TPA-RRG Report

- **What is hot and what is not**.
 TPA-RRG captures the inevitable <u>movement of stocks into and out of favor</u>.
- **Scores and ranking**
  Clients can quickly see which stocks are showing the <u>best and worst relative strength</u> characteristics. TPA found that using RRG's was very beneficial, but took some time to parse through, so we simplified the process by creating a score for each stock and sector.
- **The best of both worlds – RRG & TPA**
  Now, clients can use <u>TPA-RRG scores and rankings</u> to identify stocks that are not only moving into favor, but are also technically positive.
- ***TPA-RRG analyzes every stock in the Russell 1000 and 25 major sector & subsector ETFs***
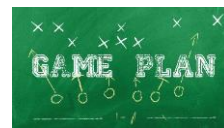
Find more in-depth explanations and links to instructional videos below.

THE REPORT

Top 20-Bottom 20

No big changes in the type of stocks populating the TOP 20 and Bottom 20. The top stocks revolve around TECH and the Consumer and the bottom stocks are still Financials and Industrials.

Sectors

A look at the history of ETF/Sector rankings shows that IYT is now firmly in the low-rank camp. At the beginning of the year, IYT was the top-ranked sector. Transportation relies on fuel, so one might think it is the cost of fuel that may be troubling investors, but Crude has barely budged from its level at the end of 2022 and the start of 2023. A look at the industry weighting of IYT shows that the heaviest weightings are in Air Freight Logistics and Rail (59%). This is how consumer goods get around. Therefore, the worry over these stocks is more likely tied to a slowing economy rather than the cost of energy.

TPA-RRG U.S. SECTOR & SUBSECTOR ETFS - HISTORY

Rank	12/9/22	12/16/22	12/23/22	12/30/22	1/6/23	1/13/23	1/20/23	1/27/23	2/3/23	2/10/23	2/17/23	2/24/23	3/3/23	3/10/23	3/17/23	3/24/23	3/31/23	4/7/23	4/14/23	4/21/23
1	MOO	PPH	PPH	IYT	IYT	SMH	SOCL	SOCL	SOCL	FDN	CLOU	XLK	XLK	XLK	IGV	IGV	HACK	HACK	XLU	XLP
2	XRT	XLB	XLB	PPH	SMH	IYT	XLU	CLOU	CLOU	FDN	XLC	IGV	IGV	IGV	FDN	XLK	XLY	CLOU	HACK	TAN
3	XLB	IYT	SMH	XLU	XLU	SOCL	XLC	XLC	FDN	XLC	FDN	XLC	FDN	FDN	XLK	HACK	XLK	FDN	FDN	TAN
4	IYT	SMH	MOO	MOO	SOCL	CLOU	CLOU	FDN	XLC	XLK	FDN	CLOU	XLY	HACK	HACK	FDN	FDN	IGV	XLC	HACK
5	SMH	MOO	SOCL	SOCL	IYR	XLC	SMH	IGV	IGV	SOCL	XLC	XLY	XLY	XLC	XLY	SMH	IGV	XLC	IGV	FDN
6	PPH	SOCL	IYR	IYR	PPH	XLK	IYT	IYR	XLK	XLY	CLOU	XLC	CLOU	XLC	XRT	CLOU	XLK	XLK	SMH	XLY
7	SOCL	XRT	IYT	IYT	XRT	IYR	IYR	IYT	IYR	IYT	HACK	SMH	SMH	CLOU	XLC	XLC	SMH	XLK	XLK	SMH
8	ITA	XLI	XRT	MOO	XME	XRT	IGV	SMH	ITB	IYT	IYT	XRT	SMH	SMH	CLOU	CLOU	SOCL	XLY	XLY	XLK
9	XLI	ITB	ITA	ITA	XLU	ITB	PPH	ITB	XRT	CLOU	XRT	XRT	XRT	SOCL	XLC	SMH	XLP	XLP	XLK	XLC
10	ITB	XLP	XLI	XLP	XLP	MOO	MOO	MOO	IYT	SMH	SOCL	PPH	IYT	IYT	XRT	XLY	IYR	IYR	XLV	XLV
11	XLP	XME	ITB	ITB	XRT	XLP	MOO	MOO	SMH	XME	PPH	SOCL	SOCL	SOCL	IYT	SOCL	IYR	IYR	XOP	XLV
12	XME	OIH	XME	XME	MOO	ITA	XRT	XRT	XLP	XLB	IYR	IYR	IYR	ITB	ITB	ITB	ITA	MOO	TAN	IYR
13	XOP	XLE	XLV	XME	OIH	OIH	XLB	XRT	PPH	PPH	IYR	IYR	IYR	IYR	IYR	IYR	XOP	XOP	IYR	XOP
14	OIH	XLF	OIH	ITA	PPH	PPH	OIH	XLB	XME	XRT	XRT	TAN	TAN	XLU	TAN	MOO	TAN	TAN	ITA	ITB
15	XLF	ITA	XLE	ITA	XLV	XLB	XLI	XLI	XLU	XLU	XLU	XLU	XME	XME	MOO	XLU	TAN	ITA	PPH	MOO
16	XLV	XLF	XLP	XLV	XLF	XLI	ITA	PPH	HACK	XLY	XLF	XLF	OIH	XLB	XLI	XOP	MOO	XLI	ITB	SOCL
17	XLE	IYR	XLP	XLV	XLI	XLF	ITB	XLU	XME	XLY	XLF	XLI	XLB	XLI	XOP	ITA	MOO	XLV	ITB	SOCL
18	IYR	XLK	XLU	TAN	XLC	XLU	XLP	XLU	OIH	OIH	ITA	XME	XLF	XLB	XME	XOP	XLU	XLV	XLE	ITA
19	XLK	HACK	XLK	HACK	TAN	XME	XME	TAN	ITA	ITA	XME	ITA	OIH	ITA	ITA	IYR	XLI	SOCL	CLOU	XLF
20	HACK	FDN	CLOU	FDN	HACK	FDN	TAN	XLY	XLI	XLE	XLI	XLI	MOO	XLI	XLI	IYT	IYT	XLI	XLI	XLF
21	CLOU	CLOU	TAN	CLOU	XLK	IGV	FDN	HACK	XLF	XLE	XLE	ITA	OIH	OIH	PPH	XLB	XME	XME	XRT	PPH
22	FDN	IGV	FDN	XLC	IGV	TAN	HACK	ITA	XLV	XLB	XLB	XLB	XLE	XOP	XLB	OIH	OIH	XRT	CLOU	XLB
23	IGV	XLC	XLC	XLK	CLOU	HACK	XLV	OIH	XLE	XLV	XLV	XLV	PPH	XLF	PPH	XLB	XRT	PPH	XLF	XRT
24	XLC	XLU	HACK	IGV	XLE	XLY	XLY	XLV	XLP	XLP	TAN	MOO	PPH	XLF	XLP	XLV	XLE	XLF	XLB	OIH
25	XLY	XOP	IGV	XLE	FDN	XLV	XLF	XLF	TAN	TAN	TAN	MOO	XOP	XLP	XLP	XLV	XLE	XLF	IYT	OIH
26	XLU	TAN	XLY	XLY	XLY	XLE	XLE	XLE	XOP	XOP	XOP	XOP	XLP	XLV	XLV	XLE	PPH	XLB	OIH	IYT
27	TAN	XLY	XOP	XOP	XOP	XOP	XOP	XOP	MOO	MOO	MOO	XLP	XLV	XLE	XLE	XLF	XLF	XLF	XRT	XME

