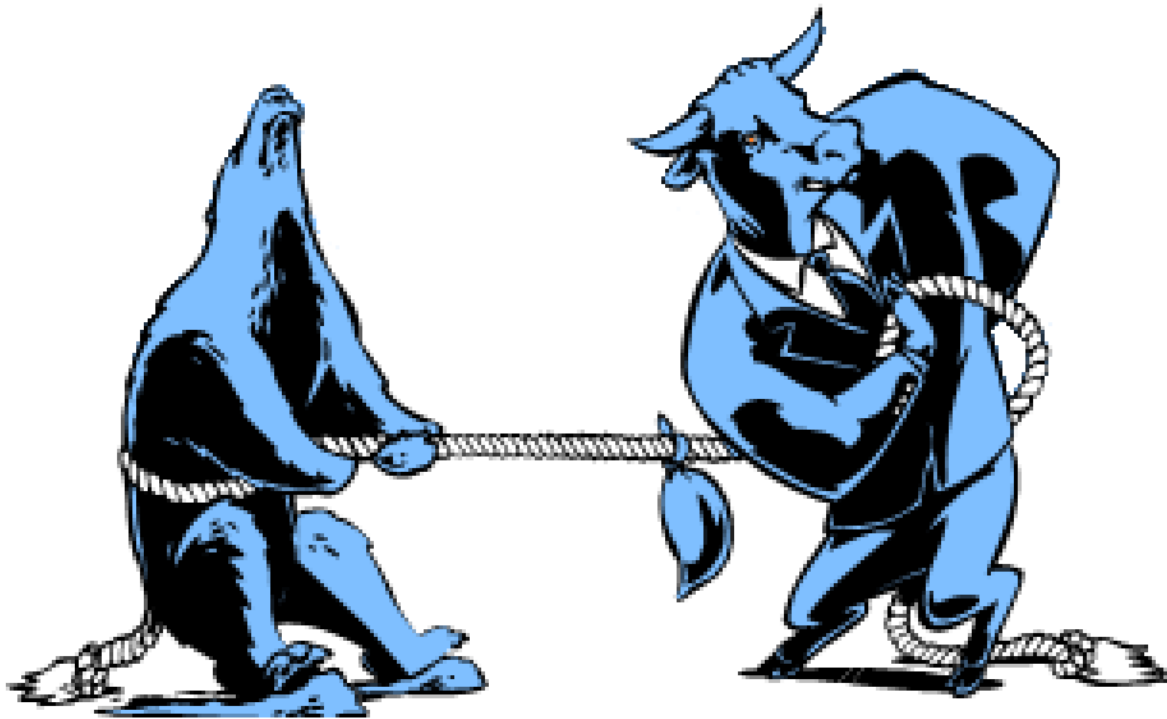


# Equity Edge

## April 2017



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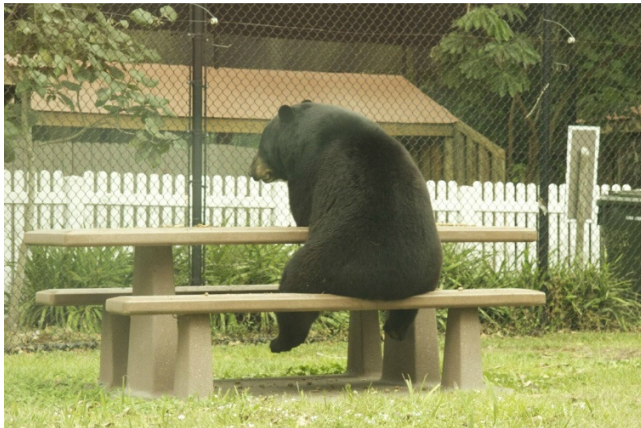
## Introduction

Just another stock market newsletter peddling standard conventional “wisdom” why stocks always go up in the long run or why the stock market is overvalued and will crash any moment?

No.

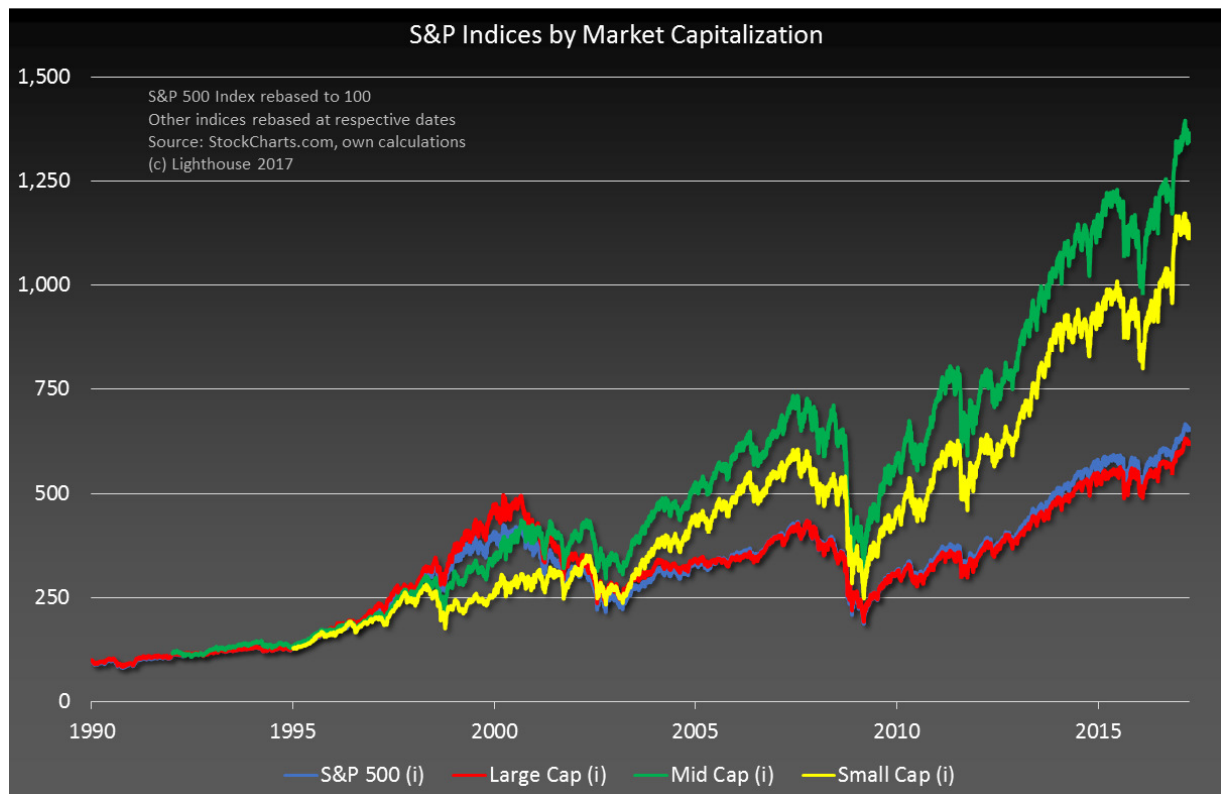
- Strategies that work, why they work (and why they might not work going forward)
- Active (stock picking) versus passive (ETF) investing
- Dangers of algorithmic / High Frequency trading
- Small caps versus large caps
- Developed versus emerging markets
- Data. Lots of data. And charts.

This report is supposed to remain „work in progress“ and will be updated and extended in the future. I hope you enjoy it.



