From: Esma Gregor <esma.gregor@quantzcap.com>

Sent: Thursday, March 10, 2022 1:06 PM

To: Milind Sharma

Subject: QMIT by QuantZ presents the Feb 2022 update + recap of a record setting triple digit 2021

Hi Milind,

- After a remarkable 60+% run in 3 months from Nov-Jan we saw QMIT flagship signals meander in Feb & finish the month down -3.3% (both Sizzling 7 & Fabulous 14). Flagship combos were still up double digits YTD led by Val-Mo at 15.8% and Sizzling 7 at +14.6% respectively. As of this writing, Sizzling 7 is back above +20% YTD.
- Amongst ESBs: DV was up +28.6% YTD, Efficiency up +23% YTD while RV clocked in at +19% YTD. As usual, high vol & high dispersion episodes are favorable for our EMN signals. While some funds are getting liquidated (look at the GS VIP basket) we delivered an entire year's worth of returns in Jan itself with Sizzling 7 already up over 20% YTD. Chances are, this extraordinary environment for EMN will continue for the next few years as the air comes out asset bubbles propped up by the Fed over the past 13y since the GFC.
- Based on Sizzling 7 sector ranks Consumer Staples, Financials & Materials are now at the top with Tech & Healthcare at the bottom.

NB heatmaps below are as of 2022-02-28

\$ Neutral - Monthly rebal heatmap YTD for ESBs:

	DTD Long	DTD Short	DTD Spread	MTD Long	MTD Short	MTD Spread	YTD Long	YTD Short	YTD Spread
DV	2.35%	1.4%	0.95%	3.34%	1.85%	0.92%	3.92%	-20.51%	28.58%
RV	2.59%	1.31%	1.28%	1.44%	-1.86%	2.13%	0.39%	-17.7%	19.0%
Size	1.77%	1.7%	0.07%	2.9%	-0.77%	3.51%	-2.17%	-15.18%	14.48%
Efficiency	2.01%	1.22%	0.79%	3.72%	-0.18%	2.92%	-0.32%	-21.07%	23.01%
Profit	2.72%	0.8%	1.92%	-0.5%	0.99%	-2.6%	-9.39%	-17.5%	7.31%
CSU	3.07%	1.1%	1.97%	1.12%	0.57%	-0.92%	-2.6%	-16.54%	13.07%
Leverage	2.03%	0.72%	1.32%	-0.27%	-1.94%	0.42%	-9.67%	-20.7%	10.86%
Reversals	2.76%	2.2%	0.55%	0.86%	0.07%	0.69%	-21.27%	-8.31%	-13.82%
EQ	1.68%	1.75%	-0.07%	0.41%	-0.34%	0.68%	-13.22%	-16.21%	3.4%
Growth	2.59%	1.85%	0.74%	2.35%	0.44%	1.74%	-4.26%	-6.51%	2.04%
ART	3.12%	1.53%	1.59%	1.6%	-3.45%	4.69%	-6.4%	-11.74%	5.16%
EnMOM	2.61%	2.13%	0.47%	-0.66%	0.45%	-1.12%	-14.74%	-3.47%	-11.61%
ARS	2.42%	2.64%	-0.22%	-0.76%	2.46%	-3.5%	-11.58%	-5.8%	-6.66%
Stability	2.62%	1.71%	0.92%	-0.22%	3.74%	-4.62%	-5.54%	-7.32%	-0.03%
PMOM	2.69%	1.54%	1.14%	3.68%	-5.33%	8.27%	-10.15%	-17.73%	7.32%
SIRF	2.7%	1.9%	0.79%	-1.7%	0.52%	-2.49%	-5.38%	-10.61%	5.12%
Risk	2.26%	1.69%	0.56%	0.23%	-0.32%	-2.15%	-1.74%	-17.41%	13.22%
Dividends	2.78%	1.7%	1.08%	1.11%	1.19%	-1.07%	2.66%	-14.96%	18.2%

\$ Neutral - Monthly rebal heatmap YTD for Combo signals:

	DTD Long I	DTD Short I	DTD MTD MTD Spread Long Short :		MTD Spread L	YTD Long I	YTD Short I	YTD Spread I	
Fabulous Fourteen	-0.29%	2.65%	-2.94%	-0.49%	0.99%	-3.24%	-5.46%	-17.72%	11.01%
Sizzling Seven	-0.38%	2.71%	-3.09%	-0.89%	0.6%	-3.38%	-1.74%	-17.06%	14.58%
Famous Five	-0.33%	3.08%	-3.42%	-0.53%	0.35%	-3.02%	-2.24%	-17.08%	13.24%
Enterpise Eighteen	-0.54%	2.41%	-2.95%	-1.43%	1.37%	-4.66%	-6.39%	-18.05%	9.81%
Q-GARP	-0.6%	2.14%	-2.74%	-1.07%	2.36%	-4.96%	-6.91%	-17.69%	9.14%
ValMo	-0.13%	1.95%	-2.08%	0.31%	1.0%	-2.17%	-1.82%	-17.92%	15.78%
Value	-0.22%	2.05%	-2.27%	2.34%	2.97%	-1.89%	4.05%	-20.74%	26.83%
QualVal	-0.63%	2.67%	-3.3%	-1.92%	2.17%	-5.63%	-4.99%	-19.58%	13.59%
QualMo	-0.93%	1.9%	-2.83%	-2.66%	0.69%	-4.75%	-11.84%	-14.52%	0.27%
Quality	-0.5%	2.19%	-2.69%	-2.85%	0.99%	-5.29%	-10.23%	-17.37%	5.16%
GrowthMo	-0.61%	0.55%	-1.16%	-1.36%	0.32%	-1.97%	-11.7%	-5.13%	-7.27%

Sector ranks based on QMIT Combo Signals:

	Sizzling Seven	Enterprise Eighteen	_ Fourteen	Famous Five	– GrowthMo	– Q-GARP	– Quality	– QualMo	– QualVal	– ValMo	– Value
Consumer Staples	1	2	2	1	5	3	1	2	2	3	5
Financials	2	1	1	2	2	2	2	1	3	2	6
Materials	3	4	5	4	7	5	5	6	5	4	4
Communication Services	4	7	7	5	10	7	6	9	4	7	2
industrials	5	5	6	7	4	6	4	5	6	6	7
Industrials Consumer Discretionary	6	6	4	6	8	4	3	4	1	5	3
Energy	7	3	3	3	1	1	9	3	7	1	1
Utilities	8	8	10	8	3	10	10	10	10	8	9
Information Technology	9	9	8	10	6	8	7	7	8	9	8
Health Care	10	10	9	9	9	9	8	8	9	10	10

2021 summary

- \cdot QMIT signals had a spectacular 2021 with flagship signals like GARP & Fabulous 14 \sim doubling YTD not to mention the LBO model tripling off of the Covid lows. Amongst market neutral signals we saw ValMo leading the charge at + 116% followed by Fab14 at + 107%. This has been the best year since the Nasdaq crash years in the 22y history of our market-neutral signals. Further, with the inflation genie uncorked & the Fed being forced to remove accommodation we suspect that the coming years could be comparable to the triple digit performance seen during the slow-motion Nasdaq crash years as well as 2021 due to the double alpha contribution from the shorts. This year our flagship signals (e.g. Fabulous 14) were famously short many of the Cathy Wood ARKK ETF names thereby contributing to the remarkable short alpha despite major market indices finishing the year up over 25%. Please stay tuned for more on the extraordinary opportunities presented by the resurgence of Value & alpha in the quant equity factor space as the air comes out of asset bubbles inflated by the Fed during the QE years.
- · QMIT Monthly heatmaps YTD as of Fri 1/21/22 show that our flagship signals like Sizzling Seven were already up as much as +22.3%. They tacked on another +4 to 5% intraday before closing up as much +2% amidst the whoosh on Monday 1/24
- Our prior prognostications of a major dislocation in Equity markets look increasingly prescient now. Chances are that we may be in the early phases of a

Nasdaq style crash which could lead to extraordinary opportunities in the market neutral space not seen since the Nasdaq crash or GFC