TPA-RRG U.S. SECTOR & SUBSECTOR ETFS - HISTORY

Rank	4/27/23
1	XLP
2	XLU
3	HACK
4	FDN
5	IGV
6	XLK
7	XLC
8	XLY
9	XLV
10	ITB
11	TAN
12	IYR
13	MOO
14	XOP
15	SOCL
16	SMH
17	XLE
18	ITA
19	CLOU
20	XLF
21	XRT
22	XLB
23	OIH
24	PPH
25	IYT
26	XME
27	XLI

Crude

$WTIC Light Crude Oil - Continuous Contract (EOD) CME — 28-Apr-2023 — Open 74.91 High 76.92 Low 73.93 Close 76.78 Volume 32.3M Chg +2.02 (+2.70%) ▲

$WTIC (Daily) 76.78
MA(10) 77.79
MA(20) 79.26
MA(50) 76.16
MA(200) 82.28

ADX(14) 18.37 +DI 20.19 -DI 22.06
RSI(14) 48.23

IYT – sector breakdown

Type	►	Fund ▼
Air Freight & Logistics		32.10
Rail Transportation		26.69
Other		25.35
Passenger Airlines		14.33
Marine Transportation		1.43
Cash and/or Derivatives		0.10

as of Apr 27, 2023

Market

The moment of truth is upon us. Watch to see if the S&P500 can confirm a move above resistance at 4175. Closes above 4200 would be confirmation of a positive trend.

S&P500

TPA-RRG TOP 20 & BOTTOM 20 (table below)