(Lonely and sad bear waiting for stock market crash)

## Performance by Market Capitalization



- It is a well-documented phenomenon that small and medium-sized companies outperform those with large market capitalization<sup>1</sup>. Compare the performance of the S&P 100 Large Cap Index (red) with the S&P 400 Mid Cap (green) and S&P 600 Small Cap (yellow) Index.
- One hundred dollars invested in 1990 grew to \$617 in large caps, \$1,349 in mid-caps and \$1,123 in small caps.
- The most well-known S&P 500 Index (blue) is dominated by the 100 largest stocks and therefore underperforms small- and mid-cap indices.
- There are more than 500 ETF on large and mega-caps, but only 83 on mid-caps.
- The top-10 ETF investing in US equities have assets of \$589bn (large and mega-caps), \$123bn (mid-caps) and \$130bn (small caps). The majority of investors are buying the “wrong” ETFs.
- Why the outperformance of companies with small and medium market cap?
- One reason lies in the composition: defensive sectors (Health Care, Consumer Staples, Utilities and Telecom Services) make up 29% of the S&P 500 and 19% of the S&P Small Cap Index.

<sup>1</sup> Market capitalization = number of all shares outstanding multiplied with current share price

## Lighthouse Investment Management

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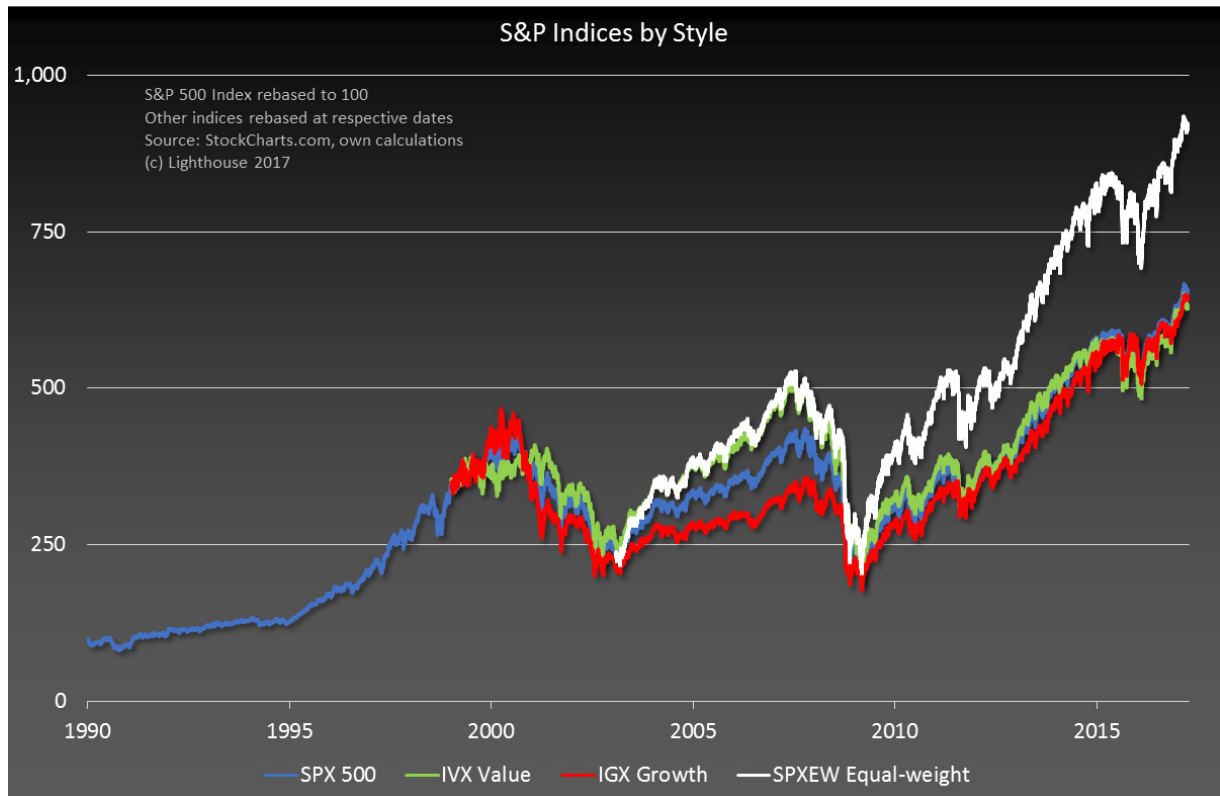
- It is more difficult for large and mature companies to grow 50% than it is for a small and new company
- Small companies are more likely to be owner-operated (founder and/or management own significant share of company) and more motivated to think entrepreneurial.
- Small companies are not covered by a lot of analysts, meaning there is not a lot of research available. Some investors shy away from investing in companies not covered by major broker houses (don't want to do their own work). Some investors are not allowed to invest in very small companies due to liquidity requirements (they need a certain amount of average daily volume in order not to move the price with their own market orders). This leads to a neglect of small companies, which manifests itself in lower multiples, or the stock being cheap. As the company's market capitalization grows, more analysts will pick up coverage, leading to higher multiples.
- It is also entirely possible small and medium-capitalization companies were simply too cheap in the past and have caught up with their larger peers.
- It is also possible that small companies have larger concentration of clients and/or products, so when the economy does well they might benefit over-proportionally.
- It is also possible that small and medium-sized companies outperform only during a bull-market (like the one since 1990). In fact, when you look at the chart, small and mid-caps seems to give up (almost) all their outperformance during crashes (2002/3, 2008/9). If that were to happen now, mid-caps might lose two thirds of their value.

CONCLUSION: Small- and medium companies outperform during good times, and low-cost exchange-traded funds (ETF) are a good way to benefit without individual company risk. However, after many years of outperformance is probably not the best moment to invest in them right now.

Here is a table with the largest ETF (US equities) for each style and each market capitalization, followed by its assets under management, the largest holding, and the largest holding's market capitalization:

		Market capitalization		
		Large	Mid	Small
Style	Growth	IWF 34bn AAPL 736bn	IWP 7bn NVDA 56bn	IWO 7bn CC 6bn
	Core/Blend	SPY 212bn AAPL 736bn	IJH 38bn RMD 10bn	IWM 36bn AMD 11bn
	Value	IWD 36bn XOM 341bn	IWS 9bn MU 30bn	VBR 11bn CDW 9bn

## Performance by Style



- Neither growth<sup>2</sup> (red) nor value<sup>3</sup> (green) style investing beat the overall market (blue)<sup>4</sup>
- Allocating the same amount to every company in the index (equal-weight, white) lead to a significant outperformance<sup>5</sup>
- Why would that be? Companies in most indices are weighed based on their market capitalization<sup>6</sup>; the more a company is worth, the higher its weight.
- So when there is a bubble in a certain sector (tech, telecom in 1999-2000), those stocks that are overvalued automatically will make their way to the top of the index
- During the tech bubble, the S&P 500 became tech-heavy (Microsoft, Cisco, Intel, Oracle, Lucent and IBM):
- Only two out of the top 10 companies are still in the top 10 today (Microsoft and GE)

<sup>2</sup> A “growth stock” should have superior growth rates of sales and earnings

<sup>3</sup> A “value stock” is cheap compared to others as measured by price-earnings, price-book and price-sales ratios

<sup>4</sup> \$100 invested grew to \$628 (value), \$642 (growth) and \$652 (overall market)

<sup>5</sup> \$100 invested grew to \$915

<sup>6</sup> The Dow Jones Industrial Index, however, is weighted by price: the stock with the highest absolute price (currently Goldman Sachs, \$223, market cap \$88bn, has the largest weighting (7.5%) while General Electric, \$29, with a market cap three times as large (\$256bn) has the smallest weighting (0.99%).

