Overcoming Behavioral Biases to Improve Financial Decisions

March-April 2019

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Outline

• Definition of behavioral finance, why it is important, and proof
• Biases
  – Representativeness
  – Availability
  – Overconfidence
  – Anchoring
  – Confirmation
  – Loss aversion
  – Herding
• 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
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](http://www.behaviouralfinance.net) for more a more extensive list of biases and associated papers which review them.
• 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!

Sources: Spellman, FactSet.
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• Expectations (i.e., sentiment) are highly correlated with stock returns
  
  – *Sentiment elevated before correction and depressed before rally*

Sources: Spellman, FactSet.
• 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?

<table>
<thead>
<tr>
<th>Student</th>
<th>High School GPA</th>
<th>Predicted College GPA</th>
<th>Actual College GPA</th>
</tr>
</thead>
<tbody>
<tr>
<td>C</td>
<td>2.20</td>
<td></td>
<td></td>
</tr>
<tr>
<td>B</td>
<td>3.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>A</td>
<td>3.80</td>
<td></td>
<td></td>
</tr>
<tr>
<td>H-L</td>
<td>1.60</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>


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

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<th>Predicted College GPA</th>
<th>Actual College GPA</th>
</tr>
</thead>
<tbody>
<tr>
<td>C</td>
<td>2.20</td>
<td>2.03</td>
<td>2.70</td>
</tr>
<tr>
<td>B</td>
<td>3.00</td>
<td>2.77</td>
<td>2.93</td>
</tr>
<tr>
<td>A</td>
<td>3.80</td>
<td>3.46</td>
<td>3.30</td>
</tr>
<tr>
<td>H-L</td>
<td>1.60</td>
<td>1.43</td>
<td>0.60</td>
</tr>
</tbody>
</table>

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


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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 overall investor returns and Intel’s ratings peaks and troughs that follow price...

high past returns represent – suggest – a buy

Representativeness impacts associations and expected returns

• **Question**: Is employment growth **positive** correlated with consumer discretionary relative returns to the S&P 500?
  
  – Employment should result in more income and more confidence to purchase discretionary items which drives up sales
    
    • Consumer discretionary = retail, auto, etc.
    • Good sales should be **represented** by good stock performance, right?
  
  – **Answer**: Returns and employment growth are correlated, but **negatively**!

  ![Graph showing correlation between employment growth and relative returns to the S&P 500]

  – Be careful making associations without confirming it with the data!

Sources: Spellman, FactSet, US Department of Labor.

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Representativeness takeaway: be careful extrapolating

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

Availability

- Ease of recall of similar situations influences one’s expectations of outcome
  - 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
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

• Chipotle media hype an over-reaction (opportunity)?
  – 1 in 1.5 mil odds and no deaths
  – Lower than air/space, storm, and ladder/scaffolding deaths

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) World Population (3/24/19)
  (2) Length of the Nile River (in miles)
  (3) Number of countries in OPEC
  (4) Number of books in the Old Testament
  (5) Diameter of the moon (in miles)
  (6) Weight of an empty Boeing 747 (in pounds)
  (7) Year in which Wolfgang Amadeus Mozart was born
  (8) Gestation period of an Asian elephant (in days)
  (9) Air distance from London to Tokyo (in miles)
  (10) Deepest known point in the ocean (in feet)

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 and https://www.census.gov/popclock/; 1 kilometer is 0.62 miles (statute), 1 kilogram is 2.20 pounds, and 1 meter is 3.28 feet.
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

<table>
<thead>
<tr>
<th>Question</th>
<th>Estimate</th>
<th>Confidence</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1) World Population (3/24/19)</td>
<td>7,561,010,850</td>
<td>390,000</td>
</tr>
<tr>
<td>(2) Length of the Nile River (in miles)</td>
<td>4,187</td>
<td>14</td>
</tr>
<tr>
<td>(3) Number of countries in OPEC</td>
<td>14</td>
<td>3</td>
</tr>
<tr>
<td>(4) Number of books in the Old Testament</td>
<td>39</td>
<td>3</td>
</tr>
<tr>
<td>(5) Diameter of the moon (in miles)</td>
<td>2,160</td>
<td>390,000</td>
</tr>
<tr>
<td>(6) Weight of an empty Boeing 747 (in pounds)</td>
<td>390,000</td>
<td>2,160</td>
</tr>
<tr>
<td>(7) Year in which Wolfgang Amadeus Mozart was born</td>
<td>1756</td>
<td>2,160</td>
</tr>
<tr>
<td>(8) Gestation period of an Asian elephant (in days)</td>
<td>645</td>
<td>3</td>
</tr>
<tr>
<td>(9) Air distance from London to Tokyo (in miles)</td>
<td>5,959</td>
<td>390,000</td>
</tr>
<tr>
<td>(10) Deepest known point in the ocean (in feet)</td>
<td>36,198</td>
<td>7,561,010,850</td>
</tr>
</tbody>
</table>

