

AAll Portland Chapter Presents:

ETF Strategies and Tactics For Investing Success

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March 10, 2018

Outline

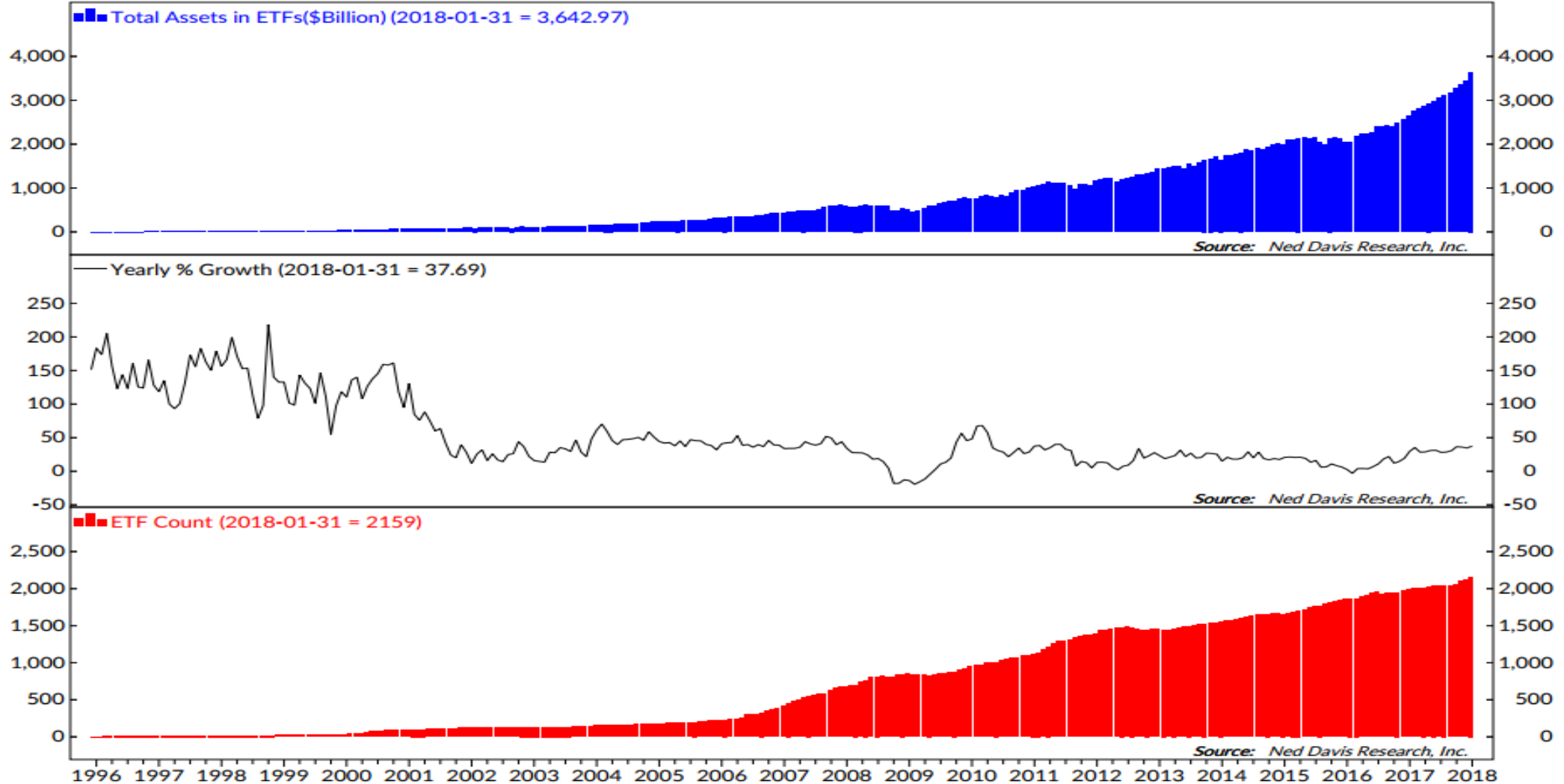
- Exchange Traded Products (ETP) – ETFs, ETPs and UITs
- ETF Basics – Structure, Costs, Replication and Features
- Considerations When Selecting an ETP
- ETPs In Multi-Asset Portfolios
- Tactical/Theme ETPs to Enhance Returns
- Simple Option Strategies for Stocks and ETFs
- Current Market Outlook and Positioning
- Available Research

ETF Growth

Total Assets and Count in U.S. Listed ETFs

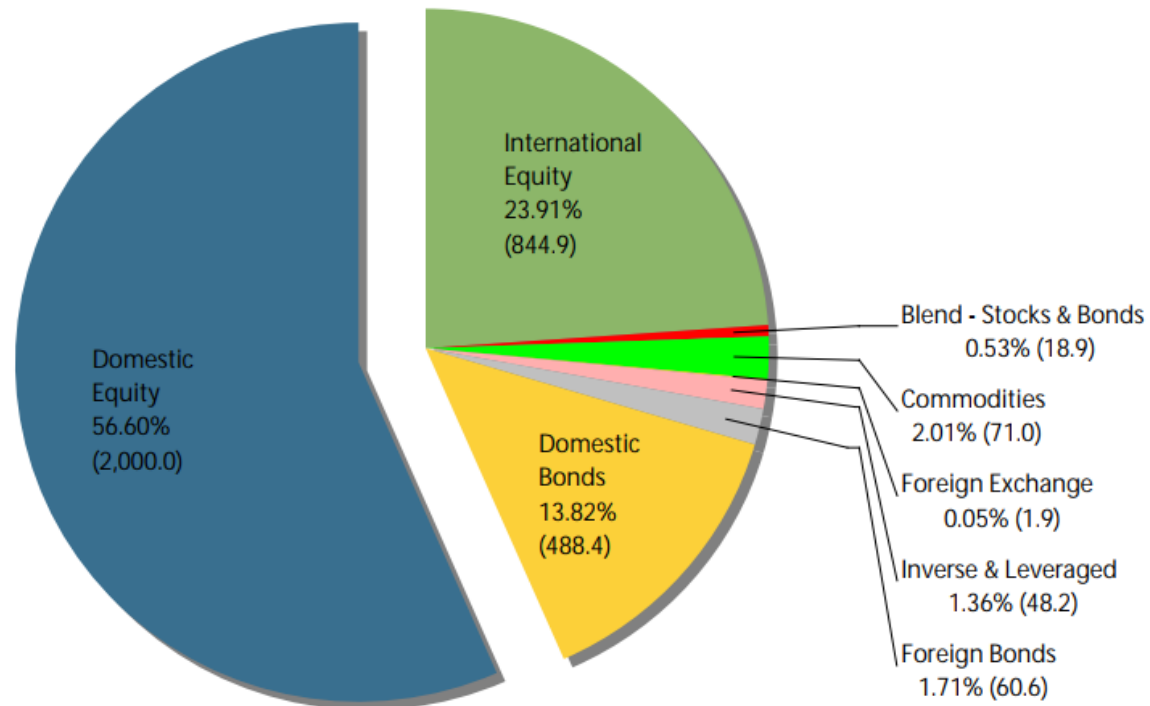
Monthly Data 1995-12-31 to 2018-01-31

(ETF104)



U.S. Funds

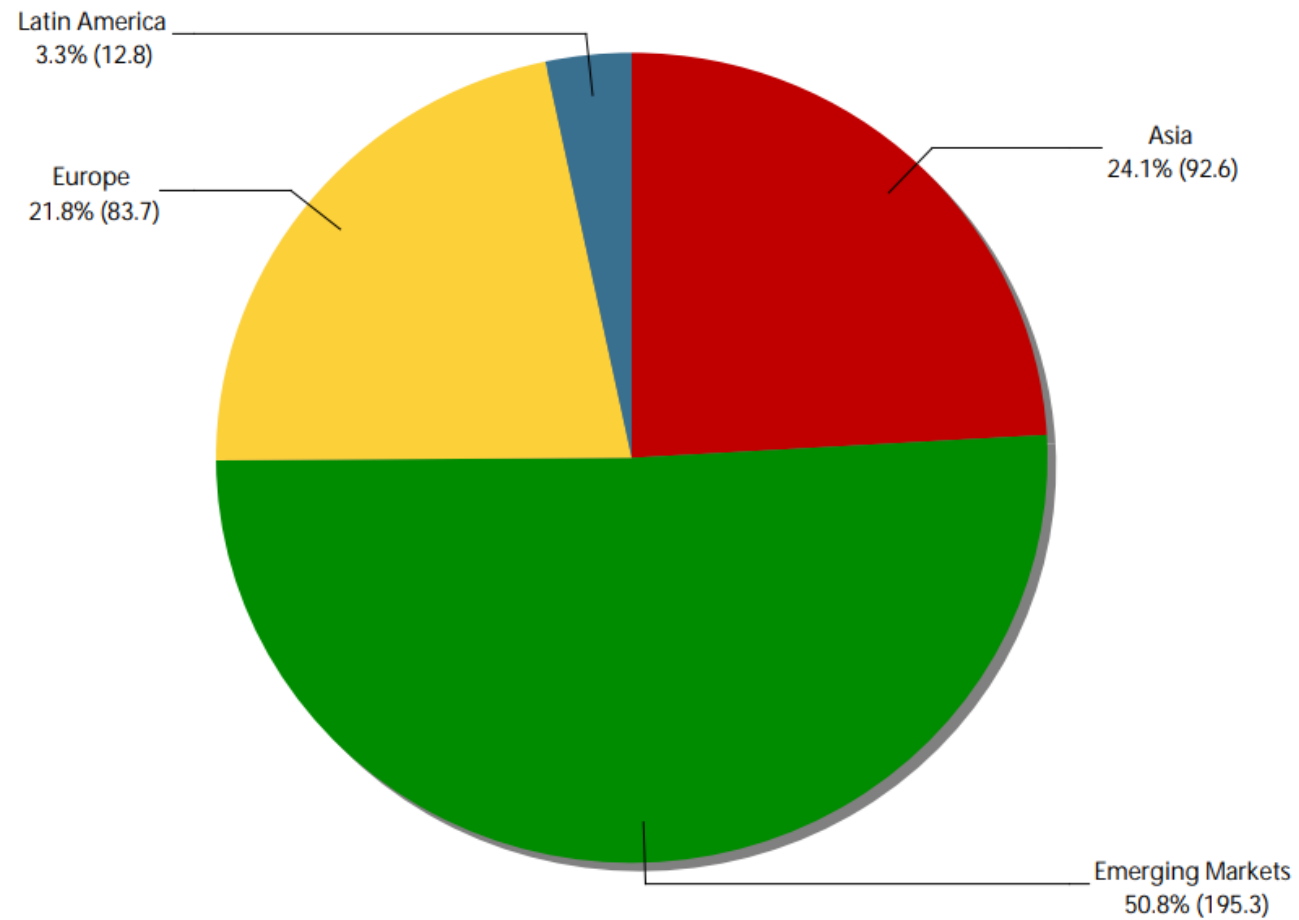
Domestically-Traded ETF and ETN Assets
(Total as of 2018-02-16 : 3533.7 Bil.)



Total Asset Shown in Parentheses (\$Billion)

International Funds

International Equity ETF and ETN Assets by Region (2018-02-16)



Total Assets Shown in Parentheses (\$Billion)

ETP Basics - Structure

- ETF – Exchange Traded Funds
- ETN – Exchange Traded Notes
- UIT – Unit Investment Trusts

ETF - Development

- Follow an Index – Fundamental, Technical, Style, Capitalization, Regional, and Country
- ETF Sponsor creates the ETF
- Creation/Redemption of Shares by Authorized Participants (AP)
- Passive, Active, and Pseudo-Active

ETF Replication

The Fund generally invests at least 90% of its assets in the securities of its Underlying Index and in depositary receipts representing securities in its Underlying Index. The Fund may invest the remainder of its assets in other securities, including securities not in the Underlying Index, but which BFA believes will help the Fund track the Underlying Index, and in other investments, including futures contracts, options on futures contracts, other types of options and swaps related to its Underlying Index, as well as cash and cash equivalents, including shares of money market funds advised by BFA or its affiliates. BFA will waive portfolio management fees in an amount equal to the portfolio management fees of such other iShares funds for any portion of the Fund's assets invested in shares of such other funds.