								STOCK	SECTOR	TOTAL
Buy	Prices as of 4/28/23							TPA-RRG	TPA-RRG	TPA-RRG
Sell				TOP 20						
Code	**Name**	**Last**	**RRG Ratio**	**RRG Momentum**	**Quadrant**	**Mkt Cap ($MIL)**	**TPA Sector**	**SCORE**	**SCORE**	**SCORE**
TYL	Tyler Technologies Inc.	379.03	101.87	104.45	Leading	$15,891	Technology	4.48	1.05	5.53
TSN	Tyson Foods Inc.	62.49	92.66	100.98	Improving	$21,786	Consumer Staples	3.14	1.76	4.90
D	Dominion Energy Inc	57.14	91.45	102.43	Improving	$47,723	Utilities	3.11	1.58	4.68
TTWO	Take-Two Interactive Software Inc.	124.29	103.22	104.27	Leading	$20,965	Tech-Software	3.28	1.06	4.34
APP	Applovin Corp - Ordinary Shares - C	17.00	103.41	115.09	Leading	$6,191	Technology	3.28	1.05	4.33
DECK	Deckers Outdoor Corp.	479.34	107.73	100.21	Leading	$12,635	Consumer Discretionary	2.82	0.97	3.80
UNH	UnitedHealth Group Inc	492.09	93.77	101.16	Improving	$459,045	Health Care	3.10	0.54	3.64
MASI	Masimo Corp	189.14	112.12	102.09	Leading	$9,949	Health Care	3.01	0.54	3.54
COO	Cooper Companies Inc.	381.45	106.92	100.09	Leading	$18,865	Health Care	2.95	0.54	3.49
ROKU	Roku Inc	56.21	108.30	103.06	Leading	$7,876	Communication Services	2.29	1.03	3.32
PARA	Paramount Global - Ordinary Share	23.33	104.74	100.10	Leading	$15,177	Communication Services	2.25	1.03	3.28
AMZN	Amazon.com Inc	105.45	99.38	105.18	Improving	$1,080,578	Consumer Discretionary	2.29	0.97	3.26
PEGA	Pegasystems Inc.	45.62	115.14	102.29	Leading	$3,785	Tech-Software	2.15	1.06	3.21
TDC	Teradata Corp	38.71	109.97	101.38	Leading	$3,902	Tech-Software	2.15	1.06	3.21
BSY	Bentley Systems Inc - Ordinary Shar	42.56	105.24	100.26	Leading	$12,361	Technology	2.13	1.05	3.18
AMD	Advanced Micro Devices Inc.	89.37	116.14	104.64	Leading	$144,010	Technology	2.11	1.05	3.16
NOW	ServiceNow Inc	459.42	104.78	100.64	Leading	$93,262	Tech-Software	2.10	1.06	3.16
WDAY	Workday Inc	186.14	108.44	100.44	Leading	$48,210	Tech-Software	2.08	1.06	3.14
SPOT	Spotify Technology S.A.	133.60	123.38	102.82	Leading	$25,459	Communication Services	2.11	1.03	3.14
CRM	Salesforce Inc	198.37	113.68	104.65	Leading	$198,370	Technology	2.09	1.05	3.14

								STOCK	SECTOR	TOTAL
Buy	Prices as of 4/28/23							TPA-RRG	TPA-RRG	TPA-RRG
Sell				BOTTOM 20						
JCI	Johnson Controls International plc	59.84	94.17	94.44	Lagging	$41,123	Industrial	-3.21	-1.77	-4.98
CMI	Cummins Inc	235.04	96.07	96.23	Lagging	$33,229	Industrial	-3.22	-1.77	-4.99
WWD	Woodward Inc	96.02	96.40	95.62	Lagging	$5,735	Industrial	-3.23	-1.77	-5.00
MAN	ManpowerGroup Inc	75.71	95.02	94.08	Lagging	$3,833	Industrial	-3.27	-1.77	-5.04
UHAL	U-Haul Holding Company	61.06	99.86	93.46	Lagging	$11,973	Transportation	-3.34	-1.73	-5.07
APO	Apollo Global Management LLC	63.39	98.18	93.64	Lagging	$50,272	Financial	-3.51	-1.57	-5.08
AYI	Acuity Brands Inc.	157.38	96.52	95.49	Lagging	$5,004	Industrial	-3.32	-1.77	-5.09
OLN	Olin Corp.	55.40	97.91	95.29	Lagging	$7,292	Materials	-3.49	-1.64	-5.13
CAT	Caterpillar Inc.	218.80	96.22	92.61	Lagging	$112,977	Industrial	-3.36	-1.77	-5.13
BEN	Franklin Resources Inc.	26.88	98.79	93.49	Lagging	$13,450	Financial	-3.56	-1.57	-5.13
STT	State Street Corp.	72.26	97.24	92.28	Lagging	$24,892	Financial	-3.57	-1.57	-5.14
CE	Celanese Corp - Ordinary Shares - S	106.24	99.53	94.98	Lagging	$11,524	Materials	-3.51	-1.64	-5.15
AL	Air Lease Corp	40.22	99.50	94.53	Lagging	$4,461	Industrial	-3.39	-1.77	-5.16
DAL	Delta Air Lines Inc.	34.31	97.73	94.39	Lagging	$22,052	Industrial	-3.40	-1.77	-5.17
BK	Bank Of New York Mellon Corp	42.59	98.43	94.66	Lagging	$34,251	Financial	-3.63	-1.57	-5.20
CG	Carlyle Group Inc (The)	30.33	99.34	94.78	Lagging	$11,047	Financial	-3.63	-1.57	-5.20
OMF	OneMain Holdings Inc	38.37	98.71	93.85	Lagging	$4,636	Financial	-3.65	-1.57	-5.22
AAL	American Airlines Group Inc	13.64	97.60	93.15	Lagging	$8,886	Industrial	-3.45	-1.77	-5.22
VRT	Vertiv Holdings Co - Ordinary Shares	14.92	98.19	94.49	Lagging	$5,634	Industrial	-3.56	-1.77	-5.33
R	Ryder System Inc.	79.16	98.24	94.32	Lagging	$3,680	Transportation	-3.62	-1.73	-5.35

Relative Rotation Graph for Top 20 and Bottom 20 is provided below.

