

Behavioral Biases Influence Financial Decisions

October 2017

Dr. G. Kevin Spellman, aka “Coach”

David O. Nicholas Director of Investment Management and Senior Lecturer
Investment Management Certificate Program, UW-Milwaukee

www.lubar.uwm.edu/IMCP

(periodic) Adjunct Professor, IE Business School

1-608-334-2110

spellman@uwm.edu

spellmankg@gmail.com

www.coachinvesting.com

Outline

- Definition of behavioral finance, why it is important, and proof
- Biases
 - Representativeness
 - Availability
 - Overconfidence
 - Anchoring
 - Loss aversion
- Ways to overcome biases
- Appendix
 - Additional models, examples, and current market data

Definition and why behavioral finance is important

- Behavioral finance = “application of psychology to financial behavior”*
- Why is this important?
 - Behavioral finance: $r = \text{fundamentals} + x$, where x is psychology

Why behavioral finance is important

- Finance is the study of risk and returns
 - It helps evaluate the success of business
 - It helps determine how to allocate capital from investors (investment managers and corporations) to the best projects
 - It is quantitative, right?

Stock return = 10%

\$1 bil capital spend Standard deviation 20%

FCF falls 12% ROE = 15%, ROIC = 8%

Credit spread falls to 1% Benchmark down 1%

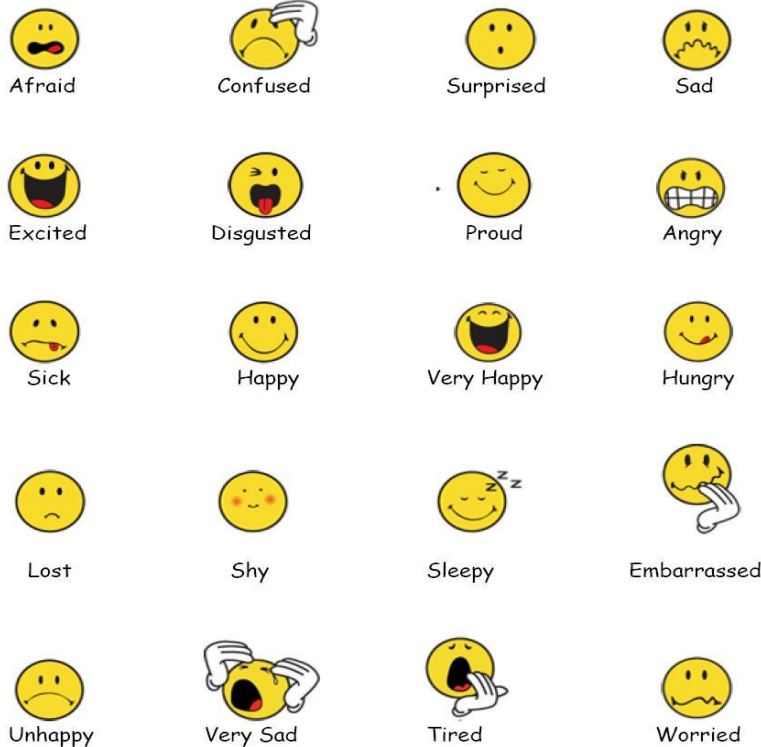
EPS growth -10% Beta 0.90, and WACC 7%

Debt rose 20%, but only 10% debt/equity

Expected sales = \$100 mil, actual \$98 mil

Is finance just quantitative?

- It is quantitative, right?
 - Yes, it is
 - No, it is not
 - The people making the decisions are...well... people
 - Who have emotions (e.g., fears and dreams)



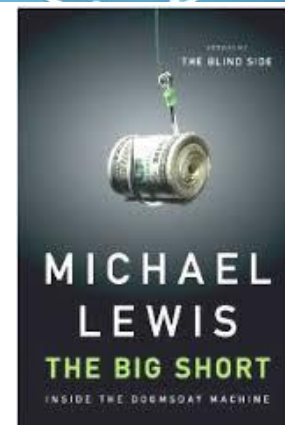
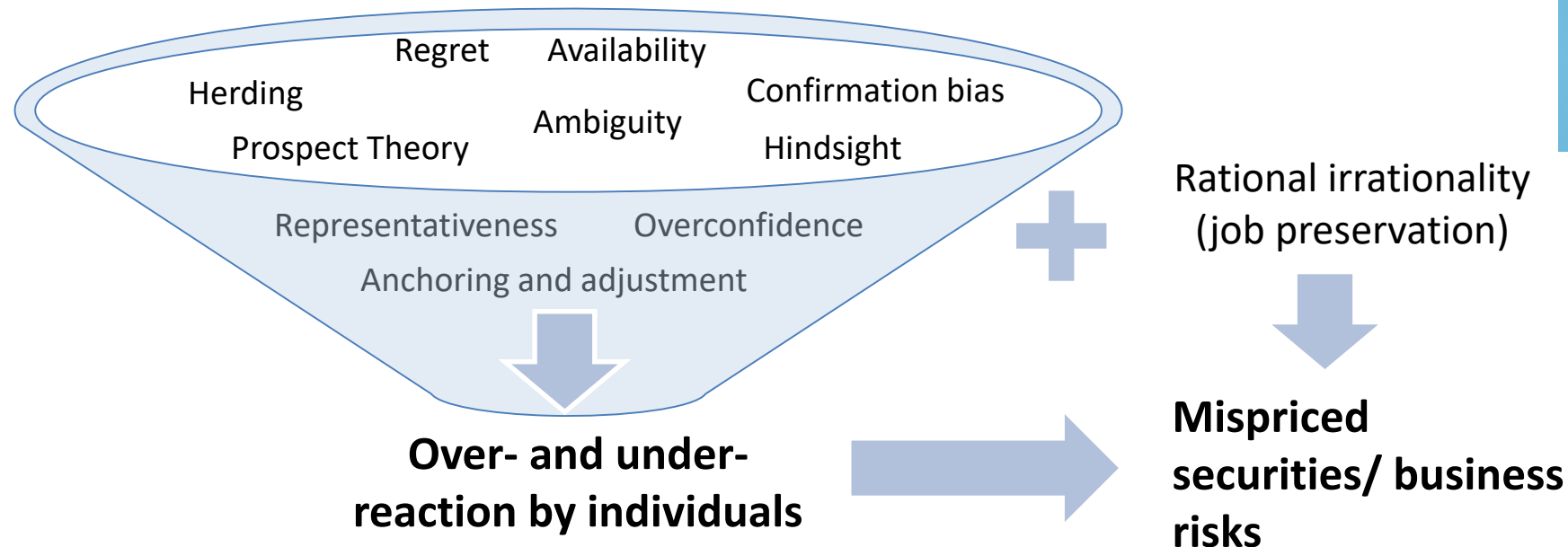
Which change based on the situation



Which impact the outcome and cannot be easily modeled in a finance equation

The X factor

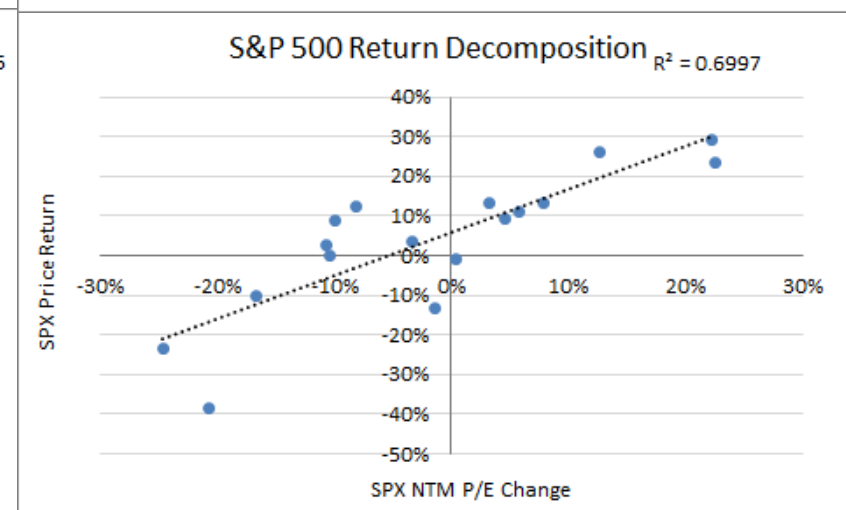
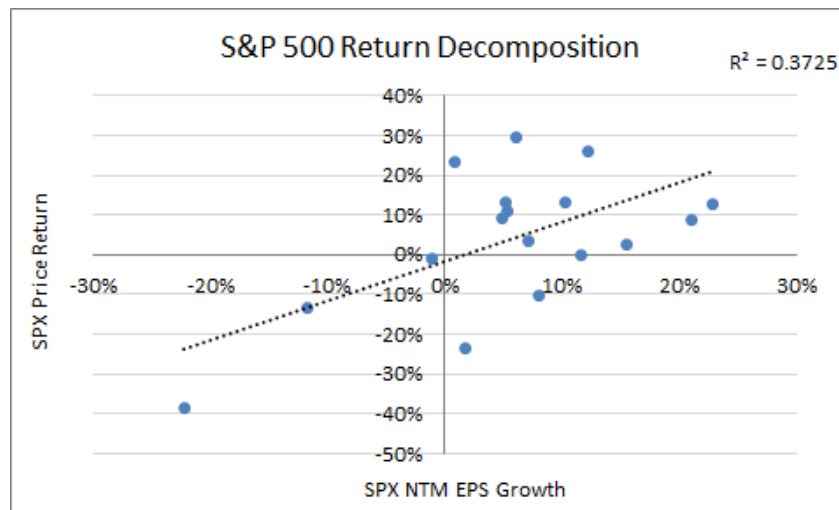
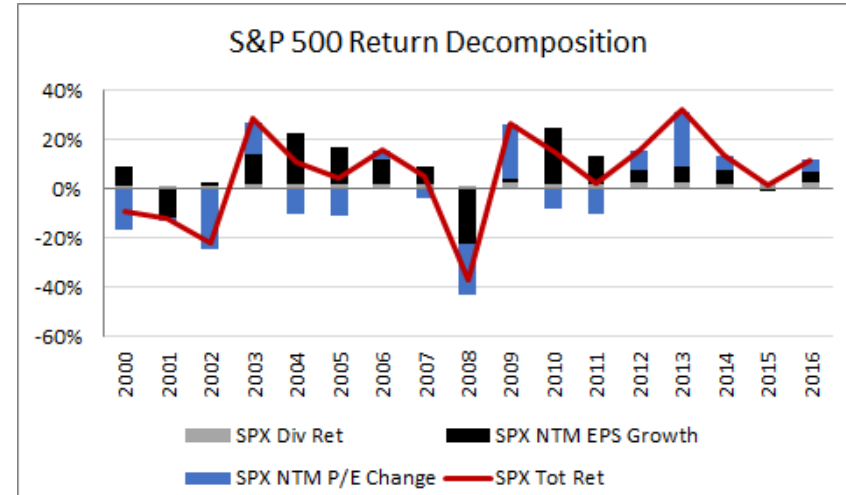
- Psychologists have long known that people are interesting creatures who have biased* (the x) decision-making processes
 - Important note: being biased is **not** synonymous with being unskillful...being biased is simply being a human*



Notes: For simplicity, I do not make a distinction between heuristics (shortcuts that may lead to biases) and biases (when we are predictably wrong) – I call both conditions biases. See www.behaviouralfinance.net for more a more extensive list of biases and associated papers which review them.

