SENTIMENT SCREENING & VOLATILITY FACTORS

HEDGEYE MACRO TEAM
BEN RYAN

October 30th, 2018

LEGAL

DISCLAIMER

Hedgeye Risk Management is a registered investment advisor, registered with the State of Connecticut. Hedgeye Risk Management is not a broker dealer and does not provide investment advice for individuals. This research does not constitute an offer to sell, or a solicitation of an offer to buy any security. This research is presented without regard to individual investment preferences or risk parameters; it is general information and does not constitute specific investment advice. This presentation is based on information from sources believed to be reliable. Hedgeye Risk Management is not responsible for errors, inaccuracies or omissions of information. The opinions and conclusions contained in this report are those of Hedgeye Risk Management, and are intended solely for the use of Hedgeye Risk Management's clients and subscribers. In reaching these opinions and conclusions, Hedgeye Risk Management and its employees have relied upon research conducted by Hedgeye Risk Management's employees, which is based upon sources considered credible and reliable within the industry. Hedgeye Risk Management is not responsible for the validity or authenticity of the information upon which it has relied.

TERMS OF USE

This report is intended solely for the use of its recipient. Re-distribution or republication of this report and its contents are prohibited. For more detail please refer to the appropriate sections of the Hedgeye Services Agreement and the Terms of Use at www.hedgeye.com.

US EQUITY VOLATILITY IN Q4 2018: GLOBAL CONTEXT

MOST ELEVATED MACRO VOL IN US "GROWTH" EQUITIES

TIME WINDOW SETTING: VOLATILITY_30D PUT_IMP_VOL_30D	TICKER	TOTAL RETURN PERFORMANCE YTD %	IVOL PREMIUM/DISCOUNT IVOL PREM % IVOL / RVOL CURRENT	Yesterday	1W Ago	1M Ago	TTM Z-Score	3Yr Z-Score	REALIZED VOLATILITY TRENDS RVOL CURRENT	MM %	PERCENTILE 10YR	IMPLIED VOLATILITY TRENDS IVOL CURRENT	MM %	PERCENTILE 10YR
US EQUITIES														
Health Care Sector SPDR ETF	XLV US EQUITY	7.18%	14%	-13%	0%	59%	0.1	0.1	19.8	189%	83%	22.5	107%	89%
Technology Sector SPDR ETF	XLK US EQUITY	5.74%	18%	22%	36%	34%	0.2	0.1	30.1	182%	92%	35.5	148%	95%
Power Shares QQQ Trust ETF	QQQ US EQUITY	5.38%	0%	-6%	0%	30%	-0.3	-0.4	29.4	167%	91%	29.5	106%	92%
Utilities Sector SPDR ETF	XLU US EQUITY	5.38%	-11%	-6%	-5%	-2%	-1.0	-0.9	19.4	45%	84%	17.3	31%	78%
Consumer Discretionary Sector SPDR ETF	XLY US EQUITY	4.75%	8%	11%	29%	25%	-0.4	-0.3	23.2	137%	83%	25.1	105%	83%
SPDR S&P 500 ETF Trust	SPY US EQUITY	0.17%	9%	6%	4%	43%	0.0	-0.1	19.3	217%	79%	21.0	142%	81%
Consumer Staples Sector SPDR ETF	XLP US EQUITY	-2.33%	2%	13%	-7%	20%	-0.1	-0.3	16.5	78%	82%	16.8	52%	86%
Vanguard Real Estate REIT ETF	VNQ US EQUITY	-2.63%	-12%	-9%	-12%	-17%	-0.6	-0.8	21.1	44%	71%	18.5	51%	63%
I-Shares Russell 2000 ETF	IWM US EQUITY	-2.96%	28%	29%	20%	42%	0.5	0.8	21.3	159%	73%	27.2	133%	80%
Financials Sector SPDR ETF	XLF US EQUITY	-7.57%	23%	19%	4%	36%	0.3	0.5	21.6	92%	68%	26.4	73%	77%
Energy Sector SPDR ETF	XLE US EQUITY	-7.82%	25%	25%	17%	36%	0.9	0.9	22.7	106%	62%	28.5	89%	80%
Industrials Sector SPDR ETF	XLI US EQUITY	-9.05%	32%	30%	18%	44%	0.8	0.7	19.7	108%	70%	26.1	91%	84%
Materials Sector SPDR ETF	XLB US EQUITY	-15.06%	50%	44%	29%	23%	1.6	1.7	19.1	57%	57%	28.7	91%	82%
Communication Services	XLC US EQUITY		26%	23%	39%	38%			27.3	129%	100%	34.4	109%	100%
INTERNATIONAL EQUITIES														
Euro Stoxx 50 Index	SX5E INDEX	-7.07%	34%	46%	27%	20%	0.9	0.5	14.4	38%	28%	19.4	55%	50%
I-Shares MSCI Japan ETF	EWJ US EQUITY	-10.08%	16%	4%	-1%	0%	0.8	0.2	17.9	53%	61%	20.8	78%	71%
I-Shares China Large-Cap ETF	FXI US EQUITY	-16.02%	9%	4%	2%	-4%	0.8	0.2	27.3	35%	69%	29.8	54%	77%
I-Shares MSCI Emerging Markets ETF	EEM US EQUITY	-18.82%	13%	7%	3%	-3%	0.9	0.4	25.0	39%	73%	28.2	62%	78%
CURRENCIES														
PowerShares US Dollar Index ETF	UUP US EQUITY	7.03%	44%	39%	28%	14%	2.0	1.8	5.1	-13%	10%	7.3	10%	30%
Currency Shares Japanese Yen ETF	FXY US EQUITY	-0.15%	25%	26%	12%	13%	0.8	0.9	6.1	12%	12%	7.6	23%	16%
Currency Shares British Pound ETF	FXB US EQUITY	-5.34%	16%	12%	12%	-2%	0.5	0.3	8.7	-9%	54%	10.1	8%	66%
Currency Shares Euro Trust ETF	FXE US EQUITY	-5.74%	26%	24%	13%	-4%	1.8	1.0	6.0	-17%	9%	7.5	8%	23%
COMMODITIES														
United States Oil Fund ETF	USO US EQUITY	17.49%	-4%	-5%	4%	29%	-0.4	-0.5	27.9	42%	49%	26.7	6%	34%
United States Natural Gas Fund ETF	UNG US EQUITY	11.15%	32%	25%	24%	12%	0.8	1.2	32.7	30%	38%	43.1	53%	60%
SPDR Gold Shares ETF	GLD US EQUITY	-5.94%	4%	4%	-9%	-3%	-0.1	-0.2	10.9	14%	20%	11.3	22%	14%
PowerShares DB Agriculture Fund ETF	DBA US EQUITY	-6.66%	34%	35%	34%	39%	0.3	0.2	11.9	12%	43%	16.0	8%	65%
PowerShares DB Base Metals Fund ETF	DBB US EQUITY	-16.13%	26%	25%	14%	14%	-0.3	-0.2	17.8	-5%	43%	22.4	5%	51%
FIXED INCOME														
I-Shares IBOXX HY Corporate Bond ETF	HYG US EQUITY	0.23%	56%	65%	39%	19%	1.3	1.1	4.4	64%	23%	6.9	114%	40%
I-Shares 7-10 Year Treasury Bond ETF	IEF US EQUITY	-2.60%	80%	21%	25%	30%	3.0	3.5	4.4	33%	17%	7.9	84%	77%
I-Shares IBOXX IG Corporate Bond ETF	LQD US EQUITY	-4.72%	26%	16%	14%	11%	0.9	0.4	4.2	10%	20%	5.3	25%	36%
I-Shares J.P. Morgan USD EM Bond ETF	EMB US EQUITY	-6.49%	38%	35%	17%	-12%	0.5	0.2	5.3	-15%	39%	7.3	34%	48%
I-Shares 20+ Year Treasury Bond ETF	TLT US EQUITY	-7.75%	4%	-2%	2%	12%	0.3	0.0	10.2	34%	18%	10.6	25%	19%

Data Source: CBOE, CME, Bloomberg

DATA SOURCE: BLOOMBERG, CME, CBOE

MOST DIVERGENT HEDGING COSTS IN DOMESTIC "GROWTH"

FROM A CROSS-ASSET GLOBAL MACRO UNIVERSE OF ~125 TICKERS, THE MOST DIVERGENT HEDGING COSTS 1 & 2 MONTHS FORWARD ARE DEFINITIVELY IN DOMESTIC "GROWTH" EQUITIES. THE SURGE IN HEDGING DEMAND IS NO SURPRISE GIVEN OCTOBER 2018 PERFORMANCE.

Global Macro Divergences: 1Mth Implied Volatility Percentile Reading

*"1Mth" represents 1Mth Expiry Implied Volatility Historical Percentile Readings (13yr Lookback or Max Lookback)

HIGH VOLATILITY DIVERGENCES (HIGHEST PERCENTILE READINGS)

SECURITY	TICKER	1Mth Expiry IVOL Percentile Reading
I-Shares US Medical Devices ETF	IHI US Equity	100%
I-Path Bloomberg Sugar Subindex Total I	SGGFF US Equity	99%
I-Shares Pharmaceuticals ETF	IHE US Equity	96%
Nasdaq 100 Index	NDX Index	96%
Dow Jones Industrial Average	INDU Index	95%
Technology Select Sector SPDR ETF	XLK US Equity	95%
Google	GOOG US Equity	95%
I-Shares MSCI Turkey ETF	TUR US Equity	94%
VanEck Vectors Semiconductor ETF	SMH US Equity	92%
Power Shares QQQ Trust ETF	QQQ US Equity	92%

LOW VOLATILITY DIVERGENCES (LOWEST PERCENTILE READINGS)

SECURITY	TICKER	1Mth IVOL Percentile Reading
VanEck Vectors Gold Miners ETF	GDX US Equity	23%
Currency Shares Canadian Dollar Trust E	FXC US Equity	23%
I-Shares National Muni Bond ETF	MUB US Equity	21%
Teucrium Corn Fund ETF	CORN US Equity	19%
Currency Shares Japanese Yen Trust ETI	FXY US Equity	15%
Teucrium Wheat Fund ETF	WEAT US Equity	15%
SPDR Gold Shares ETF	GLD US Equity	14%
PowerShares DB Precious Metals Fund	DBP US Equity	13%
I-Shares Silver Trust ETF	SLV US Equity	12%
Currency Shares Swiss Franc Trust ETF	FXF US Equity	10%

Data Source: Bloomberg

Global Macro Divergences: 2Mth Implied Volatility Percentile Reading

*"2Mth" represents 2Mth Expiry Implied Volatility Historical Percentile Readings (13yr Lookback or Max Lookback)

HIGH VOLATILITY DIVERGENCES (HIGHEST PERCENTILE READINGS)

