Strategies Using Technical Analysis Tools in Equity Investing and Trading

David Nicoski
Chief Technical Strategist

June 12, 2019

VERMILION

VERMILION RESEARCH

VR

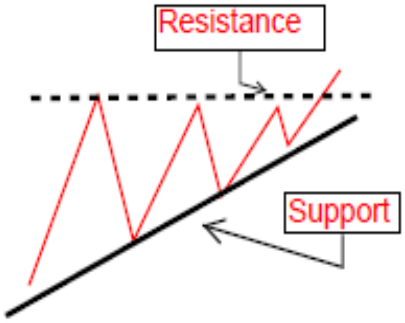
Firm Overview

- Vermilion Research is a global independent research company
- Founded in 2005
- Our U.S. research covers 5,000+ actively-traded stocks, and over 1,300 ETFs
- Our International research covers 6,000+ actively-traded, local-currency stocks across 45 exchanges
- Team has received numerous All-America Research Team citations by Institutional Investor and other industry distinctions, including Best Independent Research House by *the technical analyst* publication.

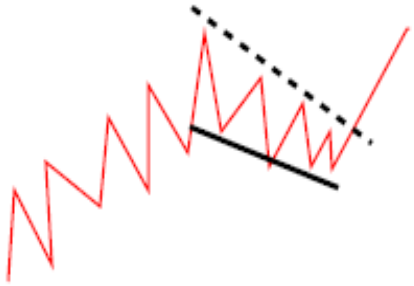
Technical Analysis – What is it?

- The study of price and volume relationships as a means to gain insight into stock market and individual stock trends.
- The underlying premise of technical analysis is that investors' perceptions toward a sector, group, or stock drive the supply and demand.
- A pattern of movement establishes a trend.
- Therefore, inflections or trend violations may occur and forecast changes in the future direction of stock prices.

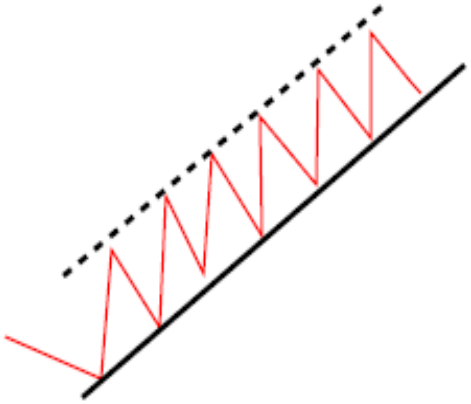
Pattern Recognition: Bullish Patterns



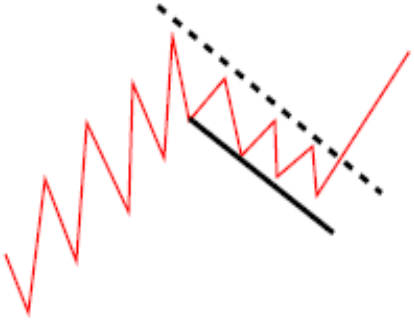
Ascending triangle



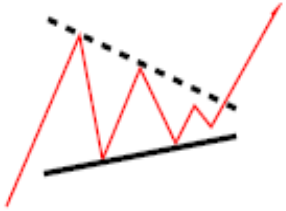
Pennant



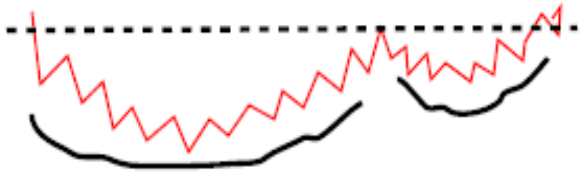
Uptrend channel



Bullish flag



Symmetrical triangle



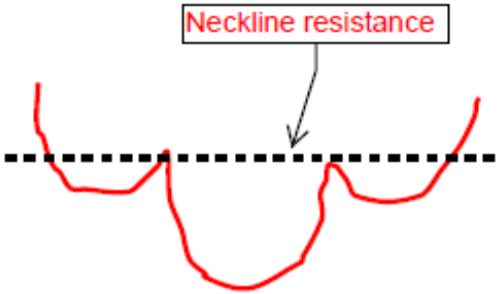
Cup & Handle

Source: Vermilion Research

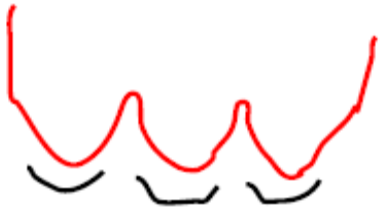
VR

Pattern Recognition: Bullish Reversal Patterns

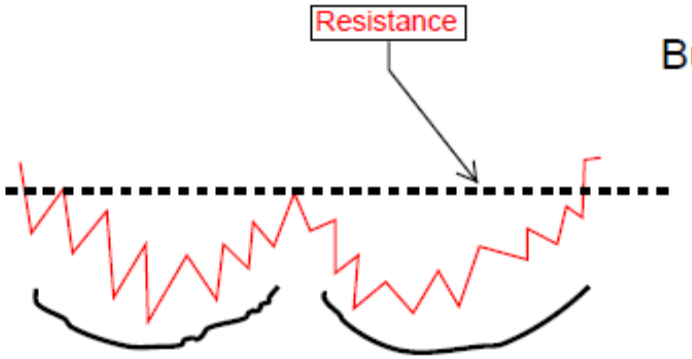
Rounding bottom



Head-and-shoulders bottom



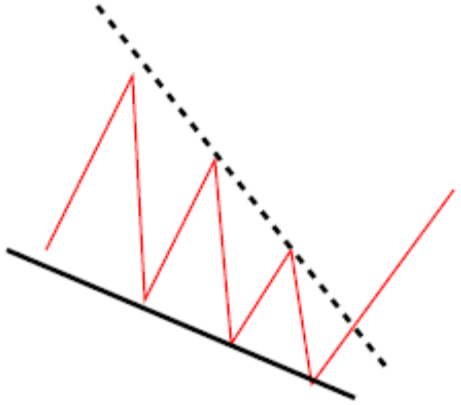
Triple bottom



Double bottom

Bullish reversal patterns

"V" reversal

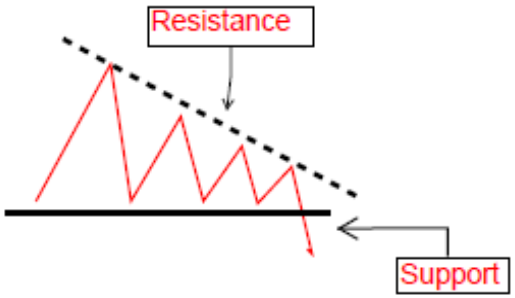


Falling wedge

Source: Vermilion Research

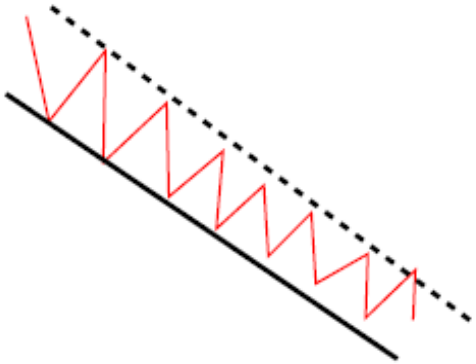
VR

Pattern Recognition: Bearish Patterns

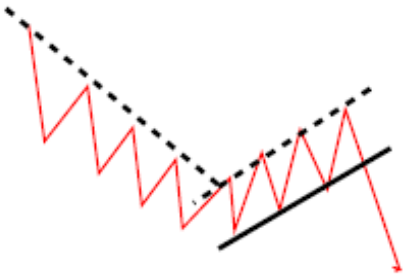


Descending triangle

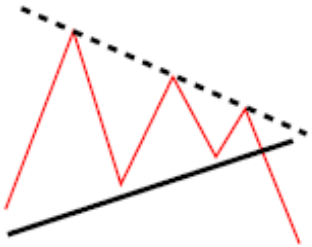
Pennant



Downtrend channel



Bearish flag



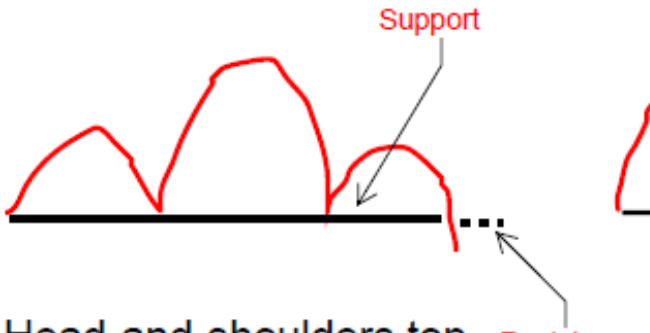
Symmetrical triangle

Source: Vermilion Research

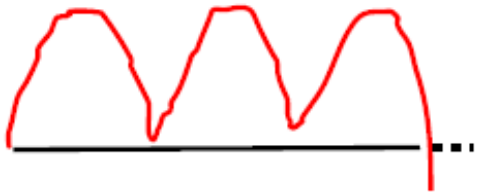
VR

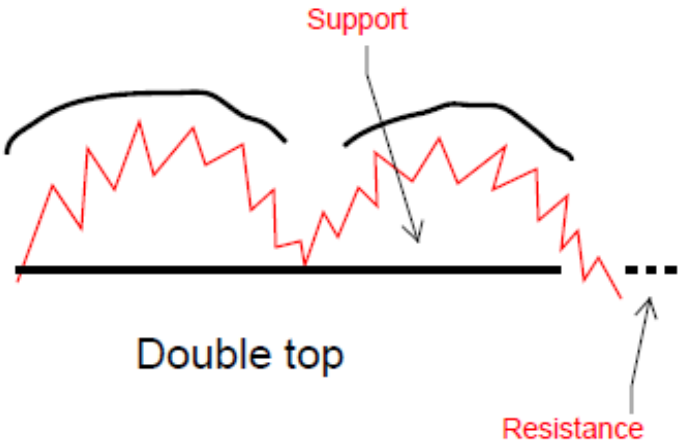
Pattern Recognition: Bearish Reversal Patterns

Rounding top

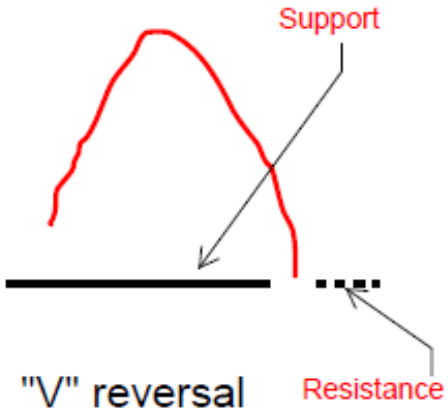


Head-and-shoulders top





Double top

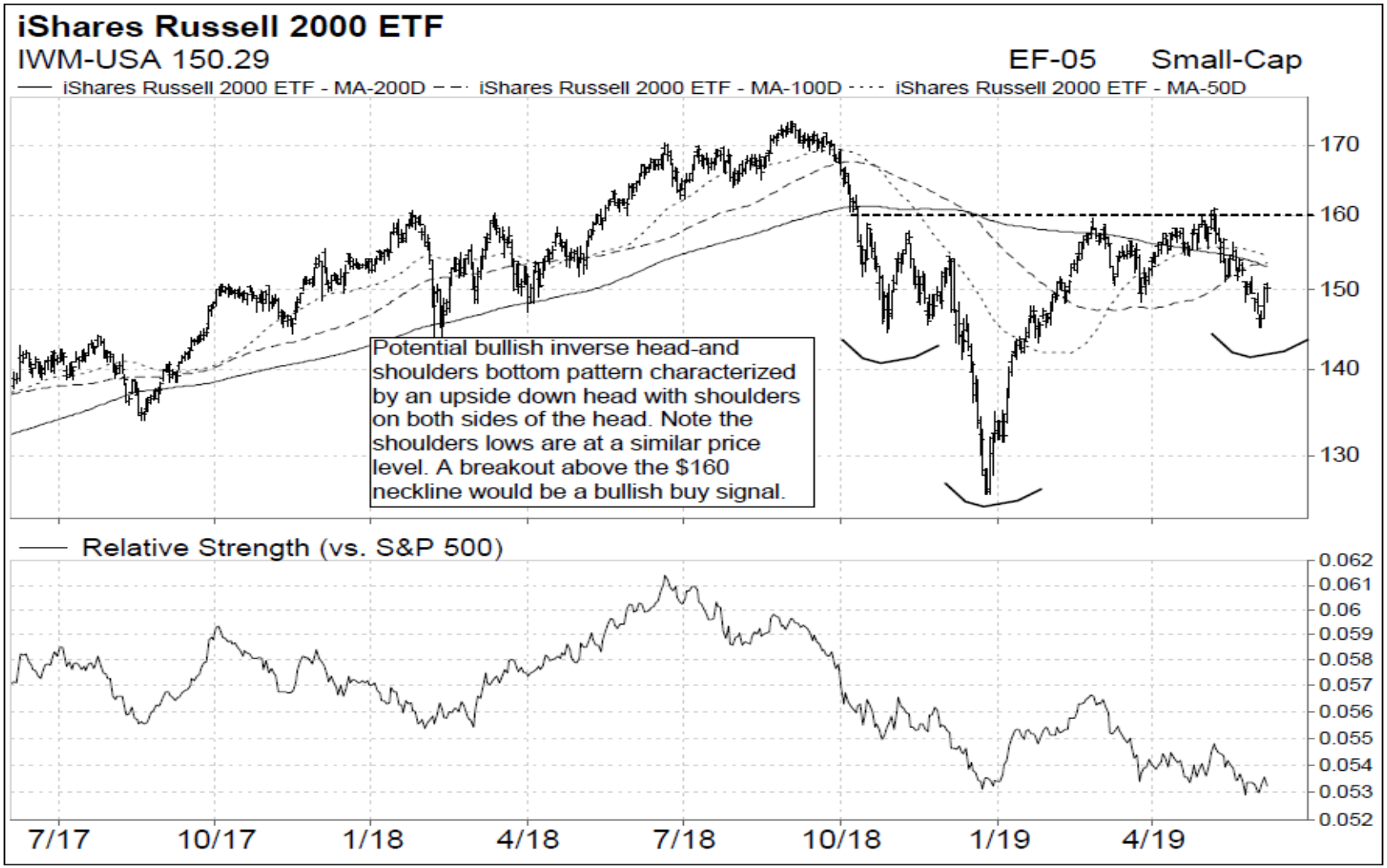


"V" reversal

Source: Vermilion Research

VR

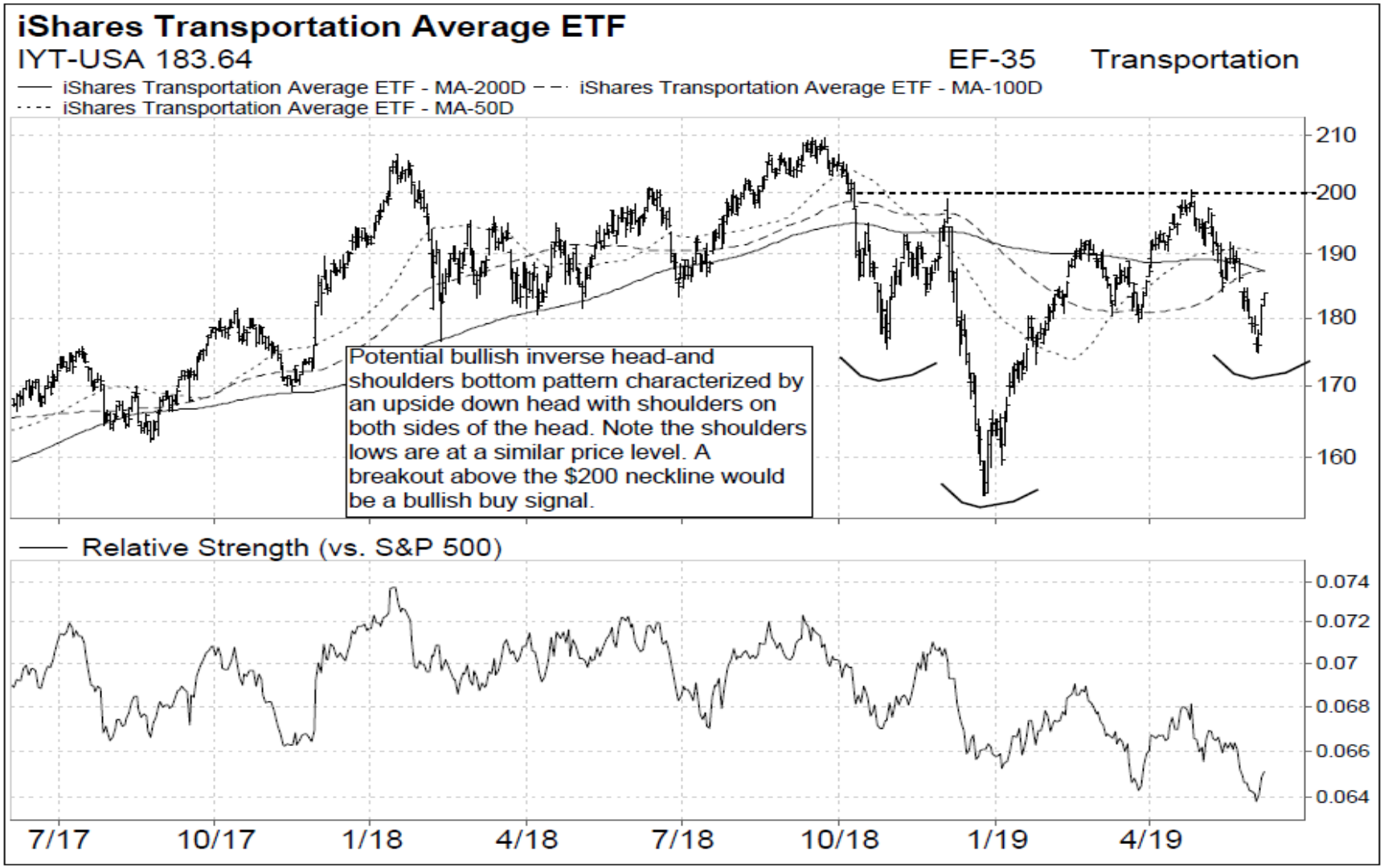
Inverse head-and-shoulder bottom patterns



