

Model Score: 69.0

Daily Change: -18.0

Stance: Risk-On

Last Investment: SPY, 409.47, 2023-04-14

Updated:2023-09-15 18:15

September 15, 2023

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At Riskdials equity markets are conceptualized relative to other markets. If money is flowing into equities, it can be identified where it is flowing out of. For example, if money is flowing into equities, it may be flowing out of bonds. Equity markets are unique in that many participants think about absolute price for example, what is the price of SPY. It is advantageous to think of the relative pricing of equity markets, eg. what is the price of SPY to TLT, a classic Risk-On to Risk-Off relationship .

The spread ratios report provides both high level and detailed overviews of intermarket relationships for 45 assets money is flowing into, and which assets money is flowing out of. This sample report is annotated throughout and provides commentary on the current and recent intermarket spread relationships as of September 15, 2023.



50 Day Z-Score

20 Day Z-Score

Return Rank

Short-Term Bearish, Medium-Term Bullish

Short-Term Bullish, Medium-Term Bullish

Short-Term Bearish, Medium-Term Bearish

Short-Term Bullish, Medium-Term Bearish

Many technology relationships are trading both below their 20 day moving averages and their 50 day moving averages.

Many of the traditional Risk-On to Risk-Off ratios are still trending strongly bullish eg. SPY/TLT, HYG/LQD, XLY/XLP.

Deep red dots indicates asset relationships that had very negative relative 1 day returns compared to the last 100 trading days.

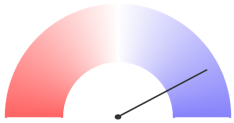
Small bubble sizes indicate lower volatility, stable trends. Larger bubble sizes indicate higher volatility, potentially unstable trends.

Equal weight relationships are trending strongly bearish.

September 15, 2023

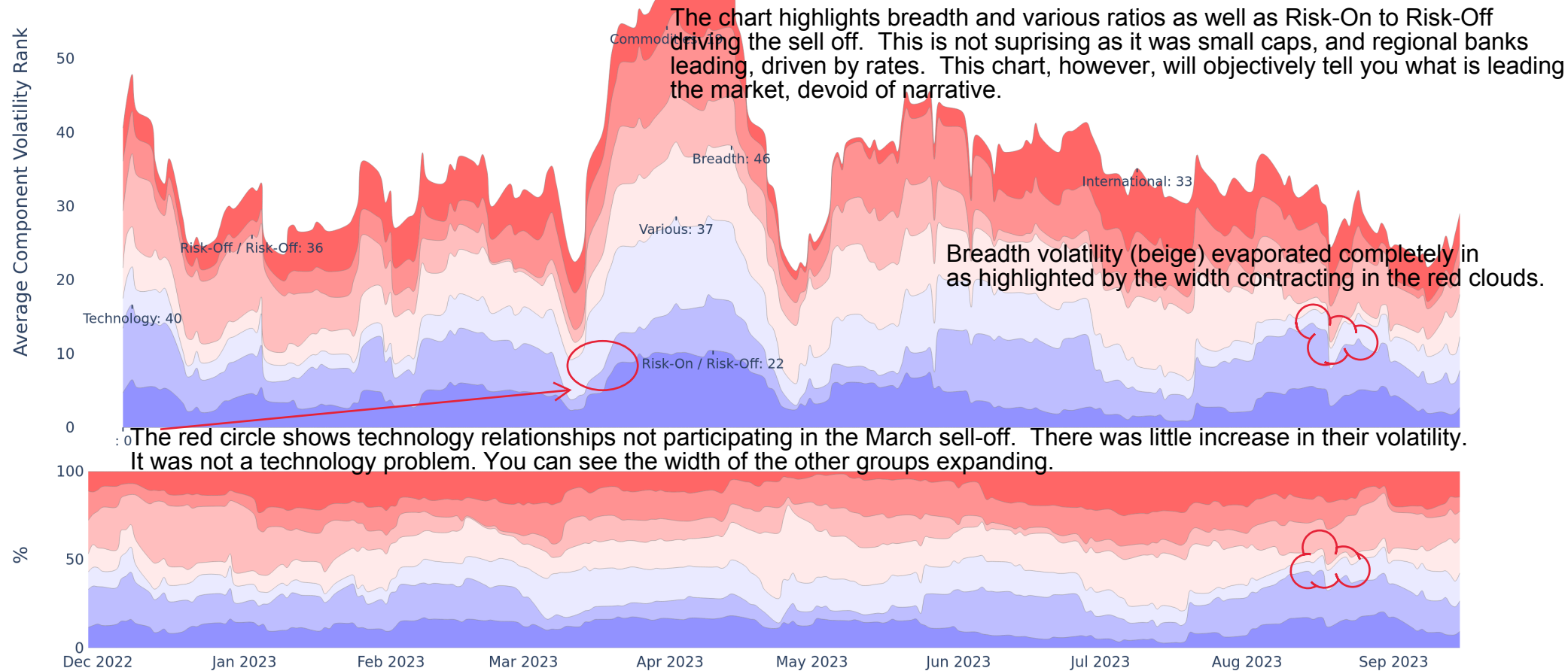
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September 15, 2023



Risk-On / Risk-Off Volatility Attributions

The volatility attributions group each of the individual ratios into a parent category and then average their 100 day rank of 21 day realized volatility. They help spot the market wide contribution to realize volatility as well as whether or not individual groups of ratios are participating in the wider market moves or not. The labels highlight where each group of ratio experienced the largest volatility on the chart (where the individual color is widest)

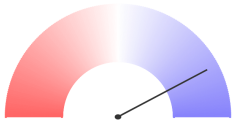


- The current spread ratio average volatility 100 day percent rank is (33.19%).
- The average trend volatility is normal.