SECURITY	TICKER	2Mth Expiry IVOL Percentile Reading
I-Shares US Medical Devices ETF	IHI US Equity	100%
I-Path Bloomberg Sugar Subindex Total I	SGGFF US Equity	99%
Google	GOOG US Equity	95%
Dow Jones Industrial Average	INDU Index	93%
I-Shares MSCI Turkey ETF	TUR US Equity	93%
Technology Select Sector SPDR ETF	XLK US Equity	93%
Nasdaq 100 Index	NDX Index	92%
I-Shares Pharmaceuticals ETF	IHE US Equity	92%
I-Shares Nasdaq Biotechnology ETF	IBB US Equity	89%
I-Shares MSCI Europe Financials ETF	EUFN US Equity	88%

LOW VOLATILITY DIVERGENCES (LOWEST PERCENTILE READINGS)

SECURITY	TICKER	2Mth IVOL Percentile Reading
Currency Shares Canadian Dollar Trust E	FXC US Equity	19%
I-Shares 20+ Year Treasury Bond ETF	TLT US Equity	19%
VanEck Vectors Gold Miners ETF	GDX US Equity	18%
Teucrium Wheat Fund ETF	WEAT US Equity	12%
Currency Shares Japanese Yen Trust ETI	FXY US Equity	11%
Teucrium Corn Fund ETF	CORN US Equity	11%
SPDR Gold Shares ETF	GLD US Equity	10%
I-Shares Silver Trust ETF	SLV US Equity	10%
Currency Shares Swiss Franc Trust ETF	FXF US Equity	7%
PowerShares DB Precious Metals Fund	DBP US Equity	6%

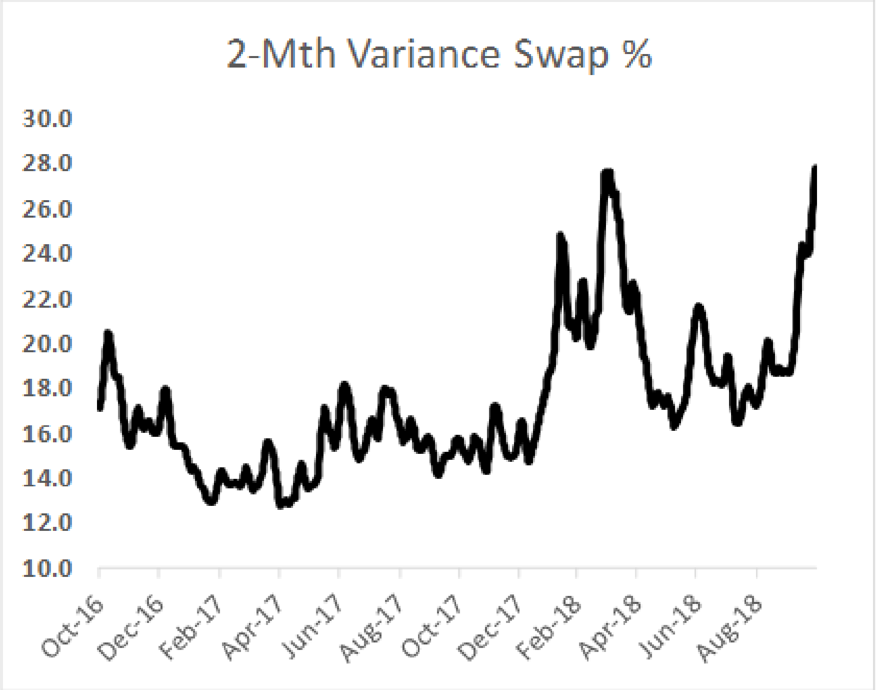
Data Source: Bloomberg

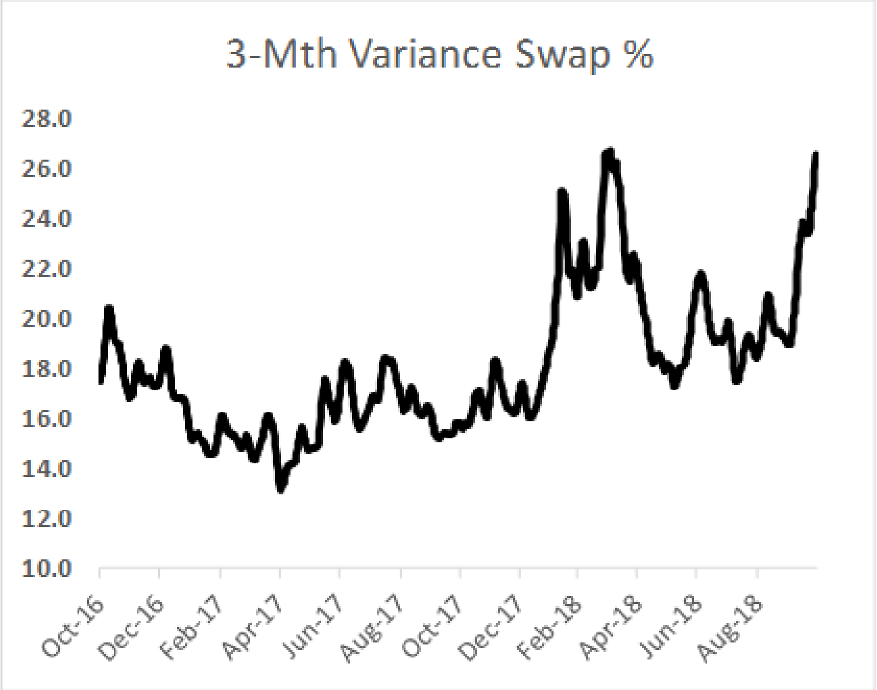
DATA SOURCE: CBOE, BLOOMBERG

NDX: 2 & 3-MTH FORWARD HEDGING COSTS AT YTD HIGHS..

SINGLE-SECURITY VARIANCE SWAP RATE %

Ticker: NDX Index

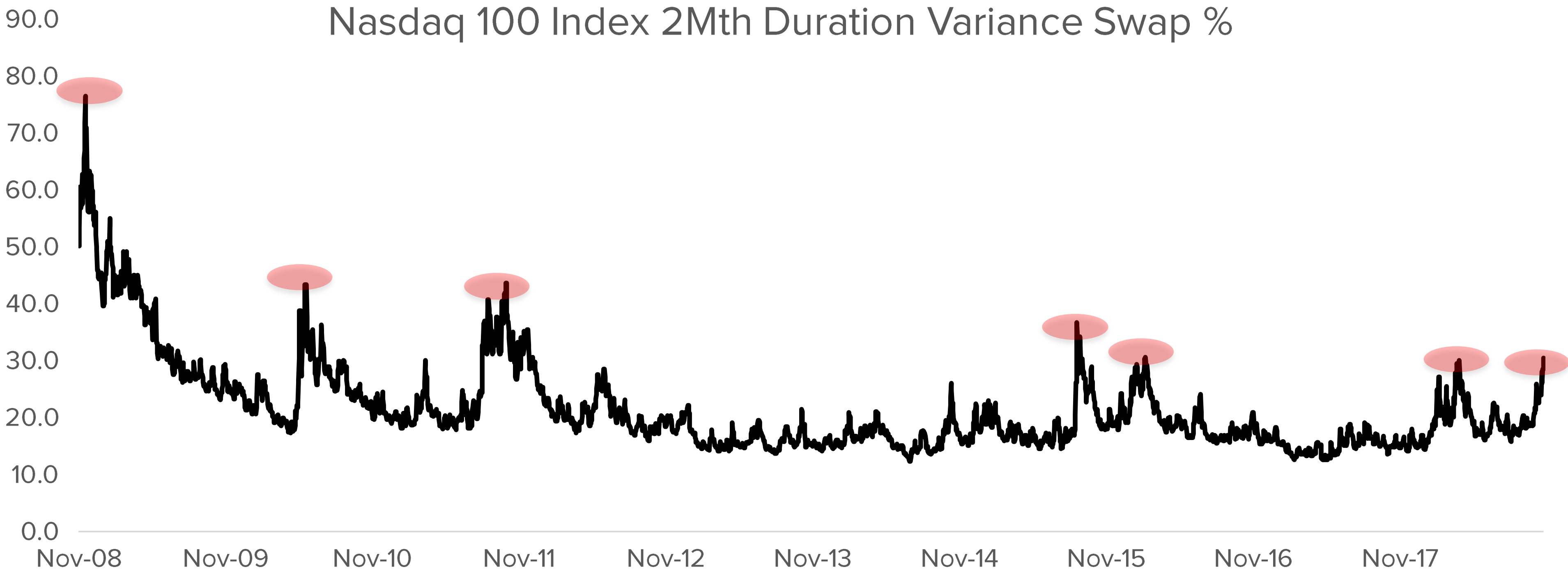




Data Source: CBOE, CME, Bloomberg

... BUT L-T CONTEXT ON HEDGING COSTS IS NEEDED

A VARIANCE SWAP IS A MEASURE OF VOLATILITY EXPECTATIONS AND HEDGING COSTS (LIKE IMPLIED VOLATILITY OR A VOLATILITY INDEX). THIS L-T VIEW PROVIDES IMPORTANT CONTEXT ON CURRENT PRICING. VARIANCE SWAP PRICING >30 HAPPENS MUCH MORE FREQUENTLY THAN WE MAY THINK GIVEN THE IMPACT THIS MONTH HAS HAD ON INVESTOR PSYCHE. THERE ARE NUMEROUS PRECEDENTS FOR MUCH MORE EXPENSIVE VOLATILITY (FROM HERE) IN JUST THIS CYCLE ALONE.



SECTOR & STYLE FACTOR TRENDS

Q4 HAS BEEN ALL ABOUT A ROTATION TO LOW-VOLATILITY, YIELD EXPOSURE

LOW-VOL, YIELD, BETA-DOWNSHIFTING HAS DEFINED THE BIG CORRECTION IN DOMESTIC EQUITIES. HIGHER BETA "VALUE", "GROWTH" & "MOMENTUM" EXPOSURE HAS BEEN STEAMROLLED.