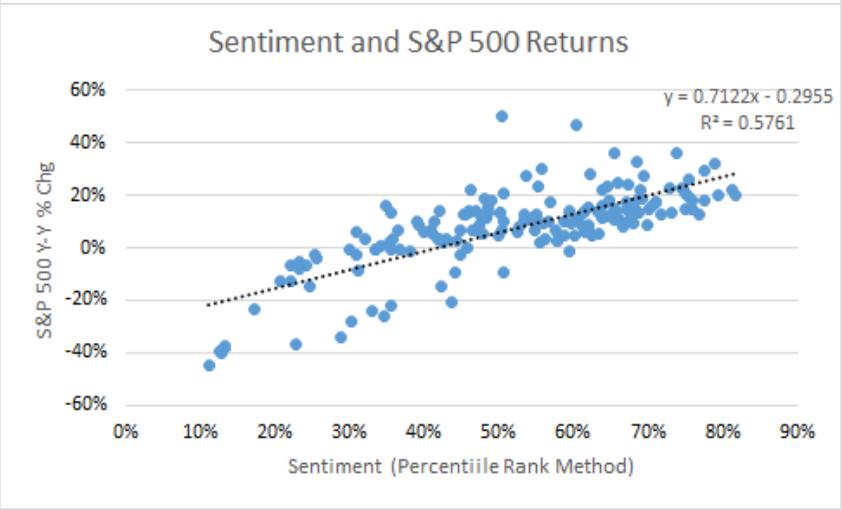
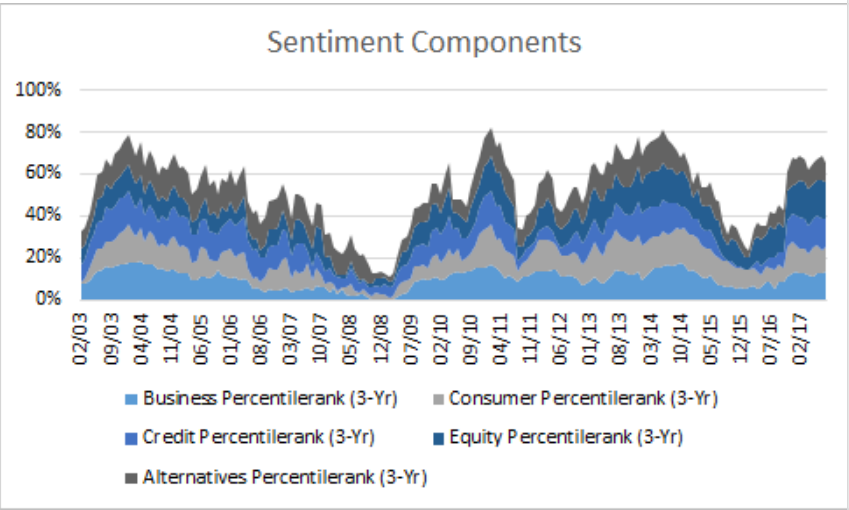
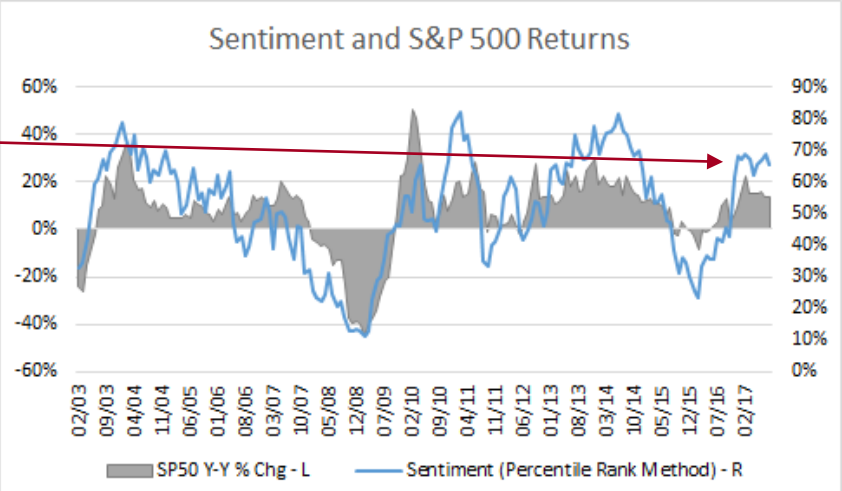
Proof

- What is **most** important to returns?
 - Earnings or expectations (P/E)?
 - **Expectations!**
 - Which are influenced by biases
 - Change in P/E matters more than earnings growth to returns!



Proof

- Expectations (i.e., sentiment) are highly correlated with stock returns
 - *Current sentiment is elevated*



Sources: Spellman, FactSet.

Representativeness

- Judgments based on stereotypes
 - What is the probability that A belongs to category B?
 - Depends on the degree that A resembles B
 - If A resembles B, then the probability assumed is to be high
 - Representativeness influences forecasts

Representativeness

- Based on high school GPAs* of three students, what would you expect them to achieve in college?

| Student | High School GPA | Predicted College GPA | Actual College GPA |
|---------|-----------------|-----------------------|--------------------|
| C | 2.20 | | |
| B | 3.00 | | |
| A | 3.80 | | |
| H-L | 1.60 | | |

Source: Kahneman, Slovic, and Tversky, *Judgement Under Uncertainty: Heuristics and Biases*, 2001.

* GPA stands for grade point average. As, or top work, receive a 4.0 credit, Bs, or above average, receive 3.0, Cs, average, receive 2.0, Ds, below average, receive 1.0, and F, failing, receive 0.0. In the US, grades are inflated, so the “average” student is probably close to 3.0.

Representativeness

- Based on high school GPAs* of three students, what would you expect them to achieve in college?

| Student | High School GPA | Predicted College GPA | Actual College GPA |
|---------|-----------------|-----------------------|--------------------|
| C | 2.20 | 2.03 | 2.70 |
| B | 3.00 | 2.77 | 2.93 |
| A | 3.80 | 3.46 | 3.30 |
| H-L | 1.60 | 1.43 | 0.60 |

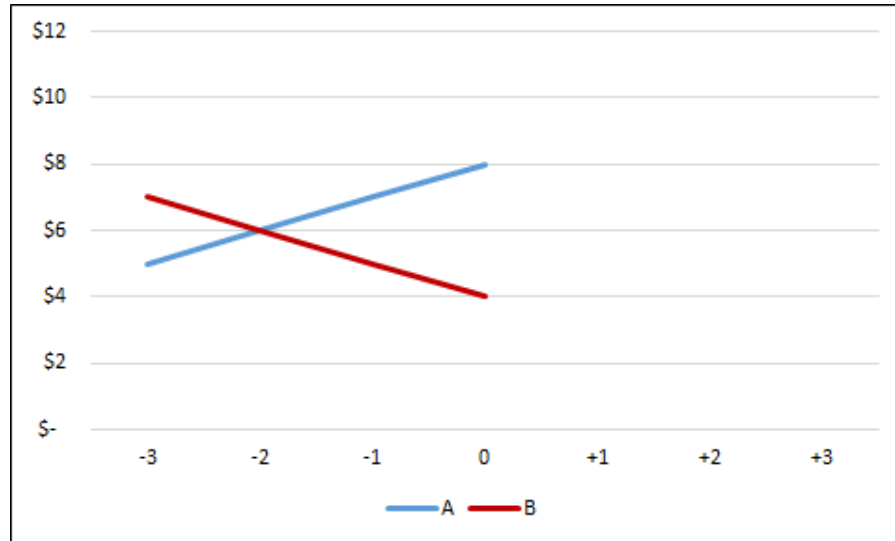
- The students with the high/low GPAs are assumed to be good/poor students and it is assumed that good/bad performance will continue
 - Poor scores could be bad luck, and should reverse
 - The top student may enroll in a more difficult university / pursue a challenging field

Source: Kahneman, Slovic, and Tversky, *Judgement Under Uncertainty: Heuristics and Biases*, 2001.

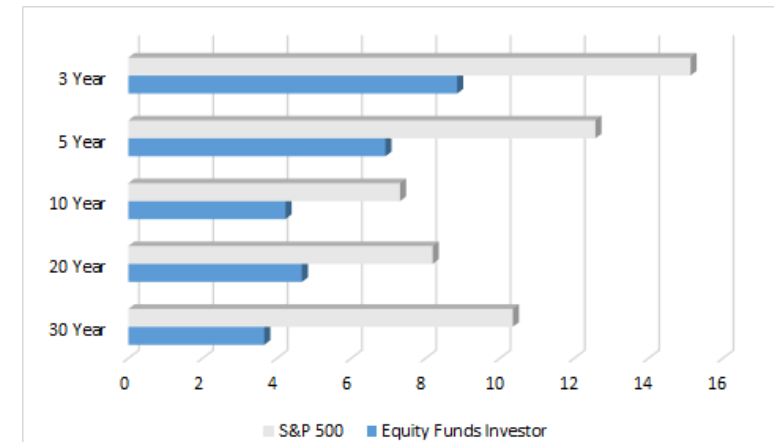
* GPA stands for grade point average. As, or top work, receive a 4.0 credit, Bs, or above average, receive 3.0, Cs, average, receive 2.0, Ds, below average, receive 1.0, and F, failing, receive 0.0. In the US, grades are inflated, so the “average” student is probably close to 3.0.

Representativeness impacts expected returns, target prices, and ratings

- How do you believe most people expect A and B to perform in the future?

