

The Man and the Machines

Portfolio Strategy Webcast

Wednesday, March 29th 2017
at 10:30am EDT

Michael L. Goldstein
MGoldstein@Empirical-Research.com
(212) 803-8010

Rochester H. Cahan
RCahan@Empirical-Research.com
(212) 803-7973

Empirical Research Partners

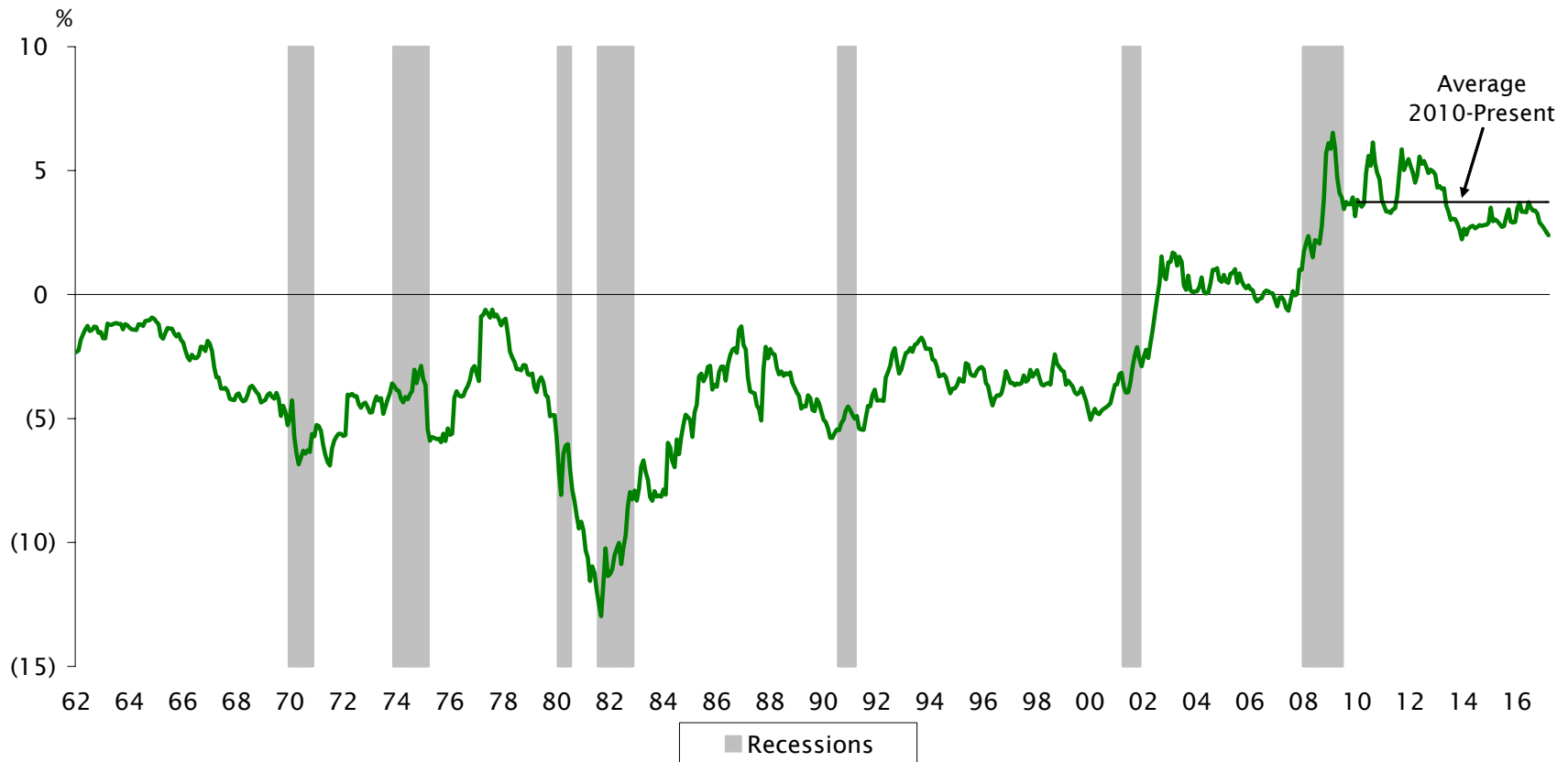
The Man and the Machines

Topics

- The Market Cycle: The Hard Part
- The Business Cycle: The Rise of the Nominals
- The Bretton Woods II Era: Over?
- The Machines: Trend Extenders
- Portfolio Analytics
- Analyses of Key Sectors
- Conclusions

Stocks Retain a Risk Premium, of Sorts

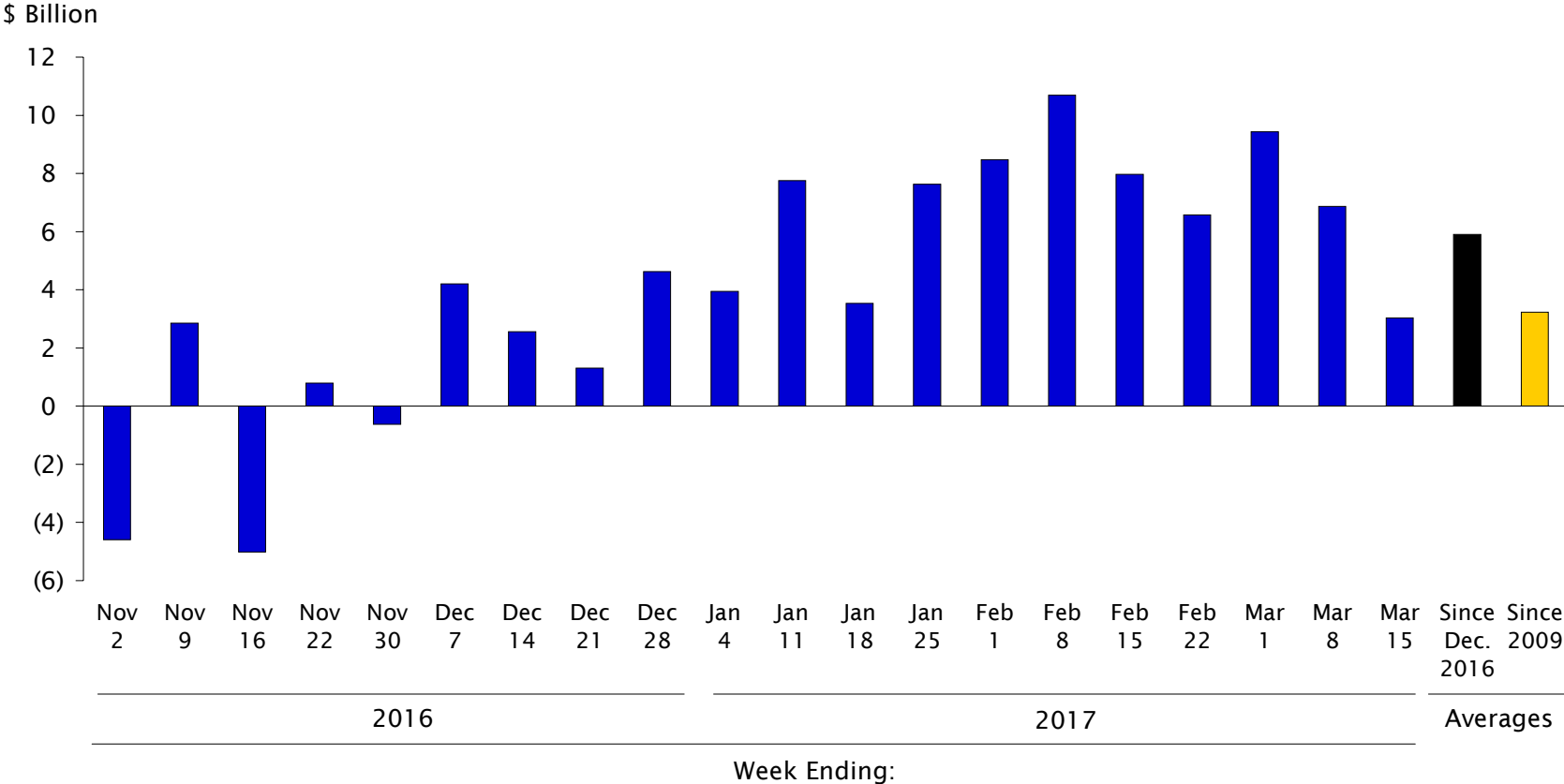
The Large-Capitalization Core of the Market¹
Free Cash Flow Yields Less the Ten-Year Treasury Bond Yield
1962 Through Late-March 2017



¹Core excludes financials, utilities, energy and industrial commodities; capitalization-weighted data.

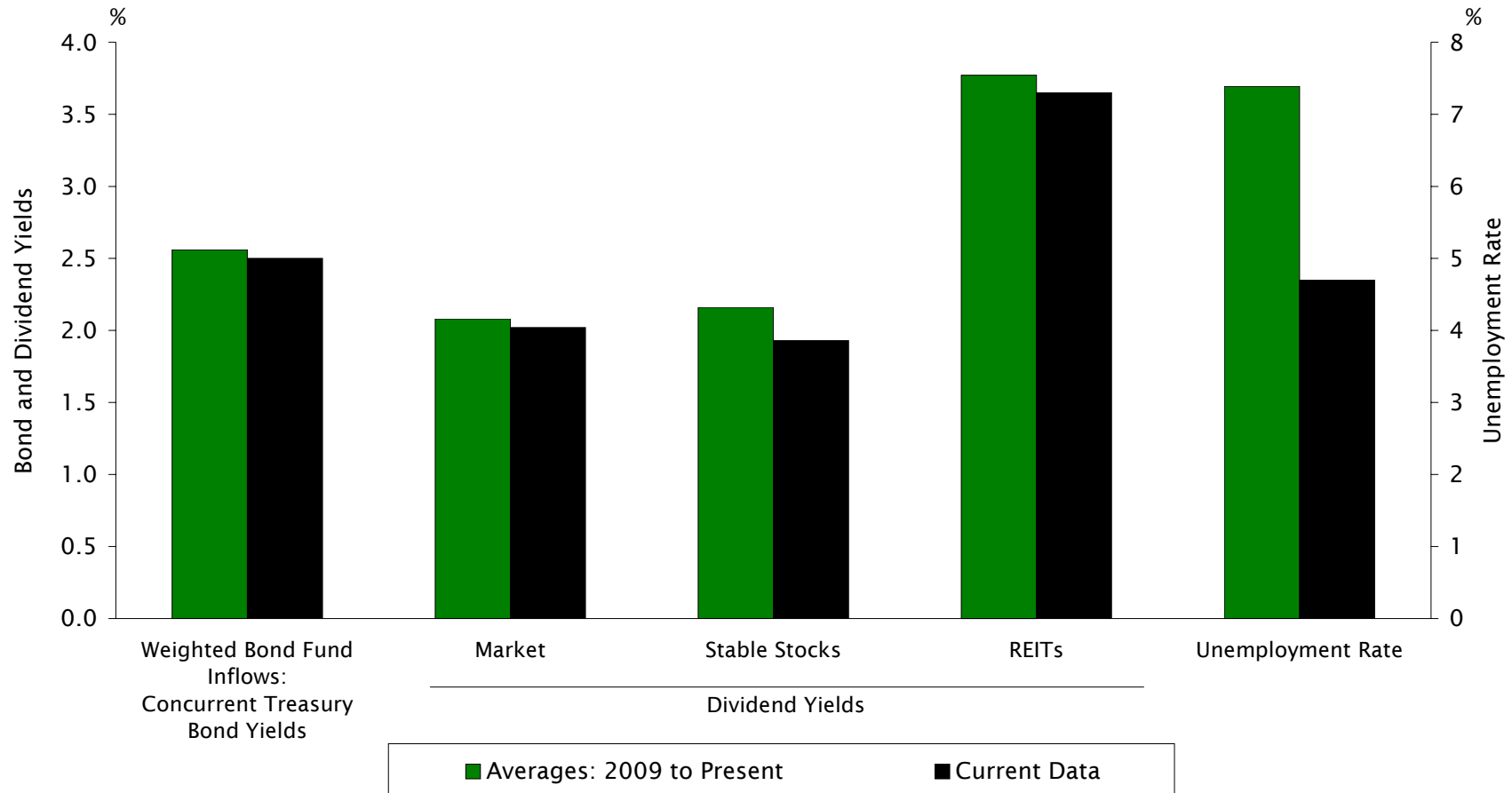
Retail Investors Bought the Dip in the Bond Market...

Taxable Bond Mutual Funds and ETFs
 Weekly Net Flows
 November 2016 Through Mid-March 2017

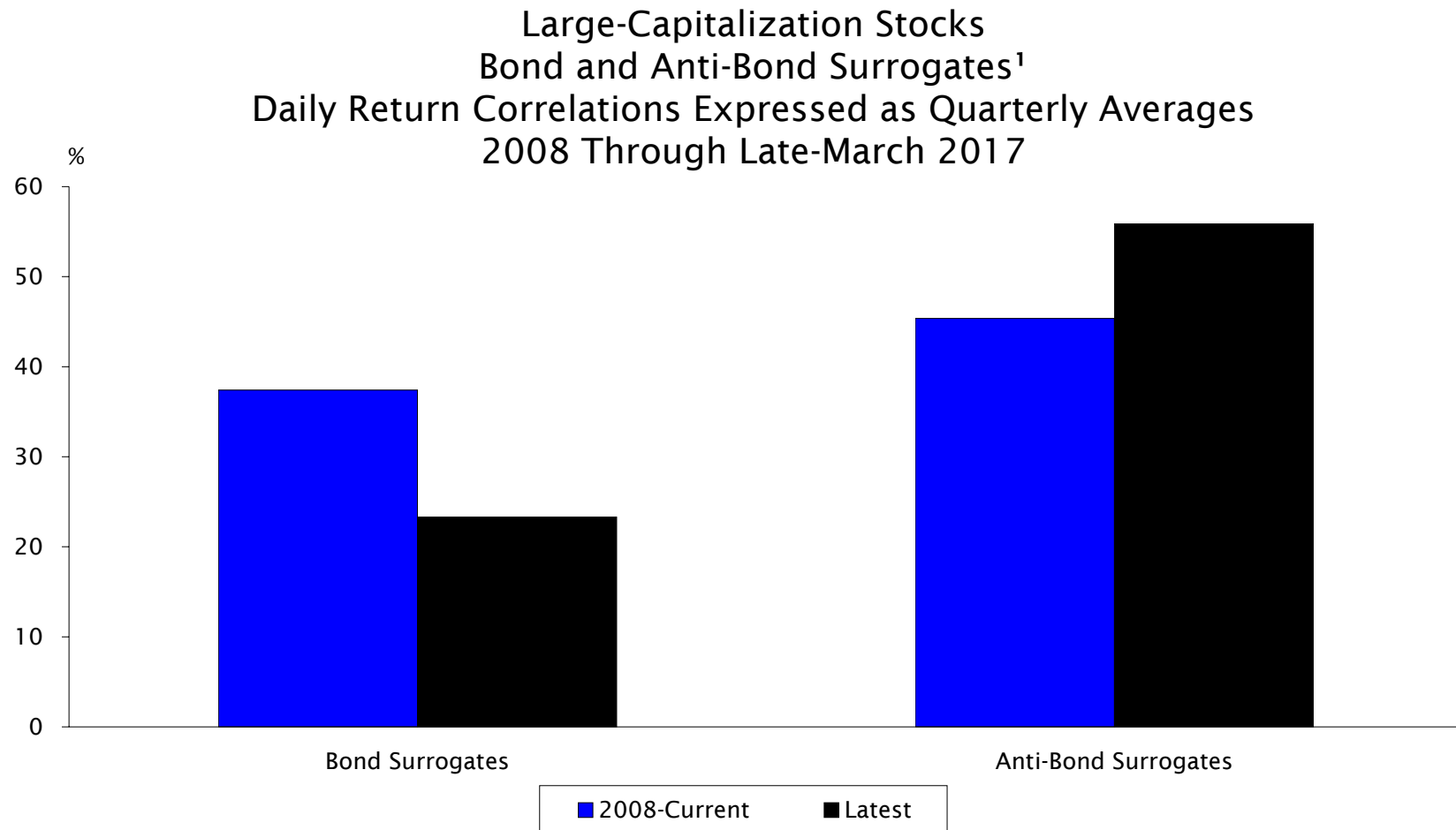


...And We've Reached a Critical Juncture...

The Yield Sweepstakes 2009 Through Late-March 2017



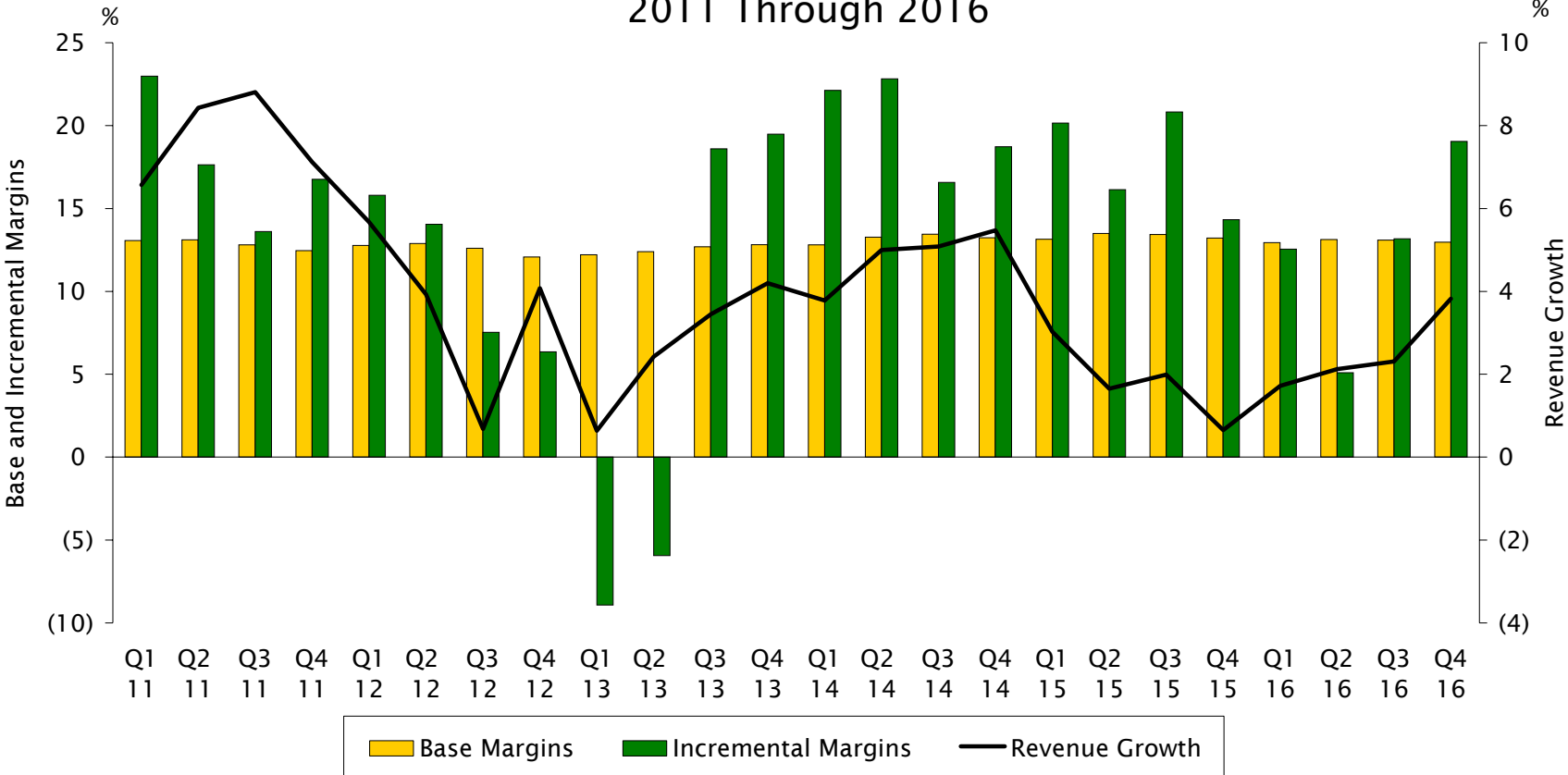
...Prompting the Equity Market to Have a Change of Heart



¹The bond surrogates are the 10% of the market with relative returns that are most correlated with the performance of ten-year Treasury bonds, while the anti-bond surrogates are the 10% that are least correlated.

Operating Leverage Has Remained Strong...

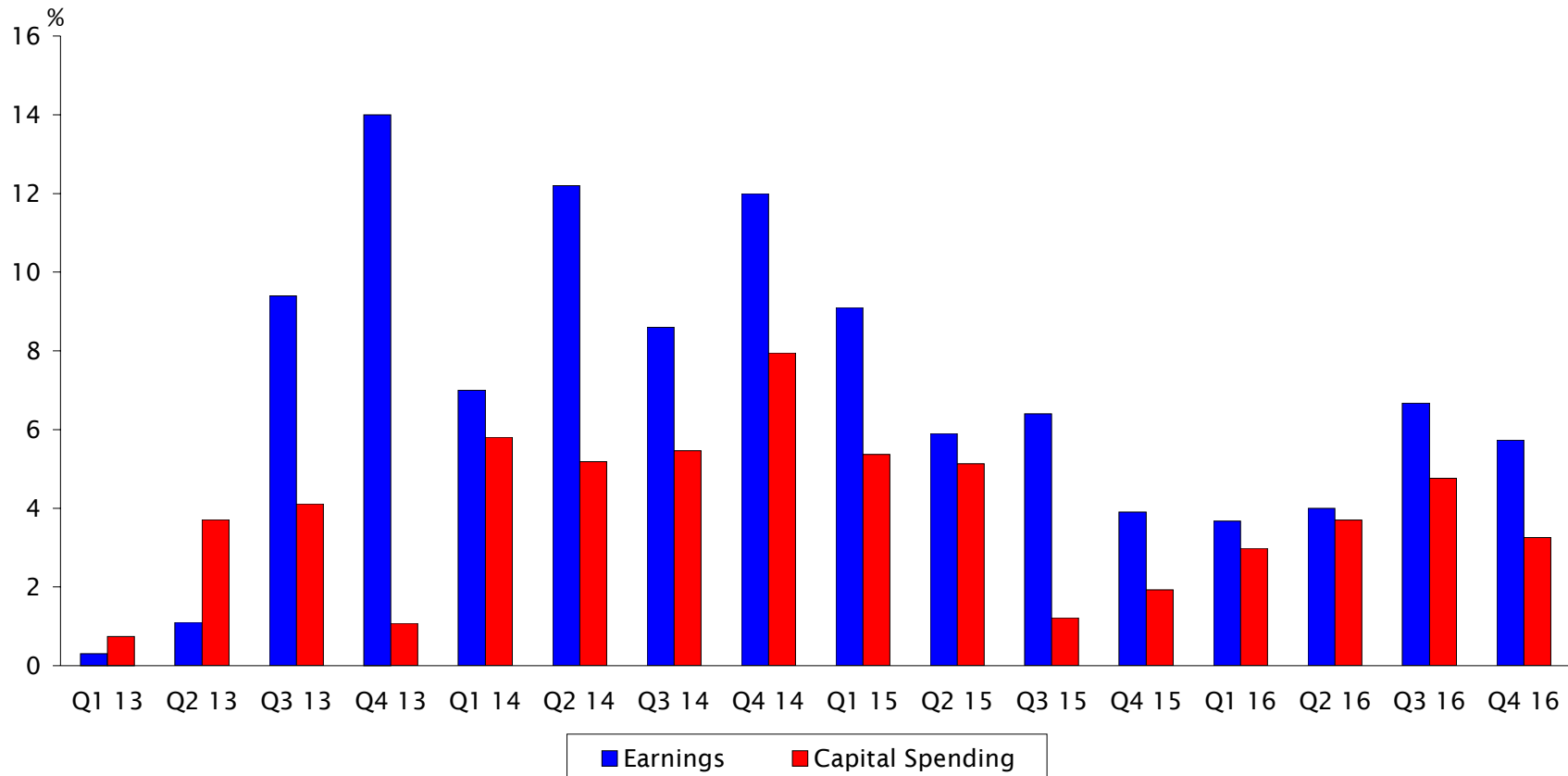
The Core of the S&P 500¹
 Base and Incremental Pre-Tax Margins
 and Revenue Growth Rates
 2011 Through 2016



¹The core excludes financials, utilities, energy and industrial commodities.

...As Capital Spending Has Yet to Undermine It

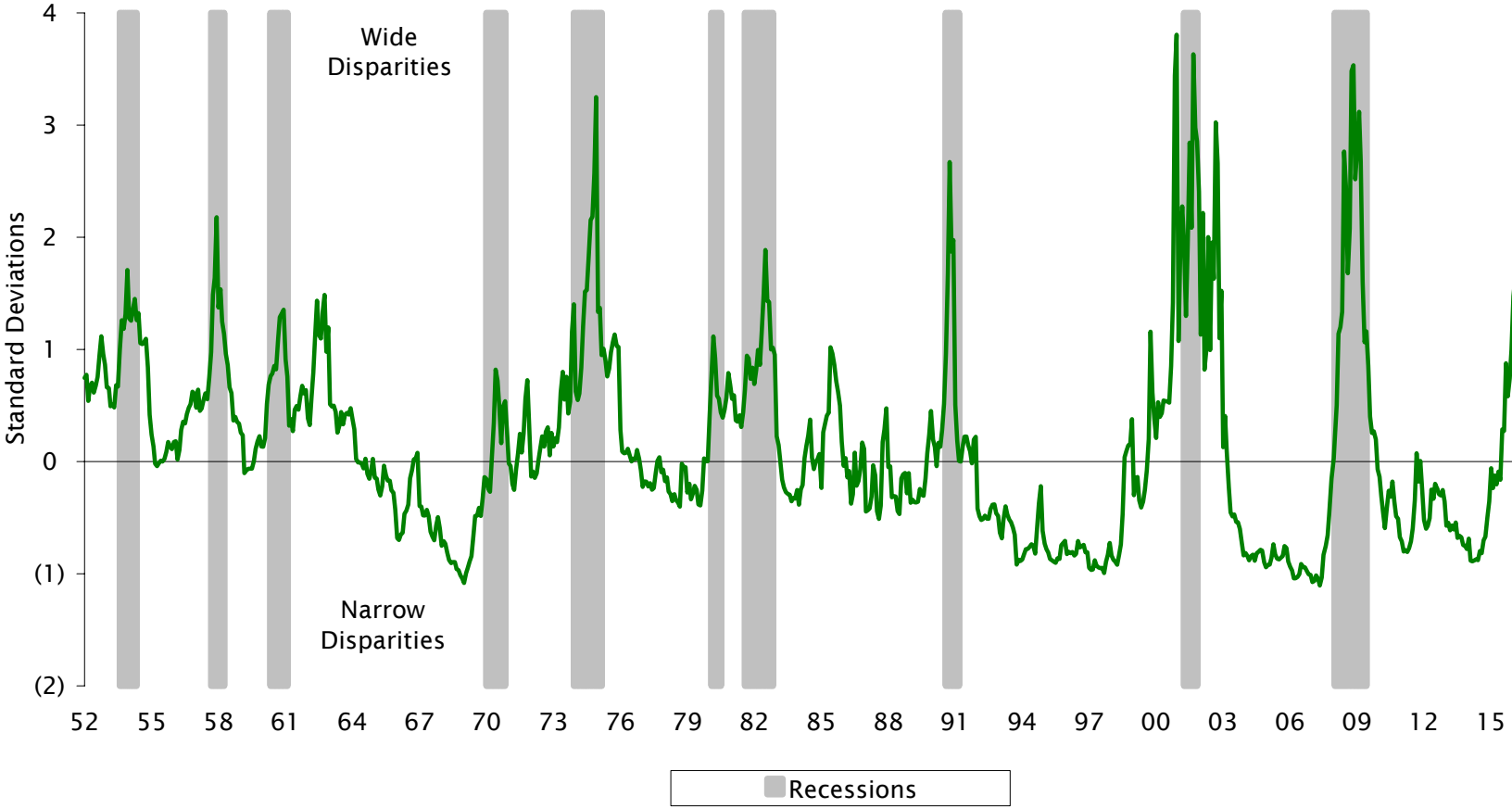
The Core of the S&P 500¹
Growth Rates in Earnings Per Share and Capital Spending
2013 Through 2016



¹ The core excludes financials, energy and industrial commodity sectors; computed on a year-over-year basis.