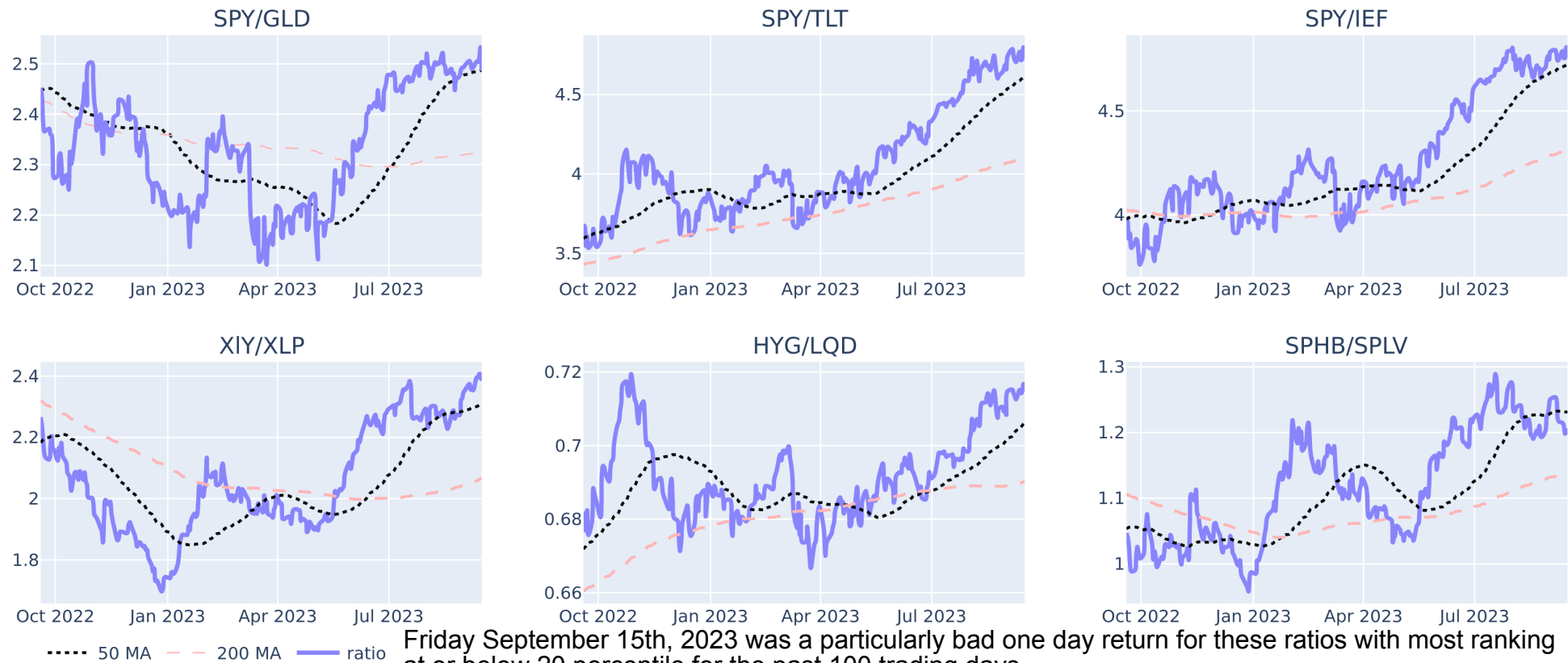
On average, as of September 15, 2023 there is low to normal volatility market wide and the main drivers are Breadth (46% rank), Technology (40 %) and Risk-Off to Risk-Off relationships (36%) respectively.