MACRO

US EQUITY MARKET STYLE FACTOR PERFORMANCE (TOTAL RETURN %)

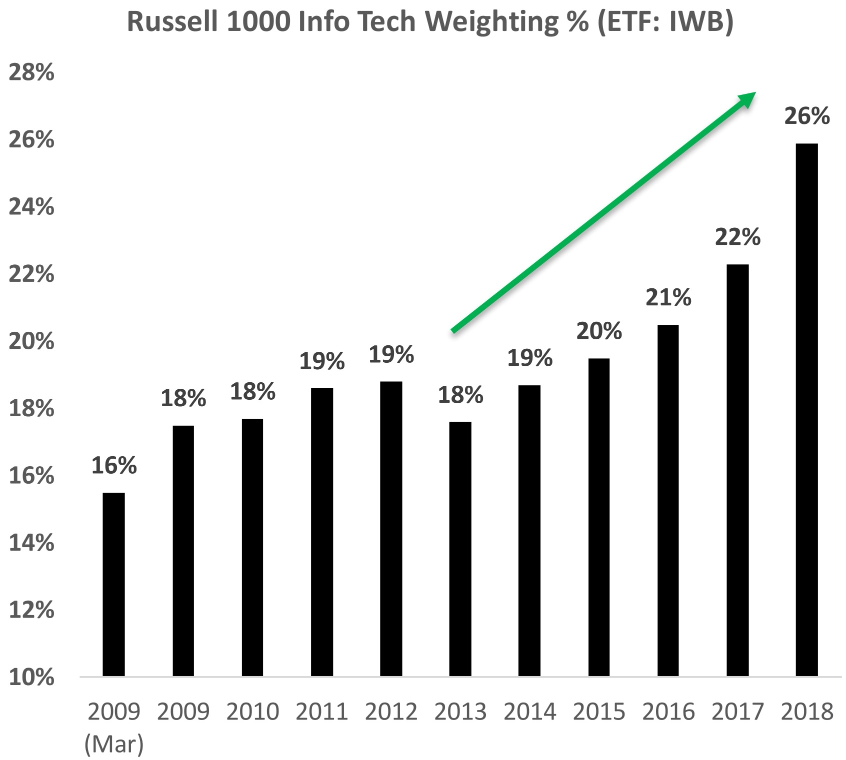
	SECURITY	TICKER	PRICE ($)	DD %	5D %	1Mth %	3Mth %	6Mth %	1Yr %	To-Date Returns MTD %	YTD %
VALUE	iShares Russell 1000 Value ETF	IWD US Equity	$117.54	0.23%	-2.92%	-7.17%	-5.15%	-2.05%	0.22%	-7.17%	-3.77%
	Vanguard Value ETF	VTV US Equity	$102.95	0.14%	-3.06%	-6.98%	-4.32%	-0.48%	3.10%	-6.98%	-1.37%
	Alpha Architect Quantitative Value ETF	QVAL US Equity	$27.53	0.02%	-4.21%	-11.22%	-12.24%	-8.49%	2.06%	-11.22%	-9.70%
	Invesco S&P 500 Pure Value ETF	RPV US Equity	$63.00	0.70%	-3.08%	-8.23%	-6.32%	-5.00%	2.53%	-8.23%	-3.52%
	iShares Edge MSCI USA Value ETF	VLUE US Equity	$80.61	0.06%	-3.16%	-8.24%	-4.54%	-1.89%	3.68%	-8.24%	-1.97%
MOMENTUM	iShares Edge MSCI USA Momentum ETF	MTUM US Equity	$103.41	-1.38%	-5.55%	-13.10%	-8.45%	-3.06%	4.01%	-13.10%	1.07%
	Invesco DWA Momentum ETF	PDP US Equity	$51.09	-1.26%	-5.56%	-14.26%	-10.03%	-3.73%	0.92%	-14.26%	-0.97%
	Alpha Architect Quantitative Momentum ETF	QMOM US Equity	$26.83	-2.78%	-9.66%	-21.09%	-14.95%	-8.34%	-5.46%	-21.09%	-6.20%
	SPDR Russell 1000 Momentum ETF	ONEO US Equity	$67.37	-0.27%	-4.18%	-11.53%	-9.56%	-6.04%	-1.96%	-11.53%	-6.39%
	Fidelity Momentum Factor ETF	FDMO US Equity	$31.30	-0.79%	-5.01%	-11.46%	-7.00%	-1.98%	3.76%	-11.46%	0.88%
GROWTH	iShares Russell 1000 Growth ETF	IWF US Equity	$137.48	-1.41%	-5.38%	-11.86%	-7.25%	0.68%	7.07%	-11.86%	2.97%
	Nasdaq 100 Index	QQQ US Equity	$163.23	-2.06%	-6.14%	-12.14%	-7.94%	1.10%	8.76%	-12.14%	5.38%
	Invesco S&P 500 Pure Growth ETF	RPG US Equity	$103.78	-0.54%	-5.09%	-13.70%	-11.80%	-5.49%	0.78%	-13.70%	-0.73%
	Vanguard Growth ETF	VUG US Equity	$141.77	-1.47%	-5.37%	-11.97%	-7.97%	-0.21%	5.29%	-11.97%	1.62%
	iShares North American Tech-Software ETF	IGV US Equity	$175.99	-0.71%	-4.82%	-14.14%	-8.13%	1.21%	12.90%	-14.14%	13.90%
LOW VOL & YIELD	iShares Edge MSCI Min Vol USA ETF	USMV US Equity	$53.86	0.07%	-2.43%	-5.58%	-1.33%	3.89%	6.48%	-5.58%	3.53%
	Invesco S&P 500 Low Volatility ETF	SPLV US Equity	$47.61	0.87%	-0.69%	-3.68%	-1.58%	2.65%	4.01%	-3.68%	1.49%
	Invesco S&P 500 High-Div Low-Vol ETF	SPHD US Equity	$39.85	0.96%	-1.17%	-3.44%	-2.21%	1.80%	0.18%	-3.44%	-2.81%
	Vanguard High Dividend Yield ETF	VYM US Equity	$81.71	0.38%	-2.67%	-6.18%	-4.12%	-0.54%	1.45%	-6.18%	-2.40%
	iShares Select Dividend ETF	DVY US Equity	$94.75	0.70%	-2.07%	-5.02%	-3.49%	-0.67%	3.04%	-5.02%	-1.43%
QUALITY	iShares Edge MSCI USA Quality Factor ETF	QUAL US Equity	$81.47	-0.20%	-3.79%	-9.85%	-5.48%	0.04%	4.20%	-9.85%	-0.42%
	Invesco S&P 500 Quality Factor ETF	SPHQ US Equity	$29.65	-0.40%	-3.98%	-9.60%	-4.34%	0.46%	2.90%	-9.60%	-1.47%
	Fidelity U.S. Quality Factor ETF	FQAL US Equity	$31.50	-0.44%	-4.15%	-9.01%	-5.47%	0.26%	5.01%	-9.01%	0.23%
	Barron's 400 ETF	BFOR US Equity	$38.84	-0.59%	-4.80%	-13.65%	-11.67%	-7.06%	-3.38%	-13.65%	-6.59%
	Vanguard U.S. Quality Factor ETF	VFQY US Equity	$76.98	1.01%	-2.71%	-10.03%	-7.40%	-0.35%	NA	-10.03%	NA

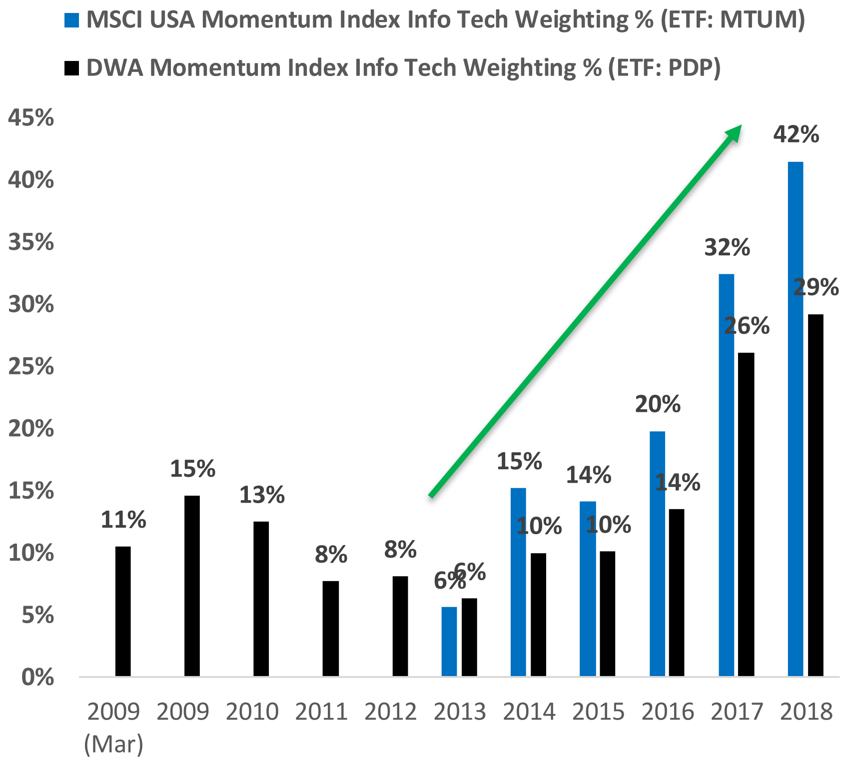
Data Source: Bloomberg

While much of 2018 was defined by "Growth" resilience, the recent correction has been so drastic that 3 exposures under the "Low Vol & Yield" style factor umbrella are the best performers on a 6-mth window.