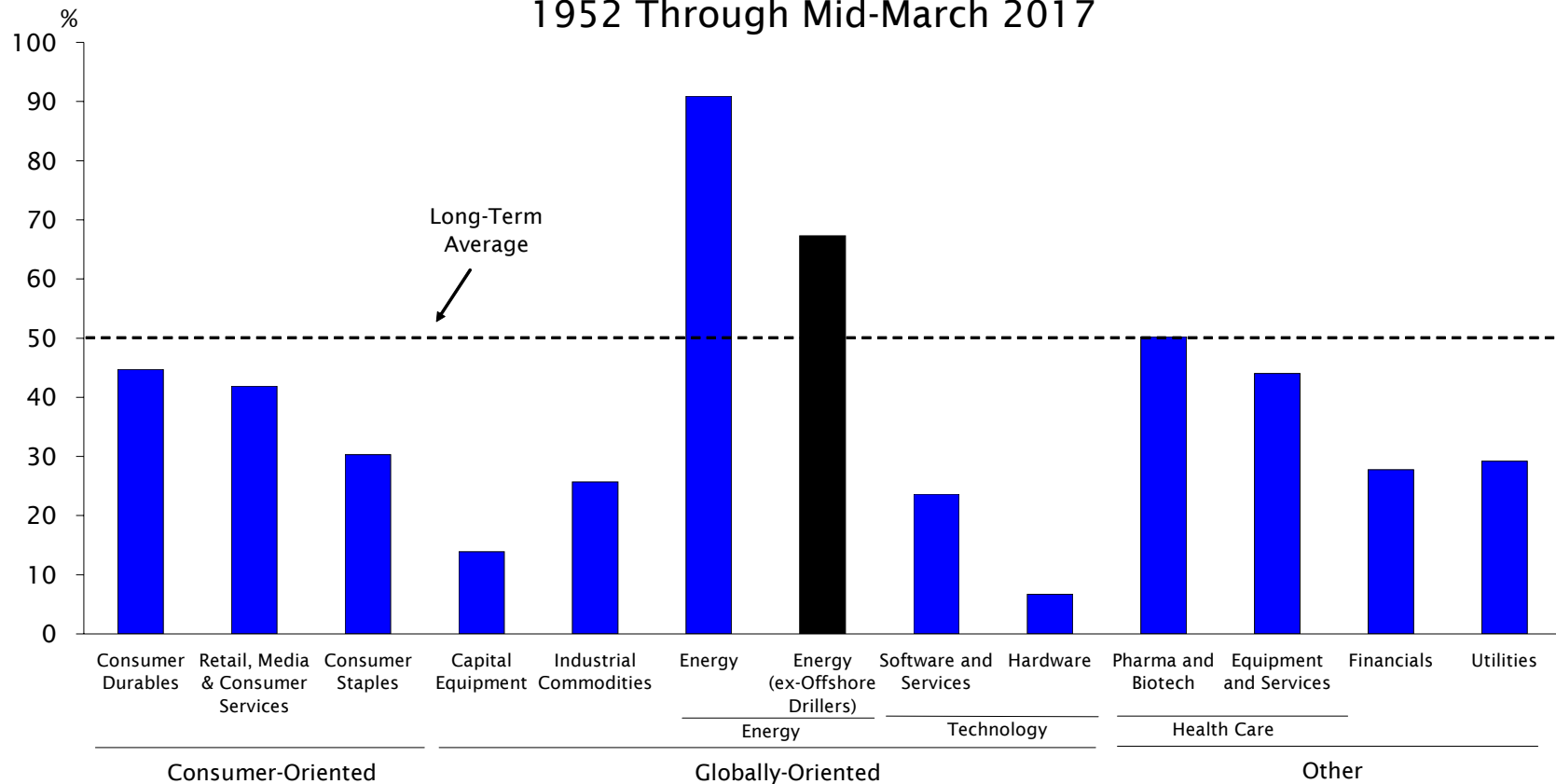
Valuation Spreads are Now Below Average...

U.S. Valuation Spreads Expected Return of the Top Quintile Compared to the Average 1952 Through Mid-March 2017



...With Energy an Outlier

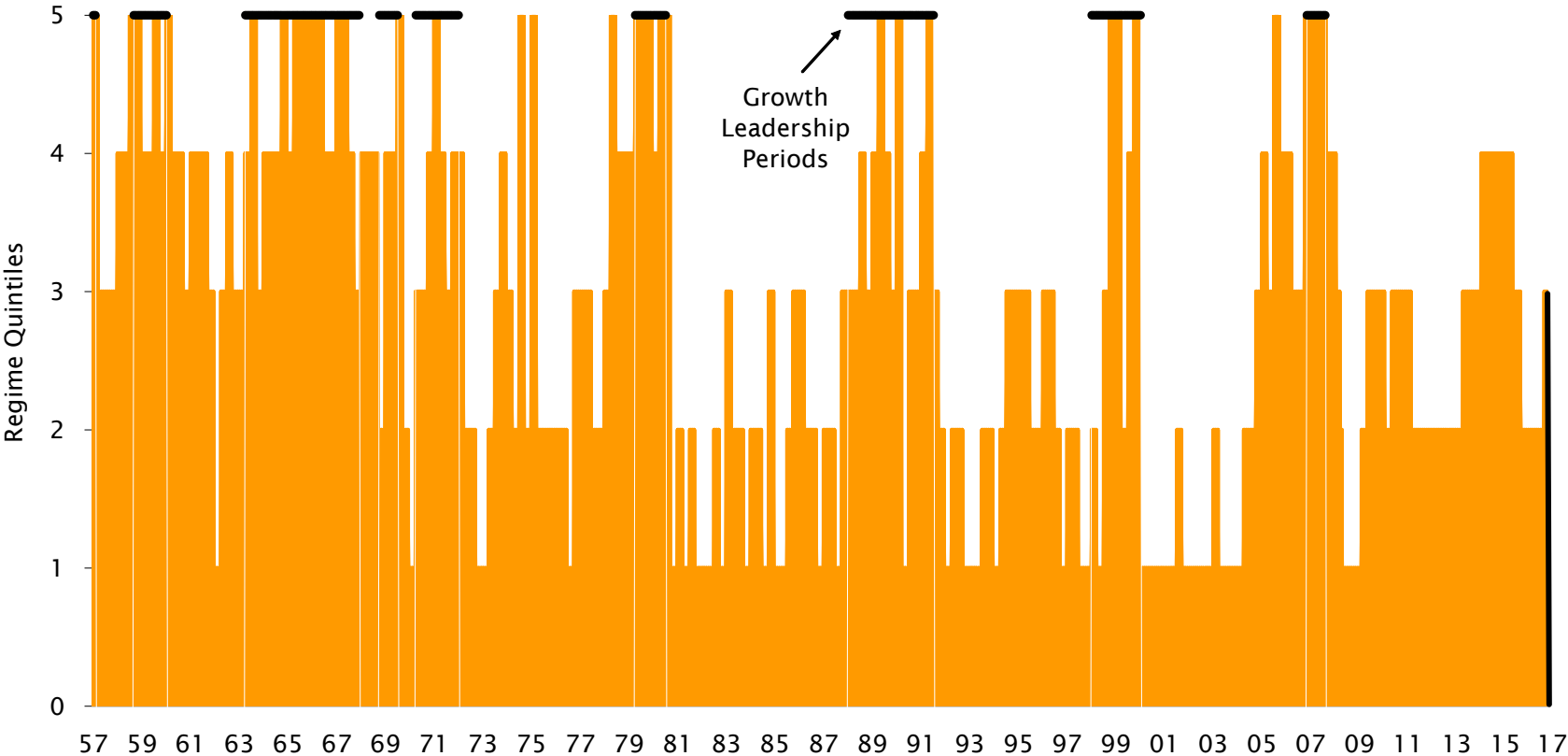
Intra-Sectoral Valuation Spreads¹
 Current Readings Compared to the Long-Term History
 Percentiles (1=Narrowest; 100=Widest)
 1952 Through Mid-March 2017



¹Based on an analysis of a 1,500 stock universe. Framework varies across sectors depending on what's proven efficacious.

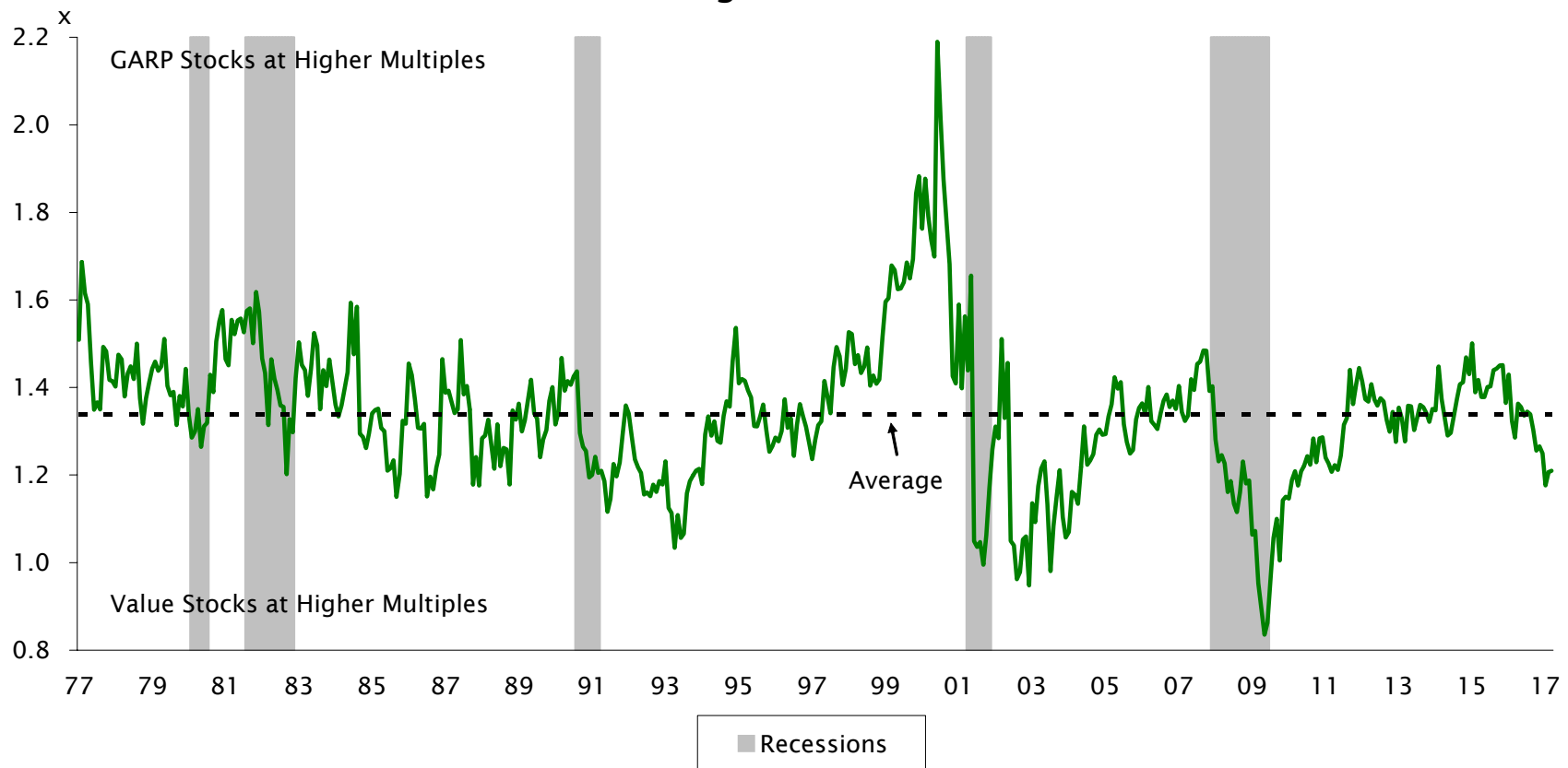
The Regime is Neutral...

The U.S. Equity Market
Regime Indicator Quintiles
(5=Growth-Driven Dynamic; 1=Valuation-Driven Dynamic)
1957 Through February 2017



...And GARP Stocks Look to Have an Edge

Large-Capitalization Stocks Top-Ranked GARP and Value Issues Comparison of Forward-P/E Ratios¹ 1977 Through Late-March 2017



¹Equally-weighted data.

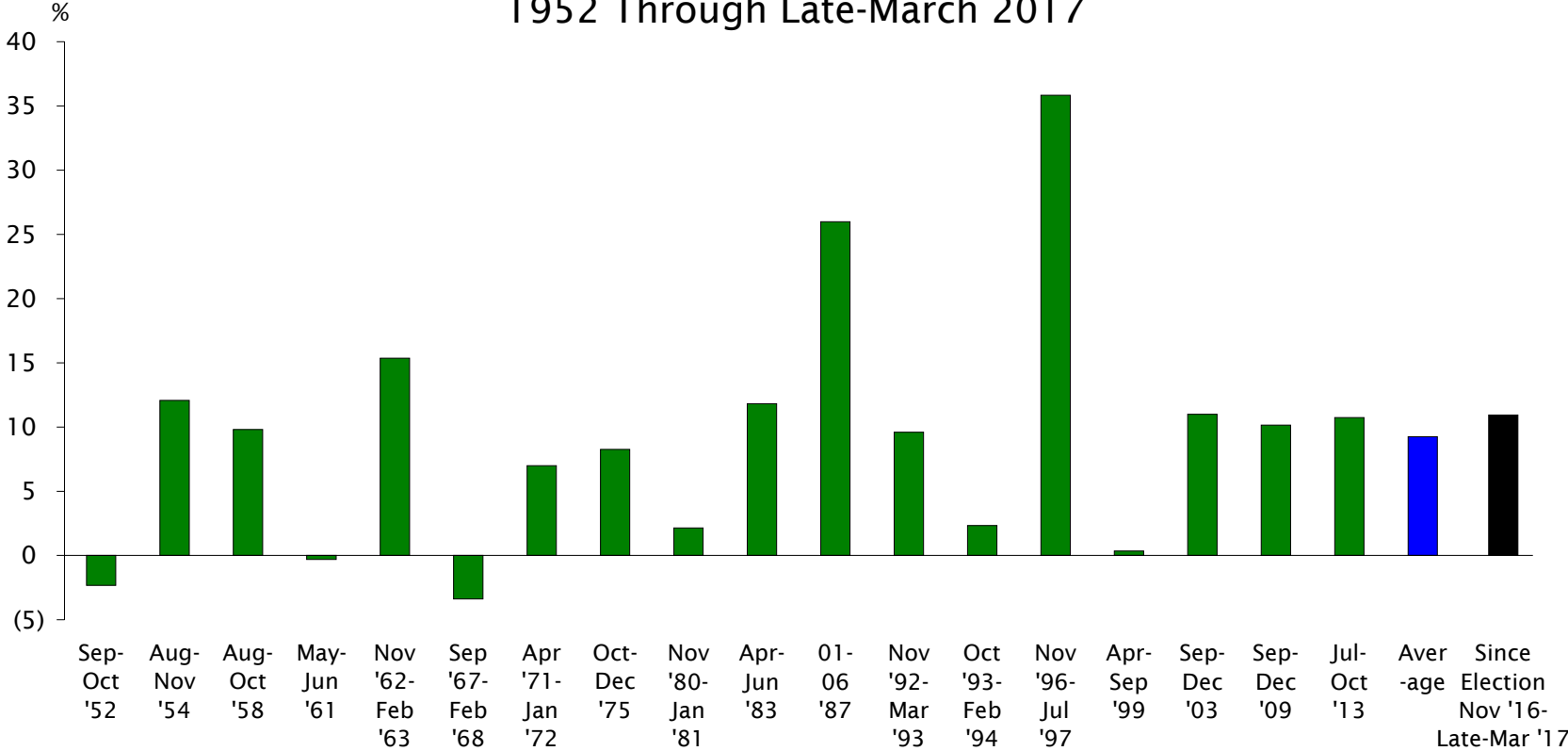
The Man and the Machines

Topics

- The Market Cycle: The Hard Part
- The Business Cycle: The Rise of the Nominals

It's Been Mostly About the Economy...

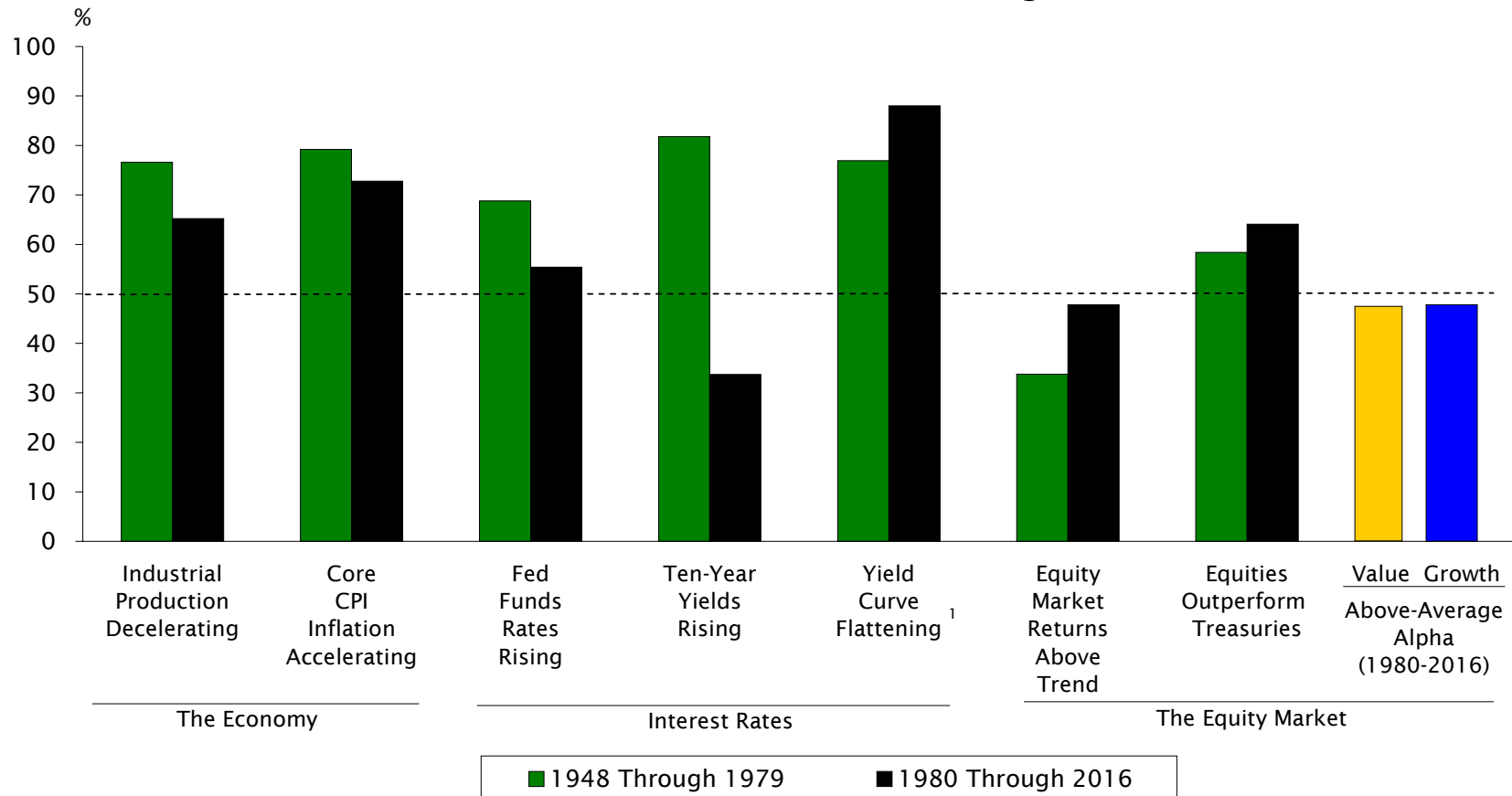
Large-Capitalization Stocks
 Nominal Returns Concurrent With +3.5 Point Increases
 in the Manufacturing PMI¹
 1952 Through Late-March 2017



¹Based on the trailing three-month average for the PMI.

...That's Somewhat Predictable

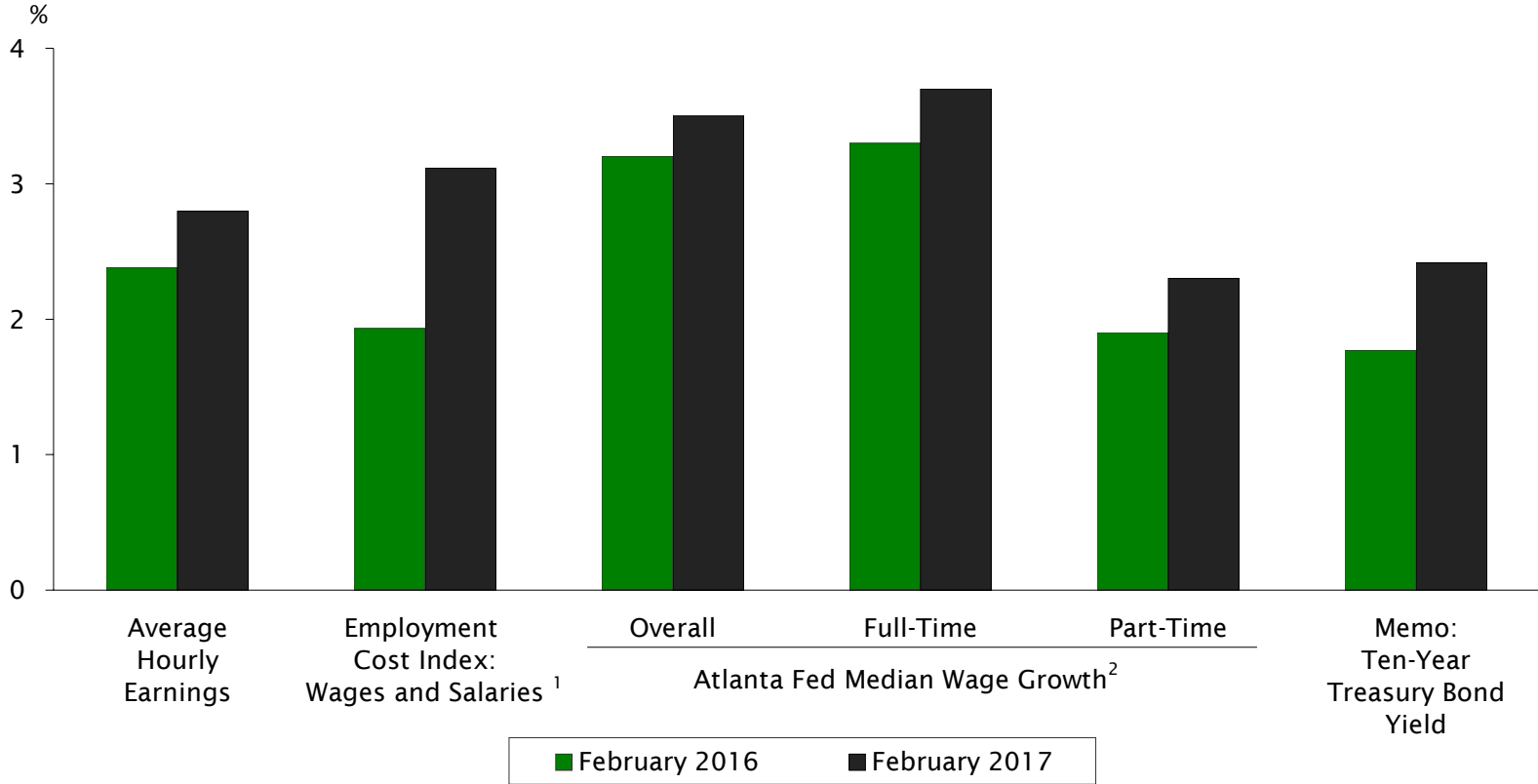
Performance of the Economy, Bond and Equity Markets
 Year Following Top-Quintile Manufacturing PMI Readings
 Share of Observations: 1948 Through 2016



¹Since 1950.

Wages are Rising...

