11/9/20 is highly reminiscent of the 2009 prolonged momentum crash caused by the V-shaped inflection point from the Mar 9th, 2009 lows. Our **Enhanced Mom ESB delivered**during the short covering rallies of Nov outperforming naïve mom as engineered to & finished the year at **+39.55%** while the top II ranked sell-side research firm had their price momentum factor at -19.5% YTD. This remarkable _outperformance of our EnMom by ~+59%_ was reminiscent of 2008 & 09 when it also outperformed the naïve 12mo price momentum factor by +32.4% & +35.35%.

Inflection Points	12Mo Mom	EnMom	EnMom Long	EnMom Short
2008	-8.3%	+24.1%	-35.27%	-45.64%
2009	-72.23%	-36.88%	4.26%	60.78%
2016	-26.31%	-9.38%	9.53%	23.57%

Pfizer (vaccine) Monday - Nov 9th, 2020 – Momentum crash

QMIT		Intra-day %			
	Long	Short	$Neutral L-S	Beta N L-S	Risk ON/OFF
ESB					
Deep Value	8.4%	0.0%	8.4%	8.4%	ON
Relative Value	5.3%	7.1%	-1.9%	0.9%	ON
Analyst Revisions	0.2%	10.3%	-10.0%	-8.1%	OFF
Analyst Ratings	0.6%	10.0%	-9.4%	-9.0%	OFF
Enhanced Momentum	-6.6%	11.2%	-17.8%	-14.5%	OFF
Momentum	-6.8%	17.4%	-24.2%	-23.1%	OFF
Growth	-0.7%	14.1%	-14.8%	-11.1%	ON
Capital Structure & Usage	6.6%	4.9%	1.6%	2.0%	OFF
Efficiency	4.0%	-0.1%	4.1%	4.1%	ON
Earnings Quality	5.2%	2.4%	2.7%	3.2%	OFF
Leverage	1.1%	3.9%	-2.8%	-0.6%	OFF
Stability	3.5%	4.8%	-1.3%	0.4%	OFF
Profitability	-0.2%	9.4%	-9.7%	-4.6%	OFF
Risk (Low Vol)	-0.2%	7.7%	-7.8%	-5.5%	OFF
Short interest	3.5%	-0.1%	3.6%	3.6%	ON
Dividend	12.4%	4.1%	8.3%	6.4%	OFF
Reversal	2.3%	4.5%	-2.2%	-1.2%	ON
Size	5.4%	-1.5%	6.9%	3.7%	ON
Composite Signals					
Sizzling 7	2.1%	4.5%	-2.4%	-0.3%	
Fabouious 14	-2.1%	5.8%	-7.9%	-5.7%	
Famous 5	0.5%	5.7%	-5.2%	-3.1%	
Enterprise 18	-1.6%	7.9%	-9.5%	-5.6%	
Val + Mo	-1.2%	9.3%	-10.5%	-8.7%	
Qual + Val	2.5%	0.3%	2.1%	2.3%	
Value composite	6.0%	0.6%	5.4%	5.7%	
Qual + Mo	-4.0%	10.8%	-14.7%	-10.4%	
Quality composite	0.3%	1.5%	-1.2%	-0.4%	
Momentum composite	-6.2%	15.4%	-21.6%	-16.4%	
Other Signals					
LBO	4.9%	0.0%	4.9%	0.0%	
ESB Risk ON/OFF Classification					
ON	4.0%	3.4%	0.6%	1.5%	ON
OFF	1.4%	7.8%	-6.4%	-4.5%	OFF
		Risk On vs OFF	7.0%		

NB All heatmaps below are as of <u>2021-03-31</u>

$ Neutral - Monthly rebalanced – Combo signals YTD:

	DTD Long	DTD Short	DTD Spread	MTD Long	MTD Short	MTD Spread	YTD Long	YTD Short	YTD Spread
Fabulous Fourteen	0.36%	2.13%	-1.77%	7.32%	-4.77%	11.9%	26.7%	1.04%	23.48%
Sizzling Seven	-0.03%	1.3%	-1.33%	7.76%	-1.88%	9.15%	21.35%	2.66%	16.0%
Famous Five	-0.33%	2.58%	-2.91%	7.07%	-6.88%	13.57%	20.66%	5.98%	11.57%
Enterprise Eighteen	-0.03%	1.8%	-1.83%	7.73%	-3.79%	11.1%	24.01%	5.35%	15.55%
Value Momentum Composite	-0.02%	2.02%	-2.05%	9.82%	-7.4%	17.78%	32.27%	2.85%	27.3%
Value Composite	-0.33%	3.5%	-3.83%	11.89%	-9.76%	20.29%	31.49%	4.6%	20.31%
Quality Momentum Composite	0.49%	1.67%	-1.18%	7.97%	-3.86%	11.93%	22.01%	10.44%	9.75%
Quality Value Composite	-0.46%	4.32%	-4.78%	10.59%	-6.54%	14.72%	24.92%	13.99%	4.33%
Quality Composite	-0.08%	3.93%	-4.01%	6.3%	-3.92%	8.07%	16.46%	15.57%	-3.02%
Growth+Mom Composite	1.66%	0.72%	0.94%	1.73%	1.48%	0.47%	20.36%	12.98%	6.66%

$ Neutral - Daily heatmap – ESBs YTD:

	DTD Long	DTD Short	DTD Spread	MTD Long	MTD Short	MTD Spread	YTD Long	YTD Short	YTD Spread
DV	-0.31%	3.44%	-3.75%	10.59%	-9.85%	19.5%	34.34%	0.02%	28.86%
Size	1.49%	0.86%	0.63%	-0.45%	0.9%	-1.09%	20.89%	2.69%	18.12%
RV	0.3%	1.86%	-1.57%	11.09%	-1.17%	11.63%	34.97%	28.24%	4.02%
Profit	1.34%	1.88%	-0.54%	2.22%	-2.93%	4.13%	6.48%	34.51%	-23.37%
CSU	-0.22%	3.01%	-3.24%	7.18%	-1.36%	6.75%	22.19%	22.37%	-3.07%
Reversals	2.97%	-0.25%	3.23%	3.71%	-4.62%	8.34%	17.14%	7.67%	7.16%
Efficiency	0.88%	3.69%	-2.82%	9.32%	-9.02%	18.72%	37.22%	-3.52%	39.57%
Leverage	0.79%	3.59%	-2.81%	1.81%	-7.69%	7.9%	4.7%	10.6%	-8.63%
EQ	0.87%	2.59%	-1.72%	-0.08%	-3.12%	2.96%	34.38%	10.7%	20.6%
Growth	1.15%	0.81%	0.34%	6.06%	3.57%	2.23%	25.18%	29.53%	-4.04%
EnMOM	1.97%	0.21%	1.76%	-3.37%	5.02%	-7.93%	19.34%	19.91%	-0.51%
ART	1.4%	0.22%	1.17%	1.41%	3.18%	-1.5%	15.77%	23.17%	-6.24%
ARS	0.57%	2.37%	-1.8%	2.62%	0.75%	1.64%	18.29%	25.01%	-5.85%
SIRF	-0.25%	1.65%	-1.9%	3.9%	-1.11%	4.47%	9.22%	18.55%	-9.45%
Stability	-0.52%	2.55%	-3.07%	8.15%	-2.04%	8.66%	14.13%	25.09%	-11.71%
PMOM	3.25%	0.67%	2.58%	-3.24%	8.45%	-10.59%	21.73%	26.41%	-3.49%
Dividends	-0.13%	0.55%	-0.67%	7.38%	5.48%	1.66%	25.82%	22.5%	2.64%
Risk	-0.28%	3.46%	-3.74%	6.17%	-0.1%	3.16%	5.75%	42.52%	-30.35%
RiskOn	0.89%	1.72%	-0.83%	6.32%	-3.04%	9.11%	25.57%	11.88%	12.03%
RiskOff	0.82%	1.75%	-0.93%	2.84%	1.33%	0.89%	18.39%	25.22%	-6.14%
RORO Spread	0.07%	-0.03%	0.1%	3.48%	-4.37%	8.22%	7.18%	-13.34%	18.17%

Beta neutral - Daily heatmap – ESBs YTD:

	DTD Long	DTD Short	DTD Spread	MTD Long	MTD Short	MTD Spread	YTD Long	YTD Short	YTD Spread
DV	-0.26%	3.44%	-3.7%	9.65%	-9.94%	18.52%	28.05%	-0.07%	22.69%
Size	0.98%	0.86%	0.12%	0.44%	0.92%	-0.48%	15.33%	2.71%	12.26%
RV	0.3%	1.7%	-1.41%	11.12%	-0.83%	11.5%	35.01%	22.48%	9.48%
Profit	1.34%	0.81%	0.53%	2.24%	-1.28%	3.59%	6.51%	13.44%	-6.31%
CSU	-0.22%	2.14%	-2.36%	7.19%	-0.7%	7.15%	22.21%	15.58%	4.55%
Reversals	2.3%	-0.25%	2.55%	2.6%	-4.55%	7.26%	12.97%	3.92%	7.55%
Efficiency	0.63%	3.69%	-3.06%	8.09%	-9.0%	17.12%	32.57%	-3.47%	34.36%
Leverage	0.79%	2.08%	-1.29%	1.83%	-3.54%	5.12%	4.69%	6.38%	-2.14%
EQ	0.54%	2.59%	-2.06%	0.18%	-3.15%	2.81%	25.58%	10.69%	12.06%
Growth	1.15%	0.67%	0.48%	6.04%	3.05%	2.98%	25.18%	24.2%	0.57%
EnMOM	0.62%	0.21%	0.41%	-0.77%	5.02%	-5.63%	8.21%	19.89%	-10.32%
ART	0.92%	0.22%	0.7%	1.72%	3.19%	-1.43%	13.66%	23.2%	-8.22%
ARS	0.57%	1.92%	-1.34%	2.66%	0.32%	2.29%	18.25%	22.68%	-3.81%
SIRF	-0.25%	1.45%	-1.7%	3.89%	-1.29%	4.85%	9.23%	10.14%	-1.62%
Stability	-0.52%	1.18%	-1.7%	8.17%	-0.59%	8.53%	14.17%	13.03%	0.51%
PMOM	0.78%	0.67%	0.11%	-0.52%	8.44%	-8.36%	11.56%	26.39%	-12.17%
Dividends	-0.13%	0.46%	-0.59%	7.37%	5.13%	2.09%	23.62%	22.22%	1.1%
Risk	-0.28%	0.29%	-0.57%	6.16%	0.17%	5.97%	5.76%	3.45%	2.2%
RiskOn	0.69%	1.65%	-0.96%	5.98%	-3.09%	8.82%	22.62%	8.56%	12.18%
RiskOff	0.36%	1.05%	-0.69%	3.44%	1.66%	1.7%	14.95%	17.06%	-2.04%
RORO Spread	0.33%	0.6%	-0.27%	2.54%	-4.75%	7.12%	7.67%	-8.5%	14.22%

$ Neutral - 19y Monthly + Daily (thereafter) heatmap - ESBs LTD:

	5Y Long	5Y Short	5Y Spread	Post-07 Long	Post-07 Short	Post-07 Spread	LTD Long	LTD Short	LTD Spread
DV	18.99%	21.74%	-3.37%	14.28%	0.98%	12.23%	17.11%	-7.27%	19.93%
Size	22.97%	19.75%	2.99%	17.12%	7.16%	9.95%	21.44%	3.2%	18.44%
RV	18.92%	25.29%	-5.51%	12.5%	4.66%	6.8%	18.78%	-5.11%	17.86%
Profit	20.73%	12.91%	1.02%	10.9%	-0.08%	5.73%	11.44%	-11.23%	14.93%
CSU	17.21%	12.53%	2.21%	11.5%	0.05%	9.08%	13.95%	-7.12%	14.35%
Reversals	33.9%	5.84%	25.84%	13.16%	0.78%	12.11%	12.74%	-3.6%	16.24%
Efficiency	14.46%	18.03%	-3.26%	9.89%	4.62%	5.14%	12.92%	-5.32%	13.07%
Leverage	17.73%	22.73%	-6.65%	10.85%	3.42%	3.87%	10.95%	-8.32%	14.06%
EQ	24.51%	15.42%	7.63%	12.15%	3.0%	8.34%	10.61%	-2.56%	11.66%
Growth	18.16%	24.51%	-7.01%	11.99%	5.0%	4.48%	14.89%	2.12%	9.94%
EnMOM	24.04%	17.02%	3.13%	12.3%	4.57%	4.66%	11.41%	0.01%	7.12%
ART	20.05%	16.56%	-1.24%	15.33%	2.98%	7.63%	15.66%	4.06%	7.49%
ARS	22.61%	11.9%	5.57%	14.27%	2.92%	7.44%	13.77%	4.1%	5.69%
SIRF	16.66%	17.29%	-1.47%	9.78%	6.46%	2.65%	13.22%	8.8%	3.55%
Stability	15.1%	6.87%	3.87%	11.73%	3.27%	4.91%	13.51%	5.3%	3.33%
PMOM	22.47%	20.17%	-5.25%	10.65%	3.01%	0.24%	7.41%	-3.36%	1.21%
Dividends	14.57%	15.18%	-0.4%	8.72%	8.25%	-0.62%	11.5%	7.52%	1.23%
Risk	11.71%	20.16%	-18.42%	10.03%	4.39%	-6.74%	12.34%	-8.53%	1.29%