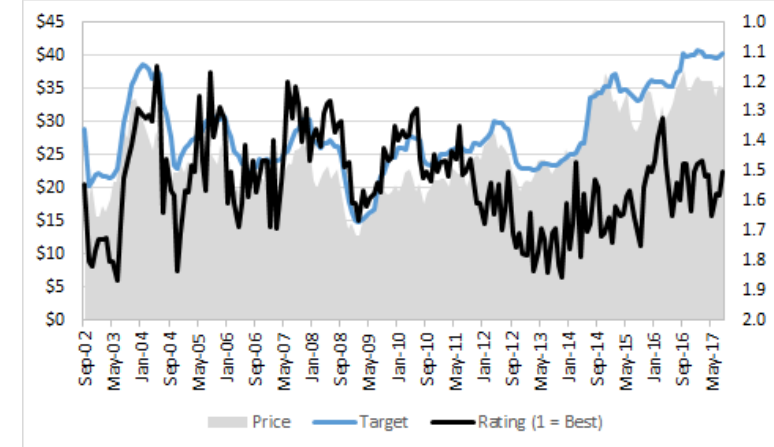


High/low performance reverses over time, but people often *extrapolate* past performance in their expectations of the future



Don't believe me?

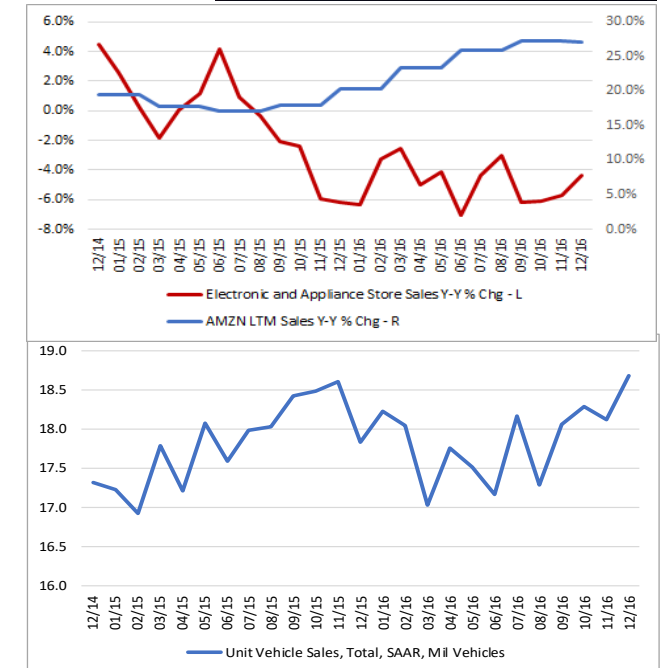
Take a look at annual investor returns and Intel's ratings peaks and troughs that follow price... high past returns *represent* – suggest – a buy



Sources: DeBondt and Thaler, Does the Stock Market Overreact? The Journal of Finance, 1985; Spellman, The Expectations Clock: A Model for Leadership, Reversion, and Over- and Under-Reaction, PhD Dissertation, 2009; Dalbar's 21st Annual Quantitative Analysis of Investor Behavior, 2015 Advisor Edition, Compliments of Peter Bell, Belmont Securities, Presentation; and Spellman, FactSet.

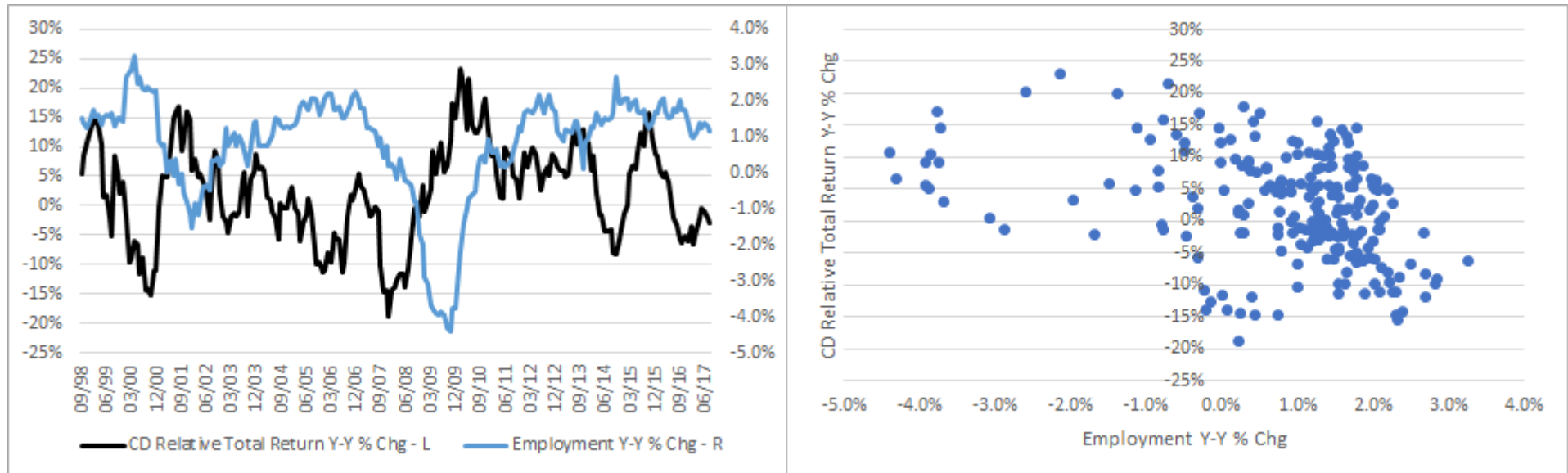
Representativeness impacts associations and expected returns

- Which stock performed **best** in 2016?
 - **Best Buy or Ford?**
 - Let me help you
 - Electronics sales languished
 - Amazon sales accelerate
 - Auto unit sales rebound to highs
 - Articles
 - “Best Buy Is Very Quietly Shrinking,” *The Street*, Feb 2016
 - “US auto sales rose for an unprecedented seventh straight year in 2016, topping the record set in 2015,” *The Business Insider*, Jan 2017
 - Answer:
 - Best Buy was **up** 40.1%
 - Ford was **down** 13.9%



Representativeness impacts associations and expected returns

- Is employment growth **positive** correlated with consumer discretionary relative returns to the S&P 500?
 - The more people who are employed, the more they can spend on discretionary items, the more confident they are, and the higher sales are of consumer discretionary companies
 - Consumer discretionary = retail, auto, etc.
 - So good sales should be **represented** by good stock performance, right?
 - Returns are correlated, but **negatively!**



Sources: Spellman, FactSet, US Department of Labor.

Representativeness takeaway: be careful extrapolating

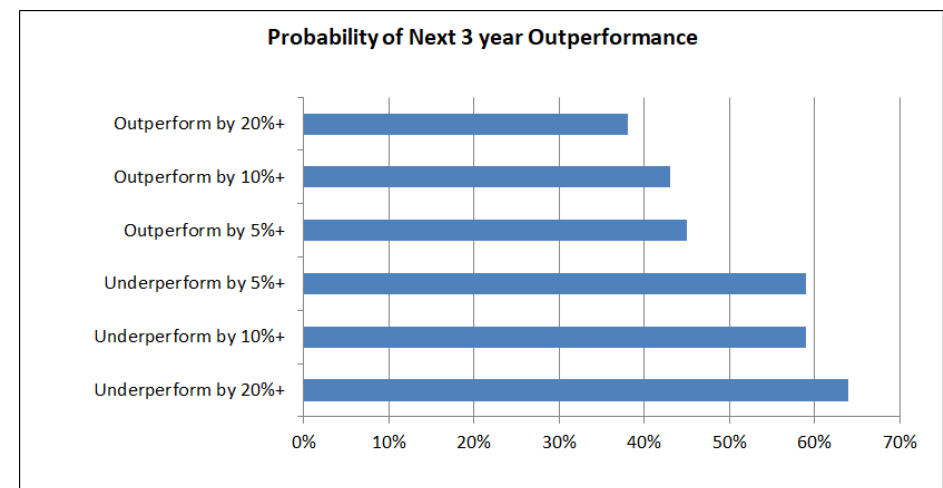
• Questions to ponder

– Association

- Do you believe a quality firm is a good stock? Could be, but what is priced in? A good firm can deteriorate
- Do you believe high earnings growth results in good stock returns? Maybe, but what about implied expectations?

– Forecasting

- How do you forecast sales? margins? stock prices? ... Based on the past?
 - “Everything is in a constant state of change, and the wise investor recognises that success is a process of continually seeking answers to new questions” Sir John Templeton
 - “An investor of today does not profit from yesterday’s growth” Warren Buffett
 - "Ignoring cycles and extrapolating trends is one of the most dangerous things an investor can do" Howard Marks
- What is the probability of a fund strategy (e.g., high quality) outperforming the next three years based on past performance?
 - Not good
 - » Economic and market cycles influence investment style cycles



Source: Merrill Lynch Quantitative Research, data from 1987-2000; and <http://mastersinvest.com/newblog/2017/9/20/conservative-forecasts>.