Wage Growth of Private-Sector Workers February 2016 Versus February 2017

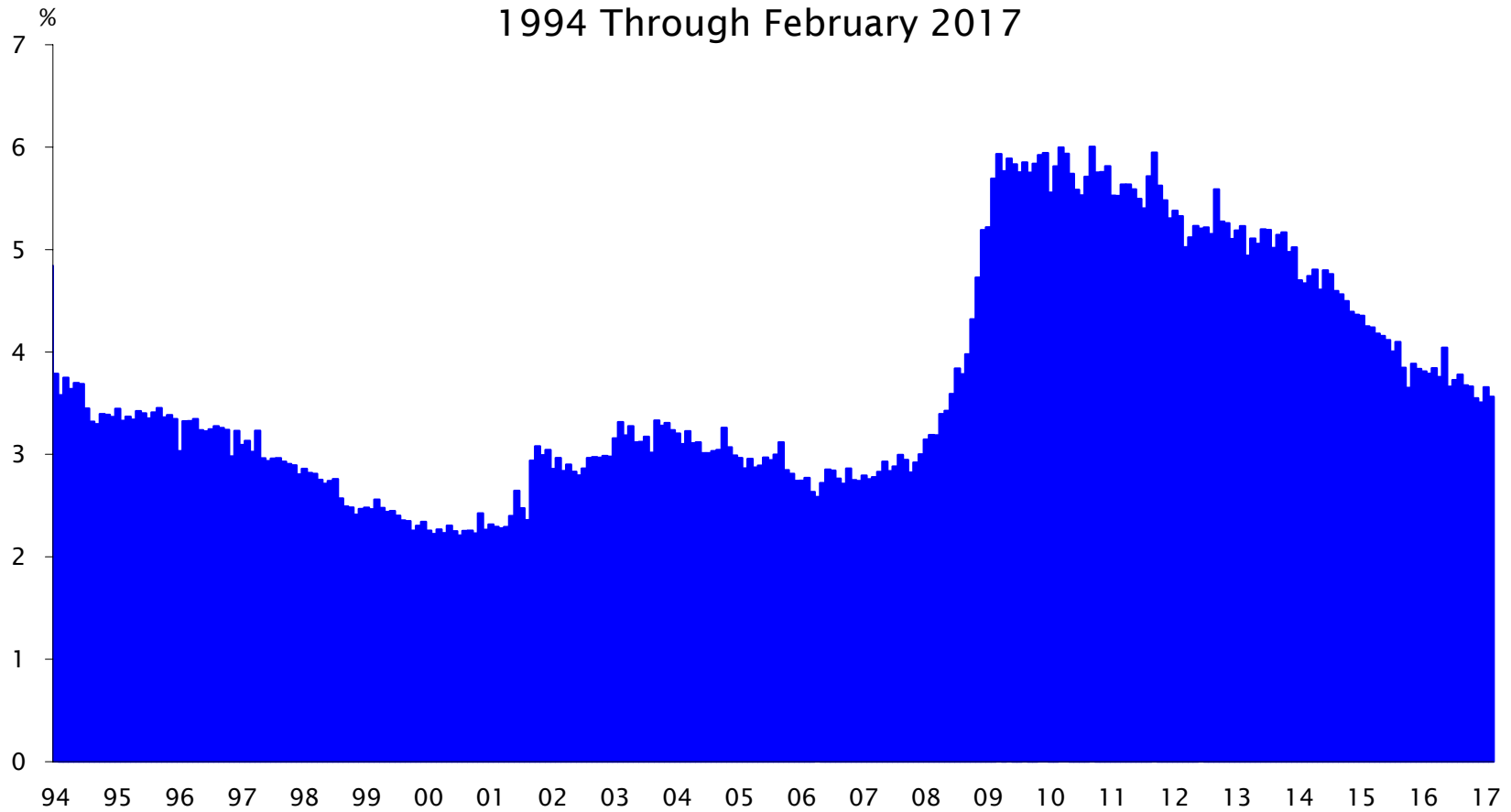


¹On a per-hour basis as of Q4 2016.

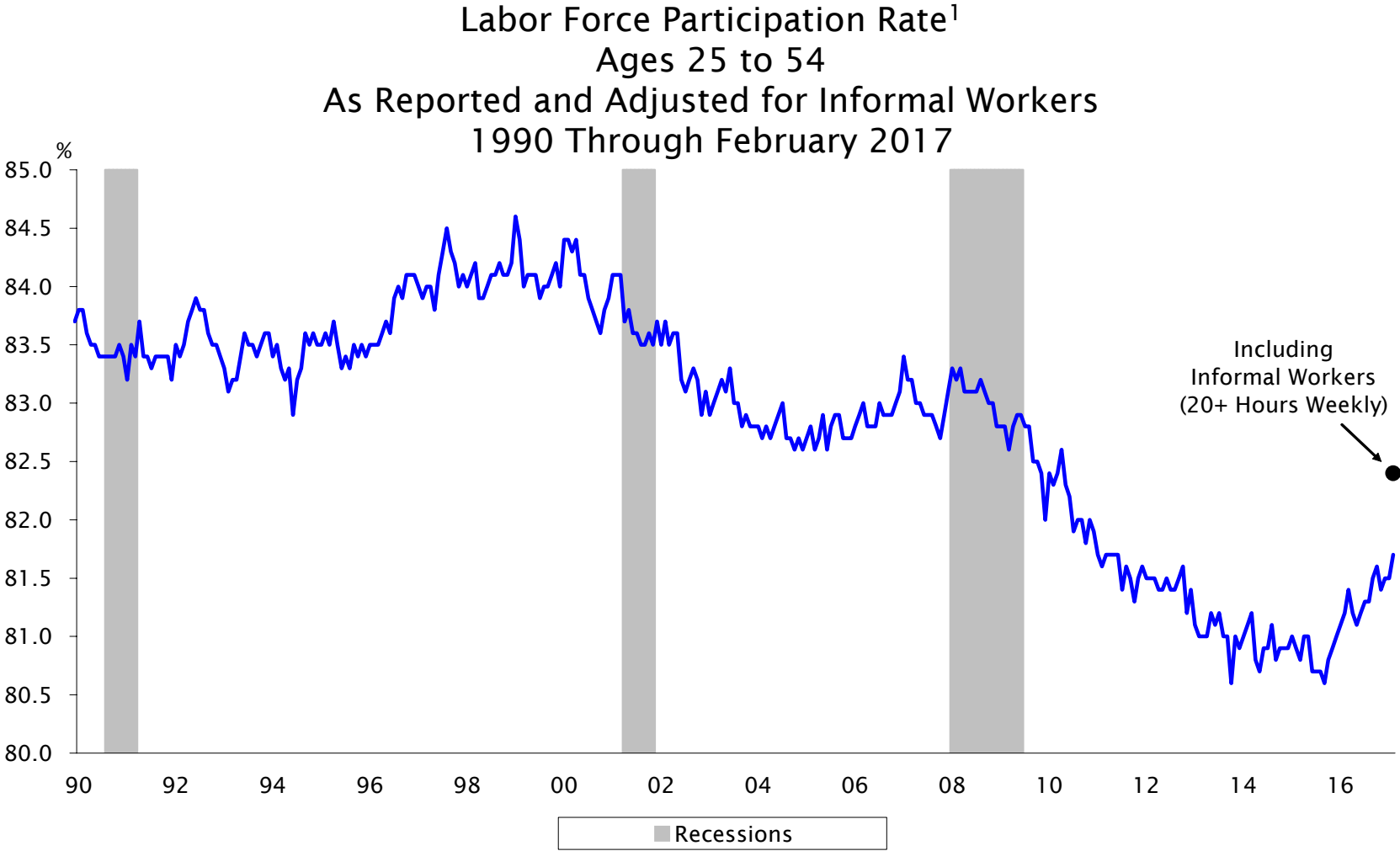
²Trailing twelve-month averages.

...As the Effects of the Crisis Have Waned

The U.S.
Working Part-Time for Economic Reasons
As a Share of the Labor Force
1994 Through February 2017

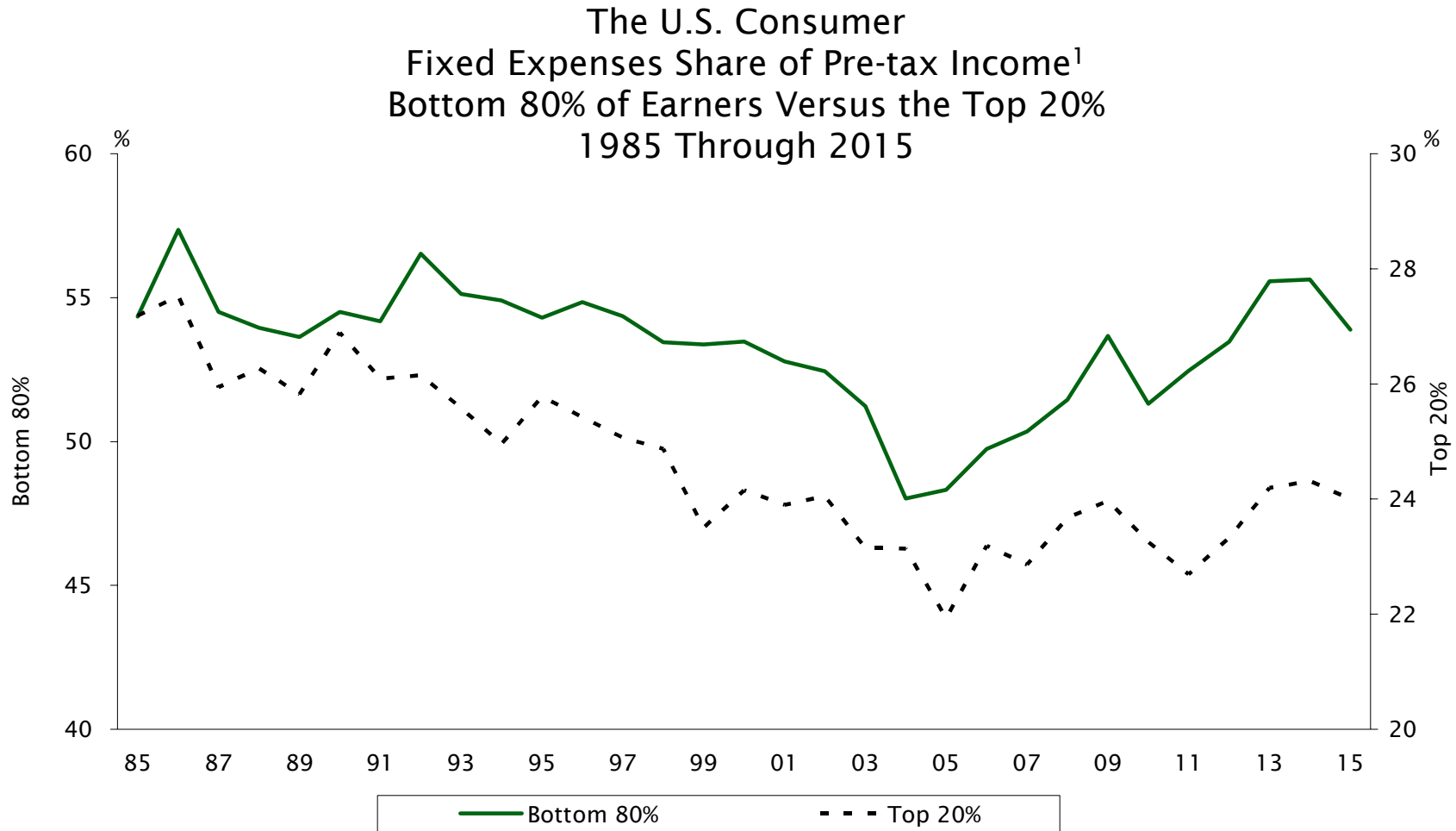


Labor Supply is a Moving Target



¹Seasonally-adjusted data.

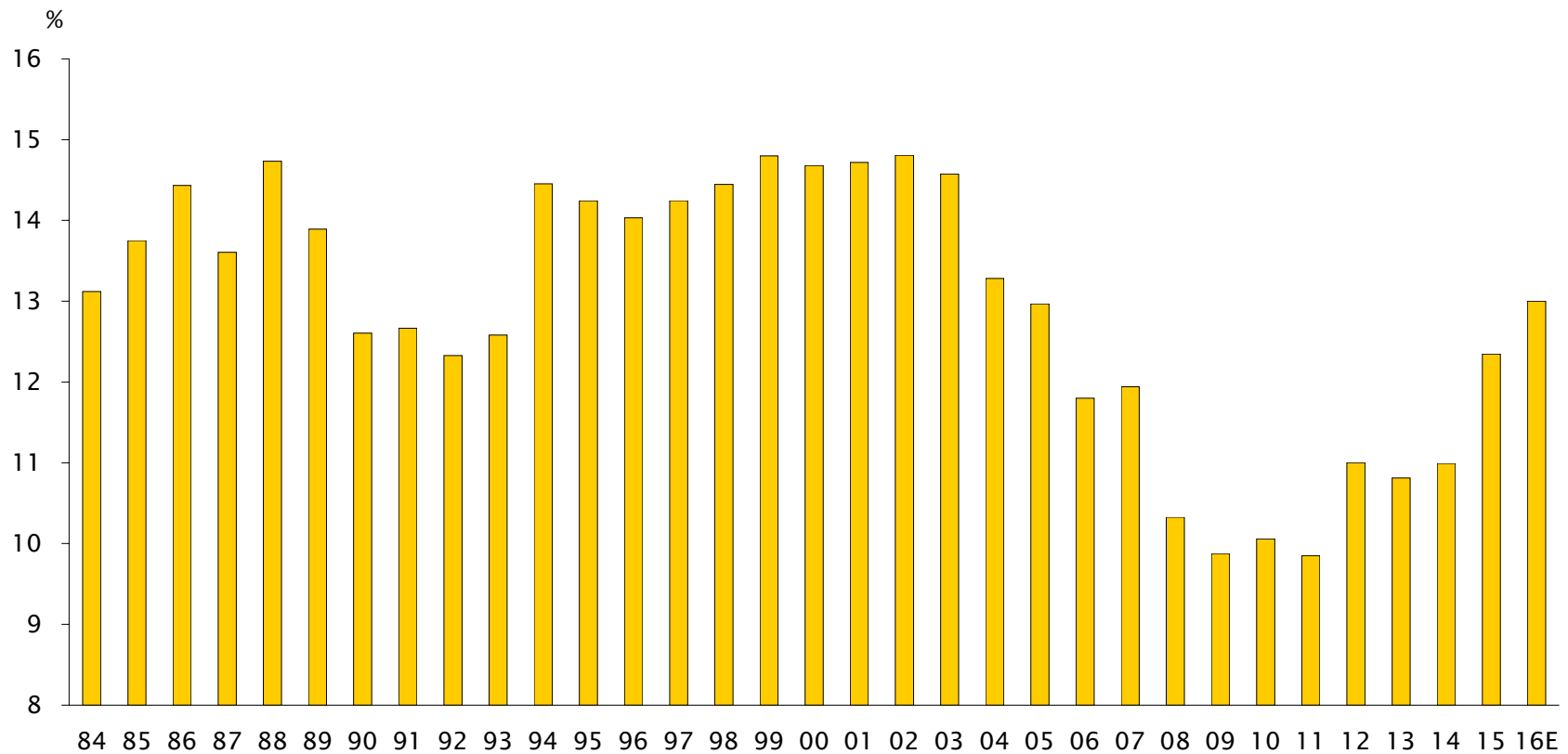
The Bottom 80% of the Income Distribution Has High Operating Leverage...



¹Fixed expenses include: health care, education, rent, mortgage interest, property taxes, utilities, auto insurance and repair, gasoline, food-at-home, half of food-away-from-home, tobacco and alcohol, and telephone service.

...And the Durables Goods Recovery Was Belated

Bottom 80% of the Income Distribution
Durable Goods Share of Spending¹
1984 Through 2016E



¹ Cars (new and used), home durables and audio and video equipment.

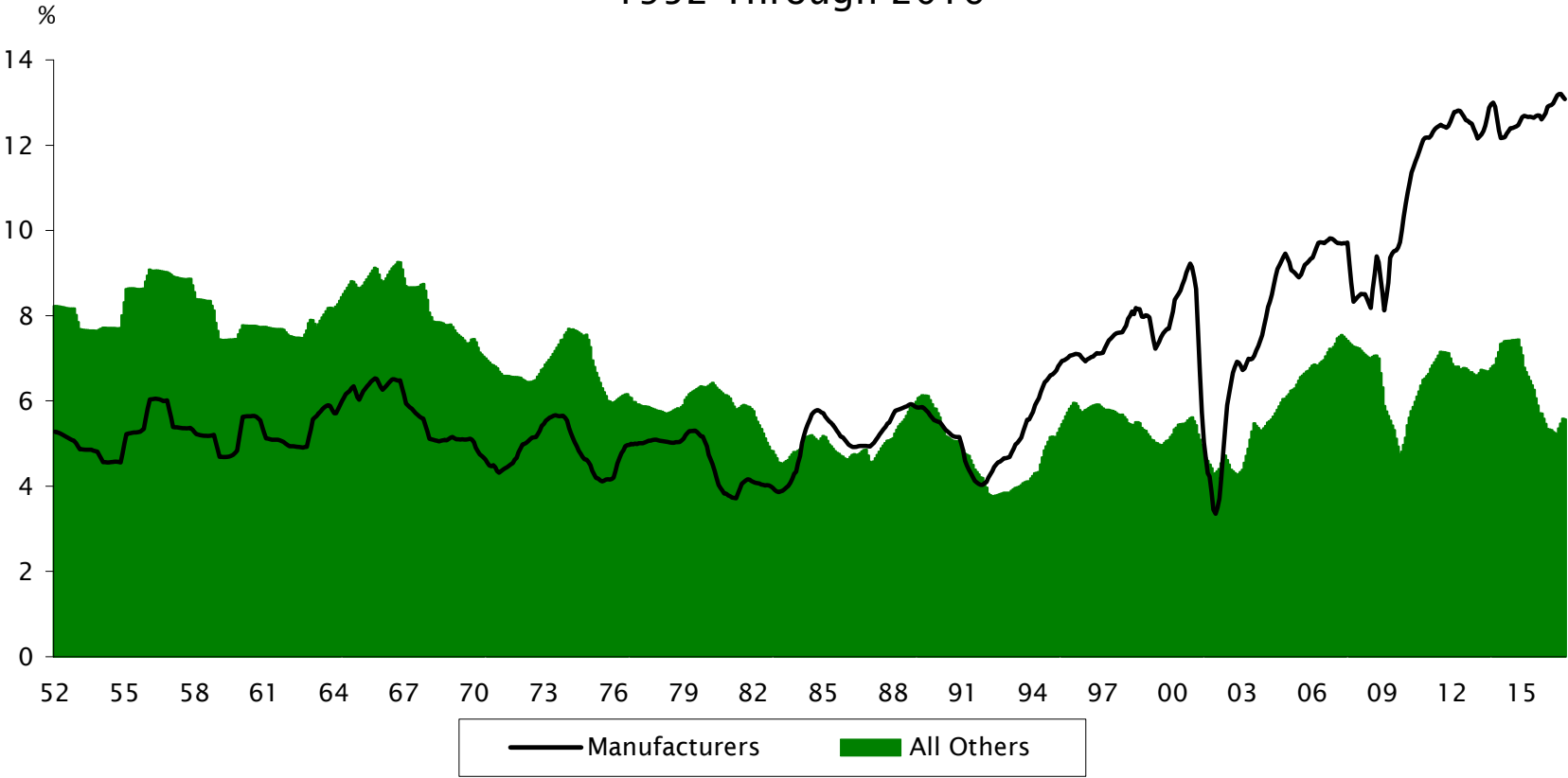
The Man and the Machines

Topics

- The Market Cycle: The Hard Part
- The Business Cycle: The Rise of the Nominals
- The Bretton Woods II Era: Over?

The Margin Story is Tied to Manufacturing...

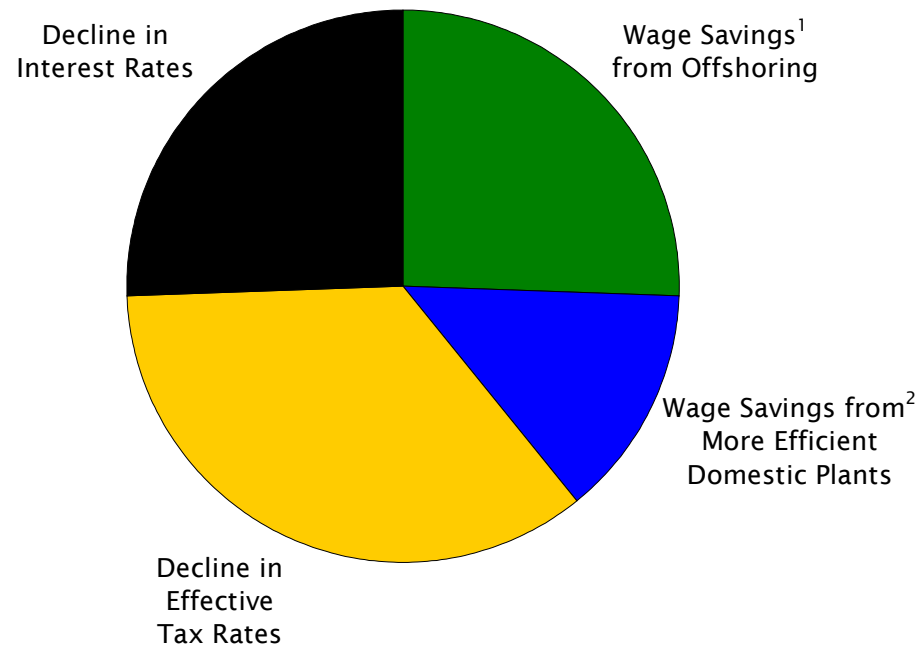
The S&P 500
Manufacturers and All Others
Net Profit Margins¹
1952 Through 2016



¹Based on trailing four-quarter data excluding financials. Smoothed on a trailing three-month basis.

...That's Been Driven by Globalization

S&P 500 Manufacturers Margin Expansion Attributable to Four Key Dynamics 2015 Versus 2000

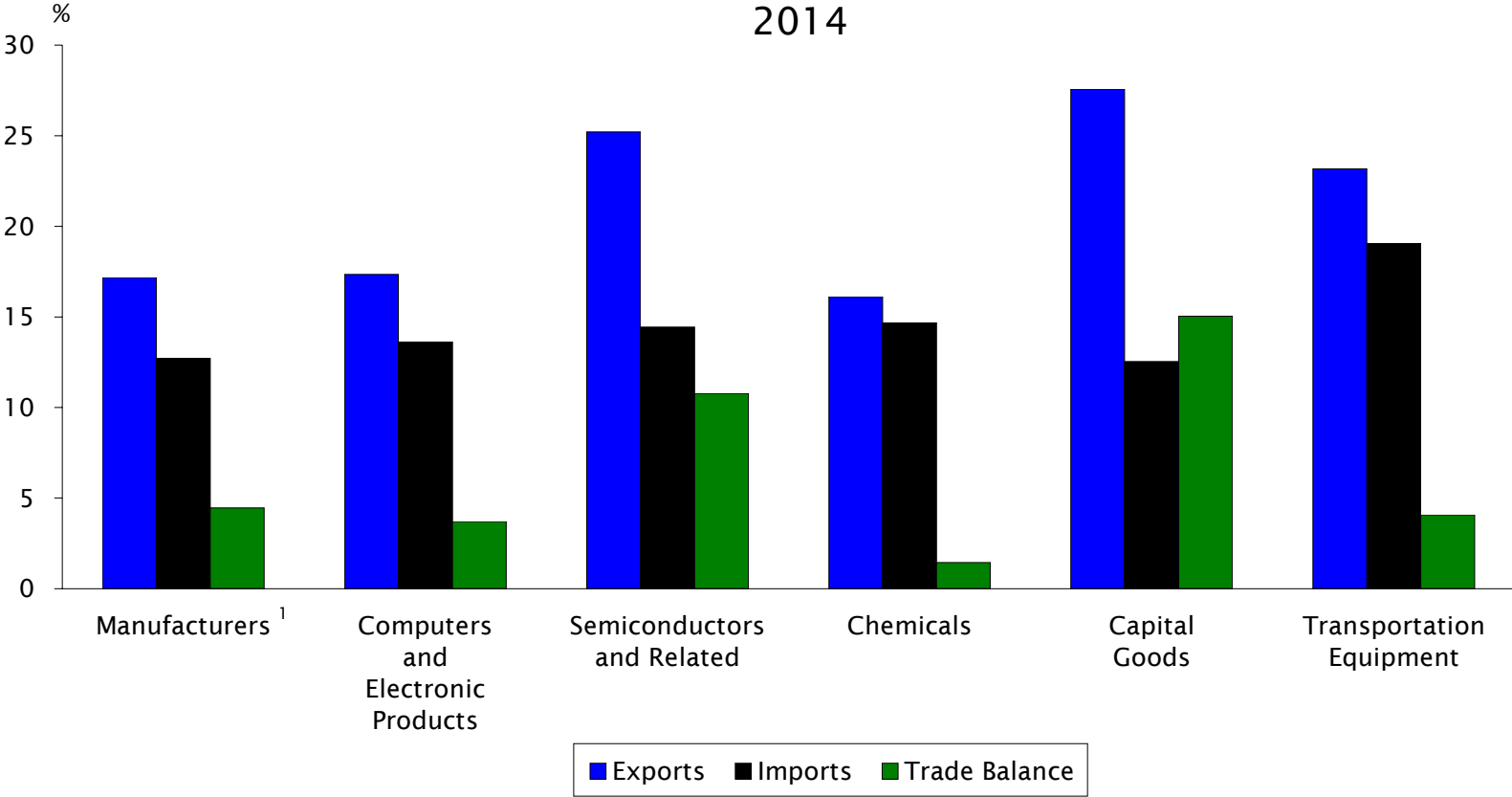


¹Assumes that the U.S. jobs lost were replaced by one-for-one by jobs in China at lower rates of compensation.

²Assumes the decline in the labor intensity of these plants matches that for the entire U.S. manufacturing system.

A Border Tax Would Reduce Tax Expense for Most Industries...

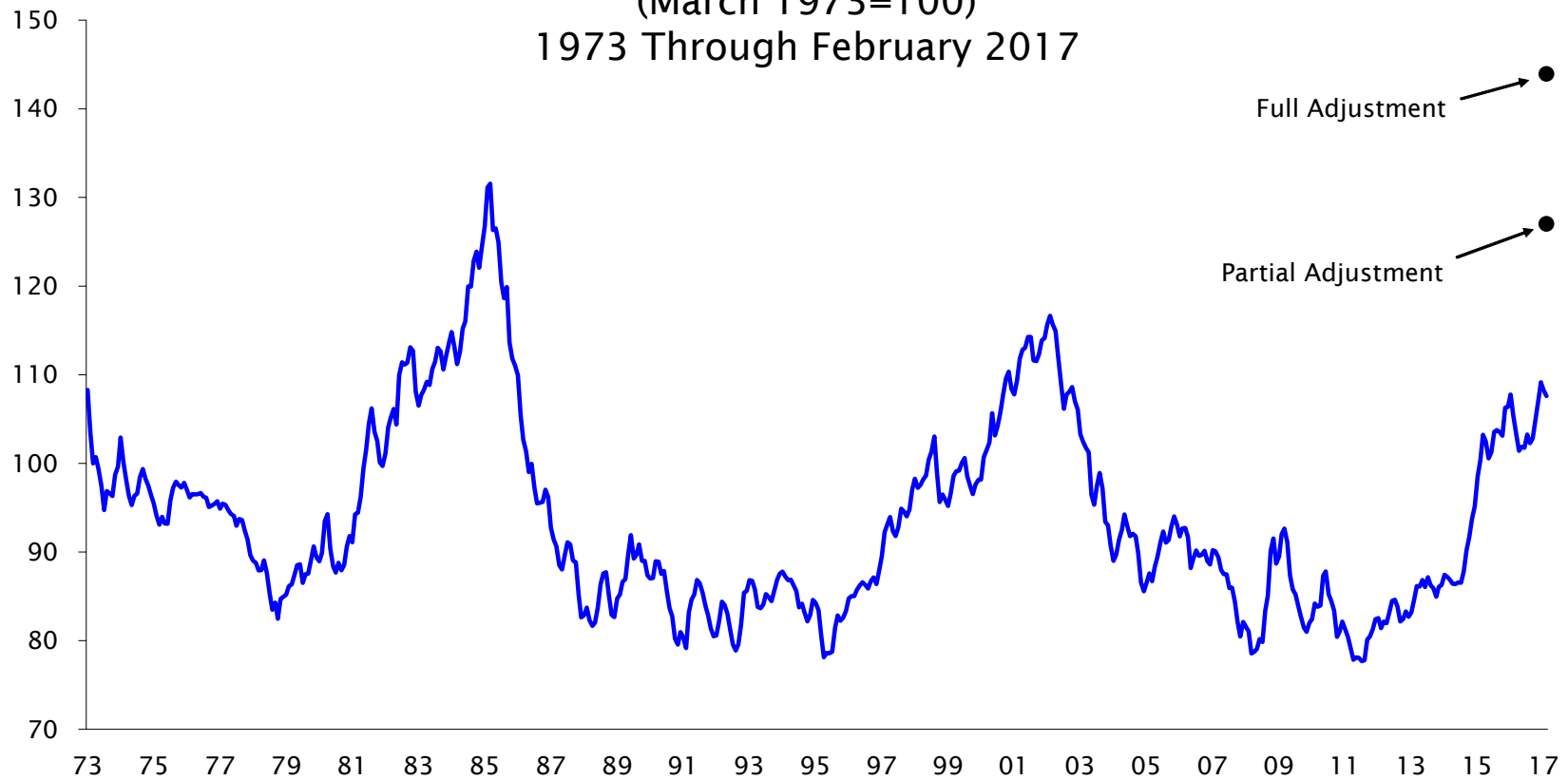
U.S. Multinational Parents
Manufacturers and Select Industries
Exports- and Imports-to-Revenues
2014



¹Manufacturers exclude petroleum and coal products.