Source: FactSet

VR

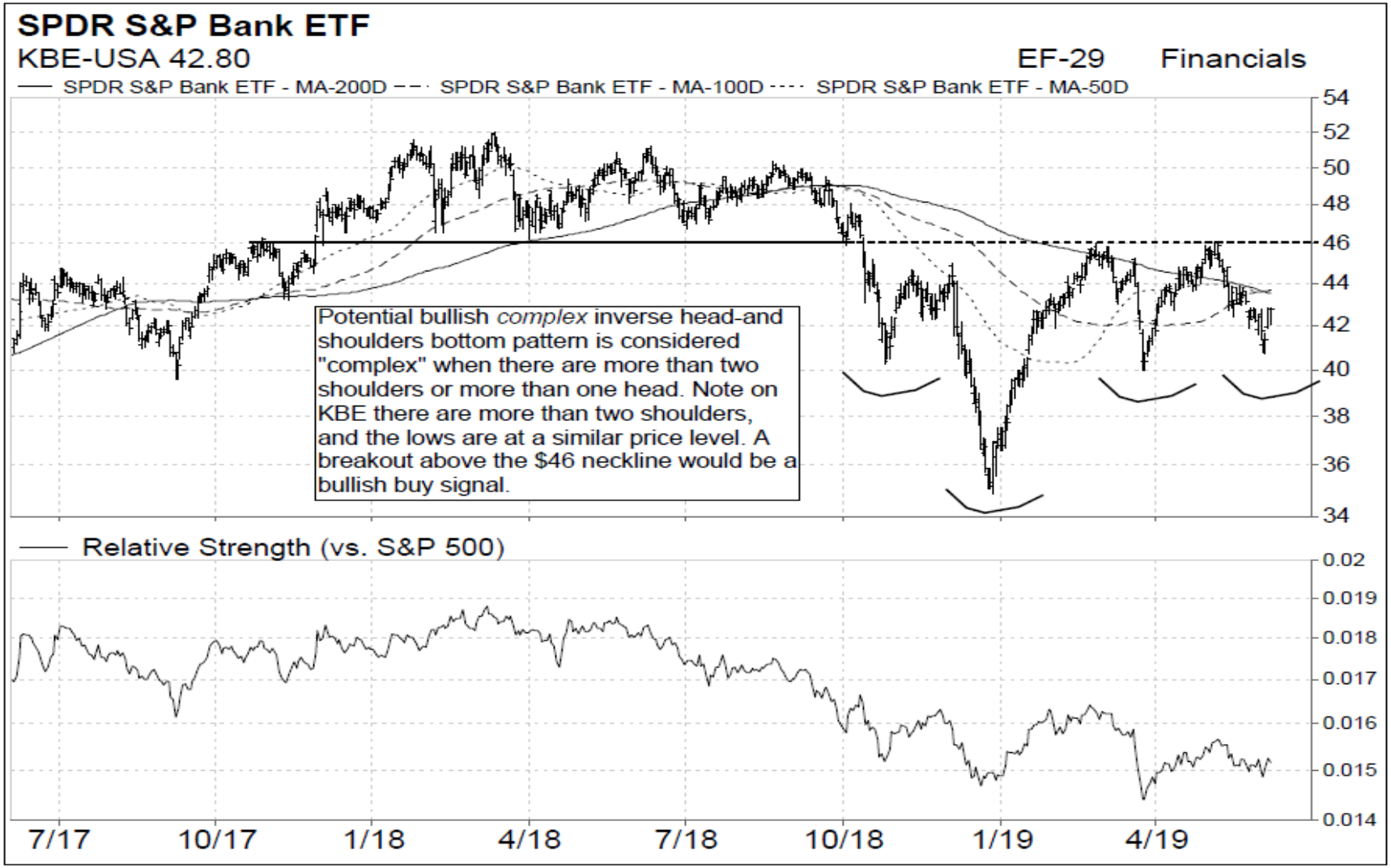
Inverse head-and-shoulder bottom patterns



Source: FactSet

VR

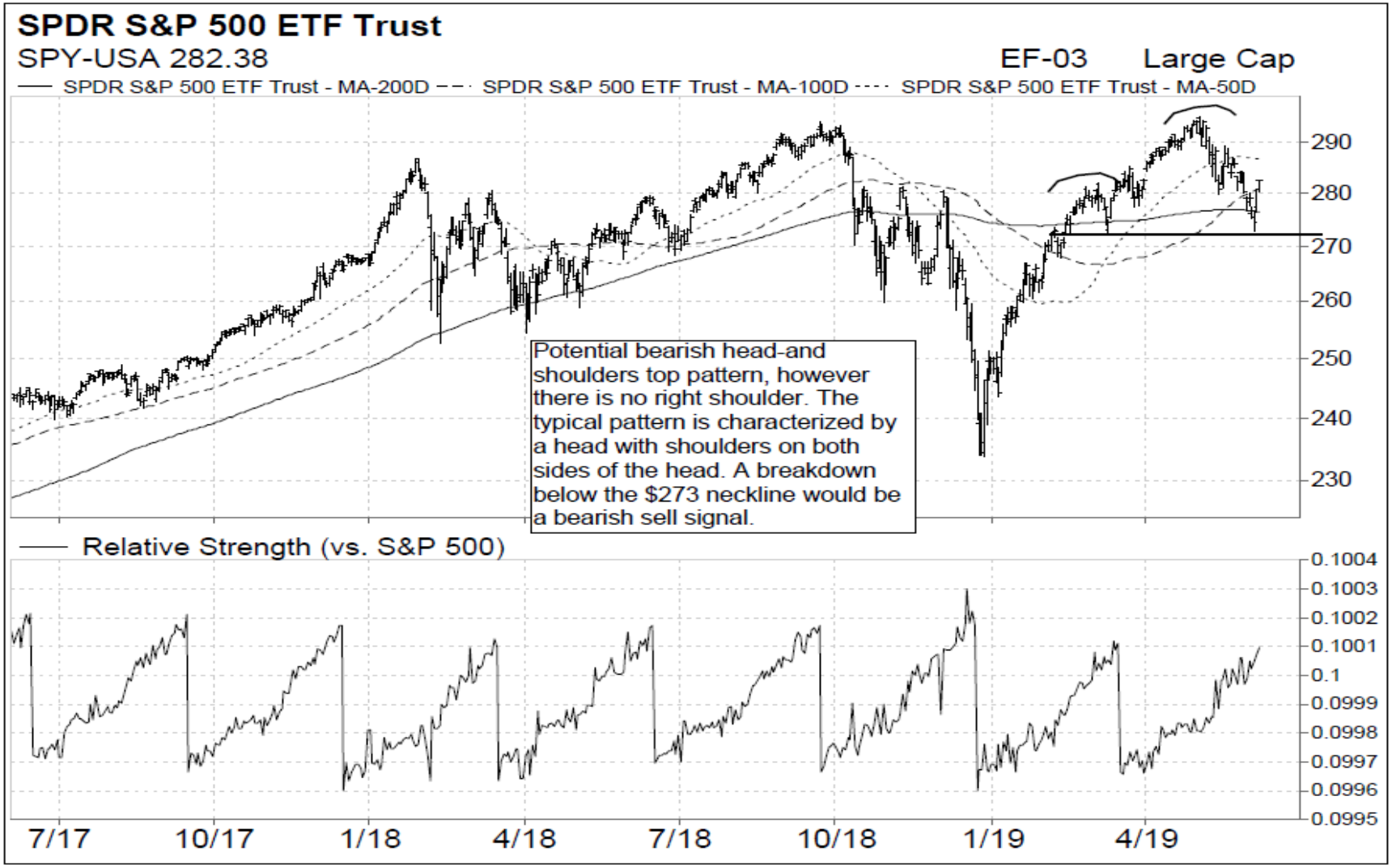
Complex inverse head-and-shoulder bottom pattern



Source: FactSet

VR

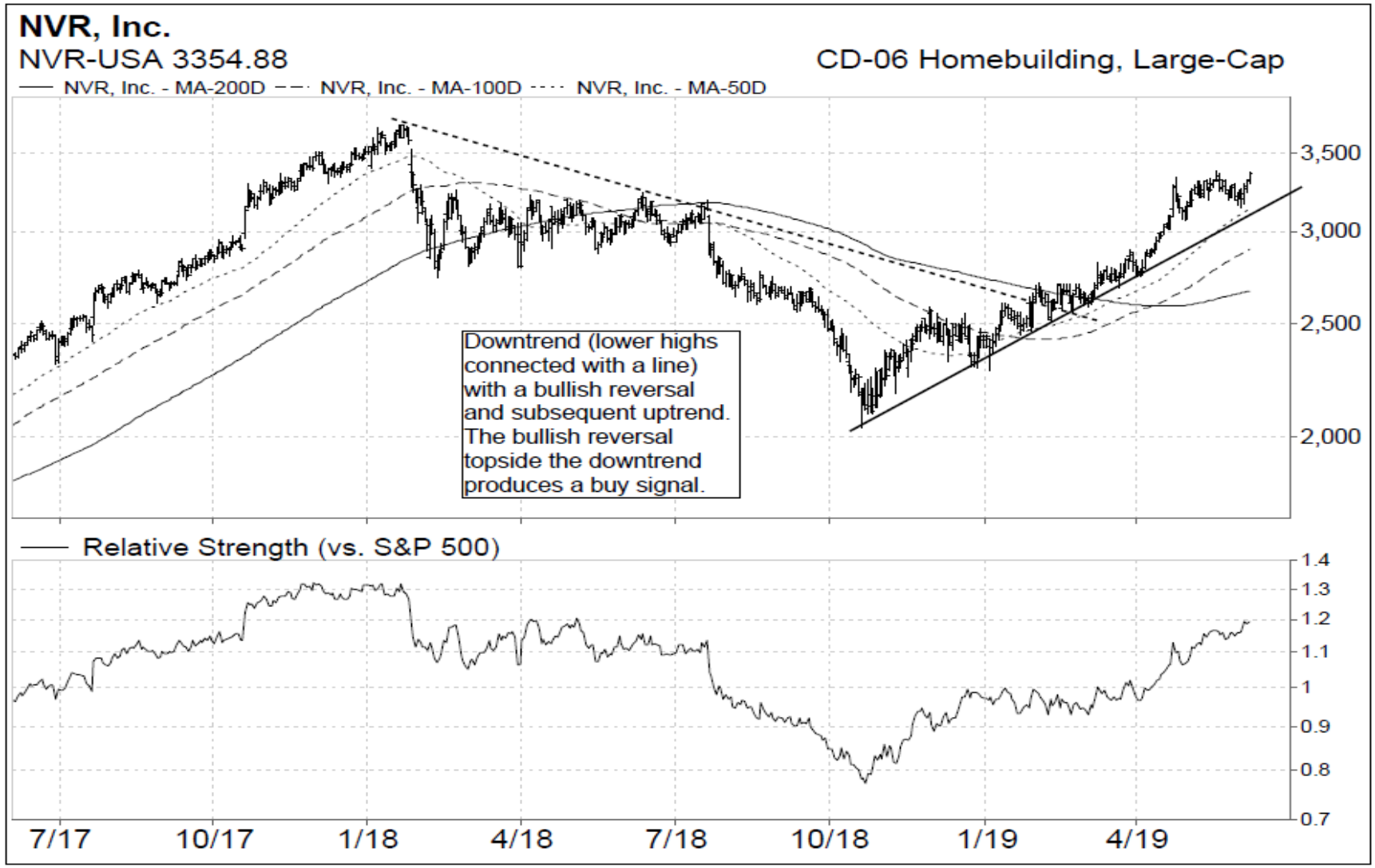
Potential head-and-shoulders top – at neckline



Source: FactSet

VR

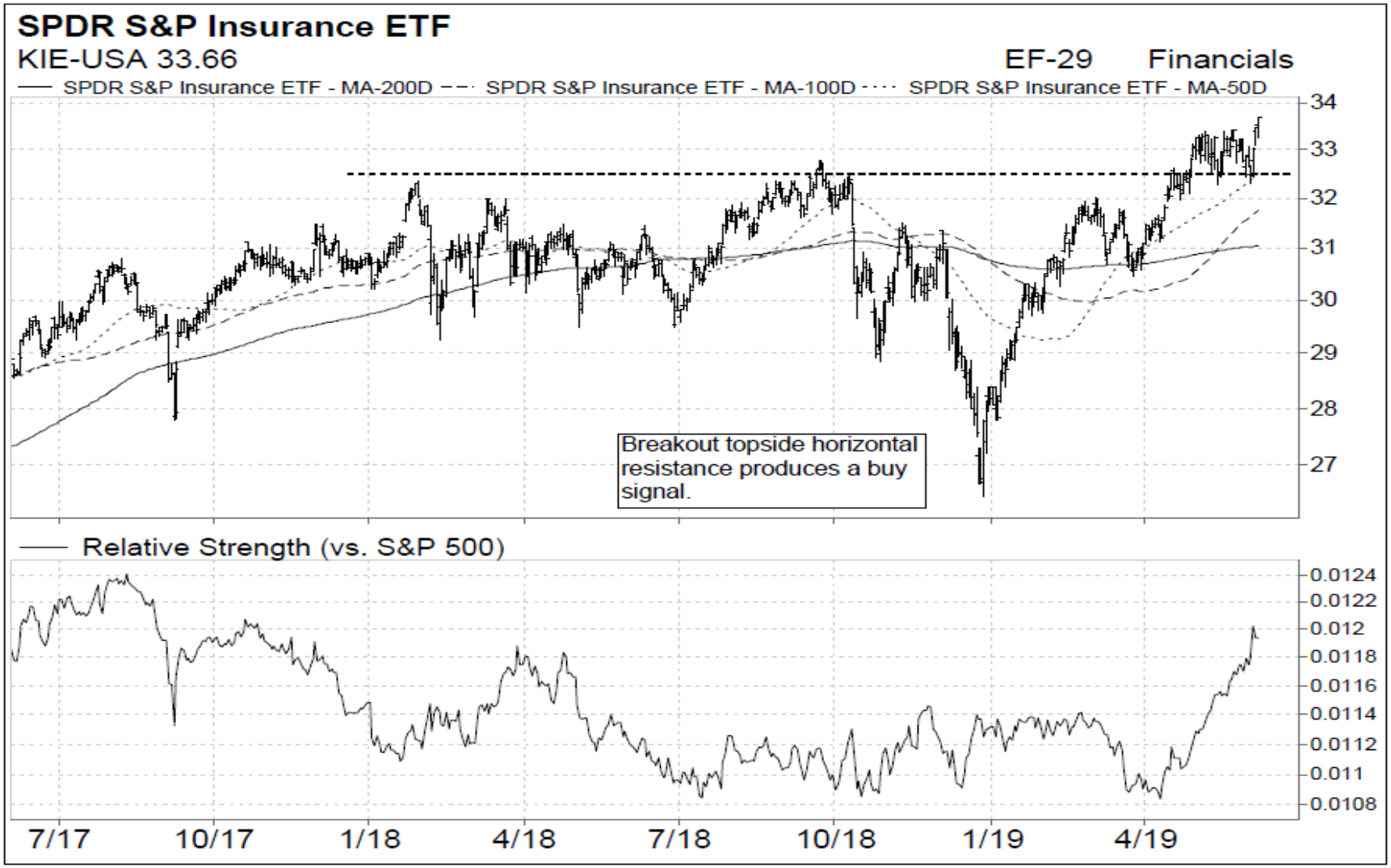
Downtrend with bullish reversal and subsequent uptrend