ETF Features

- Intraday Trading (Mutual funds at end-of-day)
- Low Costs
- Diversification
- Transparency
- Flexibility – Options
- Access to niche markets/asset classes and high cost stocks
- Tax Efficiency
- Low Investment Threshold
- Limited Management Risk

ETF Costs – Expense Ratio

- Operating Expenses
- Broker Commissions
- Slippage

Annual Fund Operating Expenses (expenses that you pay each year as a percentage of the value of your investment):

Management fees		0.03%
Distribution and service (12b-1) fees		0.04%
Other expenses	XLY	0.06%
Total annual Fund operating expenses¹		0.13%

¹ The Fund's "Total annual Fund operating expenses" have been restated to reflect a reduction in the Fund's "Distribution and service (12b-1) fees" and "Other expenses".

Annual Fund Operating Expenses (*Expenses that you pay each year as a percentage of the value of your investment*):

Management Fees	AML	0.85%
Other Expenses	MLP	0.00%
Deferred Income Tax Expense ^(a)		0.57%
Total Annual Fund Operating Expenses		1.42%

ETF Costs – Brokerage

- E*trade – 117 commission-free ETFs if held 30 days or longer
- TD Ameritrade – 101 commission-free ETFs if held 30 days or longer
- Charles Schwab - 200 commission-free no early redemption fees
- Fidelity – 100 commission-free ETFs if held 30 days or longer
- Vanguard – 55 of its own ETFs, limited number of trades

ETF Costs – Slippage

REDIPlus - PowerShares Aerospace & Defense ETF : 2

La	57.943	Ch	-0.116	%	-0.20	Ac	85,400	O	57.84	Hg	58.25
Lw	57.63	P	58.06	Ex	OTC	Bi	57.95	As	58.00	V	57.991

Display ID	Bid Size	Bid	Ask	Ask Size	Display ID
ARCA	8	57.95	58.00	20	ARCA
YBAT	3	57.95	58.00	8	EDGX
BATS	2	57.95	58.00	8	BATS
NQPX	2	57.95	58.00	8	NQPX
EDGX	1	57.95	58.00	1	YBAT
NQBX	1	57.95	58.01	25	ARCA
ARCA	20	57.94	58.01	13	NQBX
EDGA	4	57.94	58.01	9	EDGA

Most Important Considerations

- Liquidity
- Weighting Scheme – Cap-, Equal-, Fundamental-weight
- Style, Sector, Regional/Country Allocation
- Rebalancing Frequency
- Diversification/Concentration



Liquidity – Primary/Secondary

An ETF is as liquid as the underlying components!

- Creation/Redemption Shares – Primary Market
- Brokerage (ex. Fidelity, TD ...) – Secondary Market

Size of the Fund, Volume and Bid/Ask are NOT Always Good
Secondary Market Liquidity Measures

ETFs Not Moving Stocks – In Most Cases

NVIDIA Corporation[NVDA]

Long ETF Count : 196

Total long shares in ETF : 38,508,207 (6.35% of Float Shares)

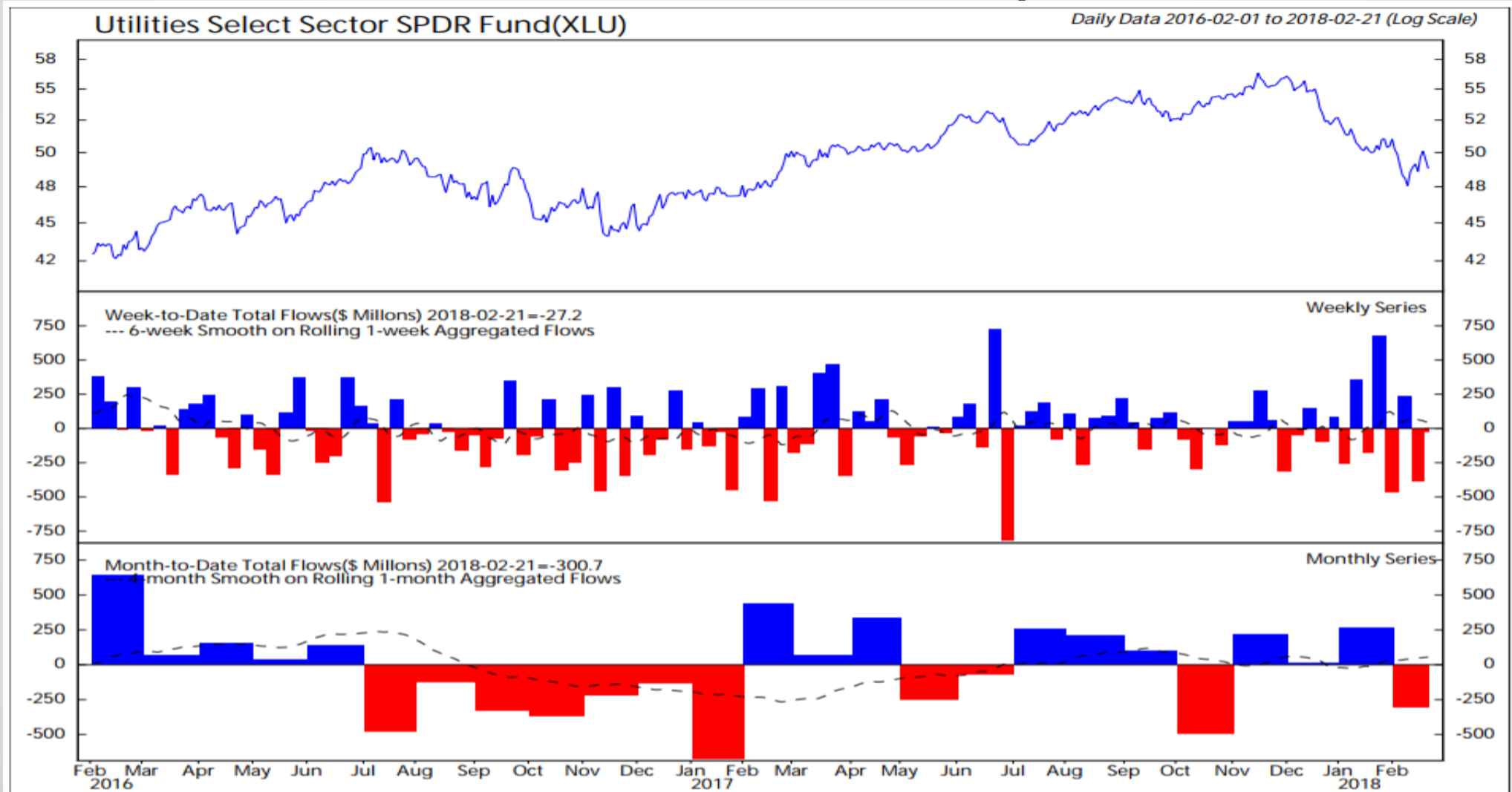
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Description					Weight		Weight Rank in Constituents		
ETF Ticker	Name	Total Assets(\$mil)	Strategy	Weight(%)	Total Shares in ETF	Value(\$mil)	Largest	Top 5	Top 10
USD	ProShares Ultra Semiconductors	82.85	L	12.215	41,016	9.91		Y	Y
BOTZ	Global X Robotics & A Intel	2,325.25	L	9.444	869,492	209.99	Y	Y	Y
SOXX	iShares PHLX Semiconductor ETF	1,590.96	L	9.413	608,217	146.89	Y	Y	Y
PTF	PowerShares DWA Technology	121.71	L	6.692	33,533	8.10	Y	Y	Y
SMH	VanEck Vectors Semiconductor	1,459.01	L	6.375	385,031	92.99		Y	Y
XKST	SPDR Kensho Smart Mobility ETF	4.61	L	5.853	1,082	0.26	Y	Y	Y
PSI	PowerShares Dyn Semiconductors	345.44	L	5.832	83,462	20.16	Y	Y	Y
FNG	Advsrshares New Tech and Media	51.50	L	5.729	14,940	3.61			Y
SOXL	Direxion Daily Semicon Bull 3X	709.53	L	5.658	168,651	40.73		Y	Y
BLOK	Amplify Transform Data Sharing	174.06	L	4.951	34,458	8.32		Y	Y
ARKQ	ARK Industrial Innovation	143.50	L	4.893	29,043	7.01		Y	Y

Primary Market - Volume



Primary Market Flows Creation/Redemption



SPDRs Flows

2/20/2018

SPDR Portfolio Funds

	Symbol	Net Expense Ratio (bps)	AUM (\$m)	Prior Day Flow (\$m)	MTD Flows (\$m)	MTD Flows % Of AUM	YTD Flows (\$m)	YTD Flows % Of AUM	Avg 30 Day Vol (\$m)	% Shares Held Short
SPDR Portfolio Total Stock Market ETF	SPTM	3	1,434	3	95	7%	509	36%	24	0%
SPDR Portfolio Large Cap ETF	SPLG	3	1,058	2	79	8%	454	43%	22	0%
SPDR Portfolio Mid Cap ETF	SPMD	5	553	(56)	(45)	-7%	114	21%	13	1%
SPDR Portfolio Small Cap ETF	SPSM	5	761	-	12	2%	180	24%	10	0%
SPDR Portfolio S&P 500 Growth ETF	SPYG	4	1,942	124	264	15%	681	35%	35	0%
SPDR Portfolio S&P 500 High Dividend ETF	SPYD	7	418	2	27	7%	112	27%	10	0%
SPDR Portfolio S&P 500 Value ETF	SPYV	4	1,209	129	202	19%	600	50%	26	0%
SPDR Portfolio Emerging Markets ETF	SPEM	11	1,599	20	178	12%	537	34%	26	0%
SPDR Portfolio Developed World ex-US ETF	SPDW	4	2,473	-	102	4%	588	24%	32	0%
SPDR Portfolio Aggregate Bond ETF	SPAB	4	2,145	17	39	2%	707	33%	33	0%
SPDR Portfolio Long Term Corporate Bond ETF	SPLB	7	367	-	(27)	-7%	126	34%	12	0%
SPDR Portfolio Intermediate Term Corporate Bond ETF	SPIB	7	3,304	17	166	5%	694	21%	46	0%
SPDR Portfolio Short Term Corporate Bond ETF	SPSB	7	3,720	-	100	3%	346	9%	43	0%
SPDR Portfolio Long Term Treasury ETF	SPTL	6	756	-	(38)	-5%	71	9%	9	0%
SPDR Portfolio Short Term Treasury ETF	SPTS	6	290	-	9	3%	66	23%	5	2%
SPDR Portfolio Funds Total			22,029	257	1,163		5,784			

Com

Secondary Market

ACWV is a \$3.5 Billion Fund

REDIPlus L2 Montage - iShares Edge MSCI Min Vol Global ETF

La	83.93	Ch	0.69 ▲	%	0.83% ▲	Ac	44,200	O	83.51	Hg	83.98
Lw	83.51	P	83.24	Ex	OTC	Bi	83.89	As	83.97	V	83.737

Display ID	Bid Size	Bid	Ask	Ask Size	Display ID
BATS	10	83.89	83.97	6	BATS
YBAT	1	83.89	83.97	2	YBAT
EDGX	1	83.86	83.98	5	EDGX
ARCA	1	83.85	83.99	7	ARCA
SBSH	1	83.85	84.00	4	ARCA
ARCA	4	83.83	84.01	1	SBSH
ARCA	4	83.82	84.10	4	ARCA
ARCA	4	83.81	84.11	7	NQPX
ARCA	5	83.80	84.11	1	ARCA
NQPX	7	83.70	84.14	4	NQBX
NQBX	4	83.61	84.17	1	ARCA
EDGA	5	83.57	84.18	5	EDGA

Secondary Market

ANGL is a \$1.2 Billion Fund

REDIPlus L2 Montage - VanEck Vectors Fallen Angel High Yield Bond ETF

La	29.390	Ch	0.0104 ▲	%	0.04% ▲	Ac	259,60	O	29.36	Hg	29.470
Lw	29.35	P	29.38	Ex	OTC	Bi	29.37	As	29.42	V	29.382

Display ID	Bid Size	Bid	Ask	Ask Size	Display ID
EDGX	1	29.37	29.42	2	NQBX
BATS	1	29.37	29.42	2	ARCA
YBAT	1	29.37	29.42	1	EDGX
ARCA	1	29.35	29.42	1	BATS
ARCA	1	29.33	29.43	1	YBAT
ARCA	2	29.32	29.44	1	ARCA
ARCA	1	29.30	29.48	1	ARCA
ARCA	12	29.29	29.49	5	IEX
IEX	5	29.22	29.49	5	ARCA
EDGA	6	29.15	29.50	7	ARCA
NQPX	6	29.13	29.61	6	EDGA