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Top-10 Index Members S&P 500 Index in Year 2000:

		2/29/2000	4/13/2017		2/29/2000
		mkt cap	mkt cap		weight
1	MSFT Microsoft	465	500	7%	4.0%
2	CSCO Cisco	452	161	-64%	3.9%
3	GE General Electric	434	256	-41%	3.8%
4	INTC Intel	378	165	-56%	3.3%
5	XOM Exxon Mobile	260	341	31%	2.3%
6	WMT WalMart	218	221	2%	1.9%
7	ORCL Oracle	209	180	-14%	1.8%
8	LU Lucent	190	10	-95%	1.7%
9	IBM IBM	185	159	-14%	1.6%
10	C Citibank	175	159	-9%	1.5%
Average:				-25%	25.8%

SPX 1,366 2,329 70%

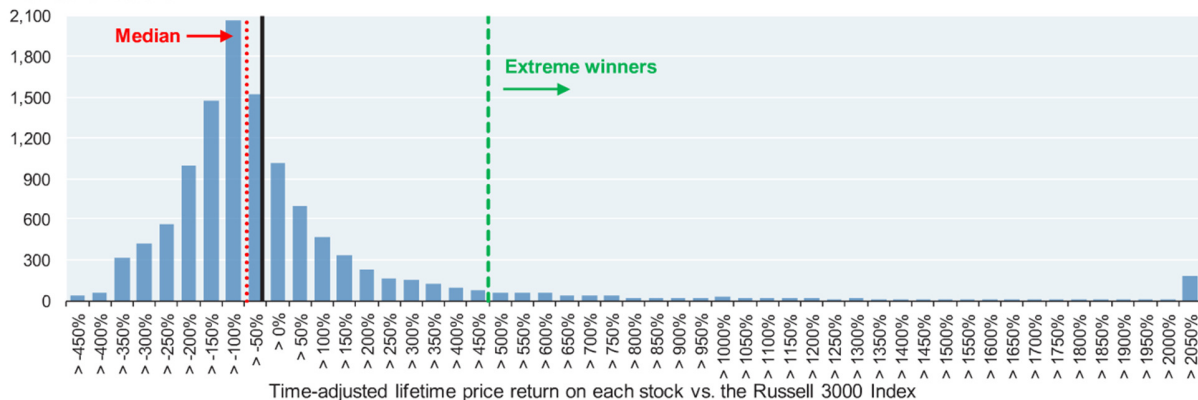
- Seven out of the top 10 today have a smaller market capitalization than 17 years ago
- The average change in market capitalization for the top 10 from the year 2000 is minus 25% (when the overall index is up 70%)
- An equal-weight index cuts back the weighting of any stocks caught in a bubble in regular intervals to 0.2% (1/500). Hence the “damage” from collapsing former darlings will be limited.

But there also is an argument *against* equal-weight:

- Look at the performance of 13,000 individual stocks versus the Russell 3000 index; the average stock underperforms by 54%, the median stock even more.
- The index is performing well only due to a handful (7%) of “extreme winners”. Which individual investor (or active fund manager) would not take profits on a stock that went up 100%, 200% or even 2500%?
- For 40% of all stocks had negative returns in *absolute* terms.
- This is why the odds are against stock-pickers (actively managed funds).

## Distribution of excess lifetime returns on individual stocks vs. Russell 3000, 1980-2014

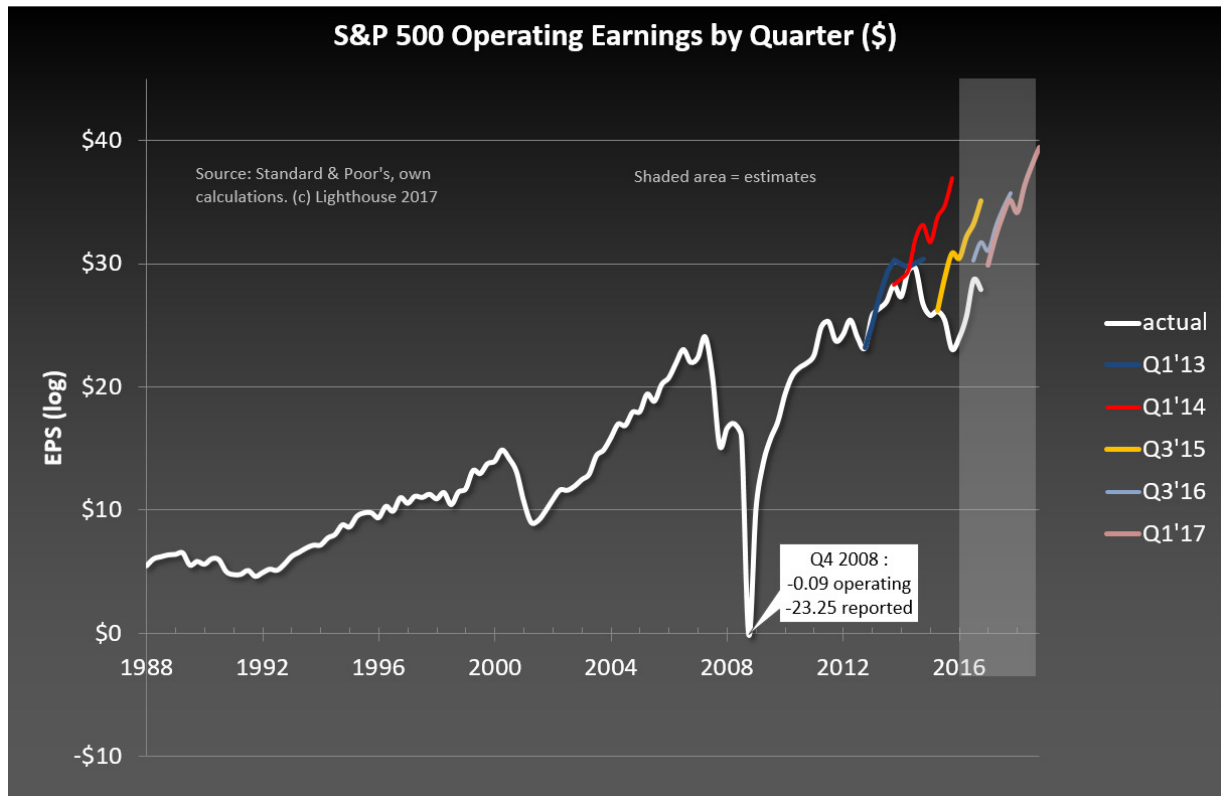
Number of stocks



Source: FactSet, J.P. Morgan Asset Management.



