Hi Milind,

QuantZ will be at the Alts Axis Vegas HF conference this week if you'd like to meet with us in person: https://altsaxis.com/las-vegas/

See our founder's podcast on the history of Computational Finance with Dimitri Bianco: https://youtu.be/LAbmckoFVws

See our founder's presentation on our "HEDGE FUND IN A BOX" strategy at Re*Work's AI conference: https://corinium.swoogo.com/newyorksummit/sign-in?rId=1977401

Look out for our founder's presentation at The Trading Show in Chicago: https://www.terrapinn.com/conference/trading-show-chicago/2022-speakers.stm

YTD PERFORMANCE UPDATE 2022

Given the latest leg of this selloff since the Fed hike in May we have seen our ANTI-FRAGILE EMN spreads dramatically benefit from the long dispersion positioning with up to another +16% MTD resulting in flagship signals like our ValMo which is now at ~+59%YTD while Sizzling Seven/ Fabulous Fourteen & Famous Five are clustered around the 50% mark YTD. These are clearly staggering, outlier alphas which need to be monetized while the environment remains exceptionally favorable for quant equity market neutral.

· Equity Indices were down in April across the board except for the defensive Staples sector. TMT and Financial have borne the brunt of the down draft. With the 10y piercing 3%, Nasdaq was down -13.6% ending April down -21.26% YTD while XLC was ~-24% & IWM -16.86% YTD. Clearly the bears are in charge. They don't ring a bell at the top but if you go back & look at our commentary we've been pounding the table on the hard landing scenario coupled with increasing odds of a recession which now seems quite likely.

· As Equity Indices plunged in April our leading combo signals had an outlandish, outlier, extraordinarily good > +20% month delivering an entire year's worth of gains just in April. This was similar to Jan & for the same exact reasons because once again we saw the re-rating of the long duration, speculative ARKK type names.

· On the other hand EMN composites like Value, Quality and Momentum drove the gains. Risk On ESBs like Reversals did not work as well.

· Risk aka Low Vol as the most defensive ESB delivered as it should in a Bear market.

· Stagflationary scenario multiples will continue to grind lower.