Capitalization, Equal, Fundamental

Equity ETF Cap-Style Allocation

Cap/Style	XLI	RGI	FXR
Cap			
Large	84.67	64.95	38.57
Mid	5.76	21.86	37.29
Small	0.00	0.00	18.19
Cap-NA	9.56	13.18	5.95
Style			
Growth	15.06	28.10	21.26
Core	67.57	47.62	46.27
Value	7.80	11.10	26.52
Style-NA	9.56	13.18	5.95

Macro Economic	CAP XLI	EQUAL RGI	FNDMTL FXR
China (Sensitivity)	-0.081	-0.070	-0.077
CPI (Sensitivity)	0.701	0.580	0.366
Credit Spread (Sensitivity)	-1.573	-0.408	2.332
Dollar (Sensitivity)	0.250	0.250	0.247
Emerging Markets (Sensitivity)	-0.155	-0.177	-0.187
Euro (Sensitivity)	-0.200	-0.201	-0.218
Total Home Sales (Sensitivity)	0.024	0.129	0.143
Inflation Expectations (Sensitivity)	-1.152	0.159	4.090
Industrial Production (Sensitivity)	-0.070	-0.053	0.021
Latin America (Sensitivity)	-0.057	-0.066	-0.043
3-Month LIBOR Rate (Sensitivity)	0.016	0.036	0.076
3-Month T-Bill Yield (Sensitivity)	-0.000	-0.003	-0.004
10-Yr T-Note Yield (Sensitivity)	-0.062	-0.070	-0.098
U.S. (Sensitivity)	1.354	1.306	1.171
Yen (Sensitivity)	-0.128	-0.169	-0.218
Yield Curve Slope (Sensitivity)	4.365	4.078	6.098

Fundamental Weighting Ex-US Small-Cap

Equity ETF Sector Allocation

<u>Sector</u>	Weight(%)				Constituent #		
	<u>Average</u>	<u>PDN</u>	<u>FDTS</u>	<u>FNDC</u>	<u>PDN</u>	<u>FDTS</u>	<u>FNDC</u>
Industrials	21.43	23.23	20.20	20.85	334	87	298
Consumer Discretionary	17.85	17.56	19.61	16.38	281	84	249
Materials	11.51	10.79	14.18	9.57	156	56	129
Information Technology	9.28	8.99	10.20	8.65	128	40	120
Financials	7.57	8.91	5.15	8.64	141	25	118
Consumer Staples	7.13	7.69	6.87	6.84	118	24	99
Real Estate	7.64	7.15	10.48	5.28	112	32	98
Health Care	4.10	4.75	3.20	4.36	68	13	64
Energy	3.54	3.62	4.08	2.93	62	15	49
Utilities	1.94	2.32	1.00	2.49	27	6	30
Telecommunication Services	0.75	1.11	0.14	1.01	17	1	16
UNKNOWN	7.26	3.88	4.89	13.00	49	14	33

How Are Securities Weighted

<u>Sector</u>	Weight(%)			Constituent #	
	<u>Average</u>	<u>SPY</u>	<u>RSP</u>	<u>SPY</u>	<u>RSP</u>
Information Technology	18.65	23.41	13.88	68	68
Health Care	13.87	14.78	12.97	62	62
Financials	13.52	13.85	13.19	68	68
Consumer Discretionary	13.63	11.88	15.38	82	82
Industrials	11.51	9.89	13.13	66	66
Consumer Staples	7.56	8.58	6.53	34	34
Energy	5.95	5.84	6.06	32	32
Utilities	4.52	3.25	5.79	28	28
Real Estate	4.90	3.07	6.73	33	33
Materials	4.09	2.94	5.24	26	26
Telecommunication Services	1.37	2.04	0.69	4	4
UNKNOWN	0.43	0.46	0.41	1	1

International Funds

Equity ETF Country Allocation

Country	Country Code	Weight(%)		
		EEM	VWO	EEMV
China	CN	20.64	27.67	18.65
South Korea	KR	14.21	0	10.32
Taiwan	TW	11.82	13.82	16.40
India	IN	8.19	11.42	6.13
Brazil	BR	7.51	7.72	1.91
South Africa	ZA	6.37	7.22	1.94
U.S.	US	5.67	1.79	2.89
Mexico	MX	3.22	3.79	1.86
Russia	RU	3.13	3.08	0.27
Malaysia	MY	2.27	3.24	7.09
Indonesia	ID	2.25	2.52	5.01
Cayman Islands	KY	2.25	0.13	2.20
Thailand	TH	2.12	3.64	6.35
Poland	PL	1.36	1.46	1.51
Turkey	TR	1.22	1.35	0

Sector	Average	Weight(%)			Constituent #		
		EEM	VWO	EEMV	EEM	VWO	EEMV
Information Technology	21.54	26.86	16.90	20.86	75	522	45
Financials	22.93	23.02	24.20	21.57	174	344	45
Consumer Discretionary	9.33	10.17	9.51	8.31	96	544	20
Materials	5.83	7.29	8.13	2.08	81	546	8
Energy	5.37	6.73	7.15	2.22	55	153	12
Consumer Staples	8.00	6.25	6.48	11.27	78	271	35
Industrials	6.07	5.19	7.42	5.59	98	730	17
Telecommunication Services	6.77	5.17	5.26	9.87	42	66	17
Utilities	4.58	2.58	3.39	7.78	49	181	23
Real Estate	2.49	2.50	4.01	0.95	37	286	4
Health Care	4.33	2.21	3.06	7.72	37	240	20
UNKNOWN	2.76	2.03	4.48	1.78	15	96	3

Cap-Weighting International

Cap-Weighted
International
ETFs Typically Heavy
In Financials

Equity ETF Sector Allocation

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Sector	Weight(%)					Constituent #			
	Average	EWG	EWJ	EWM	EWZ	EWG	EWJ	EWM	EWZ
Financials	23.81	15.05	12.16	31.08	36.94	6	37	8	10
Industrials	13.64	13.09	20.71	14.94	5.81	8	70	8	5
Consumer Discretionary	13.50	18.26	20.08	9.63	6.01	13	57	4	4
Materials	9.70	14.08	6.72	3.66	14.35	10	30	1	9
Consumer Staples	8.11	2.02	7.85	8.47	14.10	3	27	6	7
Health Care	6.63	13.63	7.26	3.47	2.17	5	24	2	3
Utilities	6.46	3.22	1.92	14.59	6.12	3	10	4	10
Information Technology	6.29	10.21	12.58	0	2.37	3	40	0	1
Telecommunication Services	5.62	4.63	5.47	9.62	2.76	2	4	4	2
Energy	3.05	0	0.91	3.74	7.54	0	4	3	4
Real Estate	1.72	1.09	4.06	0	1.72	1	18	0	2
UNKNOWN	1.48	4.73	0.27	0.80	0.10	4	0	1	0

Rebalancing

PowerShares S&P 500 Low Volati[SPLV] Total Asset : \$7039.51 mil

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Sector	Weight(%)			Constituent #		
	Current	3 Months ago	6 Months ago	Current	3 Months ago	6 Months ago
Financials	21.26	14.30	12.21	21	14	12
Utilities	17.25	19.29	22.73	18	20	23
Industrials	16.73	17.97	16.96	16	17	17
Consumer Staples	13.00	18.19	18.71	13	18	18
Information Technology	11.23	7.08	3.99	11	7	4
Health Care	5.03	6.31	8.02	5	6	9
Consumer Discretionary	4.97	8.64	6.87	5	9	7
Materials	4.15	1.88	1.76	4	2	2
Real Estate	2.71	3.53	5.46	3	4	6
Energy	1.87	0.93	0	2	1	0
Telecommunication Services	0.83	1.95	2.42	1	2	2
UNKNOWN	0.99	0	0.87	0	0	0

Rebalancing

iShares Russell 2000 ETF[IWM] Total Asset : \$37628.41 mil

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<u>Sector</u>	Weight(%)			Constituent #		
	<u>Current</u>	<u>3 Months ago</u>	<u>6 Months ago</u>	<u>Current</u>	<u>3 Months ago</u>	<u>6 Months ago</u>
Financials	17.25	18.77	18.99	403	376	382
Information Technology	16.90	17.11	16.93	284	269	277
Health Care	15.70	12.75	12.43	320	328	336
Industrials	14.56	14.30	14.61	274	252	254
Consumer Discretionary	11.92	12.29	12.09	269	270	274
Real Estate	7.61	7.90	7.72	106	108	106
Materials	4.47	4.91	4.87	79	76	77
Utilities	3.69	3.49	3.39	42	40	40
Energy	3.46	3.04	3.69	114	87	86
Consumer Staples	2.66	2.90	2.86	57	62	62
Telecommunication Services	0.89	0.80	0.76	21	21	22
UNKNOWN	0.89	1.72	1.65	8	2	2

Diversification/Concentration

Top 10 = 60%

Top 10 = 60%

Top 10 = 35%

Top Ten Holdings

SOXX [30]			SMH [25]			XSD [36]			
Ticker	Name	Weight(%)	Ticker	Name	Weight(%)	Ticker	Name	Weight(%)	
1	NVDA	NVIDIA Corporation	9.41	TSM	Taiwan -Spnsrd ADR	10.18	NVDA	NVIDIA Corporation	3.84
2	TXN	Texas Instruments Inc	8.21	INTC	Intel Corporation	9.61	ON	ON Semiconductor Corporation	3.58
3	INTC	Intel Corporation	7.84	NVDA	NVIDIA Corporation	6.38	AMD	Advanced Micro Devices Inc	3.57
4	QCOM	QUALCOMM Inc	7.32	ASML	ASML Holding NV -NY Reg Shs	5.30	MSCC	Microsemi Corporation	3.56
5	AVGO	Broadcom Ltd	6.81	AMAT	Applied Materials Inc	5.12	MXIM	Maxim Integrated Products Inc	3.53
6	TSM	Taiwan -Spnsrd ADR	4.19	TXN	Texas Instruments Inc	4.97	SYNA	Synaptics Incorporated	3.52
7	AMAT	Applied Materials Inc	4.07	NXPI	NXP Semiconductors NV	4.59	QRVO	Qorvo Inc	3.49
8	MU	Micron Technology Inc	4.02	QCOM	QUALCOMM Inc	4.53	SWKS	Skyworks Solutions Inc	3.26
9	ADI	Analog Devices Inc	3.89	MU	Micron Technology Inc	4.49	CY	Cypress Semiconductor Corp	3.24
10	SWKS	Skyworks Solutions Inc	3.85	AVGO	Broadcom Ltd	4.38	TXN	Texas Instruments Inc	3.17