WE OUTLINED THE SECTOR RISK IN "GROWTH" & "MOMENTUM" CONCENTRATION

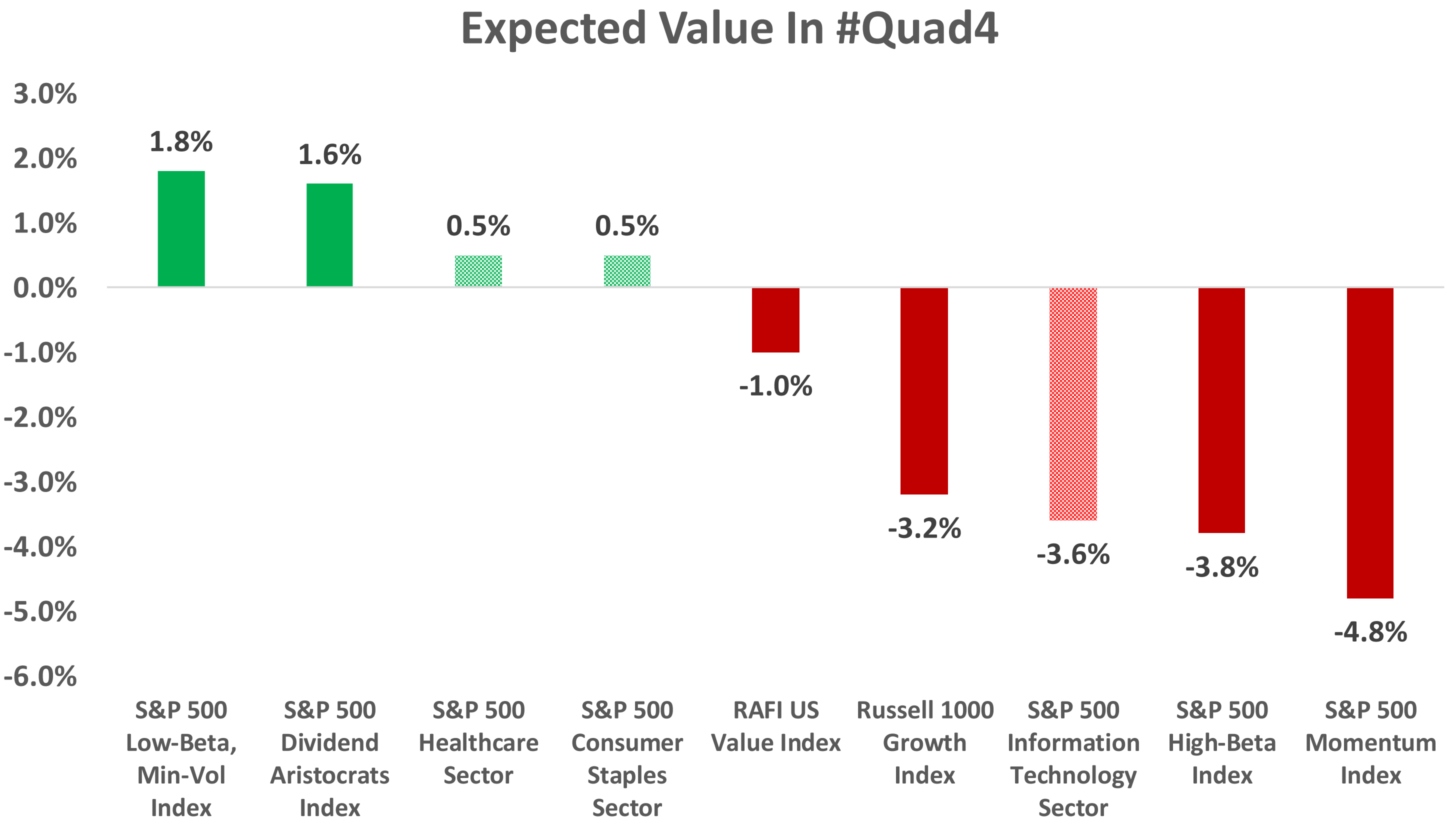
CAN QUAD 4 IN Q4 BE THE STRAW THAT BREAKS THE CAMEL'S BACK FOR LONGSTANDING GROWTH AND MOMENTUM OUTPERFORMANCE AS FACTOR EXPOSURES, PARTICULARLY AS IT RELATES TO THE INFORMATION TECHNOLOGY SECTOR? GIP-MODELING HISTORY SUGGEST THE ANSWER IS "YES" IF YOU BELIEVE #QUAD 4 IN Q4 IS A RISK.





Q: WHY ARE WE TALKING ABOUT STYLE FACTOR RETURNS IN QUAD 4?

A: PLAYING QUAD 4 WITH STYLE FACTOR CONSTRUCTIONS HAS HISTORICALLY CREATED HIGHER DISPERSION RETURN STREAMS THAN PICKING WINNERS AND LOSERS BY SECTOR.



Historically, the most divergent QUAD 4 returns at the sector level have come in the following:

Staples: +0.5%
Healthcare: +0.5%
Info Tech: -3.6%

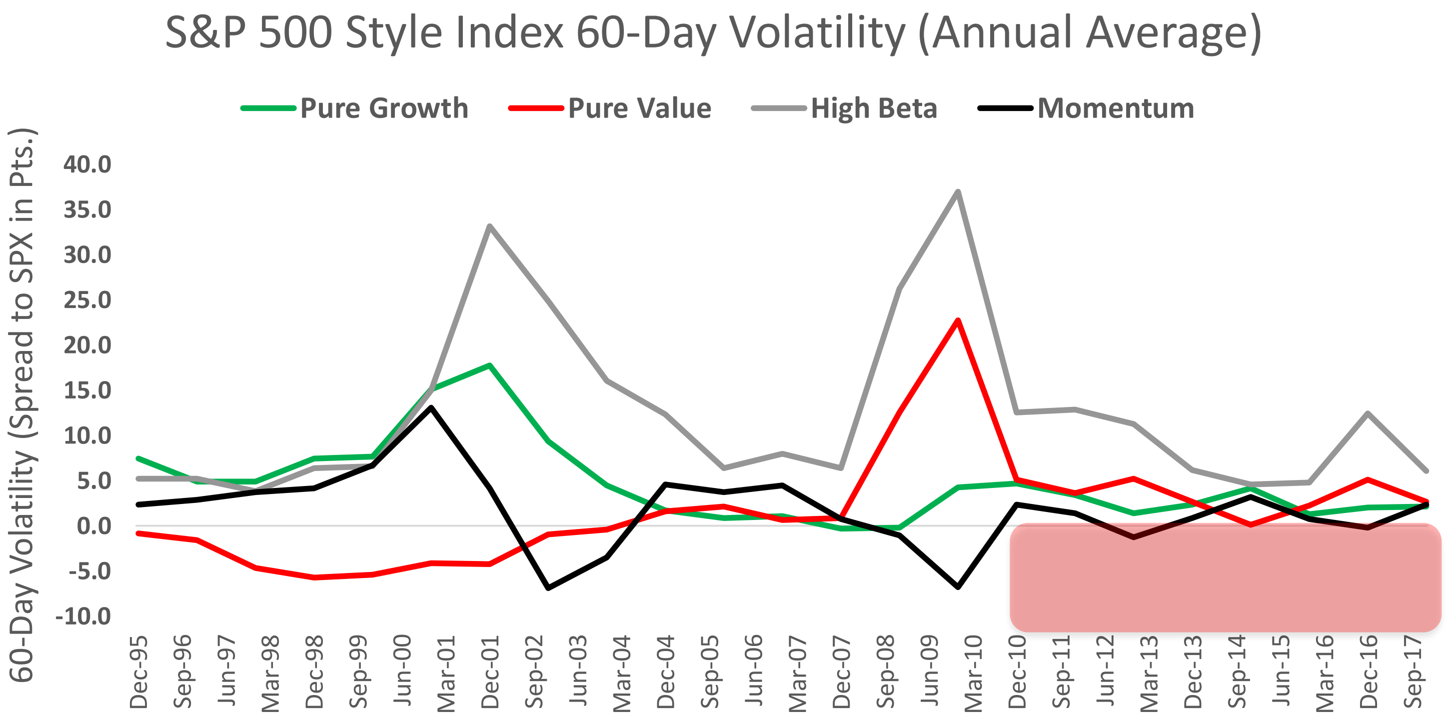
However "Style-Factor" return capture has historically been even more powerful during historical instances of Quad 4:

Low-Beta, Min-Vol: +1.8%
Dividend Yield: +1.6%
High-Beta: -3.8%
Momentum: -4.8%

DATA SOURCE: BLOOMBERG. TRAILING 20 YEARS.

VOLATILITY & THE DANGER IN FACTOR TILTS

THANKS TO AN EXPLOSION IN MONEY CHASING FACTORS, VOLATILITY AT THE STYLE FACTOR LEVEL IS NOW HIGHER THAN INDEX VOLATILITY ACROSS VARIOUS STYLE BUCKETS THAT ARE MARKETED AS BEING UNCORRELATED. THIS REALITY HAS CREATED A TECTONIC SHIFT TO "LOW-VOL" EXPOSURES THAT SHOW UP IN PERFORMANCE IN OCTOBER 2018.

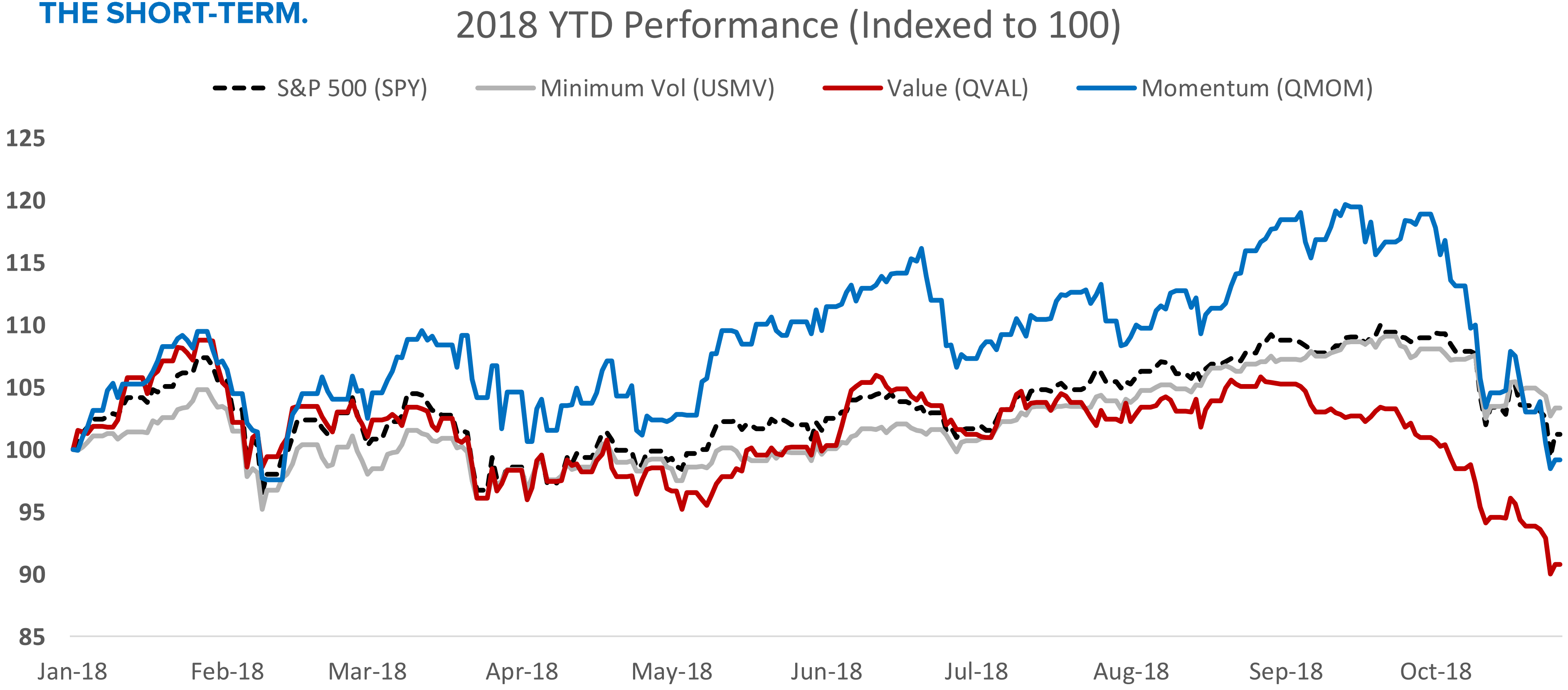


NOTE In this chart we show average annual S&P 500 Factor Index Volatility on a spread basis to the S&P 500 Index with the conclusion that this entire group of individual factor exposures are now high-beta exposures.