- The explosive run from Nov thru mid-Jan has added another ~64% to the Sizzling 7 raw signals spreads & correspondingly 27.8% to the HFIB fully optimized portfolio returns resulting in a cum 3Y return of ~110% & ~27.7% ann. This speaks to the compelling plug & play value proposition of our fully optimized HEDGE FUND IN A BOX portfolio.
- · Updated HFIB chart shows us now beating AQR by > +100% in 3Y LIVE for a cum rtn of ~109%
- The change in Risk sentiment inspired by the Fed's recent hawkishness & inflation fighting stance may precipitate an even more profitable year for our signals as the air comes out asset bubbles propped up by the Fed over the past 13y since the GFC. This is the year when one should expect the Reddit yahoos & Cryptos kings to get liquidated given that the Fed is behind the eight ball & has boxed itself into a corner where they must err on the side of hawkishness to regain credibility. In a bull market even cab drivers have great stock tips.
- · We were famously short nearly every single one of Cathy Wood's ARKK names in 2021 which significantly contributed to our double alpha on the short side

https://www.bloomberg.com/news/articles/2022-01-08/risk-bubbles-are-deflating-everywhere-some-market-watchers-say

- · As one can see from the Jan \$ neutral spreads below Growth & Momentum are down substantially led by the hyper growth ARKK type frothy names & it's still too early to catch the falling knives (REVs is our ESB for mean reversion/ stat arb).
- · Correlation doesn't imply causation but if on the way up (in terms of Fed's balance sheet expansion) we bought into the bullish narrative then logically we should also believe that markets ought to tank as the Fed finds itself behind the eight ball & forced to aggressively hike & taper. The Fed's anticipated removal of accommodation leads to a massive Val vs GrowthMo rotation as can be seen from our factor heatmap below.
- · Given the valuation headwinds & re-pricing of many speculative assets one should expect much higher vol & c-s dispersion which ought to be quite attractive for classic mean reversion type stat arb although may not be as favorable in the near term for momentum. Overall, we would expect the resurgence in Value & Quality to buoy factor based signals in conjunction with a smidge of mean reversion over momentum as the year unfolds.
- · 2022 could be the year of reckoning for asset bubbles. That giant hissing sound we hear could be the simultaneous deflation of correlated bubbles as Fed pushes lambda (risk aversion) in reverse gear. Rate hikes & the withdrawal of liquidity from the system has dramatic implications for the equity risk premium which needs re-pricing. Prominent strategists like Subramaniam of BofA, Byron Wien, Grantham Gundlach & my former boss Bob Doll have all turned cautious. Few are calling for an outright recession but if January is any harbinger of what's to come we do think that 2022 will the year for market neutrality.

Dec was an extremely strong month with huge gains across the board for our combo signals ranging from +16.3% for ValMo to +18.1% for Fab14 & +23.4% for Sizzling7.

YTD - ValMo was still leading the charge at + 116% followed by Fab14 at + 107%. Even the Qual composite laggard finished up at +60% YTD.

The \$ neutral RORO spread was flattish in Dec but with the YTD still tilting in favor of Risk ON at ~+25%.

Notably, 2/3 or more of the combo signal gains in Dec came from the short side while the longs contributed to the rest in an exceptionally strong month which delivered more than a solid years gains in a single month. Liquidation of ARKK related hyper-growth former darlings contributed to the short alpha.

Amongst ESBs: DV added +19.74% & RV +10.84% to eyepopping YTD gains of 101.6% & 70% respectively.

Efficiency added another +19% & Leverage another +13.26% to wrap up the year with eyepopping gains of +116% & 44.7% respectively.

ARS added +6.4% to +38% YTD while EnMom added +3 to finish at ~40% YTD. The ARS alpha speaks to its efficacy in anticipating earnings torpedoes as well as positive beats this season.

Strong Dec spreads propelled CSU to a +40.5% YTD finish, ART at 29.3% & Stability at 27%. Even Reversals came back to a solid +17% YTD after the blockbuster 2020 hangover.

Profitability recovered substantially by +13.3% finishing up nicely at +16.9% YTD after spending the year in the red while SIZE slid another -7.5% to -16.9% YTD.

As often noted the \$ neutral spreads can be misleading for Risk [Low Vol] which shows -7% YTD but is actually up +16.1% on a Beta Neutral basis due to the embedded substantial beta mismatch. The fact that the Risk ESB was up +17.25% in Dec on a \$ neutral basis speaks to the magnitude of Low Vol catch up in Dec.