Diversification/Concentration

Top 10 = 60%

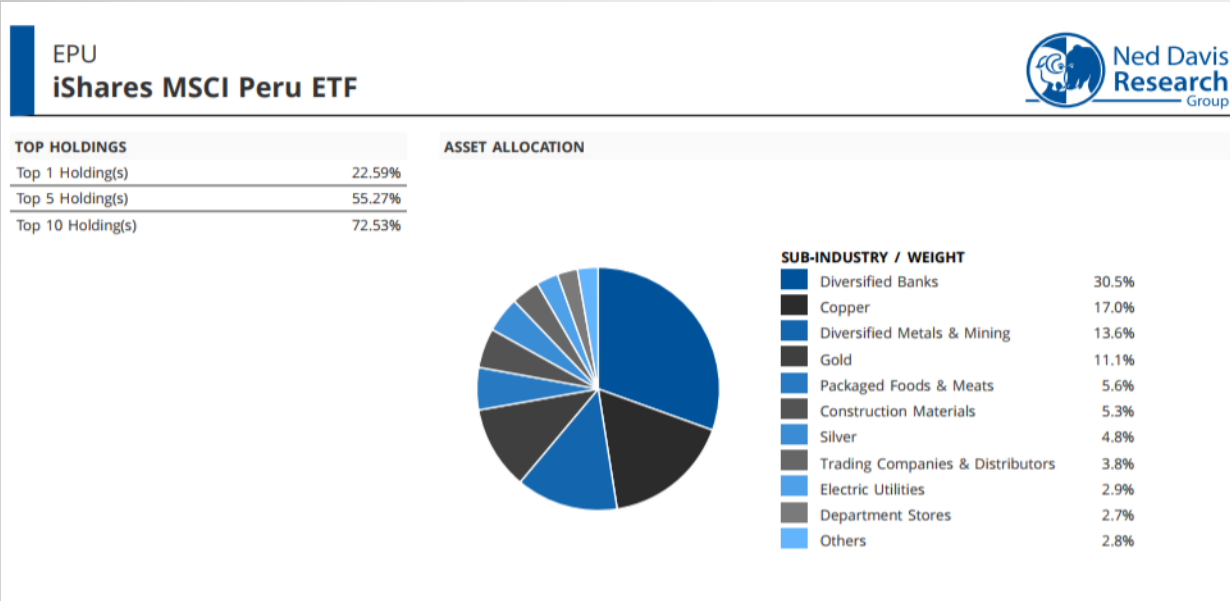
Top 10 = 60%

Top 10 = 35%

Top Ten Holdings

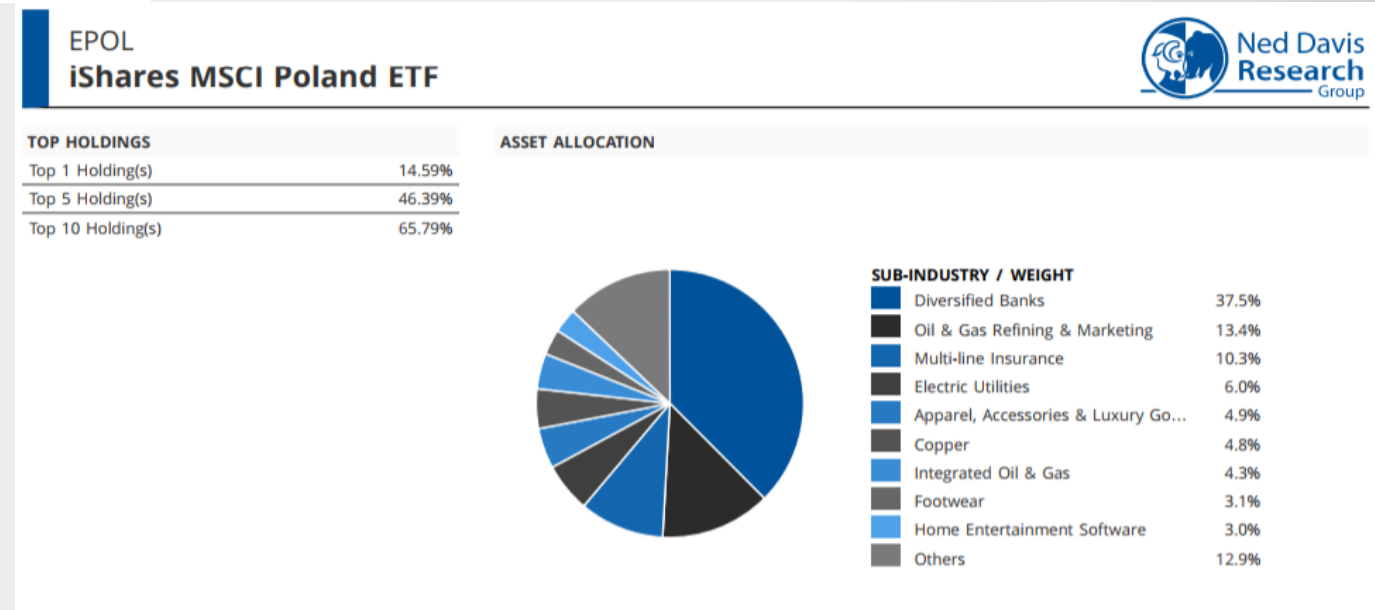
SOXX [30]			SMH [25]			XSD [36]			
Ticker	Name	Weight(%)	Ticker	Name	Weight(%)	Ticker	Name	Weight(%)	
1	NVDA	NVIDIA Corporation	9.41	TSM	Taiwan -Spnsrd ADR	10.18	NVDA	NVIDIA Corporation	3.84
2	TXN	Texas Instruments Inc	8.21	INTC	Intel Corporation	9.61	ON	ON Semiconductor Corporation	3.58
3	INTC	Intel Corporation	7.84	NVDA	NVIDIA Corporation	6.38	AMD	Advanced Micro Devices Inc	3.57
4	QCOM	QUALCOMM Inc	7.32	ASML	ASML Holding NV -NY Reg Shs	5.30	MSCC	Microsemi Corporation	3.56
5	AVGO	Broadcom Ltd	6.81	AMAT	Applied Materials Inc	5.12	MXIM	Maxim Integrated Products Inc	3.53
6	TSM	Taiwan -Spnsrd ADR	4.19	TXN	Texas Instruments Inc	4.97	SYNA	Synaptics Incorporated	3.52
7	AMAT	Applied Materials Inc	4.07	NXPI	NXP Semiconductors NV	4.59	QRVO	Qorvo Inc	3.49
8	MU	Micron Technology Inc	4.02	QCOM	QUALCOMM Inc	4.53	SWKS	Skyworks Solutions Inc	3.26
9	ADI	Analog Devices Inc	3.89	MU	Micron Technology Inc	4.49	CY	Cypress Semiconductor Corp	3.24
10	SWKS	Skyworks Solutions Inc	3.85	AVGO	Broadcom Ltd	4.38	TXN	Texas Instruments Inc	3.17

Diversification?



Top Holding 22.6%, Top 10 = 55%
Banks 30.5%

Top 10 = 66%
Banks 37.5%



ETFs For Asset Allocation

- Core Asset Allocation – AAIL, Schwab, Fidelity, Vanguard ...
- Tactical Allocation for Return Enhancement

Aggressive Investor
90% Diversified Stock

Suggested Allocation Breakdowns

20%	Large-Cap Stocks
20%	Mid-Cap Stocks
20%	Small-Cap Stocks
20%	International Stocks
10%	Emerging Markets Stocks
10%	Intermediate Bonds
0%	Short-Term Bonds

Characteristics

Growth:	Substantial
Income:	Very Low
Risk:	Substantial Year-to-Year Volatility of Portfolio Value
Average Annual Growth in Value:	10%
Bad Year:	-35%

-35% Bad Year

Allocations

10%	Fixed Income
90%	Diversified Stock

Portfolio Return

YTD:	10.9%
1 yr:	14.3%
5 yrs:	11.1%
10 yrs:	5.9%

Transitions

20% Fixed Income
80% Diversified Stock

Investors, as they age, usually transition their portfolios toward less risky and less aggressive asset allocations.

Moderate Investor
70% Diversified Stock

Suggested Allocation Breakdowns

20%	Large-Cap Stocks
20%	Mid-Cap Stocks
10%	Small-Cap Stocks
15%	International Stocks
5%	Emerging Markets Stocks
30%	Intermediate Bonds
0%	Short-Term Bonds

Characteristics

Growth:	Moderate
Income:	Low
Risk:	Moderate Year-to-Year Volatility of Portfolio Value
Average Annual Growth in Value:	8%
Bad Year:	-25%

-25% Bad Year

Allocations

30%	Fixed Income
70%	Diversified Stock

Portfolio Return

YTD:	8.7%
1 yr:	10.6%
5 yrs:	9.2%
10 yrs:	5.7%

Transitions

40% Fixed Income
60% Diversified Stock

Investors, as they get closer to retirement, usually transition their portfolios toward lower risk and more conservative allocations.

Conservative Investor
50% Diversified Stock

Suggested Allocation Breakdowns

25%	Large-Cap Stocks
10%	Mid-Cap Stocks
10%	Small-Cap Stocks
5%	International Stocks
0%	Emerging Markets Stocks
40%	Intermediate Bonds
10%	Short-Term Bonds

Characteristics

Growth:	Low
Income:	Moderate
Risk:	Low Year-to-Year Volatility of Portfolio Value
Average Annual Growth in Value:	6%
Bad Year:	-16%

-16% Bad Year

Allocations

50%	Fixed Income
50%	Diversified Stock

Portfolio Return

YTD:	6.0%
1 yr:	7.0%
5 yrs:	7.5%
10 yrs:	5.7%

Core series

Our most straightforward portfolios include broadly diversified domestic and international equity and fixed income Vanguard ETFs®. In addition, each portfolio features remarkably low costs and the potential for few capital gains.

Strategic asset allocation by product
As of December 31, 2017

Asset allocation (%)¹ ■ Equity / ■ Fixed income

Vanguard ETF	Ticker	Expense ratio ²	0/100	10/90	20/80	30/70	40/60	50/50	60/40	70/30	80/20	90/10	100/0
Domestic equity													
Total Stock Market	VTI	0.04%	0.0%	5.9%	11.8%	17.6%	23.5%	29.4%	35.3%	41.2%	47.0%	52.9%	58.8%
International equity													
Total International Stock	VXUS	0.11%	0.0%	3.9%	7.8%	11.8%	15.7%	19.6%	23.5%	27.4%	31.4%	35.3%	39.2%
Domestic fixed income													
Total Bond Market	BND	0.05%	68.6%	61.7%	54.9%	48.0%	41.2%	34.3%	27.4%	20.6%	13.7%	6.9%	0.0%
International fixed income													
Total International Bond	BNDX	0.12%	29.4%	26.5%	23.5%	20.6%	17.6%	14.7%	11.8%	8.8%	5.9%	2.9%	0.0%
Money market fund													
			2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
Asset-weighted expense ratio			0.07%	0.07%	0.07%	0.07%	0.07%	0.07%	0.07%	0.07%	0.07%	0.07%	0.07%

Model portfolio performance

Quarter	0.62%	1.12%	1.61%	2.11%	2.61%	3.11%	3.61%	4.12%	4.62%	5.13%	5.64%
Year-to-date	3.21	5.07	6.96	8.88	10.84	12.82	14.83	16.87	18.96	21.07	23.21
1 year	3.21	5.07	6.96	8.88	10.84	12.82	14.83	16.87	18.96	21.07	23.21
3 year (annualized)	2.32	3.10	3.87	4.63	5.39	6.14	6.89	7.63	8.35	9.08	9.80
5 year (annualized)	2.25	—	4.33	—	6.40	—	8.46	—	10.51	—	12.55
Since inception (annualized)	2.54	3.94	4.68	5.14	6.82	6.32	8.97	7.47	11.10	8.59	13.23
Inception date	1/1/2012	1/1/2014	1/1/2012	1/1/2014	1/1/2012	1/1/2014	1/1/2012	1/1/2014	1/1/2012	1/1/2014	1/1/2012