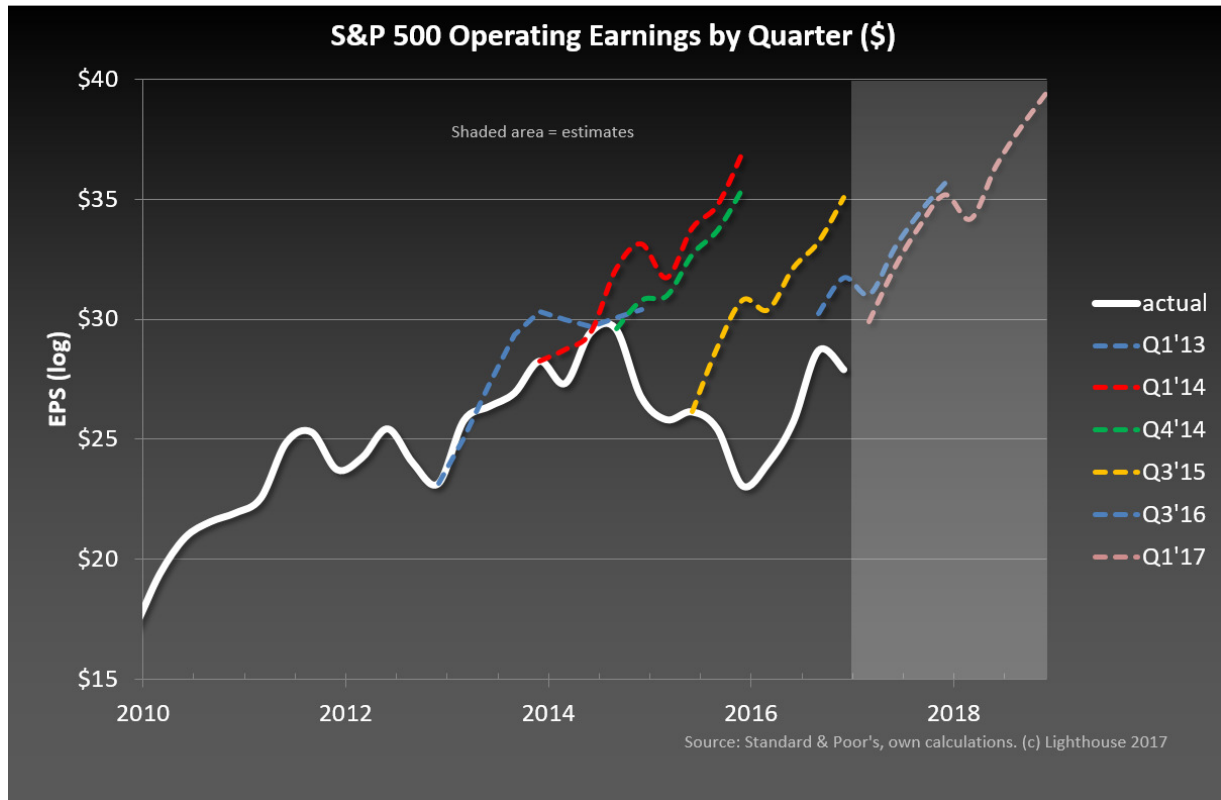
Company Earnings



- This chart shows total company earnings per quarter per S&P 500 Index. Over the last four available quarters (Q1-Q4 2006) companies earned \$106. The current index value (2,330) is at a multiple (or price-earnings-ratio) of 22 (which is historically expensive).
- Stock markets trades future expectations. By the end of 2018, earnings of \$39.43 are expected. Annualized over four quarters earnings could reach \$157.72. Based on that number the price-earnings-ratio sinks to 14.8x (which would be fairly valued).
- But earnings estimates almost always turn out to be too optimistic (there is an average “decay” of 6% per annum). And if we are headed for a recession, earnings could turn out much lower.
- During the peak of the “Great Financial Crisis”, reported earnings were negative \$23.25 (due to a lot of one-off write-downs). Even if you took operating earnings (excluding one-off items), earnings were zero, so how do you calculate an earnings multiple?
- The S&P 500 Index hit its low of 666 points on March 9, 2009. But due to collapsed earnings estimates the earnings multiple would have looked expensive.

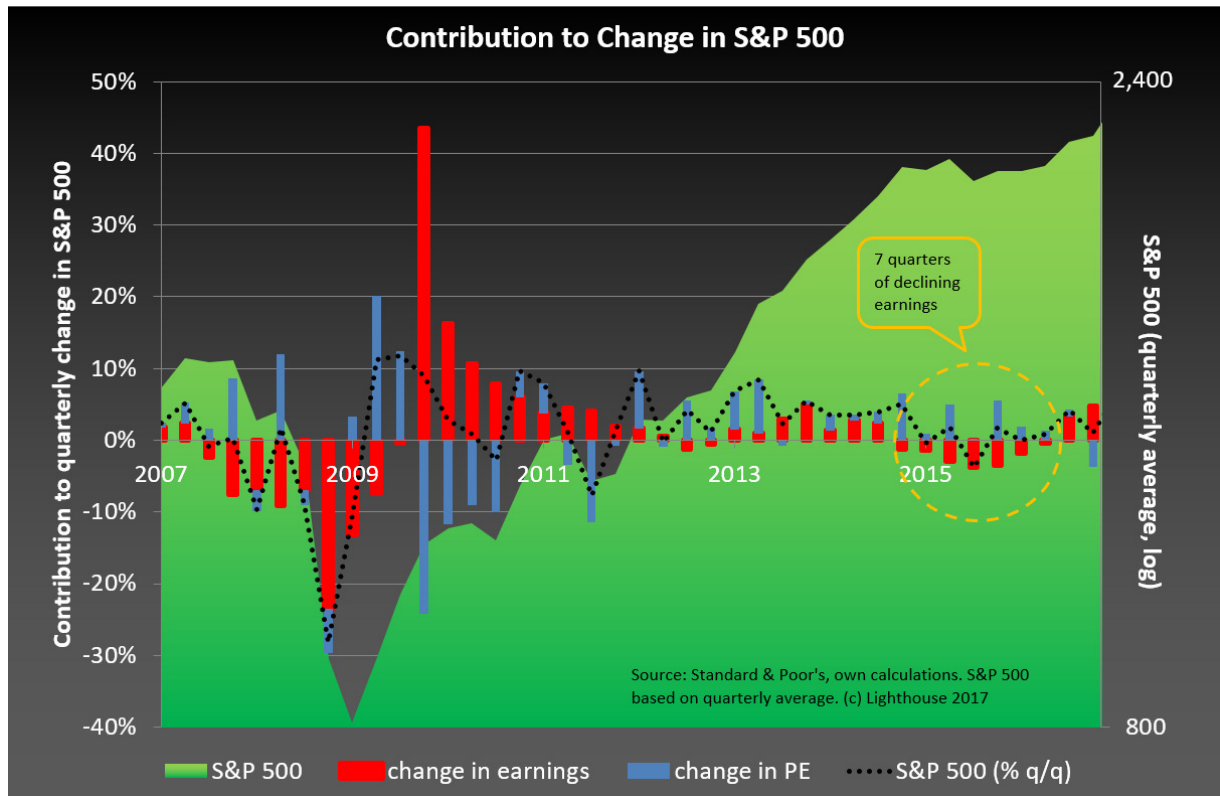
CONCLUSION: earnings estimates are pretty much useless.