Also, use the following link that shows RRG over time - how stocks move in and out of favor over time:
https://youtu.be/8CWpl_SsWBY

Weekly Relative Rotation Graph®   Date: 4/28/2023 Benchmark: S&P 500 INDEX - SPX (WI)
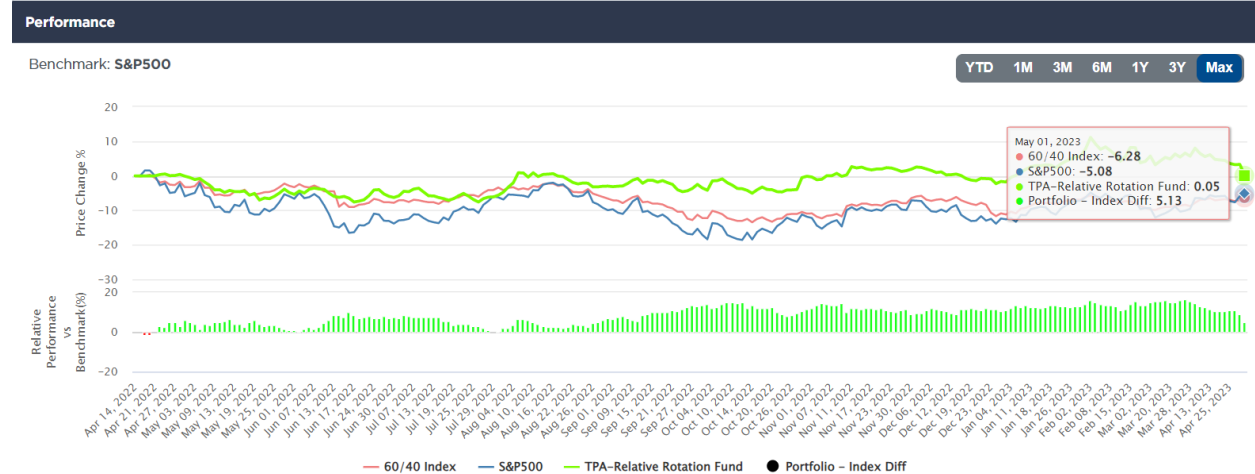
Relative Rotation Strategies (RSS)

1. The Relative Rotation Fund

Most recent performance:

Since inception


The Relative Rotation Fund is created using the weekly Top and Bottom ranked stocks in the TPA-RRG report. The fund holds 60 stocks; 30 long and 30 short. The portfolio is created by buying the Top 10 and selling short the Bottom 10 ranked stocks each week. Screens are used to ensure that overbought and oversold stocks are not included. Long positions have twice the weight of short positions. This is a nod to history, which has shown that stocks approximately go up twice as much as down on a daily basis. Since new stocks are added each week, each position is held for 3 weeks. Rebalancing occurs as close as possible to Friday's closing prices. (Trades and returns are hypothetical.)

2. Top 5 and Bottom 5 ETFs

Most recent performance:

Since inception
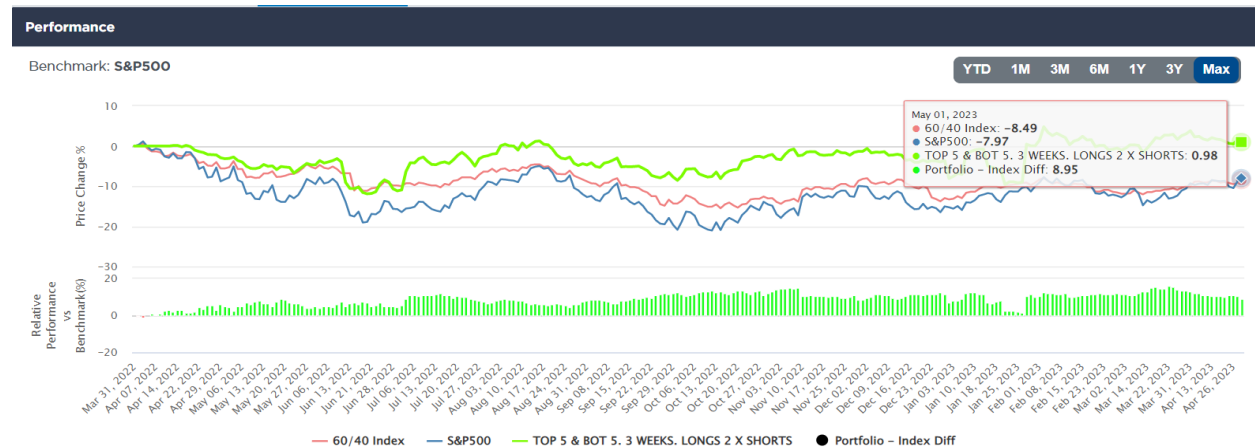
Top 5 and Bottom 5 ETFs – Buys the Top 5 ETFs and Sells short the Bottom 5 ETFs each week. Each position is held for 3 weeks. The 3-week holding period means that each week we trade out of the positions from 3 weeks ago and add the current week's TOP 5 and Bottom 5. Each week's trades account for approximately 1/3 of the portfolio. Shorts are always ½ the value of longs.