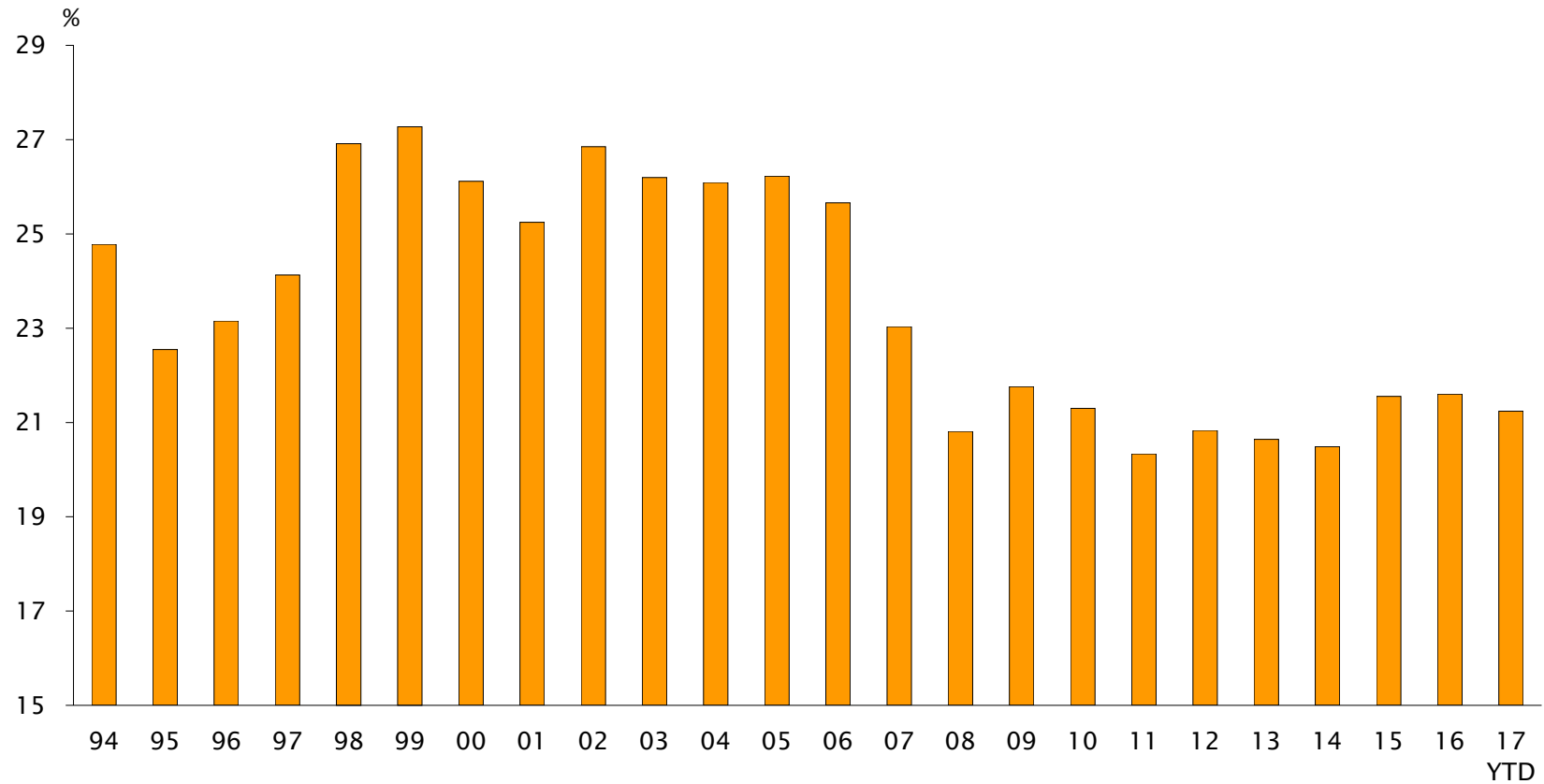
...Although the Other Consequences...

Real Trade-Weighted U.S. Dollar
and Its Estimated Full and Partial Adjustment
Due to Destination Tax
(March 1973=100)
1973 Through February 2017



...Could Prove Disruptive

China
Exports to the U.S. as a Share of the Total¹
1994 Through February 2017



¹ Total exports exclude those to Hong Kong and Taiwan.

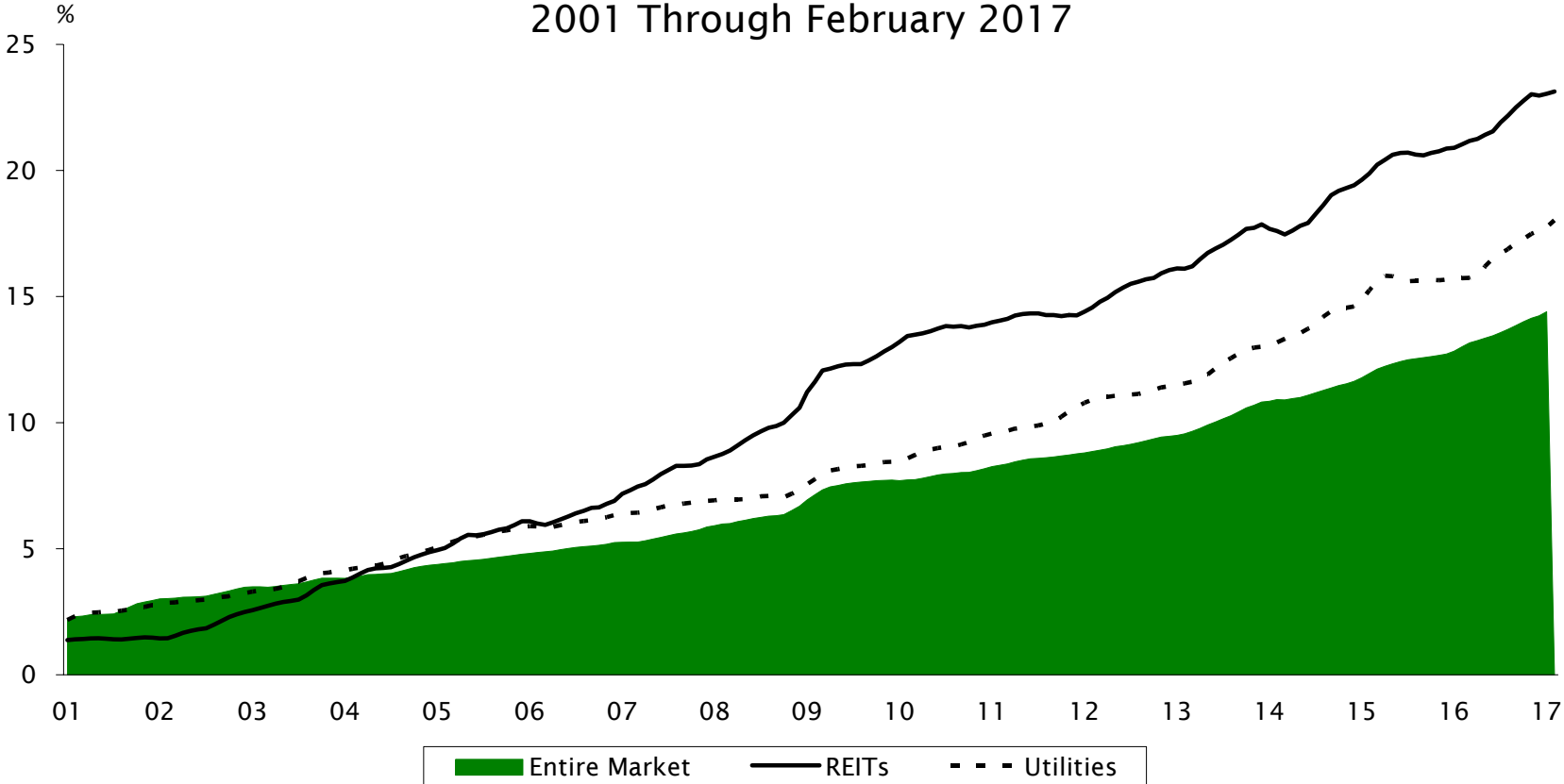
The Man and the Machines

Topics

- The Market Cycle: The Hard Part
- The Business Cycle: The Rise of the Nominals
- The Bretton Woods II Era: Over?
- The Machines: Trend Extenders

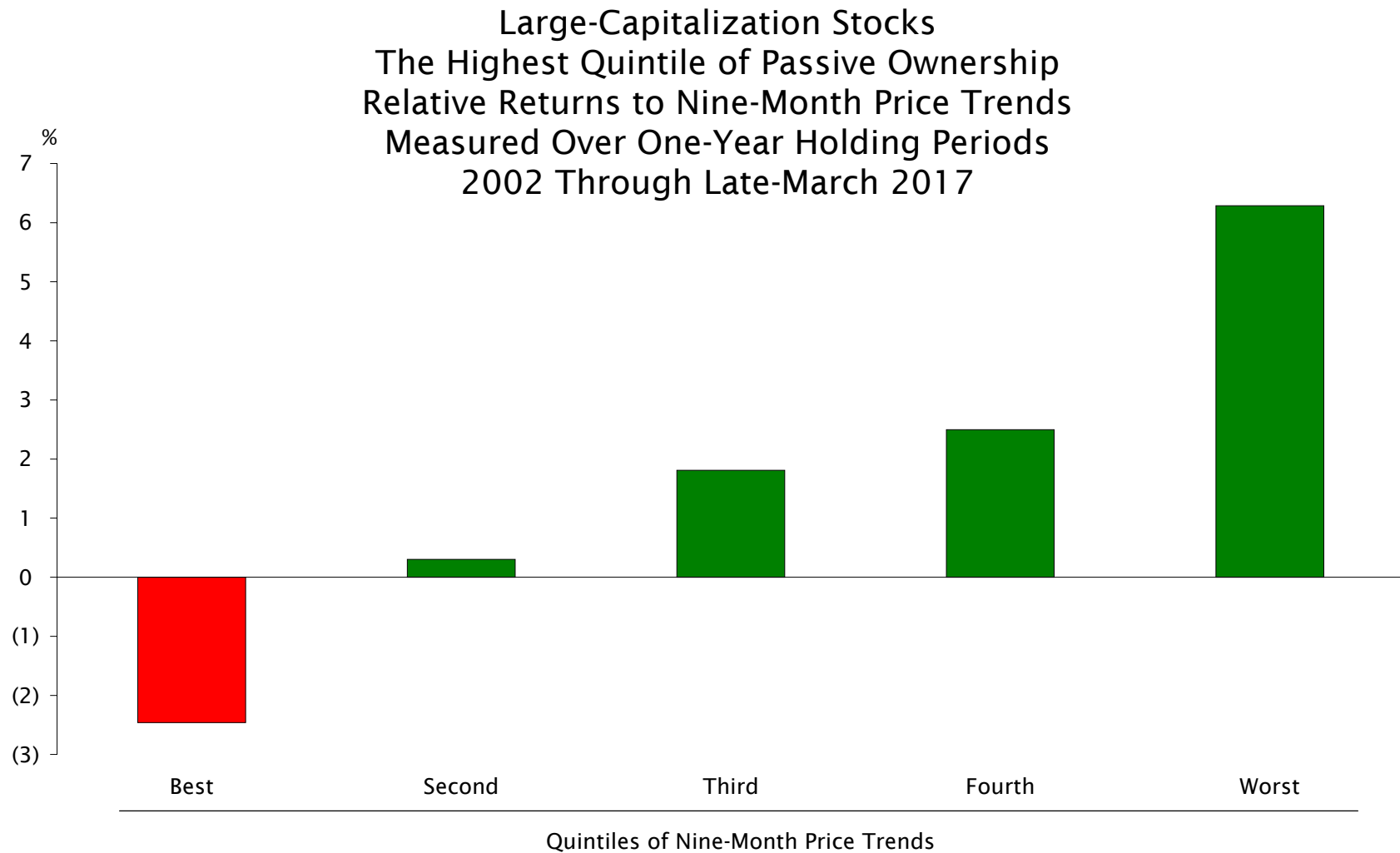
Passive Investing Isn't Entirely Passive...

Large-Capitalization REITs and Utilities
Retail Passive Mutual Fund and ETF Ownership
As a Share of the Total¹
2001 Through February 2017



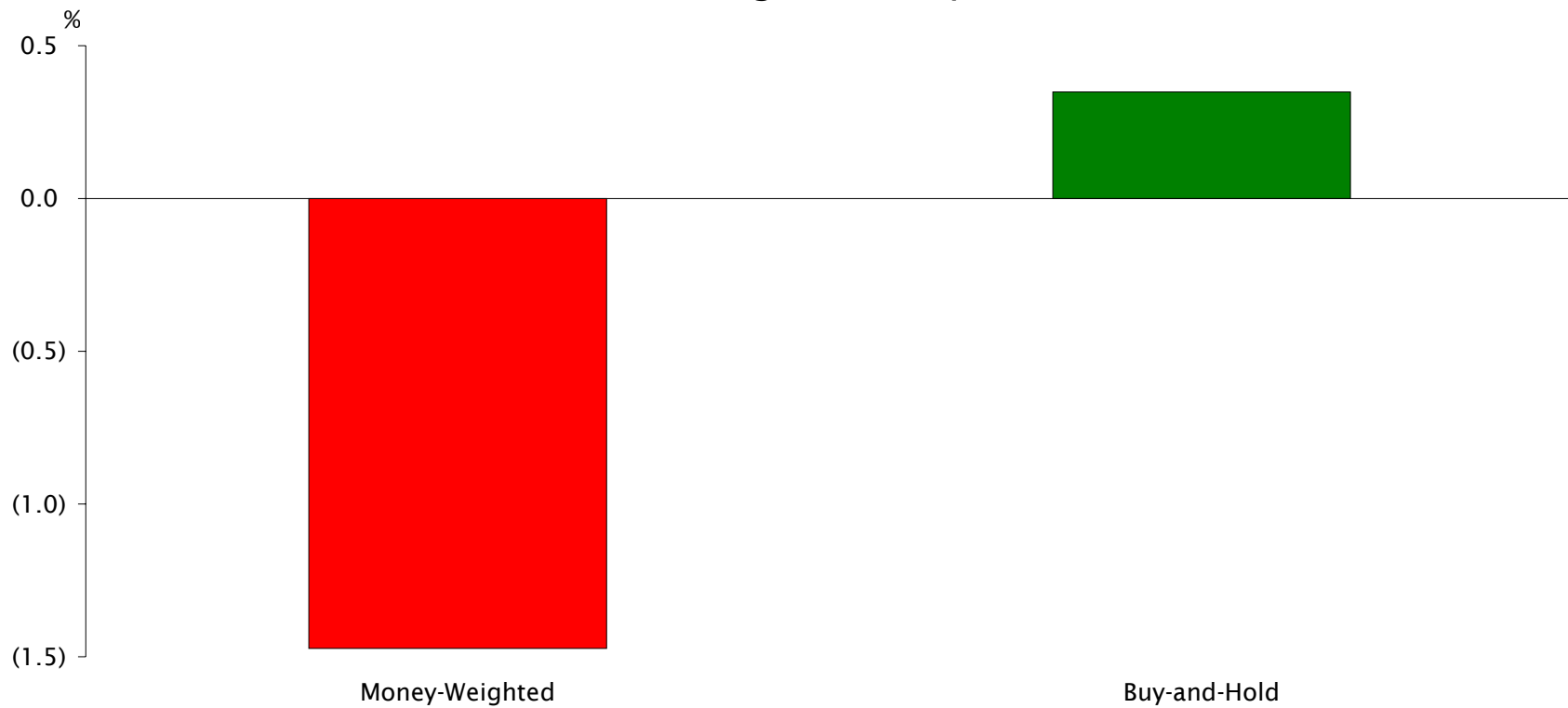
¹Passive ownership includes index mutual funds and ETFs. Data smoothed on a trailing three-month basis.

...Making Some Trends Unreliable...



...And Investors Have Chased Them, Unsuccessfully

U.S. Low-Volatility ETFs¹
Annualized Relative Returns²
2011 Through February 2017

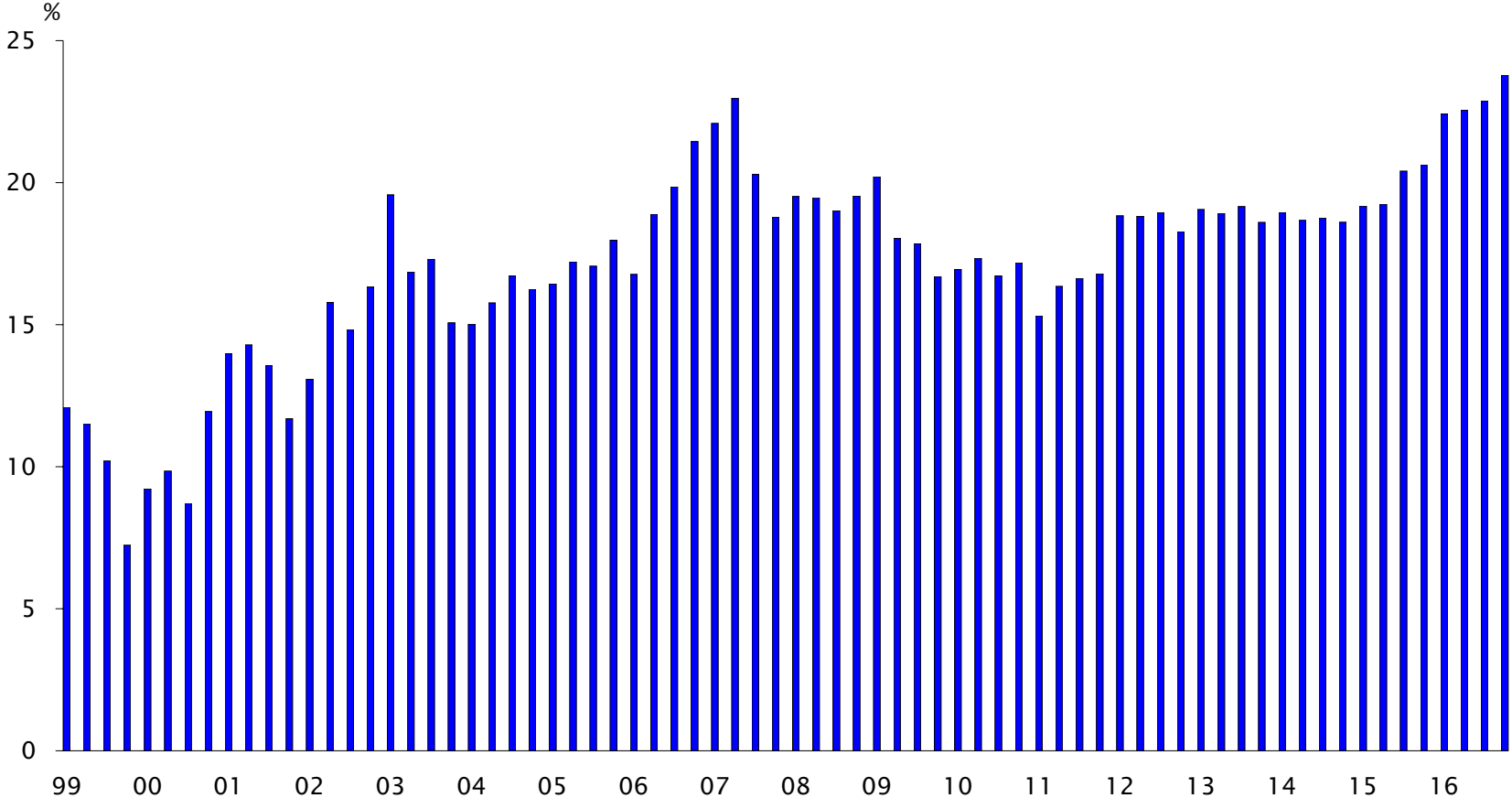


¹Includes USMV, SPLV, and SPHD.

²Money-weighted return approximates the return realized by actual investors, based on the timing of their allocations and withdrawals. Calculation assumes all inflows or outflows occur in the middle of each quarter. Benchmark is the S&P 500.

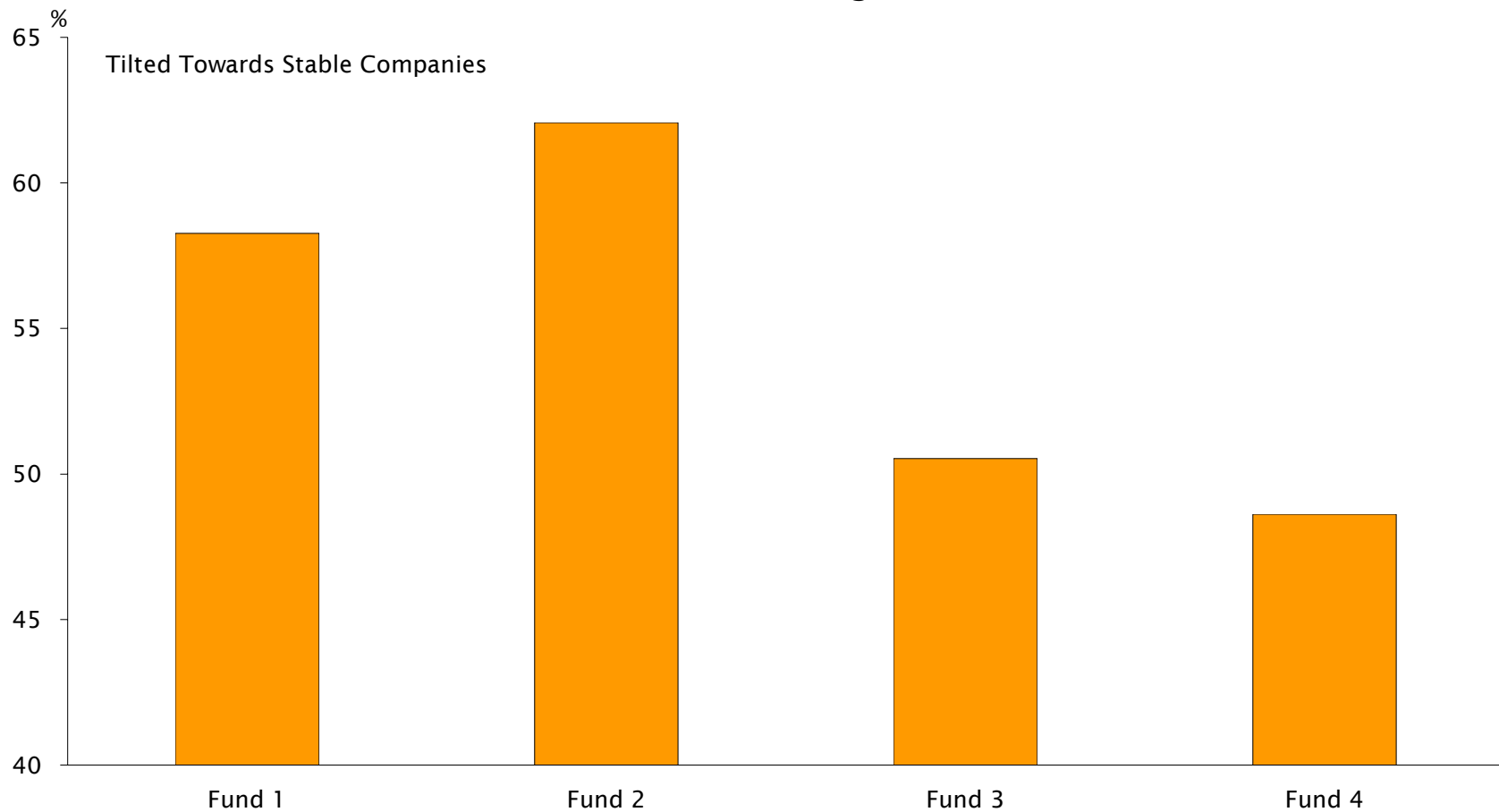
Quant Hedge Funds are Hot...