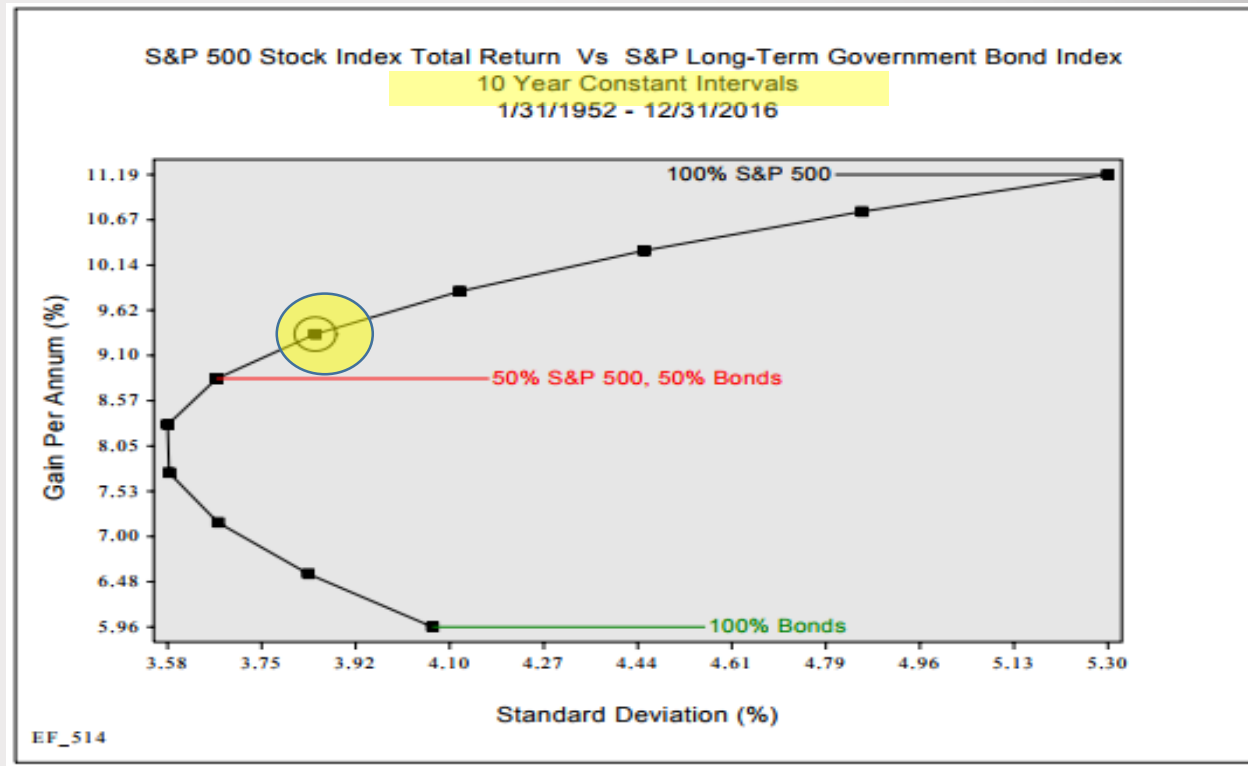
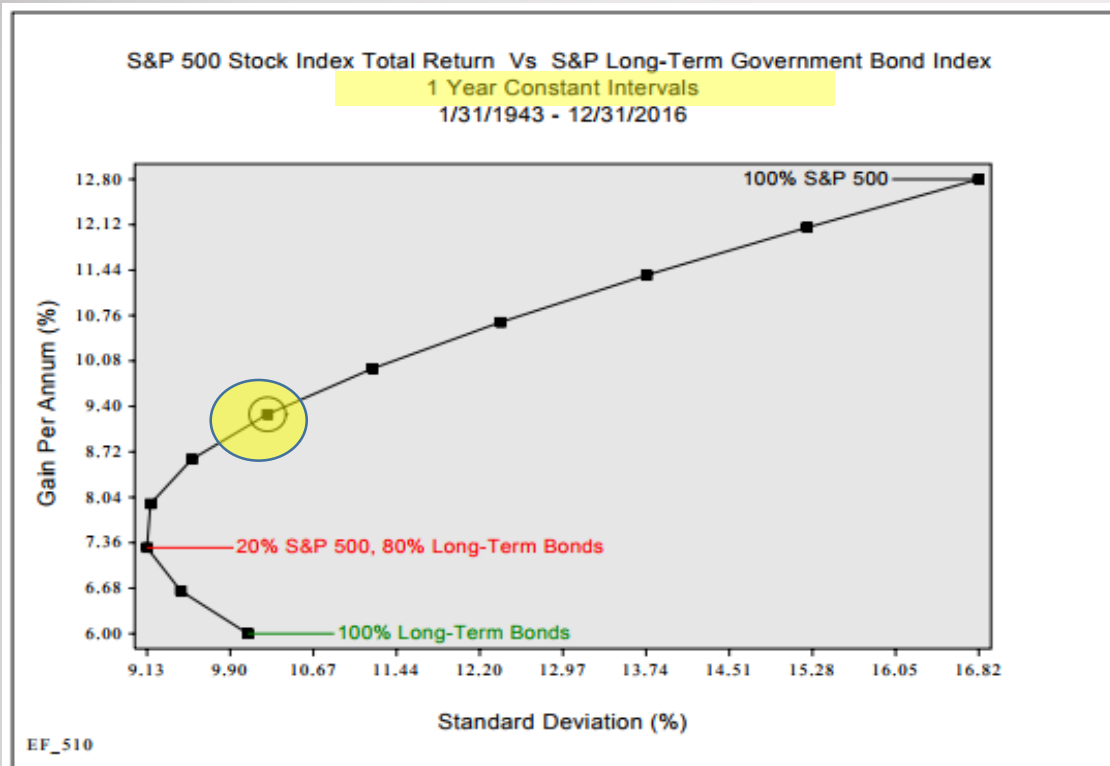
¹ Portfolio weights reflect a combination of market characteristics, Vanguard philosophy, and the availability of the ETFs in the Vanguard lineup. Because of rounding, weights may not add up to 100%.

² As reported in each ETF's most recent prospectus as of December 31, 2017. The current expense ratio may be higher or lower than the figure shown.

Source: Vanguard calculations using data from FactSet.

The performance data shown represent past performance, which is not a guarantee of future results, and reflects the performance of the underlying products that comprise our strategies and our investment allocation methodology. Investment returns and principal value will fluctuate, so an investor's ETF shares, when sold, may be worth more or less than their original cost. Current performance may be higher or lower than the performance data cited. Performance of the model ETF components are based on net asset value (NAV) return and assumes a semiannual rebalance from January 2010 through December 2012, a quarterly rebalance from January 2013 through December 2013, and a monthly rebalance thereafter. Performance figures assume the reinvestment of dividends and capital gains distributions; the figures are pre-tax and net of expenses. All figures are for periods ended December 31, 2017, except where noted. Performance figures for periods of less than one year are cumulative returns.

Efficient Frontier



The Efficient Frontier
S&P 500 Stock Index Total Return vs S&P Long-Term Government Bond Index
1/31/1943 - 12/31/2016
Based On 1 Year Constant Intervals

Asset Mix				
S&P_500	Long-Term Bonds	SD%	GPA%	Reward/Risk
0%	100%	10.06	6.00	0.60
10%	90%	9.44	6.64	0.70
20%	80%	9.13	7.29	0.80
30%	70%	9.16	7.95	0.87
40%	60%	9.54	8.61	0.90
50%	50%	10.24	9.29	0.91 --> 0
60%	40%	11.21	9.97	0.89
70%	30%	12.40	10.66	0.86
80%	20%	13.75	11.37	0.83
90%	10%	15.23	12.08	0.79
100%	0%	16.82	12.80	0.76

The Efficient Frontier
S&P 500 Stock Index Total Return vs S&P Long-Term Government Bond Index
1/31/1952 - 12/31/2016
Based On 10 Year Constant Intervals

Asset Mix				
S&P_500	S&P Long-Term Bonds	SD%	GPA%	Reward/Risk
0%	100%	4.06	5.96	1.47
10%	90%	3.84	6.57	1.71
20%	80%	3.67	7.17	1.95
30%	70%	3.58	7.74	2.16
40%	60%	3.58	8.30	2.32
50%	50%	3.67	8.83	2.41
60%	40%	3.85	9.35	2.43 --> 0
70%	30%	4.11	9.84	2.39
80%	20%	4.45	10.31	2.32
90%	10%	4.85	10.76	2.22
100%	0%	5.30	11.19	2.11

Annualized volatility changes with the time period used to measure it.

Annualized Volatility by Holding Period, US Equities, 1871–2016



Source: Research Affiliates, LLC, based on data from Robert Shiller.

Core Portfolio



Moderate Investor
70% Diversified Stock

Suggested Allocation Breakdowns

- 20% Large-Cap Stocks
- 20% Mid-Cap Stocks
- 10% Small-Cap Stocks
- 15% International Stocks
- 5% Emerging Markets Stocks
- 30% Intermediate Bonds
- 0% Short-Term Bonds



Portfolio Name : AAll - Moderate

Security		Description					
Ticker	Weight(%)	Name	ETF/Stock	Asset Type	Sector	Country	ExpRat(%)
SPY	20.00	SPDR S&P 500 ETF Trust	ETF	EQUITY	Mix	US	0.09
MDY	20.00	SPDR S&P Midcap 400 ETF Trust	ETF	EQUITY	Mix	US	0.25
IJR	10.00	iShares Core S&P Small Cap ETF	ETF	EQUITY	Mix	US	0.07
ACWX	15.00	iShares MSCI ACWI ex U.S. ETF	ETF	EQUITY	Mix	BLEND	0.33
EEM	5.00	iShares MSCI Emerging Markets ETF	ETF	EQUITY	Mix	BLEND	0.7
BIV	30.00	Vanguard Intermediate-Term Bond ETF	ETF	BOND	null	US	0.07
	100.00	Portfolio					0.18

Gain 2/24/2017 – 2/23/2018 = 11.83%

70/30 (ACWI & Global Agg.) = 8.65%

Core Portfolio with Tactical

Core Reduce:
 SPY 10%
 MDY 10%
 ACWX 15%
 Total = 35%

Tactical Add:
 EEM 5%
 ITA 5%
 XLB 5%
 IBB 5%
 FXI 2.5%
 EFA 12.5%

Security		Description					
Ticker	Weight(%)	Name	ETF/Stock	Asset Type	Sector	Country	ExpRat(%)
SPY	10.00	SPDR S&P 500 ETF Trust	ETF	EQUITY	Mix	US	0.09
MDY	10.00	SPDR S&P Midcap 400 ETF Trust	ETF	EQUITY	Mix	US	0.24
IJR	10.00	iShares Core S&P Small Cap ETF	ETF	EQUITY	Mix	US	0.07
EEM	10.00	iShares MSCI Emerging Markets ETF	ETF	EQUITY	Mix	BLEND	0.69
BIV	30.00	Vanguard Intermediate-Term Bond ETF	ETF	BOND	null	US	0.07
ITA	5.00	iShares U.S. Aerospace & Defense ETF	ETF	EQUITY	Industrials	US	0.44
XLB	5.00	Materials Select Sector SPDR Fund	ETF	EQUITY	Materials	US	0.13
IBB	5.00	iShares NASDAQ Biotechnology ETF	ETF	EQUITY	Health Care	US	0.47
FXI	2.50	iShares China Large-Cap ETF	ETF	EQUITY	Financials	CN	0.74
EFA	12.50	iShares MSCI EAFE ETF	ETF	EQUITY	Mix	BLEND	0.32
	100.00	Portfolio					0.24

Gain 2/24/2017 – 2/23/2018 = 14.25%

70/30 (ACWI & Global Agg.) = 8.65%

Single Stock Exposure or ETF?

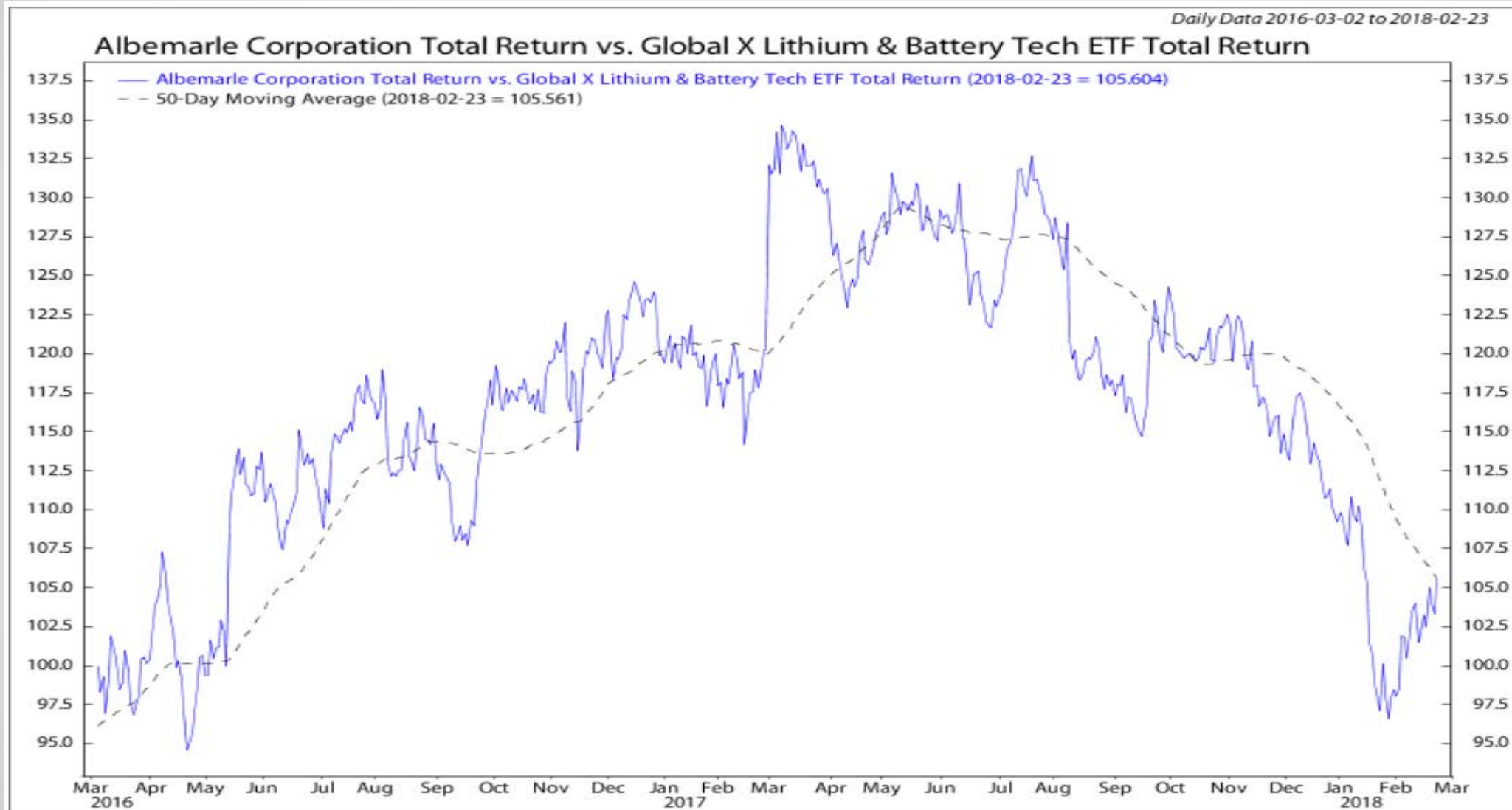


Chart Builder

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Tactical ETFs To Follow/Add

- Regional Funds – Country Funds, Small-Cap, Fundamental, and FOREX
- Domestic Funds – Sectors, Industry Groups, Momentum, Buy-Backs, Strategy, Low-Volatility and Fundamental
- Commodity Funds – Aggregate (Oil Overweight), Sectors (grains, basic materials, gold, lumber), Actively-Managed
- Fixed-Income – Duration, Yield Curve, Actively-Managed