3. Top 5 ETFs and a S&P500 Hedge

Most recent performance:
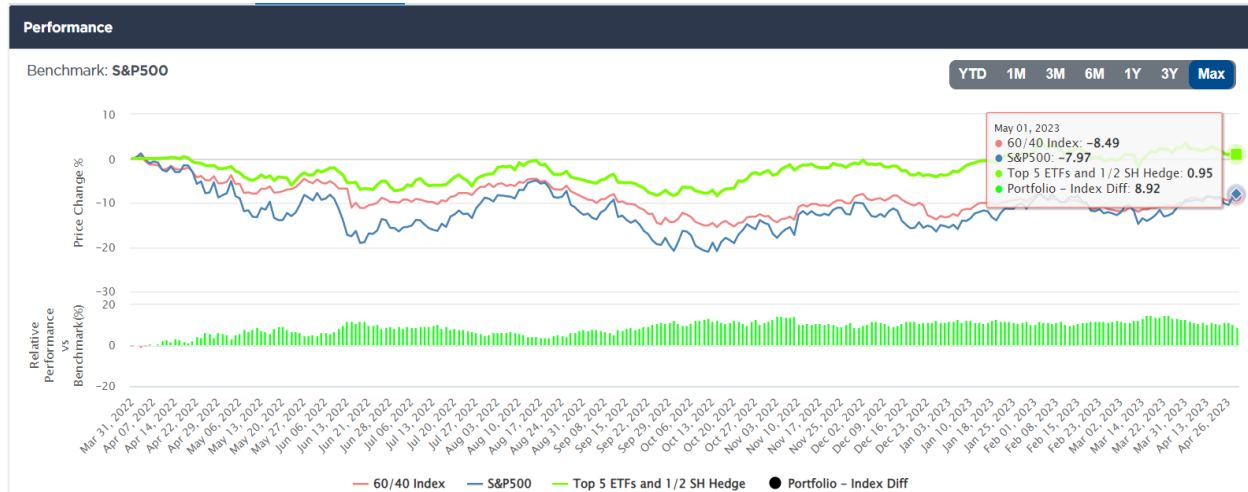
<u>Since inception</u>

Top 5 ETFs and a S&P500 Hedge – *Buys the Top 5 ETFs each week and maintains a long SH position that is ½ the value of the long ETFs.*

4. Top 5 ETFs – Long Only

Most recent performance:

<u>Since inception</u>
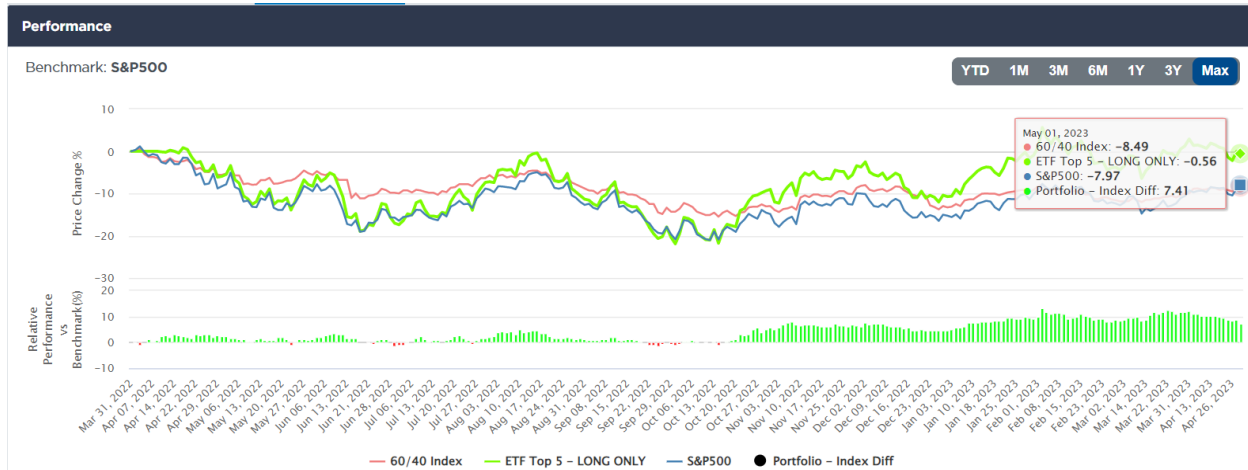
Top 5 ETFs – Long Only – *Each week the TOP 5 ETFs are purchased. The holding period is 3 weeks. Each week accounts for 1/3 of the portfolio.*