September 15, 2023

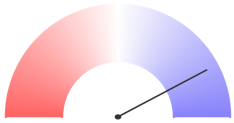
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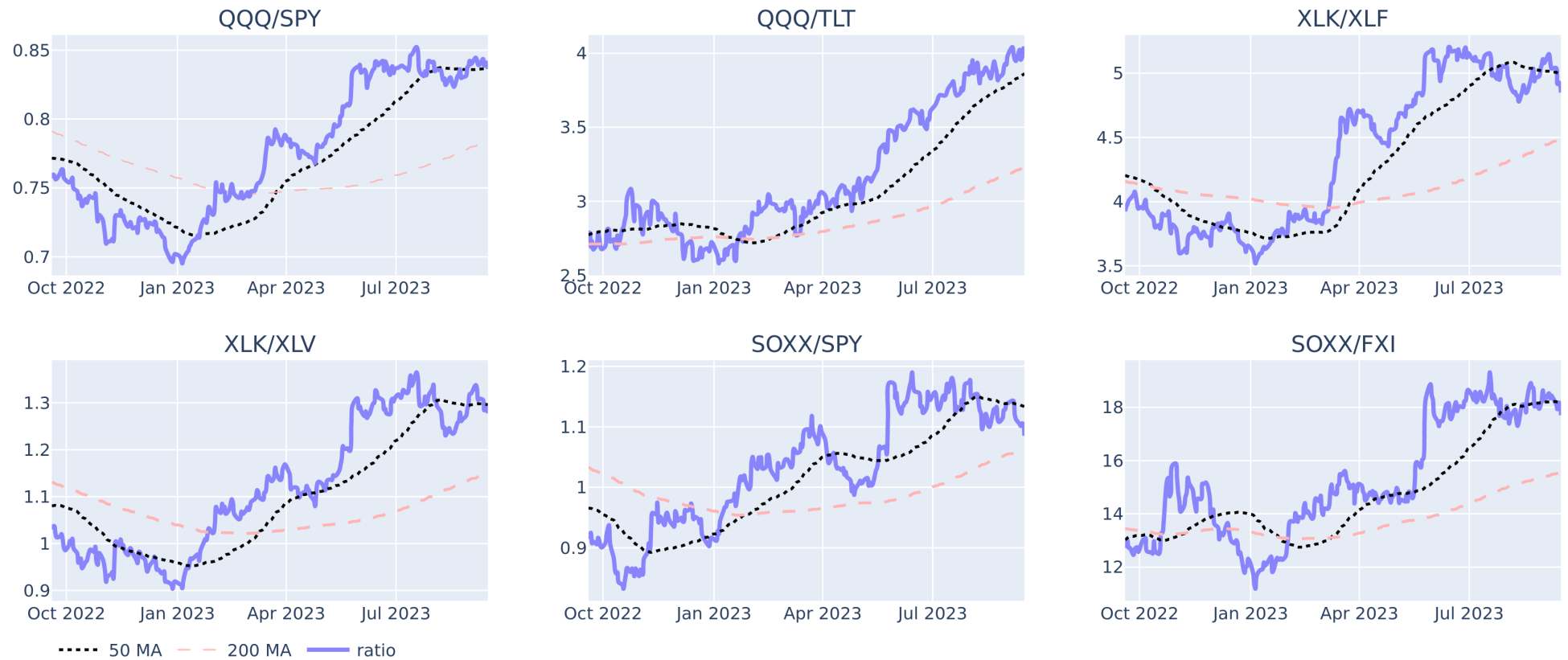
Risk-On to Risk-Off Ratios



Ratio	Return Rank	Volatility Rank	Z-Score 20	Z-Score 50	Z-Score 200
SPY/GLD	3	38	-0.29	-0.03	1.3
SPY/TLT	22	28	1.15	1.35	1.93
SPY/IEF	12	22	0.55	0.86	1.59
XIY/XLP	14	6	0.95	1.48	1.69