Quant Funds Share of
Hedge Funds' U.S. Equity Holdings
1999 Through 2016



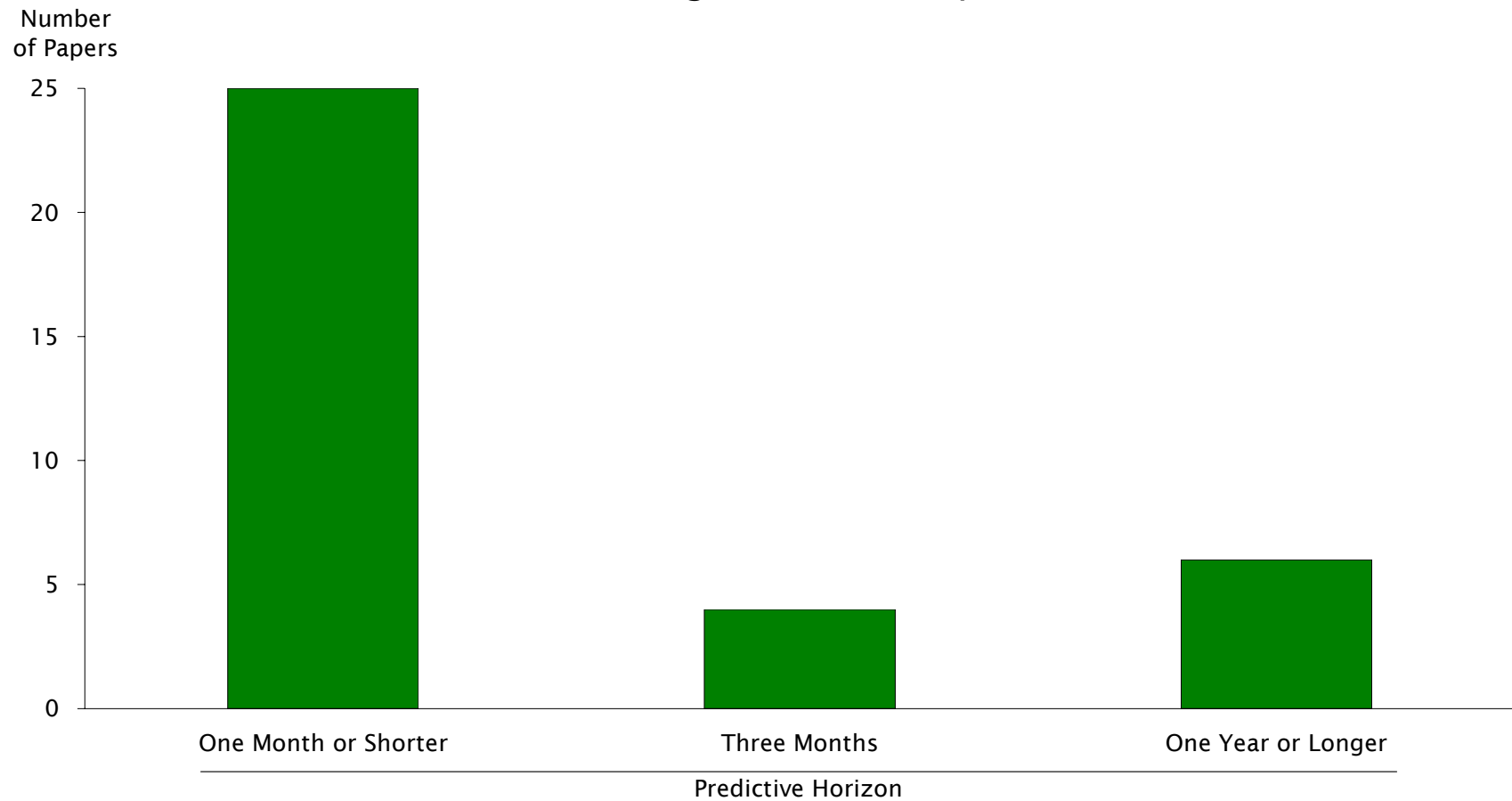
...Having Caught the Stability Wave

Large Quant Hedge Funds Fundamental Stability Analysis: Average Percentile Ranks Four Years Ending 2016



Big Data's Alpha is Largely Short-Term in Nature

Academic Papers on Big Data
Number of Papers Finding Return Predictability at Varying Horizons
2013 Through Late-February 2017



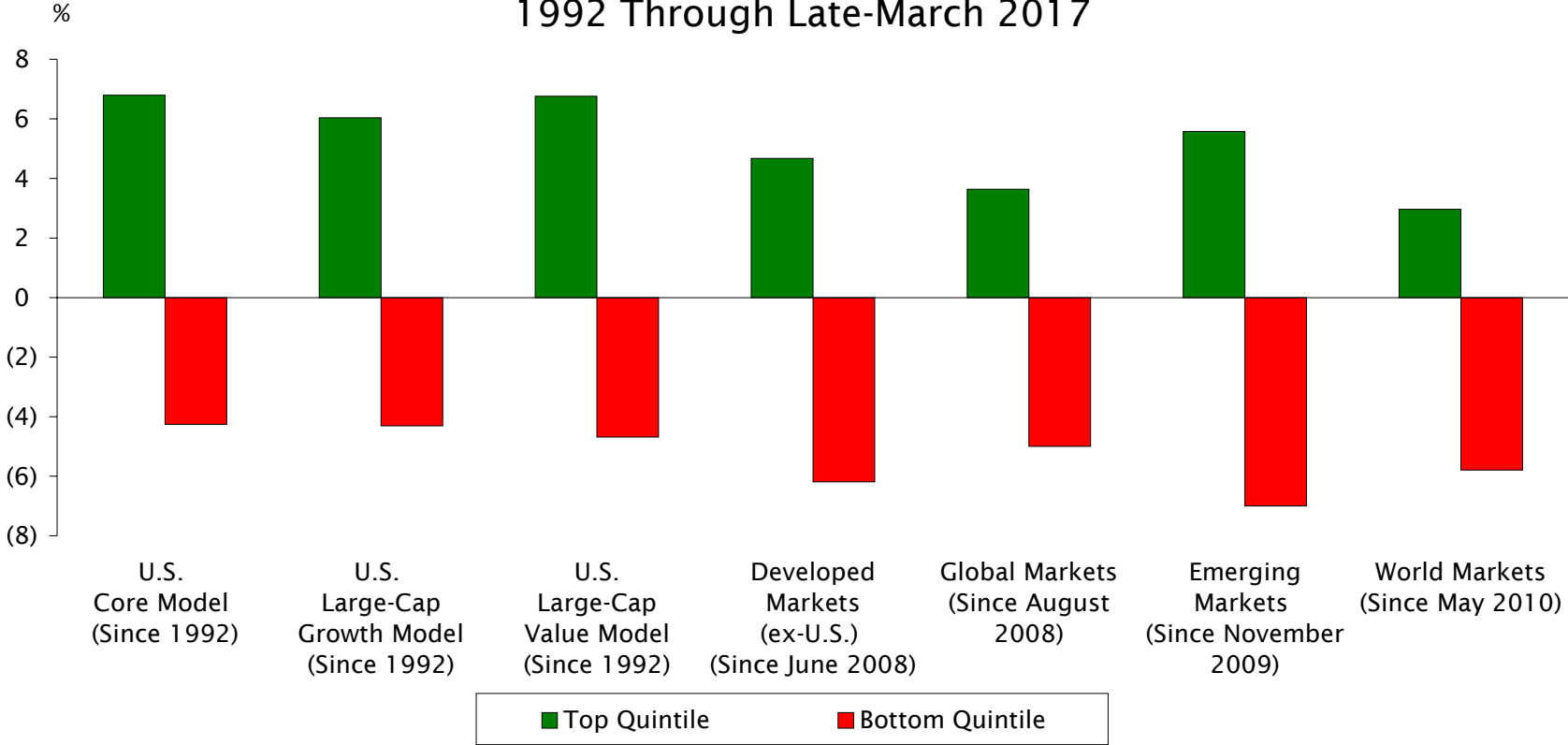
The Man and the Machines

Topics

- The Market Cycle: The Hard Part
- The Business Cycle: The Rise of the Nominals
- The Bretton Woods II Era: Over?
- The Machines: Trend Extenders
- Portfolio Analytics

Our Modeling Frameworks Have Long Track Records...

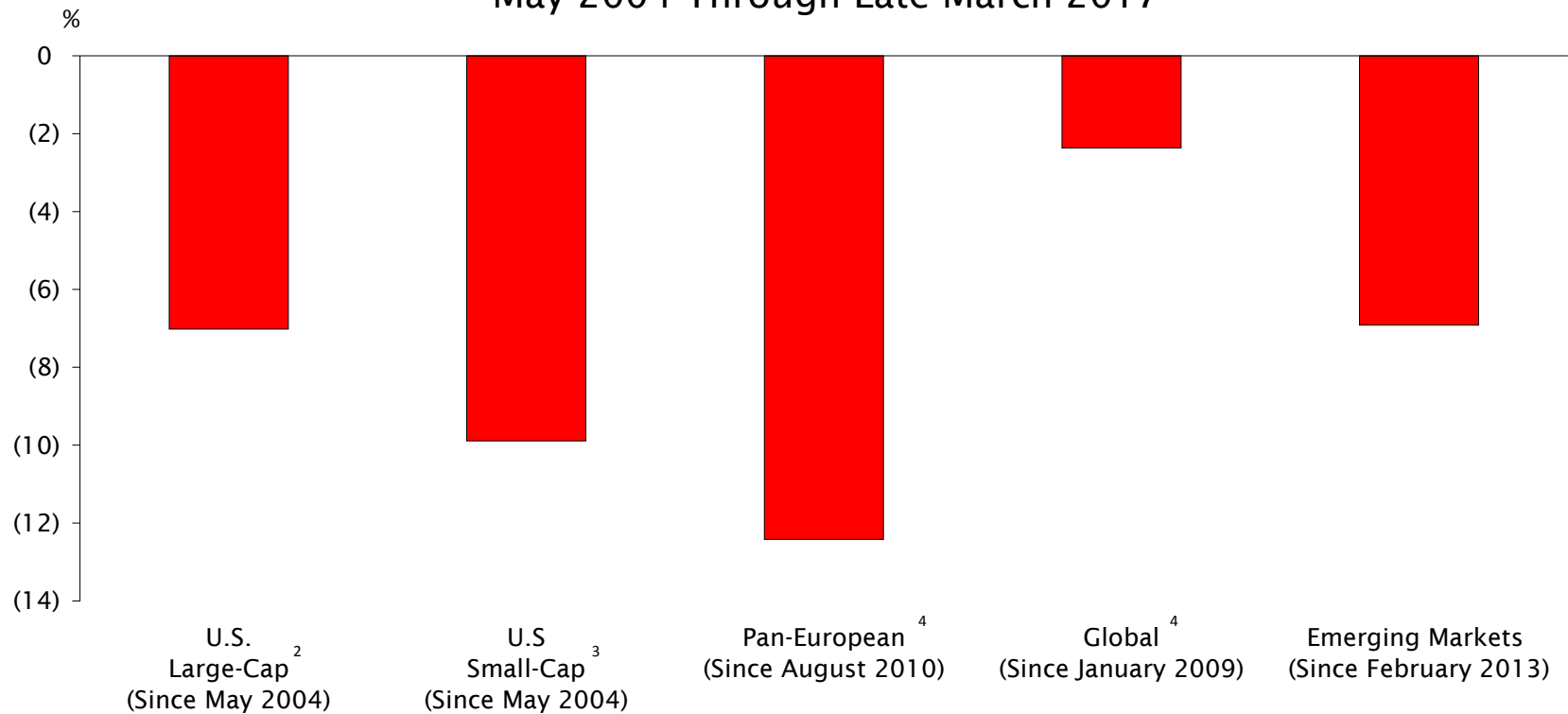
Developed and Emerging Market Models
 Relative Returns to the Top and Bottom Quintiles Since Inception¹
 Monthly Returns Compounded to Annual Holding Periods
 1992 Through Late-March 2017



¹Equally-weighted data. Developed markets (ex-U.S.), global and world returns are USD-hedged. Emerging markets returns are USD-based.

...Including Those That Look for Failure

Developed and Emerging Market Failure Models Relative Returns of Failure Candidates Since Inception¹ Monthly Returns Compounded to Annual Holding Periods May 2004 Through Late-March 2017



¹Equally-weighted data.

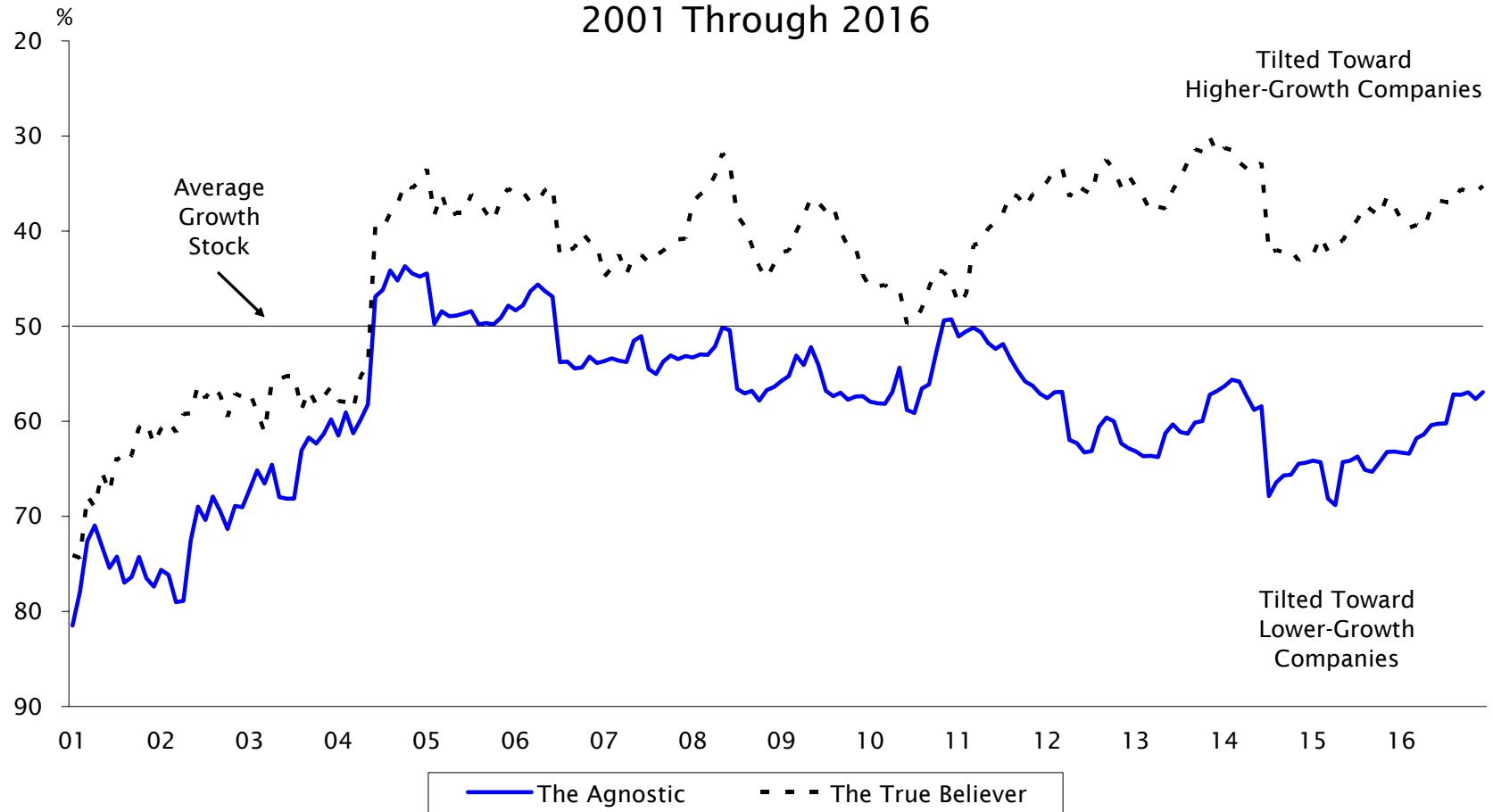
²Largest 1,000 stocks.

³Next 2,000 stocks.

⁴USD-hedged.

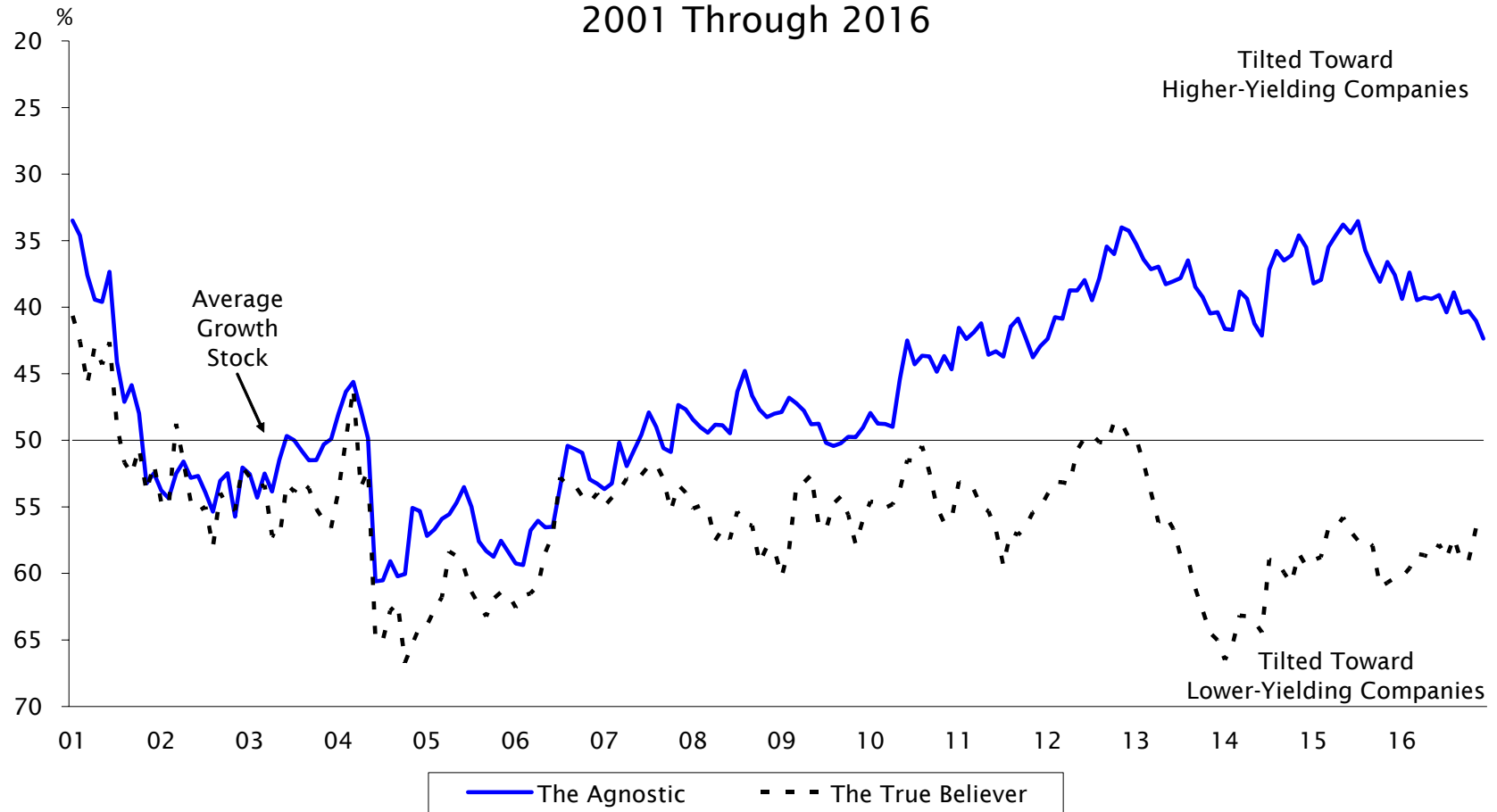
The True Believer Owns Big Top-Line Growers...

A Tale of Two Growth Managers:
The Agnostic and the True Believer
Revenue Growth Analysis: Percentiles
2001 Through 2016



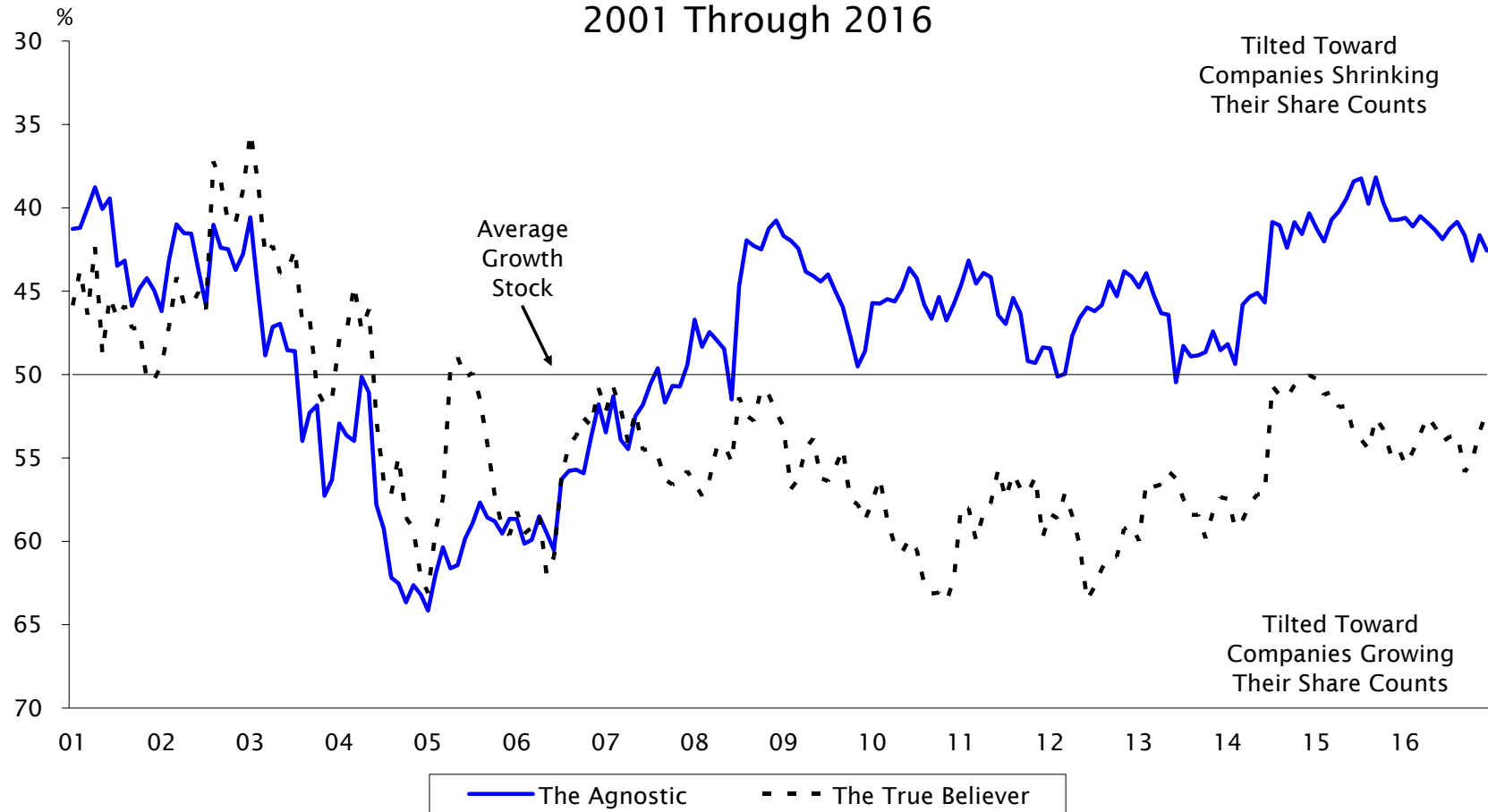
...While the Agnostic Sought Out Higher Free Cash Flow Yields

A Tale of Two Growth Managers:
The Agnostic and the True Believer
Free Cash Flow-to-Enterprise Value Analysis: Percentiles
2001 Through 2016



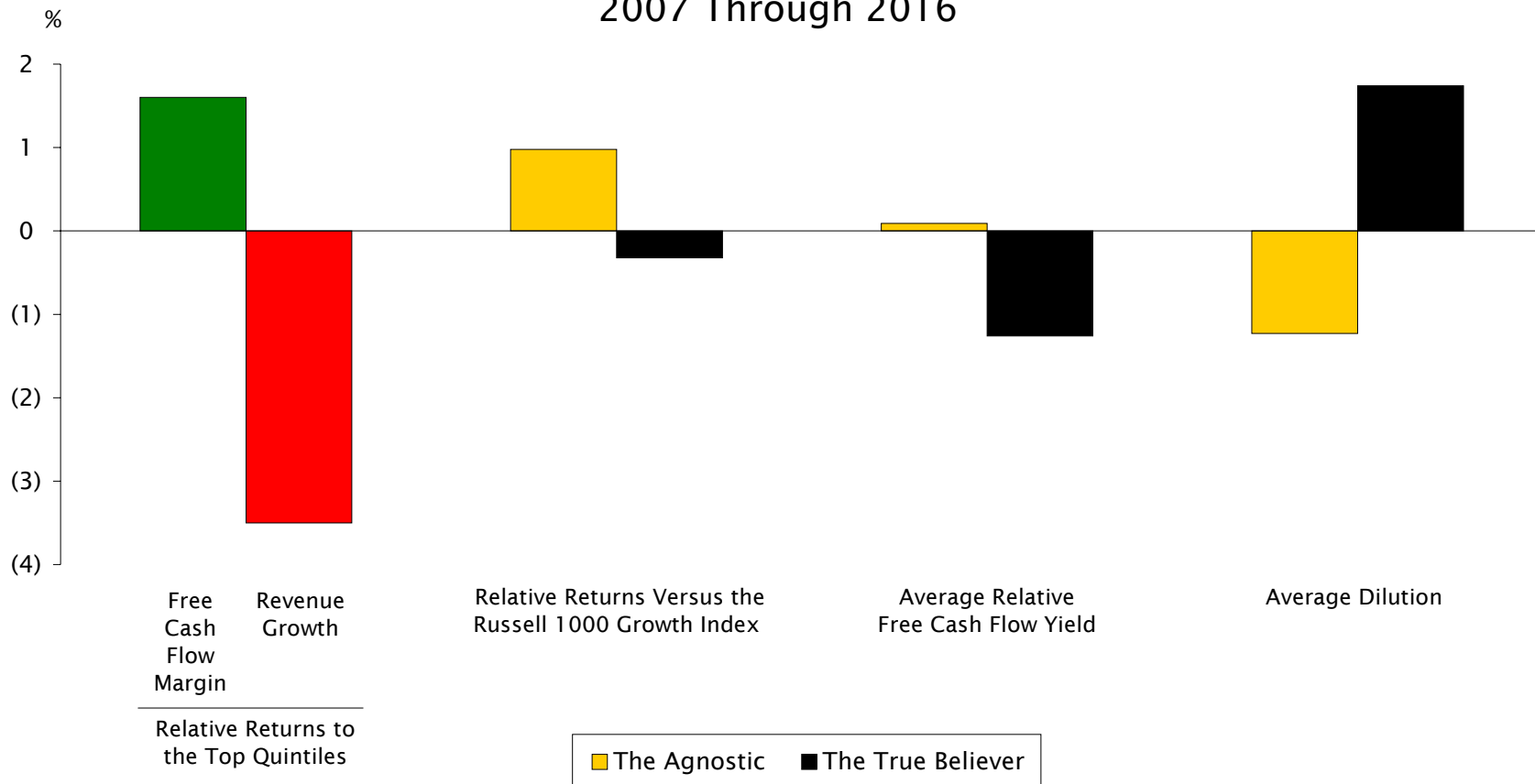
Their Attitudes About Dilution Were Different...

