

Stock Selection Research: Big Data October 2017

Earnings Calls: FOMO and MOMO

FOMO: The Fear of Missing Out

- Most of us in this business, including your author, have spent more hours than we care to count dialed in to the ubiquitous quarterly earnings call. And most of us have at one time or another – most likely during an after-market call on a sunny Friday afternoon – pondered whether it's all worthwhile. Is anything that matters for long-term returns actually said, or is it just the Fear of Missing Out that keeps us coming back for more?
- One way to try to answer that question is to parse the language used in the call using so-called Natural Language Processing (NLP) techniques, to determine if there are any linguistic patterns that systematically lead to higher or lower post-call returns. A logical place to start is to quantify the sentiment expressed on the call, both during the prepared remarks of the management teams and the sell-side analyst Q&A session that follows.

Triple MOMO

- On average stocks with positive conference call sentiment do outperform those with negative sentiment in the three months following the call but the return spread is modest, on the order 50 basis points or so. The magnitude of the alpha is similar to what we find for the two other pieces of information one gets on earnings day: the earnings surprise and the announcement-day stock price reaction. None of the three signals are that compelling stand-alone, but stocks in the best quintile of all three have outperformed by about a percentage point over the following quarter. Forget FOMO, what you want is triple MOMO: an earnings beat, a big share price pop, and a bullish conference call.
- The caveat is that only about 2.5% of stocks have that triple crown combination. By way of comparison, stocks in the highest quintile of free cash flow yield have delivered almost the same alpha over the same holding period, but there you get to work with 20% of the universe. Moreover, earnings are only announced four times per year so you don't get as many at-bats as you do with more traditional metrics.

Blink and You'll Miss It

- The other knock on Big Data-derived signals, which is a fair one, is that the majority of what's been proposed so far tends to have a quick alpha decay, meaning one needs to trade daily, or even tick-by-tick, to squeeze much juice out. That's certainly the case for conference call sentiment; even though the alpha of triple crown stocks persists over three months, almost all of it comes in the first month.
- The problem with that is that most institutional investors are not very good at short-term trading. We came across a fascinating paper that studied the actual trades of almost 1,000 institutional over a decade. More than half of all trades were closed out in less than six months, and on average only positions held for more than nine months generated alpha, with the rest detracting from performance. That evidence made us question if expanding the set of signals to encompass all sorts of short-lived Big Data indicators would add to returns.

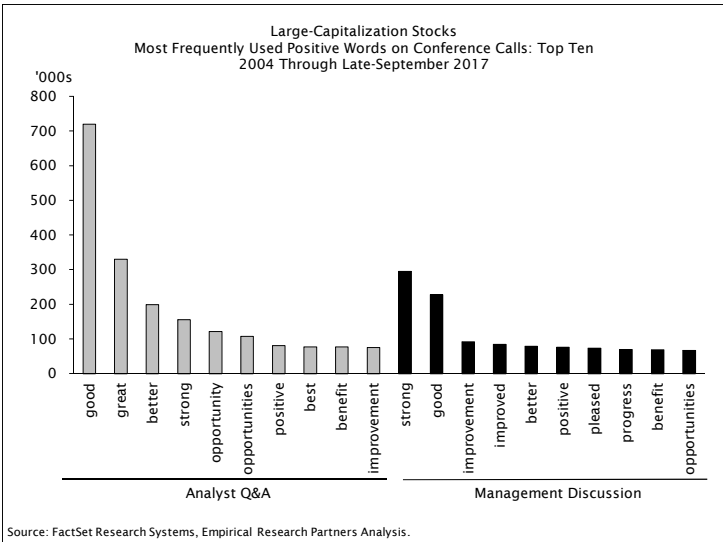
Optimism Fuels Value, Skepticism is Healthy in Growth

- Luckily, there's some good news for long-term investors. We noticed that bullish management sentiment can serve as a useful indicator for a potential turnaround in a value stock, whereas dour sentiment is helpful in growth stocks because there you don't want a management team that's drunk too much of their own Kool-Aid. It's also been a good sign for long-dated relative returns when there's discussion about returning capital to shareholders.
- Another combination that has outperformed over the long-run is high free cash flow yield and pessimistic *analyst* sentiment. That's very consistent with our view that investors have underestimated the durability of the extraordinary free cash flows produced in the Bretton Woods II era. Appendix 1 on page 12 lists the current crop of stocks, including Amgen, LyondellBasell, McKesson, HCA, CA Technologies, and Owens Corning.