The <u>3-year live performance</u> of our Top vs Bottom flagship signal spreads (e.g. Sizzling Seven or Fabulous 14) leaves prominent quant HFs like AQR's QMNIX, Renaissance's RIEF & similar funds from Two Sigma in the dust. NB – we show monthly rebalanced gross signal spread heatmaps below which have de minimus t-costs but are substantially handicapped vs HFs in that they are presented as 100x100 with no additional portfolio margining leverage: https://www.institutionalinvestor.com/article/b1vznfl98t5jm2/Two-Sigma-Renaissance-Rebound-in-2021

\$ Neutral - Monthly heatmap YTD as of Fri 1/21/22:

			DTD Spread I	MTD Long	MTD Short I	MTD Spread	YTD Long	YTD Short I	YTD Spread
Fabulous Fourteen	-1.38%	-3.94%	2.56%	-7.71%	-20.19%	14.63%	-7.71%	-20.19%	14.63%
Sizzling Seven	-1.3%	-3.2%	1.9%	-2.56%	-20.97%	22.33%	-2.56%	-20.97%	22.33%
Famous Five	-1.31%	-3.66%	2.35%	-4.02%	-19.99%	18.79%	-4.02%	-19.99%	18.79%
Enterprise Eighteen	-1.1%	-3.95%	2.84%	-6.86%	-21.19%	16.96%	-6.86%	-21.19%	16.96%
Value Momentum Composite	-1.79%	-3.81%	2.02%	-6.08%	-20.36%	16.89%	-6.08%	-20.36%	16.89%
Q-GARP	-1.35%	-4.66%	3.32%	-10.0%	-21.1%	12.96%	-10.0%	-21.1%	12.96%
Value Composite	-2.09%	-4.3%	2.21%	-1.76%	-24.88%	29.26%	-1.76%	-24.88%	29.26%
Quality Value Composite	-1.09%	-4.61%	3.52%	-6.08%	-23.98%	22.09%	-6.08%	-23.98%	22.09%
Quality Momentum Composite	-1.35%	-4.04%	2.68%	-11.77%	-17.56%	6.22%	-11.77%	-17.56%	6.22%
Quality Composite	-0.79%	-4.51%	3.71%	-9.18%	-20.92%	13.72%	-9.18%	-20.92%	13.72%
Growth+Mom Composite	-2.5%	-2.12%	-0.38%	-14.26%	-6.4%	-8.42%	-14.26%	-6.4%	-8.42%

\$ Neutral - Monthly rebal heatmap YTD for ESBs as of 12/31/21:

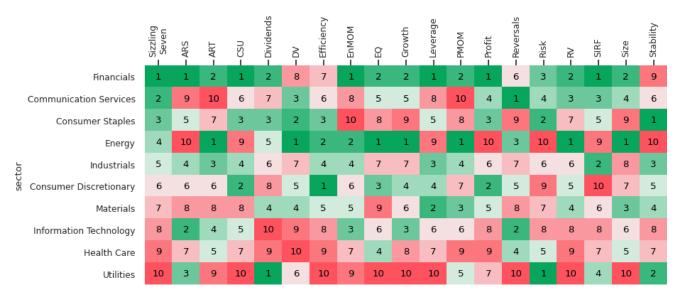
	DTD Long I	DTD Short			MTD Short	MTD Spread	YTD Long	YTD Short I	YTD Spread
DV	0.23%	-0.38%	0.61%	6.19%	-11.95%	19.74%	57.41%	-27.52%	101.61%
RV	0.16%	-0.89%	1.05%	5.25%	-5.8%	10.82%	61.08%	-8.99%	70.02%
Profit	-0.14%	-1.39%	1.25%	2.02%	-10.95%	13.33%	19.85%	-6.27%	16.89%
Size	-0.39%	-0.34%	-0.05%	-6.39%	1.55%	-7.63%	-2.38%	18.34%	-16.86%
CSU	0.08%	-1.51%	1.59%	5.21%	-13.86%	20.41%	35.61%	-11.17%	40.45%
Efficiency	0.25%	-0.99%	1.24%	5.22%	-12.54%	19.01%	56.62%	-31.26%	115.92%
Leverage	-0.16%	-1.25%	1.09%	2.81%	-10.38%	13.26%	17.54%	-25.93%	44.66%
Reversals	-0.12%	0.25%	-0.36%	3.44%	-1.95%	5.45%	31.56%	11.15%	16.89%
EQ	-0.72%	-0.4%	-0.32%	-6.27%	-5.43%	-0.92%	6.34%	-4.85%	11.2%
Growth	0.34%	-0.59%	0.92%	3.36%	0.01%	3.23%	48.48%	18.61%	23.6%
ART	0.12%	-0.82%	0.94%	3.9%	-1.82%	5.56%	33.29%	2.53%	29.27%
EnMOM	0.31%	-0.41%	0.72%	2.03%	-1.08%	3.04%	23.08%	-11.57%	39.86%
ARS	0.14%	-0.43%	0.57%	3.54%	-3.05%	6.37%	37.49%	-2.56%	37.87%
Stability	0.29%	-1.12%	1.41%	6.91%	-6.42%	13.12%	29.68%	-6.31%	26.83%
PMOM	0.22%	-1.13%	1.35%	-2.56%	-8.35%	5.69%	22.45%	-12.93%	40.27%
SIRF	0.0%	-0.46%	0.46%	6.34%	-0.86%	6.86%	22.58%	15.82%	2.35%
Risk	0.18%	-1.03%	1.22%	6.45%	-11.16%	17.25%	18.07%	7.13%	-7.03%
Dividends	0.28%	-0.11%	0.39%	5.34%	4.8%	0.08%	38.29%	27.68%	6.62%