Tactical ETFs – Additional Things To Consider

- How are the underlying securities selected – due diligence.
HACK – Cyber Security ETF
- How Often Will They Add a New Stock
- Primary Market Liquidity – Want Institutional Interest

Simple Options to Enhance/Protect

Can do in IRA

- Covered (short) Calls
- Naked Puts – don't mind owning
- Long Puts/Calls – protection/leveraged gains

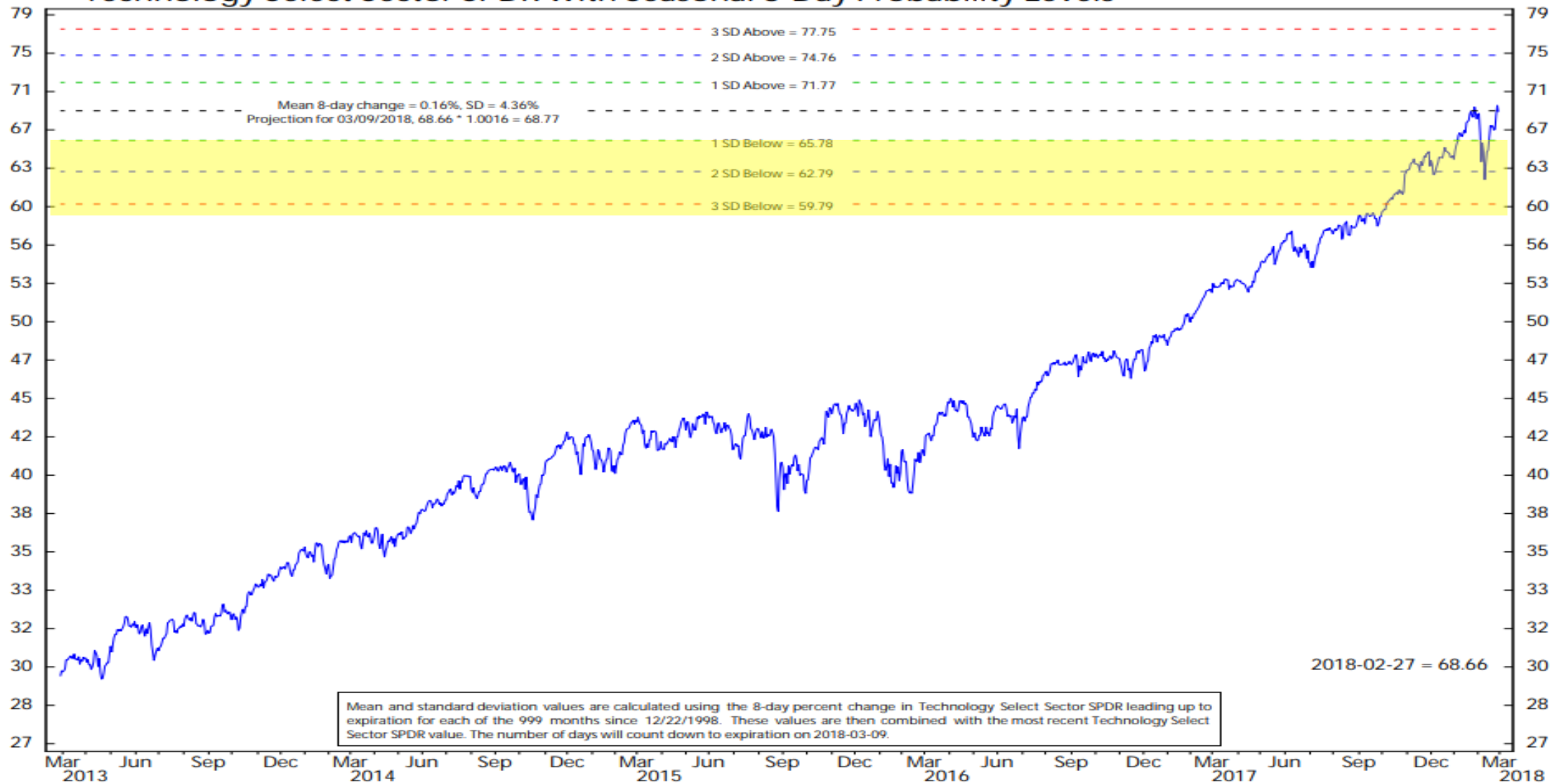
Can Not do in an IRA

- Naked Calls – don't mind being short (can't do in IRA)

Options Strategies all Based on Overbought/Oversold and Probability

Daily Data 2013-02-26 to 2018-02-27 (Log Scale)

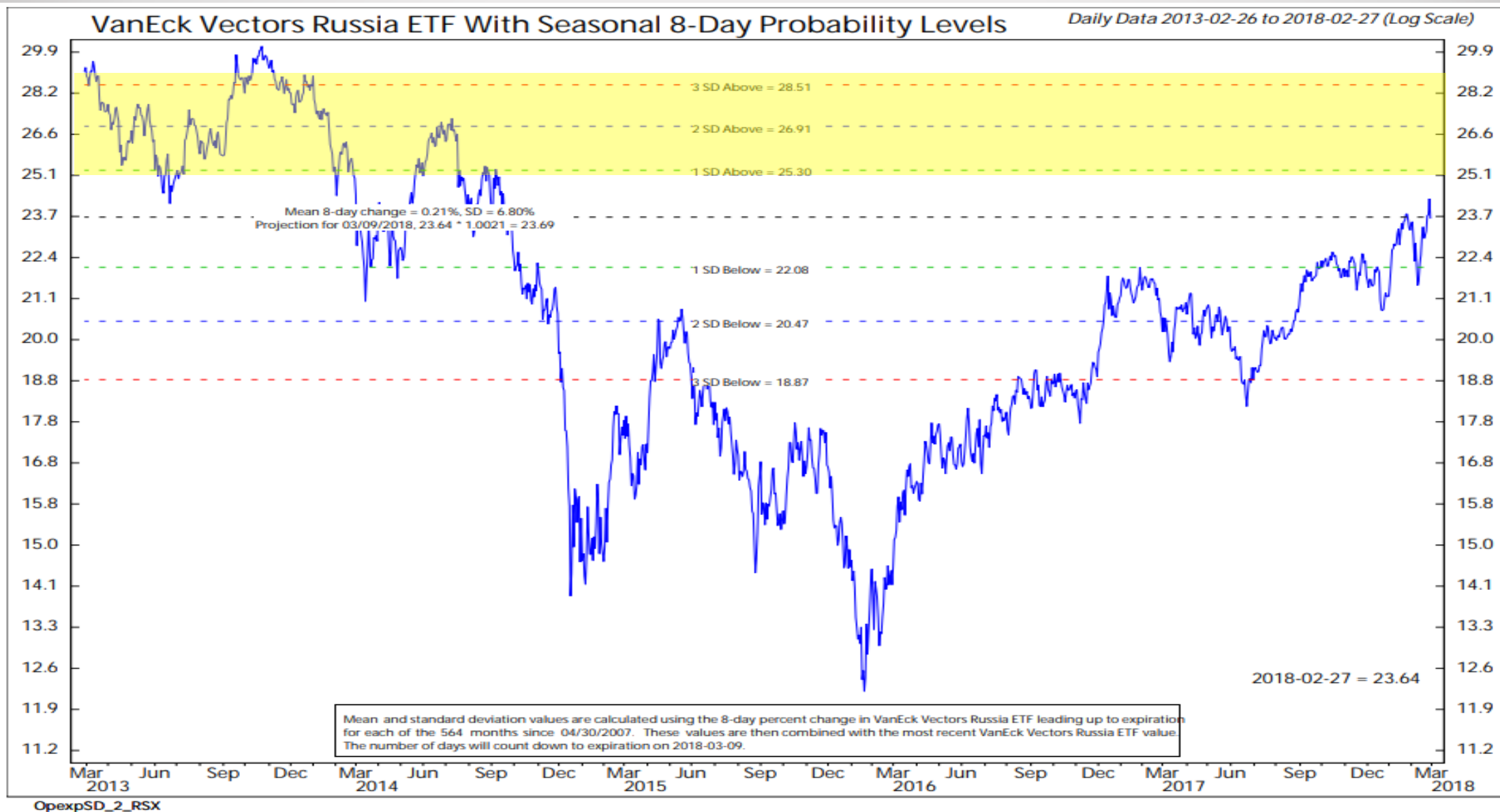
Technology Select Sector SPDR With Seasonal 8-Day Probability Levels