A Tale of Two Growth Managers:
The Agnostic and the True Believer
Change in Shares Outstanding Analysis: Percentiles
2001 Through 2016



...And Without a Strong Tailwind, That's Mattered

A Tale of Two Growth Managers: The Agnostic and the True Believer Relative Returns, Free Cash Flow Yields and Dilution 2007 Through 2016



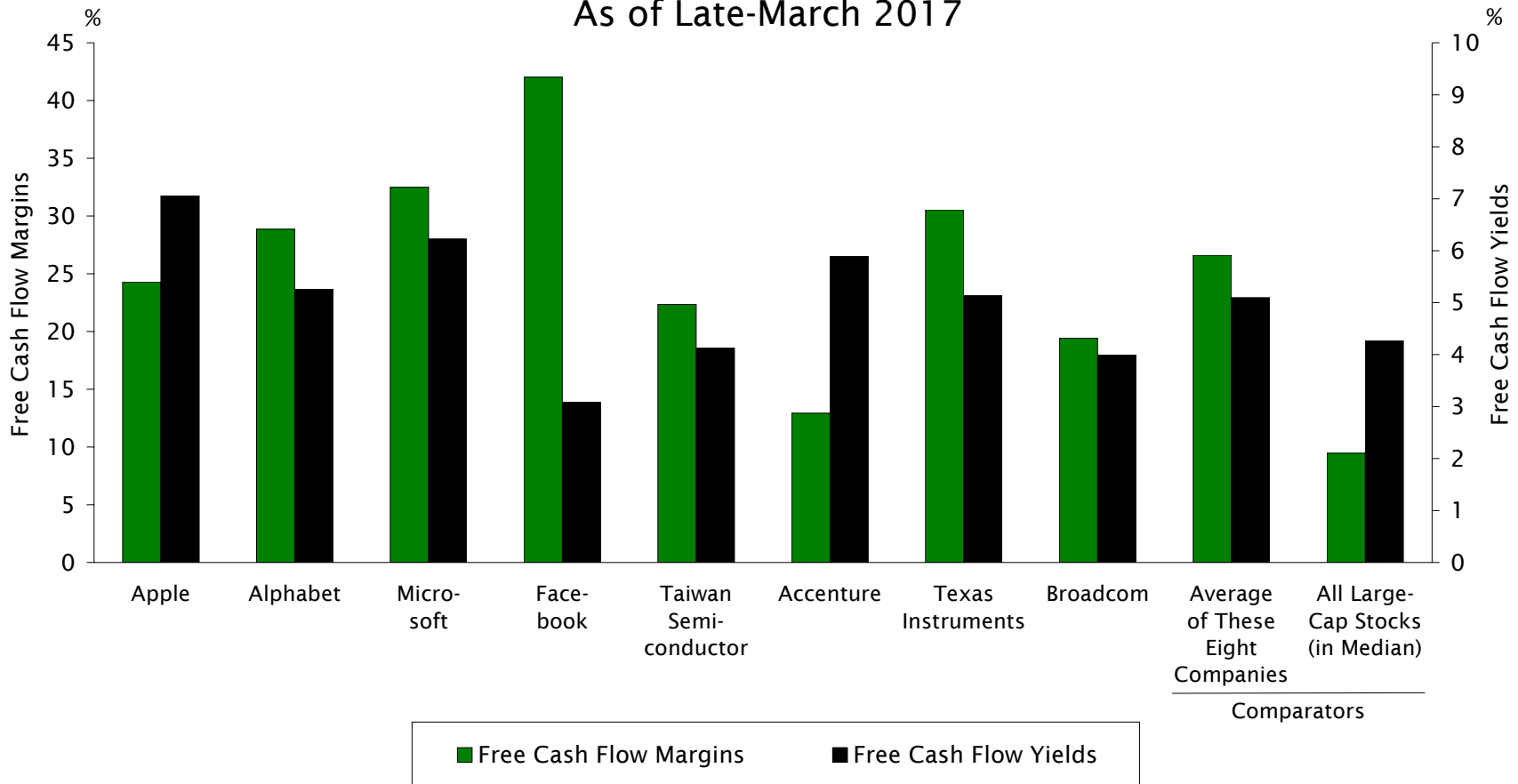
The Man and the Machines

Topics

- The Market Cycle: The Hard Part
- The Business Cycle: The Rise of the Nominals
- The Bretton Woods II Era: Over?
- The Machines: Trend Extenders
- Portfolio Analytics
- Analyses of Key Sectors

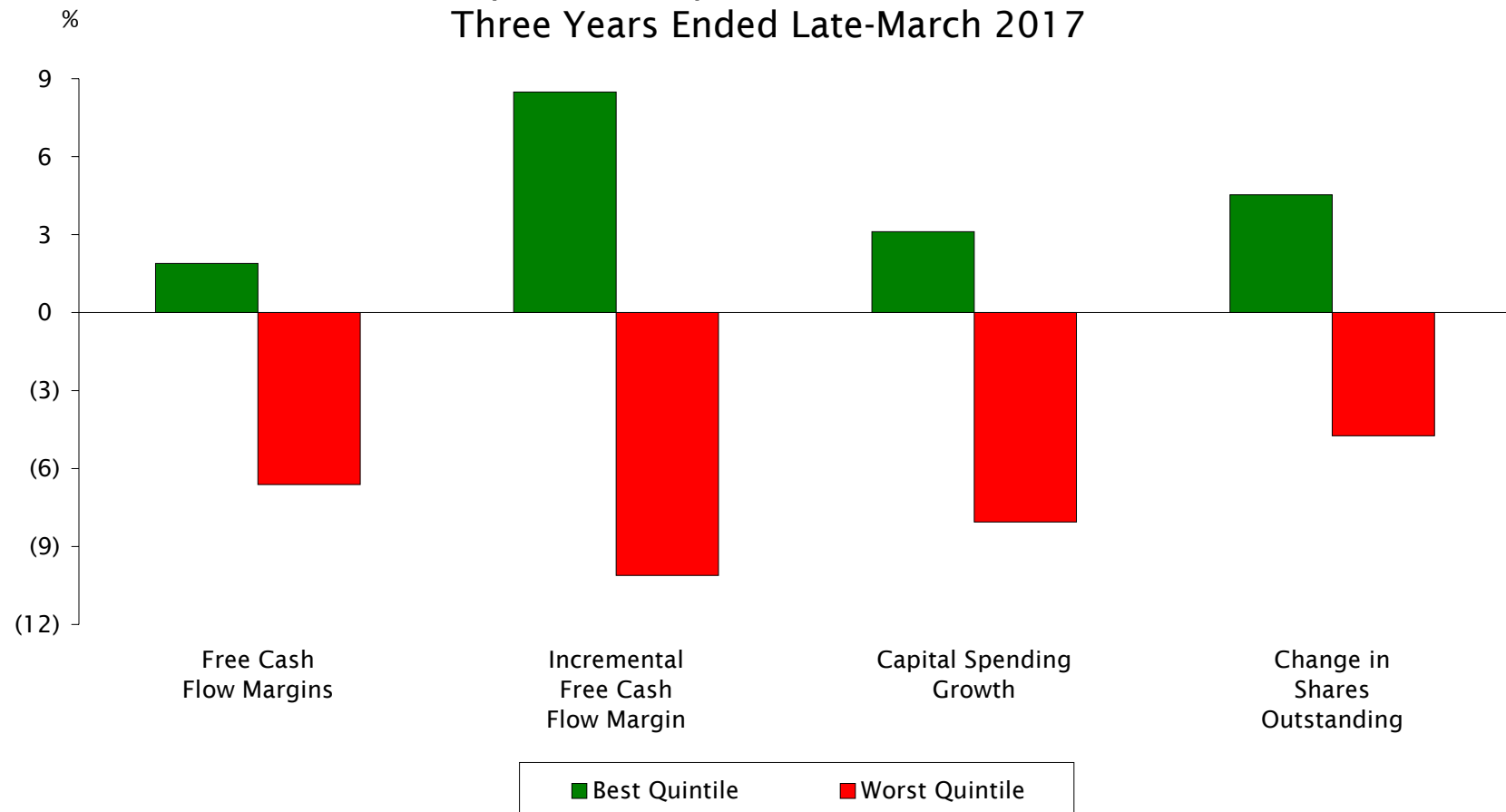
The Tech Sector's Cash Flow Production is Unprecedented...

Mega-Cap Technology Stocks
Free Cash Flow Margins and
Free Cash Flow-to-Enterprise Value Yields
As of Late-March 2017



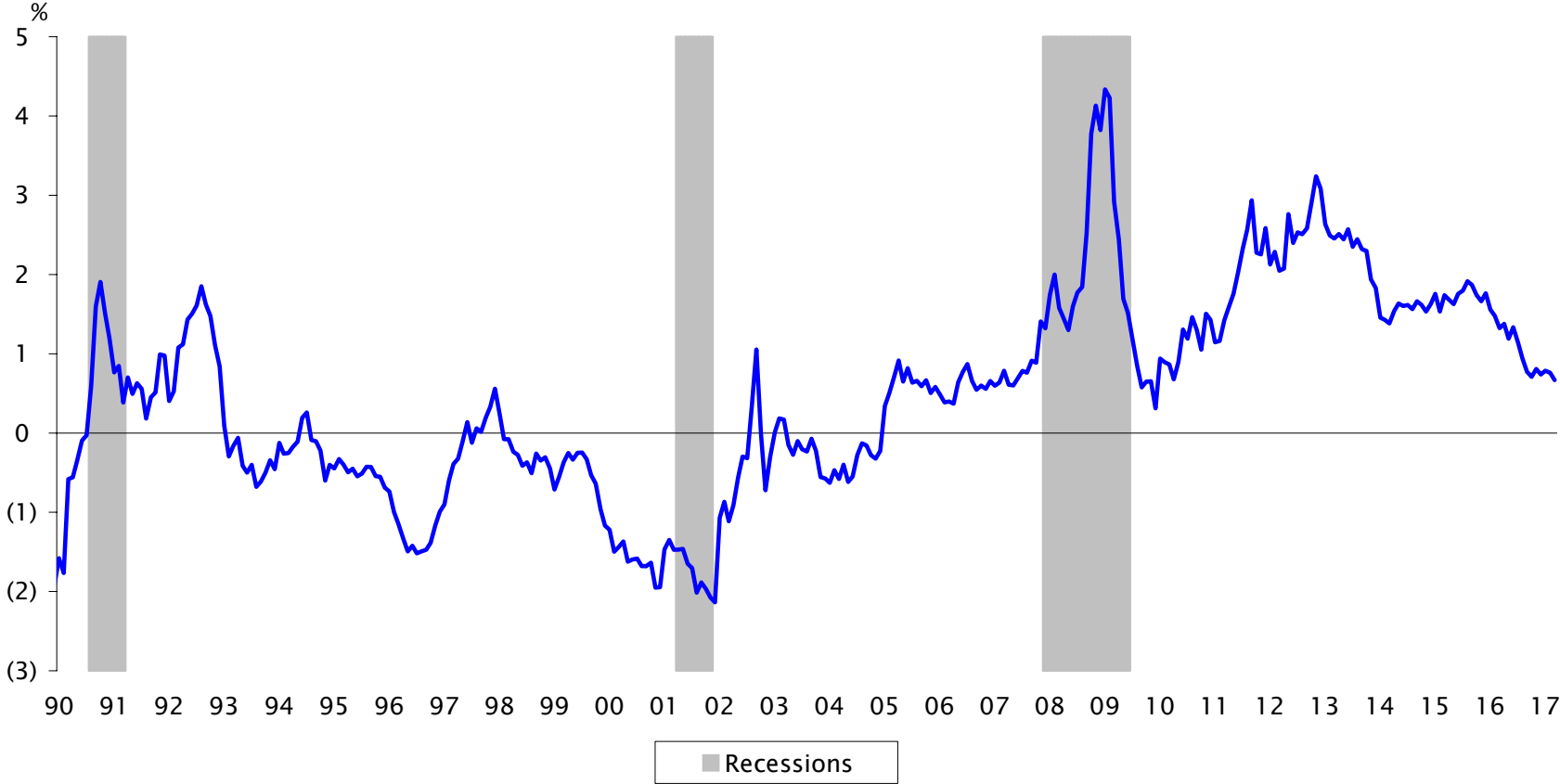
...And Has Proven Deterministic for Performance

Large-Capitalization Technology Stocks
Sector Relative Returns to Select Factors
Monthly Data Compounded to Annual Periods
Three Years Ended Late-March 2017



Unfortunately, Our Margin-of-Safety Has Dissipated

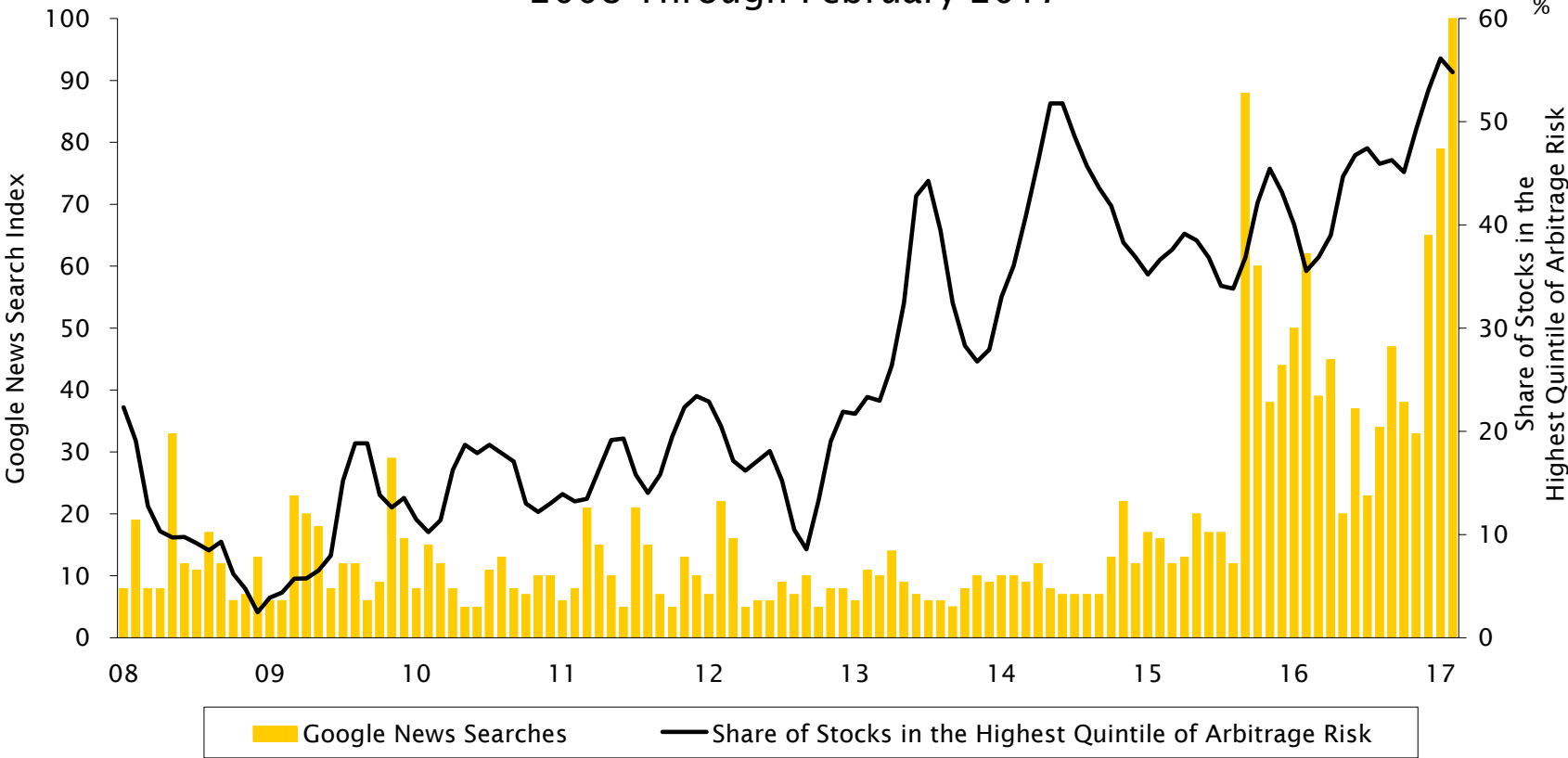
Large-Capitalization Technology Stocks Relative Free Cash Flow-to-Enterprise Value Yield¹ 1990 Through Late-March 2017



¹Equally-weighted data.

Drug Prices are Under Scrutiny...

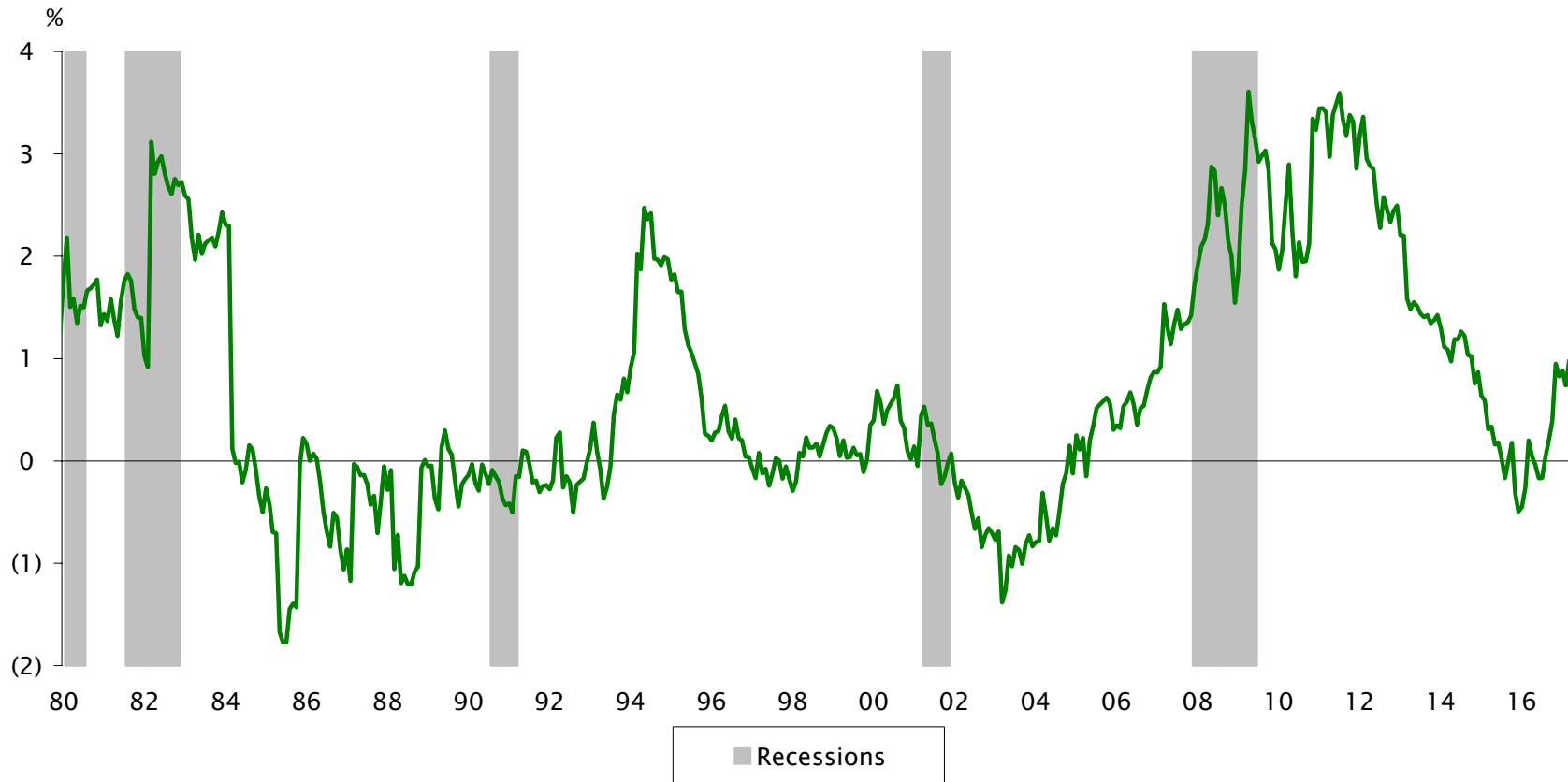
Large-Capitalization Pharmaceuticals and Biotechnology Stocks
 Share in the Highest Quintile of Arbitrage Risk
 and Google Search Activity for "Drug Prices"¹
 2008 Through February 2017



¹ Google searches limited to the U.S.; a reading of 100 indicates maximum search intensity.

...And the Stocks Aren't All That Cheap

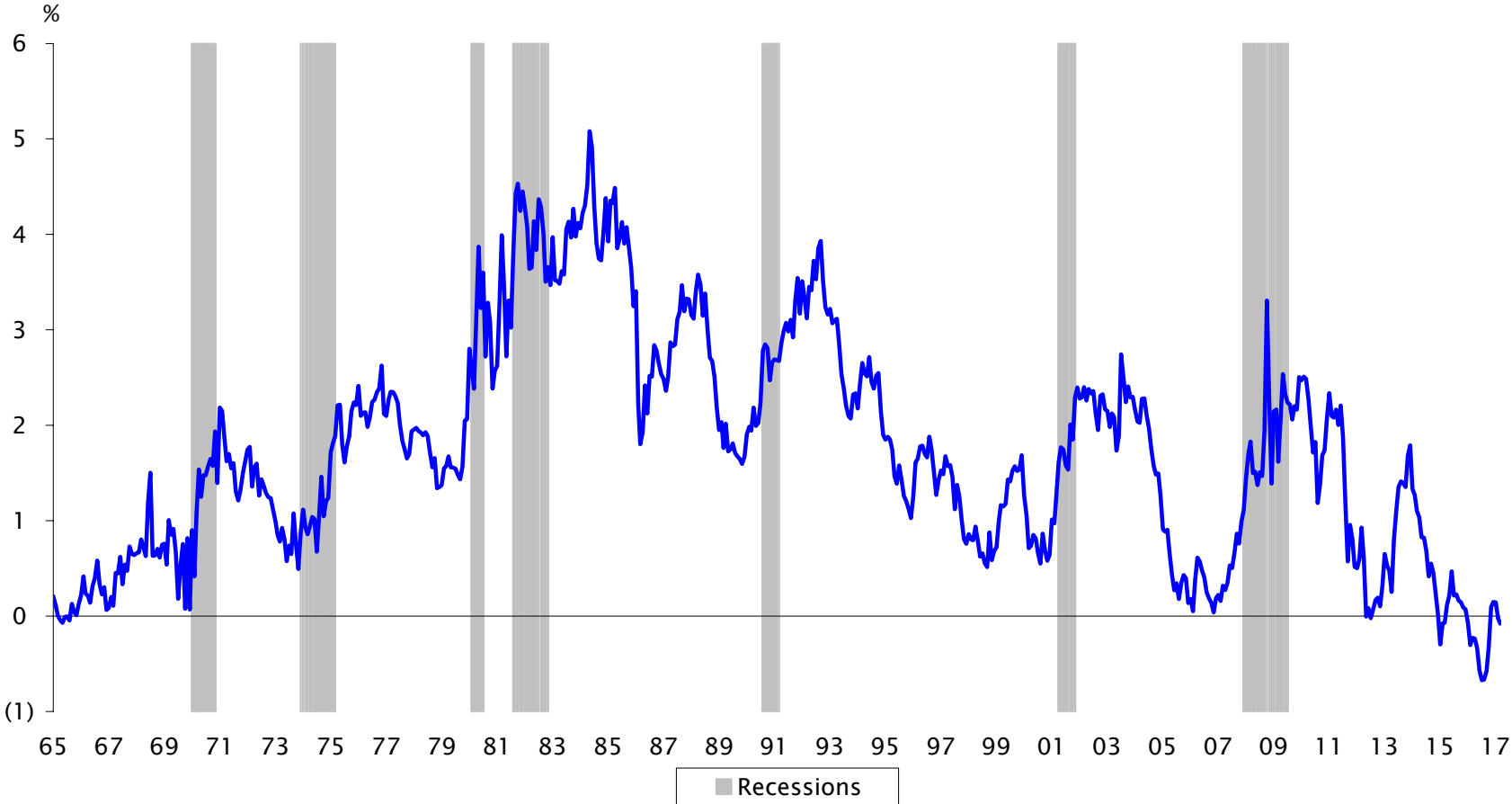
Large-Capitalization Pharmaceutical Stocks
Relative Free Cash Flow Yields¹
1980 Through Late-March 2017



¹Capitalization-weighted data.

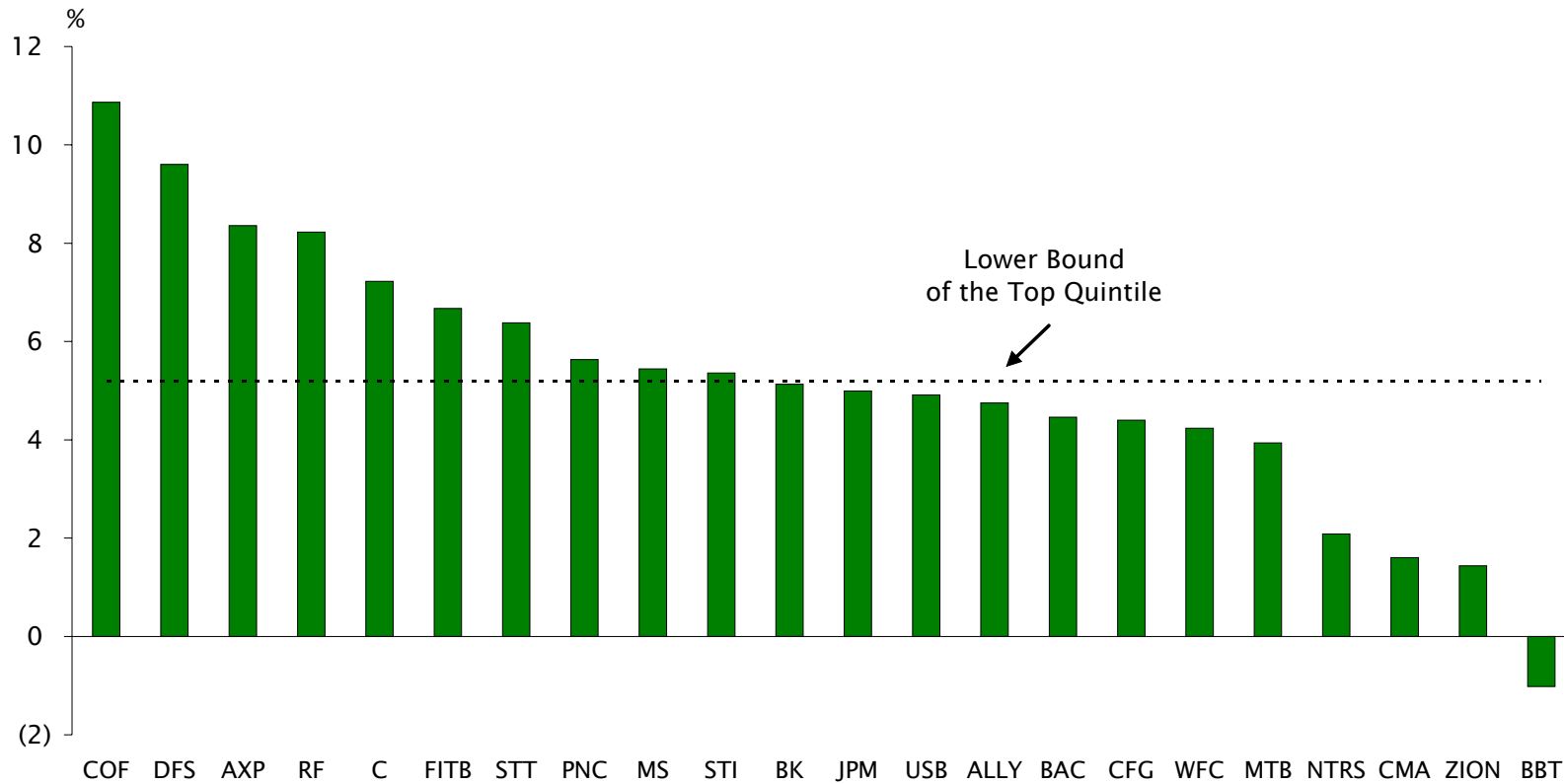
The Financials are a Bet on Normalization...