HYG/LQD	21	35	0.96	1.22	2.16
SPHB/SPLV	22	2	-0.92	-1.33	0.7

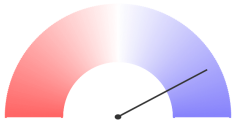


Technology Ratios

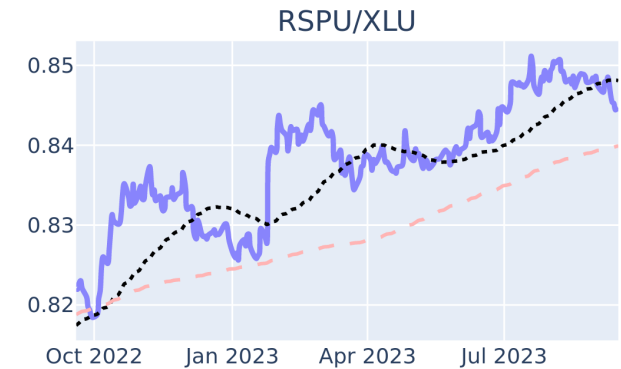
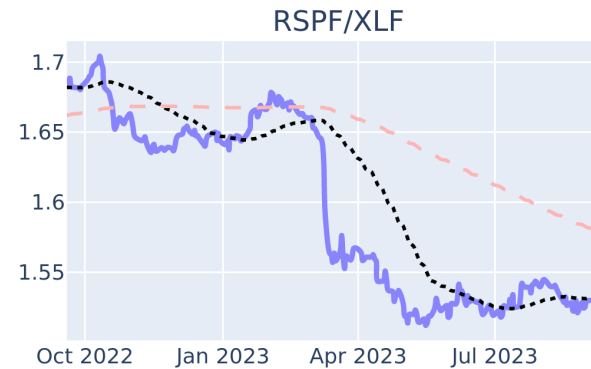
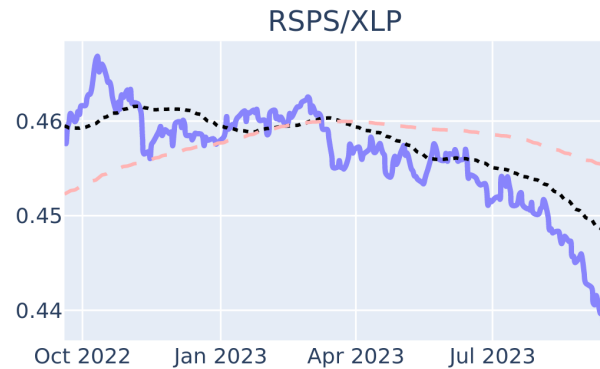
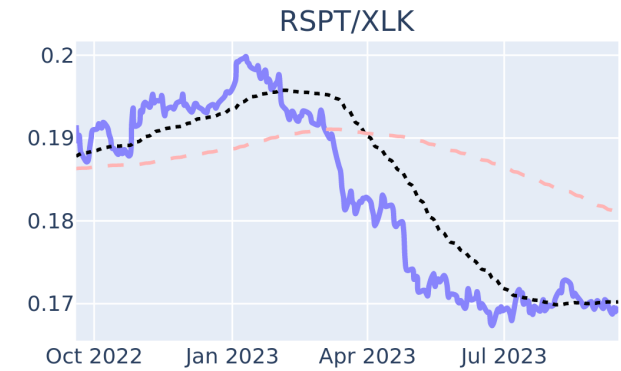
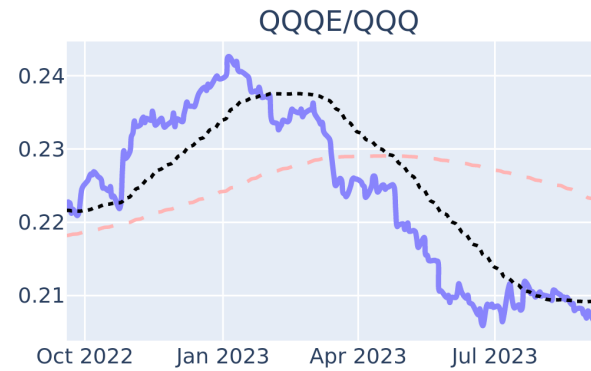
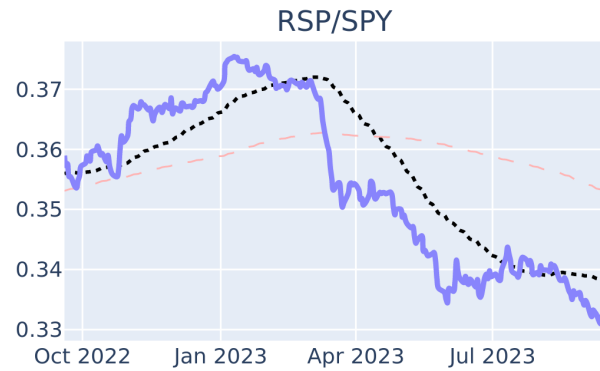