TPA-RRG Top 5 & Bottom 5 ETFS		4/27/23				TPA-RRG SCORE
Code	**Name**	**Last**	**RRG Ratio**	**RRG Momentum**	**Quadrant**	
XLP	Staples	77.44	98.64	100.68	Improving	3.51
XLU	Utilities	68.98	96.98	101.12	Improving	3.15
HACK	Cyber Security	44.91	100.00	100.68	Leading	2.61
FDN	Internet	142.30	103.33	100.70	Leading	2.16
IGV	Software	296.50	104.51	101.58	Leading	2.12
OIH	Oil Services	274.13	94.68	92.58	Lagging	-3.29
PPH	Pharma	78.87	99.37	99.02	Lagging	-3.38
IYT	Transportation	222.40	98.99	98.36	Lagging	-3.46
XME	Metals & Mining	49.40	98.42	95.54	Lagging	-3.53
XLI	Industrial	100.00	99.24	98.16	Lagging	-3.54

Weekly Relative Rotation Graph®   Date: 4/28/2023 Benchmark: S&P 500 INDEX - SPX (WI)
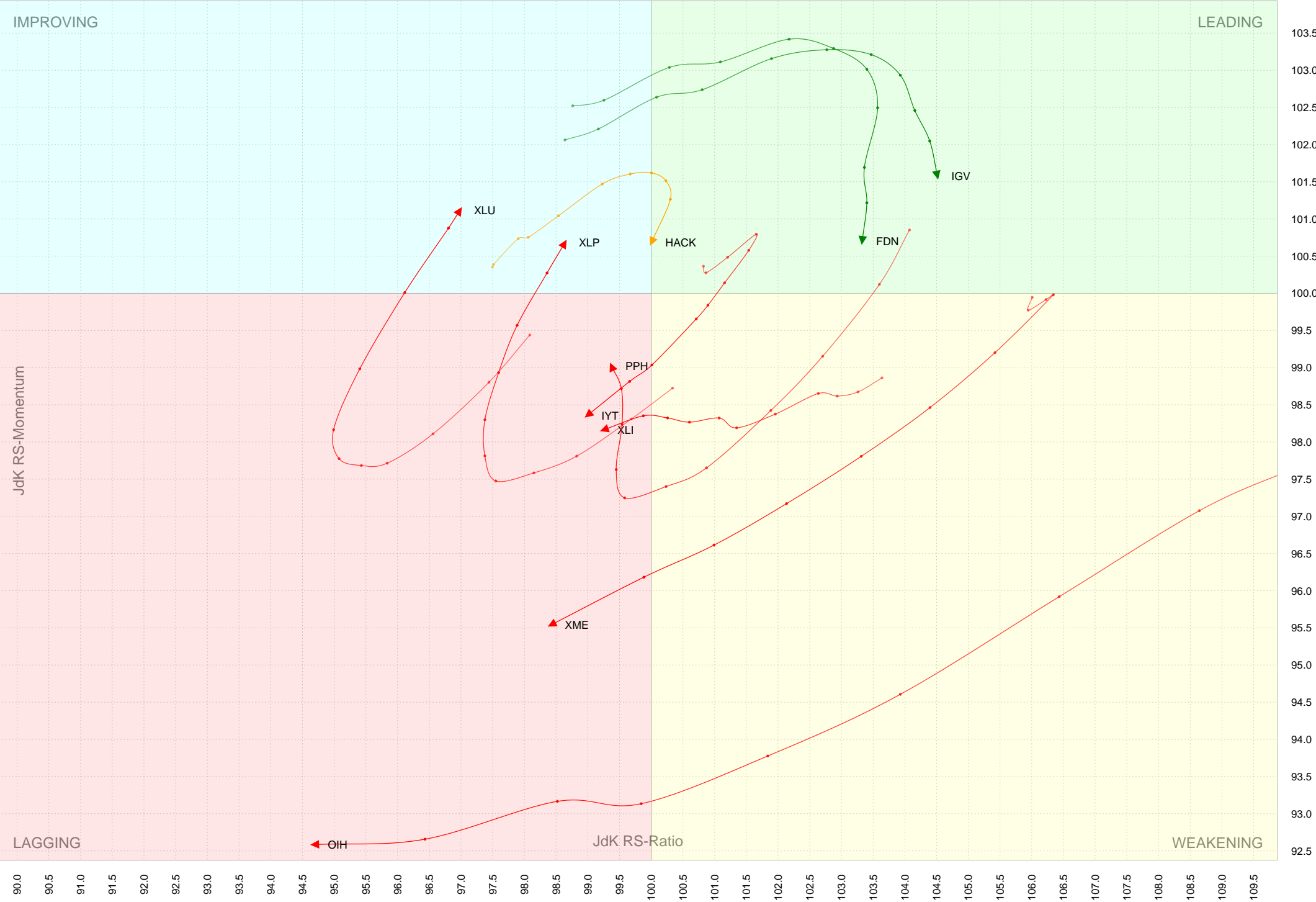
TPA-RRG 27 SECTOR ETFS