Source: FactSet

VR

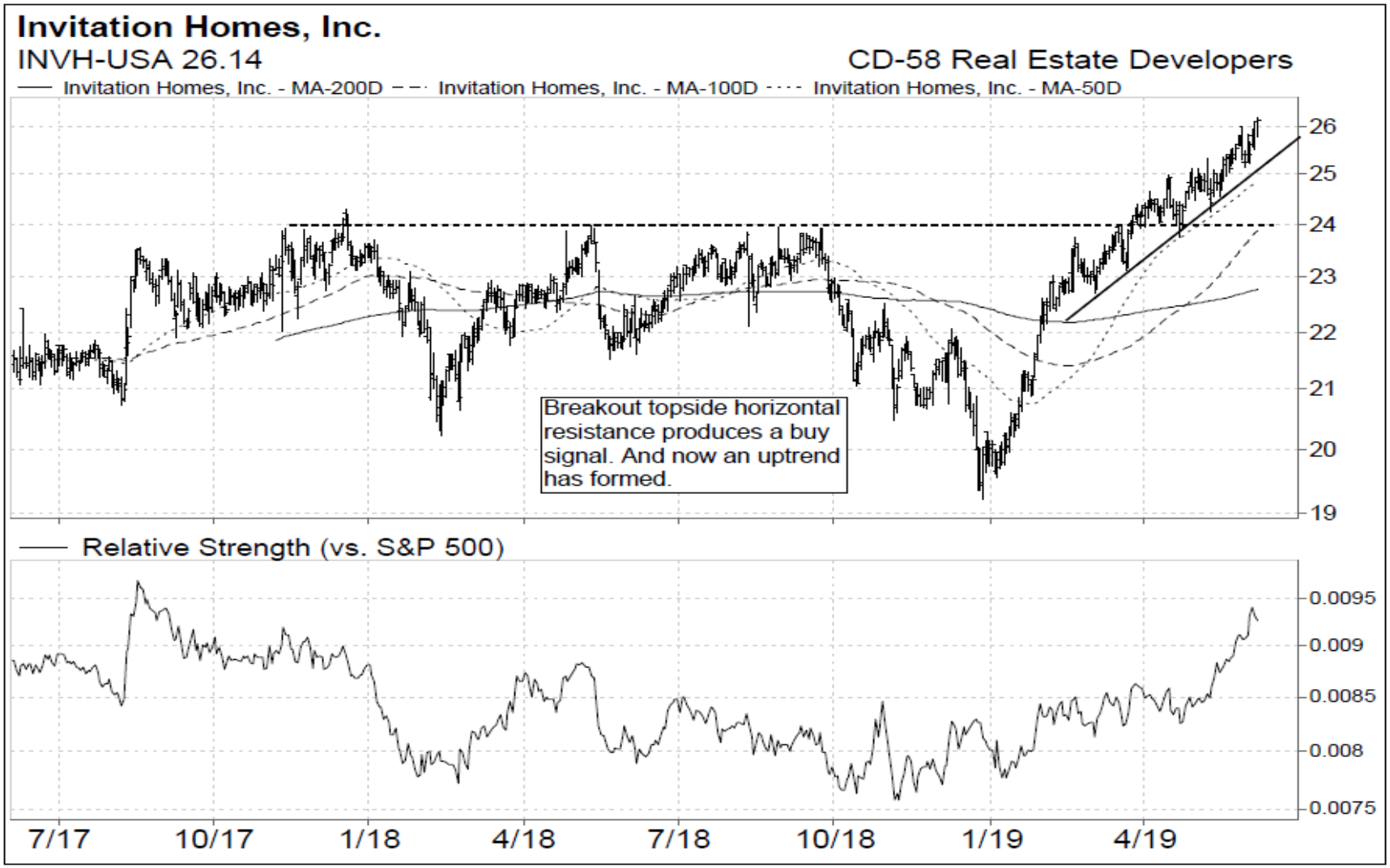
Breakout topside a base



Source: FactSet

VR

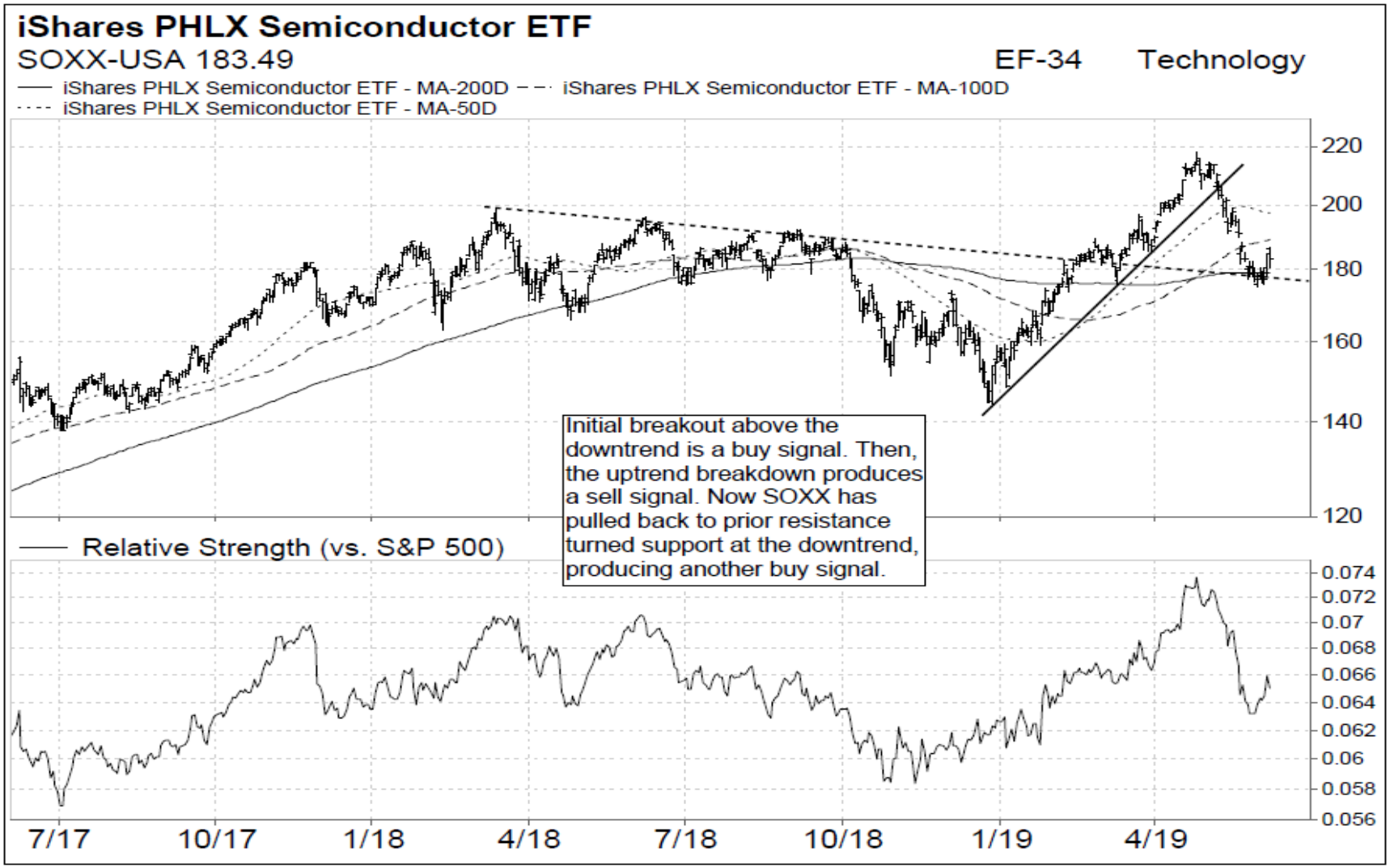
Breakout topside a base



Source: FactSet

VR

Uptrend breakdown and subsequent pullback to prior resistance turned support



Source: FactSet

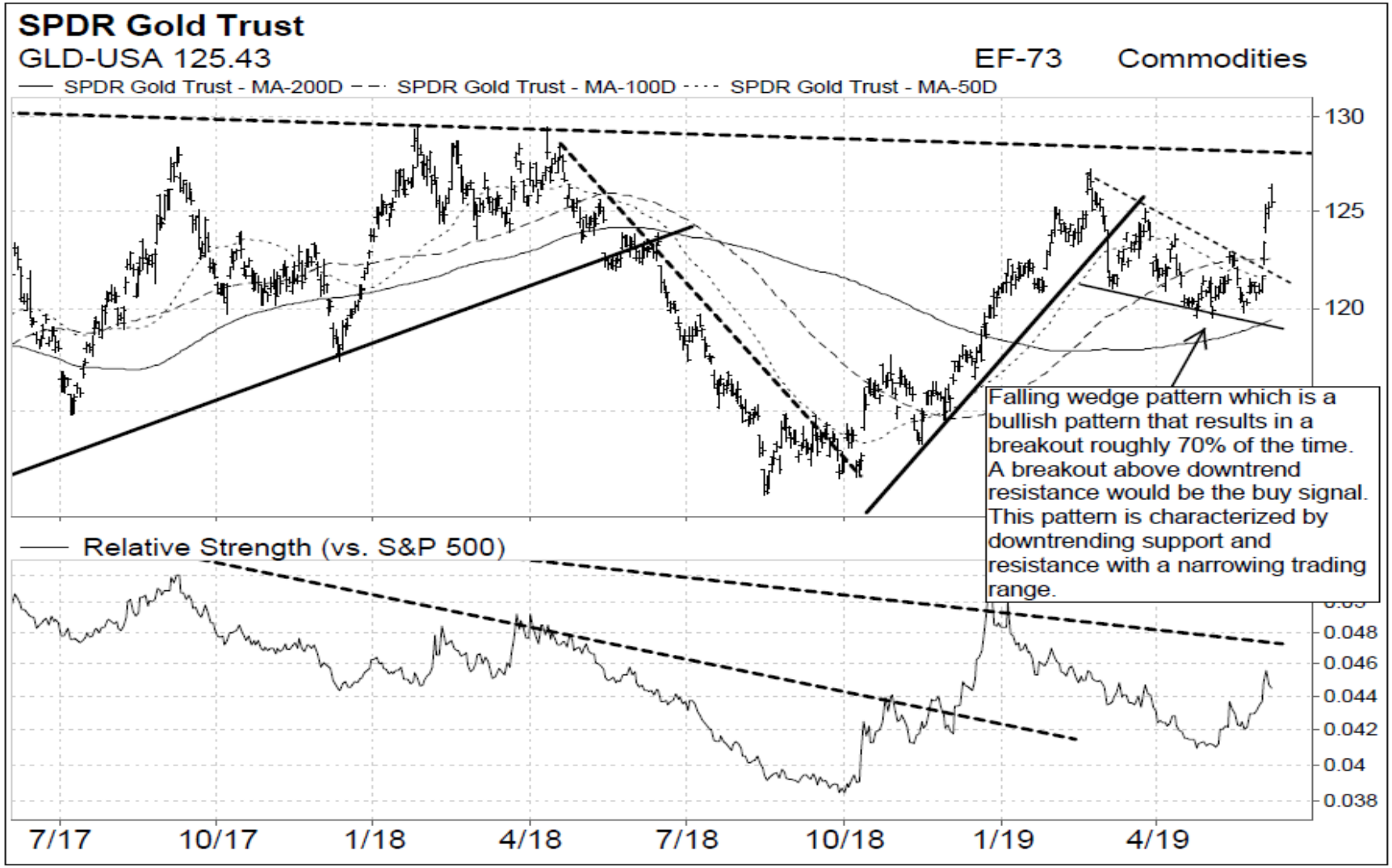
VR

Rising wedge

Source: FactSet

VR

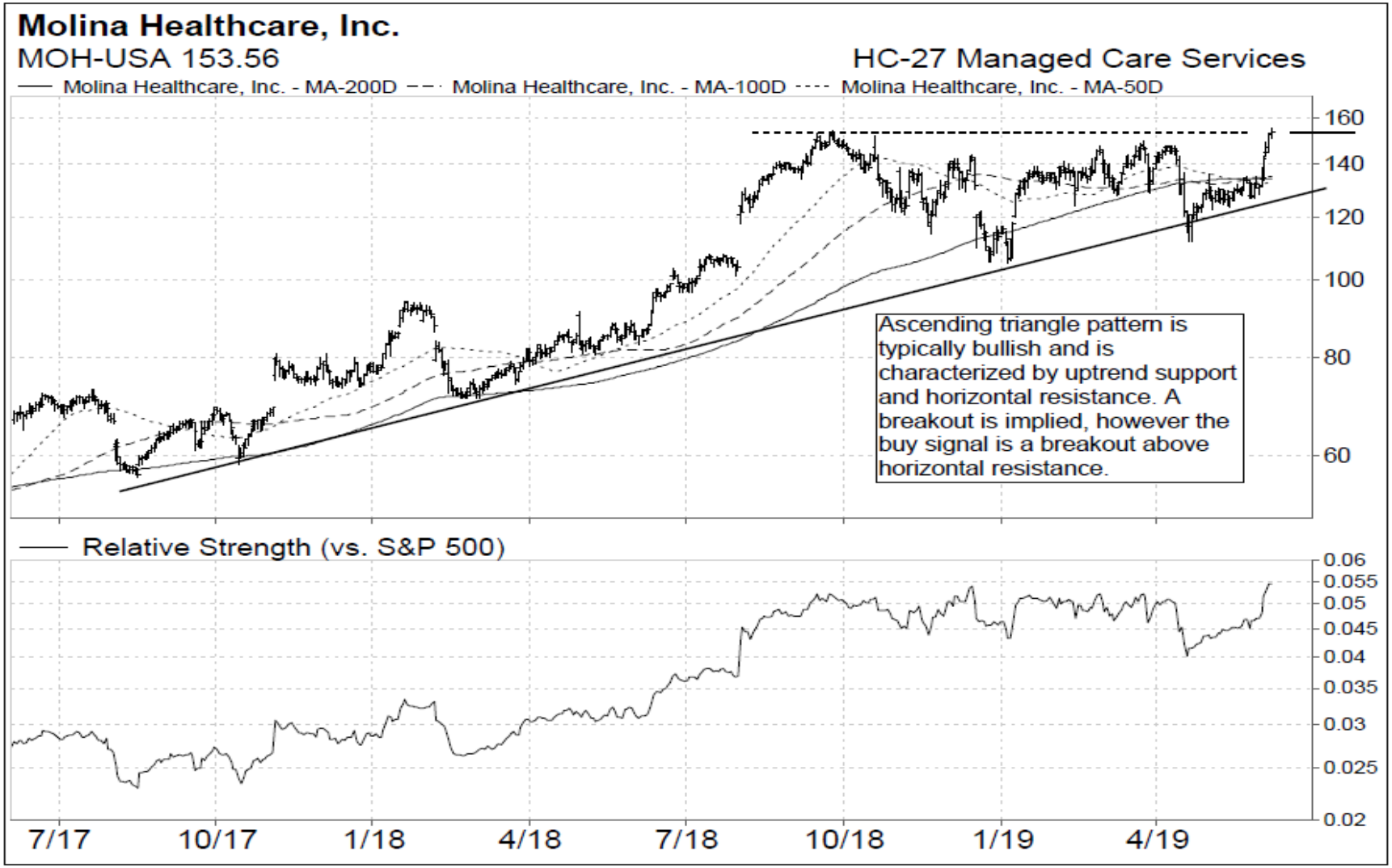
Falling wedge



Source: FactSet

VR

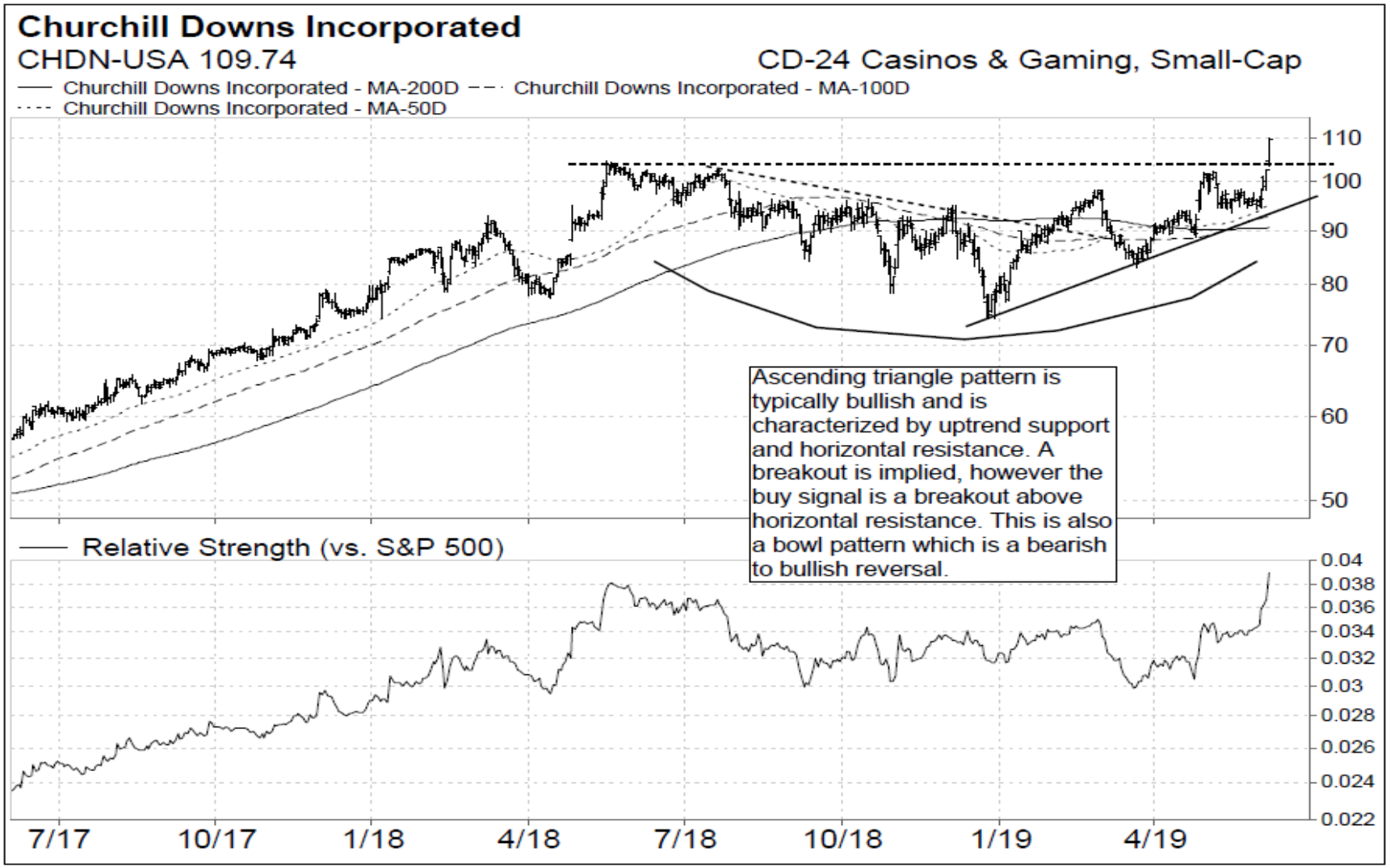
Ascending triangle



Source: FactSet

VR

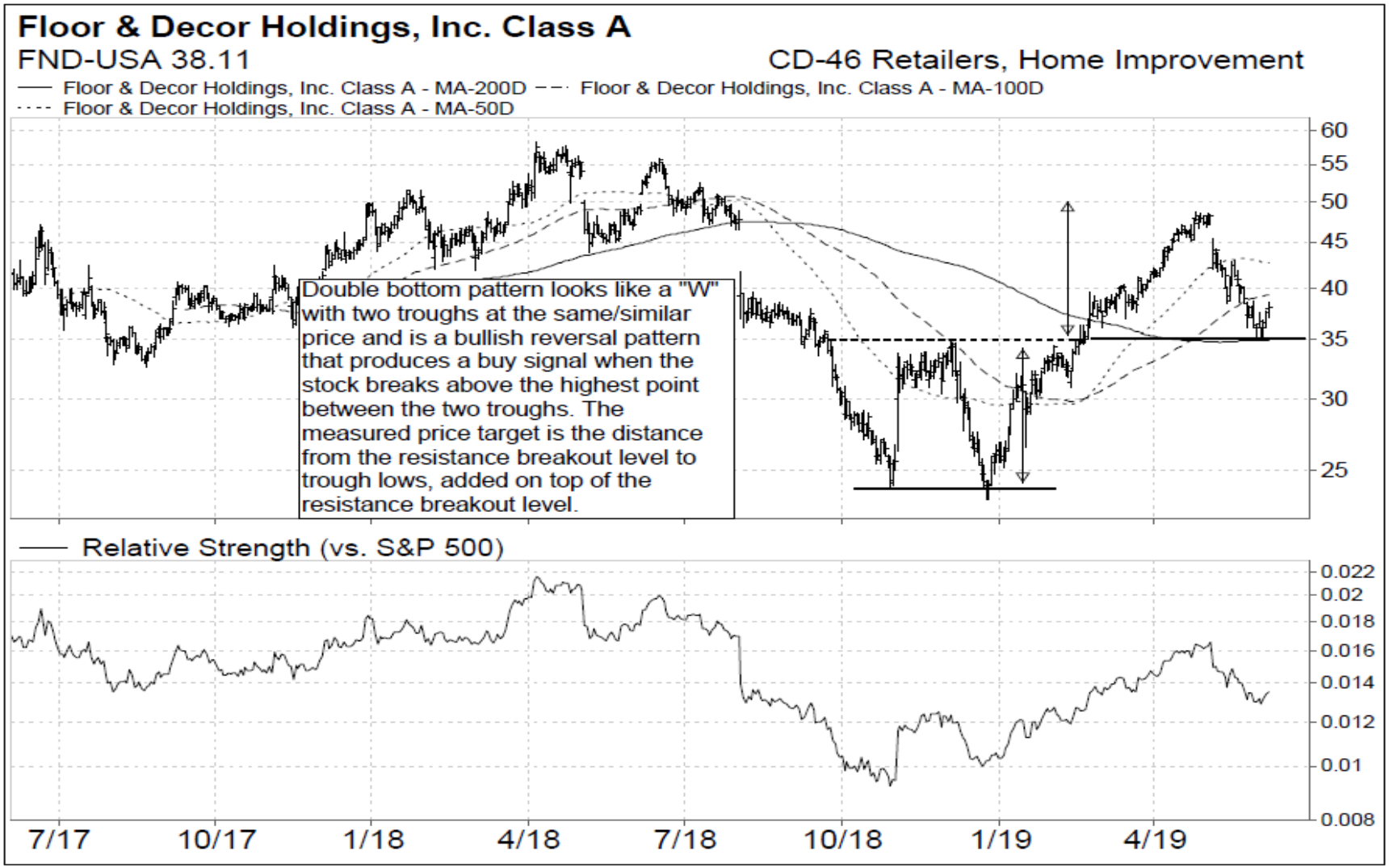
Ascending triangle



Source: FactSet

VR

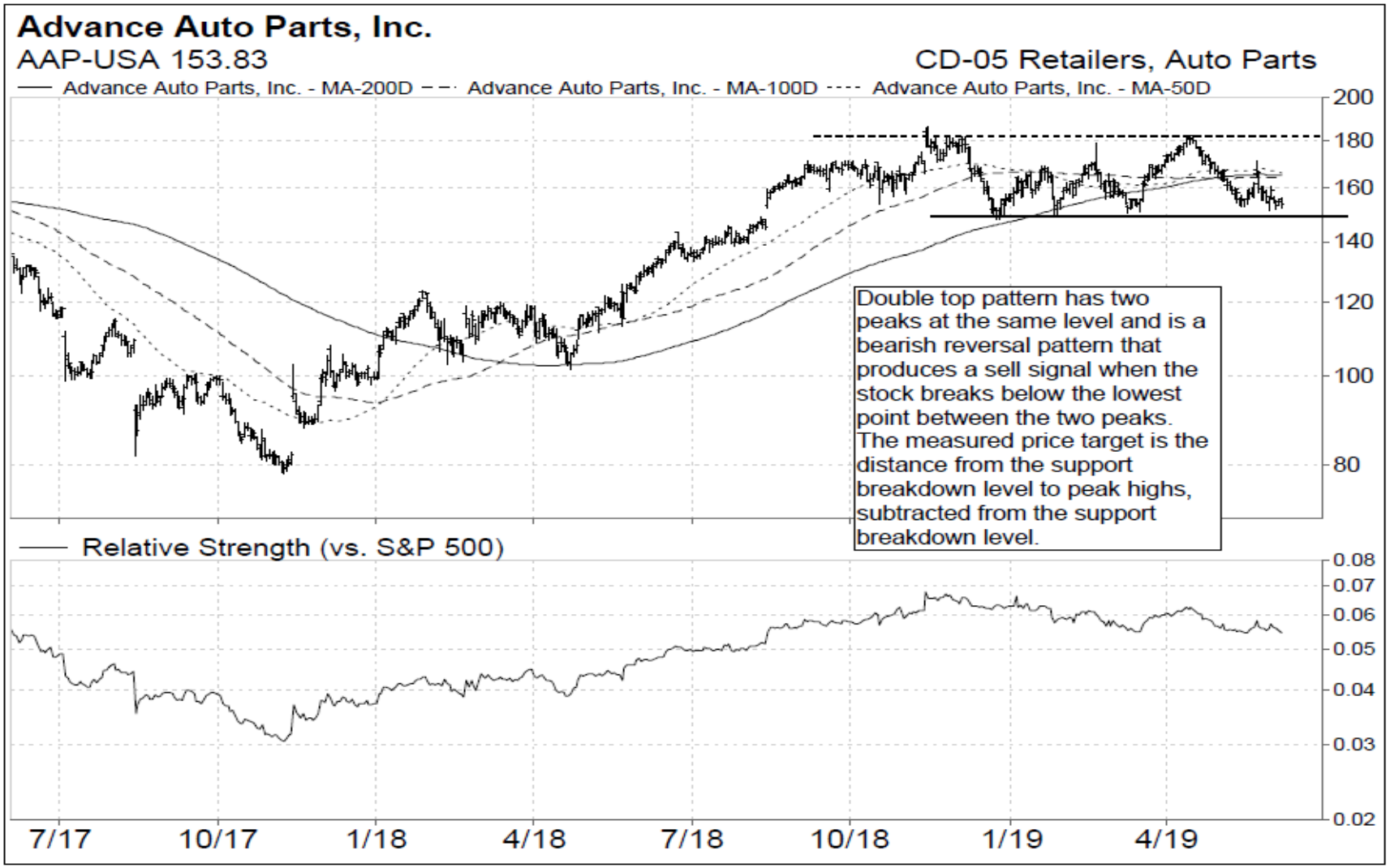
Double bottom, uptrend, uptrend breakdown, pullback to prior resistance turned support