Ratio	Return Rank	Volatility Rank	Z-Score 20	Z-Score 50	Z-Score 200
QQQ/SPY	11	30	-0.11	-0.04	1.06
QQQ/TLT	17	49	0.78	1.35	1.67
XLK/XLF	9	73	-1.79	-1.4	0.64
XLK/XLV	13	34	-0.43	-0.5	0.94
SOXX/SPY	11	18	-2.09	-2.02	0.31
SOXX/FXI	9	37	-1.91	-1.1	0.95

Many technology ratios have started to roll over, losing their 50 day moving averages, but all still above their 200 day moving averages. September 15, 2023 Page 6

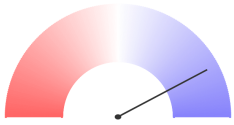


Equal Weight to Cap Weight

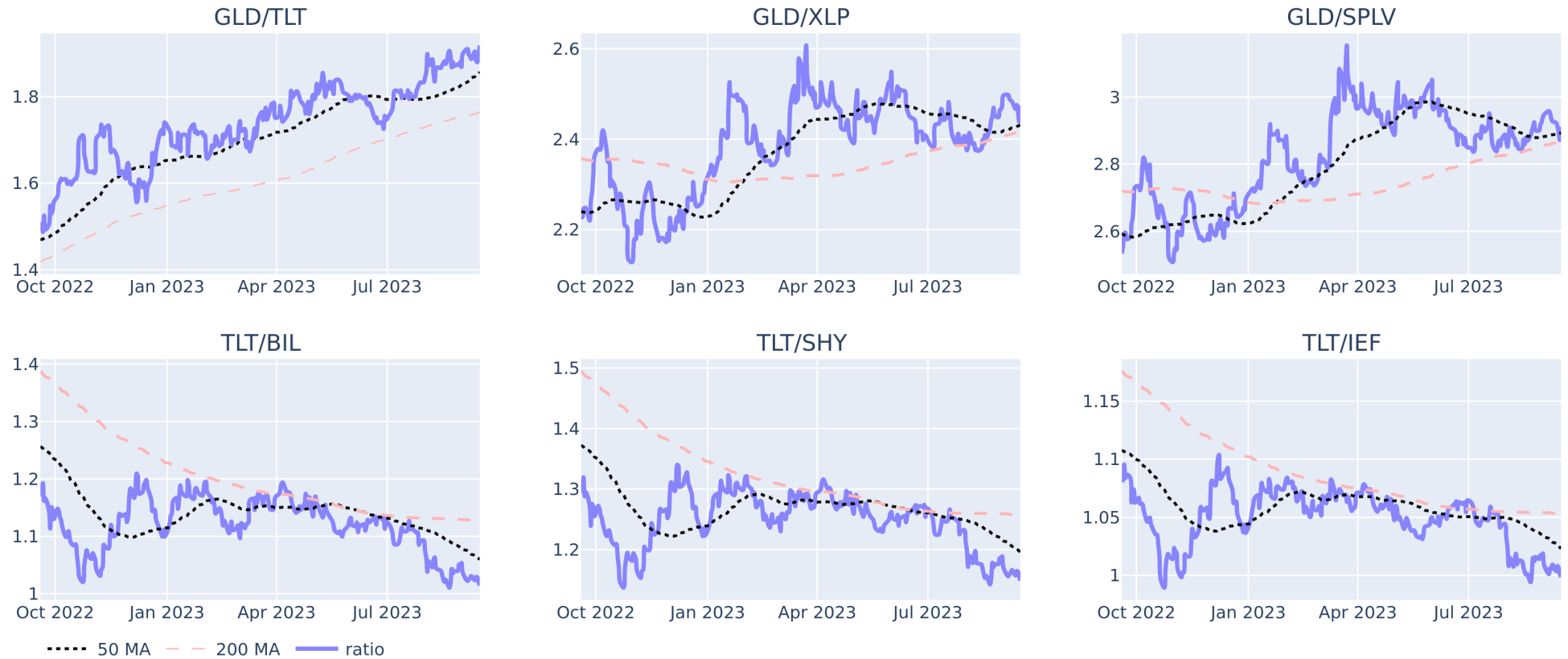


----- 50 MA - - - 200 MA — ratio

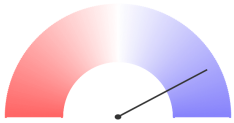
Ratio	Return Rank	Volatility Rank	Z-Score 20	Z-Score 50	Z-Score 200
RSP/SPY	86	66	-0.6	-1.42	-1.35
QQQE/QQQ	55	16	-0.94	-1.41	-1.23
RSPT/XLK	70	7	-0.35	-0.57	-1.01
RSPS/XLP	66	78	-1.37	-1.98	-3.03
RSPF/XLF	40	77	-0.57	-1.2	-0.94
RSPU/XLU	54	31	-1.71	-2.33	0.7



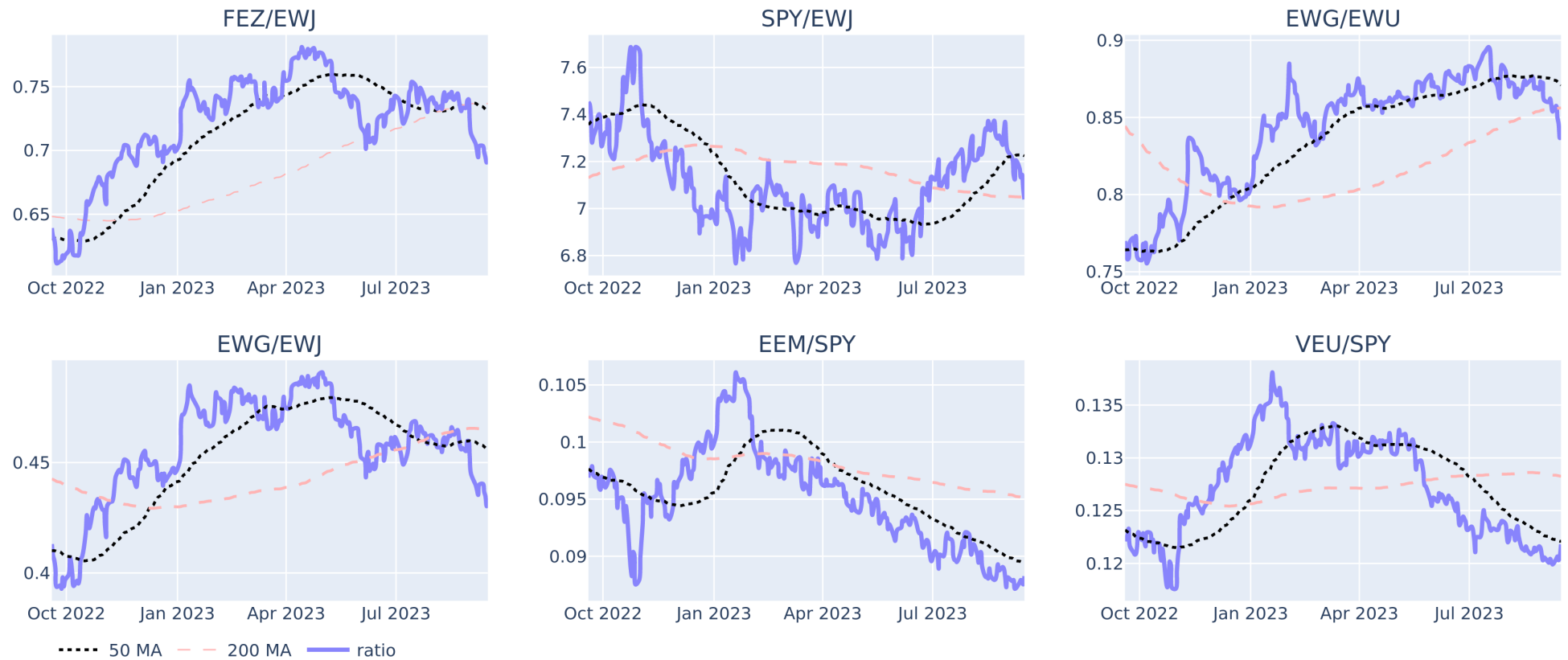
Risk-off to Risk-off



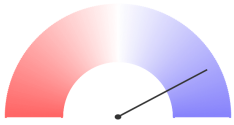
Ratio	Return Rank	Volatility Rank	Z-Score 20	Z-Score 50	Z-Score 200
GLD/TLT	90	47	2.06	1.69	1.91
GLD/XLP	96	12	0.49	1.13	0.67
GLD/SPLV	97	9	-0.17	0.57	0.35
TLT/BIL	31	43	-1.38	-1.31	-2.31
TLT/SHY	32	50	-1.32	-1.27	-2.37
TLT/IEF	30	53	-1.32	-1.23	-2.32