Sector ranks based on QMIT Combo Signals:

sector	Sizzling Seven	Enterprise Eighteen	Fabulous Fourteen	Famous Five	Growth+Mom Composite	Quality Composite	Quality Momentum Composite	Quality Value Composite	Value Composite	Value Momentum Composite
Financials	1	1	1	2	1	4	3	6	7	3
Materials	2	3	4	4	5	5	5	4	2	2
Consumer Staples	3	5	5	1	9	1	6	1	3	7
Communication Services	4	6	6	5	8	6	7	5	4	6
Energy	5	7	7	8	6	9	9	7	1	1
Industrials	6	2	2	3	3	2	1	2	6	4
Consumer Discretionary	7	4	3	6	4	3	2	3	5	5
Information Technology	8	8	8	7	2	7	4	8	9	8
Health Care	9	9	9	9	7	8	8	9	10	9
Utilities	10	10	10	10	10	10	10	10	8	10

Sector ranks based on QMIT Enhanced Smart Betas:

sector	Sizzling Seven	ARS	ART	CSU	Dividends	DV	Efficiency	EnMOM	EQ	Growth	Leverage	PMOM	Profit	Reversals	Risk	RV	SIRF	Size	Stability
Financials	1	1	1	1	2	8	8	2	9	8	4	5	1	3	3	1	5	2	9
Materials	2	4	6	7	4	3	6	6	4	5	5	4	7	5	7	2	2	3	4
Consumer Staples	3	6	9	4	5	2	4	9	7	2	1	9	2	7	2	7	8	9	1
Communication Services	4	9	8	6	7	4	5	7	3	7	7	7	6	2	5	5	7	4	7
Energy	5	8	5	9	3	1	2	1	1	9	10	1	10	1	10	3	1	1	10
Industrials	6	3	2	3	6	6	1	4	5	3	2	3	5	9	6	6	4	7	2
Consumer Discretionary	7	5	4	2	9	5	3	3	2	4	6	2	9	6	9	4	6	6	5
Information Technology	8	2	3	5	8	9	7	5	6	1	3	6	4	4	8	8	10	8	6
Health Care	9	7	7	8	10	10	9	8	8	6	8	8	8	8	4	9	9	5	8
Utilities	10	10	10	10	1	7	10	10	10	10	9	10	3	10	1	10	3	10	3

20y Return correlations for QMIT Enhanced Smart Betas:

	ARS	ART	CSU	DV	Dividends	EQ	Efficiency	EnMOM	Growth	Leverage	PMOM	Profit	RV	Reversals	Risk	SIRF	Size	Stability
ARS	1.0	0.81	0.18	-0.36	0.03	-0.21	-0.13	0.56	0.52	0.29	0.69	0.49	-0.02	-0.47	0.51	0.19	-0.55	0.35
ART	0.81	1.0	0.11	-0.34	-0.04	-0.24	-0.14	0.59	0.5	0.29	0.72	0.41	-0.05	-0.35	0.46	0.21	-0.45	0.29
CSU	0.18	0.11	1.0	0.69	0.72	0.46	0.8	-0.06	0.41	0.69	0.02	0.74	0.86	-0.21	0.78	-0.16	-0.38	0.8
DV	-0.36	-0.34	0.69	1.0	0.59	0.5	0.88	-0.45	0.08	0.33	-0.45	0.28	0.79	0.18	0.32	-0.3	0.04	0.44
Dividends	0.03	-0.04	0.72	0.59	1.0	0.43	0.65	-0.22	0.27	0.44	-0.13	0.53	0.69	-0.11	0.64	-0.25	-0.29	0.57
EQ	-0.21	-0.24	0.46	0.5	0.43	1.0	0.53	-0.12	-0.1	0.15	-0.1	0.11	0.41	0.07	0.19	-0.22	0.11	0.26
Efficiency	-0.13	-0.14	0.8	0.88	0.65	0.53	1.0	-0.19	0.18	0.42	-0.17	0.41	0.84	-0.0	0.5	-0.26	-0.07	0.53
EnMOM	0.56	0.59	-0.06	-0.45	-0.22	-0.12	-0.19	1.0	0.22	0.08	0.9	0.12	-0.16	-0.23	0.18	0.25	-0.17	0.02
Growth	0.52	0.5	0.41	0.08	0.27	-0.1	0.18	0.22	1.0	0.57	0.39	0.65	0.45	-0.22	0.56	0.01	-0.38	0.38
Leverage	0.29	0.29	0.69	0.33	0.44	0.15	0.42	0.08	0.57	1.0	0.19	0.86	0.67	-0.31	0.75	0.07	-0.48	0.63
PMOM	0.69	0.72	0.02	-0.45	-0.13	-0.1	-0.17	0.9	0.39	0.19	1.0	0.28	-0.09	-0.39	0.34	0.24	-0.33	0.14
Profit	0.49	0.41	0.74	0.28	0.53	0.11	0.41	0.12	0.65	0.86	0.28	1.0	0.66	-0.34	0.86	-0.01	-0.63	0.75
RV	-0.02	-0.05	0.86	0.79	0.69	0.41	0.84	-0.16	0.45	0.67	-0.09	0.66	1.0	-0.07	0.63	-0.16	-0.23	0.6
Reversals	-0.47	-0.35	-0.21	0.18	-0.11	0.07	-0.0	-0.23	-0.22	-0.31	-0.39	-0.34	-0.07	1.0	-0.41	-0.19	0.46	-0.34
Risk	0.51	0.46	0.78	0.32	0.64	0.19	0.5	0.18	0.56	0.75	0.34	0.86	0.63	-0.41	1.0	-0.03	-0.64	0.81
SIRF	0.19	0.21	-0.16	-0.3	-0.25	-0.22	-0.26	0.25	0.01	0.07	0.24	-0.01	-0.16	-0.19	-0.03	1.0	-0.05	-0.07
Size	-0.55	-0.45	-0.38	0.04	-0.29	0.11	-0.07	-0.17	-0.38	-0.48	-0.33	-0.63	-0.23	0.46	-0.64	-0.05	1.0	-0.53
Stability	0.35	0.29	0.8	0.44	0.57	0.26	0.53	0.02	0.38	0.63	0.14	0.75	0.6	-0.34	0.81	-0.07	-0.53	1.0

QMIT's **LBO Top100 model** beat the R2000 Value index by **+20.48% last year finishing at +24.28%**. **It's already up +28.66% YTD & has TRIPLED since the Covid lows of 2020 over the LTM!!!**

Small-cap deep value names are clearly en vogue & were largely impervious to the sharp sell-off in the speculative growthy Nasdaq names earlier in March which were at the epicenter of the market froth. As suggested in Q4, this would be the year to run the LBO Top100 net long or against a SPY or IWF hedge to the extent that one buys into the Small Cap Value vs Large Cap Growth resurgence thesis. Certainly, that call has turned out to be rather prescient thus far with the SPX only clocking **+7.43%** YTD resulting in relative **outperformance of +21.23% YTD**. The spectacular tripling of the LBO Top100 (long only) portfolio from the Covid lows of March 24th 2020 is reminiscent of the +84% return in 2009 and consistent with numerous k-baggers off of the covid lows LTM. Conditions remain quite favorable for their continued rally as such stocks should continue to benefit from the tsunami of stimulus forthcoming, monetary policy as well as the re-opening of the economy.

