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- Co-Chair of the NY Chapter of the CMT Association
- 10 Years Covering Large Institutional Investors
- Teach Technical Analysis at Baruch College in NYC



#### **Topics of Conversation**

What is Relative Strength?

How Do We Measure Relative Strength?

Relative Strength and Asset Allocation

Relative Strength and Stock Selection



#### What is Relative Strength?

Relative Strength compares the performance of one security to another with a ratio chart. This indicator is also known as the Relative Strength indicator or Relative Strength Comparative. Often, the Price Relative indicator is used to compare the performance of a stock against a benchmark index, such as the S&P 500. Chartists can also use the Price Relative to compare the performance of a stock to its sector or industry group. This makes it possible to determine if a stock is leading or lagging its peers. The Price Relative indicator can also be used to find stocks that are holding up better during a broad market decline or showing weakness during a broad market advance.

Relative Strength is simply the base security divided by the comparative security. Typically, the underlying security is a stock and the benchmark is the S&P 500.



#### How Do We Measure Relative Strength

I have three ways that I like to measure relative strength depending on what I am analysing:

- 1. In a Table More Quantitative
- 2. In a Chart: Both as a Ratio and an Oscillator. The Ratio Chart Allows for the Application of Traditional Technical Analysis
- 3. In a Relative Rotation Graph

Each of these tells the same story in a slightly different way



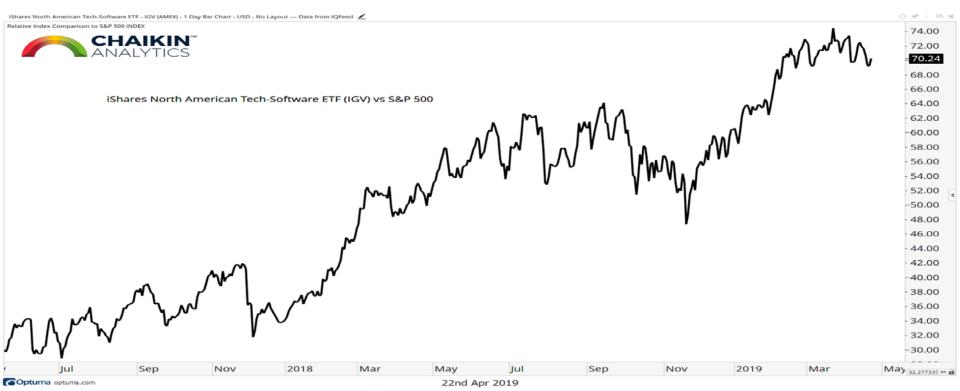
#### In a Table - For Quantitative Studies

Code	Name	Last	Change (%)	YTD	1 Month	3 Month	6 Month	9 Month	12 Month ▼	Average (3, 6 & 12)	ETF Momentum	Above 200 DMA	<b>±</b>
IGV	iShares North American Tech-Software ETF	213.10	0.58%	22.81%	2.29%	14.61%	15.25%	8.83%	21.88%	6.13%	2.71%	True	
SMH	VanEck Vectors Semiconductor ETF	117.63	-0.08%								3.31%	True	
RTH	VanEck Vectors Retail ETF	107.69									1.86%	True	
PBS	PowerShares Dynamic Media ETF	34.2100	-0.64%								2.60%	True	
IYR	iShares U.S. Real Estate ETF	84.45	-1.39%								2.40%	True	
IGN	iShares North American Tech-Multimedia Networking E	60.00	0.25%								3.19%	True	
IHI	iShares U.S. Medical Devices ETF	214.24									1.09%	True	
IYZ	iShares U.S. Telecommunications ETF	30.76	0.16%								2.49%	True	
SPY	S & P 500 Stock Index	2,905.40	0.01%								2.08%	True	
IYT	iShares Transportation Average ETF	197.79	0.11%	19.87%	9.40%	12.02%	5.39%	2.32%	4.00%	2.12%	1.29%	True	
XHB	SPDR S&P Homebuilders ETF	40.83									2.10%	True	
PBJ	Invesco Dynamic Food & Beverage ETF	33.43	-0.34%								1.56%	True	
IAK	iShares U.S. Insurance Index Fund ETF	65.82									1.24%	True	
AMLP	ALPS Alerian MLP ETF	10.06				4.88%			0.38%		0.09%	False	
ITA	iShares U.S. Aerospace & Defense ETF	205.36		18.80%							0.91%	True	
IBB	iShares Nasdaq Biotechnology ETF	104.41	-0.12%								-0.55%	False	
ITB	iShares U.S. Home Construction Index Fund ETF	38.03									1.72%	True	
IHE	iShares U.S. Pharmaceuticals ETF	144.69									-0.73%	False	
PEJ	PowerShares Dynamic Leisure & Entertainment Portfoli	44.4811									0.44%	True	
JETS	US Global Jets ETF	30.901	-0.96%	10.84%							0.55%	True	
PKB	PowerShares Dynamic Build & Construction ETF	29.2272									0.93%	True	
IHF	iShares U.S. Healthcare Providers ETF	154.09									-1.95%	False	
IAI	iShares U.S. Broker-Dealers & Security Exchanges ETF	62.76			8.83%						0.06%	True	
GDX	VanEck Vectors Gold Miners ETF	21.09	-1.19%								0.10%	True	
IAT	iShares U.S. Regional Banks Index Fund ETF	46.26									-0.09%	False	
KBE	SPDR S&P Bank ETF	44.03	-0.27%								0.02%	False	
IEO	iShares U.S. Oil & Gas Exploration & Production ETF	62.70									-0.30%	False	
XOP	SPDR S&P Oil & Gas Exploration & Production ETF	32.90	3.41%								-0.50%	False	
ВЈК	VanEck Vectors Gaming ETF	39.25	0.10%	18.85%							-0.08%	True	
SLX	VanEck Vectors Steel ETF	39.88	-0.97%								-0.78%	False	
OIH	VanEck Vectors Oil Services ETF	18.48	2.63%								-0.64%	False	