DATA SOURCE: BLOOMBERG

HAVE YOU DONE YOUR HOMEWORK ON VOLATILITY?

"VALUE" AND "MOMENTUM" HAVE BEEN PUMMELED SIMULTANEOUSLY AS INVESTORS RACE FOR "LOW-VOLATILITY" EXPOSURE IN A QUAD 4 MACRO ENVIRONMENT. FACTORS CAN BE HIGHLY CORRELATED IN THE SHORT-TERM.



Source: Bloomberg, MSCI, Alpha Architect

THE SECTOR IMPLICATIONS OF THE "LOW-VOL" RACE HAVE BEEN DRASTIC...

S&P 500 SPDR ETF SECTOR PERFORMANCE (TOTAL RETURN %*)

RAW SECTOR PERFORMANCE

SECURITY	TICKER	PRICE ($)	DD %	5D %	1Mth %	3Mth %	6Mth %	1Yr %	MTD %	YTD %
SPDR S&P 500 ETF Trust	SPY US Equity	$263.86	-0.55%	-4.05%	-9.24%	-5.82%	-0.12%	4.25%	-9.24%	0.17%
Energy Sector SPDR ETF	XLE US Equity	$65.24	-1.87%	-7.77%	-13.86%	-14.28%	-10.40%	-0.43%	-13.86%	-7.82%
Materials Sector SPDR ETF	XLB US Equity	$50.74	-0.24%	-3.68%	-12.41%	-14.03%	-11.32%	-12.61%	-12.41%	-15.06%
Industrials Sector SPDR ETF	XLI US Equity	$67.95	-1.66%	-6.83%	-13.33%	-10.17%	-6.34%	-4.32%	-13.33%	-9.05%
Consumer Discretionary Sector SPDR ETF	XLY US Equity	$102.50	-0.88%	-4.00%	-12.56%	-7.91%	-0.99%	12.26%	-12.56%	4.75%
Consumer Staples Sector SPDR ETF	XLP US Equity	$54.45	1.15%	0.31%	0.96%	2.72%	8.83%	5.41%	0.96%	-2.33%
Health Care Sector SPDR ETF	XLV US Equity	$87.64	0.25%	-3.44%	-7.89%	0.02%	5.71%	8.31%	-7.89%	7.18%
Financials Sector SPDR ETF	XLF US Equity	$25.48	0.87%	-2.38%	-7.61%	-9.02%	-7.21%	-3.23%	-7.61%	-7.57%
Technology Sector SPDR ETF	XLK US Equity	$66.94	-1.69%	-5.17%	-11.14%	-6.52%	2.30%	8.52%	-11.14%	5.74%
Communication Services SPDR ETF	XLC US Equity	$43.91	-1.55%	-5.95%	-10.39%	-9.98%			-10.39%	
Utilities Sector SPDR ETF	XLU US Equity	$54.12	1.41%	-0.18%	2.79%	3.73%	6.54%	1.78%	2.79%	5.38%
Vanguard Real Estate REIT ETF	VNQ US Equity	$78.18	1.27%	1.49%	-3.10%	-1.55%	4.77%	-0.27%	-3.10%	-2.63%

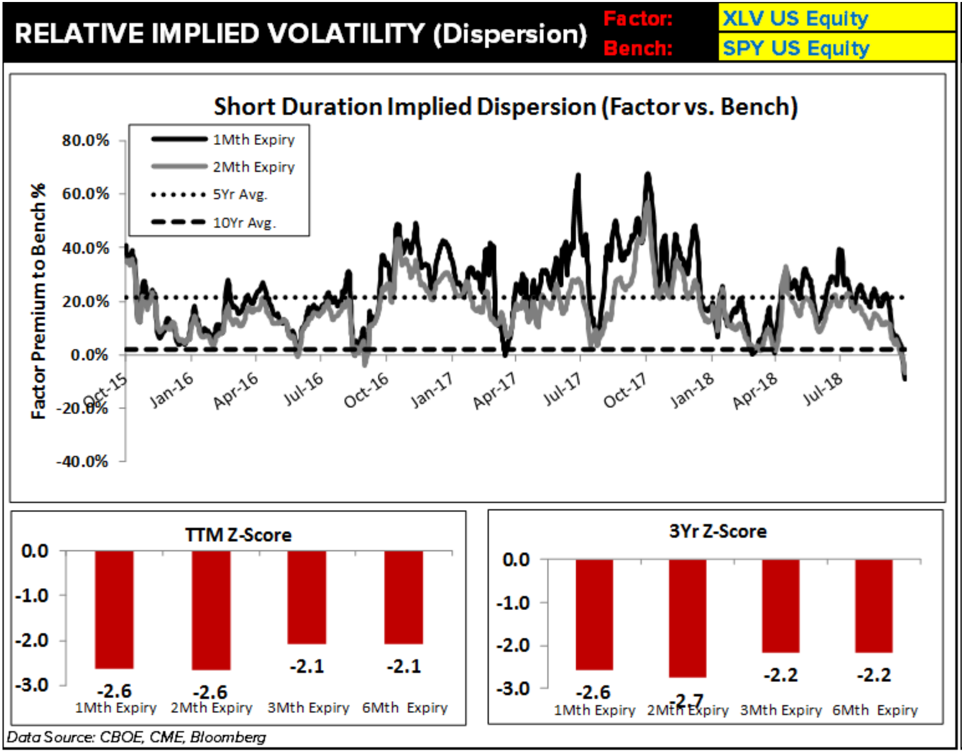
RELATIVE SECTOR PERFORMANCE (vs. SPY)

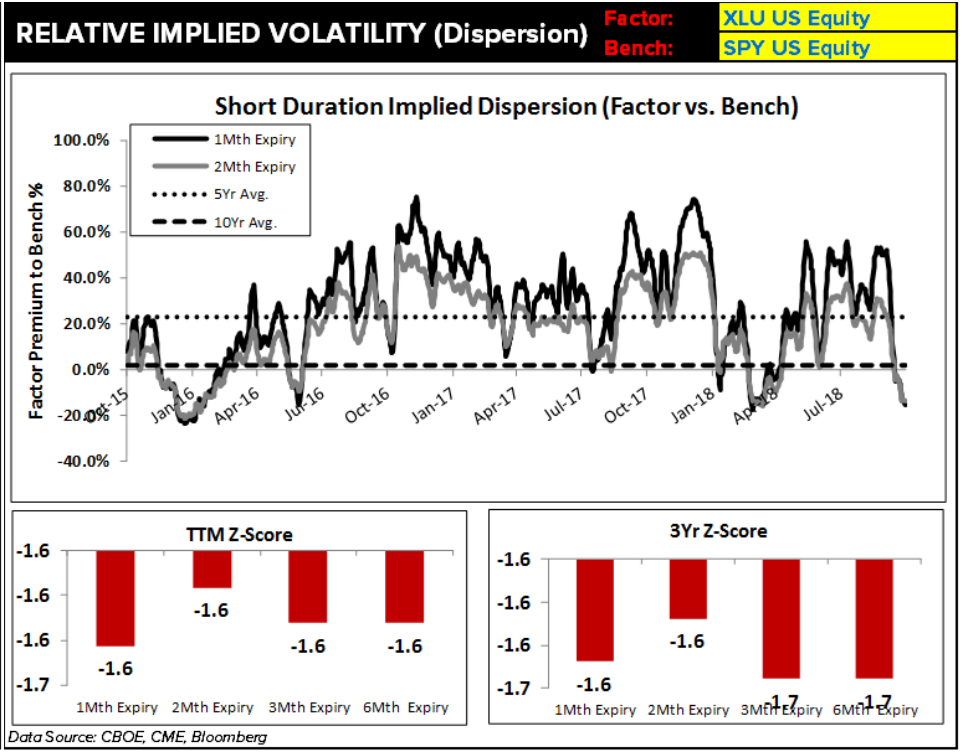
SECURITY	TICKER	PRICE ($)	DD %	5D %	1Mth %	3Mth %	6Mth %	1Yr %	MTD %	YTD %
Energy Sector SPDR ETF	XLE US Equity	$65.24	-1.31%	-3.72%	-4.62%	-8.47%	-10.29%	-4.68%	-4.62%	-7.99%
Materials Sector SPDR ETF	XLB US Equity	$50.74	0.32%	0.37%	-3.17%	-8.21%	-11.20%	-16.86%	-3.17%	-15.23%
Industrials Sector SPDR ETF	XLI US Equity	$67.95	-1.11%	-2.77%	-4.09%	-4.36%	-6.22%	-8.57%	-4.09%	-9.21%
Consumer Discretionary Sector SPDR ETF	XLY US Equity	$102.50	-0.33%	0.06%	-3.32%	-2.10%	-0.87%	8.01%	-3.32%	4.58%
Consumer Staples Sector SPDR ETF	XLP US Equity	$54.45	1.71%	4.37%	10.20%	8.54%	8.95%	1.16%	10.20%	-2.50%
Health Care Sector SPDR ETF	XLV US Equity	$87.64	0.81%	0.62%	1.35%	5.84%	5.82%	4.06%	1.35%	7.01%
Financials Sector SPDR ETF	XLF US Equity	$25.48	1.42%	1.68%	1.62%	-3.20%	-7.09%	-7.48%	1.62%	-7.74%
Technology Sector SPDR ETF	XLK US Equity	$66.94	-1.13%	-1.12%	-1.90%	-0.70%	2.42%	4.27%	-1.90%	5.57%
Communication Services SPDR ETF	XLC US Equity	$43.91	-0.99%	-1.90%	-1.15%	-4.16%			-1.15%	
Utilities Sector SPDR ETF	XLU US Equity	$54.12	1.96%	3.87%	12.03%	9.55%	6.65%	-2.47%	12.03%	5.21%
Vanguard Real Estate REIT ETF	VNQ US Equity	$78.18	1.82%	5.55%	6.14%	4.27%	4.88%	-4.52%	6.14%	-2.80%

Data Source: Bloomberg *Total Return data is pulled for every duration excluding 'DD%'

… AND THE EFFECT ON FORWARD EXPECTATIONS HAS ALSO BEEN DRASTIC

AS A RESULT OF "LOW-VOL" QUAD 4 DEMAND IN U.S. EQUITIES, 1 & 2-MONTH FORWARD HEDGING COSTS IN HEALTHCARE (XLV) & UTILITIES (XLU) TRADE AT DEEP RELATIVE DISCOUNTS TO THE S&P 500 INDEX.