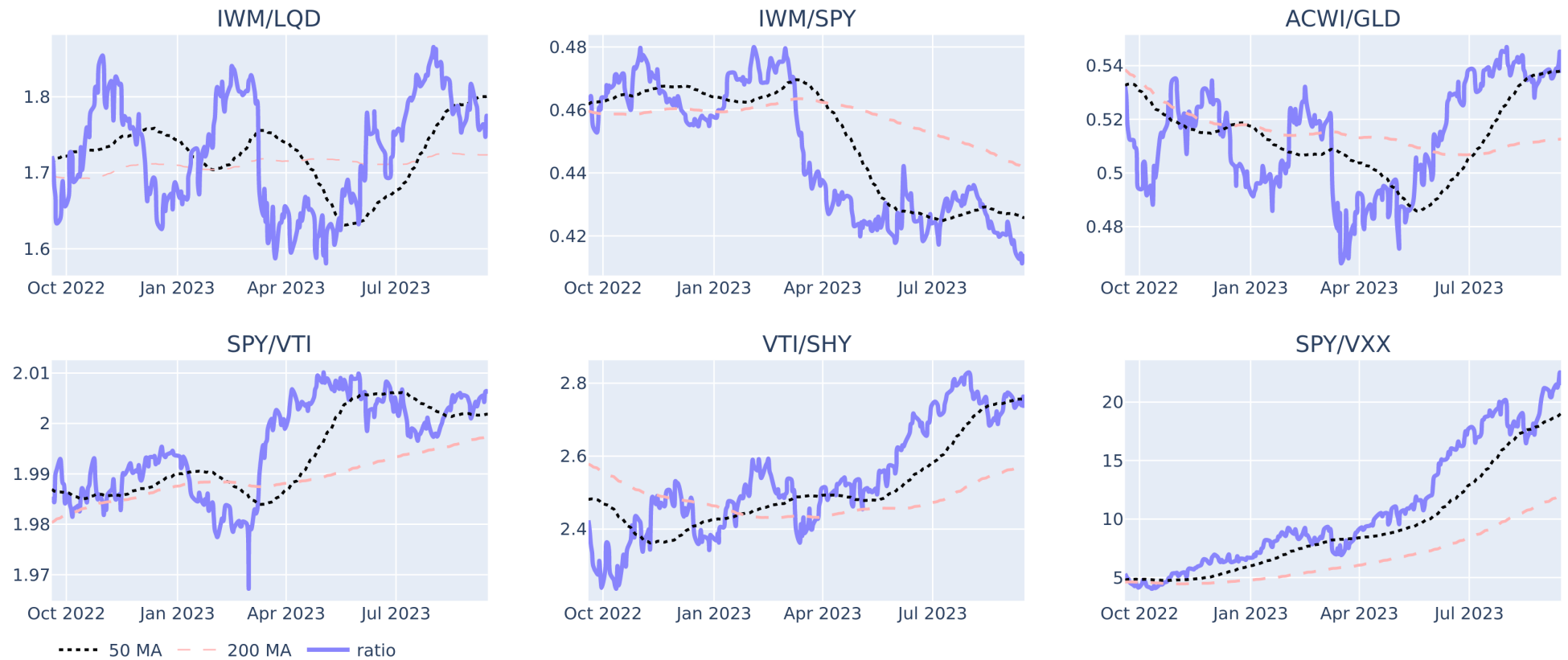
International Ratios



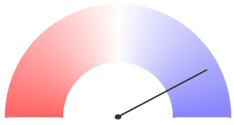
Ratio	Return Rank	Volatility Rank	Z-Score 20	Z-Score 50	Z-Score 200
FEZ/EWJ	74	50	-1.24	-2.18	-1.99
SPY/EWJ	19	3	-1.98	-2.15	-0.06
EWG/EWU	91	61	-1.79	-2.34	-0.65
EWG/EWJ	87	57	-1.22	-2.14	-2.21
EEM/SPY	88	25	0.31	-0.79	-1.44
VEU/SPY	98	4	1.83	-0.23	-1.42