Source: FactSet

VR

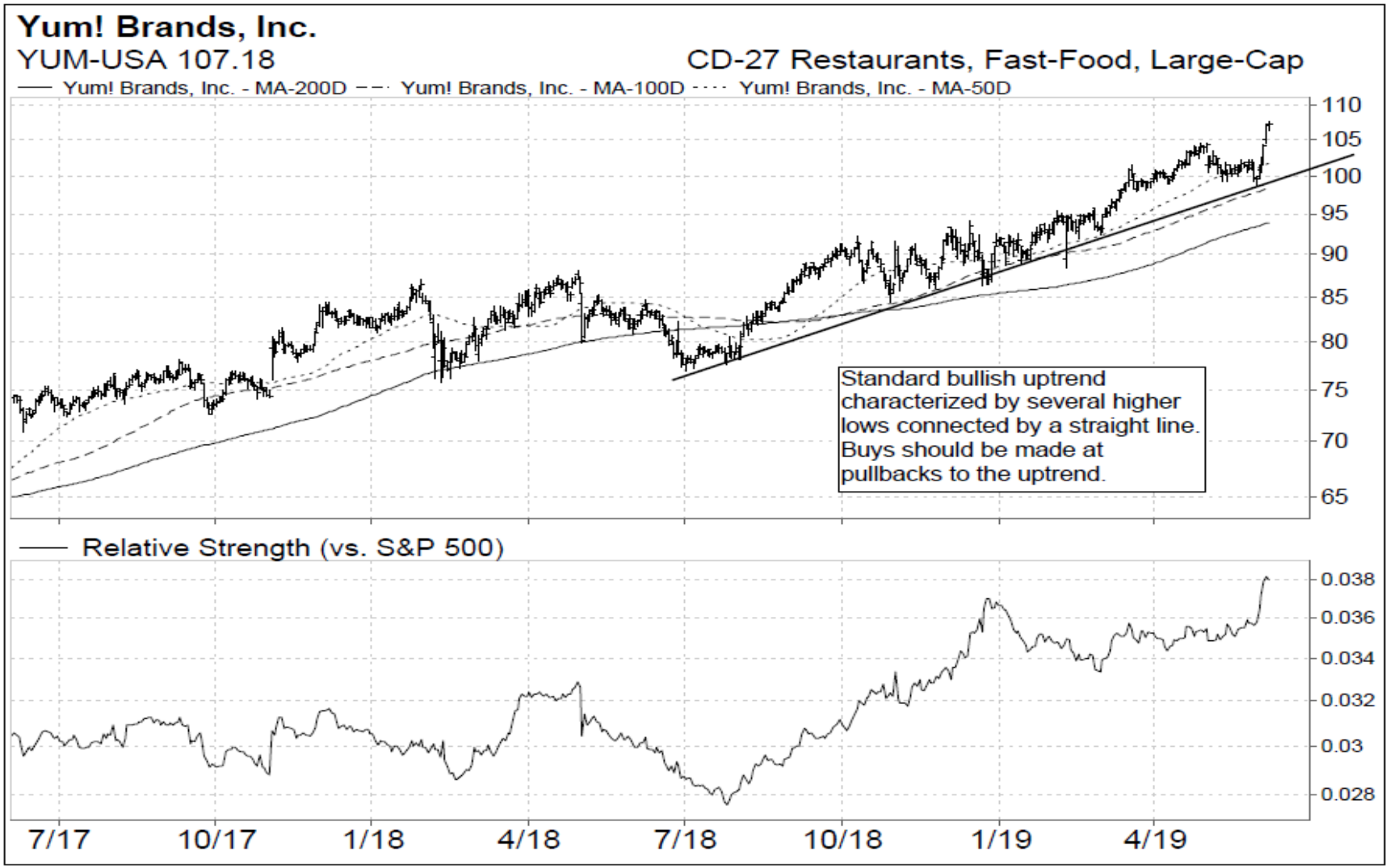
Double top



Source: FactSet

VR

Pullback to uptrend support



Source: FactSet

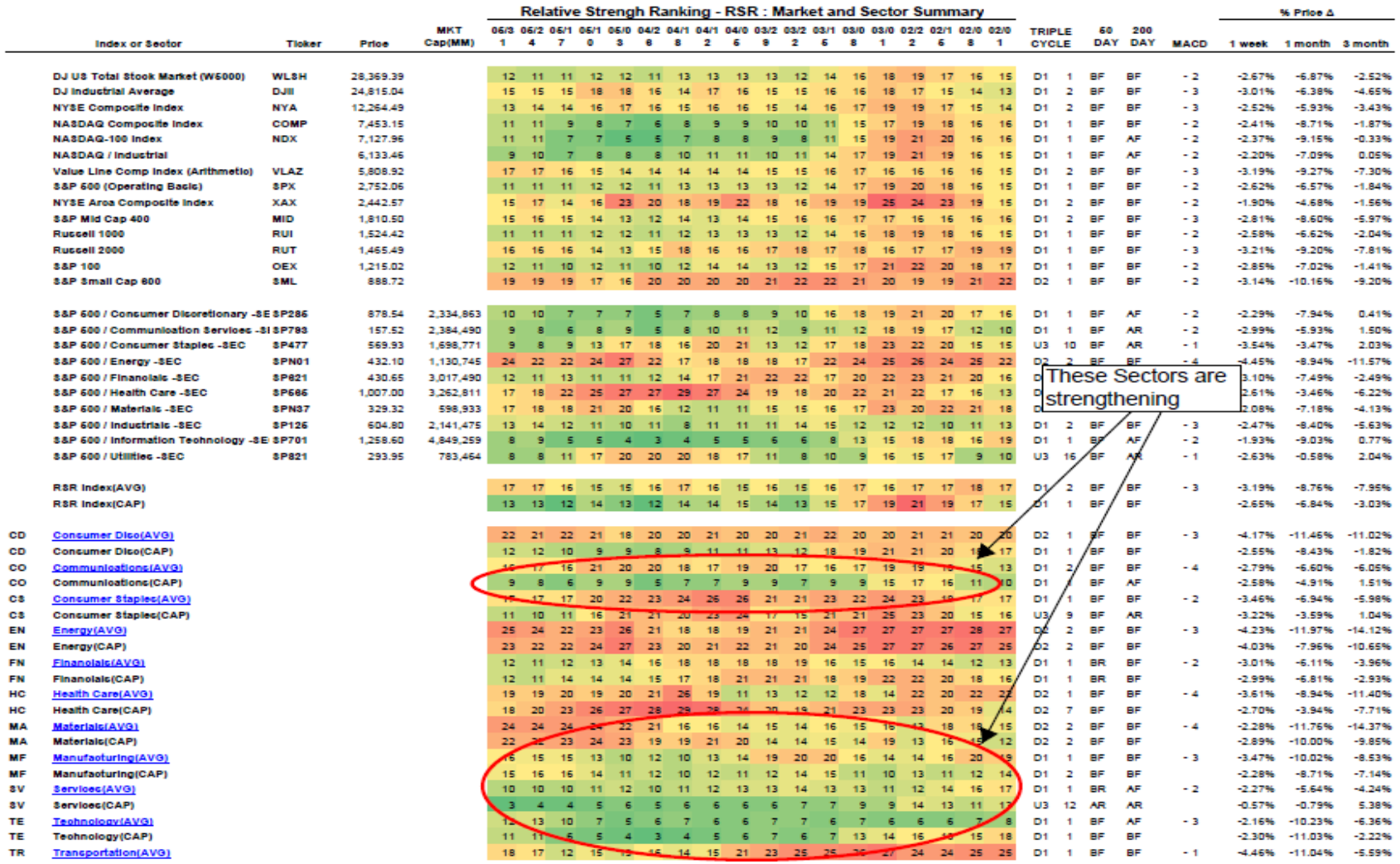
VR

Other Technical Analysis Tools: Relative Strength

- Relative Strength should not be confused with the Relative Strength Index (RSI).

- RSI is a technical momentum indicator, or more specifically an oscillator, which compares recent gains versus recent losses in an effort to determine oversold and overbought conditions. RS, on the other hand, is only concerned with gains and losses compared to the market and not to the individual security's price history, like the RSI.

Relative Strength Example – Services Sector

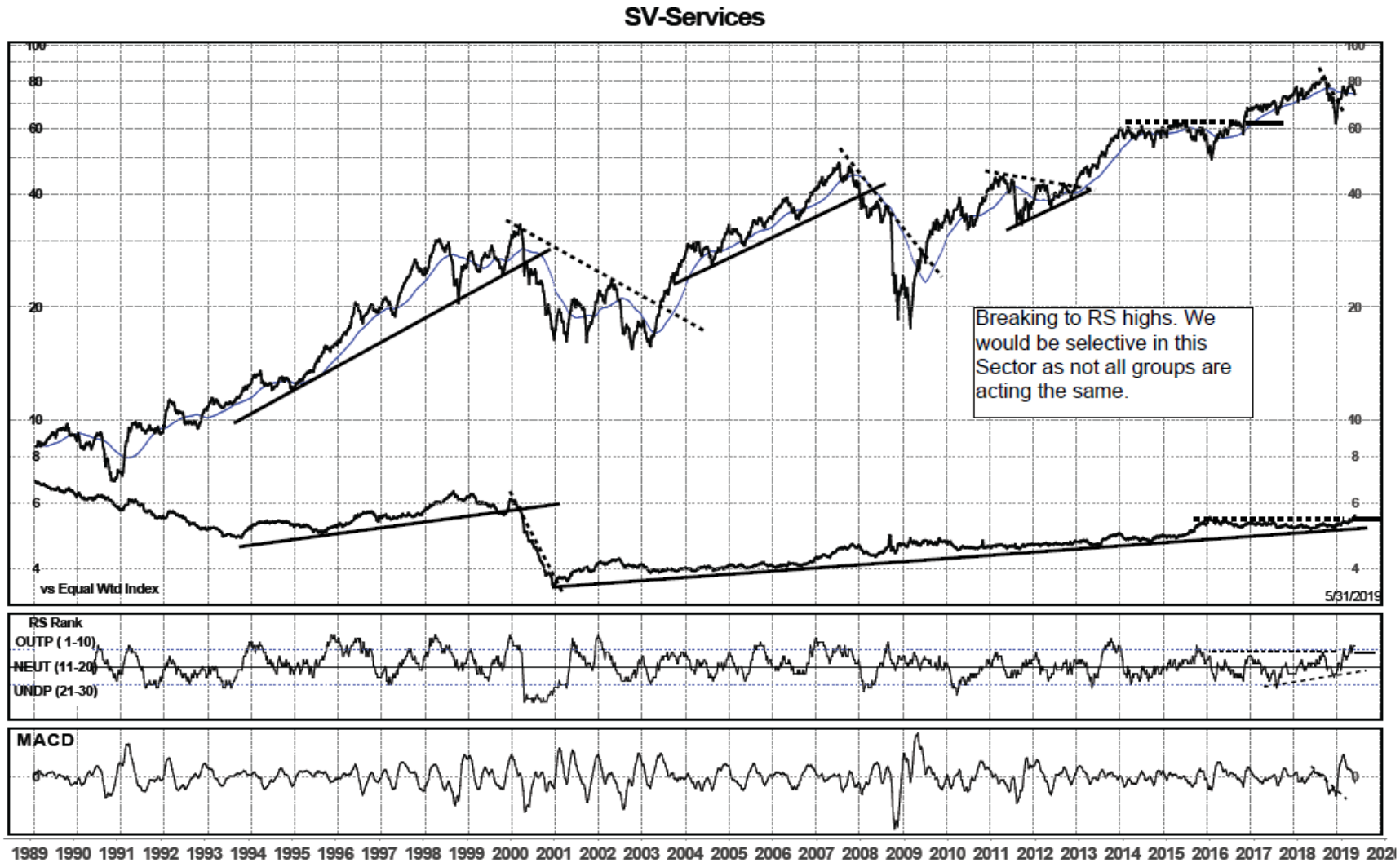


	Index or Sector	Ticker	Price	MKT Cap(MM)	Relative Strength Ranking - RSR : Market and Sector Summary																	TRIPLE CYCLE		50 DAY	200 DAY	MACD	% Price Δ 1 week	% Price Δ 1 month	% Price Δ 3 month
					06/31	06/24	05/17	05/10	05/03	04/26	04/18	04/12	04/05	03/29	03/22	03/15	03/08	03/01	02/22	02/15	02/08	02/01								
	DJ US Total Stock Market (W5000)	WLSH	28,369.39		12	11	11	12	12	11	13	13	13	13	12	14	16	18	19	17	16	15	D1	1	BF	BF	- 2	-2.67%	-6.87%	-2.52%
	DJ Industrial Average	DJII	24,815.04		15	15	15	18	18	16	14	17	16	15	15	16	16	18	17	15	14	13	D1	2	BF	BF	- 3	-3.01%	-6.38%	-4.65%
	NYSE Composite Index	NYA	12,264.49		13	14	14	16	17	16	15	16	16	15	14	16	17	19	19	17	15	14	D1	2	BF	BF	- 3	-2.52%	-5.93%	-3.43%
	NASDAQ Composite Index	COMP	7,453.15		11	11	9	8	7	6	8	9	9	10	10	11	15	17	19	18	16	16	D1	1	BF	BF	- 2	-2.41%	-8.71%	-1.87%
	NASDAQ-100 Index	NDX	7,127.96		11	11	7	7	5	5	7	8	8	9	8	11	15	19	21	20	16	16	D1	1	BF	AF	- 2	-2.37%	-9.15%	-0.33%
	NASDAQ / Industrial		6,133.46		9	10	7	8	8	8	10	11	11	10	11	14	17	19	21	19	16	15	D1	1	BF	AF	- 2	-2.20%	-7.09%	0.05%
	Value Line Comp Index (Arithmetic)	VLAZ	5,808.92		17	17	16	15	14	14	14	14	14	15	15	16	17	16	16	16	16	15	D1	2	BF	BF	- 3	-3.19%	-9.27%	-7.30%
	S&P 500 (Operating Basic)	SPX	2,752.06		11	11	11	12	12	11	13	13	13	13	12	14	17	19	20	18	16	15	D1	1	BF	BF	- 2	-2.62%	-6.57%	-1.84%
	NYSE Area Composite Index	XAX	2,442.57		15	17	14	16	23	20	18	19	22	18	16	19	19	25	24	23	19	15	D1	2	BF	BF	- 2	-1.90%	-4.68%	-1.56%
	S&P Mid Cap 400	MID	1,810.50		15	16	15	14	13	12	14	13	14	15	16	16	17	17	16	16	16	16	D1	2	BF	BF	- 3	-2.81%	-8.60%	-5.97%
	Russell 1000	RUI	1,524.42		11	11	11	12	12	11	12	13	13	13	12	14	16	18	19	18	16	15	D1	1	BF	BF	- 2	-2.58%	-6.62%	-2.04%
	Russell 2000	RUT	1,465.49		16	16	16	14	13	15	18	16	16	17	18	17	18	16	17	17	19	19	D1	1	BF	BF	- 3	-3.21%	-9.20%	-7.81%
	S&P 100	OEX	1,215.02		12	11	10	12	11	10	12	14	14	13	12	15	17	21	22	20	18	17	D1	1	BF	BF	- 2	-2.85%	-7.02%	-1.41%
	S&P Small Cap 600	SML	888.72		19	19	19	17	16	20	20	20	20	21	22	22	21	20	19	19	21	22	D2	1	BF	BF	- 2	-3.14%	-10.16%	-9.20%
	S&P 500 / Consumer Discretionary -SE	SP286	878.54	2,334,863	10	10	7	7	7	5	7	8	8	9	10	16	18	19	21	20	17	16	D1	1	BF	AF	- 2	-2.29%	-7.94%	0.41%
	S&P 500 / Communication Services -SI	SP783	157.52	2,384,490	9	8	6	8	9	5	8	10	11	12	9	11	12	18	19	17	12	10	D1	1	BF	AR	- 2	-2.99%	-5.93%	1.50%
	S&P 500 / Consumer Staples -SEC	SP477	569.93	1,698,771	9	8	9	13	17	18	16	20	21	13	12	17	18	23	22	20	15	15	U3	10	BF	AR	- 1	-3.54%	-3.47%	2.03%
	S&P 500 / Energy -SEC	SPN01	432.10	1,130,745	24	22	22	24	27	22	17	18	18	18	17	22	24	25	26	24	25	22	D2	2	BF	BF	- 4	-4.45%	-8.94%	-11.57%
	S&P 500 / Financials -SEC	SP821	430.65	3,017,490	12	11	13	11	11	12	14	17	21	22	22	17	20	22	23	21	20	16	D					3.10%	-7.49%	-2.49%
	S&P 500 / Health Care -SEC	SP686	1,007.00	3,262,811	17	18	22	25	27	27	29	27	24	19	18	20	22	21	22	17	16	13	D					2.61%	-3.46%	-6.22%
	S&P 500 / Materials -SEC	SPN37	329.32	598,933	17	18	18	21	20	16	12	11	11	15	15	16	17	23	20	22	21	18	D					2.08%	-7.18%	-4.13%
	S&P 500 / Industrials -SEC	SP126	604.80	2,141,475	13	14	12	11	10	11	8	11	11	11	14	15	12	12	12	10	11	13	D1	2	BF	BF	- 3	-2.47%	-8.40%	-5.63%
	S&P 500 / Information Technology -SE	SP701	1,258.60	4,849,259	8	9	5	5	4	3	4	5	5	6	6	8	13	15	18	18	16	19	D1	1	BF	AF	- 2	-1.93%	-9.03%	0.77%
	S&P 500 / Utilities -SEC	SP821	293.95	783,464	8	8	11	17	20	20	20	18	17	11	8	10	9	16	15	17	9	10	U3	16	BF	AR	- 1	-2.63%	-0.58%	2.04%
	RSR Index(AVG)				17	17	16	15	15	16	17	16	15	16	15	16	17	16	17	17	18	17	D1	2	BF	BF	- 3	-3.19%	-8.76%	-7.95%
	RSR Index(CAP)				13	13	12	14	13	12	14	14	15	14	13	15	17	19	21	19	17	15	D1	1	BF	BF		-2.65%	-6.84%	-3.03%
CD	Consumer Disc(AVG)				22	21	22	21	18	20	20	21	20	20	21	22	20	20	21	21	20	20	D2	1	BF	BF	- 3	-4.17%	-11.46%	-11.02%
CD	Consumer Disc(CAP)				12	12	10	9	9	8	9	11	11	13	12	18	19	21	21	20	18	17	D1	1	BF	BF		-2.55%	-8.43%	-1.82%
CO	Communications(AVG)				16	17	16	21	20	20	18	17	19	20	17	16	17	19	19	16	15	13	D1	2	BF	BF	- 4	-2.79%	-6.60%	-6.05%
CO	Communications(CAP)				9	8	6	9	9	5	7	7	9	9	7	9	9	15	17	16	11	10	D1	1	BF	AF		-2.58%	-4.91%	1.51%
CS	Consumer Staples(AVG)				17	17	17	20	22	23	24	26	26	21	21	23	22	24	23	19	17	17	D1	1	BF	BF	- 2	-3.46%	-6.94%	-5.98%
CS	Consumer Staples(CAP)				11	10	11	16	21	21	20	23	24	17	15	21	21	25	23	20	15	16	U3	9	BF	AR		-3.22%	-3.59%	1.04%
EN	Energy(AVG)				25	24	22	23	26	21	18	18	19	21	21	24	27	27	27	27	28	27	D2	2	BF	BF	- 3	-4.23%	-11.97%	-14.12%
EN	Energy(CAP)				23	22	22	24	27	23	20	21	22	21	20	24	25	27	27	26	27	25	D2	2	BF	BF		-4.03%	-7.96%	-10.65%
FN	Financials(AVG)				12	11	12	13	14	16	18	18	18	18	19	16	15	16	14	14	12	13	D1	1	BR	BF	- 2	-3.01%	-6.11%	-3.96%
FN	Financials(CAP)				12	11	14	14	14	15	17	18	21	21	21	18	19	22	22	20	18	16	D1	1	BR	BF		-2.99%	-6.81%	-2.93%
HC	Health Care(AVG)				19	19	20	19	20	21	26	19	11	13	12	12	18	14	22	20	22	22	D2	1	BF	BF	- 4	-3.61%	-8.94%	-11.40%
HC	Health Care(CAP)				18	20	23	26	27	28	29	28	26	20	19	21	23	23	23	20	19	14	D2	7	BF	BF		-2.70%	-3.94%	-7.71%
MA	Materials(AVG)				24	24	24	24	22	21	16	16	14	15	14	16	15	16	13	18	18	15	D2	2	BF	BF	- 4	-2.28%	-11.76%	-14.37%
MA	Materials(CAP)				22	22	23	24	23	19	19	21	20	14	14	15	14	19	13	16	15	12	D2	2	BF	BF		-2.89%	-10.00%	-9.85%
MF	Manufacturing(AVG)				16	15	15	13	10	12	10	13	14	19	20	20	16	14	14	16	20	19	D1	1	BF	BF	- 3	-3.47%	-10.02%	-8.53%
MF	Manufacturing(CAP)				15	16	16	14	11	12	10	12	11	12	14	15	11	10	13	11	12	14	D1	2	BF	BF		-2.28%	-8.71%	-7.14%
SV	Services(AVG)				10	10	10	11	12	10	11	12	13	13	14	13	13	11	12	14	16	17	D1	1	BR	AF	- 2	-2.27%	-5.64%	-4.24%
SV	Services(CAP)				3	4	4	5	6	5	6	6	6	6	7	7	9	9	14	13	11	12	U3	12	AR	AR		-0.57%	-0.79%	5.38%
TE	Technology(AVG)				12	13	10	7	5	6	7	6	6	7	7	6	7	6	6	6	7	8	D1	1	BF	AF	- 3	-2.16%	-10.23%	-6.36%
TE	Technology(CAP)				11	11	6	5	4	3	4	5	6	7	6	7	13	14	16	16	15	18	D1	1	BF	BF		-2.30%	-11.03%	-2.22%
TR	Transportation(AVG)				18	17	12	15	13	16	14	15	21	23	25	25	26	27	24	24	25	25	D1	1	BF	BF	- 1	-4.46%	-11.04%	-6.59%