Availability

- Ease of recall of similar situations to make comparisons can influence one's expectations of the frequency of an event
 - If it is easy to recall a past event which is similar to the current event, then one assumes the probability of association is high
 - The more recent and common the experience, the higher the associated assumed probability

Availability and probabilities



- Do you want to go to the beach?
- Even though shark attacks are rare, after the motion picture, Jaws, in 1975, trips to the beach dropped off sharply
 - US averages 19 shark attacks per year and one fatality every two years



Availability and probabilities

- Food health issues (Aug 2015+) for Chipotle, a firm that promotes quality foods
- Same store sales down
- Stock crushed
- Is media hype/concern an over-reaction (opportunity)?
 - 1 in 1.5 mil odds and *no* deaths
 - Lower than air/space, storm, and ladder/scaffolding deaths

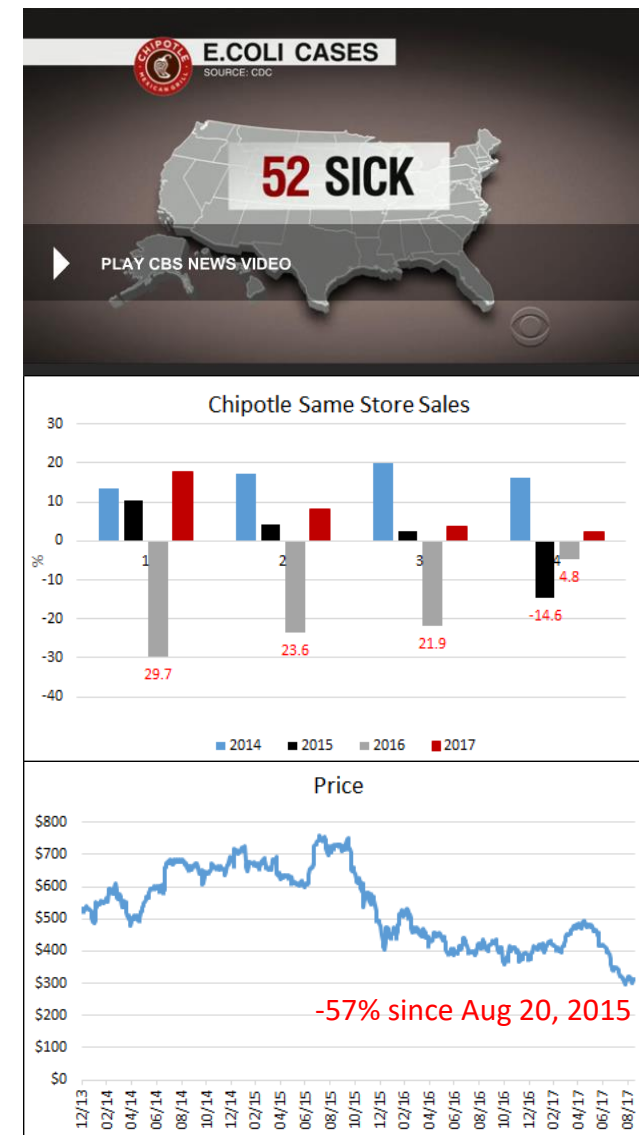
| | | |
|-------------|-------------|---|
| Customers | 183,913,043 | \$2.1 bil sales last 5 mo 2015 & Jan 2016 / \$11.5 est ticket price |
| Cases | 125 | Reported cases of E. coli, salmonella, and 1 norovirus |
| Probability | 0.00007% | |
| One in | 1,471,304 | |
| 2011 | 494 | Air and space transport accidents |
| One in | 630,753 | Air and space transport accidents |
| 2011 | 584 | Deaths from cataclysmic storm* |
| One in | 533,548 | Cataclysmic storm |
| 2011 | 465 | Fall on and from ladder or scaffolding |
| One in | 670,090 | Fall on and from ladder or scaffolding |

* Tornadoes, hurricanes, blizzards, dust storms, etc.

<http://www.iii.org/fact-statistic/mortality-risk>

<http://nrrn.com/food-safety/chipotle-temporarily-closes-43-units-after-e-coli-outbreak>

http://www.nytimes.com/2016/02/02/business/cdc-unable-to-trace-cause-of-outbreaks-at-chipotle.html?_r=0



Sources: Spellman, FactSet; <http://www.businessinsider.com/chipotle-fourth-quarter-guidance-2016-1>; and <http://marketrealist.com/2016/02/chipotle-store-sales-growth-14-6-blame-food/>.

Overconfidence is a **big** problem

- Overconfidence is one of the most well-documented biases
 - Leads people to be overly aggressive in forecasts, take too much risk, etc. (not good)
 - Confidence is due, in part, to neurochemical processes
 - Success through risk taking (e.g. gambling) makes one feel good
 - Alcohol, sex, drugs, and gambling have neurochemical commonalities
 - Stimulate chemical neurotransmission which results in feelings of pleasure; however, “...prolonged use of the drug followed by removal creates an exaggerated sense of craving ... satiated by increased intake” (page 428)



Overconfidence test

- Are you overconfident? **Let's check**

- Please write down your best guess and a range (high and low) where you are 90% confident that the correct answer is between

| | |
|---|-------------|
| (1) Population of the US (12/2016) | 323,127,513 |
| (2) Length of the Nile River (in miles) | 4,187 |
| (3) Number of countries in OPEC | 13 |
| (4) Number of books in the Old Testament | 39 |
| (5) Diameter of the moon (in miles) | 2,160 |
| (6) Weight of an empty Boeing 747 (in pounds) | 390,000 |
| (7) Year in which Wolfgang Amadeus Mozart was born | 1756 |
| (8) Gestation period of an Asian elephant (in days) | 645 |
| (9) Air distance from London to Tokyo (in miles) | 5,959 |
| (10) Deepest known point in the ocean (in feet) | 36,198 |

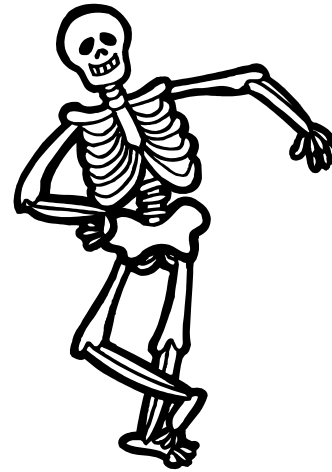
- How did you do?

**Now...please don't
cheat by saying
something like 0 to 1
quintillion...**

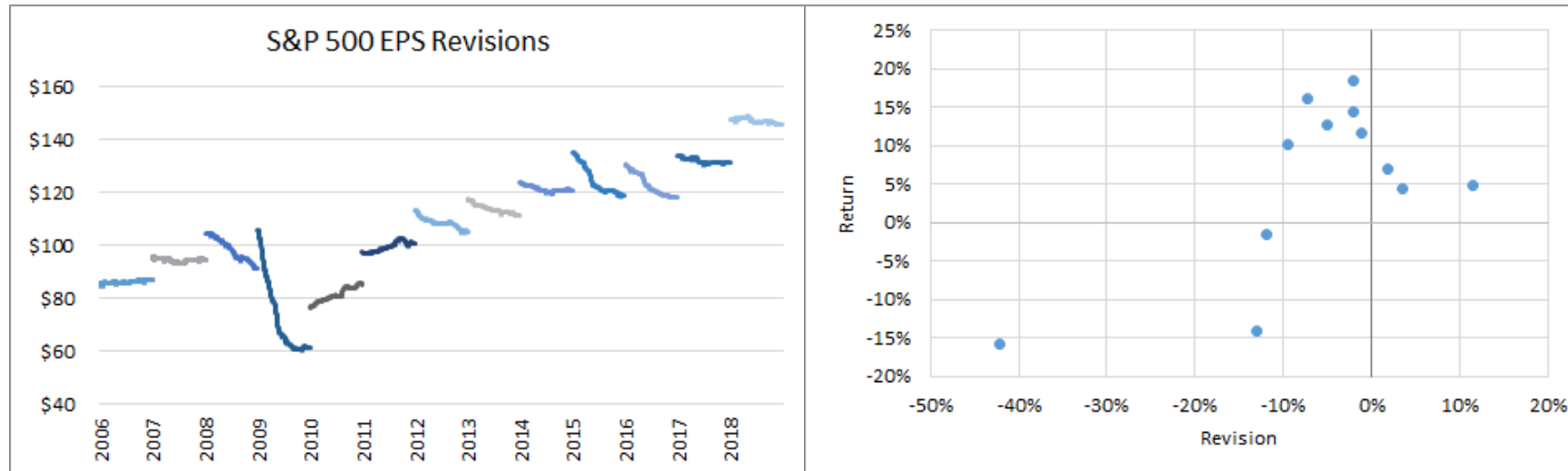
Source: Lo, Reconciling Efficient Markets With Behavioral Finance: The Adaptive Market Hypothesis, *Journal of Investment Consulting*, 2005; 1 kilometer is 0.62 miles (statute), 1 kilogram is 2.20 pounds, and 1 meter is 3.28 feet.

Overconfidence impacts surprises and revisions

- Overconfidence can cause problems
 - “ ‘When the music stops, in terms of liquidity, things will be complicated,’ Mr Prince (CEO Citigroup, July 2007), when asked about problems in the US sub-prime market... ‘But as long as the music is playing, you’ve got to get up and dance. We’re still dancing.’ ”
 - And it is all too common ...
 - Revisions are normally negative (during good times)
 - And the better the revision the higher the returns (a reason to be conservative)



The dance
of
corporate
death



Sources: Spellman, FactSet; and Freeland, Investors Had Little Choice But to Keep on Dancing, *Financial Times*, October 8, 2009.

Capital spending and M&A measure confidence

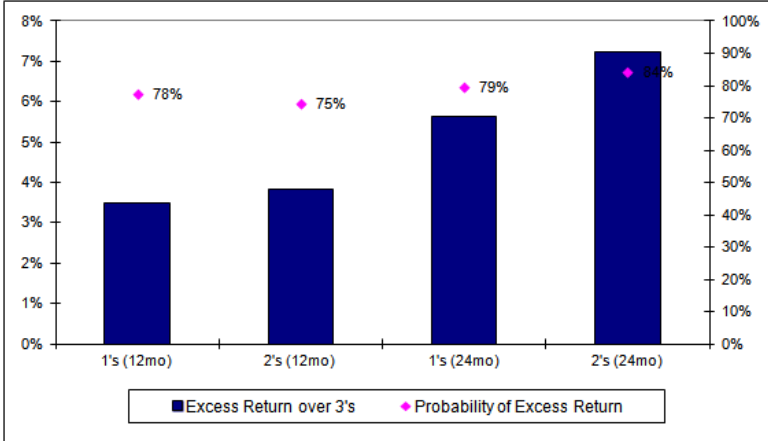
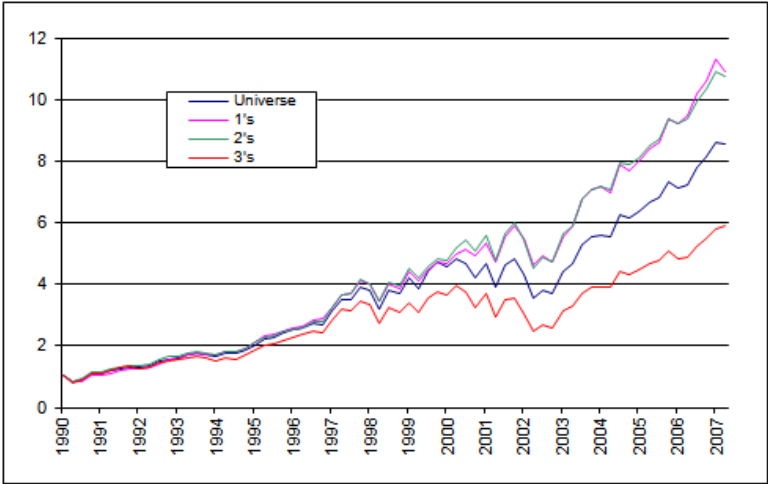
- There is plenty of incentive to grow, so grow we try
 - M&A and capital expansion occurs when believe future is bright
 - After periods of good times and at peaks
 - So, M&A and capital expansion occur at tops (buy high) and at peak prices (buy high), and capital may be shed at bottoms (sell low)