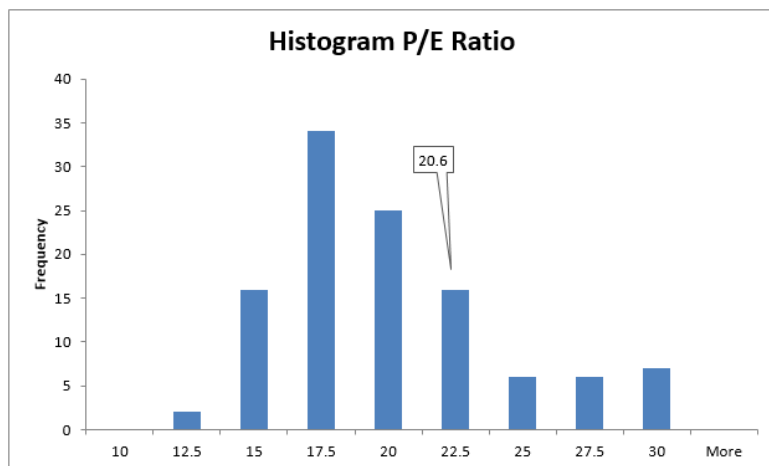
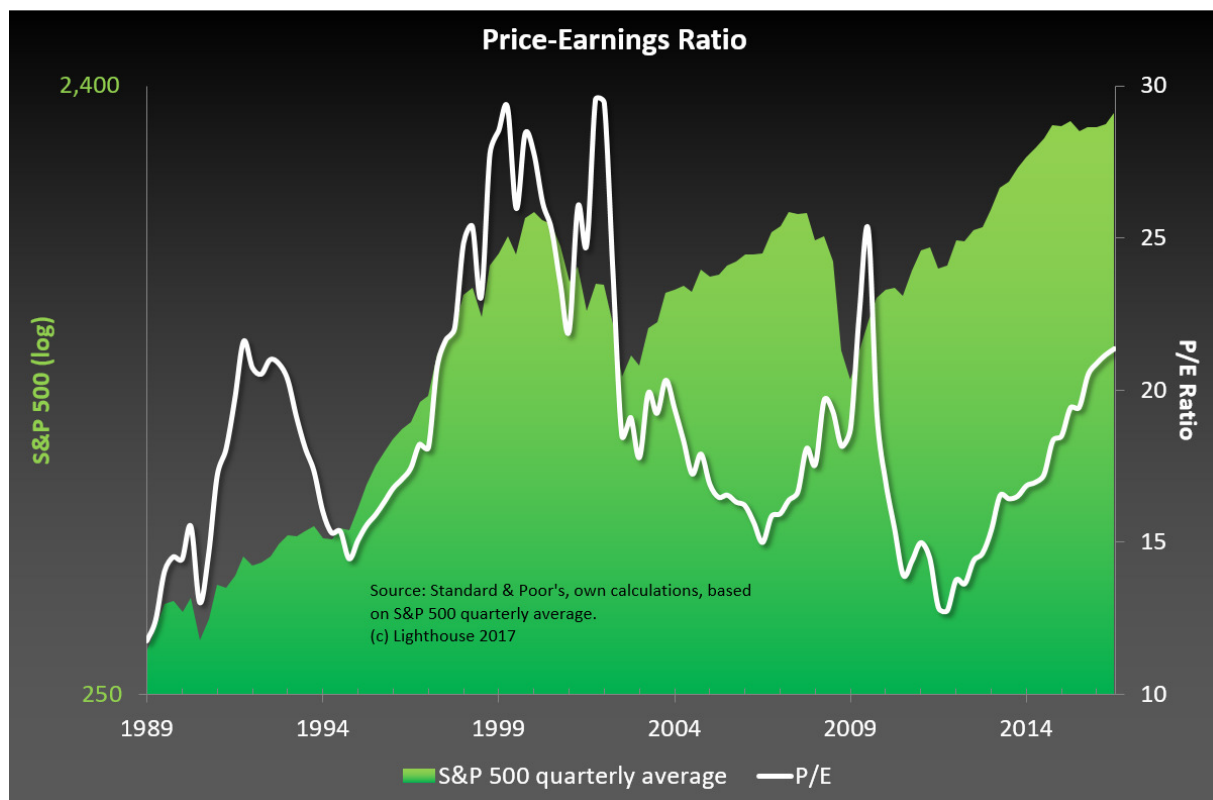
- This is a zoomed-in view of the same chart, showing that each year analysts begin with overly optimistic earnings estimates, only to be “walked down” by investor relations departments.
- Overly optimistic earnings estimates for the year can be maintained even after a first disappointing quarter (since three quarters remain to “catch up”). But once two quarters are in the books this gets harder and harder. Maybe that is a reason why stock market crashes often happen in October (when the first Q3 results begin to come in).

## Earnings Growth and Multiple Expansion



- The US stock market has digested seven (!) consecutive quarters of declining earnings (Q4 2014 – Q2 2016) pretty well.
- This decline in earnings (red bars) has been overcompensated by an expansion in earnings multiple (blue bar); the stock market has thus become more expensive.
- This game obviously cannot continue forever; in a recession *both* earnings and multiple collapse, compounding the negative effect for stock prices.

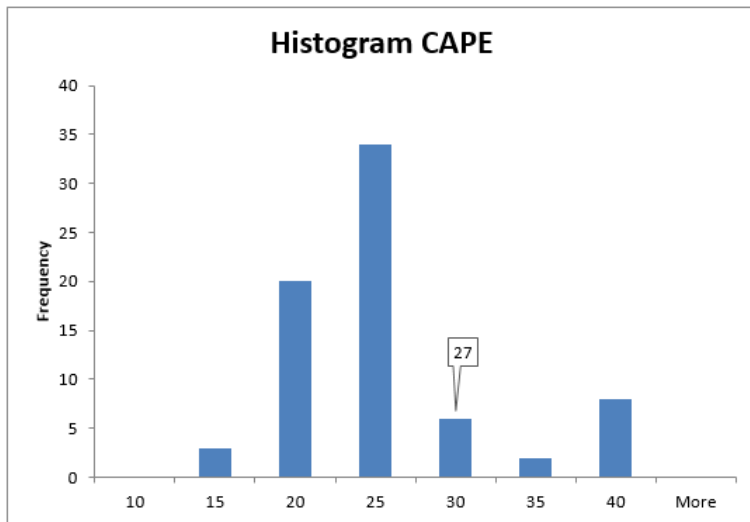
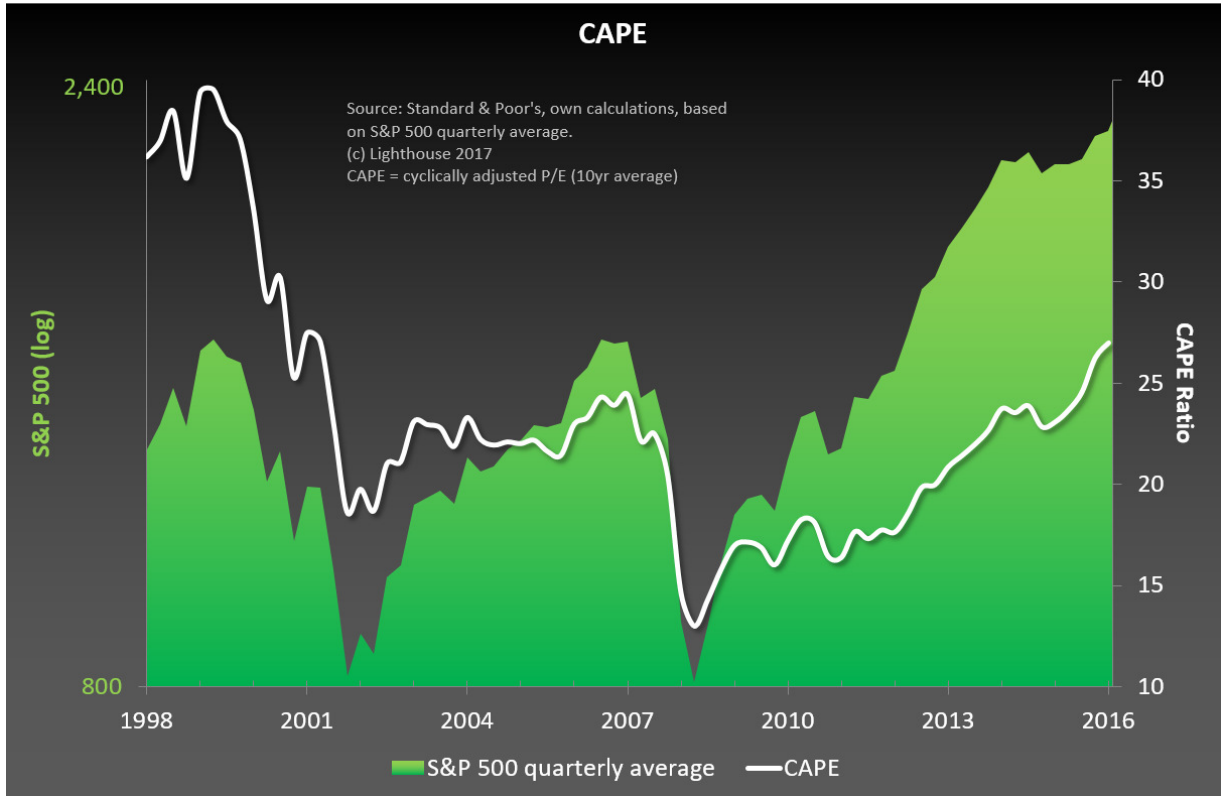
Valuation: Price-Earnings-Ratio