Source: Vermilion Research

VR

Relative Strength Example – Services Sector



Source: Vermilion Research

VR

Relative Strength Example – Services Sector

Group or Corp	Ticker	Price	MKT Cap(MM)	Relative Strengh Ranking - RSR : Sorted By Sector																	TRIPLE CYCLE	50 DA	200 DA	MACD	% Price Δ		
				05/3 1	05/2 4	05/1 7	05/1 0	05/0 3	04/2 6	04/1 8	04/1 2	04/0 5	03/2 9	03/2 2	03/2 5	03/1 8	03/0 1	03/0 2	02/2 5	02/1 8	02/0 1					1 week	1 month	3 month
SV	Services			10	10	10	11	12	10	11	12	13	13	14	13	13	11	12	14	16	17	D1	1	BR	AF	- 2	-2.3%	-5.6%	-4.2%
SV	Services(CAP)			3	4	4	5	6	5	6	6	6	6	7	7	9	9	14	13	11	13	U3	12	AR	AR	- 1	-0.6%	-0.8%	5.4%
SV-01	Data Processing & Outsourcing Svcs., Large-Cap			2	3	3	4	4	4	5	4	4	3	4	5	6	7	12	10	8	12	U3	13	AR	AR	- 2	-0.8%	-0.7%	5.6%
SV-02	Data Processing & Outsourcing Svcs., Mid-Cap			9	10	11	14	7	5	8	7	7	8	10	8	12	14	18	20	17	21	D1	2	BF	BF	- 3	-1.7%	-7.2%	-3.1%
SV-03	Data Processing & Outsourcing Svcs., Small-Cap			9	9	12	15	10	10	16	18	14	15	17	18	18	20	14	18	18	26	D1	1	BR	AF	- 1	-1.7%	-5.3%	-1.2%
SV-04	IT Consulting, Gov't/Global, Large-Cap			4	5	8	13	14	7	9	6	6	6	8	10	12	14	17	15	12	13	D1	2	BR	AR	- 3	-0.9%	0.6%	3.8%
SV-05	IT Consulting, Gov't/Global, Small-Cap			6	7	6	4	4	6	10	10	10	9	6	7	6	6	7	4	6	7	U3	13	BR	AF	- 2	-1.4%	-6.3%	-1.9%
SV-06	Research & Consulting Services			10	11	14	19	16	11	12	13	15	11	13	13	11	11	11	11	10	12	D1	2	BR	AF	- 4	-1.5%	-3.8%	-2.7%
SV-07	Human Resources & Employment Svcs., Large-Cap			10	7	7	7	7	4	2	4	3	3	5	3	4	3	4	5	7	13	D1	2	BF	AF	- 4	-4.5%	-7.9%	-6.9%
SV-08	Human Resources & Employment Svcs., Small-Cap			13	9	6	5	8	6	7	5	6	8	9	5	4	3	3	3	13	16	D1	1	BF	BF	- 3	-4.8%	-8.9%	-11.7%
SV-09	Advertising Agencies, Large-Cap			17	20	20	20	24	19	16	25	26	27	19	17	17	17	18	16	12	8	D2	1	BF	BF	- 3	-2.0%	-6.2%	-7.0%
SV-10	Advertising Agencies, Small-Cap			5	3	2	3	25	23	19	17	12	15	22	25	23	15	14	24	22	21	U3	9	BR	AF	+ 21	-4.8%	5.3%	-0.1%
SV-11	Commercial Printing			28	28	29	29	28	25	26	27	24	26	26	27	26	23	12	13	17	24	D3	2	BF	BF	- 5	-5.0%	-14.2%	-22.4%
SV-12	Office Services & Supplies			23	22	23	25	25	23	21	24	26	24	25	24	22	22	15	18	18	19	D2	2	BF	BF	- 4	-4.5%	-9.2%	-12.5%
SV-13	Construction & Engineering, Large-Cap			11	15	18	15	20	10	10	13	15	21	21	22	24	26	20	24	26	26	D1	2	BF	BF	- 2	-1.0%	-4.4%	-2.5%
SV-14	Construction & Engineering, Small-Cap			13	16	11	9	11	20	14	22	22	23	23	20	20	18	23	25	26	25	D1	1	BR	BF	- 1	-1.5%	-8.5%	-7.2%
SV-15	Waste Services, Large-Cap			4	8	7	10	12	7	6	7	5	4	7	9	8	9	18	14	11	12	D1	2	BR	AR	- 3	0.4%	-1.1%	2.6%
SV-16	Waste Services, Small-Cap			5	7	7	3	5	5	7	10	11	12	10	8	9	13	20	21	21	18	D1	1	BR	AF	- 2	-1.2%	-6.0%	0.6%
SV-17	Uniforms/Facilities Mgt.			9	11	12	16	18	17	14	19	22	20	24	25	23	23	22	23	23	23	U3	8	BR	BF	+ 20	-0.6%	-2.7%	-1.3%
SV-18	Correctional Facilities			4	5	12	20	24	29	29	29	29	30	29	30	27	21	14	20	7	15	U2	3	AR	AF	+ 5	-0.8%	4.1%	-0.9%
SV-19	Security Services			3	3	3	2	4	3	2	2	4	2	6	4	6	5	5	4	5	11	U3	14	BR	AR	- 2	-1.2%	-2.9%	3.9%
SV-20	Tax Preparation Services			16	18	23	25	29	30	29	29	29	29	28	29	26	27	25	25	20	17	U1	3	AR	BF	+ 4	-2.3%	3.9%	-2.2%
SV-21	Auctions			2	2	4	4	5	5	4	6	10	10	12	13	9	9	13	12	14	17	U3	12	AR	AF	+ 21	-2.8%	-0.8%	4.6%
SV-22	Death Services			24	23	25	22	26	24	18	21	24	22	24	24	18	19	18	20	22	28	D2	2	BF	BF	- 3	-4.4%	-10.7%	-17.2%
SV-23	Educations Svcs., China			26	28	27	27	22	6	7	13	23	18	21	21	12	8	13	19	11	10	D2	2	BF	BF	- 4	0.2%	-14.5%	-17.6%
SV-24	Transactions Systems			1	1	1	1	1	1	1	1	1	1	1	1	3	2	2	10	27	16	U3	12	BR	AF	- 1	-6.4%	-5.2%	13.8%
SV-25	Marketing/Merchandising/Digital			10	11	10	16	11	13	15	20	15	3	2	2	1	2	3	3	4	3	D1	8	BF	AR	- 9	-1.5%	-4.1%	-5.9%

Source: Vermilion Research

VR

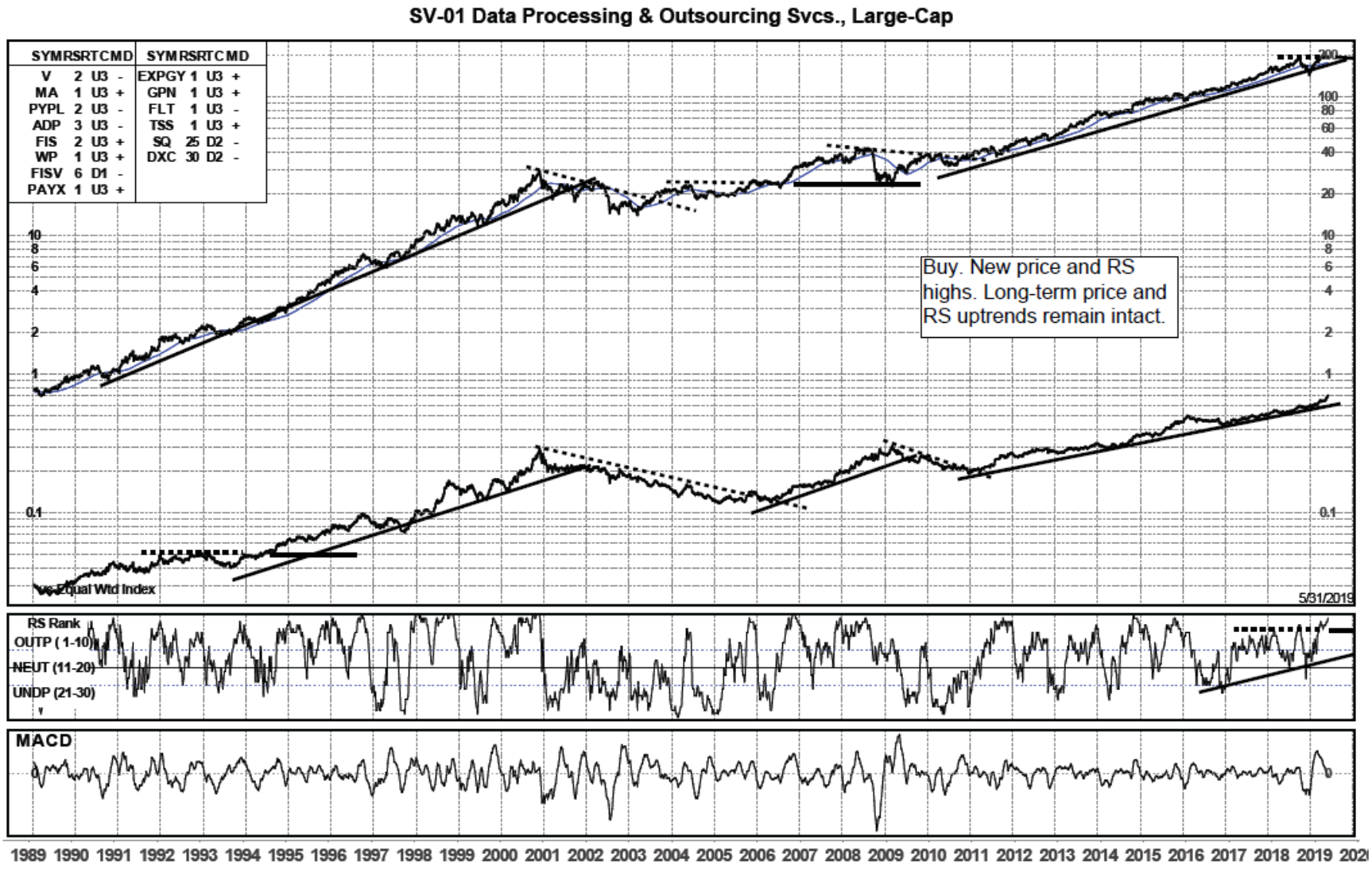
Relative Strength Example – Services Sector