Acquirers outperform before acquisitions, and underperform after

| | Year Before | Year After | Three Years After |
|--------------------|-------------|------------|-------------------|
| All Stocks* | +24.5% | -7.4% | -22.2% |
| Large-Cap Stocks** | +22.0% | -4.3% | -16.5% |

*Relative to equal-weighted 1,500 stock universe
 **Relative to cap-weighted S&P 500

Moderate growth (2s) and low growth (1s) are best, and high cap ex growth firms (3s) underperform

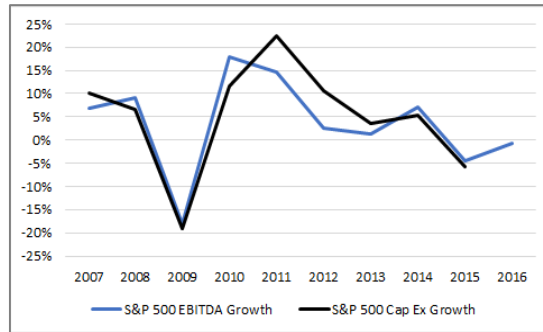


Sources: Francois Trahan, Brian Herlihy and Michael Kantrowitz (with Spellman providing data/analysis as a consultant), "Quantitative Research: Common Sense Meets Quant – Slow and Steady Wins the Race, ISI Group, 2008; and Goldstein, "Mergers and Acquisitions and Their Consequences," Bernstein, 2002.

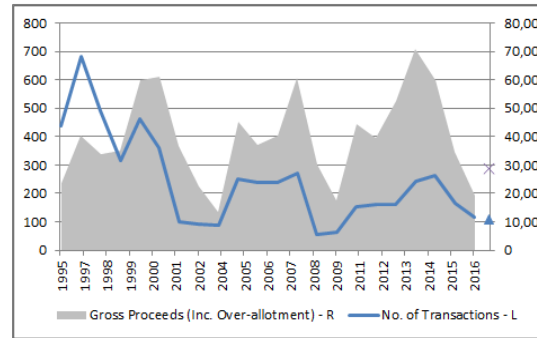
Capital spending, IPO activity, M&A, and lending measure corporate confidence

- Moderate corporate bullishness

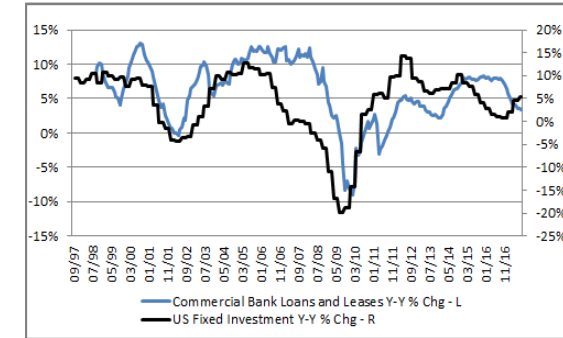
Cap ex picks up after cash flow



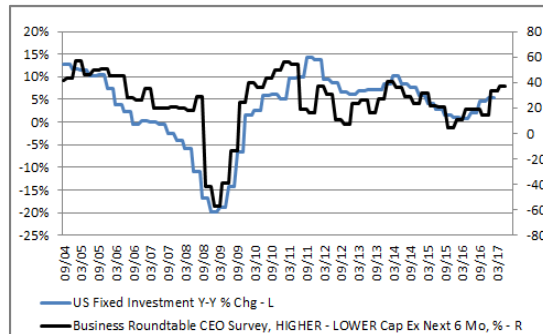
IPO activity down



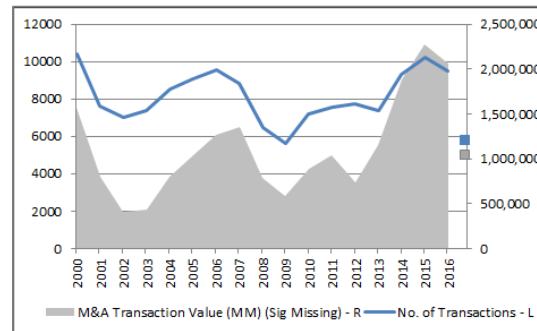
Lending subdued



Surveys up, and capital spending normally follows



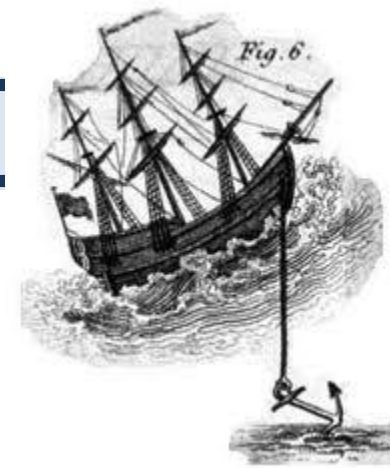
M&A down, but off high levels



– Each metric peaks with the market and economy, when confidence about the future is the highest as

- extrapolation (representativeness bias) is at its fullest,
- and when expectations are fully anchored (next bias) on the past

Sources: Spellman, FactSet, Business Roundtable, Federal Reserve System.



Anchoring results in slow adjustments

- People tend to anchor opinions from initial *value* and adjust slowly from them in the future
- Consider the following information
 - Data: 100 book bags each with 1000 poker chips; 45 bags with 700 black chips and 300 red chips, and 55 bags with 300 black chips and 700 red chips
 - A bag is selected at random
 - (1) What is the probability it contains predominantly black chips?
 - (2) Imagine that 12 chips are drawn, with replacement, and there were 8 black chips and 4 red chips; [what now would you assign to the probability that the bag contains predominantly black chips?](#)

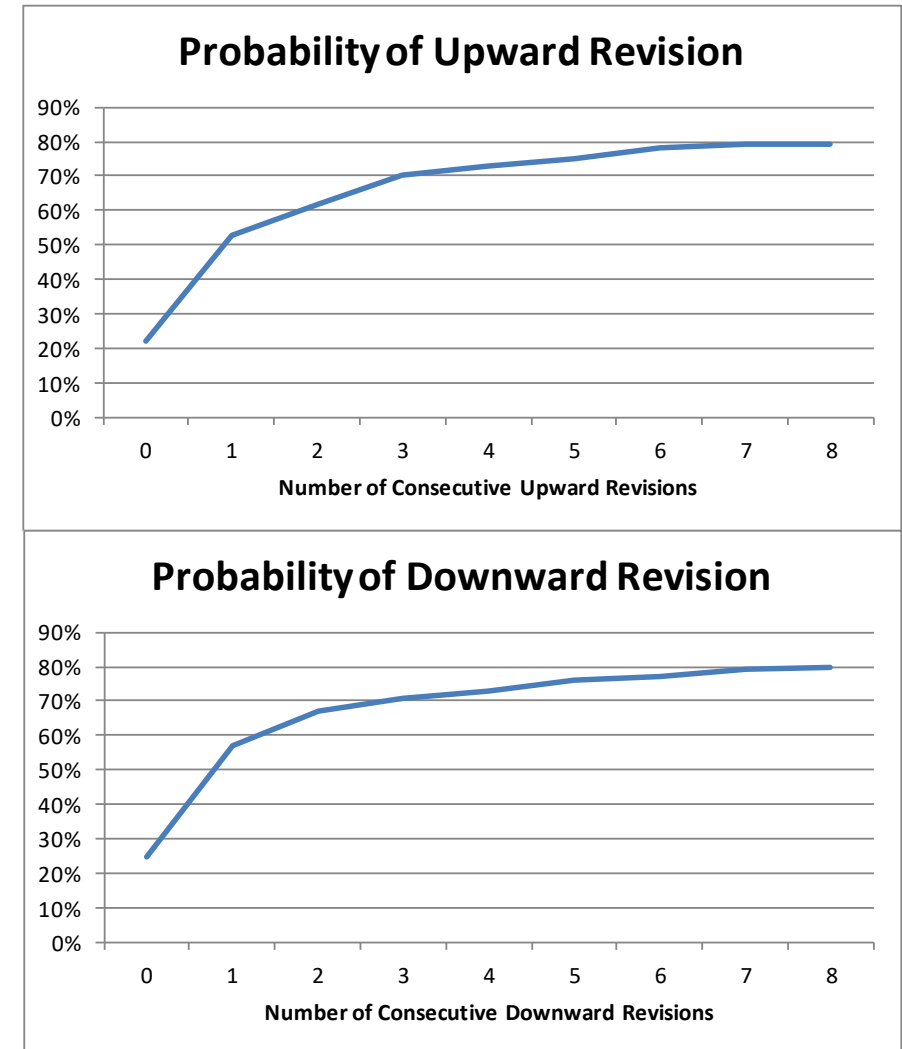


Anchoring: People do not adjust enough when given new information!

- Continued ...
 - Most people answer 45% for the first question
 - For the second question, you have new data, so you have the opportunity to adjust your guess
 - The most common answers are 45% and 67%
 - Those who answered 45% did not adjust their answers based on the new information
 - Those who answered 67% likely guessed based on the percent in the 12 chip draw
 - The correct answer is 96.04%

Anchoring is the basis of momentum

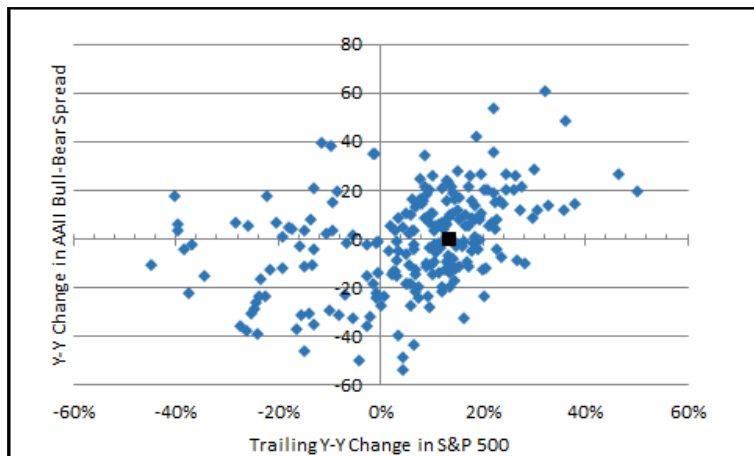
- Estimates change gradually and momentum develops because the *anchor* moves slowly as the past is assumed to *represent* the future
 - The probability of an upward/downward revision after two prior consecutive upward/downward revisions is greater than 50%
 - Revisions are not random (as theory would indicate)
 - Positive or negative revision likely result in positive or negative price changes



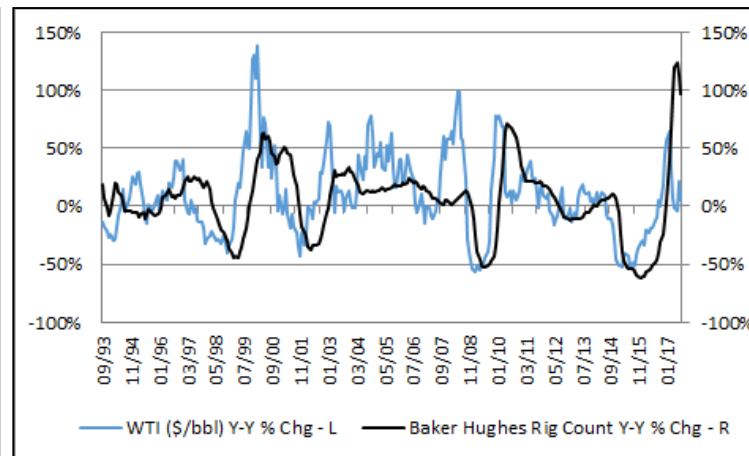
All types of investors are guilty of anchoring!