#### **Data From Optuma**

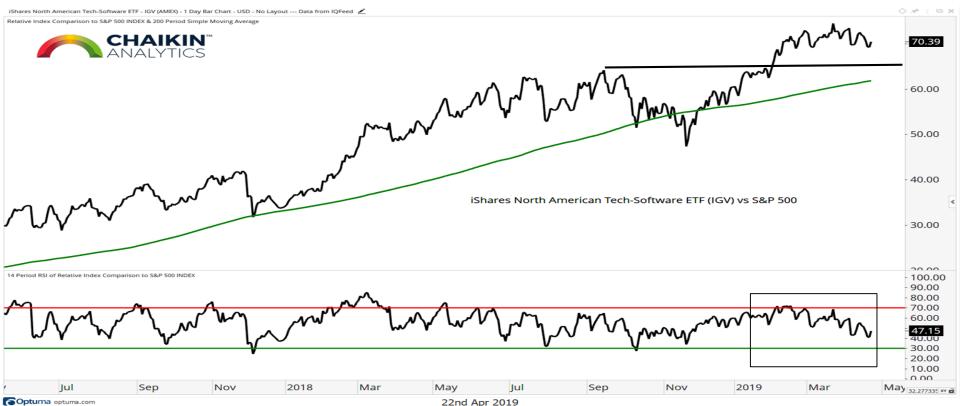


#### **Ratio Charts**



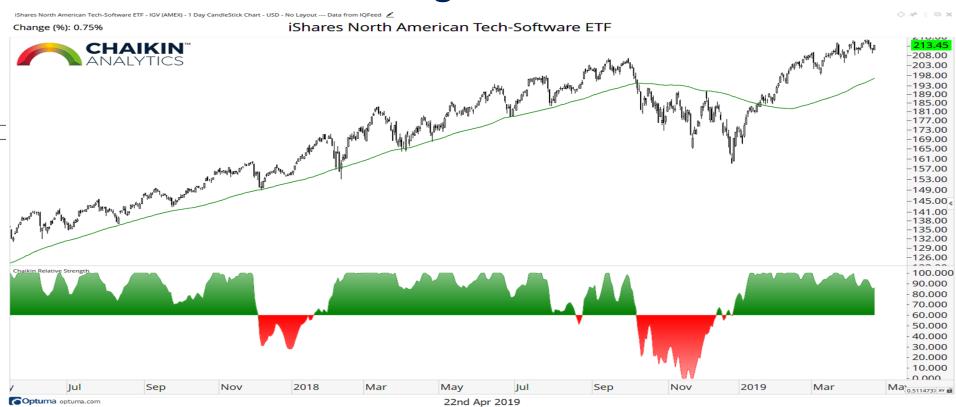


#### **Ratio Charts**





## Relative Strength as an Oscillator





## Relative Rotation Graph (RRG)

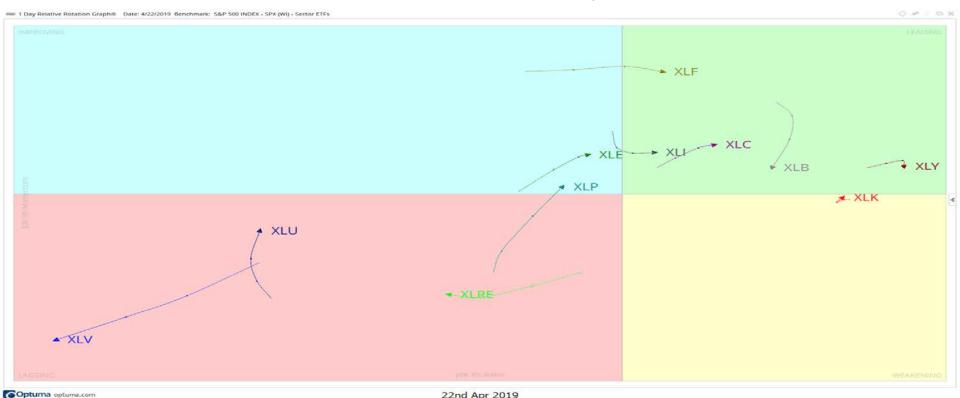


Chart Source: Optuma

22nd Apr 2019



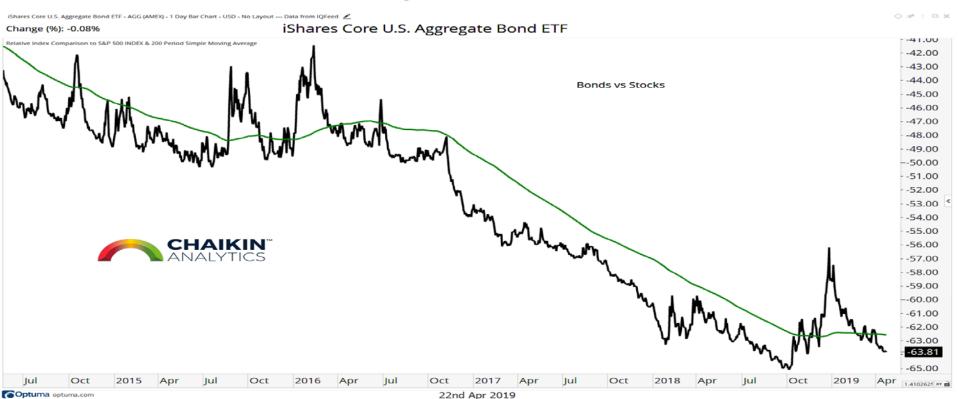
#### Relative Strength for Asset Allocation

ı	Code	Name	Last	Change (%)	YTD	1 Month	3 Month	6 Month	9 Month	12 Month 🗸	Average (3, 6 & 12)	ETF Momentum	Above 200 DMA 📱
	SPY	SPDR S&P 500 ETF	290.11	0.03%	16.07%	3.89%	10.37%	5.49%	3.73%	8.81%	2.79%	2.09%	True
	IWV	iShares Russell 3000 ETF	170.87	-0.03%	16.34%	3.86%	10.22%	5.39%	2.46%	7.94%	2.62%	1.88%	True
	AGG	iShares Core U.S. Aggregate Bond ETF	108.11	-0.07%	1.52%	-0.47%	1.57%	3.60%	1.73%	1.99%	0.76%	2.28%	True
	SHY	iShares Barclays 1-3 Year Treasury Bond Fund ETF	83.9000	0.01%	0.34%	-0.15%	0.35%	1.17%	0.78%	0.77%	0.25%	2.10%	True
	ACWX	iShares MSCI ACWI ex US Index Fund ETF	47.59	-0.17%	13.42%	3.84%	8.88%	6.70%	-0.85%	-5.26%	0.42%	0.70%	True
	DBC	Invesco DB Commodity Index Tracking ETF	16.31	0.62%	12.56%	2.32%	5.57%	-8.22%	-3.72%	-6.64%	-1.33%	-0.51%	False