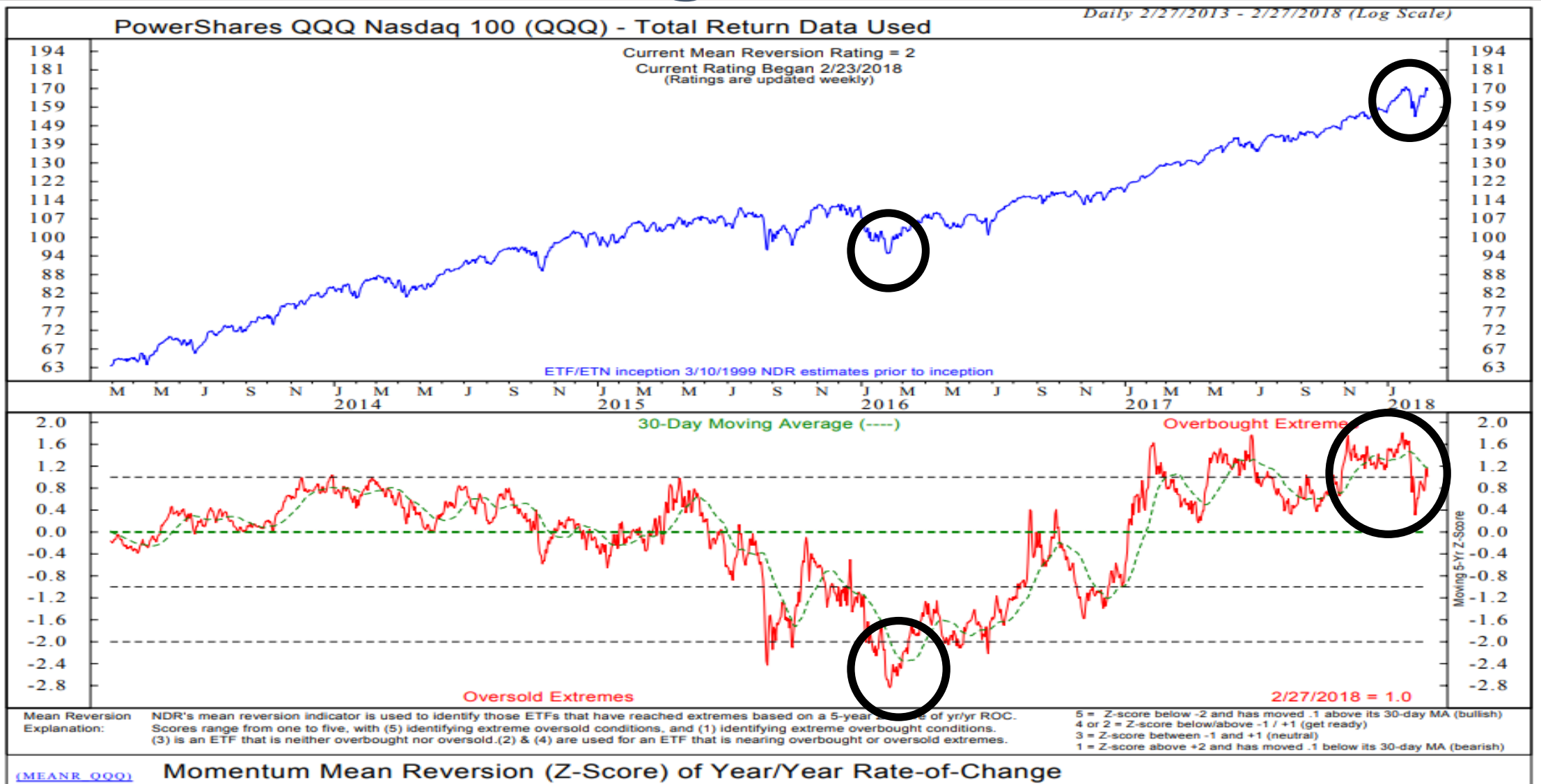
OpexpSD_2_XLK

Mean and standard deviation values are calculated using the 8-day percent change in Technology Select Sector SPDR leading up to expiration for each of the 999 months since 12/22/1998. These values are then combined with the most recent Technology Select Sector SPDR value. The number of days will count down to expiration on 2018-03-09.

Options Strategies all Based on Overbought/Oversold and Probability



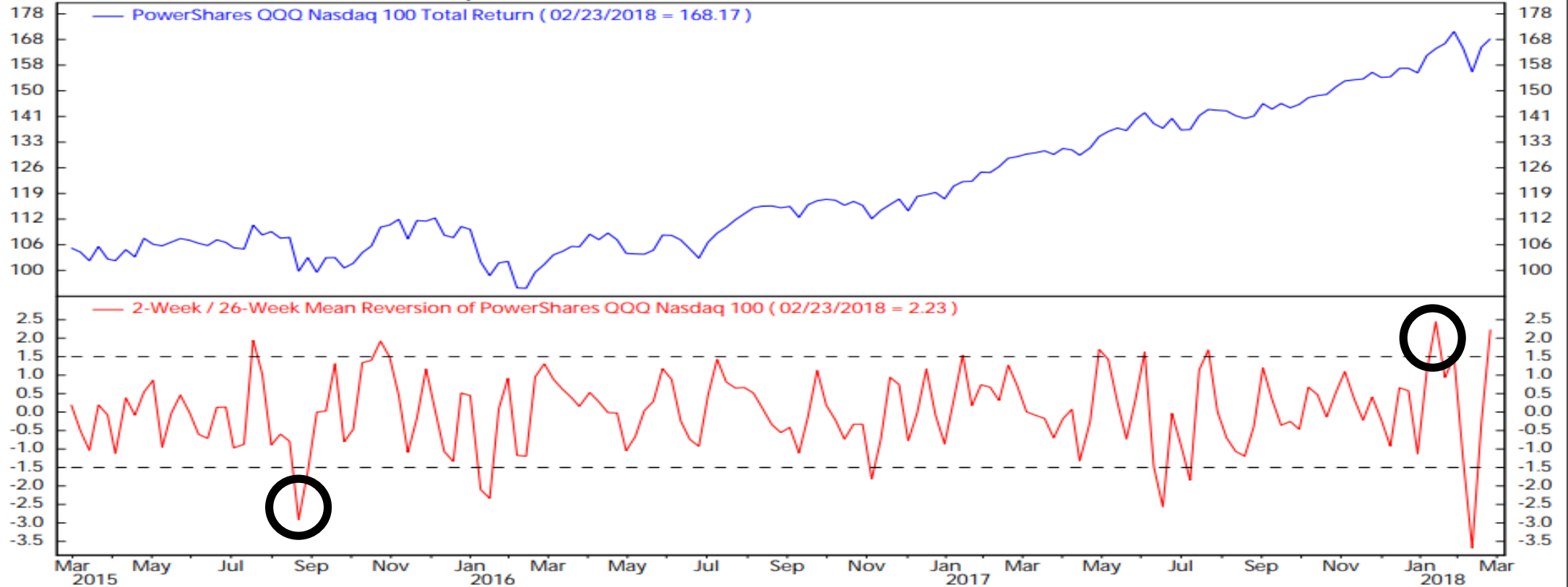
Overbought/Oversold



Overbought/Oversold

PowerShares QQQ Nasdaq 100 (QQQ) Mean Reversion

Weekly Data 2015-02-27 to 2018-02-23 (Log Scale)



QQQ Performance when: (Analysis Dates: 02/27/2015 to 02/23/2018)		
2-Week Mean Reversion is:	% Gain/Annum	% of Time
* Greater than 1.5	-14.15	4.49
Between -1.5 and 1.5	14.55	90.38
Less than -1.5	122.31	5.13

QQQ Average Percentage Gain After 2-Week Mean Reversion First Crosses:			
Weeks Later	Above 1.5	Below -1.5	All Periods
1	-0.28	2.18	0.32
4	-0.69	1.28	1.28
12	-0.04	7.03	3.82

Data Range:
[6-Mths](#) [1-Yr](#) [3-Yr](#) [5-Yr](#) [Full History](#)

Deviation Level:
[0.5](#) [1](#) [1.5](#) [2](#) [2.5](#) [3](#) [3.5](#)
 Mean Reversion Periods:
[1](#) [2](#) [4](#) [13](#) [26](#)

ETF_400.RPT_QQQ

Simple Technical Indicators



Simple Indicators for Better Entry/Exit



Research – Top Down

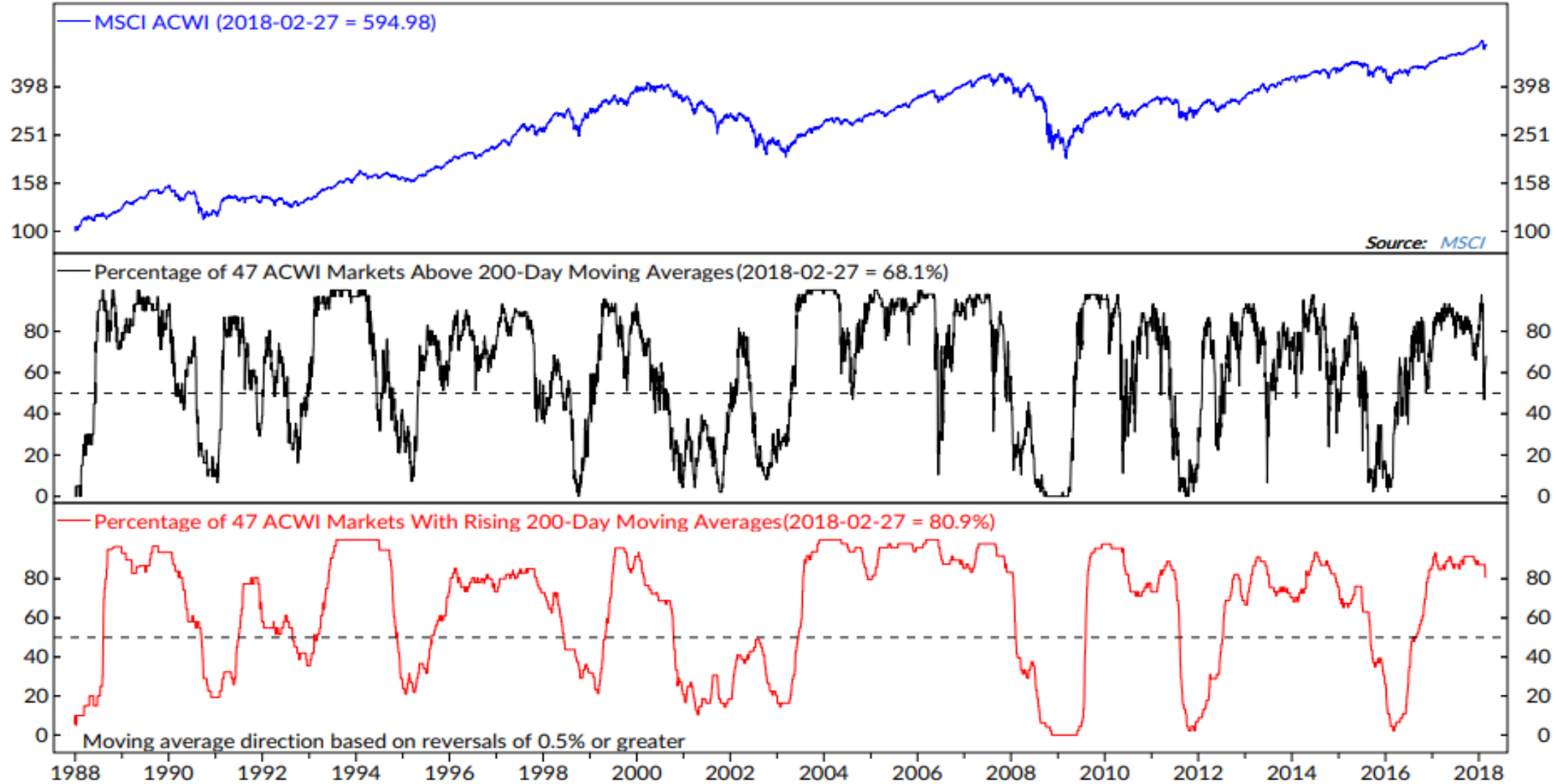
- Trend – Don't Fight The Tape
- Monetary – Don't Fight The Fed
- Sentiment – Be Wary of Crowds at Extremes
- Valuation – Not a timing indicator

Trend - Aggregate

MSCI All Country World Index vs. 200-Day Moving Average Indicators

Daily Data 1987-12-31 to 2018-02-27

(11388)



Trend/Technical Confirmation

Name	Daily	Weekly	Monthly
Consumer Discretionary Sel.	Strong Buy	Strong Buy	Strong Buy
First Trust Dow Jones Inte.	Strong Buy	Strong Buy	Strong Buy
Industrial Select Sector S. ▲ ⁺	Strong Buy	Strong Buy	Strong Buy
Technology Select Sector S.	Strong Buy	Strong Buy	Strong Buy
iShares Russell 2000 Growt.	Strong Buy	Strong Buy	Strong Buy
PowerShares QQQ	Strong Buy	Strong Buy	Strong Buy
SPDR S&P 500	Strong Buy	Strong Buy	Strong Buy
S&P 500	Strong Buy	Strong Buy	Strong Buy
iPath Bloomberg Grains Sub.	Strong Buy	Strong Buy	Strong Sell
KraneShares CSI China Inte.	Buy	Strong Buy	Strong Buy
SPDR S&P Biotech	Buy	Strong Buy	Strong Buy
iShares Core S&P Small-Cap.	Neutral	Strong Buy	Strong Buy
iShares MSCI Europe Financ.	Neutral	Strong Buy	Strong Buy
iShares Russell 2000	Neutral	Strong Buy	Strong Buy
Utilities Select Sector SP.	Sell	Strong Sell	Neutral
iShares Core MSCI Emerging.	Sell	Strong Buy	Strong Buy
iShares MSCI Mexico Capped.	Strong Sell	Strong Sell	Strong Sell
iShares 20+ Year Treasury.	Strong Sell	Strong Sell	Strong Sell
Vanguard Telecommunication.	Strong Sell	Strong Sell	Strong Sell