$ Neutral - Weekly rebalanced YTD [daily geometric chain-linked returns]:

	DTD	MTD	YTD
LBO100 Hedged	-0.36%	1.53%	6.01%
LBO100	0.08%	7.09%	28.66%
IWN	0.44%	5.45%	21.34%

Month	Top100	Hedged w/ IWN
2020-03 Stub	18.63%	3.51%
2020-04	22.29%	9.30%
2020-05	9.00%	5.85%
2020-06	6.10%	3.25%
2020-07	2.39%	0.36%

2020-08	7.27%	1.81%
2020-09	-2.28%	2.50%
2020-10	4.87%	1.11%
2020-11	20.74%	1.23%
2020-12	7.46%	-0.50%
2021-01	7.93%	2.76%
2021-02	11.31%	1.61%
2021-03	7.09%	1.53%
Comp Geom	**215.22%**	**39.80%**

Fama-French on steroids
Join us for a webinar on the _Great Factor Rotation of 2021_

SigmaSandbox

David Rudd
Director, Sandbox Limited

QMIT

Milind Sharma
CEO, Quantz/QMIT

Date: April 7, 2021 @ 1:00 PM EDT

Featuring **Milind Sharma**, CEO of QuantZ/ QMIT with **David Rudd**, Director of Sandbox Limited

[Click Here to Register](#)

QMIT is a signal provider spun out of QuantZ's award winning statistical arbitrage hedge fund which provides highly customized ML enhanced signals to democratize access to hedge fund alphas. Combining machine learning with a spanning set of equity smart betas & alternative data allows investors to express any linear view on equities. Milind has 25 years of market experience running prop desks as well as hedge funds & mutual funds at Merrill Lynch (now BlackRock), RBC & Deutsche Bank before starting QMIT. His funds have won many awards over the years (Morningstar, Lipper, BattleFin etc) and his publications have appeared in Risk, JoIM, Wiley, Elsevier etc. His educational background includes Oxford, Vassar, Carnegie Mellon & Wharton. He has also lectured, presented and/ or taught Capstone courses at Columbia, Carnegie Mellon, Courant, Georgia Tech, Johns Hopkins, Rutgers, NYU Tandon, UCSD, UCLA etc.

EXPLANATORY FOOTNOTES:

- *Sector Ranks are aggregated bottom up average ranks for each of the ESBs. Enhanced Smart Beta (ESB).*
- *ESB portfolios are not sector neutral.*
- *Generated weekly as of previous trading day's close, this report shows the DTD, MTD, YTD and LTD spread returns for our ESBs.*
- *ESB spreads are long-short based on top vs bottom 5%-tile (~125x125) of the largest liquid US traded stocks (usually ~2,500 depending upon market capitalization & minimum $ price criterion for stocks listed on NYSE & Nasdaq).*
- *Certain industries like Biotechs and REITS are excluded due to event risk or because a generic quant model is not appropriate for those industries.*
- *Daily vs Monthly rebalaning - Our Monthly Heatmaps are based on a T-1 month end optimization to solve for the optimal factor weights. While we use optimal factor weights based on month end optimization, in Daily Heatmaps, we refresh individual Factor Ranks on a daily basis therefore resulting in an intra-month varying Long/Short Portfolio. The optimal factor weights & selection of the "Best Flavor of the Month" is still static intra-month in order to prevent excessive turnover & unnecessarily noisy ESBs.*
- *Dollar neutral vs Beta Neutral - Beta-neutrality implies daily de-levering of the higher beta side of the Long/Short factor portfolio. Indeed, the beta neutrality has to be enforced via daily rebalance since the factor ranks (& top/ bottom portfolios) are being refreshed daily.*
- *MTD spread returns are geometrically chain-linked DTD spread returns where both are based on ESB portfolios formed at the prior month end close in the case of Monthly Heatmaps and formed at the prior trading day's close in the case of Daily Heatmaps.*
- *YTD & LTD returns are based on geometric chain-linking of monthlies without transaction costs or fees as is customary in the factor literature.*
- *Multi-period spread returns are not the difference of cumulative top vs bottom returns. Instead, they represent the daily geometrically compounded rebalancing of the market neutral "active return" differential of the top vs bottom portfolios which is a more realistic representation.*
- *Both Max Sharpe & Risk Parity optimization routines are based on a Hybrid methodology where we 1] find the optimal factor mix within the Smart Beta cohort*

based on signal blending/ "mixing" but 2] subsequently run the combined ESB spreads outsample on a fully "integrated" basis not just as the linear combination of factor returns.