Data From Optuma



#### Relative Strength for Asset Allocation





#### Relative Strength for Asset Allocation





## Stocks Are Leading, Now What? Sector Work

Code	Name	Last	Change (%)	YTD	1 Month	3 Month	6 Month	12 Month 🔻	Average (3, 6 & 12)	ETF Momentum	Above 200 DMA
XLK	SPDR Technology Select Sector Fund ETF	77.94	0.15%	25.77%	6.30%	21.31%	10.41%	17.72%	5.60%	2.87%	True
XLRE	SPDR Real Estate Select Sector Fund ETF	34.98	-1.55%	12.84%	-2.29%	7.30%	11.51%	15.75%	4.19%	2.42%	True
XLY	SPDR Consumer Discretionary Select Sector Fund ETF	119.16	-0.09%	20.38%	6.71%	13.26%	11.60%	15.71%	4.69%	2.87%	True
XLU	SPDR Utilities Select Sector Fund ETF	57.15	-0.25%	7.98%	-2.30%	7.33%	5.39%	13.61%	3.33%	1.90%	True
XLP	SPDR Consumer Staples Select Sector Fund ETF	56.89	0.04%	12.01%	3.29%	9.47%	4.81%	12.68%	3.30%	2.34%	True
SPY	SPDR S&P 500 ETF	290.15	0.04%	16.11%	3.90%	10.38%	5.51%	8.83%	2.80%	2.09%	True
XLV	SPDR Health Care Select Sector Fund ETF	85.71	-0.24%	-0.89%	-5.42%	-4.19%	-5.56%	4.41%	-0.08%	-0.42%	False
XLI	SPDR Industrial Select Sector Fund ETF	78.12	-0.25%	21.28%	7.08%	13.64%	7.11%	3.33%	2.28%	1.58%	True
XLC	SPDR Communication Services Select Sector ETF	49.22	0.13%	19.23%	4.78%	11.75%	5.41%	1.00%	1.60%	0.00%	True
XLF	SPDR Financial Select Sector Fund ETF	27.31	-0.11%	14.61%	7.75%	6.25%	4.62%	-2.06%	0.56%	0.61%	True
XLB	SPDR Materials Select Sector Fund ETF	57.57	-0.43%	13.95%	5.96%	9.10%	9.28%	-2.42%	1.13%	0.99%	True
XLE	SPDR Energy Select Sector Fund ETF	68.59	2.08%	19.58%	4.77%	9.83%	-3.04%	-6.43%	-0.50%	0.01%	True

Data From Optuma



## Analysis of the Technology Sector





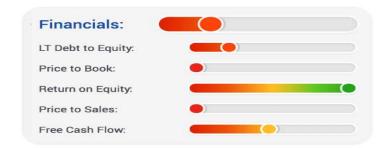
# Analysis of the Energy Sector

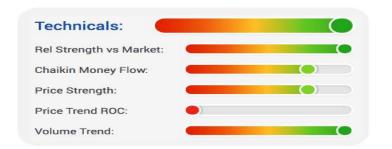




#### Stock Selection: Fundamentals and Technicals Look For Leading Stocks in Leading Sectors 20-Factor Model

#### It is unbiased. It is unemotional.









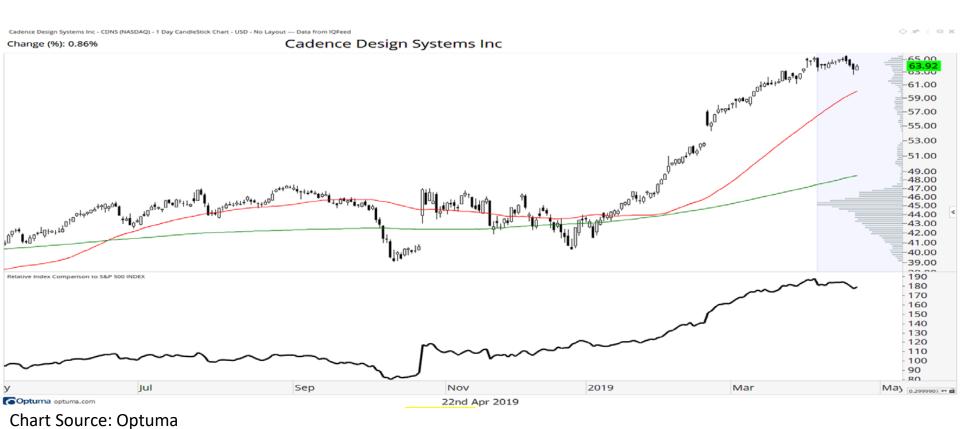


## Buy the Dip: Cadence Design - CDNS





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# Fade the Rally: Halliburton Co - HAL





## Fade the Rally: Halliburton Co - HAL



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