Ten-Year Treasury Bond Term Premium 1965 Through Late-March 2017



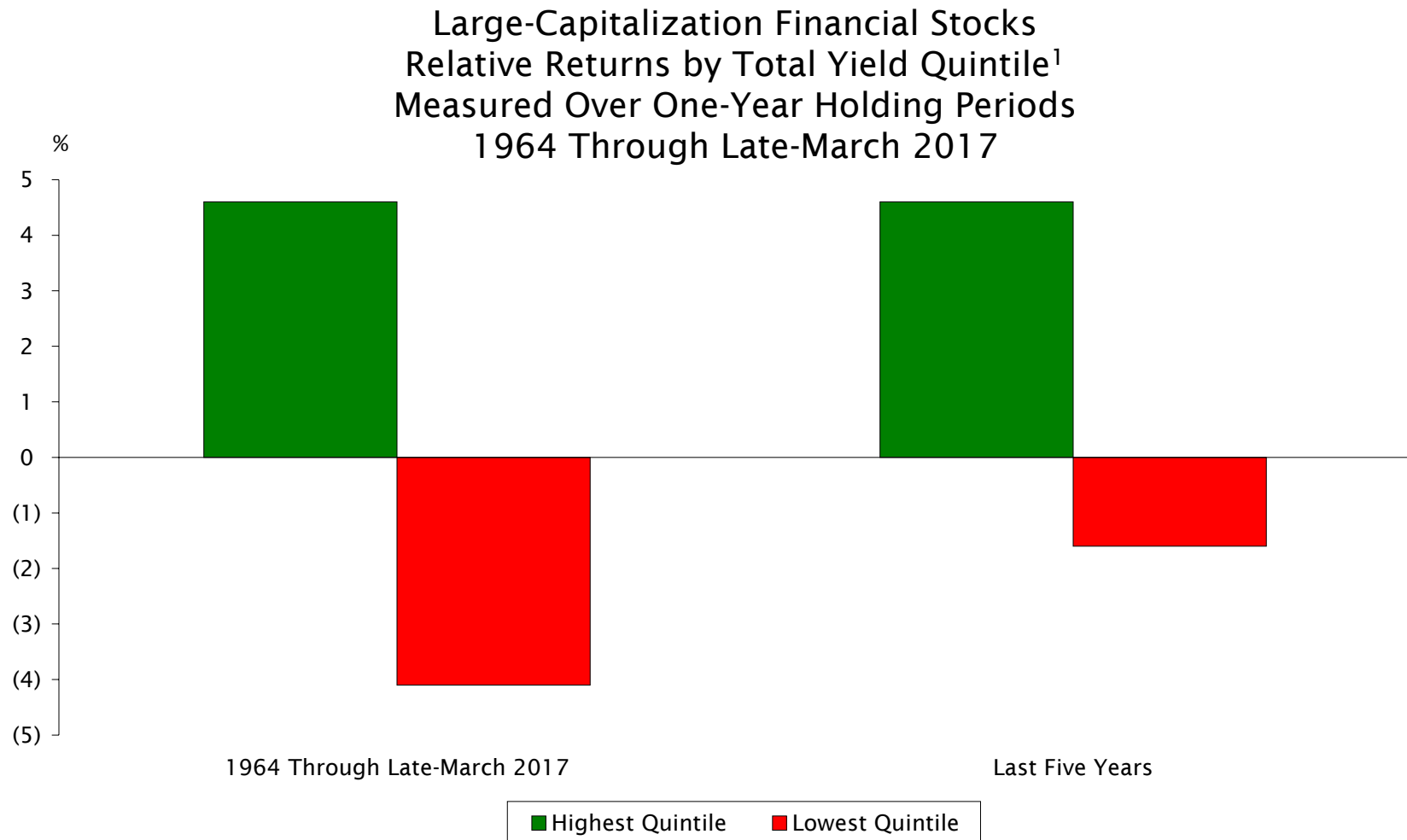
...And Some Still Offer High Total Yields...

Regulated Financial Companies
Total Yields¹
As of Late-March 2017



¹Measured as dividend yield plus share count reduction.

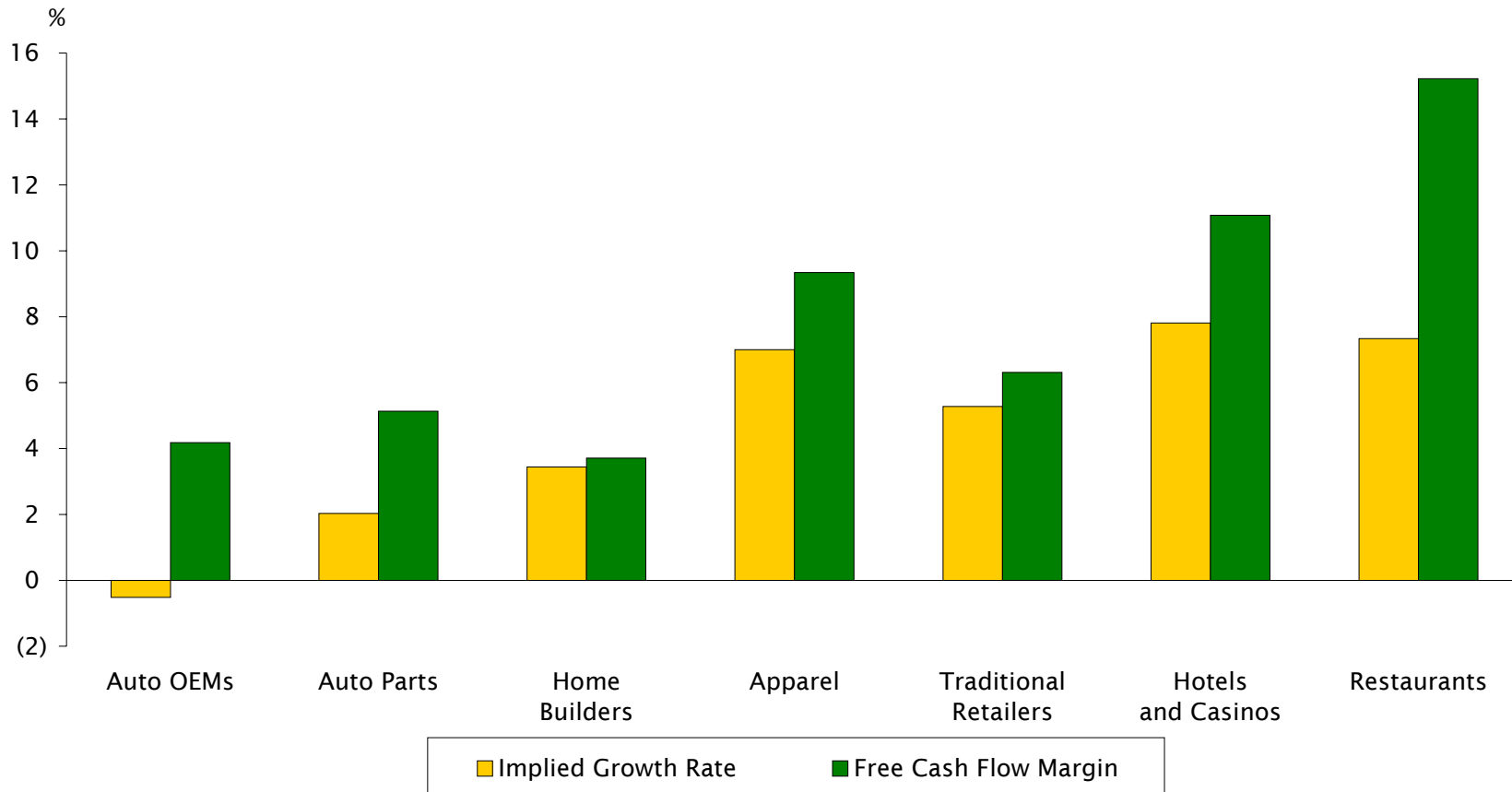
...That Have Been a Continuing Source of Alpha



¹Measured as dividend yield plus share count reduction. Returns are ranked across and relative to the large-cap stock universe.

As Usual, the Market is Skeptical of the Durables Cycle

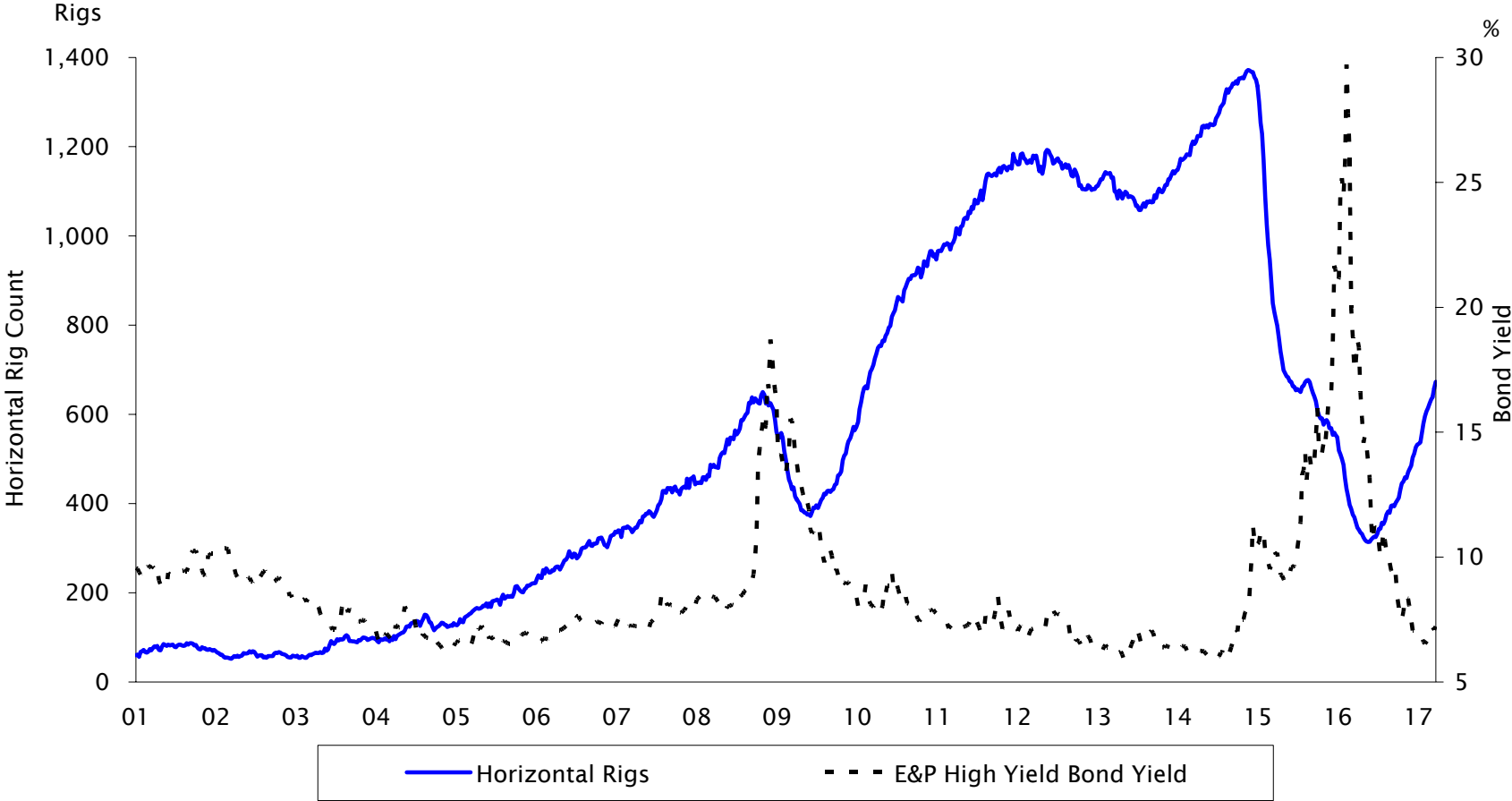
Select Large-Capitalization Consumer Cyclical Industries
Implied Earnings Growth Rates and Free Cash Flow Margins¹
As of Late-March 2017



¹Capitalization-weighted averages.

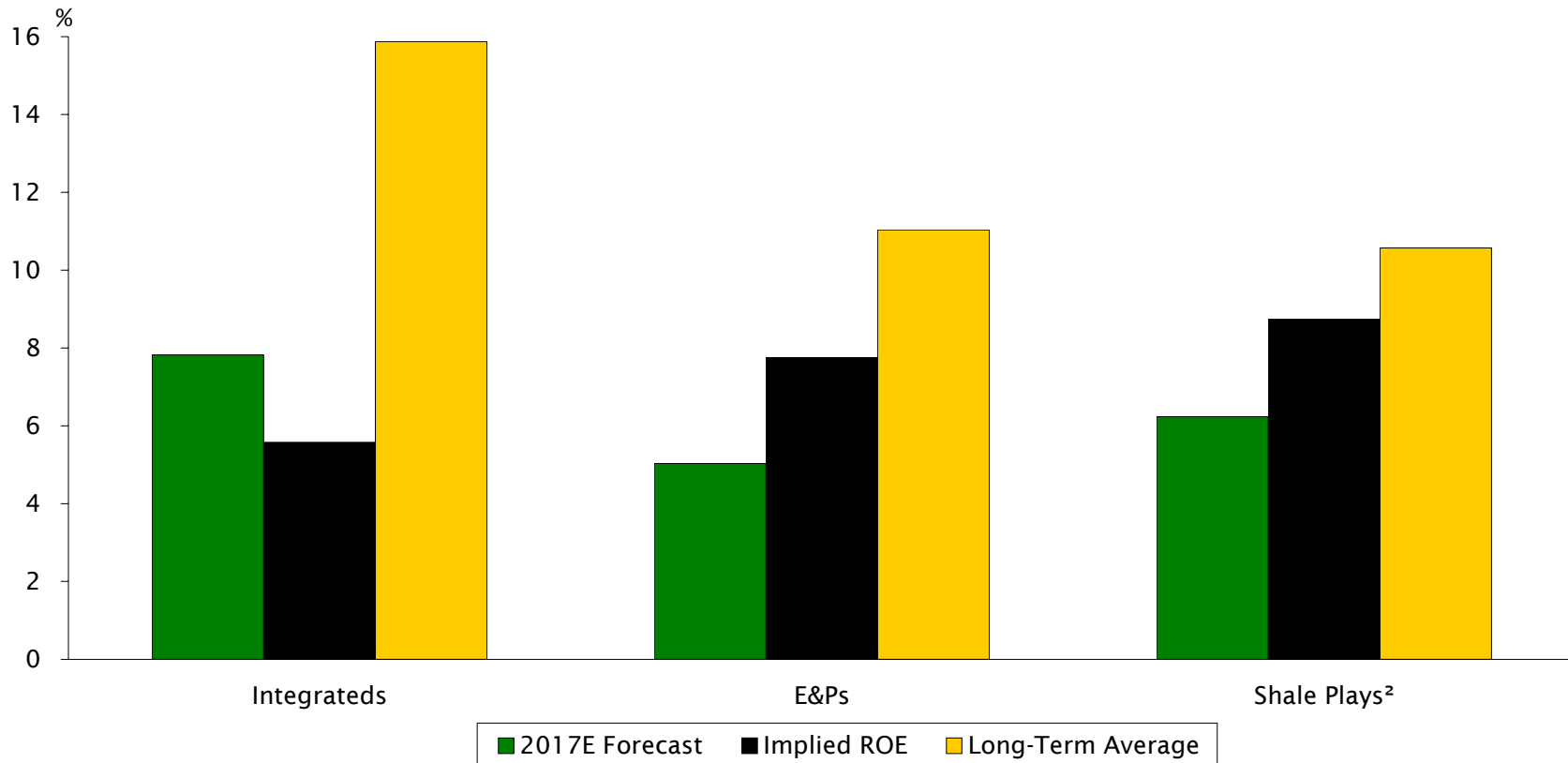
In Energy, Cheap Credit Has Changed the Rules of the Game...

North American Horizontal Rigs
Number of Rigs and the U.S. E&P High Yield Bond Yield
2001 Through Late-March 2017



...And the Stocks Discount Some Rebalancing...

Large-Capitalization Integrations and E&Ps Return on Equity¹ As of Late-March 2017

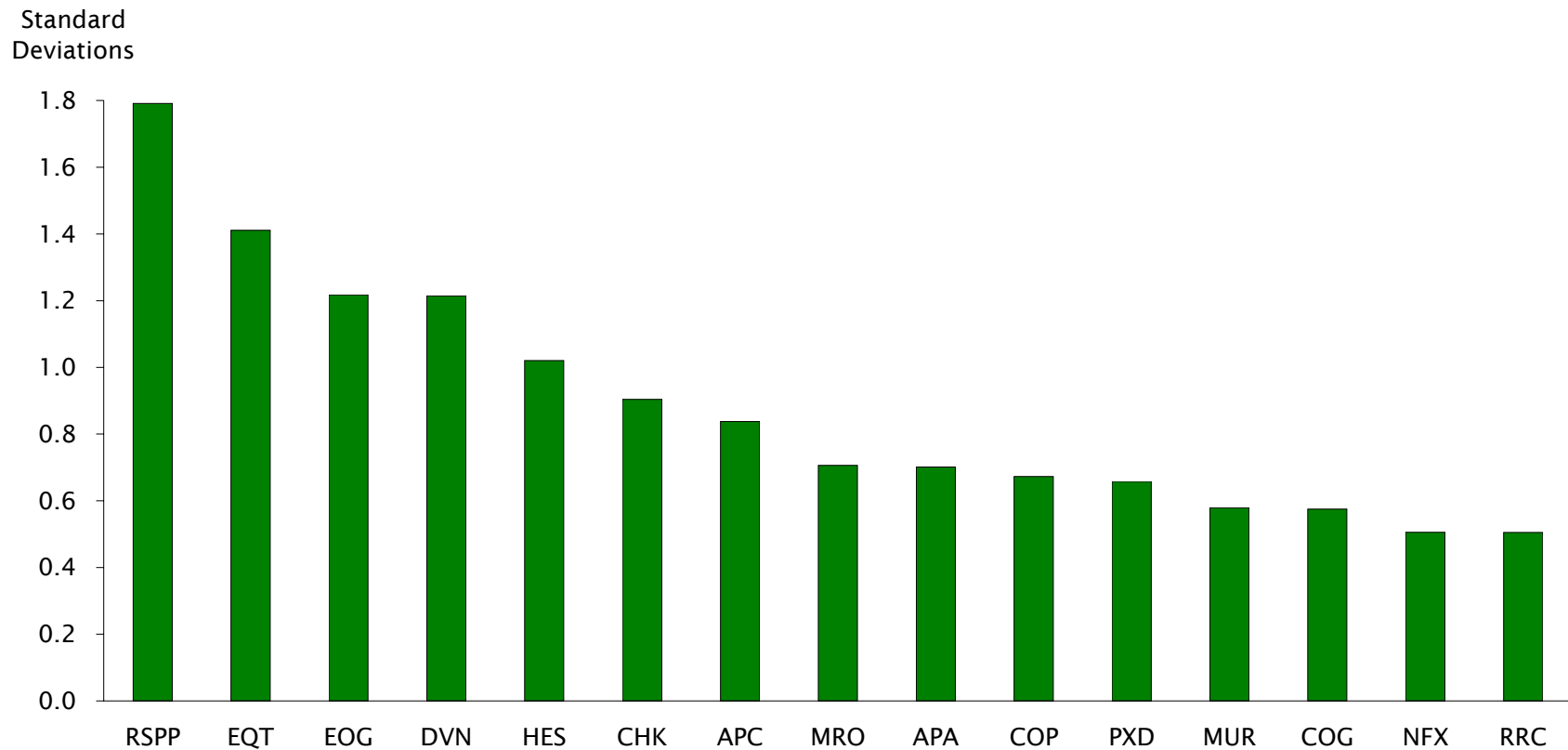


¹Forecast ROE is based on capitalization-weighted consensus estimates for 2017E. Implied ROE is the average ROE that was historically delivered over the subsequent five years by stocks trading at similar relative price-to-book ratios. Long-term averages are from 1970, except for the shale plays which start in 2002.

²Shale plays are: CLR, COG, CXO, EOG, PXD, QEP, RRC, SWN, WLL, XEC.

...With the E&P Issues Most Operationally Leveraged

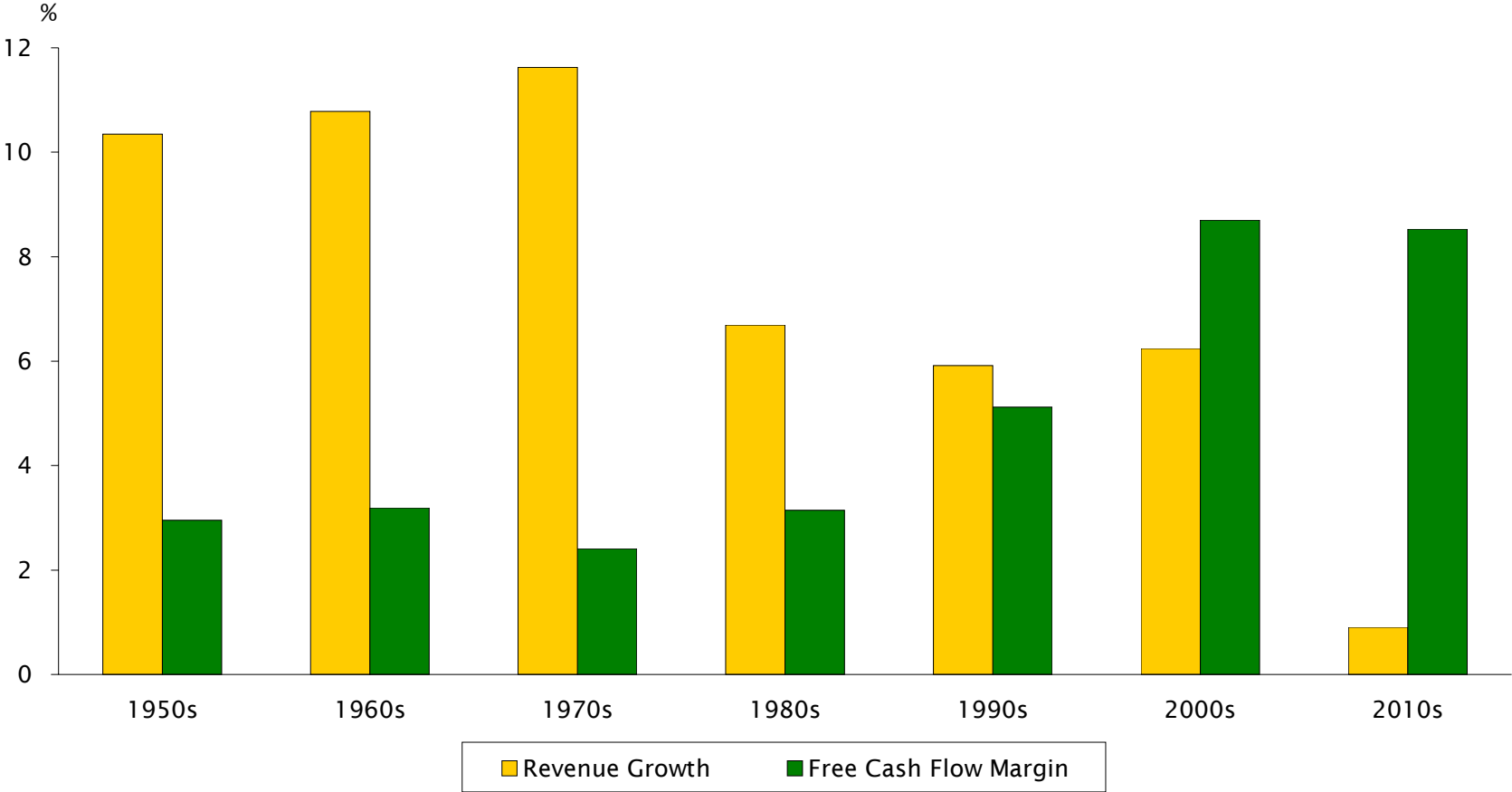
Large-Capitalization E&P Stocks With Positive Free Cash Flow Surprises¹ As of Late-March 2017



¹ Includes those with free cash flow surprises of +0.5 standard deviations or greater.