Code	Name	Last	RRG Ratio	RRG Momentum	Quadrant	TPA-RRG SCORE
	TPA-RRG U.S. SECTOR & SUBSECTOR ETFS		5/1/23			
XLP	Staples	77.44	98.64	100.68	Improving	3.51
XLU	Utilities	68.98	96.98	101.12	Improving	3.15
HACK	Cyber Security	44.91	100.00	100.68	Leading	2.61
FDN	Internet	142.30	103.33	100.70	Leading	2.16
IGV	Software	296.50	104.51	101.58	Leading	2.12
XLK	TECH	150.83	105.30	101.89	Leading	2.10
XLC	Communications	59.90	105.18	101.41	Leading	2.06
XLY	Consumer Discretionary	147.86	99.81	101.28	Improving	1.94
XLV	Health Care	133.53	96.41	99.41	Lagging	1.08
ITB	Home Construction	75.79	106.49	98.81	Weakening	0.98
TAN	Solar	71.99	96.54	99.91	Lagging	-1.97
IYR	Real Estate	85.68	96.45	98.26	Lagging	-2.01
MOO	Agribusiness	85.40	96.11	98.62	Lagging	-2.01
XOP	Oil&Gas E&P	127.11	91.32	98.33	Lagging	-2.06
SOCL	Social Media	34.76	106.60	97.62	Weakening	-2.09
SMH	SEMI	247.25	108.08	99.84	Weakening	-2.12
XLE	Energy	85.13	94.55	97.46	Lagging	-2.13
ITA	Aerospace & Defense	113.96	100.91	98.45	Weakening	-2.43
CLOU	Cloud Computing	16.79	100.77	98.82	Weakening	-2.66
XLF	Financials	33.17	94.71	96.17	Lagging	-3.14
XRT	Retail	61.43	96.57	96.10	Lagging	-3.25
XLB	Materials	80.55	98.73	98.07	Lagging	-3.28
OIH	Oil Services	274.13	94.68	92.58	Lagging	-3.29
PPH	Pharma	78.87	99.37	99.02	Lagging	-3.38
IYT	Transportation	222.40	98.99	98.36	Lagging	-3.46
XME	Metals & Mining	49.40	98.42	95.54	Lagging	-3.53
XLI	Industrial	100.00	99.24	98.16	Lagging	-3.54

Relative Rotation Graph for 27 major sector & subsector ETFs provided below.

Also, use the following link that shows RRG over time - how sectors & subsectors move in and out of favor over time: https://youtu.be/qFkBgvZ4S2Y

Weekly Relative Rotation Graph®   Date: 4/28/2023 Benchmark: S&P 500 INDEX - SPX (WI)
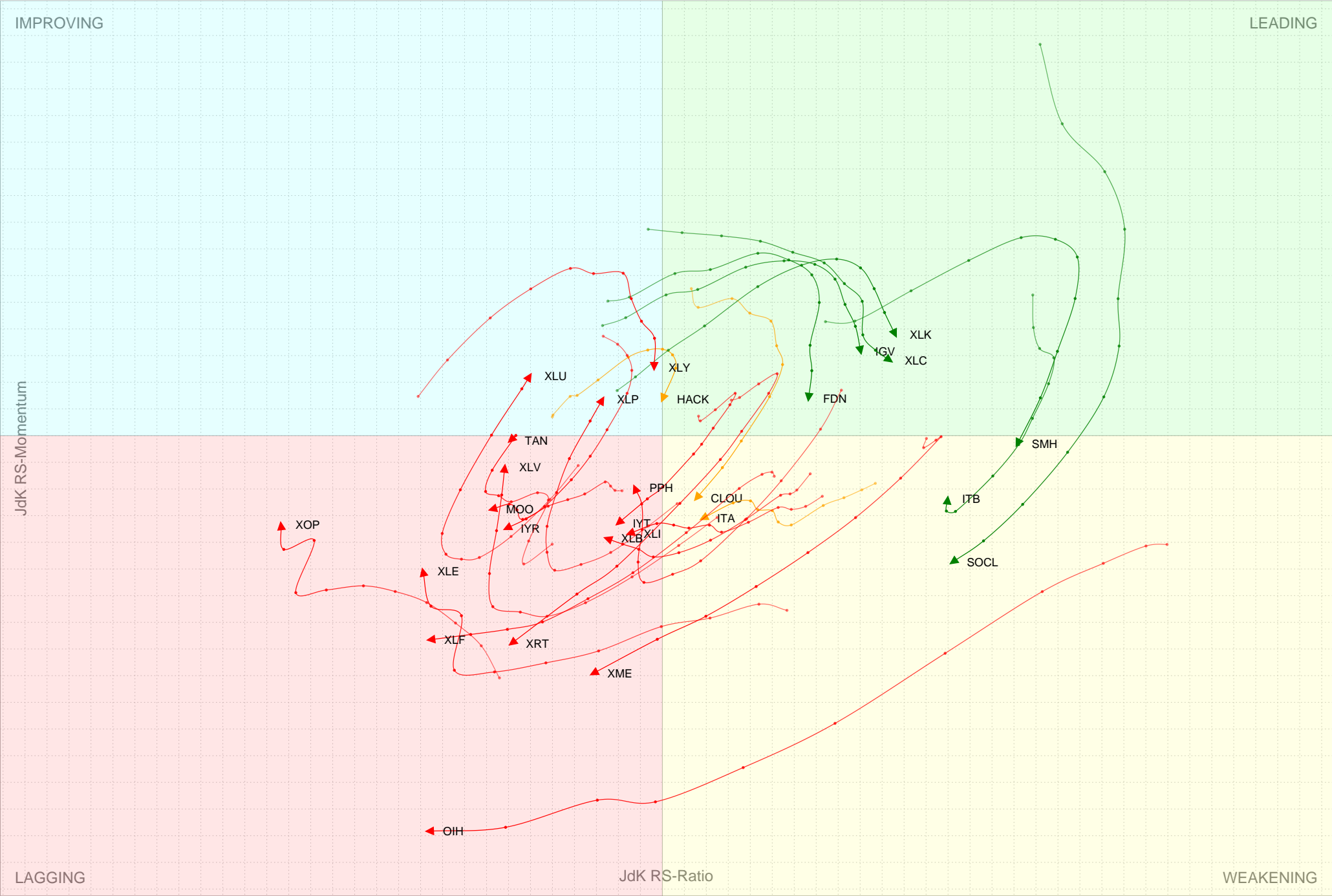
Click [HERE](#) for the entire Russell 1000 TPA-RRG Score and Rank Report.