Daily Indicators

Technical Indicators » Feb 28, 2018 06:00PM GMT			Moving Averages » Feb 28, 2018 06:00PM GMT		
Name	Value	Action	Period	Simple	Exponential
RSI(14)	54.143	Neutral	MA5	77.9460	77.7806
STOCH(9,6)	59.112	Buy	MA10	77.4390	77.3194
STOCHRSI(14)	66.613	Buy	MA20	76.3820	77.3636
MACD(12,26)	0.044	Buy	MA50	77.8620	76.8638
ADX(14)	35.042	Buy	MA100	75.3898	75.4703
Williams %R	-30.199	Buy	MA200	72.1748	72.5823
CCI(14)	82.7926	Buy	Buy: 10 Sell: 2		
ATR(14)	0.8982	Less Volatility	Summary: STRONG BUY		
Highs/Lows(14)	0.2396	Buy			
Ultimate Oscillator	43.640	Sell			
ROC	3.773	Buy			
Bull/Bear Power(13)	0.9680	Buy			
Buy: 9 Sell: 1 Neutral: 1					
Summary: STRONG BUY					

Don't Fight The Central Banks

Country	Rate	Real Rate	Last Rate Move	Date of Last Rate Move
Australia	1.50	-0.41	Easing	2016-08-03
Brazil	6.75	3.89	Easing	2018-02-08
Canada	1.25	-0.45	Tightening	2018-01-17
Chile	2.50	0.31	Easing	2017-05-19
China	4.35	3.04	Easing	2015-10-26
Colombia	4.50	0.83	Easing	2018-01-30
Czech Republic	0.05	-2.10	Easing	2012-11-02
Denmark	0.00	-0.60	Easing	2012-07-06
Eurozone	0.00	-1.16	Easing	2016-03-16
Hong Kong	1.75	0.11	Tightening	2017-12-14
Hungary	0.90	-1.32	Easing	2016-05-25
Iceland	5.00	5.67	Easing	2017-10-04
India	6.00	0.93	Easing	2017-08-02
Indonesia	4.25	1.00	Easing	2017-09-25
Japan	-0.10	-1.40	Easing	2016-02-16
Malaysia	3.25	0.54	Tightening	2018-01-25
Mexico	7.50	1.95	Tightening	2018-02-08
New Zealand	1.75	0.13	Easing	2016-11-10

Norway	0.50	-1.13	Easing	2016-03-18
Peru	3.00	1.75	Easing	2018-01-11
Philippines	3.50	-0.45	Easing	2016-06-03
Poland	1.50	-0.43	Easing	2015-03-05
Qatar	2.50	-0.42	Tightening	2017-12-14
Russia	7.50	5.29	Easing	2018-02-12
Saudi Arabia	2.00	-0.96	Easing	2009-01-19
South Africa	6.75	2.48	Easing	2017-07-21
South Korea	1.50	0.49	Tightening	2017-11-30
Sweden	-0.50	-2.08	Easing	2016-02-17
Switzerland	-0.75	-1.49	Easing	2015-01-15
Taiwan	1.38	0.50	Easing	2016-07-01
Thailand	1.50	0.82	Easing	2015-04-29
Turkey	8.00	-2.35	Tightening	2016-11-24
United Kingdom	0.50	-2.20	Tightening	2017-11-02
United States	1.38	-0.70	Tightening	2017-12-13

Beware of Crowds

Fear & Greed Index beta

Sponsored by

What emotion is driving the market now?

Now:
Extreme Fear



Previous Close
Extreme Fear

20

1 Week Ago
Extreme Fear

17

1 Month Ago
Extreme Greed

79

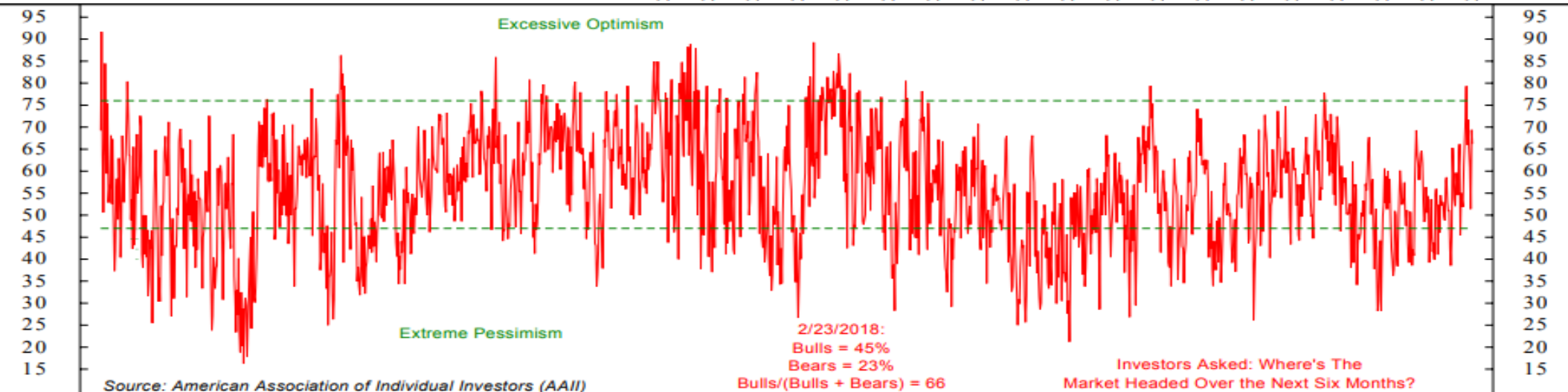
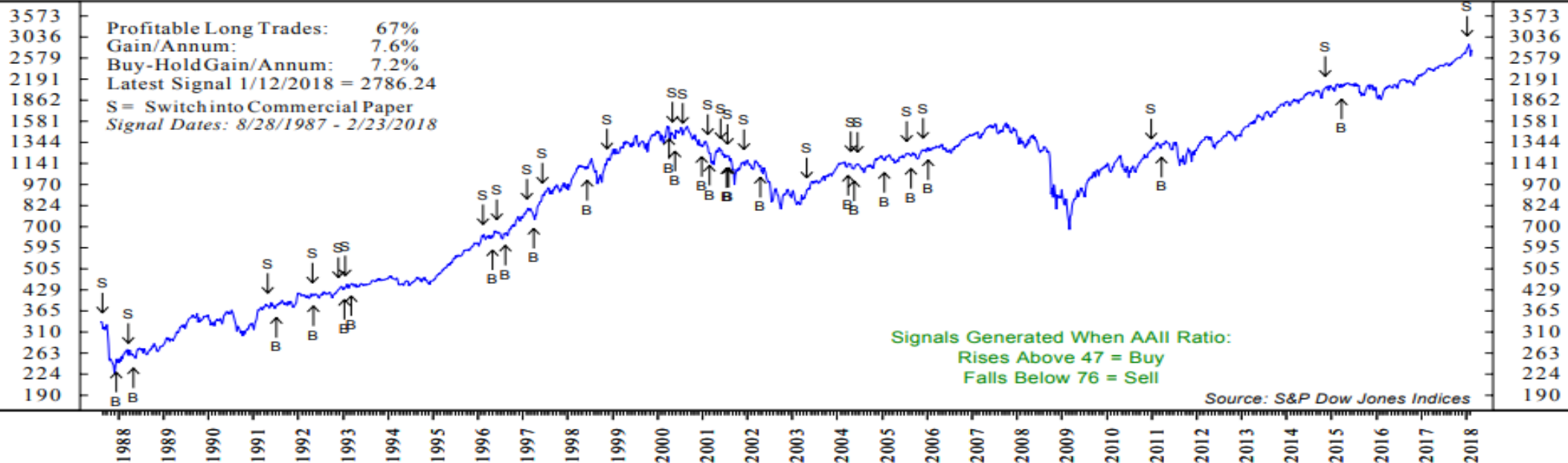
1 Year Ago
Greed

71

Last updated Feb 26 at 7:00pm

Standard & Poor's 500 Stock Index

Weekly 8/14/1987 - 2/23/2018 (Log Scale)



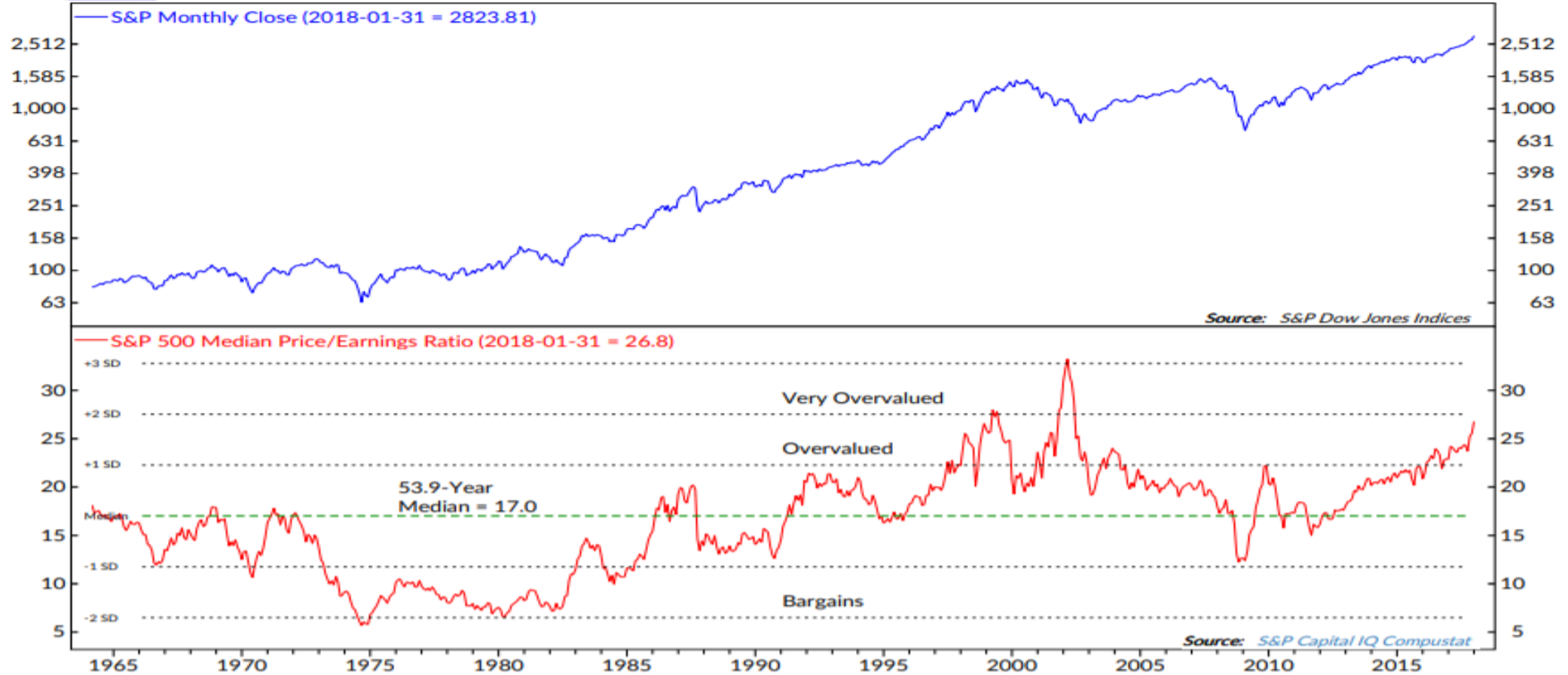
(S0508) American Association of Individual Investors Bulls/(Bulls + Bears)

Valuation on a Relative Basis

S&P 500 Median Price/Earnings Ratio (NDR Calculation)

Monthly Data 1964-03-31 to 2018-01-31

(DAVIS100)



Price Move Of:
-16.8% to Overvalued (+1SD) = S&P 500 Level of 2349.41
-36.4% to Median Fair Value = S&P 500 Level of 1795.94
-56.1% to Undervalued (-1SD) = S&P 500 Level of 1239.65

Current Outlook

Domestic - Neutral

Developed Ex. US -
Positive

Emerging- Positive

Tape – Positive

Tape – Positive

Tape – Positive

Central Bank –
Negative

Central Bank – Positive

Central Bank – Positive

Sentiment – Positive

Sentiment – Positive

Sentiment – Neutral

Valuation - Negative

Valuation - Neutral

Valuation - Positive

Research

Free

- [TradingView.com](https://www.tradingview.com)
- [Investing.com](https://www.investing.com)
- [RealInvestmentAdvice.com](https://www.realinvestmentadvice.com)
- CNN Fear & Greed
- [IndexIndicators.com](https://www.indexindicators.com)
- ETF Providers (iShares, Vanguard...)

Low Fee

- AAI
- Fibonacci Queen
- Bespoke
- Sentiment Trader
- IBD
- Morningstar