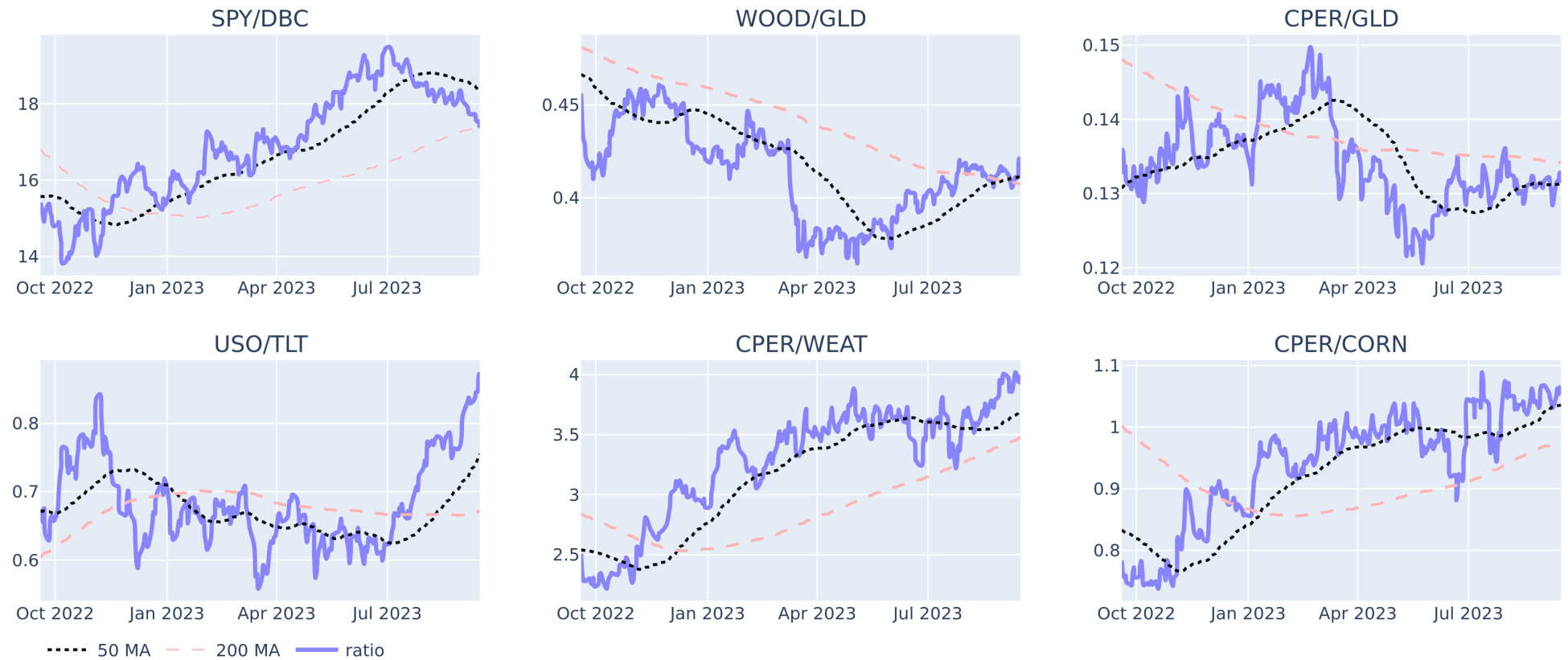
Various



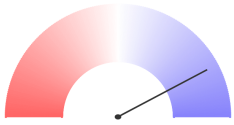
Ratio	Return Rank	Volatility Rank	Z-Score 20	Z-Score 50	Z-Score 200
IWM/LQD	17	44	-0.87	-1.33	0.47
IWM/SPY	66	33	-1.08	-1.63	-1.37
ACWI/GLD	3	35	0.25	-0.18	1.16
SPY/VTI	41	29	0.82	1.27	0.9
VTI/SHY	6	40	-0.1	-0.65	1.18
SPY/VXX	10	39	0.89	1.61	1.92



Commodities



Ratio	Return Rank	Volatility Rank	Z-Score 20	Z-Score 50	Z-Score 200
SPY/DBC	12	22	-1.9	-2.13	-0.02
WOOD/GLD	44	46	1.95	1.71	0.6
CPER/GLD	19	9	0.11	0.06	-0.43
USO/TLT	57	10	1.74	2.02	3.2
CPER/WEAT	20	23	0.41	1.11	1.64
CPER/CORN	57	3	1.11	0.95	1.57



This report is for informational purposes only and should not be considered as investment advice. RiskDials is not liable for any decisions or actions based on the information provided in this report.

Appendix

Ratio Spread Summary Scatterplots

There are two ratio spread summary scatter plot pages. The first page compares the short term trend to the medium term trend via a 20 day Z-Score (standard deviations from the 20 day moving average) compared to the 50 day Z-Score. The second compares the medium term trend (50 day Z-Score) to the long term trend (200 day Z-Score).

The Quadrants

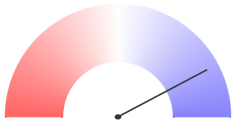
The quadrants are color coded to identify the regime a ratio is priced in. The South West quadrant denotes the most bearish quadrant - on both of the Z-scores being compared it implies they are likely both below their respective moving averages. For example if we are looking at the short to medium term comparison and a ratio falls in the bottom left most quadrant, it would imply the ratio is both below the 20-day and 50-day moving averages.

Similarly, the North-East Quadrant would indicate the most bullish quadrant, on both timeframes being compared the ratios are trading over their respective moving averages.

The North-West and South-East quadrants are more neutral, where the two trends being compared are not necessarily aligned.

Bubble Size

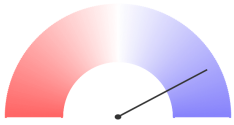
The bubble size acts as a 100 day volatility rank of the 21 day realized volatility of a given ratio. The smallest bubble size will be pin sized indicating a 1st percentile volatility rank, ie. the lowest volatility now, compared to the last 100 days. The largest bubble size should indicate a 100% rank, ie. the highest volatility now compared to the last 100 days.