$ Neutral - Daily heatmap YTD: as of 5/9/2022

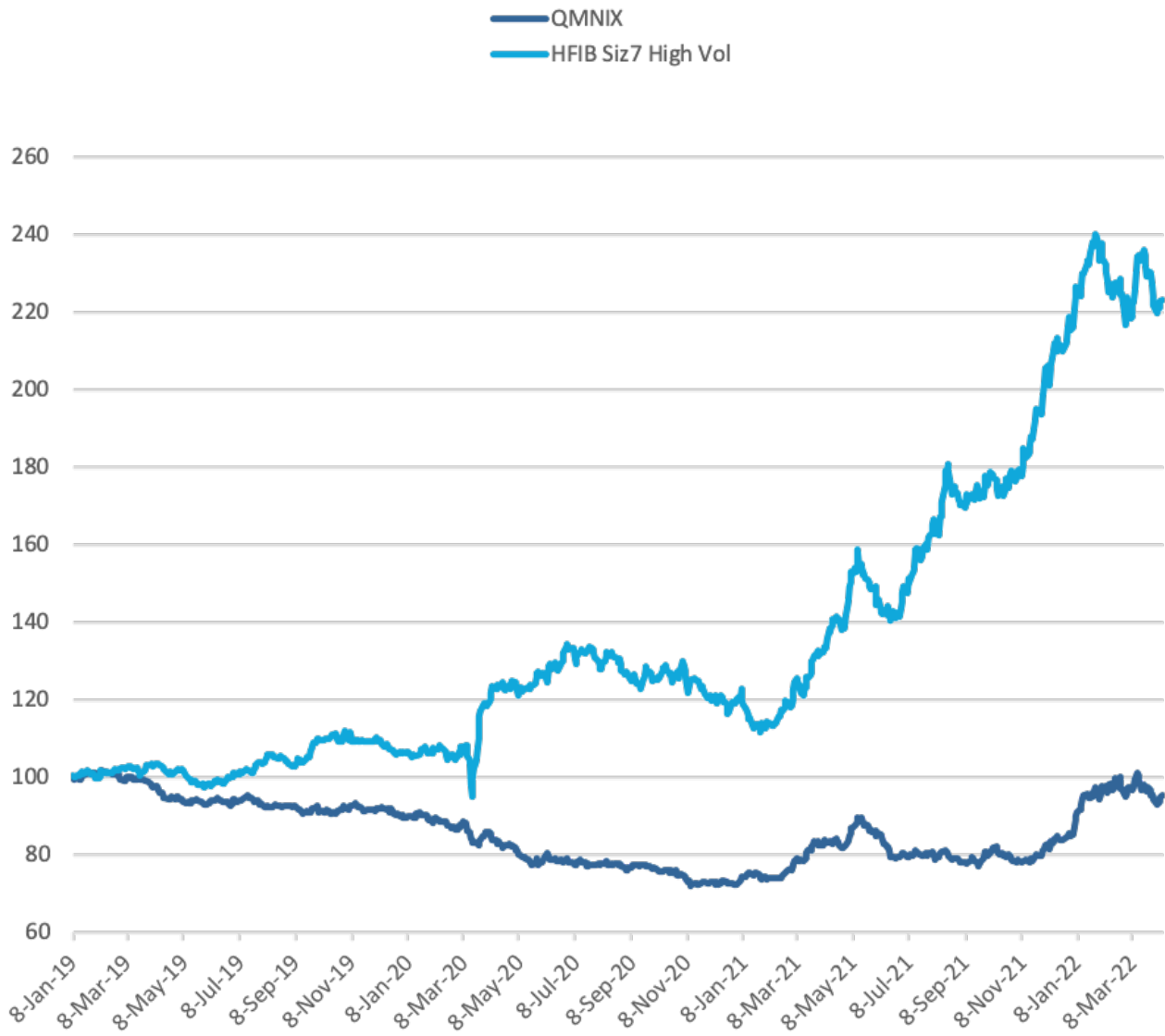|	DTD Long	DTD Short	DTD Spread	MTD Long	MTD Short	MTD Spread	YTD Long	YTD Short	YTD Spread
Fabulous Fourteen	-3.19%	-10.4%	7.22%	-2.89%	-16.31%	14.58%	-9.92%	-43.82%	48.9%
Sizzling Seven	-2.37%	-9.34%	6.98%	-2.76%	-14.86%	12.94%	-6.03%	-40.42%	48.14%
Famous Five	-2.34%	-10.2%	7.86%	-2.04%	-16.34%	15.28%	-6.92%	-44.08%	51.12%
Enterpise Eighteen	-2.44%	-10.75%	8.31%	-2.13%	-16.86%	15.95%	-11.17%	-44.81%	47.19%
Q-GARP	-3.55%	-10.38%	6.84%	-1.83%	-15.71%	15.09%	-8.63%	-43.24%	48.63%
ValMo	-5.7%	-9.76%	4.06%	-2.82%	-15.59%	14.09%	-3.49%	-43.46%	59.17%
Value	-3.37%	-10.33%	6.96%	-2.82%	-16.25%	14.73%	0.19%	-43.45%	66.32%
QualVal	-2.01%	-10.8%	8.78%	-1.66%	-16.39%	15.97%	-9.0%	-43.92%	50.09%
QualMo	-2.73%	-9.71%	6.98%	-3.2%	-14.8%	12.31%	-18.62%	-42.25%	30.83%
Quality	-1.8%	-10.72%	8.92%	-2.43%	-15.88%	14.37%	-14.89%	-41.14%	34.0%
GrowthMo	-6.34%	-5.57%	-0.78%	-4.27%	-8.02%	3.85%	-18.86%	-25.11%	5.76%

2022 Q1 summary and end of April update

· QMIT signals had a spectacular 2021 with flagship signals like ValMo [GARP] & Fabulous 14 more than doubling YTD (gross 100x100) 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 3/31/2022 show that our flagship signals like Sizzling Seven were already up as much as +31.17%.