	Group or Corp	Ticker	Price	MKT Cap(MM)	Relative Strengh Ranking - RSR : Sorted By Sector																		TRIPLE CYCLE		50 DAY	200 DAY	MACD	% Price Δ		
					05/3 1	05/2 4	05/1 7	05/1 0	05/0 3	04/2 6	04/1 8	04/1 2	04/0 5	03/2 9	03/2 2	03/1 6	03/0 8	03/0 1	02/2 2	02/1 5	02/0 8	02/0 1						1 week	1 month	3 month
SV-01	Data Processing & Outsourcing Svcs., Large-Cap				2	3	3	4	4	4	5	4	4	3	4	5	6	7	12	10	8	12								
	Visa Inc. Class A	V	161.33	280,551	2	3	3	4	5	4	5	5	6	5	5	5	8	10	16	14	14	13	U3	13	AR	AR	- 1	-0.8%	-0.3%	8.1%
	Mastercard Incorporated Class A	MA	251.49	253,970	1	2	1	2	2	2	3	3	3	2	3	3	4	5	7	5	4	4	U3	13	AR	AR	+ 20	0.0%	1.4%	10.8%
	PayPal Holdings Inc	PYPL	109.75	128,949	2	2	1	2	1	1	2	2	2	1	1	3	3	3	6	5	5	6	U3	17	AR	AR	- 1	-0.1%	-2.0%	11.1%
	Automatic Data Processing, Inc.	ADP	160.12	69,689	3	4	4	5	9	4	4	4	5	3	5	5	7	7	8	8	7	11	U3	12	BR	AR	- 3	-1.1%	0.0%	4.6%
	Fidelity National Information Services, Inc.	FIS	120.30	38,933	2	4	4	7	9	21	18	14	13	9	10	16	19	21	23	15	8	10	U3	13	AR	AR	+ 20	1.3%	2.2%	11.4%
	Worldpay, Inc. Class A	WP	121.64	37,857	1	1	1	1	1	1	1	1	1	1	1	3	3	4	22	20	20	22	U3	11	AR	AR	+ 19	1.4%	1.9%	24.5%
	Fiserv, Inc.	FISV	85.86	33,695	6	8	7	15	15	17	15	14	5	5	7	7	6	7	9	5	3	4	D1	1	BR	AR	- 7	-1.2%	-1.0%	-0.6%
	Paychex, Inc.	PAYX	85.79	30,832	1	1	1	2	3	3	4	3	3	2	3	3	3	4	7	4	3	6	U3	14	AR	AR	+ 20	-0.4%	2.2%	11.6%
	Experian PLC Sponsored ADR	EXPGY	30.09	27,379	1	2	3	5	4	4	4	4	8	6	5	5	6	10	6	7	5	5	U3	18	AR	AR	+ 23	1.6%	3.5%	15.3%
	Global Payments Inc.	GPN	154.04	24,212	1	1	1	1	1	1	1	2	2	1	1	2	1	2	4	6	12	13	U3	13	AR	AR	+ 21	0.4%	5.6%	17.2%
	FleetCor Technologies, Inc.	FLT	258.21	22,256	1	1	1	1	1	1	1	1	1	1	1	2	2	2	4	3	3	11	U3	14	AR	AR	- 1	-3.2%	0.2%	10.7%
	Total System Services, Inc.	TSS	123.53	21,858	1	1	3	4	4	5	5	7	9	10	10	11	11	11	16	15	10	11	U3	12	AR	AR	+ 20	8.9%	21.0%	29.9%
	Square, Inc. Class A	SQ	61.95	20,832	25	24	26	28	27	22	23	12	12	10	9	8	11	9	15	14	12	18	D2	3	BF	BF	- 7	-4.2%	-9.6%	-20.0%
	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]																		D2	3	BF	BF	- 4	-10.4%	-24.6%	-29.1%
SV-04	IT Consulting, Govt/Global, Large-Cap				4	5	8	13	14	7	9	6	6	6	8	10	12	14	17	15	12	13	D1	2	BR	AR	- 3	-0.9%	0.6%	3.8%
	Accenture Plc Class A	ACN	178.07	113,579	2	3	3	6	7	4	4	4	4	3	10	11	13	16	21	20	18	18	U3	11	AR	AR	- 1	-0.4%	0.6%	9.3%
	Infosys Limited Sponsored ADR	INFY	10.47	45,743	11	19	22	24	26	19	21	19	5	7	5	8	8	6	10	5	2	2	D2	2	BF	AR	- 8	2.3%	1.4%	-3.4%
	Equinix, Inc.	EQIX	485.79	40,840	1	1	1	2	2	5	6	2	2	2	1	4	3	6	8	8	14	13	U3	12	AR	AR	+ 20	-2.2%	2.4%	12.8%
	Cognizant Technology Solutions Corporation Class A	CTSH	61.93	35,256	24	27	30	30	30	16	21	14	14	14	15	16	15	20	19	13	8	15	D3	1	BF	BF	- 5	0.1%	4.9%	-13.9%
	Wipro Limited Sponsored ADR	WIT	4.42	26,670	4	5	4	4	10	6	8	11	22	21	15	19	18	9	8	6	3	2	U3	7	AR	AR	+ 8	-0.5%	0.2%	4.5%
	CGI Inc. Class A	GIB	72.86	17,872	3	4	4	6	9	9	9	11	11	8	9	10	11	12	12	11	5	5	U3	17	AR	AR	+ 21	-0.3%	1.0%	8.5%
	Gartner, Inc.	IT	151.30	13,631	5	5	6	8	6	6	7	5	8	8	12	18	20	22	25	21	20	20	D1	1	BR	AR	- 2	-1.8%	-5.4%	4.4%
SV-05	IT Consulting, Govt/Global, Small-Cap				6	7	5	4	4	6	10	10	10	9	8	7	6	6	7	4	6	7	U3	13	BR	AF	- 2	-1.4%	-6.3%	-1.9%
	Leidos Holdings, Inc.	LDOS	75.33	10,863	1	1	1	1	1	8	10	11	13	11	11	16	15	13	16	17	15	24	U3	10	AR	AR	+ 19	-1.2%	1.2%	16.5%
	EPAM Systems, Inc.	EPAM	172.59	9,429	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	D1	1	AR	AR	- 4	3.2%	-2.7%	5.5%
	Booz Allen Hamilton Holding Corporation Class A	BAH	63.17	8,846	1	1	1	2	3	4	7	3	2	2	2	3	5	7	6	5	2	5	U3	13	AR	AR	+ 18	1.3%	5.5%	18.0%
	CACI International Inc Class A	CACI	203.52	5,062	1	1	1	1	1	6	8	8	9	8	8	7	7	7	9	10	9	17	U3	11	AR	AR	+ 18	-0.9%	-0.6%	10.4%
	MAXIMUS, Inc.	MMS	71.25	4,547	9	12	14	14	16	15	20	23	18	13	12	12	11	10	9	4	6	4	U3	7	BR	AR	- 3	-0.5%	-3.2%	0.0%
	Science Applications International Corp.	SAIC	76.74	4,542	3	3	4	6	14	15	17	13	10	5	15	14	14	9	10	8	17	25	U3	4	AR	AF	+ 20	-2.5%	2.3%	1.9%
	LiveRamp Holdings, Inc.	RAMP	51.38	3,544	8	4	3	1	1	1	2	2	3	1	1	1	1	1	1	1	19	18	D1	2	BF	AR	- 4	-5.6%	-11.7%	-5.9%
	Globant SA	GLOB	92.84	3,370	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	U3	19	AR	AR	+ 26	3.8%	10.1%	31.5%
	ManTech International Corporation Class A	MANT	61.37	1,638	2	3	3	3	3	8	23	25	27	24	26	27	24	27	28	18	14	17	U3	7	AR	AF	+ 9	-0.3%	-3.9%	12.2%
	Luxoft Holding, Inc. Class A	LXFT	57.57	1,308	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	D1	4	BF	AR	- 9	0.2%	-1.9%	-1.5%
	Virtusa Corporation	VRTU	42.40	1,278	27	27	28	4	3	4	7	2	4	2	4	2	8	10	12	9	8	10	D2	1	BF	BF	- 3	-2.9%	-23.3%	-16.5%
	Presidio, Inc.	PSDO	13.25	1,097	24	25	24	25	21	22	26	24	23	17	20	17	4	2	4	3	5	2	D3	1	BF	BF	- 11	-2.6%	-12.5%	-21.0%
	Forrester Research, Inc.	FORR	45.53	839	17	17	16	8	6	7	9	11	8	7	6	4	4	3	4	4	8	12	D1	2	BF	BF	- 3	-2.5%	-11.6%	-8.9%
	Formula Systems (1985) Ltd. Sponsored ADR	FORTY	47.09	720	2	1	1	3	1	2	1	1	1	1	3	6	8	9	12	21	14	8	U3	13	BR	AR	- 1	-4.0%	-4.4%	11.3%
	Unisys Corporation	UIS	9.70	502	29	30	30	30	30	30	30	30	30	30	30	28	29	29	29	29	30	30	D3	10	BF	BF	- 9	-0.9%	-7.3%	-29.0%
	Hackett Group, Inc.	HCKT	16.09	479	17	21	24	27	30	30	30	30	30	30	29	29	29	30	29	11	9	18	U1	2	AR	BF	+ 4	-0.9%	3.1%	-2.1%
	Vectrus Inc	VEC	35.29	403	1	1	1	1	1	1	1	2	4	13	14	15	7	7	11	8	24	24	U3	11	BR	AR	+ 21	-2.5%	-16.0%	24.6%
	Safeguard Scientifics, Inc.	SFE	12.01	247	1	1	1	2	1	3	3	2	3	2	5	2	1	2	4	2	3	8	U3	17	AR	AR	+ 28	-1.1%	2.5%	11.2%
	FRONTEO, Inc. Sponsored ADR	FTEO	7.05	134	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	28	27	D3	16	BF	BF	- 16	0.0%	-22.8%	-38.2%
	Performant Financial Corporation	PFMT	1.61	86	29	30	30	29	28	20	4	4	1	5	3	8	5	2	1	1	1	1	D3	2	BF	BF	- 11	5.9%	-13.9%	-27.1%
	NetSol Technologies, Inc.	NTWK	5.88	69	28	29	14	11	9	14	29	28	29	28	10	5	1	2	13	22	21	8	D2	1	BF	BF	- 10	1.2%	-21.6%	-26.7%
	Computer Task Group, Incorporated	CTG	4.20	60	16	17	11	14	15	20	27	29	28	24	26	29	29	29	29	28	28	29	U3	2	BR	BF	+ 23	-2.3%	-8.3%	0.5%
	RCM Technologies, Inc.	RCMT	3.30	42	28	24	26	24	24	27	18	15	16	18	12	25	23	3	5	1	3	19	D2	3	BF	BF	- 6	-9.3%	-16.9%	-27.5%
	Tapping Inc.	TAOP	0.81	34	30	30	30	30	30	30	29	30	30	30	30	30	29	29	28	29	28	28	D3	17	BF	BF	- 3	-5.6%	-20.6%	-26.4%
	ModSys International Ltd.	MDSYF	0.95	21	23	27	29	29	30	30	29	30	30	22	29	30	27	28	29	29	26	29	D3	12	BF	BF	+ 2	0.0%	5.0%	-14.9%
	TSR, Inc.	TSRI	4.99	10	17	20	22	28	28	29	29	29	29	26	29	29	27	29	29	26	28	24	D3	6	BR	BF	+ 3	-1.1%	0.7%	-6.3%

Source: Vermilion Research

VR

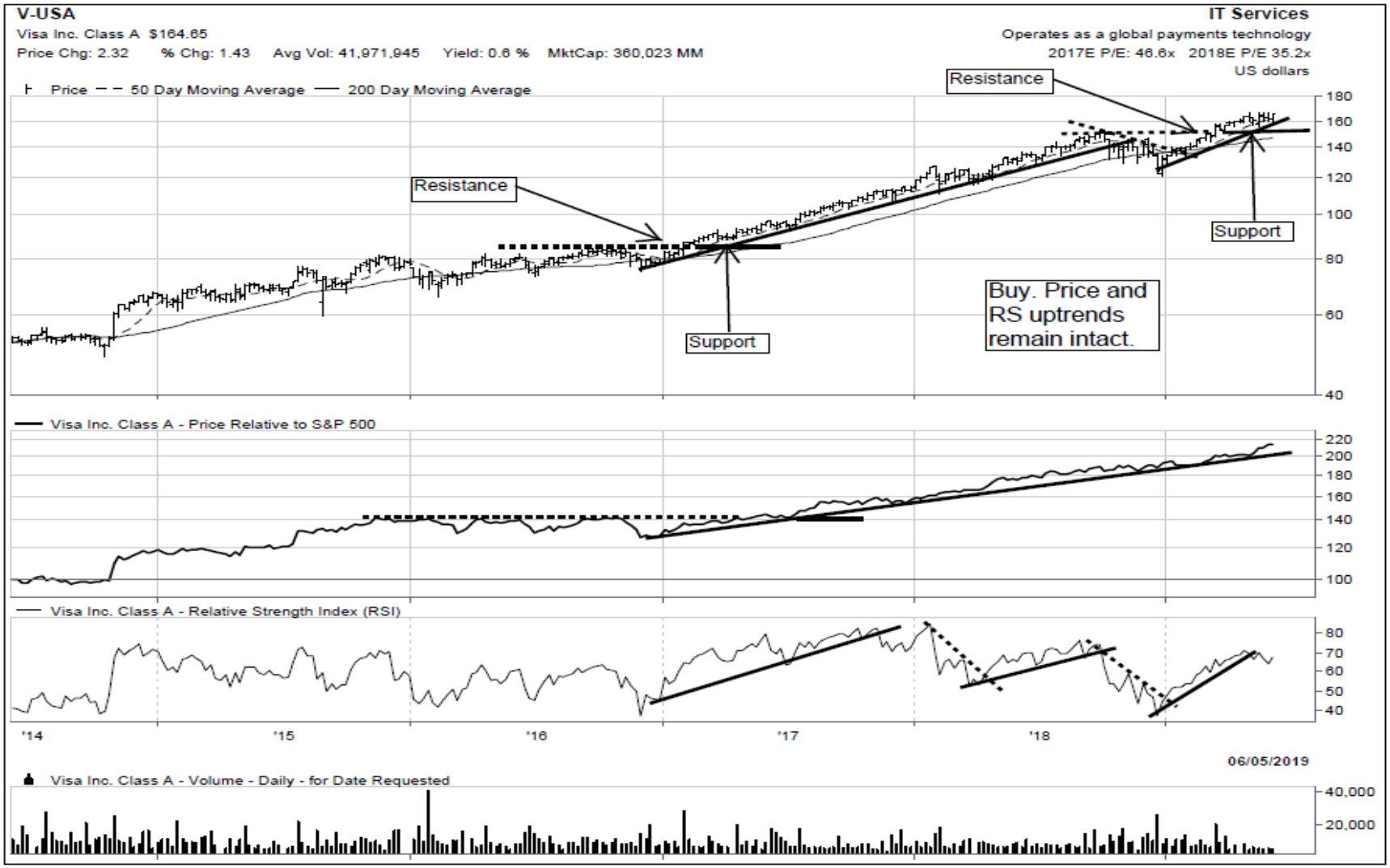
Relative Strength Example – Services Groups



Source: Vermilion Research

VR

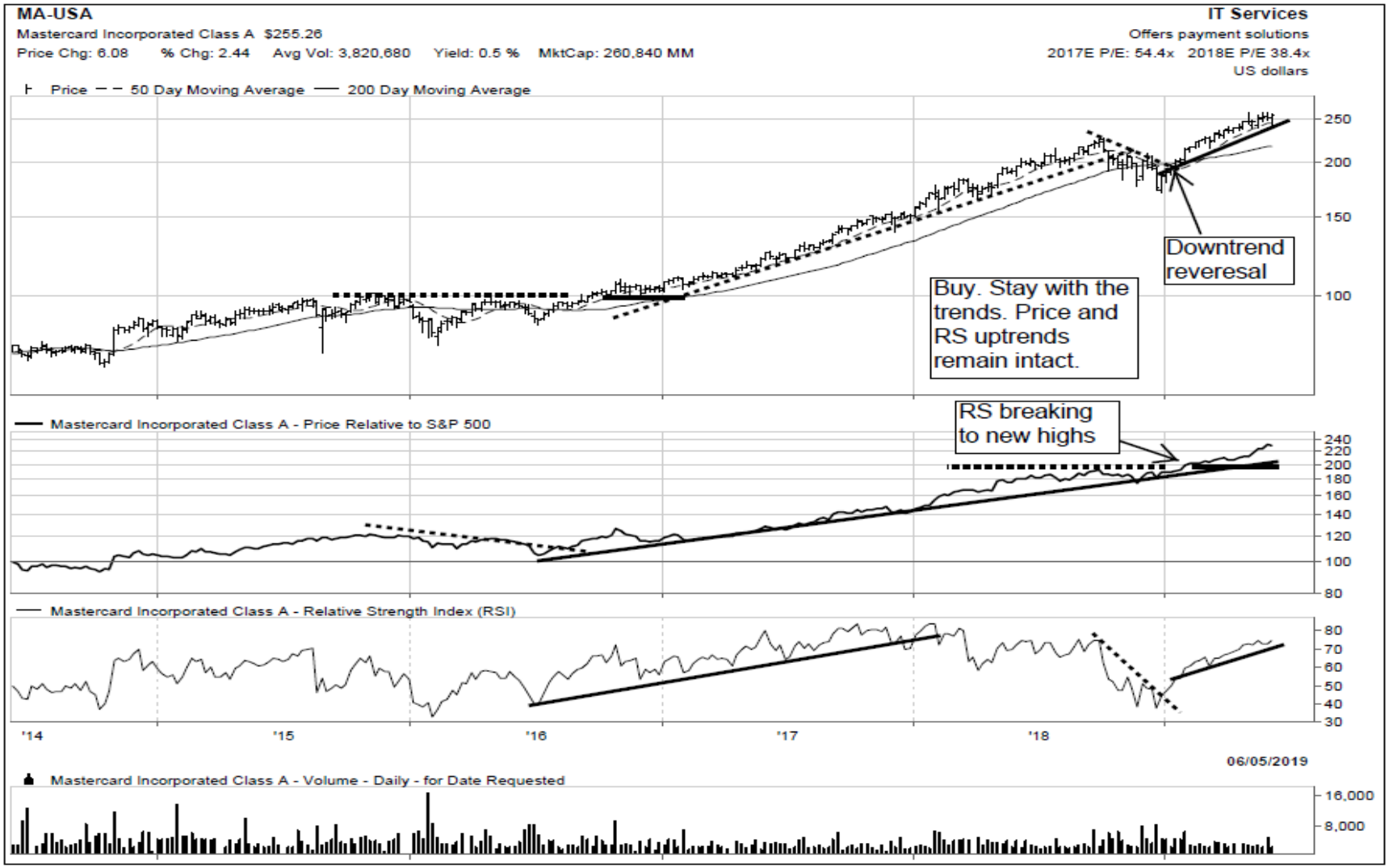
Relative Strength Example – Services Stocks



Source: FactSet

VR

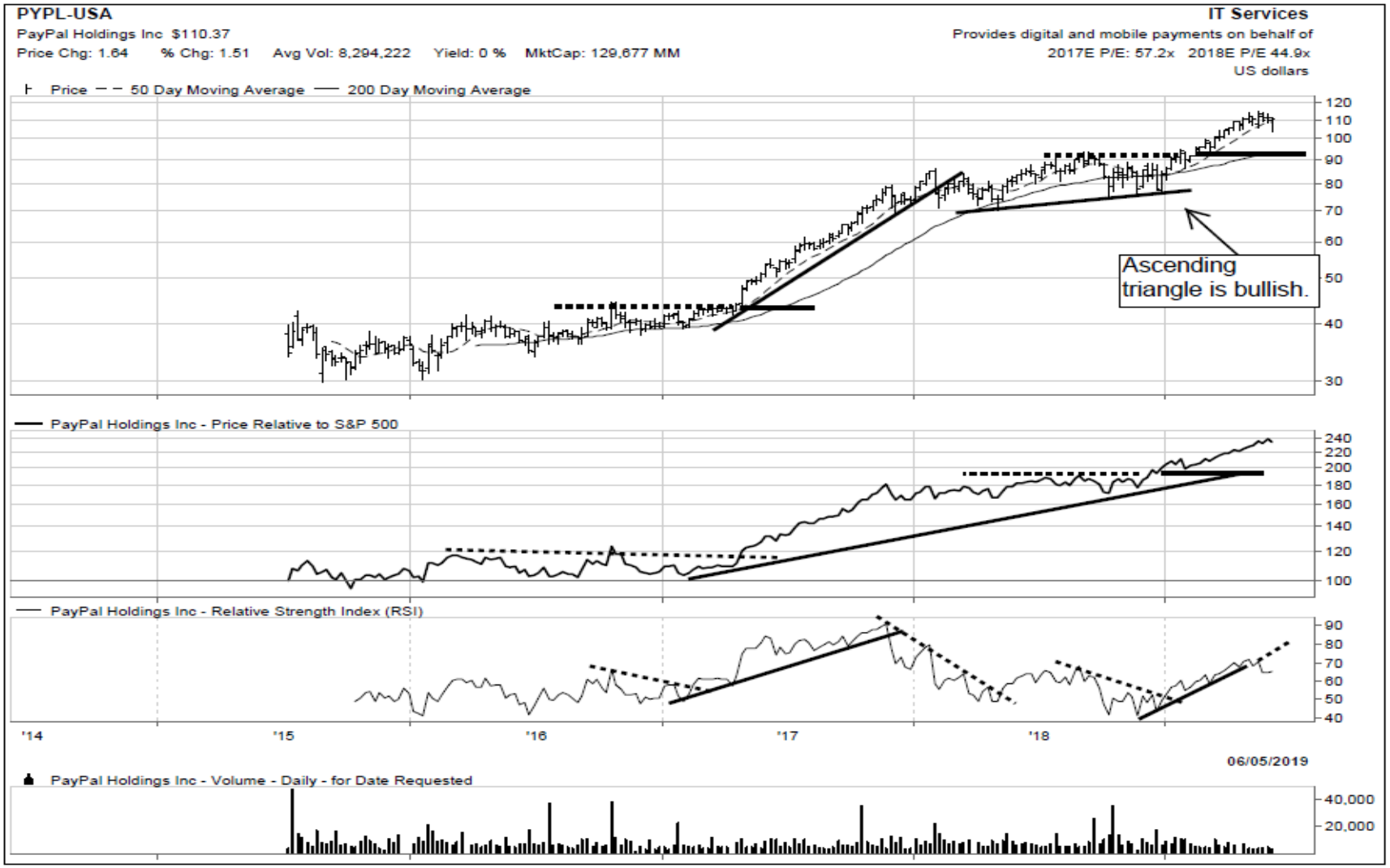
Relative Strength Example – Services Stocks