Bubble Color

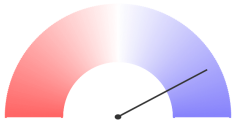
The bubble color provides one additional layer of insight by ranking the 1 day return to the last 100 days of 1 day returns. Deep blues will indicate highly ranked returns and deep reds the most negative returns.

These scatter plots allow us to quickly synthesize how and where aggregate Risk-On and Risk-Off ratios are trading.



Risk-On / Risk-Off Volatility Attributions

The Volatility Attributions tells us on any given day whether or not trends are stable for a group of ratios by calculating an average component volatility rank. The chart then provides an attribution of each ratio group to the total average component volatility rank. Each color on the chart represents that contribution, through time. This enables us to see on any given day if a particular ratio is exhibiting high or low volatility relative to the other ratio groups.



Risk On to Risk Off Ratios

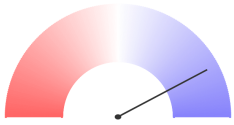
Displays risk assets and their relationship to risk off (defensive) assets. The ratios listed are S&P500 to Gold (SPY/GLD), S&P500 to long term Bonds (SPY/TLT), S&P500 to medium term Bonds (SPY/IEF), Consumer Discretionary to Consumer Staples (XLY/XLP), High Yield Bonds to Investment Grade Bonds (HYG/LQD), and High Beta Stocks to Low Volatility Stocks (SPHB/SPLV).

Technology Ratios

Displays Technology indices and sectors relative to other indices and sectors. When Technology is outperforming, this is a Risk-On indication. The ratios listed are Nasdaq 100 to S&P500 (QQQ/SPY), Nasdaq 100 to long term Bonds (QQQ/TLT), Nasdaq 100 to US Financials (QQQ/XLF), Nasdaq 100 to Healthcare (XLK/XLV), Semi Conductors to S&P500 (SOXX/SPY), and Semi Conductors to China large cap stocks (SOXX/FXI).

Equal Weight to Cap Weight

Displays how the average component of a universe is performing relative to indices that are calculated based on a market capitalization weighting. When equal weight is underperforming this * can * be a risk-off indication as it indicates weakness internally. The ratios shown include equal weight S&P500 to S&P500 (RSP/SPY), Equal Weight Nasdaq 100 to Nasdaq 100 (QQQE/QQQ), Equal Weight Technology to Technology (RSPT/XLK), Equal Weight Consumer Staples to Consumer Staples (RSPS/XLP), Equal Weight Financials to Financials (RSPF/XLF) and Equal Weight Utilities to Utilities (RSPU/XLU).



Risk Off to Risk Off

Shows how risk-off assets are performing relative to one another, it helps answer which risk-off assets are preferred by the market at any given time. The ratios shown include Gold to long term Bonds (GLD/TLT), Gold to Consumer Staples (GLD/XLP), Gold to Low Volatility Stocks (GLD/SPLV), long term Bonds to 1-3 month Treasury Bills (TLT/BIL), long term Bonds to 1-3 year Treasury Bonds (TLT/SHY), and long term Bonds to 7-10 year Treasury Bonds (TLT/IEF).

International

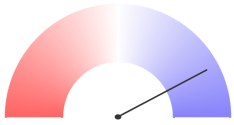
Compares various country and international ETFs. The ratios covered include Euro Stoxx 50 to Japan (FEZ/EWJ), S&P500 to Japan (SPY/EWJ), Germany to UK (EWG/EWU), Germany to Japan (EWG/EWJ), Emerging Markets to S&P500 (EEM/SPY), and All World ex. US to S&P500 VEU/SPY.

Various

The ratios shown on this page include Small Cap stocks to Investment Grade Bonds (IWM/LQD), Small Cap stocks to S&P500 (IWM/SPY), all World developed and emerging markets to Gold (ACWI/GLD), S&P500 to Total Stock Market (SPY/VTI), Total Stock Market to 1-3 year Bonds (VTI/SHY) and S&P500 to short-term volatility futures (SPY/VXX).

Commodities

This page shows various relationships centered around commodities, the numerator is a proxy for the risk-asset while the denominator is meant to be a proxy for the risk-off asset. The ratios shown are S&P500 to commodity index (SPY/DBC), Timber and Forestry companies to Gold (WOOD/GLD), Copper to Gold (CPER/GLD), Oil to long term Bonds (USO/TLT), Copper to Wheat (CPER/WEAT), and Copper to Corn (CPER/CORN).



Summaries Table

The Summaries table is meant to highlight changes and anomalies in the various ratios tracked. The return rank is the daily return on the ratio ranked on a 100 day basis. The volatility shows the 21 day realized volatility of each ratio ranked on a 100 day basis. The Z-scores put the ratios in context of the timeframes tracked - 20 days, 50 days, and 200 days. A "Z-Score 20" at or above two would simply indicate that the ratio is priced above the upper 20-day Bollinger Band. Likewise, a ratio at or below -2 would indicate it is priced below the lower Bollinger Band (i.e. 2 standard deviations above or below the 20 day moving average of the ratio). This can help us quickly identify and track very strong or weak trends in the ratios report. The summary tables are color coded from red to white to blue. Deeper red indicates larger negative changes and Z-scores, deeper blue indicates larger positive changes and Z-scores. White shading indicates small changes or neutral Z-scores.

On average, as of September 15, 2023 there is low to normal volatility market wide and the main drivers are Breadth (46% rank), Technology, and Risk-Off to Risk-Off relationships respectively.