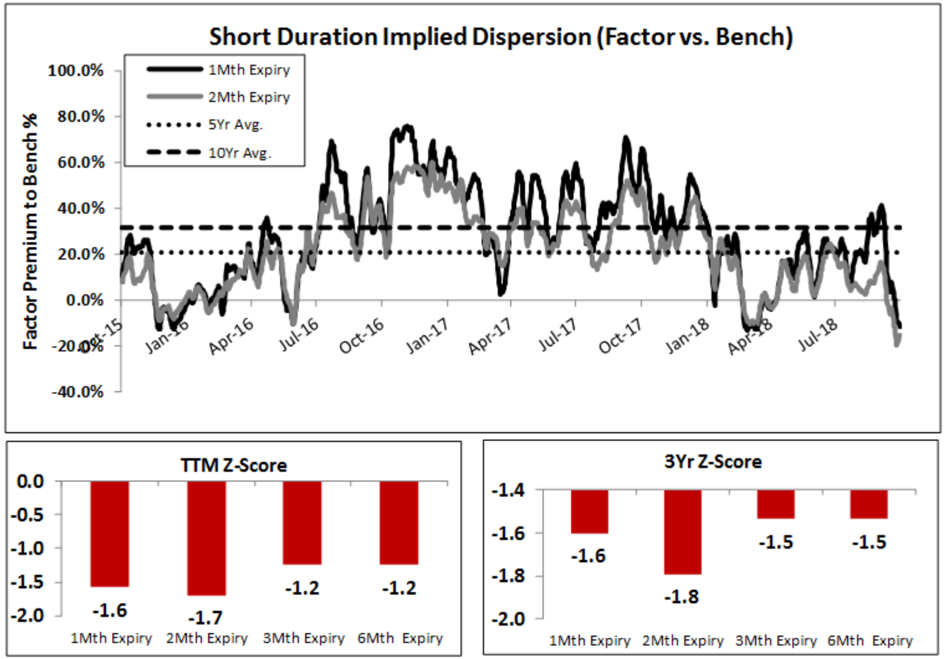


DATA SOURCE: CME, CBOE, BLOOMBERG

MORE DOWNSIDE DISPERSION: VNQ, XLP

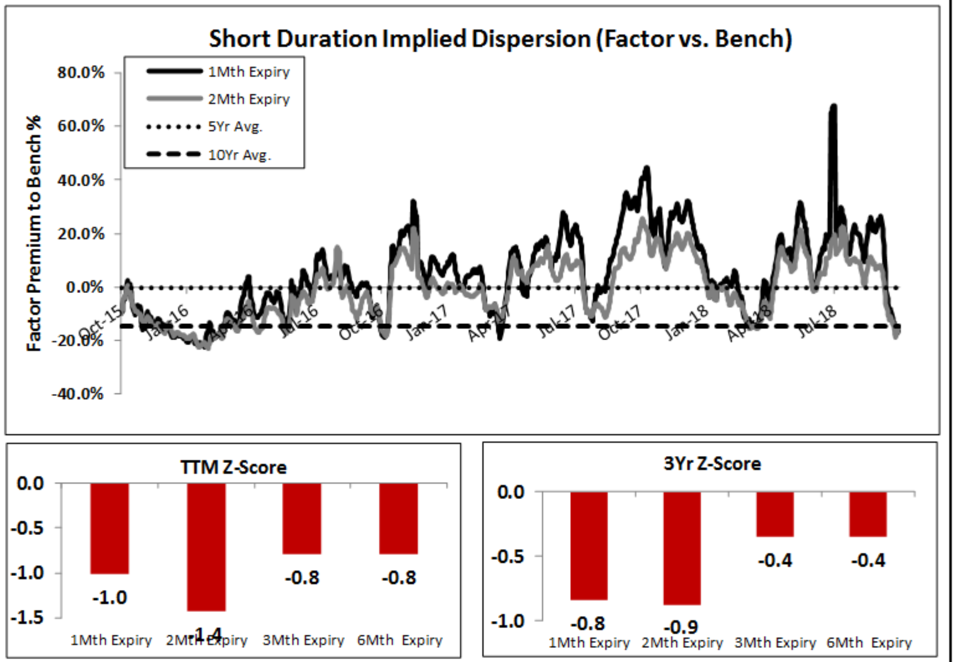
1 & 2-MONTH FORWARD HEDGING COSTS IN HEALTHCARE (XLV) & UTILITIES (XLU) TRADE AT DEEP RELATIVE DISCOUNTS TO THE S&P 500 INDEX.

RELATIVE IMPLIED VOLATILITY (Dispersion) Factor: VNQ US Equity Bench: SPY US Equity



Data Source: CBOE, CME, Bloomberg

RELATIVE IMPLIED VOLATILITY (Dispersion) Factor: XLP US Equity Bench: SPY US Equity

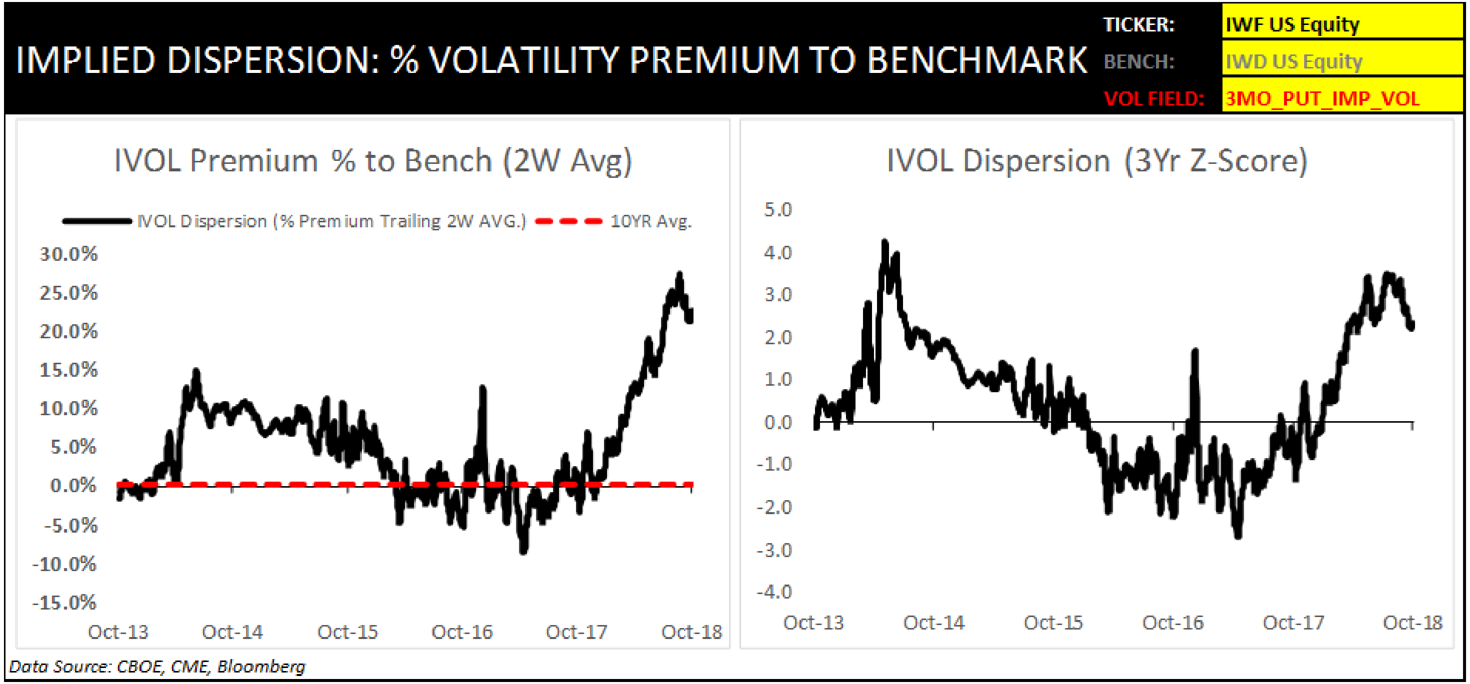


Data Source: CBOE, CME, Bloomberg

DATA SOURCE: CME, CBOE, BLOOMBERG

SHIFTING CONSENSUS IN "GROWTH" EXPOSURES?

RUSSELL 1000 "GROWTH" INDEX VOLATILITY EXPECTATIONS HAVE EXPLODED, REFLECTING THAT CONSENSUS HAS ACKNOWLEDGED THE CONCERNING DIVERGENCE IN "GROWTH" EXPOSURE VOLATILITY EXPECTATIONS.



In this chart we look at the cost of hedging the Russell 1000 "Growth" Index (ETF: IWD) relative to the Russell 1000 "Value" Index (ETF: IWD) for the next 3 months (at-the-money)

The time series is constructed by looking at 3-mth implied volatility in R1K "growth" as a ratio of 3-mth implied volatility in "value".

Takeaway: Realized volatility and volatility expectations (as shown in this chart) in "growth" as a style continue to trend higher which does not bode well for incremental flows/demand absent of your view on the cycle.