- Based on reported operating earnings the S&P is trading at 20.5x
- This is above the median (18x), but not outrageously expensive
- History includes one of the worst valuation bubbles in stock market history (dot-com bubble in 1999-2000) which should be seen as an aberration and not the norm
- When using "price" only a company's market capitalization is taken into account. But most

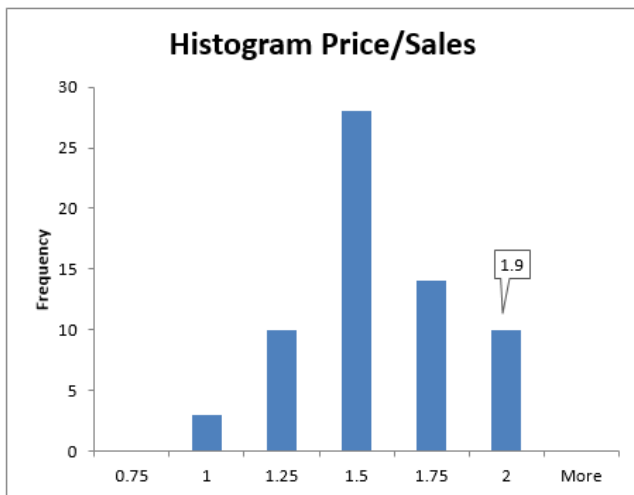
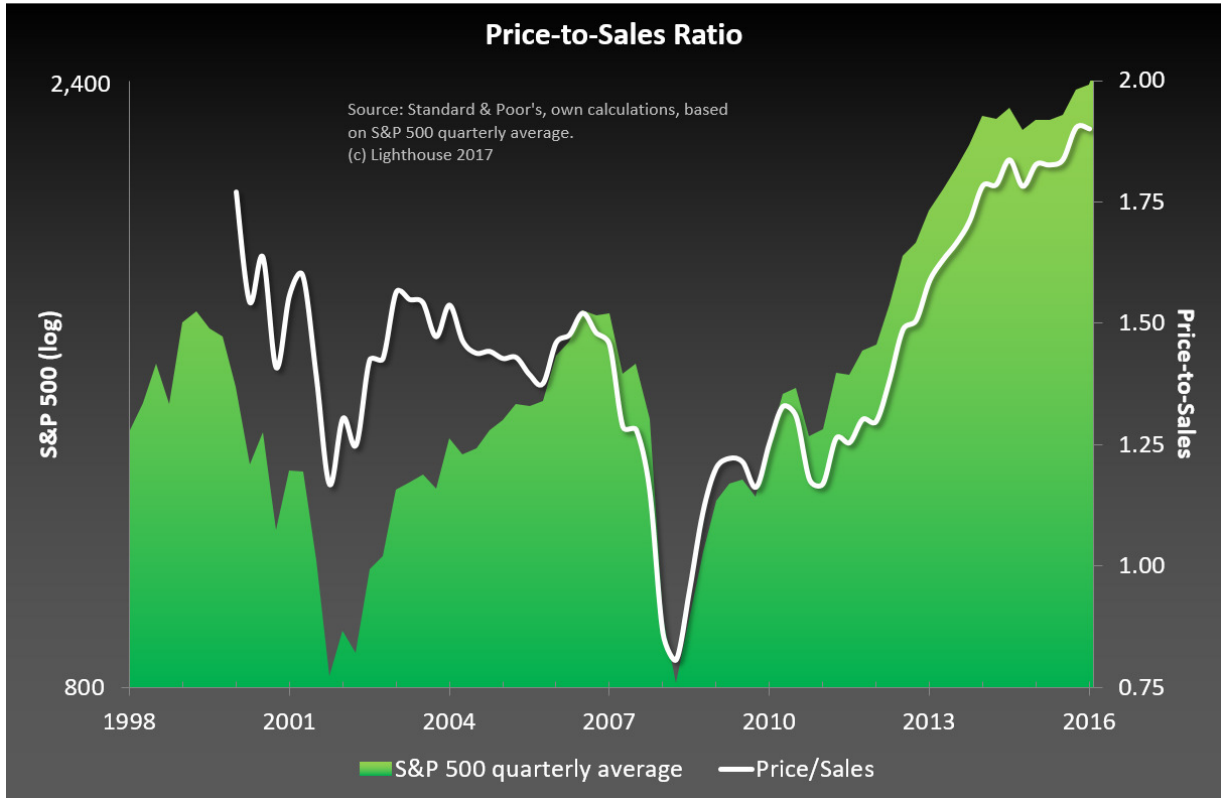
companies have net debt (which, added to market capitalization, equals enterprise value). Two companies could have identical P/E-ratios, even if one company was debt-free and the other one had same share price and same number of shares outstanding, but considerable net debt. This does not make sense.

Valuation: CAPE



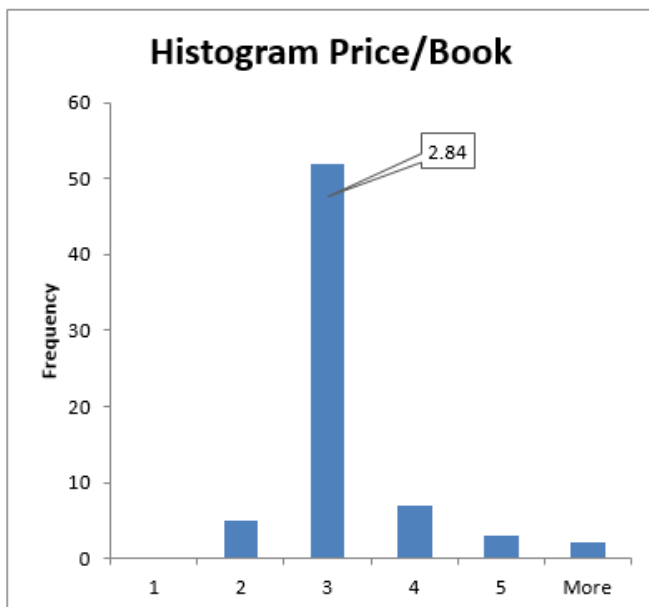
- CAPE, or cyclically-adjusted price-earnings ratio, tries to address the problem of temporary, deep drops in earnings during recessions by looking at average earnings over the past ten years.
- On this measure, the S&P 500 is currently trading at 27x, a level exceeded only during the dot-com bubble.