What are RRGs?

Julius de Kempenaer developed Relative Rotational Graphs (RRG) in 2004 and thousands of investors use RRGs. *"Relative Rotation Graphs, commonly called RRGs, are a unique **visualization tool for relative strength analysis.** Chartists can use RRGs to analyze the relative strength trends of several securities against a common benchmark, and against each other. The real power of this tool is its ability to plot relative performance on one graph and show true rotation. We have all heard of sector and asset class rotation, but it is hard to visualize this "rotation" sequence on linear charts. **RRGs use four quadrants to define the four phases of a relative trend. True rotations can be seen as securities move from one quadrant to the other over time."** - Stockcharts

What are TPA-RRG scores?

TPA recognizes the power of RRGs to highlight stocks and sectors moving in and out of favor, but also notes the shortcoming of having to examine many RRGs to decide where to invest. TPA has developed TPA-RRG Scores to be able to rank stocks and sectors in terms of relative strength. *TPA-RRG scores are constructed to focus on stocks and sectors as they move from negative to positive and positive to negative.* Scoring also allows ranking so investors can focus on the best and worst areas of the market.

How are TPA-RRG scores created?

TPA uses not only the **RS Ratio** and **RS Momentum** of each stock to make its forecast, but TPA also uses certain characteristics on each stock's RS to calculate its score. The following measures are used to calculate the TPA-RRG score:

1. **RRG ANGLE -** Represents the current position of the security on the RRG chart based on the points of the compass:
   ➢ 0-90 Degrees = Leading Quadrant
   ➢ 90-180 Degrees = Weakening Quadrant
   ➢ 180-270 Degrees = Lagging Quadrant
   ➢ 270-360 Degrees = Improving Quadrant

2. **RRG DISTANCE -** This number represents how far away the security is from the center of the RRG chart (ie the benchmark). One of the observations is that higher alpha comes from those components that make bigger arcs around the benchmark. We will ignore those closest to the center.

3. **RRG ANGLE ROC -** The Angle Rate of Change measures the distance of the angle of the current data point of a security, to the previous data point. The greater the value, the larger the distance between the two data points.

4. **RRG HEADING -** This is the direction that the arrow is pointing to (where the RS is headed), again based on the points of the compass, and is one of the most useful measures:

> ➢ 0 degrees = North (up) - positive
> ➢ 45 degrees = Northeast – less positive
> ➢ 90 degrees = East (right) - positive
> ➢ 180 degrees = South (down) - negative
> ➢ 270 degrees = West (left) - negative

5. **RRG VELOCITY** This is the vector difference – or distance – between the last two data points on the line; with the longest having the highest relative momentum:

How investors can use TPA-RRG
1. The Sector analysis lets clients <u>focus</u> on the best and avoid the worst areas of the market
2. TPA-RRG ranks the entire Russell 1000 and provides the Top 20 and Bottom 20 stocks so investors can see the best and worst stocks to make sure they are <u>taking advantage of opportunities and not getting into trouble.</u>
3. We also look at the top and bottom stocks through a standard technical analysis to <u>avoid stocks that are overbought, oversold or at other technical trouble spots.</u>
4. Finally, we provide TPA-RRG Scores and rankings for the stocks in the most used 25 sector and subsector ETFs. This analysis is especially helpful for investors who are focused on <u>specific areas</u> of the market.

You can learn more about RRGs with these links:
[**_Relative Rotation Graphs (RRG) – explanation video_**](#)
[**_RRG – written explanation_**](#)

Included in the Weekly TPA-RRG Report
1. <u>The weekly TPA RRG Report will provide RRG Scores, Rankings, RRG and a RRG Video for:</u>
   - 25 Major Sector and Subsector ETFs
   - Top 20 & Bottom 20 stocks in the Russell 1000 - based on TPA's RRG and Trend-Range analysis

2. <u>The report will also include:</u>
   - TPA RRG scores and rankings for the *focus stocks* in the 11 major sectors ETFs and 14 major subsectors ETFs. *Provided in a separate PDF*

3. ***Finally, TPA will provide a weekly commentary on TPA-RRG Scores and Rankings***