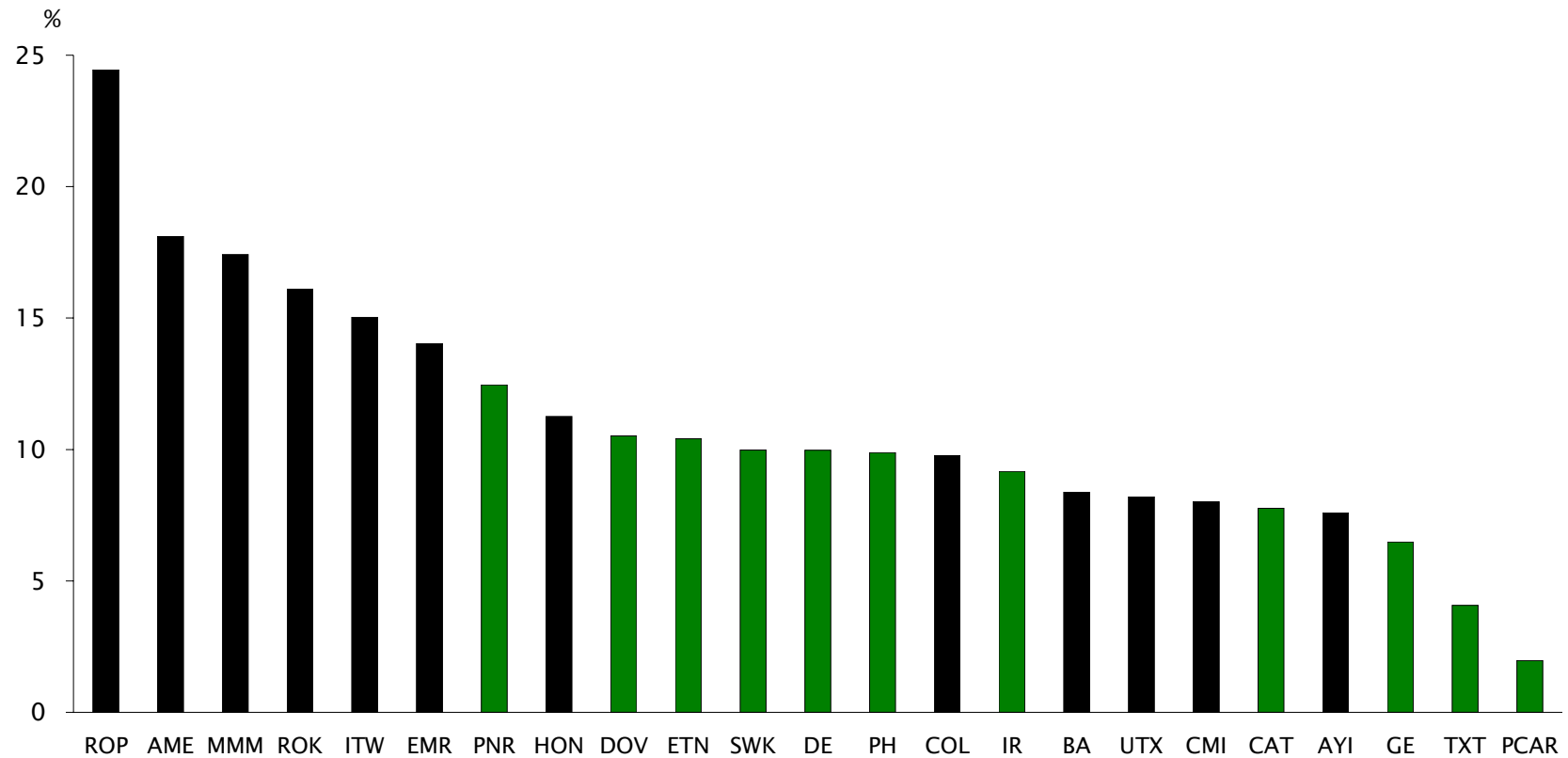
Capital Goods Companies Have Been Cash Flow Maximizers...

Large-Capitalization Capital Equipment (ex-Defense) Stocks
Average Year-over-Year Revenue Growth and Free Cash Flow Margins
1952 Through February 2017



...And We're Tilted Toward the Higher-Margin Ones

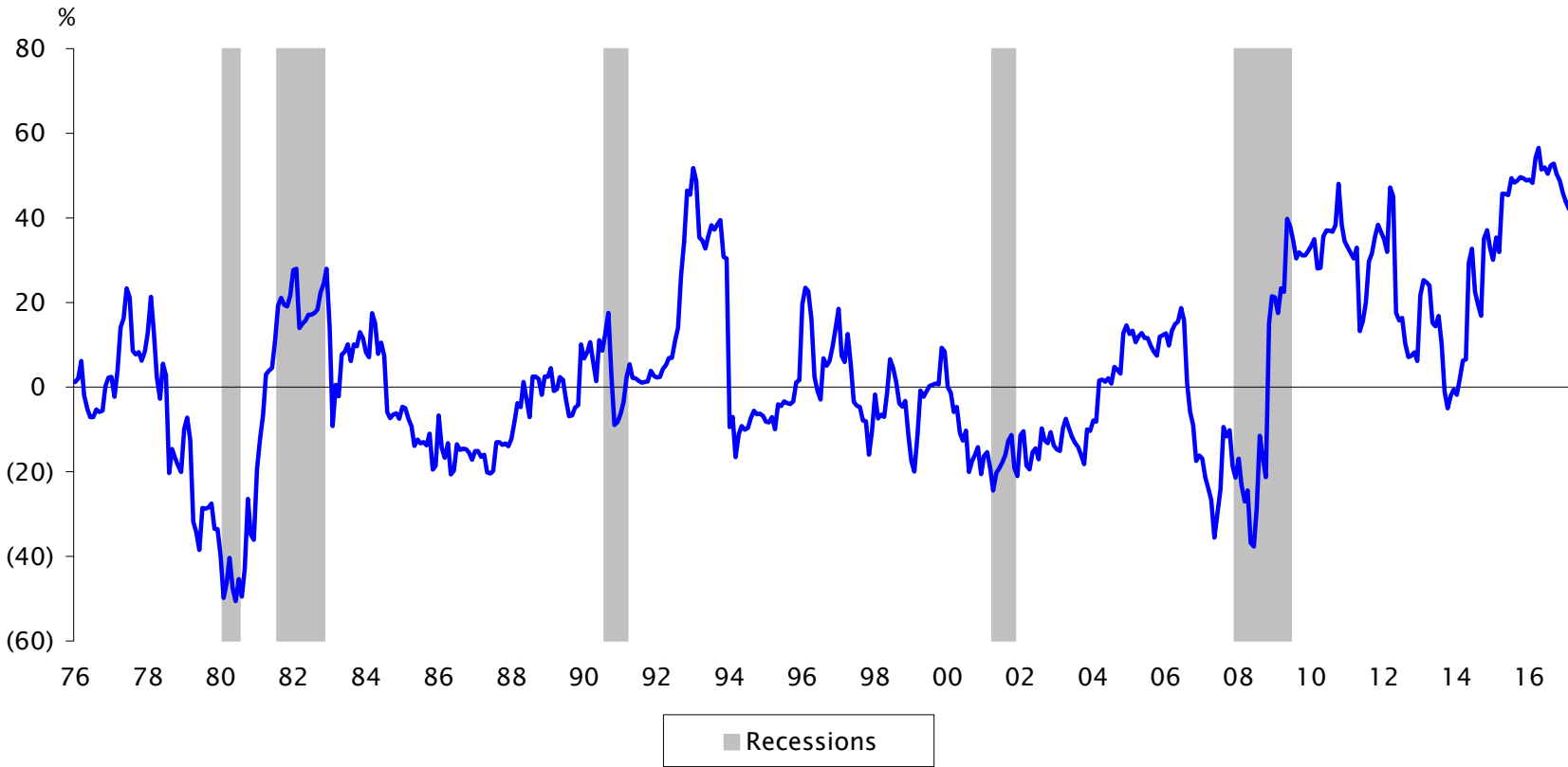
Large-Capitalization Capital Equipment Stocks
Free Cash Flow Margins and Fundamental Stability Ranks¹
As of Late-March 2017



¹The two most stable quintiles signified by black bars.

Chemical Multiples are Tied to Oil Prices...

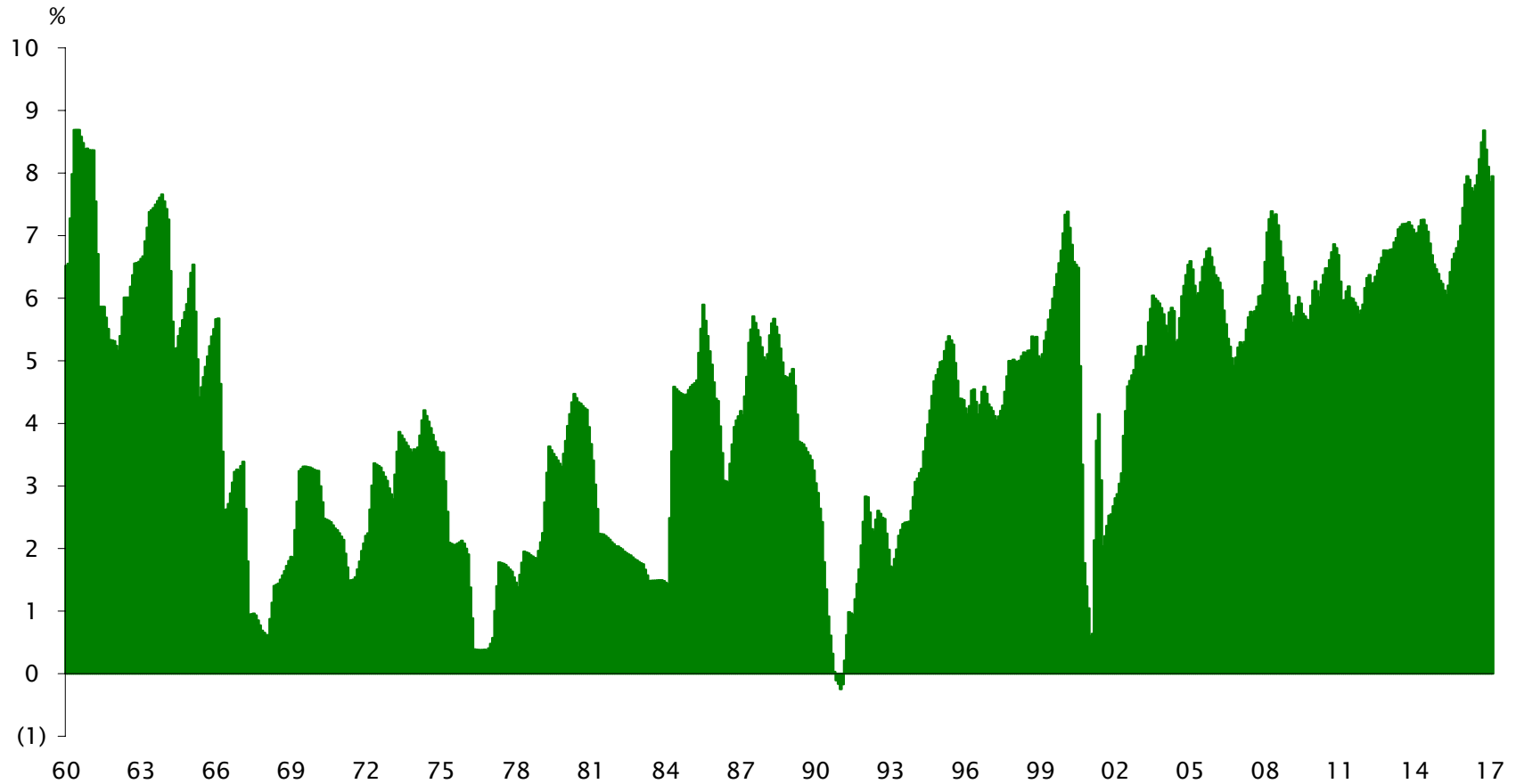
Large-Capitalization Chemical Stocks¹
Correlation of Changes in Relative P/E's with Those of Oil Prices²
1976 Through Late-March 2017



¹LYB, WYK, DOW, EMN and DD; equally-weighted data.
²Month-over-month changes, correlations based on trailing 24-month data.

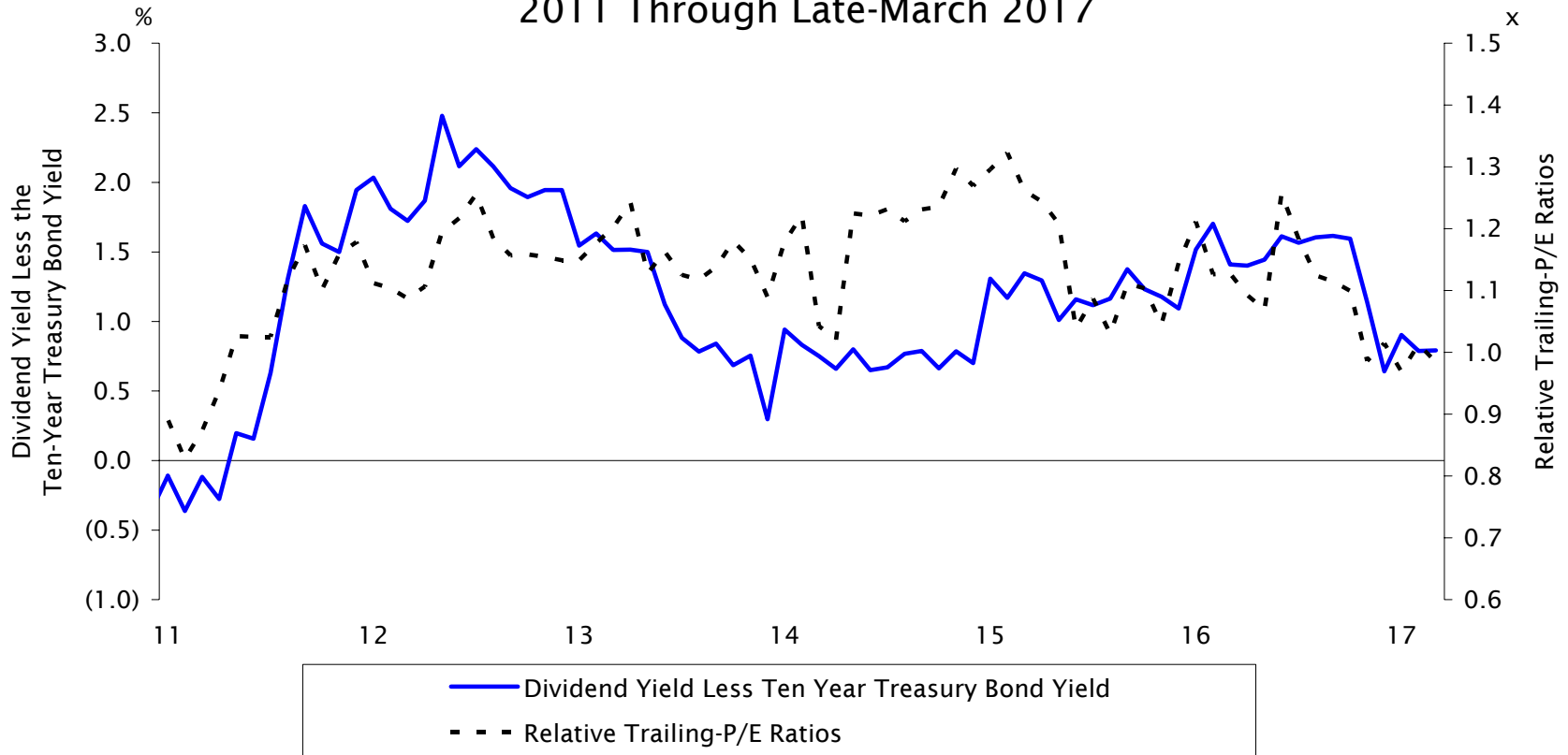
...And Here, We're Being Paid to Wait

Large-Capitalization Chemical Stocks
Free Cash Flow Margins
1960 Through February 2017



Bond Surrogates are Really Just That...

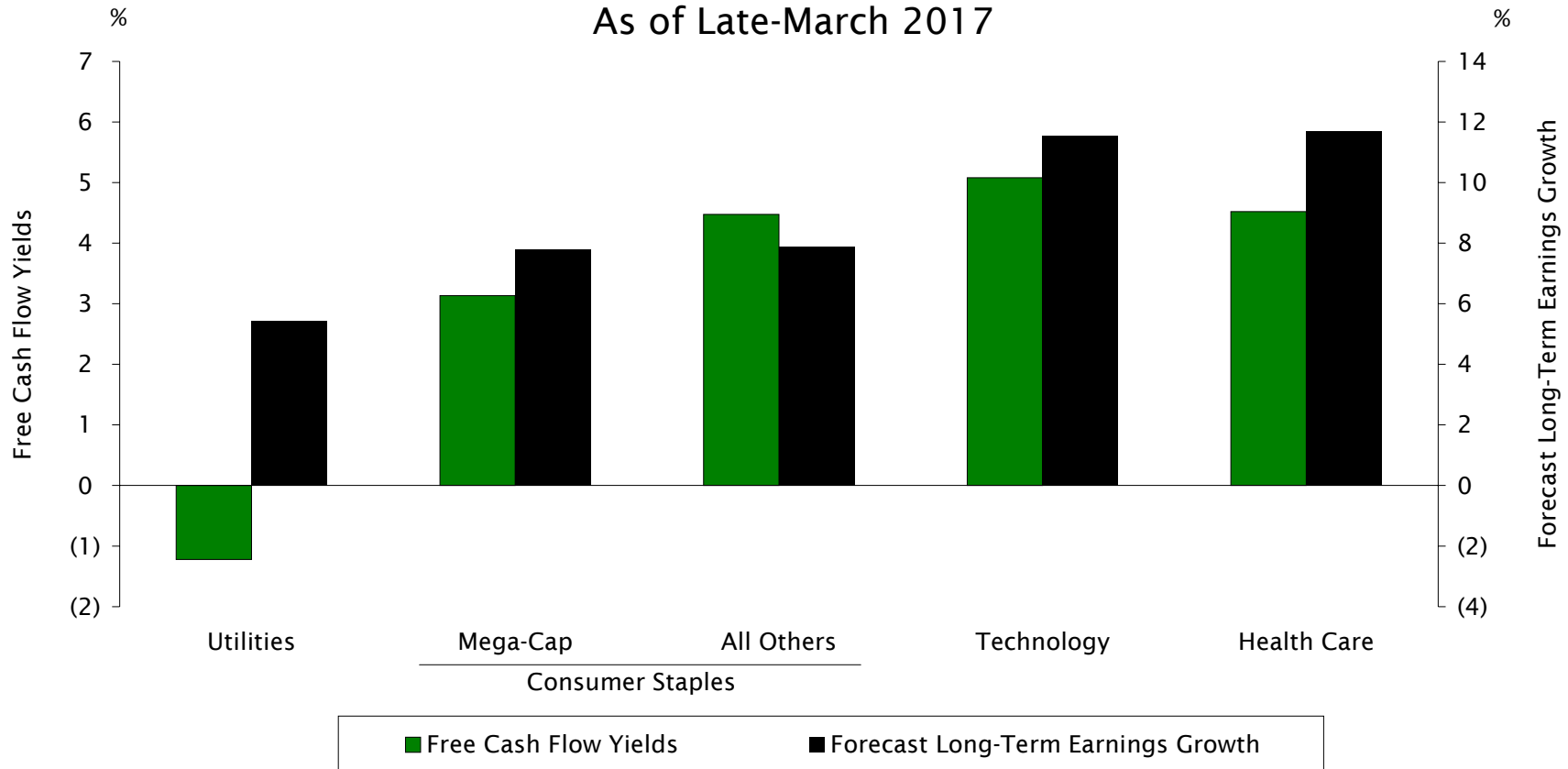
Large-Capitalization Bond Surrogates¹
 Dividend Yields Less the Ten-Year Treasury Bond Yields
 and Relative Trailing-P/E Ratios
 2011 Through Late-March 2017



¹The bond surrogates are the 10% of the market with relative returns that are most correlated with the performance of ten-year Treasury bond. Capitalization-weighted data.

...And We're Still Being Paid to Take on Some Volatility

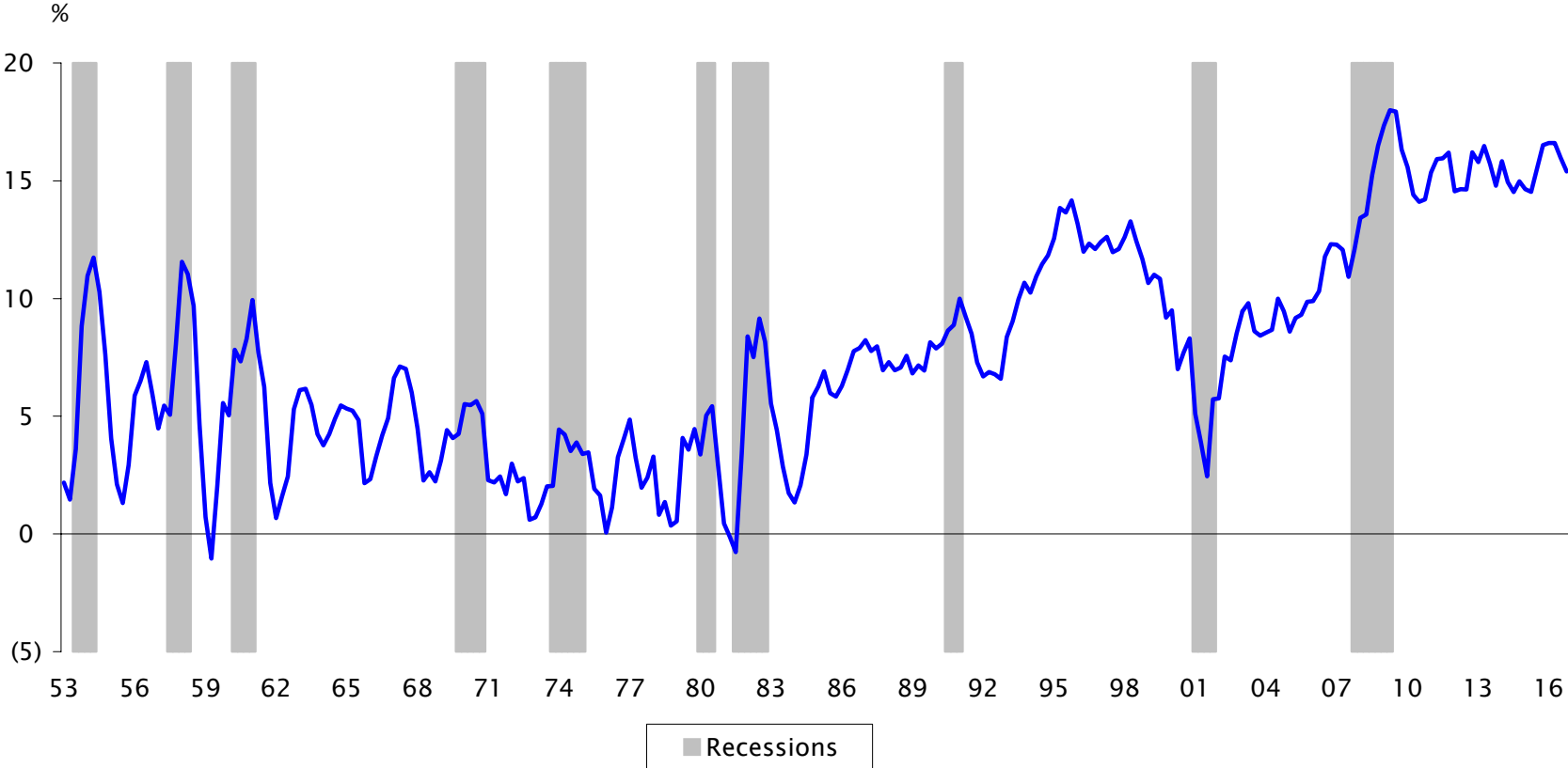
Large-Capitalization Stable Stocks¹
 Free Cash Flow Yields
 and Forecast Long-Term Earnings Growth
 As of Late-March 2017



¹ Drawn from the top quintile of stability. Equally-weighted data.

The Real ROEs Tell the Tale

The Large-Capitalization Core of the Market¹
ROEs Less Nominal-U.S GDP Growth
1953 Through 2016



¹Core excludes financials, REITs, energy and industrial commodities.

Conclusions

- It's been one big free cash flow story. When in doubt, go with GARP.
- We're betting on a long expansion, with a somewhat different character than its predecessors.
- A bull market in bonds is still imbued to the valuation paradigm in the equity market.
- The Bretton Woods II era is under threat. Tinkering could prove painful.
- We're overweighting technology, with a cyclical bias, financials, HMOs, auto parts, hotels, airlines, chemicals and biotech.
- The equity yield curve has steepened as the Sharpe ratio rose to prominence as a gauge of performance.
- Long holding periods have been rewarded because real ROEs are high.

The Distrusted Fifty

The Distrusted Fifty Large-Capitalization Growth Stocks with High Reinvestment Rates Discounting Relatively Low Secular Earnings Growth In Capitalization Order As of Late-March 2017

Symbol	Company	Recent Price	Market Capitalization (\$ Billion)	Symbol	Company	Recent Price	Market Capitalization (\$ Billion)
AAPL	APPLE INC	\$140.88	\$740.4	ESRX	EXPRESS SCRIPTS HOLDING CO	\$64.60	\$39.1
GOOGL	ALPHABET INC	838.51	579.7	EBAY	EBAY INC	33.43	36.3
MSFT	MICROSOFT CORP	65.10	503.2	MAR	MARRIOTT INTERNATIONAL INC	93.17	36.0
WFC	WELLS FARGO & CO	55.39	277.8	HCA	HCA HOLDINGS INC	90.49	33.5
CMCSA	COMCAST CORP	37.11	176.3	MCK	MCKESSON CORP	148.50	31.5
PM	PHILIP MORRIS INTERNATIONAL	112.38	174.3	STT	STATE STREET CORP	78.11	29.8
TSM	TAIWAN SEMICONDUCTOR MFG CO	33.17	172.0	TEL	TE CONNECTIVITY LTD	74.46	26.5
IBM	IBM CORP.	173.77	164.4	DFS	DISCOVER FINANCIAL SERVICES INC	66.79	26.0
PEP	PEPSICO INC	111.83	159.7	WDC	WESTERN DIGITAL CORP	78.57	22.6
UNH	UNITEDHEALTH GROUP INC	164.60	157.0	MCO	MOODY'S CORP	111.41	21.3
MMM	3M CO	190.43	113.8	LRCX	LAM RESEARCH CORP	127.80	20.8
BA	BOEING CO	176.10	108.7	DG	DOLLAR GENERAL CORP	68.97	19.1
ABBV	ABBVIE INC	66.10	105.4	CHKP	CHECK POINT SOFTWARE TECHNOLOGIES INC	103.71	18.1
GILD	GILEAD SCIENCES INC	67.50	88.4	TROW	PRICE (T. ROWE) GROUP	67.63	16.6
AVGO	BROADCOM LTD	219.05	87.9	ADS	ALLIANCE DATA SYSTEMS CORP	243.43	14.0
TXN	TEXAS INSTRUMENTS INC	80.53	80.5	CTXS	CITRIX SYSTEMS INC	83.57	13.1
AGN	ALLERGAN PLC	239.38	80.2	WAT	WATERS CORP	155.91	12.5
ACN	ACCENTURE PLC	119.39	78.9	WYNN	WYNN RESORTS LTD	114.65	11.7
AXP	AMERICAN EXPRESS CO	77.60	70.2	TDG	TRANSDIGM GROUP INC	214.54	11.5
ADBE	ADOBE SYSTEMS INC	128.25	63.6	SNI	SCRIPPS NETWORKS INTERACTIVE	78.53	10.2
BIIB	BIOGEN INC	275.23	59.4	FFIV	F5 NETWORKS INC	146.52	9.5
TJX	TJX COMPANIES INC	78.35	51.1	VRSN	VERISIGN INC	86.97	9.0
ITW	ILLINOIS TOOL WORKS	131.64	45.7	WYN	WYNDHAM WORLDWIDE CORP	83.98	8.9
HAL	HALLIBURTON CO	47.78	41.4	JAZZ	JAZZ PHARMACEUTICALS PLC	146.98	8.8
COF	CAPITAL ONE FINANCIAL CORP	82.13	39.6	BBBY	BED BATH & BEYOND INC	38.32	5.8