Valuation: Price/Sales



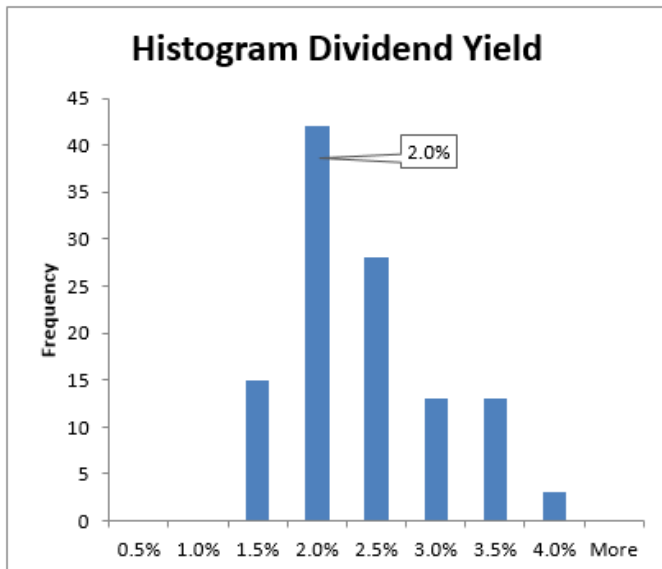
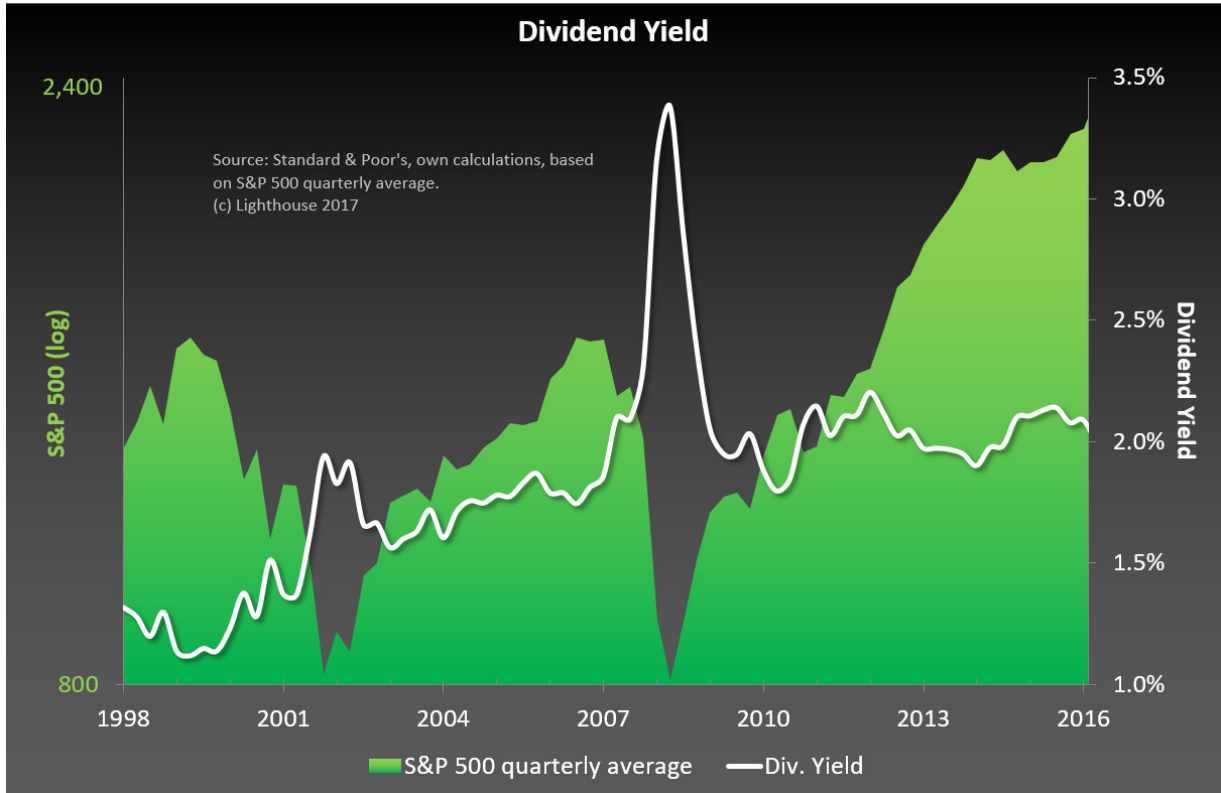
- Earnings can be manipulated easier than sales. Price-per-sales could be a better measure of how cheap or expensive a market is. However, it ignores profitability.
- Based on this metric the S&P 500 Index, at 1.9x sales, is currently even more expensive than during the dot-com bubble.

Valuation: Price/Book



- The book value of a company is equal to the value of its assets minus its debt (equal to its equity). Most companies trade at a premium to its book value, since it is assumed they can add value by earning a decent return on equity.
- Book values can be distorted by large acquisitions resulting in large goodwill (and subsequent goodwill impairment charges).
- Book value does not take into account the value of patents, which often create barriers of entry for competitors, resulting in higher margins.
- I don't find book value very useful.

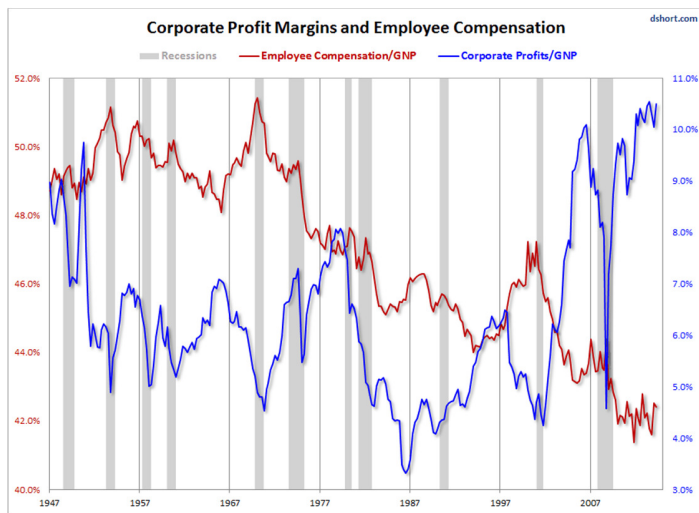
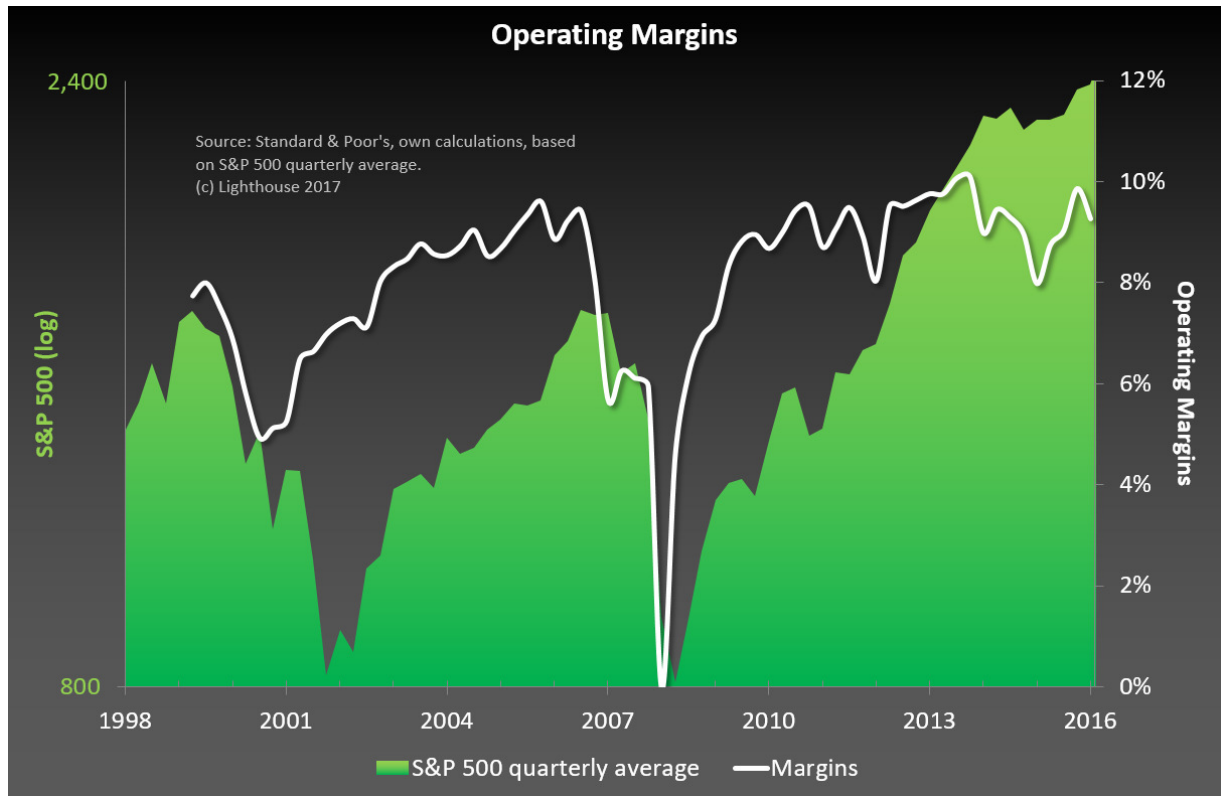
Valuation: Dividend Yield