Source: FactSet

VR

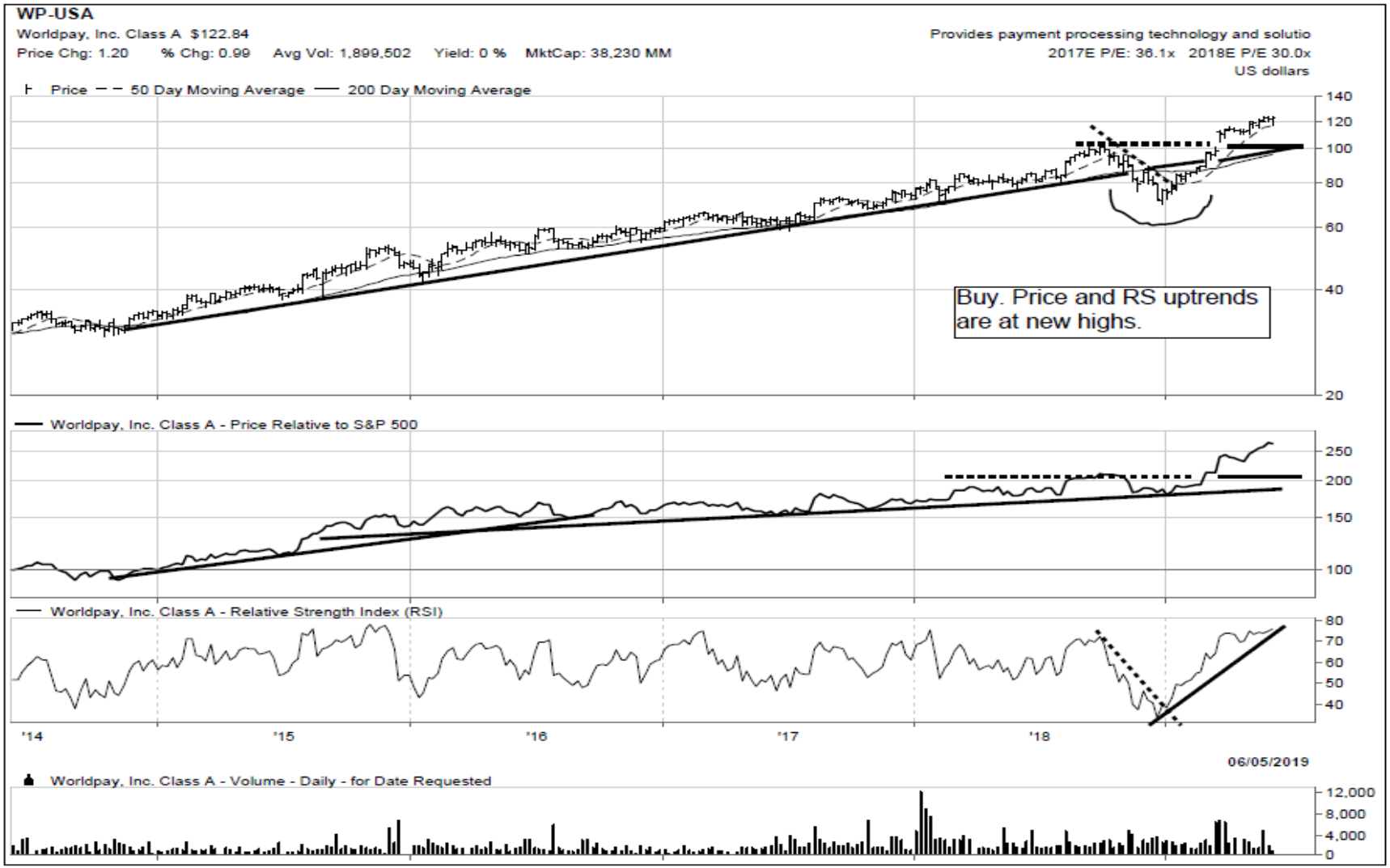
Relative Strength Example – Services Stocks



Source: FactSet

VR

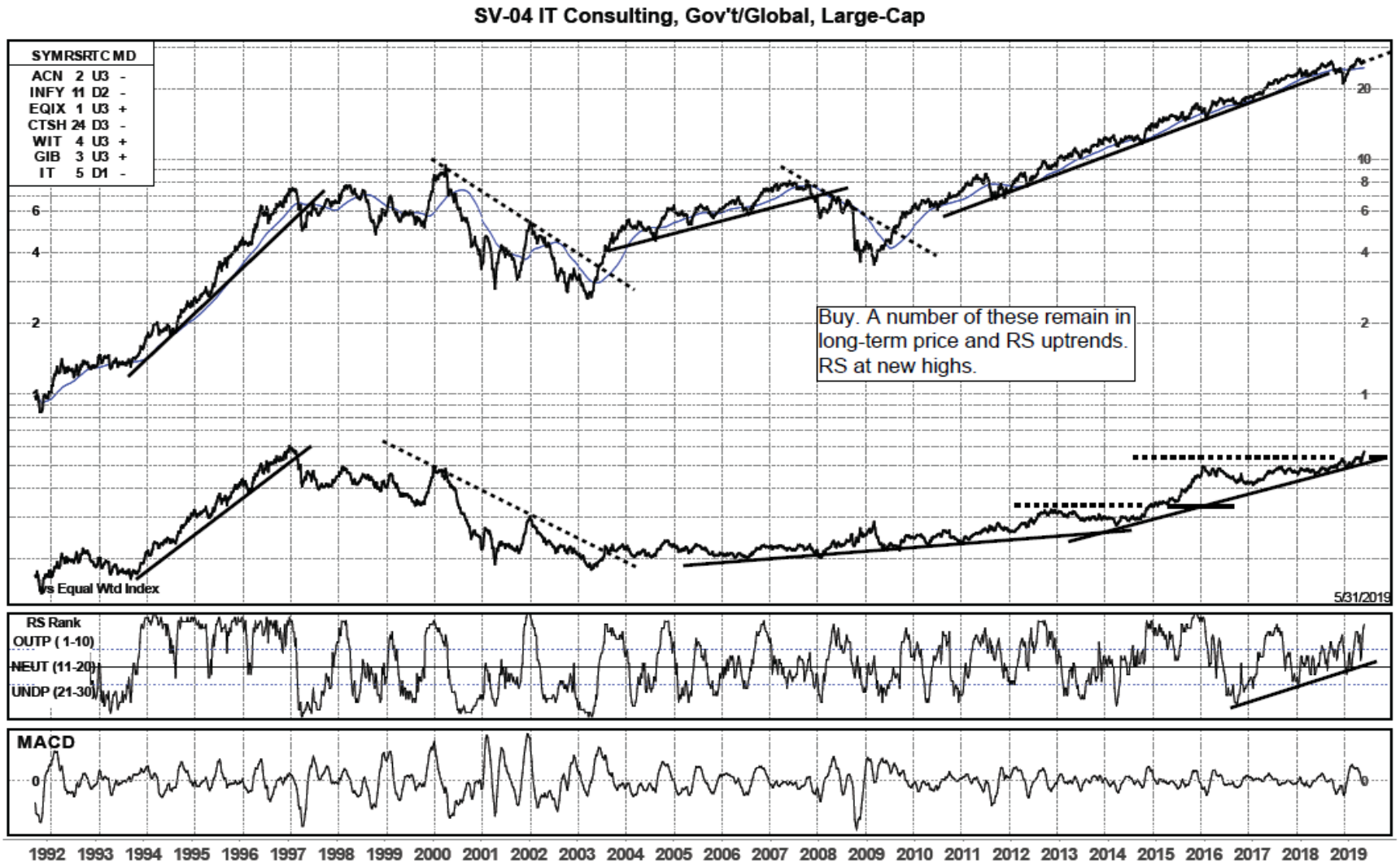
Relative Strength Example – Services Stocks



Source: FactSet

VR

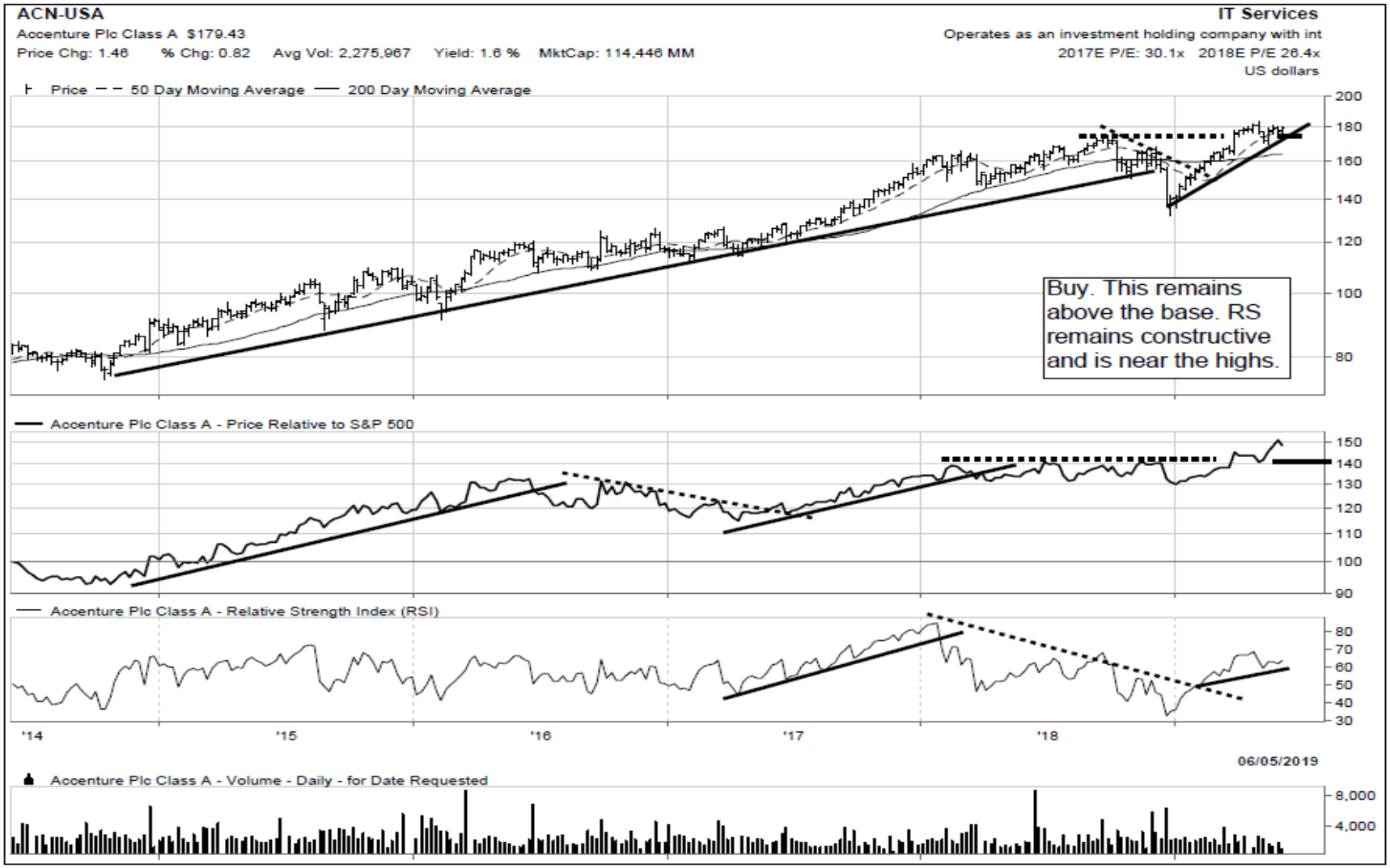
Relative Strength Example – Services Groups



Source: Vermilion Research

VR

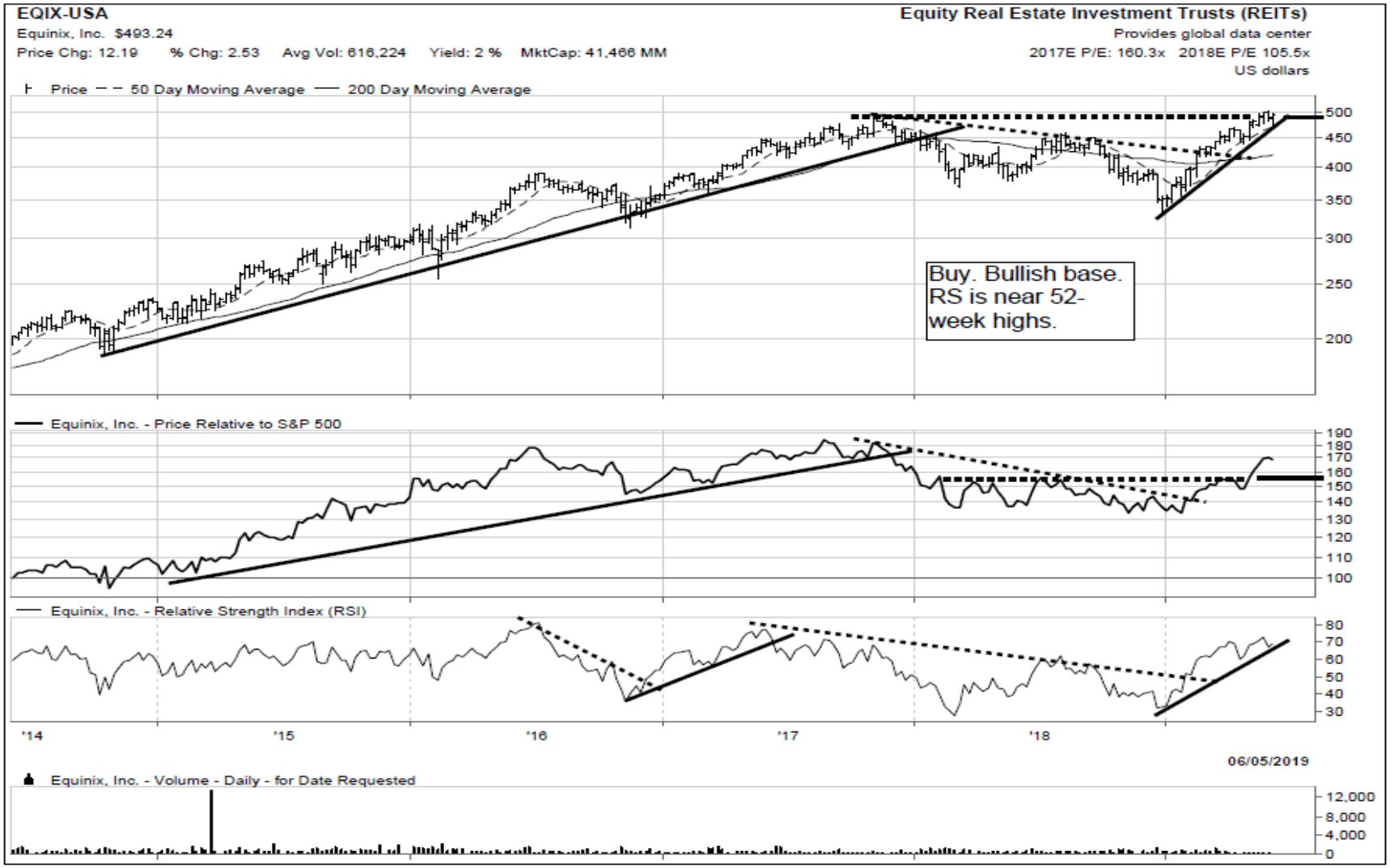
Relative Strength Example – Services Stocks



Source: FactSet

VR

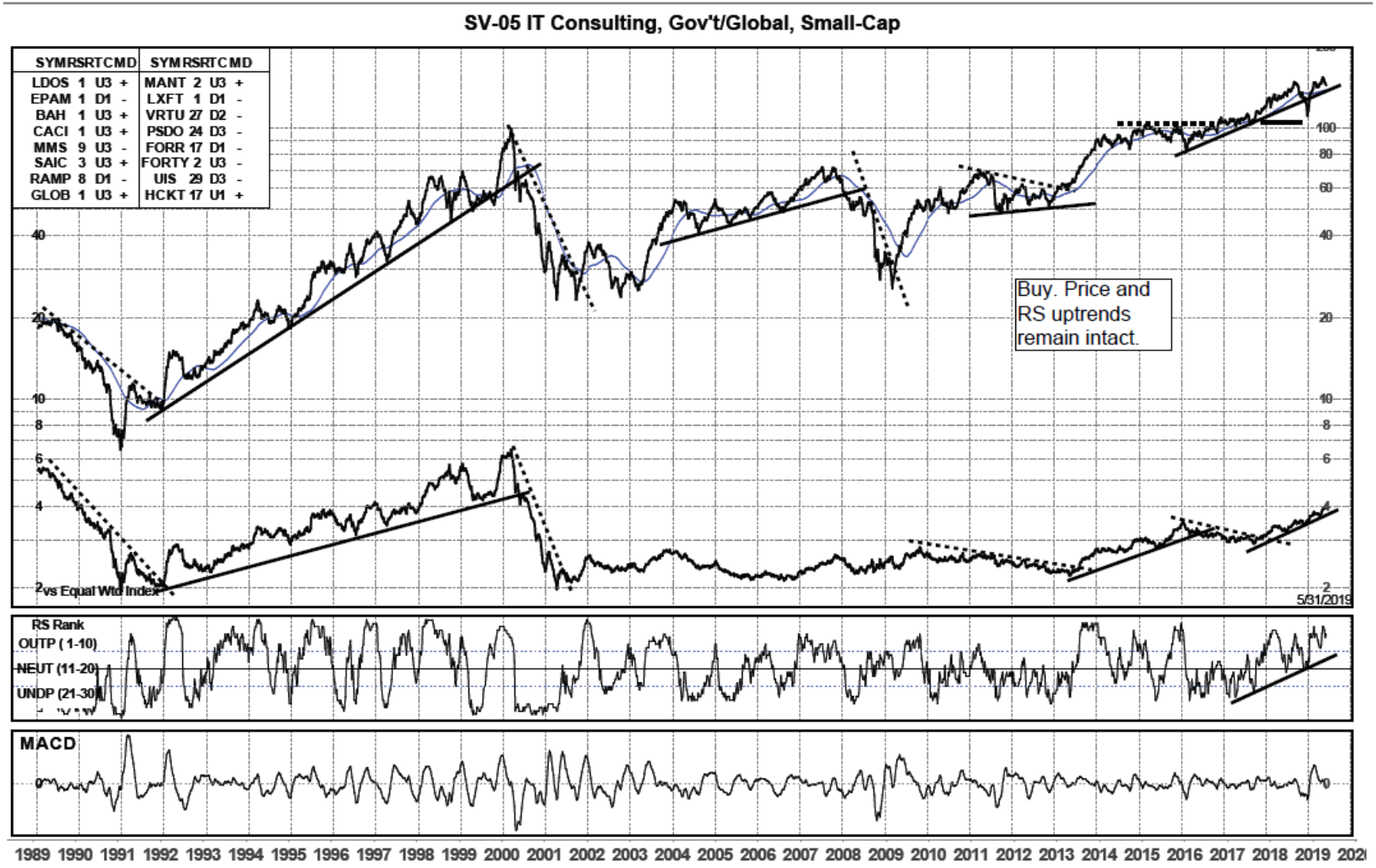
Relative Strength Example – Services Stocks