	DTD Long I			MTD Long I	MTD Short I	MTD Spread I	YTD Long I	YTD Short I	YTD Spread
Fabulous Fourteen	0.09%	-1.45%	1.54%	4.69%	-12.78%	18.13%	45.59%	-34.64%	107.27%
Sizzling Seven	-0.0%	-1.56%	1.56%	7.06%	-14.69%	23.36%	37.92%	-31.93%	87.49%
Famous Five	0.1%	-1.64%	1.74%	5.63%	-10.54%	16.01%	35.38%	-27.21%	71.96%
Enterprise Eighteen	0.12%	-1.73%	1.85%	4.7%	-13.95%	19.38%	46.21%	-34.08%	103.78%
Value Momentum Composite	0.41%	-1.19%	1.59%	5.61%	-10.31%	16.29%	58.53%	-30.79%	115.81%
Q-GARP	0.15%	-1.77%	1.91%	4.55%	-11.21%	16.1%	48.8%	-14.93%	64.3%
Value Composite	-0.0%	-1.17%	1.17%	5.39%	-13.05%	19.6%	55.18%	-34.29%	112.37%
Quality Value Composite	0.02%	-1.47%	1.49%	6.15%	-14.63%	22.13%	40.86%	-30.25%	78.65%
Quality Momentum Composite	0.27%	-1.21%	1.48%	4.3%	-9.47%	13.51%	42.0%	-27.15%	83.81%
Quality Composite	0.19%	-1.15%	1.34%	5.08%	-11.64%	17.21%	35.74%	-23.18%	59.47%
Growth+Mom Composite	0.23%	-0.46%	0.68%	3.49%	-0.86%	4.09%	41.15%	-3.21%	43.89%

Sector ranks based on QMIT Combo Signals:

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

Sector ranks based on QMIT Enhanced Smart Betas:



C-S Rank correlations for QMIT Enhanced Smart Betas:

					owidends owidends		Efficiency	Ohn.	,KY	leverage	rs.			25315		,		Hilli
	PB.S	ART	GN	9	Divid	\$0	Efficia	EUWOW	Growth	lene.	SWOW	Profit	4	68.16.	Rist	GIRK	512e	Stab.
ARS	1.0	0.34	0.26	-0.01	0.1	0.03	0.11	0.31	0.25	0.27	0.43	0.32	0.18	-0.23	0.16	0.02	-0.3	0.19
ART	0.34	1.0	0.07	-0.12	0.02	-0.01	-0.01	0.39	0.17	0.1	0.49	0.12	0.06	-0.12	-0.02	0.02	-0.09	0.0
CSU	0.26	0.07	1.0	0.18	0.18	0.13	0.38	0.07	0.32	0.46	0.2	0.48	0.57	-0.23	0.24	0.11	-0.27	0.32
DV	-0.01	-0.12	0.18	1.0	0.18	0.03	0.6	-0.21	0.04	0.06	-0.06	0.05	0.44	-0.23	0.02	0.1	-0.04	0.32
Dividends	0.1	0.02	0.18	0.18	1.0	0.04	0.13	-0.01	0.0	0.19	0.12	0.36	0.27	-0.29	0.36	0.11	-0.22	0.22
EQ	0.03	-0.01	0.13	0.03	0.04	1.0	0.22	-0.03	0.05	-0.09	-0.0	-0.1	0.15	-0.01	-0.02	0.03	0.04	-0.08
Efficiency	0.11	-0.01	0.38	0.6	0.13	0.22	1.0	-0.09	0.1	0.1	0.06	0.1	0.45	-0.2	-0.05	0.12	-0.0	0.35
EnMOM	0.31	0.39	0.07	-0.21	-0.01	-0.03	-0.09	1.0	0.25	0.15	0.83	0.16	0.01	0.15	-0.02	-0.1	-0.14	-0.06
Growth	0.25	0.17	0.32	0.04	0.0	0.05	0.1	0.25	1.0	0.38	0.32	0.34	0.53	-0.09	-0.04	-0.03	-0.11	-0.01
Leverage	0.27	0.1	0.46	0.06	0.19	-0.09	0.1	0.15	0.38	1.0	0.27	0.69	0.47	-0.22	0.27	0.08	-0.38	0.32
PMOM	0.43	0.49	0.2	-0.06	0.12	-0.0	0.06	0.83	0.32	0.27	1.0	0.33	0.21	-0.2	0.08	-0.08	-0.28	0.1
Profit	0.32	0.12	0.48	0.05	0.36	-0.1	0.1	0.16	0.34	0.69	0.33	1.0	0.48	-0.29	0.32	0.07	-0.41	0.27
RV	0.18	0.06	0.57	0.44	0.27	0.15	0.45	0.01	0.53	0.47	0.21	0.48	1.0	-0.25	0.12	0.11	-0.16	0.25
Reversals	-0.23	-0.12	-0.23	-0.23	-0.29	-0.01	-0.2	0.15	-0.09	-0.22	-0.2	-0.29	-0.25	1.0	-0.29	-0.07	0.32	-0.36
Risk	0.16	-0.02	0.24	0.02	0.36	-0.02	-0.05	-0.02	-0.04	0.27	0.08	0.32	0.12	-0.29	1.0	0.18	-0.29	0.36
SIRF	0.02	0.02	0.11	0.1	0.11	0.03	0.12	-0.1	-0.03	0.08	-0.08	0.07	0.11	-0.07	0.18	1.0	-0.07	0.13
Size	-0.3	-0.09	-0.27	-0.04	-0.22	0.04	-0.0	-0.14	-0.11	-0.38	-0.28	-0.41	-0.16	0.32	-0.29	-0.07	1.0	-0.36
Stability	0.19	0.0	0.32	0.32	0.22	-0.08	0.35	-0.06	-0.01	0.32	0.1	0.27	0.25	-0.36	0.36	0.13	-0.36	1.0

QMIT's LBO Top100 model beat the R2000 Value index by +20.48% last year finishing at +24.28%. It was up 40.78% in 2021 & it has more than TRIPLED since the Covid lows of 2020!

Small-cap deep value names are clearly en vogue. 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. 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.



Should you be interested in a trial of the HEDGE FUND IN A BOX strategy, QMIT heatmaps or the underlying combo HF signals, we look forward to hearing from you.

For prior webinars + research papers please see: https://www.quantzqmit.com/media

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 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 our earnings as wen as reverouperform traditional metrics like a lime consensus change.

ART: This smart beta composite shows our Analyst Ratings & Targets cohort based on measures including Buybacks, Total yield, Capex, capital usage ratios etc which can outperform traditional metrics like a lime 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.

Div: This smart beta composite shows our Efficiency choort based on measures including Rangible book & sales which can outperform traditional metrics like Asset Turnover.

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

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

Enfolder: This smart beta composite shows our Efficiency choort based on a variety of Accernal measures which can outperform traditional metrics like Total Accurals.

Environ: Insignate teat composite shows our Enranceus vinomentum control which can outperform traditional at 12 month price momentum in noon return. As risk adjusted erms particularly at market infection points.

Growth: 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 Enranings, Sales, Margins & CF related growth measures which can outperform traditional metrics like Debt To Equity.

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

PMOM: This smart beta composite shows our PMOM related cohort based on measures like ROA, ROE, ROCE, ROTC, Margins et which can outperform traditional metrics like ROE.

RV: This smart beta composite shows our Profitability cohort based on measures of EPS, CFO, EPIDA et which can outperform traditional metrics like ROE.

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.

Pilet. This serrant beta composite shows our Reversals cohort which is comprised of metrics like a Low volstitive etc.

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.

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Best Regards,

Esma Gregor Head of Business Development QuantZ Machine Intelligence Technologies (QMIT)

QuantZ - Winner at Battle of the Quants & BattleFin Elite

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