· Our prior prognostications of a major dislocation in Equity markets look rather prescient now. We are now well into a Nasdaq style crash which should lead to extraordinary opportunities in the market neutral space given the 2-way price discovery as many acronyms of yesteryear (like FOMO, YOLO, TINA, FANG) fade into obsolescence.

· The explosive run from Nov-Jan 2022 was extraordinary in its magnitude exceeding +60% on the high end & quite similar to what we've seen YTD 2022. This directly correlates with the liquidation taking place in speculative assets like cryptos, ARKK & other hypergrowth long duration segments of the market. We were famously short nearly every single one of Cathy Wood's Top 10 ARKK names in Feb 2021 when that portfolio peaked. Given the valuation headwinds & re-pricing of many speculative assets one should expect much higher vol & c-s dispersion to be particularly favorable for the classic quant pillars of Val & Mom. Indeed now that the typical momentum lookback windows have captured the recent zeitgeist particularly on the short side we see that PMOM ESB performing exceptionally well YTD.

· Correlation doesn't imply causation but if on the way up (in terms of Fed's balance sheet expansion) the market 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 should lead to a massive Val vs GrowthMo rotation as can be seen from our factor heatmaps below.

· 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. Cryptos crashing to wit. The easy $ has been made. In a bull market even cab drivers have great stock tips & crypto kids turn into billionaires. 2022 is indeed turning out to be the year of reckoning for asset bubbles as we'd anticipated. That giant hissing sound we hear is the simultaneous deflation of correlated bubbles as Fed pushes lambda (risk aversion) in reverse gear. To wit we now have a major crypto "stable coin" de-pegged. An event with significant ramifications that begs for regulation.

· The 3.3-year live performance 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 etc in the dust. NB – we also show the 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. To take our investors the last mile from LIVE signal spreads to fully baked, realistically risk-optimized HF portfolios we present the HEDGE FUND IN A BOX strategy tracker below. For perspective, we show the cum VAMI of our HFIB tracker and it's substantial outperformance as compared to AQR's QMNIX EMN hedge fund in the 3.3y of LIVE publication (Jan 2019 – April 2022 daily rebalanced) with us now beating AQR by a cum ~ +120%.

$ Neutrality (no leverage)	100 Long x 90 to 100 Short
Earnings Torpedoes, Mean Reversion, SIRF	ESB constraints
Net Sector& Industry Exposure	2.5%
Beta Neutrality	[-0.01,0.01]
Long-side single stock weight	< 1.50%
Short-side single stock weight	< 1.50%
Naïve factor neutrality	0 based on 5 factors

	HFiB	AQR
Annualized Ret	28.04%	-1.47%
Annualized Std	15.46%	9.92%
Sharpe Ratio	1.81	-0.15
Sortino Ratio	2.92	-0.18
Max DD	16.79	29.24

AQR QMNIX VS QMIT HFIB HIGH VOL

NB heatmaps below are as of 2022-04-29

$ Neutral - Daily rebal heatmap YTD for ESBs:

	DTD Long	DTD Short	DTD Spread	MTD Long	MTD Short	MTD Spread	YTD Long	YTD Short	YTD Spread
DV	-2.26%	-1.87%	-0.39%	-5.67%	-12.6%	7.57%	0.32%	-22.7%	26.46%
RV	-1.73%	-3.07%	1.34%	-5.42%	-18.71%	15.36%	-4.45%	-30.06%	30.74%
Efficiency	-2.34%	-3.26%	0.92%	-5.28%	-19.87%	17.29%	-2.86%	-33.51%	39.72%
Size	-1.95%	-2.84%	0.89%	-9.7%	-12.32%	2.92%	-7.57%	-25.7%	24.02%
CSU	-2.53%	-3.22%	0.69%	-5.13%	-18.9%	15.59%	-9.18%	-25.71%	15.5%
Profit	-3.24%	-2.69%	-0.55%	-9.87%	-18.07%	9.37%	-17.87%	-26.87%	7.91%
Leverage	-2.79%	-3.04%	0.25%	-8.54%	-17.76%	10.49%	-16.15%	-32.77%	18.8%
Reversals	-3.12%	-2.09%	-1.03%	-13.15%	-10.46%	-2.99%	-16.23%	-20.91%	5.71%
Growth	-2.4%	-2.21%	-0.19%	-7.18%	-12.43%	5.81%	-7.0%	-16.48%	10.46%
EQ	-2.49%	-3.1%	0.62%	-11.91%	-15.74%	4.51%	-19.09%	-24.64%	7.17%
ART	-2.5%	-2.64%	0.14%	-6.45%	-13.43%	7.57%	-11.36%	-20.6%	8.67%
EnMOM	-2.26%	-2.77%	0.51%	-2.17%	-14.24%	13.6%	-7.68%	-20.1%	13.99%
ARS	-2.46%	-2.47%	0.01%	-7.87%	-12.07%	4.54%	-17.9%	-13.82%	-5.91%
Stability	-2.41%	-2.6%	0.19%	-3.51%	-17.03%	15.54%	-8.51%	-17.73%	7.36%
PMOM	-2.43%	-2.68%	0.25%	-3.83%	-21.68%	20.88%	-5.18%	-35.35%	36.87%
SIRF	-2.19%	-2.68%	0.49%	-7.06%	-8.18%	1.17%	-12.17%	-17.69%	5.99%
Risk	-1.76%	-4.29%	2.54%	-2.31%	-20.02%	20.25%	-2.11%	-26.88%	21.6%
Dividends	-2.59%	-2.85%	0.26%	-5.4%	-10.46%	5.09%	1.15%	-22.02%	25.11%
RiskOn	-2.28%	-2.57%	0.29%	-7.64%	-13.51%	6.73%	-7.14%	-23.86%	20.44%
RiskOff	-2.5%	-2.94%	0.45%	-6.09%	-16.31%	11.58%	-10.35%	-24.23%	14.28%
RORO Spread	0.22%	0.37%	-0.16%	-1.55%	2.8%	-4.85%	3.21%	0.37%	6.16%

$ Neutral - Daily rebal heatmap YTD for Combo signals:

	DTD Long	DTD Short	DTD Spread	MTD Long	MTD Short	MTD Spread	YTD Long	YTD Short	YTD Spread
Fabulous Fourteen	-2.37%	-3.11%	0.75%	-4.83%	-19.73%	17.29%	-7.23%	-32.88%	29.95%
Sizzling Seven	-2.25%	-3.18%	0.92%	-5.6%	-17.63%	13.53%	-3.37%	-30.02%	31.17%
Famous Five	-2.29%	-3.9%	1.61%	-4.5%	-21.32%	19.68%	-4.98%	-33.16%	31.09%
Enterpise Eighteen	-2.59%	-3.37%	0.78%	-4.47%	-20.31%	18.36%	-9.24%	-33.61%	26.94%
Q-GARP	-2.5%	-3.31%	0.81%	-2.77%	-20.61%	21.02%	-6.93%	-32.66%	29.13%
ValMo	-2.47%	-3.26%	0.79%	-3.25%	-20.41%	20.17%	-0.7%	-33.02%	39.51%
Value	-2.06%	-3.05%	1.0%	-4.18%	-17.67%	15.47%	3.11%	-32.48%	44.97%
QualVal	-2.58%	-2.89%	0.31%	-1.98%	-19.97%	21.23%	-7.47%	-32.93%	29.42%
QualMo	-2.72%	-3.26%	0.53%	-5.74%	-21.4%	18.52%	-15.94%	-32.22%	16.49%
Quality	-2.79%	-3.68%	0.89%	-4.03%	-19.45%	17.84%	-12.78%	-30.03%	17.16%
GrowthMo	-2.6%	-2.72%	0.11%	-6.56%	-16.21%	10.91%	-15.25%	-18.59%	1.85%

Sector ranks based on QMIT Combo Signals:

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

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.

$ Neutral - Weekly rebalanced YTD [daily geometric chain-linked returns as of 4/29/22:

	DTD	MTD	YTD
LBO100 Hedged	0.78%	5.00%	3.56%
LBO100	-1.98%	-3.21%	-7.16%
IWN	-2.76%	-7.79%	-10.09%

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 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 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.

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

Best Regards,

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QuantZ - Winner at Battle of the Quants & BattleFin Elite

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