- *Since liquid equity commissions are now de minimus for both the institutional & even the retail world and market impact is really a function of the investor's AUM we simply leave out the impact of TCosts as is customary in factor research.*
- *LTD data commences January 2000.*

Enhanced Smart Beta Definitions

ARS: This smart beta composite shows our **Analyst Revisions** cohort based on measures of estimate revisions, dispersion, Standardized Unexpected Earnings surprise (SUE score) & consensus change in both earnings as well as revenues which can outperform traditional metrics like a 1mo consensus change.

ART: This smart beta composite shows our **Analyst Ratings & Targets** cohort based on measures of analyst recommendations, target price, changes & diffusion which can outperform traditional metrics like a 1mo consensus change.

CSU: This smart beta composite shows our **Capital Structure/Usage** cohort based on measures including Buybacks, Total yield, Capex, capital usage ratios etc which can outperform traditional metrics like Cash/MC.

Dividends: This smart beta composite shows our **Dividends** related cohort based on measures including Yield, payout, growth, forward yield etc which can outperform traditional metrics like Dividend Yield.

DV: This smart beta composite shows our **Deep Value** (or intrinsic value) cohort based on measures including tangible book & sales which can outperform traditional Book yield.

Efficiency: This smart beta composite shows our **Efficiency** cohort based on measures including Asset Turnover, Current Liabilities, Receivables etc which can outperform traditional metrics like Asset Turnover.

EnMOM: This smart beta composite shows our **Enhanced Momentum** cohort which can outperform traditional 12 month price momentum in both return & risk adjusted terms particularly at market inflection points.

EQ: This smart beta composite shows our **Earnings Quality** cohort based on a variety of Accrual measures which can outperform traditional metrics like Total Accruals.

Growth: This smart beta composite shows our **Historical Growth** cohort based on a variety of Earnings, Sales, Margins & CF related growth measures which can outperform traditional metrics like 3yr Sales growth.

Leverage: This smart beta composite shows our **Leverage** related cohort based on measures of Balance Sheet leverage which can outperform traditional metrics like Debt To Equity.

PMOM: This smart beta composite shows our **PMOM** related cohort which can outperform traditional 12 month price momentum using a variety of traditional momentum factors.

Profit: This smart beta composite shows our **Profitability** cohort based on measures like ROA, ROE, ROCE, ROTC, Margins etc which can outperform traditional metrics like ROE.

RV: This smart beta composite shows our **Relative Value** cohort based on measures of EPS, CFO, EBITDA etc which can outperform traditional Earnings yield.

Reversals: This smart beta composite shows our **Reversals** cohort which is comprised of metrics like short term reversals, RSI, DMA & other technical factors which can outperform traditional metrics like a 1 month total return.

Risk: This smart beta composite shows our **Risk/ Low Vol** cohort which is comprised of metrics like Beta, Low volatility etc.

SIRF: This smart beta composite shows our **Short Interest** cohort which is comprised of metrics related to Short Interest and its normalization by Float, trading volume etc.

Size: This smart beta composite shows our **Size** cohort which is comprised of metrics related to firm size including market capitalization.

Stability: This smart beta composite shows our **Stability** cohort which is comprised of metrics like Dispersion of EPS/ SPS estimates as well as the stability of Margins, EPS & CFs etc.

Best Regards,

Dr. Esma Gregor
Head of Business Development
QuantZ Machine Intelligence Technologies (QMIT)
85 Broad St., 28th Floor, New York, NY, 10004
QMIT disclaimers
QMIT website

Winner at Battle of the Quants & BattleFin Elite

PRESERVE YOUR ALPHA - PLEASE DO NOT FORWARD!

Click here to unsubscribe