Source: FactSet

VR

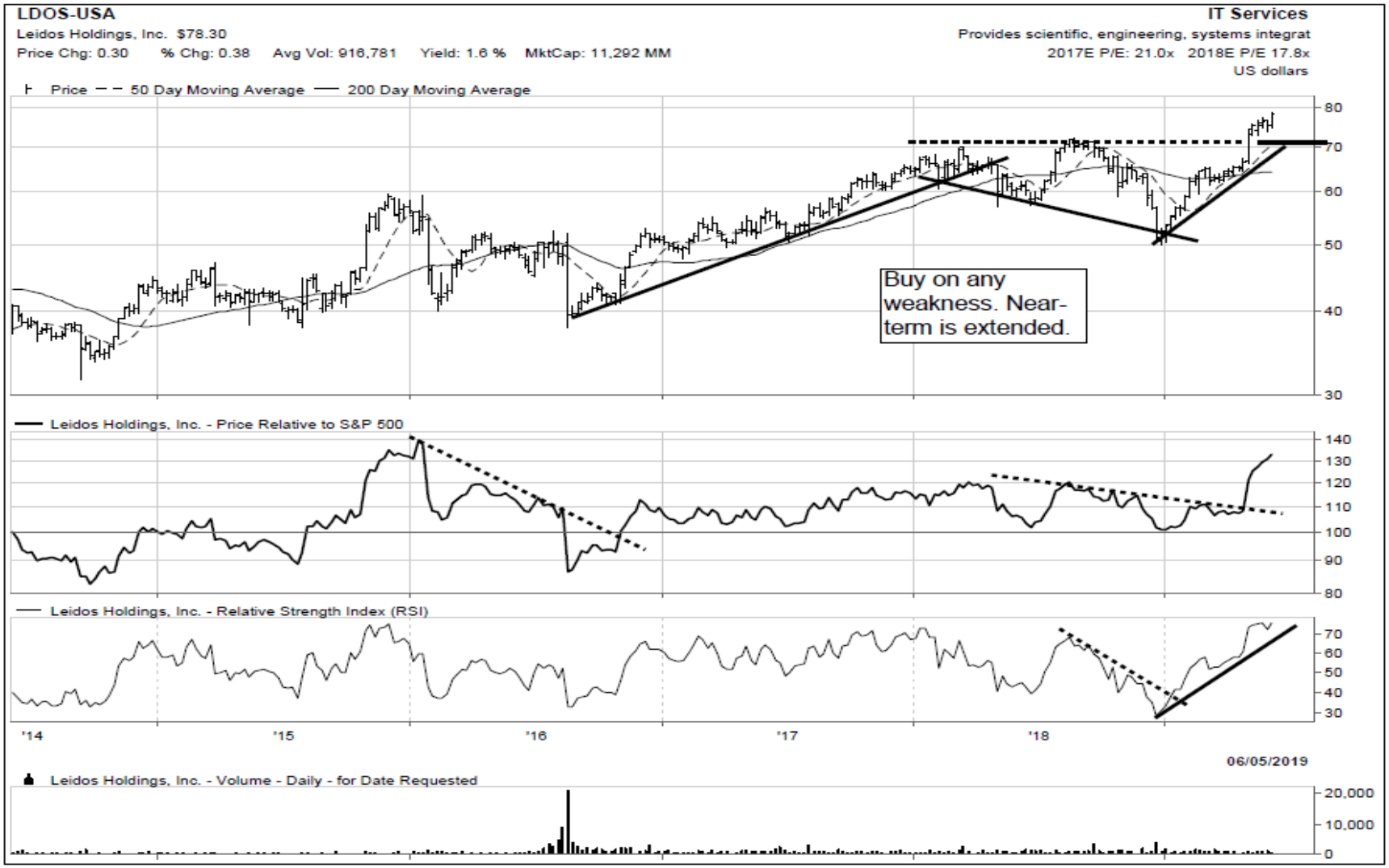
Relative Strength Example – Services Groups



Source: Vermilion Research

VR

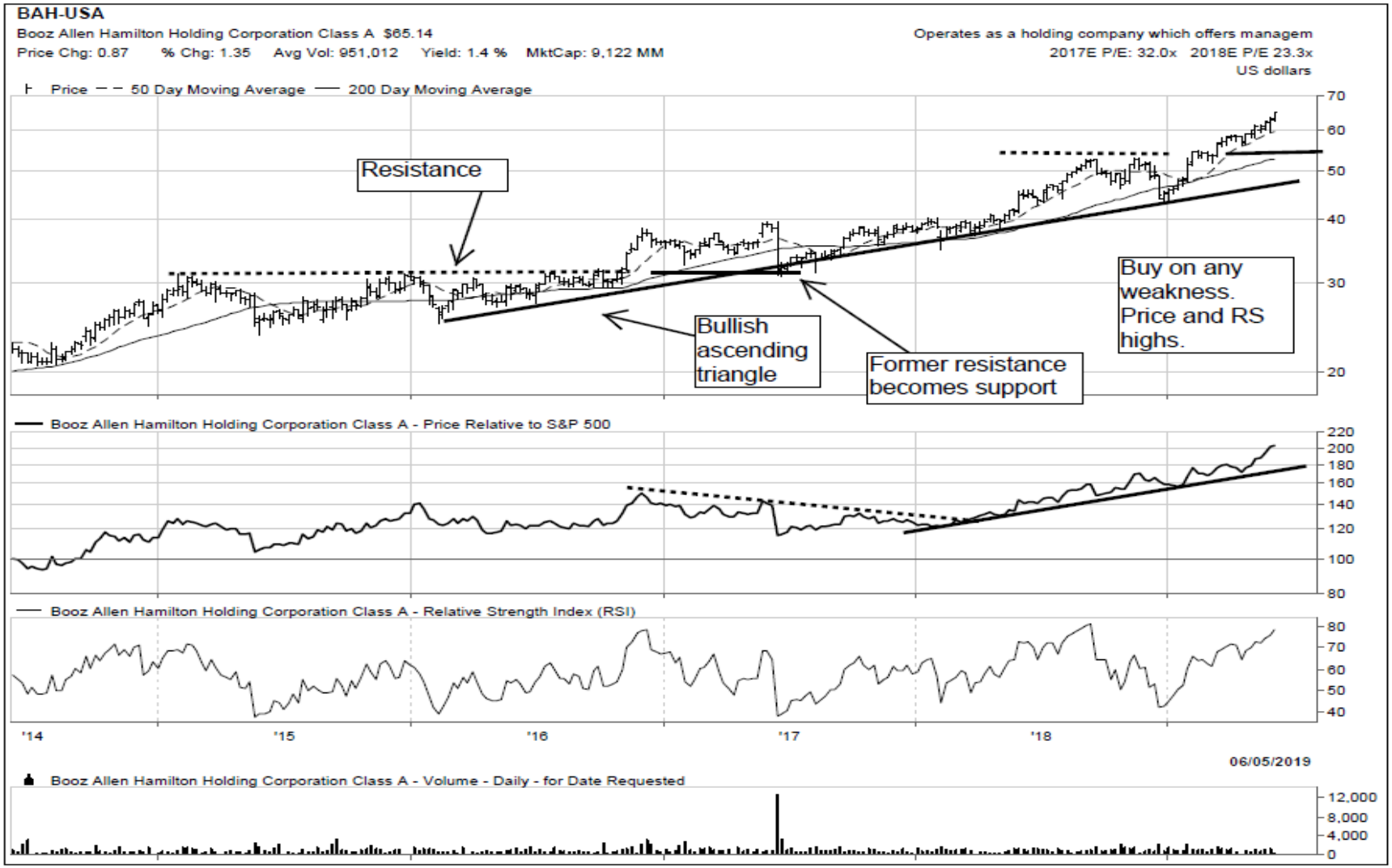
Relative Strength Example – Services Stocks



Source: FactSet

VR

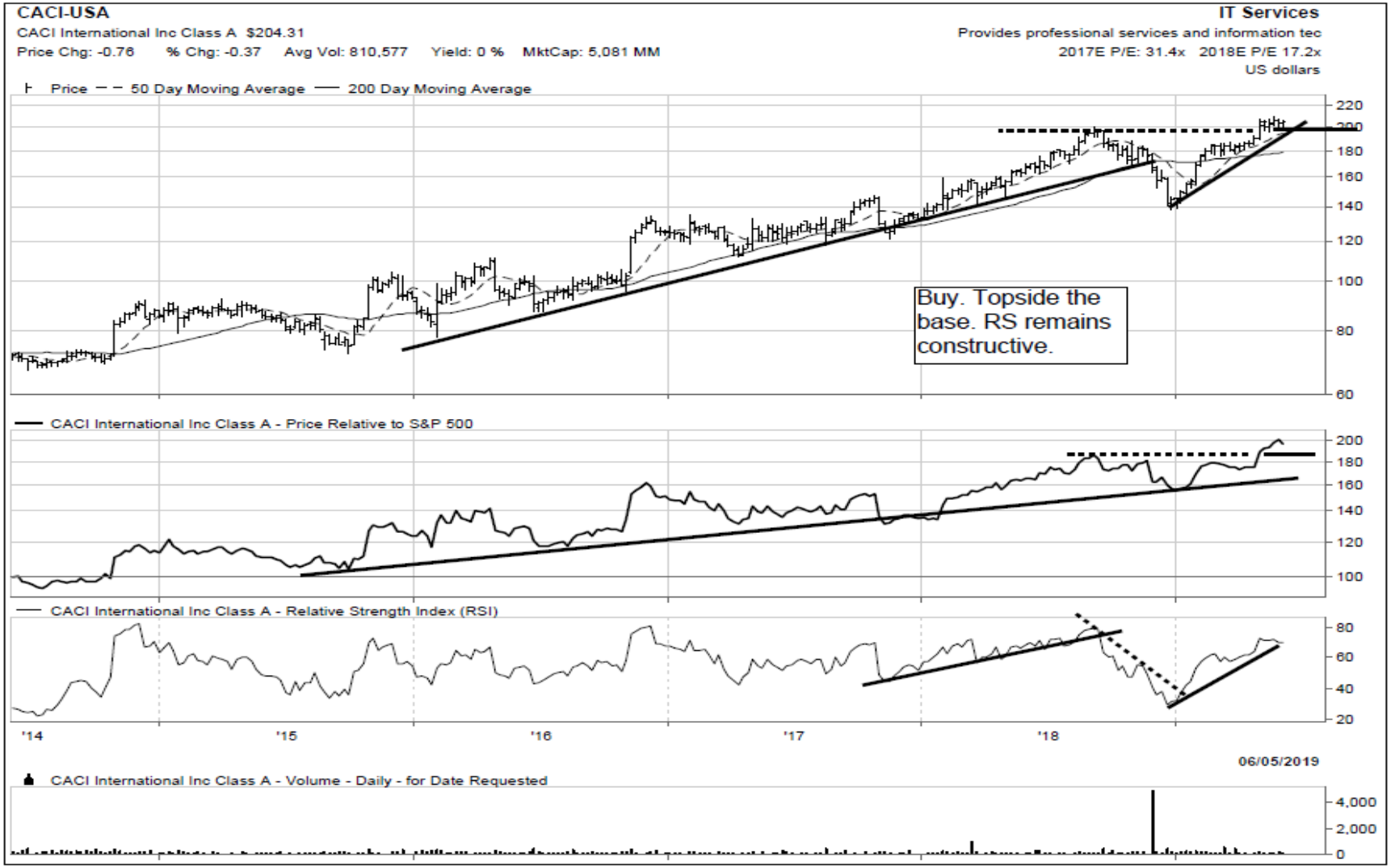
Relative Strength Example – Services Stocks



Source: FactSet

VR

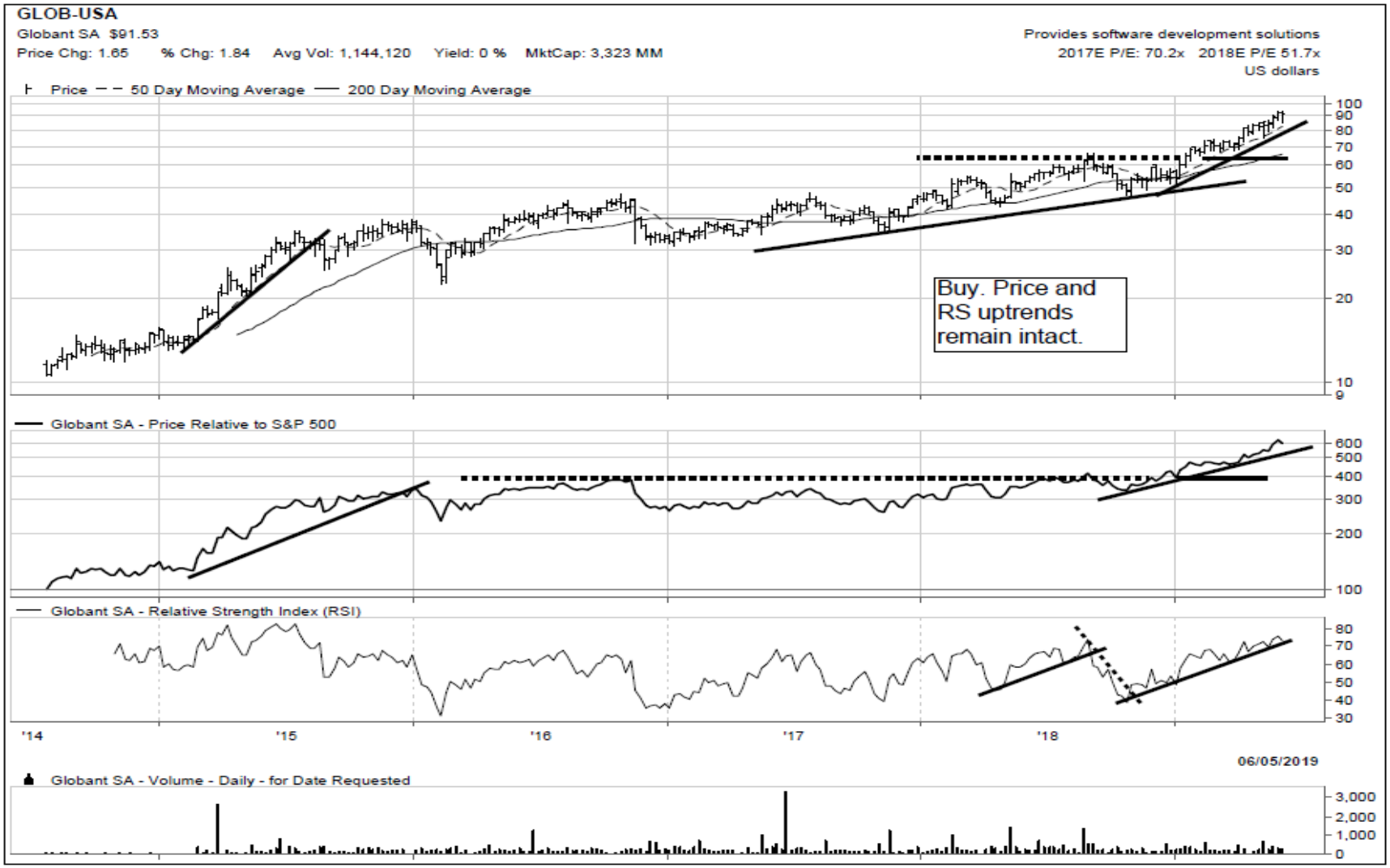
Relative Strength Example – Services Stocks



Source: FactSet

VR

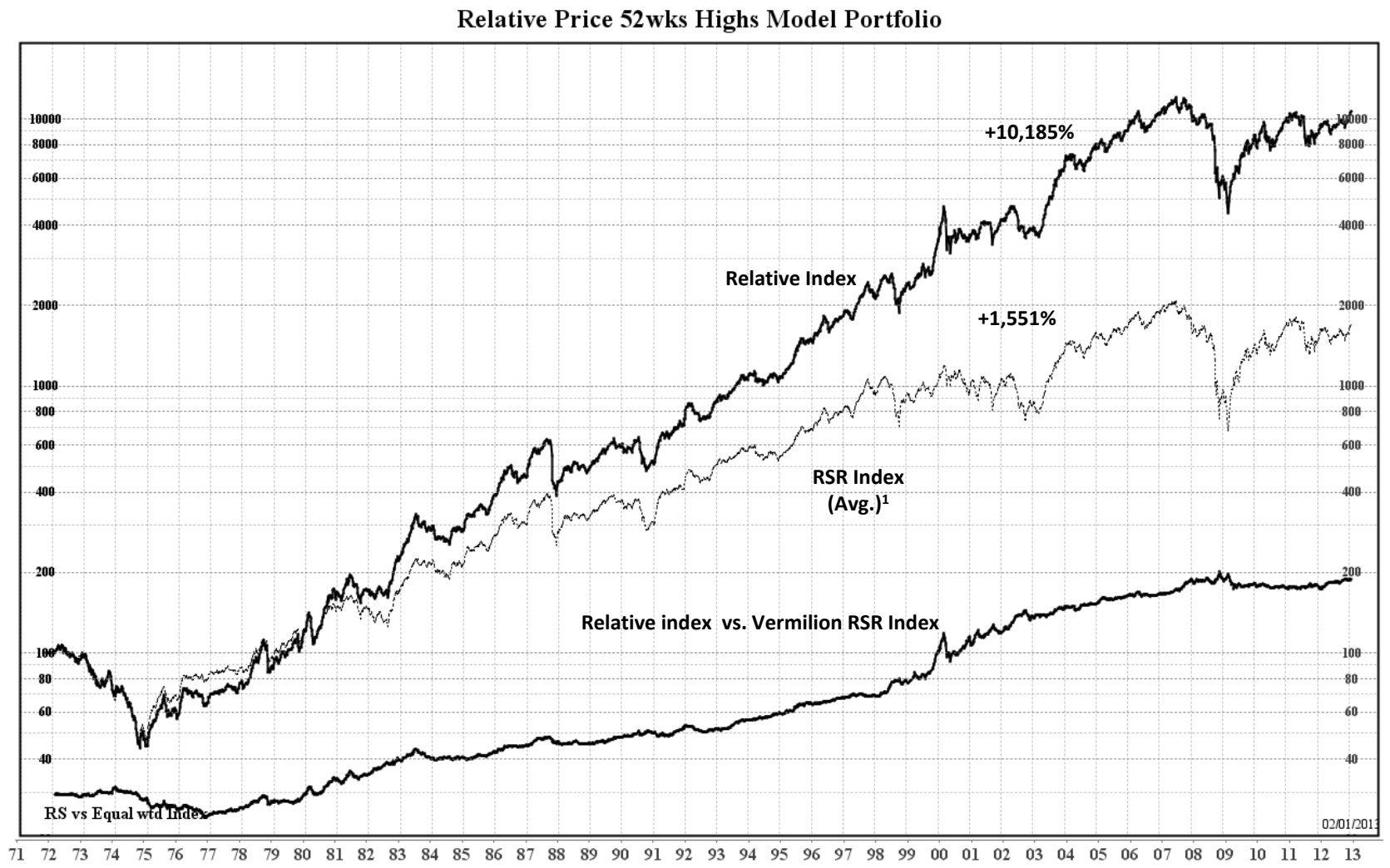
Relative Strength Example – Services Stocks



Source: FactSet

VR

Relative Strength Strategy: Historical Performance



Risks to Relative Strength

No trend lasts forever

- Perhaps the biggest risk to relying on RS measures is the outright risk of an unexpected trend reversal. There is always the potential for an exogenous factor or surprise event of some sort to completely change the direction of price trends already in place.

RS can be Misleading

- If a “regular” market pullback turns into a full-blown correction, or even a bear market, then even those securities with the highest RS measures are vulnerable to swift profit-taking pressures. Just like a rising tide is said to lift all boats, a bear market can (and will sooner or later) bring down even “best of breed” names.

Positives to Using Relative Strength

- Relative Strength provides an important metric when it comes to Sector, Group and Stock selection as it dictates which areas of the market are outperforming and which ones are underperforming.
- Relative strength when used in conjunction with pattern recognition, and other technical tools can provide for effective risk/reward in managing portfolios and can provide insight to intra-market analysis.

The Bottom Line

- Technical analysis, helps investors determine support and resistance levels. These levels define the periods of congestion in a stock chart where the prices of stocks fluctuate within a limited range for a long period of time.

- When you are able to identify support and resistance levels, you can make better decisions whether or not to invest in a particular stock.

- Technical analysis also helps investors' time entry points. With the help of technical analysis, you know exactly when to time your action, thus creating better risk/reward scenarios. You are also able to understand demand and supply levels, and breakouts to make better decisions. Buying close to support levels or a breakout above resistance helps you earn greater returns on your investment.

VR

Questions?

VERMILION

VERMILION RESEARCH

VR