- Individual and institutional equity investors, and corporations and bond investors are guilty (at least in aggregate) of anchoring
 - Because of this, they are most optimistic when they should be most pessimistic and vice versa!

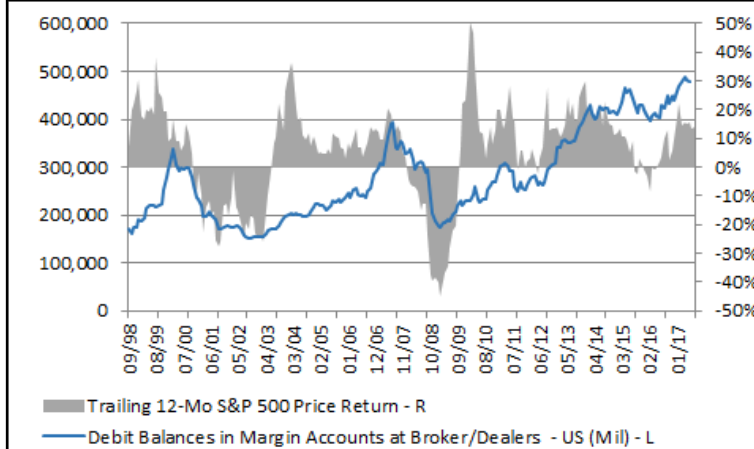
Individual Investors:
Stock prices drive
Bull-Bear spread



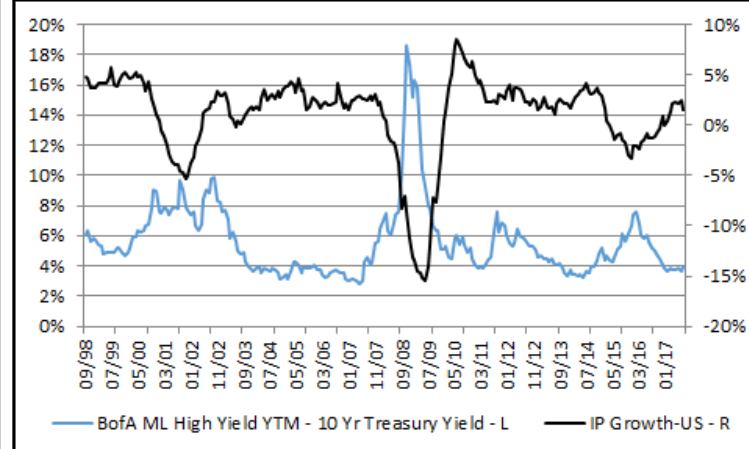
Corporations:
Oil prices drive
drilling activity



Equity Investors:
Stock prices drive
margin



Bond Investors:
Industrial activity
drives bond
spreads



Source: Spellman, FactSet, Baker Hughes, Inc, Conference Board, CRB, Merrill Lynch Fixed Income, and S&P.

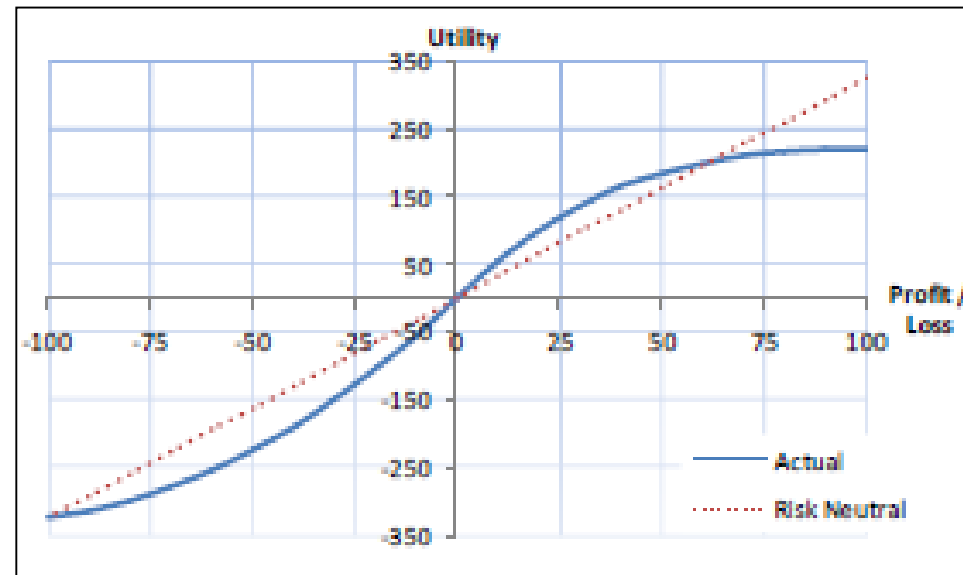
Loss Aversion – Prospect Theory

- Kahneman won Nobel Memorial Prize in Economic Sciences (2002) for his work, in conjunction with Tversky, on prospect theory, etc.
 - Here are two (slight adjusted) famous K-T questions
 - First decision: choose
 - (A) A sure gain of \$74 million, or
 - (B) A 25% chance of gaining nothing and a 75% chance of \$100 million
 - Second decision: choose
 - (A) A sure loss of \$74 million
 - (B) A 75% chance of losing \$100 million and a 25% chance of losing nothing
 - [What do you choose?](#)



People risk more in loss situations than in gain situations

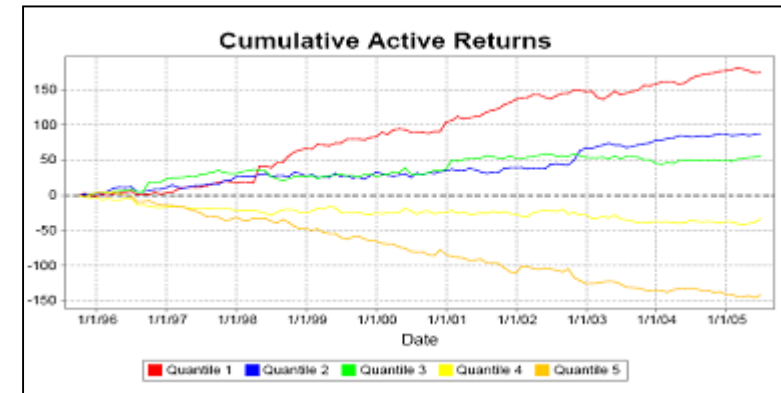
- Most people choose option A in gain situation and option B in loss situation
 - These choices are suboptimal to B and A, respectively!
- Implication
 - People risk more in loss situations than in gain situations
 - We tend to “feel” much more pain, vs. gratification, for similar-sized losses and gains...
 - We sell winners early and ride losers too long...



Source: Kahneman and Tversky, Prospect Theory: An Analysis of Decision Under Risk, *Econometrica*, 1979.

Selling losers is key, but it is very difficult!

- Selling losers *early* is a key to outperformance!
 - The losers often cost more than the winners add
 - A 50% loss needs a 100% gain to get back to even
- Then why is selling losers so difficult?
 - Imagine an analyst who has told investors that a stock is a buy from \$30 to \$50 and then, overnight, it falls to \$25
 - (1) Analyst is probably *overconfident* since stock rose from \$30 to \$50, especially since this success is easy to recall (*availability*)
 - (2) Difficult to sell at \$25 since analyst is convinced about merits of stock (past good returns *represent* a bright future and *anchors* adjust slowly)
 - Plus the analyst has thought of all kinds of new reasons to *confirm* his/her position (*confirmation bias*)
 - (3) Selling a loss is admitting one is wrong which could cost the analyst's job, so he/she is *rationally irrational* and takes more risk in the loss situation (*prospect theory*) and stays with a buy
 - (4) If one sells at \$25 and watches the stock rise back to \$50 then *regret* is higher than not selling and watching it fall to \$0
 - Action decisions (i.e., changing recommendation) cause more regret than inaction decisions and staying the course is common when the outcome is ambiguous



Source: Spellman, "Reluctance to Sell Losers," 2009; the term *rationally irrational* was developed by Spellman, see <https://coachinvesting.com/2017/05/02/expectations-clock-a-model-for-cycles-and-sentiment/> for more details.