• **How did you do?**

Source: Lo, Reconciling Efficient Markets With Behavioral Finance: The Adaptive Market Hypothesis, *Journal of Investment Consulting*, 2005 and https://www.census.gov/popclock/; 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)

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

<table>
<thead>
<tr>
<th></th>
<th>Year Before</th>
<th>Year After</th>
<th>Three Years After</th>
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</thead>
<tbody>
<tr>
<td>All Stocks*</td>
<td>+24.5%</td>
<td>-7.4%</td>
<td>-22.2%</td>
</tr>
<tr>
<td>Large-Cap Stocks**</td>
<td>+22.0%</td>
<td>-4.3%</td>
<td>-16.5%</td>
</tr>
</tbody>
</table>

*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

Corporate confidence peaks with cycle (due to extrapolation and anchoring)

- Growth in cap ex, M&A, and IPO activity, but lending moderate

Company optimism coming off high

Which may explain willingness to borrow

Optimism (high but moderating) leads investment

Large M&A strong, but off high pace perhaps due to ample PE funding and drop in number of public firms

Confident since income is up (leads cap ex)

Plus lenders are bullish

Loan growth follows cap ex

IPO activity coming back (selling high?)

And I/S down and inventory growth rebounding

**Anchoring results in slow adjustments**

• People tend 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%

We tend to look for information to confirm initial decisions and opinions

- If we make our decisions public (as a CEO does with strategic plans and an analyst does with recommendations) it is even harder to change plans
  - Wrong:
    - Culture suggests people who change opinions are weak and wrong
  - Right:
    - “When the facts change, I change my mind” (Keynes)

Null hypothesis is what we should try to disprove to accept the alternative

- We should rigorously test the null
  - Why we are wrong
  - To prove why we are right
- But we do the opposite
  - We tend accept information why we are right
  - And critically analyze information on why we are wrong

Null needs to be why we are wrong
How strong is the Brexit anchor?

- Should government stay anchored to the course of the first vote, or put it to a new vote in light of the new information?

All types of investors are guilty of anchoring!

- Investors and corporations are guilty (at least in aggregate) of anchoring as they expect trends to continue
  - Because of this, they are most optimistic when they should be most pessimistic and vice versa!

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...

Trading subdued if returns are low as people hunker down

- People are reluctant to sell their losers
- Even if better options present themselves during times of market turmoil

Source: Spellman, FactSet.
Herding Drives Decisions

- People feel safe in the crowd
  - The elephant is safe if it does not stray too far from the herd

- Why do people herd?
  - It is in our genetic makeup as people survived due to division of labor
  - People are social animals and like to be liked
  - Better to fail conventionally than unconventionally (rational irrationality to save job)
Trade War: *availability* of information and *herding* may lead to false conclusions

- The trade war is making people nervous
  - Impacts sentiment
  - Impacts spending
  - Impacts markets

- But who wins such a war?
- Does China sell more to the US or the US more to China?
  - US imports $506 billion/$483 billion from China and exports $130 billion/$116 billion in 2017/2015
  - US affiliates in China sell $481 billion while Chinese US affiliates sell $26 billion in the US in 2015
  - The *net sales* of US to China (2015) is about $597 billion and China’s sales to US is $599 billion, or about even
    - Conclusion: China has ample opportunity to pressure US, and it may be easy for them to implement policy
- Would a full-blown trade war impact earnings and inflation to a *large* degree?

Back of envelope, 25% Chinese tariff only boosts inflation 0.6% or hurts profits 7%

Why matters? Higher inflation and/or lower profits

7% + drop in business profits if they eat the costs
- Business about 85% of GDP ($17 trillion / $20 trillion) so impact is $110 billion ($125 billion * 85%)
- Net income = 7% * $17 trillion = $1.2 trillion
- Hit to income is 7% ($110 billion trillion / $1.2 trillion)
  - Ignores lost income from retaliation on US companies in China, lost export sales on products with tariffs in China, slowing Chinese and world growth, etc.