FUTURES & OPTIONS OPEN INTEREST

GLOBAL MACRO CONSENSUS: FUTURES & OPTIONS POSITIONING

CFTC NET NON-COMMERCIAL FUTURES & OPTIONS POSITIONING

EQUITIES	Current Contract Length	WW Chg.	MM Chg.	3M Chg.	6M Chg.	TTM Z-Score	3Yr Z-Score
S&P 500 (Index + E-Mini)	221,412	11,828	36,531	37,319	25,921	1.5	1.5
Dow Jones (Mini)	24,045	(1,939)	(25,917)	3,163	24,327	-0.5	-1.1
Nasdaq 100 (Mini)	10,457	8,894	(26,594)	(22,305)	35,104	-0.3	-0.9
Russell 2000 (Mini + E-Mini)	(79,369)	(3,180)	(63,246)	(109,006)	(98,621)	-2.3	-2.1
Nikkei Index	(7,827)	1,301	880	(2,429)	(18,721)	-1.3	-2.0
CBOE Volatility Index (VIX)	(10,303)	22,734	129,472	75,858	(41,922)	0.5	1.1
INTEREST RATES	**Current Contract Length**	**W/W Chg.**	**M/M Chg.**	**3M Chg.**	**6M Chg.**	**TTM Z-Score**	**3Yr Z-Score**
30D Fed Funds	(56,760)	(26,722)	(18,368)	(211,811)	(272,916)	-0.9	0.0
2YR Note	(318,570)	(51,551)	(19,206)	(270,170)	(252,462)	-1.7	-2.0
5Yr Note	(804,981)	38,620	30,273	(115,036)	(244,183)	-1.4	-1.8
10Yr Note*	(589,344)	53,277	166,603	(161,538)	(191,841)	-1.2	-1.5
30Yr Bond*	(95,424)	28,915	11,523	(114,399)	(192,255)	-1.6	-2.4
CURRENCIES	**Current Contract Length**	**W/W Chg.**	**M/M Chg.**	**3M Chg.**	**6M Chg.**	**TTM Z-Score**	**3Yr Z-Score**
USD	38,072	167	1,039	12,724	39,814	1.7	0.8
JPY	(95,564)	7,259	(8,006)	(18,547)	(99,050)	-0.5	-0.7
EUR	(31,344)	(4,009)	(38,873)	(61,781)	(155,797)	-1.9	-0.9
GBP	(41,666)	2,378	22,932	4,953	(83,106)	-0.9	-0.3
AUD	(72,321)	(116)	702	(26,617)	(73,736)	-1.6	-2.1
CAD	(5,167)	4,594	13,189	40,965	17,514	-0.1	-0.1
MXN	58,090	(10,398)	6,696	38,553	(30,772)	0.1	0.4
NZD	(33,048)	2,364	(1,213)	(8,678)	(57,482)	-1.4	-1.7
CHF	(16,419)	(544)	(720)	29,810	(5,962)	0.8	0.2
RUB	2,563	(268)	6,778	(5,594)	(11,235)	-1.3	-1.1
ZAR	(3,295)	1,196	(4,669)	(10,336)	(11,091)	-2.5	-1.6
BRL	(15,265)	428	13,324	11,167	6,206	-0.2	-0.9
COMMODITIES	**Current Contract Length**	**W/W Chg.**	**M/M Chg.**	**3M Chg.**	**6M Chg.**	**TTM Z-Score**	**3Yr Z-Score**
Crude Oil	482,706	(27,285)	(99,469)	(166,052)	(272,535)	-2.4	-0.6
Gold	28,404	13,445	61,168	(3,927)	(113,509)	-0.9	-1.4
Copper	8,648	507	(2,315)	(376)	(32,270)	-1.1	-1.2
Natural Gas	(14,801)	(8,730)	25,045	114,851	84,457	1.8	1.0
RBOB Gasoline	93,673	(7,751)	(20,147)	(7,229)	6,622	0.1	0.8
ULSD Heating Oil	37,935	(6,017)	(5,691)	(3,208)	13,119	-0.3	0.1
Silver	(5,651)	9,797	18,506	(8,681)	(15,958)	-0.6	-1.2
Platinum	12,840	(1,711)	9,209	20,305	(4,874)	-0.1	-0.4
Aluminum	163,475	(2,043)	(1,765)	6,145	(3,122)	0.4	0.7
Nickel	42,230	(365)	(1,818)	(1,834)	65	1.4	0.2
Corn	87,295	3,462	139,627	140,742	(176,305)	0.1	0.3
Soybeans	(33,353)	(6,449)	31,083	11,336	(224,170)	-0.7	-0.9
Wheat	(15,418)	(9,912)	(17,777)	(36,316)	12,999	0.2	0.5
Live Cattle	97,625	206	332	33,327	68,423	0.4	-0.1
Lean Hogs	26,838	(2,206)	4,040	29,390	21,066	0.1	-0.4
Sugar	67,901	48,140	143,295	107,509	179,846	2.2	0.5
Cotton	56,116	903	(14,981)	(41,613)	(43,108)	-1.8	-1.3
Coffee	(38,341)	17,514	63,393	43,307	11,847	0.8	-0.3
Cocoa	(22,679)	2,328	(17,149)	(50,253)	(82,976)	-1.7	-0.8
Orange Juice	(5,518)	(2,079)	(4,165)	(10,985)	(3,873)	-1.9	-1.8

Data Source: CFTC, LME, CME, Bloomberg

*Combines Legacy & Ultra Contracts

The data in this section focuses on the "non-commercial" pool of investors from the CFTC's Commitment of Traders Report (COT).

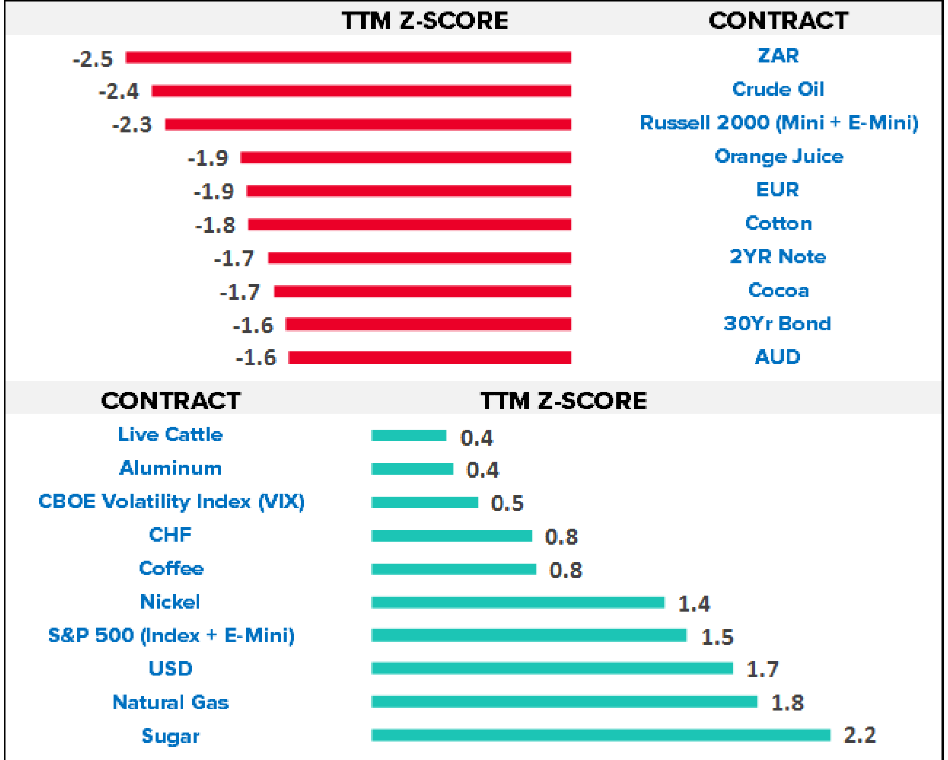
Here are a few key call-outs:

1) **Russell 2000:** Investors have been increasing their Bearish positions in a market that is a pureplay on domestic growth.
2) **Euro:** Investors are holding the most bearish position in over a year (absolute contracts
3) **Short Bond Positions:** Some investors have been forced out of a crowded macro trade m/m but there's a plenty of room to run if this QUAD 4 market continues.

OPEN INTEREST POSITIONING DIVERGENCES: Z-SCORE VIEW

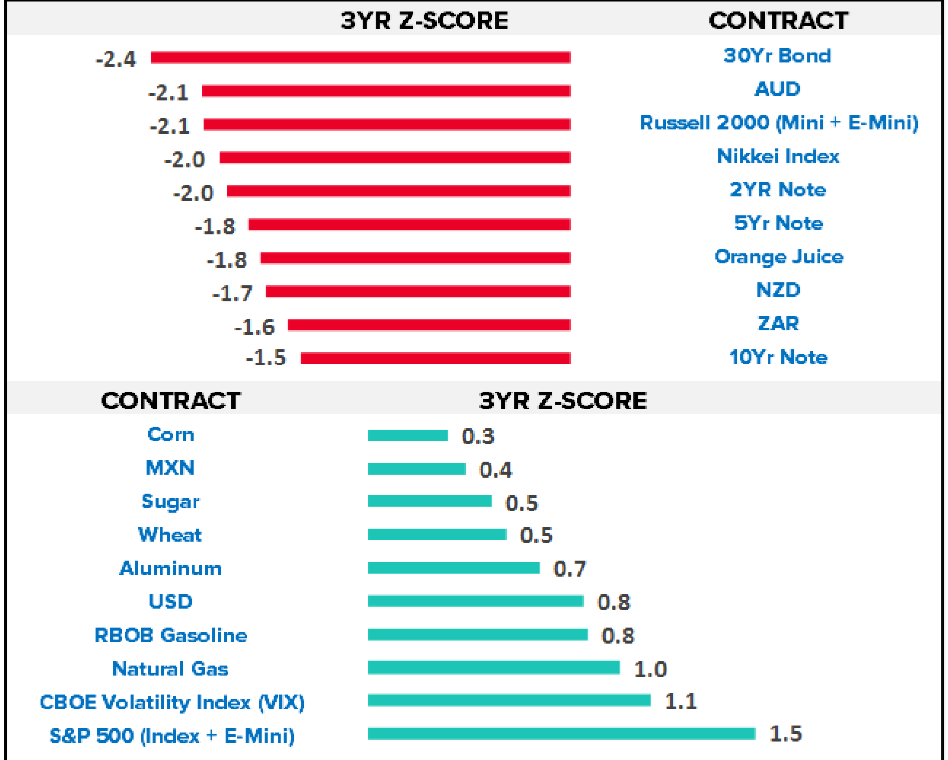
PARTICULARLY ON A 3YR WINDOW, THE "RATES-RISING" BETS REMAIN A KEY MACRO THEME DESPITE A M/M WASHOUT IN SHORT BOND POSITIONS.