Overcoming Biases

- Seek non-confirming information

 - Reward dissenters

 - Assign a devil's advocate

 - Rotate decision-makers

 - Have stop-loss and stop-buys

 - Be conservative

 - Implement proper risk controls and incentives

 - Write down your thesis and reassess results

 - Create a checklist for buys and a red flag list for sells

 - View every holding as if it is a new idea

 - Require learning from mistakes

 - Change voting process for losses

 - Pause and reassess before making decisions (e.g., stock circuit breakers)

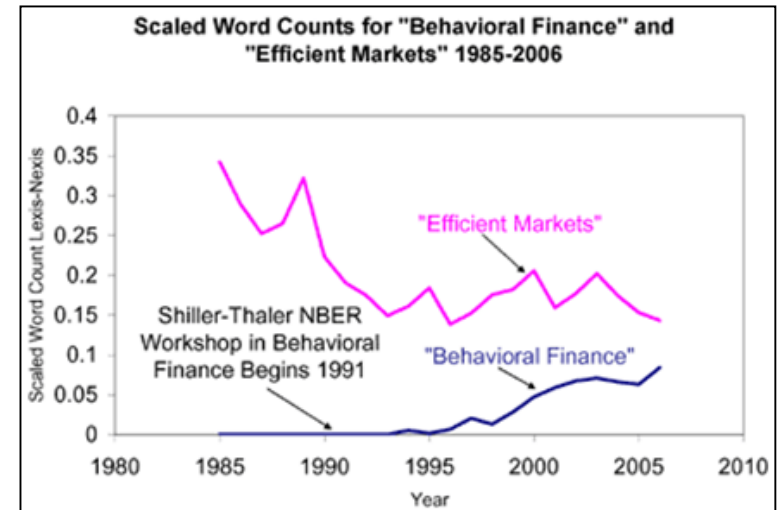
- Not correcting behavioral blunders delays learning and compounds mistakes

 - After more investment and when the negative implications are greater



Summary: $r = \text{fundamentals} + X$, where X is **market psychology**

- The study of behavioral finance is flourishing
 - Do not ignore the X factor because stocks under-react and over-react
 - ... which is your opportunity!



Google hits (9/22/17)

Behavioral finance = 571,000
 Behavioural finance = 336,000
 Total = 907,000

Efficient market hypothesis = 401,000
 Efficient markets hypothesis = 91,000
 Efficient market theory = 88,200
 Efficient markets theory = 75,600
 Total = 655,800

Source: Jegadeesh and Titman, 2002, Cross-Sectional and Time-Series Determinants of Momentum Returns, *The Review of Financial Studies*; and DeBondt and Thaler, 1985, 1985, Does the Stock Market Overreact? *The Journal of Finance*.

Appendix

- The Expectations Clock
- Biases and gold
- Sentiment model
- Market model
- Earnings and returns
- The best stocks have ...
- Ways to quantify progress of overcoming biases
- Coach Investing website

The Expectations Clock

- Fundamentals cycle, and over-reaction and under-reaction occur during different phases of the cycle



Source: Spellman, The Expectations Clock: A Model for Leadership, Reversion, and Over- and Under-Reaction, PhD Dissertation, 2009; and Spellman, “The Expectations Clock: A Model for Cycles and Sentiment,” <https://coachinvesting.com/2017/05/02/expectations-clock-a-model-for-cycles-and-sentiment/>, May 2, 2017.

Biases and gold

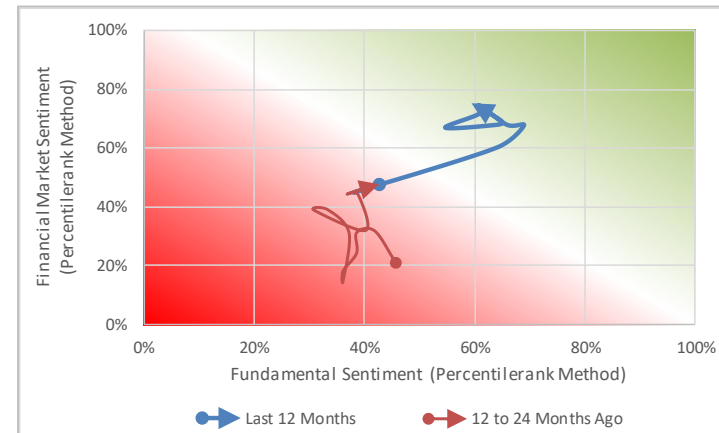
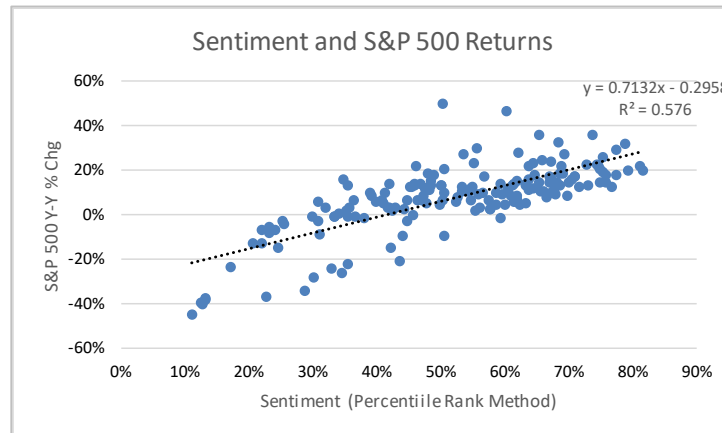
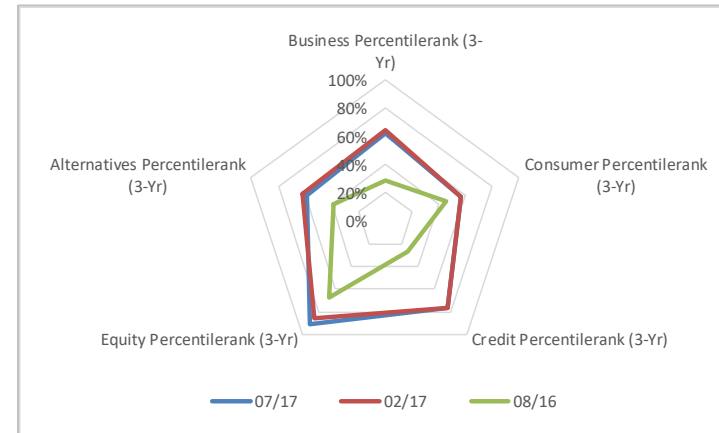
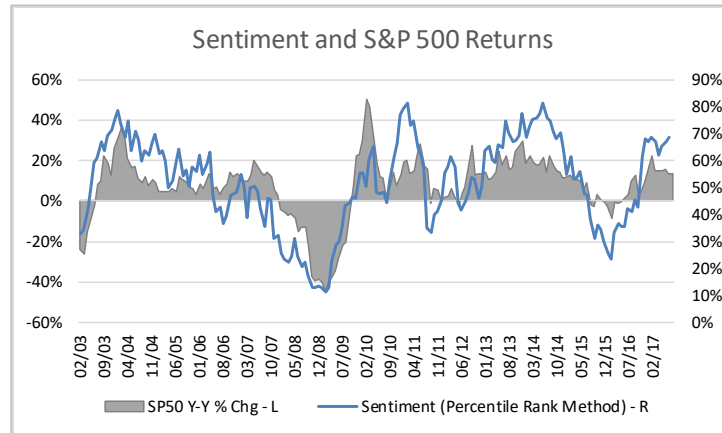
- When gold was at \$1,700 per oz., did people expect it to continue to rise?
 - Most people probably did
 - What was the value of gold?
 - All the gold in world would amount to a cube 67 feet on each side and is worth \$8 trillion
 - What can you do with gold? Polish it, look at it...
 - What could you buy for \$8 trillion?
 - All of the farmland in the US
 - Plus 15 Exxons
 - Plus \$2 trillion pocket change
 - Was the price rational? Was the market efficient?
 - Why had gold gone up so much?
 - Gold initially rose because of inflation concerns and other fears (fundamentals)
 - People then believed gold would rise because it had risen (the past *represents* the future, people *anchor* expectations on recent trends), so they bought more gold and the buying pushed it up more
 - This *confirmed* the initial buyers' thoughts and makes them more *confident* gold will rise again
 - So they bought again, but this time other people see gold rising and they also *herded* and bought the asset so they could profit as well
 - The feedback loop... *efficacy performance spiral*... continues
 - *In the end, gold became overvalued*



Source: Spellman, this illustration was provided by Warren Buffett on April 30, 2011 at the Berkshire Hathaway Annual Meeting as a reason to not own gold.

Warning: sentiment peaking at high levels?

- Weakening sentiment is a negative driver as it is positively correlated with returns
 - All variables improved over last year, led by financial factors
 - Credit and equity are elevated



Source: Spellman, FactSet, sentiment index includes financial market variables in equities (multiples, revisions, and technical factors), credit markets (real rates, yield curve, and credit spreads), and alternatives (dollar, gold, oil, other commodities, put/call, volatility, and margin balances) and fundamental factors in business (ISM manufacturers index, small business confidence, investment spending, and lending growth) and consumer (consumer confidence, AAll surveys, and fund flows) areas.

The market is excited and this is worrisome

- S&P positively or negatively correlated with 13 variables

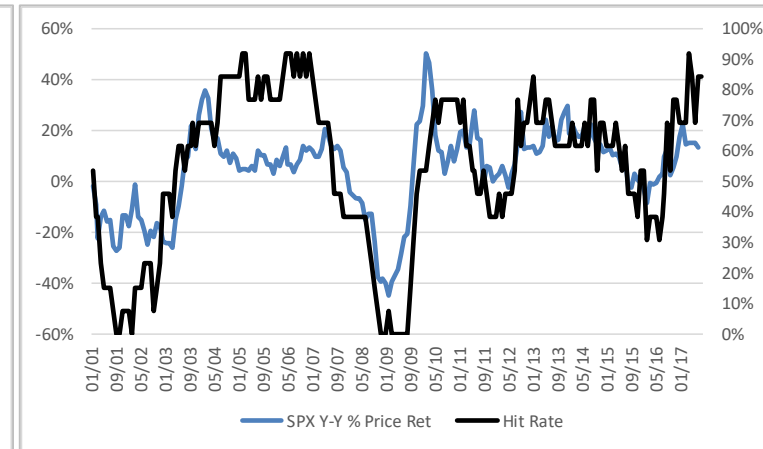
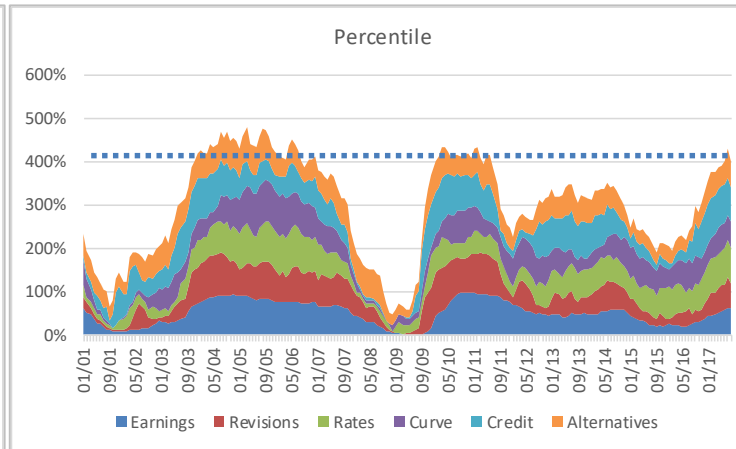
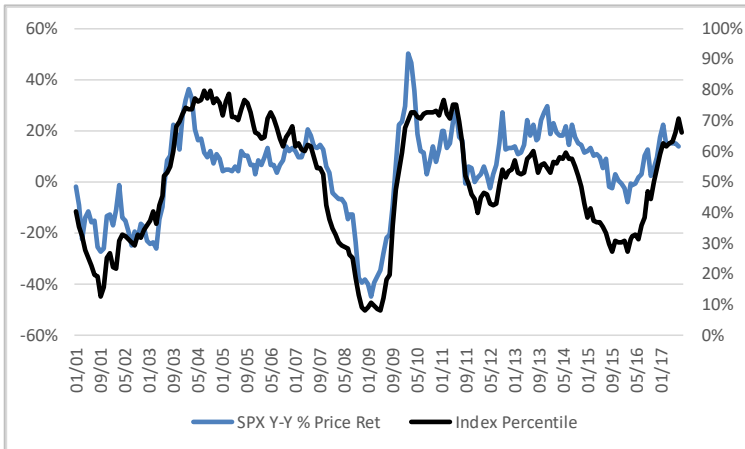
- Growth, revisions, rates, yield curve, credit, and alternatives
- 11 of 13 pointing in same “up” direction
- Overall composite level lofty
 - Positively correlated with returns
 - Poised for correction