- A dividend yield of 2% looks rather fair (or even at the upper end of recent history excluding the 2008/9 crisis).
- 2% yield in a real and (hopefully) growing asset like stocks looks relatively attractive compared to a 10-year Treasury Note (nominal asset) currently yielding 2.25%.
- However, dividend yields have been distorted by companies paying zero dividend (Google, Facebook, Amazon)
- The mean and median dividend yield since 1870, however, is around 4.3%, with a maximum of 13.8% in June 1932 and 6.2% in mid-1980.



Valuation: Margins



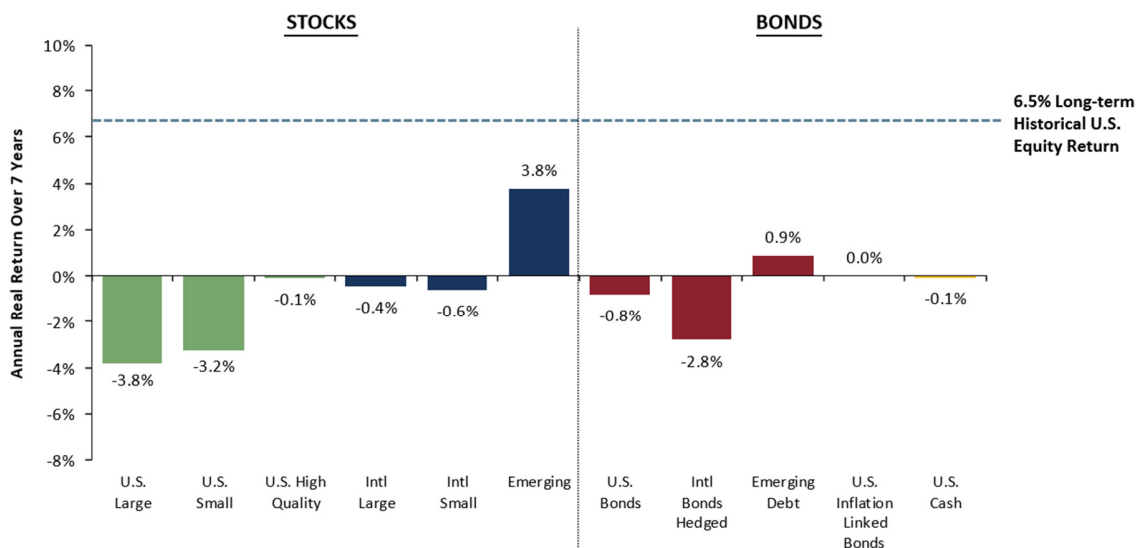
- Operating margins might not look excessive compared to recent history (see above), but they are certainly an aberration compared to longer time horizons (see left).
- Gains in the share of corporate profits to GDP seem to have come at the expense of labor, helped by offshoring to China and wages suppressed by high unemployment in after the recent recession.
- This situation might not be sustainable much longer. Many states have recently

passed increases in minimum wages going far above the federal minimum.

## Expected Return by GMO

### 7-Year Asset Class Real Return Forecasts\*

As of March 31, 2017



- Well respected Boston-based investment firm GMO (“Grantham, Mayo, Van Otterloo & Co.”) publishes expected real (after inflation) returns over the next 7 years by asset class
- No asset class is expected to deliver positive real returns except Emerging Market stocks and bonds.
- US large cap and small cap stocks are expected to lose between 3.2% and 3.8% per annum, which adds up to losing 20% and 24% after 7 years.
- GMO assumes US inflation to mean-revert to 2.2% over 15 years. That means even in nominal terms they expect US stocks to be lower in 7 years than today.
- GMO’s model assumes that profit margins and P/E ratios are mean-reverting over time. Since P/E-ratios and profit margins are above their long-term average, stocks will decline if those two ratios reverted back to their mean (with which I agree; there are no good reasons why this shouldn’t be the case).
- GMO is forecasting real returns since 1994 (they switched from 10-year to 7-year periods, which were found more accurate). The expected and actual returns for the 10 years from 2000 to 2009 look very impressive. GMO points out that the chances of getting the ranking of asset class returns (almost) correct based on luck (rather than skill) is 1 in 550,000.

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### Performance of GMO Asset Class Forecasts for the Decade Dec. 31, 1999 to Dec. 31, 2009

Asset Class	Estimated Rank	GMO 10-Yr Forecast Dec-31-99 (% Real Return/Yr)	Actual 10-Yr Return*	Actual Rank
U.S. REITs	1	10.0	7.4	3
Emerging Market Equities	2	7.8	8.1	1
Emerging Country Debt	3	6.1	7.5	2
U.S. TIPS	4	4.3	4.9	4
Barclays Capital U.S. Gov't. Debt	5	3.8	3.5	6
International Small Cap	6	3.4	3.5	7
Foreign Bonds	7	3.0	3.9	5
U.S. Small	8	2.5	2.3	8
U.S. T-Bills	9	2.1	0.3	9
EAFE	10	0.4	-1.4	10
S&P 500	11	-1.9	-3.5	11

- A negative real return forecast over the next 7 years doesn't mean that the stock market can't go up further. It could even go up another 50% or 100%. The following crash would just be greater.
- The general assumption is that stock markets will remain open and our monetary system survives.
- When you open an account with a broker / bank you automatically signed permission for them to lend out any stock / ETF you own to short sellers. The bank earns a fee (you get nothing). So your stocks and ETF are wondering around while you think they are in your possession. Short sellers borrow stocks / ETF in order to sell them in the market. So in theory, you could be buying the same shares / ETF you already own. The amount of shares sold short sometimes exceeds the number of shares outstanding (Retail ETF "XRT" has 11 million shares outstanding but 21 million shares are sold short). So in total owners will have claims on 32 million shares – almost triple the amount outstanding. For an ETF that is usually not a problem, since the 'sponsor' of the ETF can create new shares (against delivery of baskets of constituent shares). But for a company this is not so easy. Should the financial system suffer another seizure (Lehman-moment), lawyers will rush to freeze many assets with court orders, and it might take years to sort out who legally can claim which shares.
- The future of our monetary system will be topic for another time.

Any questions or feedback welcome.

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