0.6% jump in inflation if costs passed on to consumers
- $500 billion imports * 25% = $125 billion in tariffs
- $125 billion / $20 trillion economy = 0.6% rise in inflation

Data and Assumption:
- US GDP = $20 trillion
- Chinese imports = $500 billion
- Business GDP = $17 trillion
- 7% estimated net profit margin
- 25% tariff on all imports is max, but US could influence allies to partner against China

Source: Spellman, BEA.
Social media can be dangerous

• **Algorithms amplify news?**
  – Go to YouTube and search for “Trade War with China”
  – Click on “Trump launches trade war with China” (1\textsuperscript{st} recommended)
  – Click on “What are the ripple effects of a U.S.-China trade war?” (2\textsuperscript{nd} recommended)
  – Click on “American shopping malls struggle to survive” (3\textsuperscript{rd} recommended)
  – Click on “Retailers CLOSING in 2019!” (2\textsuperscript{nd} recommended)
  – Click on “Nearly 5000 U.S. Stores Closing Already in 2019! MASS Debt and Bankruptcy” (2\textsuperscript{nd} recommended)

• **Took five clicks to get to armageddon!**
  – Note that this was after goofing around for 30-40 min with different searches
  – It appears as YouTube learned my interests and then apocalypse-like videos rose to the top

Source: Spellman, YouTube.
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

Source: Spellman, “Reluctance to Sell Losers,” 2009
The study of behavioral finance is flourishing

- Do not ignore the X factor because individuals, businesses, and financial markets under-react and over-react to information
  ... which is your opportunity!

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

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**Google hits (3/24/19)**

- Behavioral finance = 1,900,000
- Behavioural finance = 622,000
- Total = 2,522,000

- Efficient market hypothesis = 619,000
- Efficient markets hypothesis = 132,000
- Efficient market theory = 124,000
- Efficient markets theory = 51,400
- Total = 926,400

Source: Spellman, Google.
Appendix

- The Expectations Clock
- Selling losers is difficult
- Biases and gold
- Sentiment model
- Market model
- Earnings and returns
- Coach Investing website
The Expectations Clock

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

![Diagram of the Expectations Clock]

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/](https://coachinvesting.com/2017/05/02/expectations-clock-a-model-for-cycles-and-sentiment/) for more details.
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 peaked last fall and bottomed at start of year

- Weakening sentiment is negative driver as it is positively correlated with returns
  - All variables, except consumer, down from last fall

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, AAII surveys, and fund flows) areas.
The market was VERY EXCITED before correction, but is still elevated

- S&P positively or negatively correlated with 13 variables
  - Growth, revisions, rates, yield curve, credit, and alternatives
  - 9 of 13 pointing in same “up” direction, vs 12 in October 2018
  - Overall composite still at level lofty
    - Positively correlated with returns
    - Poised for correction

Components of composite

<table>
<thead>
<tr>
<th>100.0% Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>13.3% SPX Y-Y % LTM EPS Growth</td>
</tr>
<tr>
<td>13.3% SPXY Y-Y % NTM EPS Growth</td>
</tr>
<tr>
<td>13.3% SPX (Up-Down)/(Up+Down) 6 Mo Avg</td>
</tr>
<tr>
<td>3.3% Y-Y Chg 10-Yr Treasury</td>
</tr>
<tr>
<td>3.3% Y-Y Chg 2-Yr Treasury</td>
</tr>
<tr>
<td>3.3% Y-Y Chg Fed Funds</td>
</tr>
<tr>
<td>3.3% Y-Y Chg in 10-Yr Fed Funds</td>
</tr>
<tr>
<td>3.3% Y-Y Chg in 10-2 Yr Treasury</td>
</tr>
<tr>
<td>3.3% Y-Y Chg in Fed Funds - Core CPI</td>
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<td>20.0% Y-Y Chg in HY - 10-Yr Treasury</td>
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<tr>
<td>5.7% Dollar Broad Y-Y % Chg</td>
</tr>
<tr>
<td>5.7% GSCI Price Y-Y % Chg</td>
</tr>
<tr>
<td>5.7% Gold Y-Y % Chg</td>
</tr>
</tbody>
</table>

Correlation to SPX Y-Y % change

Markets took breather as growth slowed

- Quarterly Y-Y EPS growth correlated with returns
  - *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 1Q-3Q 2019 before rebounding in 4Q


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Keep updated on investment strategy, behavioral finance, and more

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.

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.

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

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Coach Investing: Sharing Investment Knowledge

Behavioral test

- Go to [http://etc.ch/TUii](http://etc.ch/TUii) to submit answer

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

Spellman
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