Components of composite

| 100.0% Total |
|--|
| 13.3% SPX Y-Y % LTM EPS Growth |
| 13.3% SPX Y-Y % NTM EPS Growth |
| 13.3% SPX (Up-Down)/(Up+Down) 6 Mo Avg |
| 3.3% Y-Y Chg 10-Yr Treasury |
| 3.3% Y-Y Chg 2-Yr Treasury |
| 3.3% Y-Y Chg Fed Funds |
| 3.3% Y-Y Chg in 10-Yr-Fed Funds |
| 3.3% Y-Y Chg in 10-2 Yr Treasury |
| 3.3% Y-Y Chg in Fed Funds - Core CPI |
| 20.0% Y-Y Chg in HY - 10-Yr Treasury |
| 6.7% Dollar Broad Y-Y % Chg |
| 6.7% GSCI Price Y-Y % Chg |
| 6.7% Gold Y-Y % Chg |

Correlation to SPX Y-Y % change

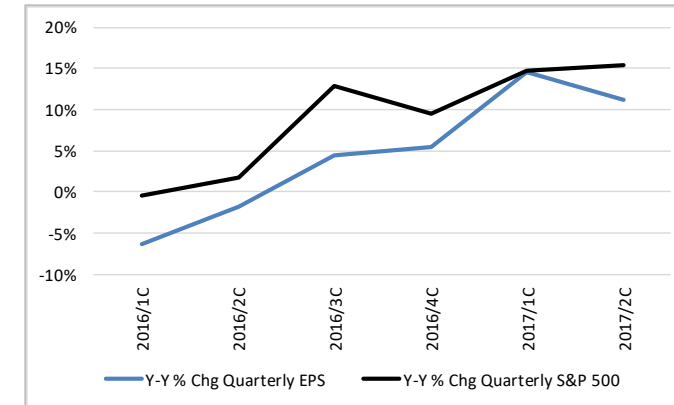
| Since January 2001 | SPX Y-Y % Price Ret |
|----------------------------------|---------------------|
| SPX Y-Y % Price Ret | 1.00 |
| SPX Y-Y % LTM EPS Growth | 0.50 |
| SPX Y-Y % NTM EPS Growth | 0.70 |
| SPX (Up-Down)/(Up+Down) 6 Mo Avg | 0.77 |
| Y-Y Chg 10-Yr Treasury | 0.60 |
| Y-Y Chg 2-Yr Treasury | 0.62 |
| Y-Y Chg Fed Funds | 0.62 |
| Y-Y Chg in 10-Yr - Fed Funds | (0.36) |
| Y-Y Chg in 10-2 Yr Treasury | (0.32) |
| Y-Y Chg in Fed Funds - Core CPI | 0.61 |
| Y-Y Chg in HY - 10-Yr Treasury | (0.72) |
| Dollar Broad Y-Y % Chg | (0.41) |
| GSCI Price Y-Y % Chg | 0.34 |
| Gold Y-Y % Chg | (0.00) |



Source: Spellman, FactSet, Federal Reserve System, Merrill Lynch Fixed Income, S&P GSCI, U.S. Department of Labor.

Markets can remain elevated if EPS growth remains solid

- Quarterly Y-Y EPS growth turned positive in 3Q 2016 and was accelerating as market rebounded
 - Rising and accelerating EPS growth is overwhelmingly associated with good returns*
 - Consensus:* EPS growth is positive through 2018, but Y-Y quarterly EPS growth decelerates in 3Q before rebounding in 4Q



| | LTM EPS Growth Positive | Accelerating LTM EPS | LTM EPS Growth Positive and Accelerating | LTM EPS Growth Positive and Decelerating | LTM EPS Growth Negative and Accelerating | LTM EPS Growth Negative and Decelerating | Total Count | Price Return Positive | LTM EPS Growth Positive and Price Return Positive | LTM EPS Growth Negative and Price Return Positive | LTM EPS Growth Positive and Price Return Positive and Accelerating | LTM EPS Growth Positive and Price Return Positive and Decelerating | LTM EPS Growth Negative and Price Return Positive and Accelerating | LTM EPS Growth Negative and Price Return Positive and Decelerating |
|-------------------|-------------------------|----------------------|--|--|--|--|-------------|-----------------------|---|---|--|--|--|--|
| Since 1873 | 1046 | 830 | 687 | 359 | 143 | 539 | 1728 | 1084 | 761 | 323 | 530 | 231 | 90 | 233 |
| Percent of Months | 61% | 48% | 40% | 21% | 8% | 31% | | 63% | 73% | 47% | 77% | 64% | 63% | 43% |
| Since 1970 | 364 | 267 | 236 | 128 | 31 | 169 | 564 | 411 | 284 | 127 | 182 | 102 | 26 | 101 |
| Percent of Months | 65% | 47% | 42% | 23% | 5% | 30% | | 73% | 78% | 64% | 77% | 80% | 84% | 60% |
| Since 1980 | 275 | 202 | 174 | 101 | 28 | 141 | 444 | 343 | 234 | 109 | 135 | 99 | 23 | 86 |
| Percent of Months | 62% | 45% | 39% | 23% | 6% | 32% | | 77% | 85% | 64% | 78% | 98% | 82% | 61% |
| Since 1990 | 205 | 142 | 125 | 80 | 17 | 102 | 324 | 253 | 189 | 64 | 111 | 78 | 13 | 51 |
| Percent of Months | 63% | 44% | 39% | 25% | 5% | 31% | | 78% | 92% | 54% | 89% | 98% | 76% | 50% |
| Since 2000 | 132 | 82 | 75 | 57 | 7 | 65 | 204 | 143 | 120 | 23 | 65 | 55 | 4 | 19 |
| Percent of Months | 65% | 40% | 37% | 28% | 3% | 32% | | 70% | 91% | 32% | 87% | 96% | 57% | 29% |

Source: Spellman, FactSet, Shiller data, annual returns and growth rates, data through 2016.

The best stocks have ...

- Accelerating fundamentals
- Beating expectations (positive surprise)
- Growing
- Low expectations



Keep your
expectations
LOW
...and you will
seldom be
disappointed


Ways to quantify progress of overcoming biases

- Where is your fund invested?
 - Percent planted (cheap, no catalyst), growing (cheap, improving, undiscovered), being harvested (improving, expensive), and dying (relatively expensive and deteriorating)?



- Evaluate all security decisions
 - Beyond just what is held
 - Was selling correct? Was buying more correct? How much did missed opportunities cost? Did pitched and not purchased outperform?
- Determine source of returns
 - Beyond traditional allocation, factor, and selection measures
 - High conviction, quartile of return by #/% of portfolio, and new purchases and recent sales
- Evaluate your portfolio's sentiment
- Evaluate patience (gradual build vs all at once) and trading volume

Keep updated on investment strategy, behavioral finance, and more



COACH INVESTING
SHARING INVESTMENT KNOWLEDGE


HOME PAGE ▾ ALUMNI DIRECTORY WISCONSIN DIRECTORY COACH'S RESEARCH ▾ STUDENTS' RESEARCH ▾ CONTACT US

HOME PAGE

This site provides ideas and information on investment markets. Research is on investment strategy, quantitative investment studies, behavioral finance, and stocks. Careers are also discussed. The website is free to the public to make the world a better place.

This website also includes links to a Wisconsin Investment Directory, updated yearly, and an alumni directory for the Investment Management Certificate Program at University of Wisconsin-Milwaukee.

Dr. G. Kevin Spellman, CFA, aka "Coach," maintains the site. He coaches students in investments. He has over 20 years of experience in investments as an analyst, portfolio manager, consultant, and director of research on the buy-side and sell-side of Wall Street, and 15 years of experience teaching investments. He is the David O. Nicholas Director of Investment Management and Senior Lecturer at University of Wisconsin-Milwaukee and a periodic Adjunct Professor at IE Business School. He has



ARCHIVES

Select Month ▾

RECENT POSTS

- The 6 Ps of Job Placement September 3, 2017
- The Stock Market: Where Do We Go from Here? August 1, 2017
- Behavioral Biases, Trump, and the Paris Agreement June 21, 2017
- Is Amazon's P/E Worth 11X More than Walmart's? June 9, 2017
- When Do Value and Growth Outperform? June 5, 2017

Source: <https://www.coachinvesting.com>

Web Viewer [Terms](#) | [Privacy & Cookies](#) Edit

Behavioral test

- Go to <http://etc.ch/YVqp> to submit answer



The image shows a screenshot of a Direct Poll interface. At the top, the URL <http://etc.ch/YVqp> is displayed in large white text on a black background. Below the URL is a large QR code. In the bottom right corner, the Direct Poll logo is visible. At the bottom of the screenshot, there is a footer area with the source URL <https://directpoll.com/r?YDk-DBd2iYce9S-t04e0h81eCuDeAcTu7mPrPa>, links for [Web Viewer Terms](#) and [Privacy & Cookies](#), and an [Edit](#) button.

Return to: [representativeness](#), [overconfidence](#), [anchoring](#), [prospect theory](#).