CFTC NET FUTURES & OPTIONS POSITIONING (TTM Z-SCORE)



Data Source: CFTC, LME, Bloomberg

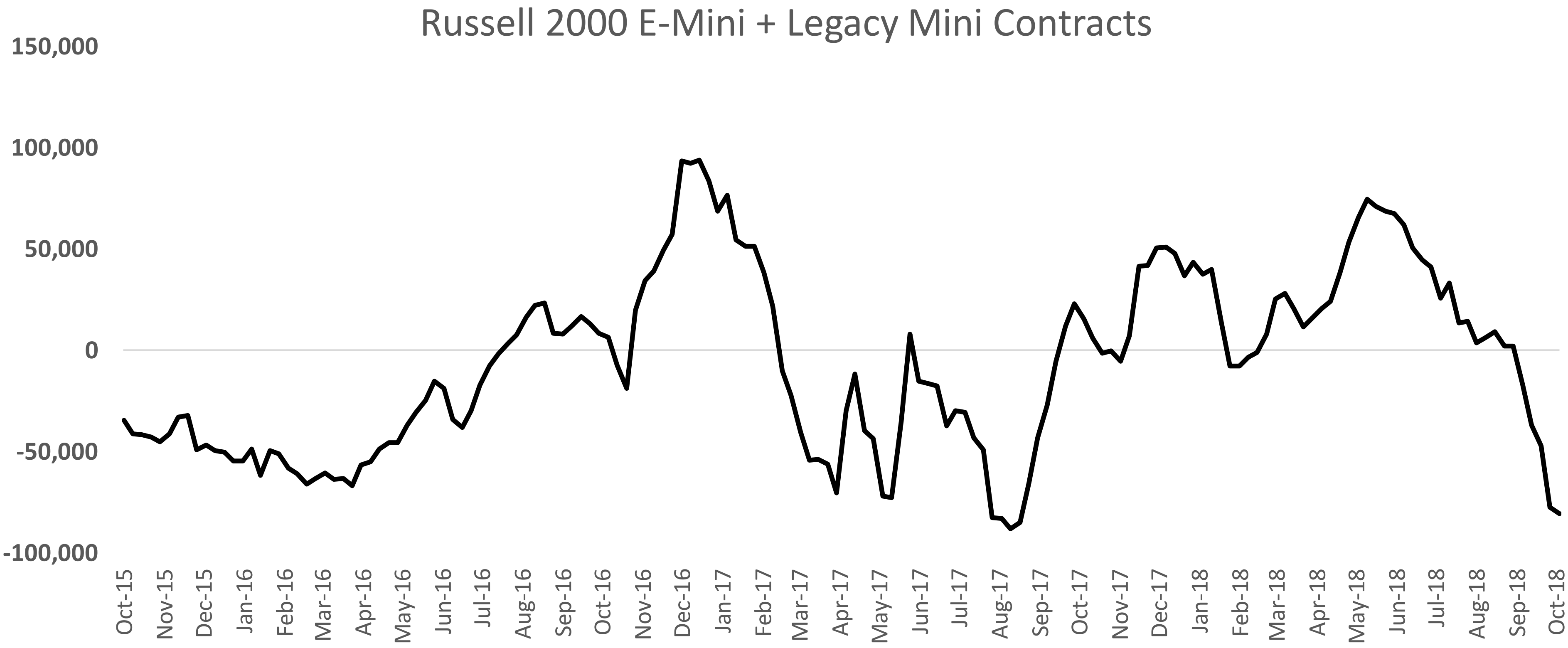
CFTC NET FUTURES & OPTIONS POSITIONING (3YR Z-SCORE)



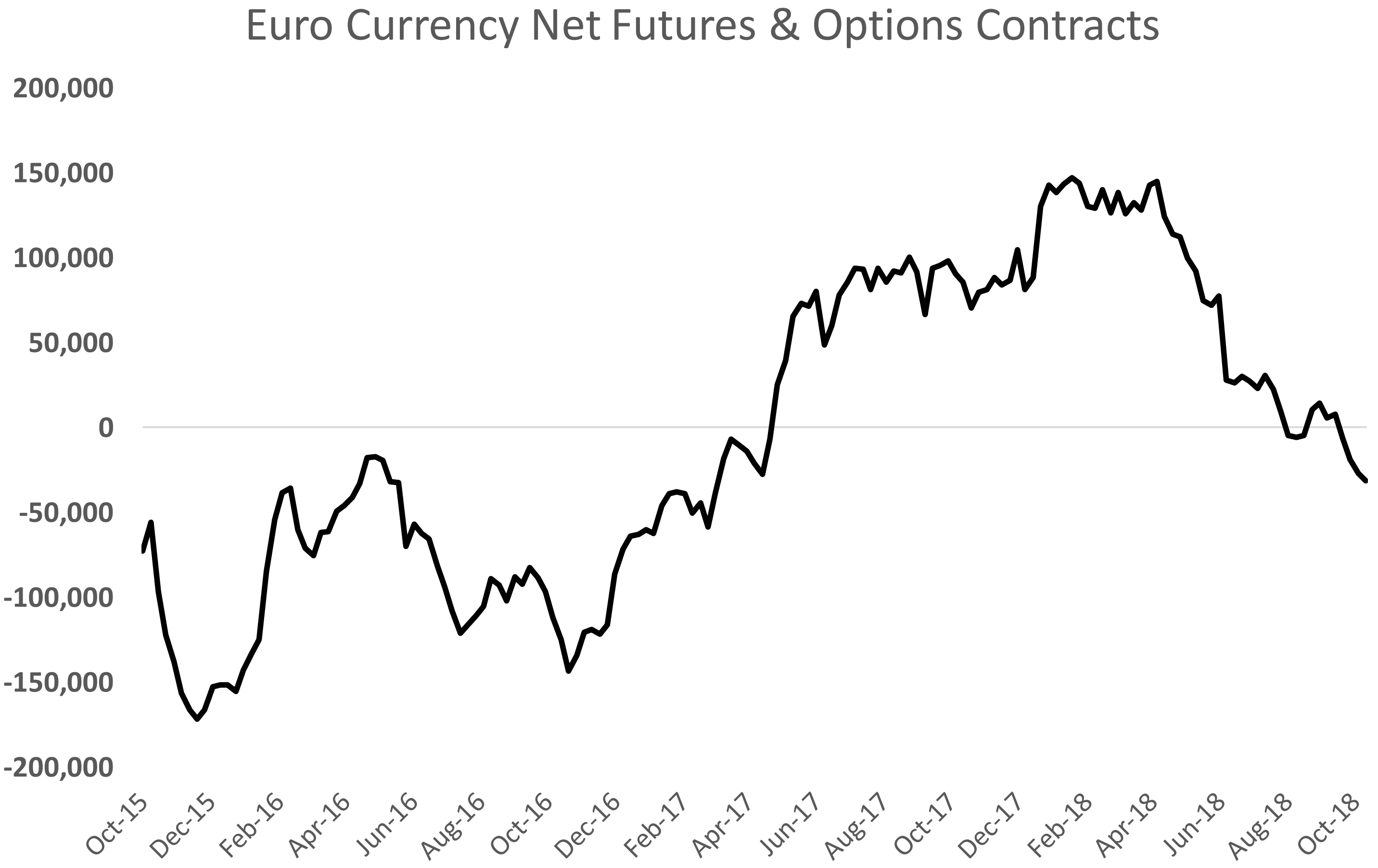
Data Source: CFTC, LME, Bloomberg

RUSSELL 2000 POSITIONING SWINGING BEARISH

RUSSELL 2000 NET FUTURES & OPTIONS POSITIONING HAS MOVED -109K CONTRACTS ON THE MARGIN OVER THE LAST 3 MONTHS TO -79K SHORT CURRENTLY (ABSOLUTE). IN Z-SCORE TERMS THAT'S A #3 SHORT LEAN IN GLOBAL MACRO ON BOTH TTM & 3YR WINDOWS.



EURO CURRENCY: YTD SHORT LEAN IN DERIVATIVES MARKETS



Peak BULLISHNESS in the EURO currency coincided with the YTD low in the USD.

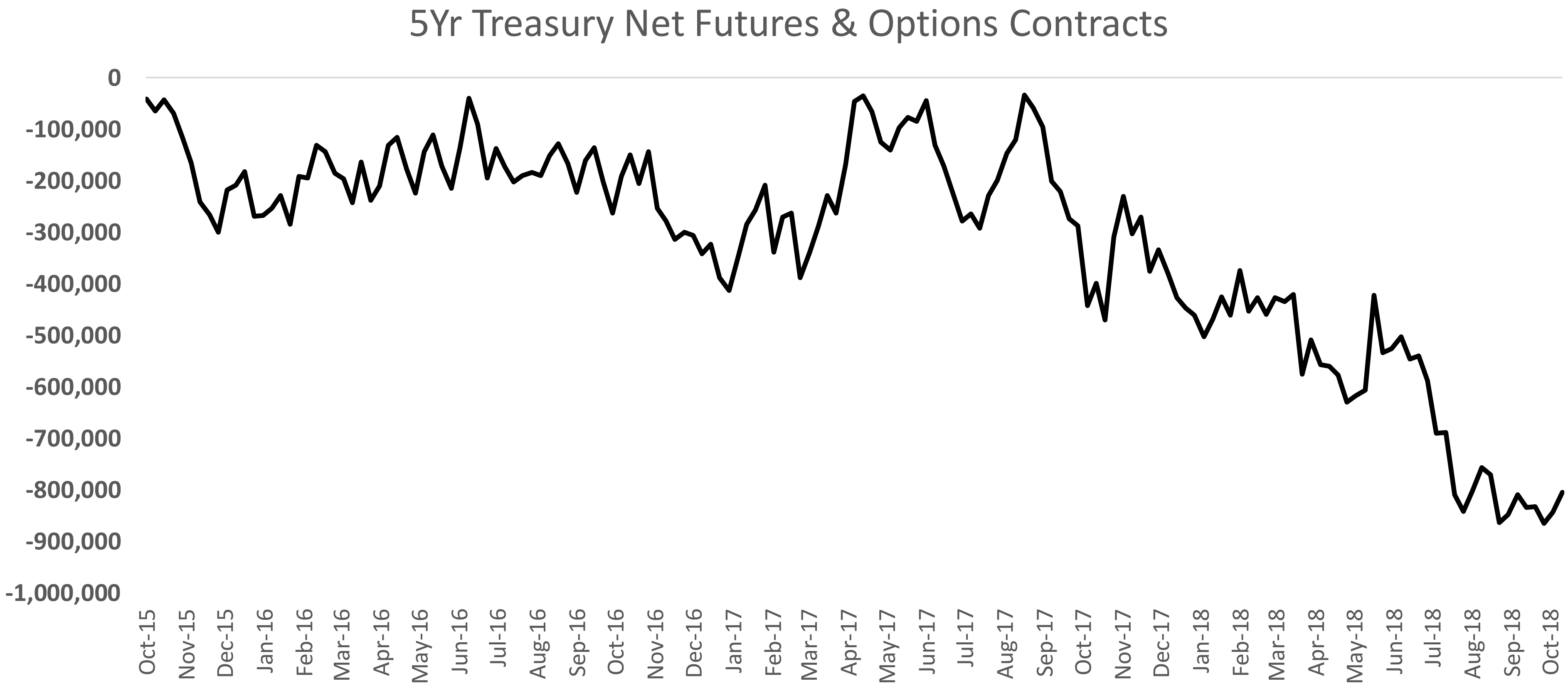
Heading into Q2, USD shorts expressed in every global currency were unwound.

In the case of the Euro, a marginally SHORTER consensus gives Euro positioning the following Z-Score Factors:

- TTM: **-1.9x**
- 3YR: **-0.9x**

CONTEXTUALIZING THE WASHOUT IN "SHORT BOND" CONSENSUS

FUTURES & OPTIONS OPEN INTEREST IS LONGER ON THE MARGIN IN 5/10/30YR CONTRACTS M/M, BUT ANY WASHOUT IS VERY SMALL IN COMPARISON TO AGGREGATE CONTRACT POSITIONING.



FOR MORE INFORMATION, CONTACT US AT:

SALES@HEDGEYE.COM

(203) 562-6500