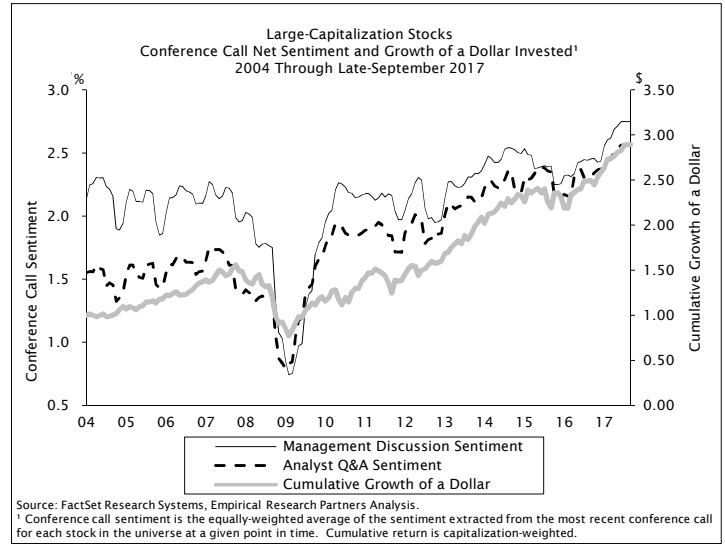
Sungsoo Yang (212) 803-7925 Nicole Price (212) 803-7935 Yi Liu (212) 803-7942 Yuntao Ji (212) 803-7920 Iwona Scanzillo (212) 803-7915

Conclusions in Brief

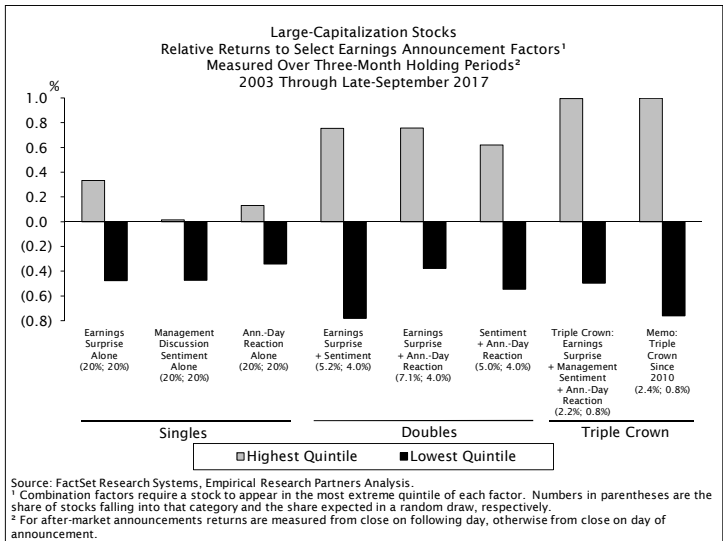
- We used natural language processing to measure sentiment in conference calls...



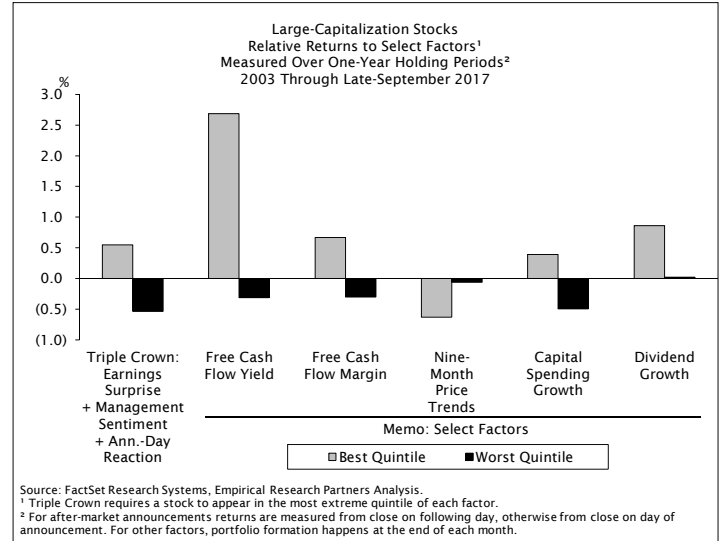
- ...Which in aggregate tracks the market:



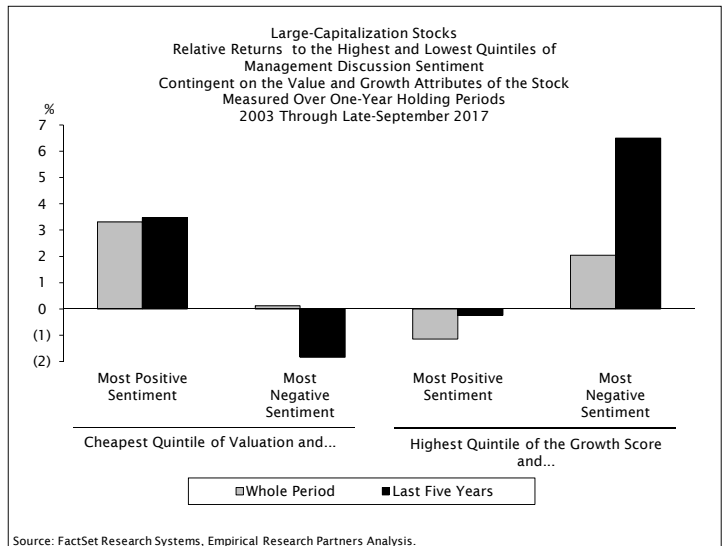
- Stocks with an earnings beat, a share price pop, and bullish sentiment outperform...



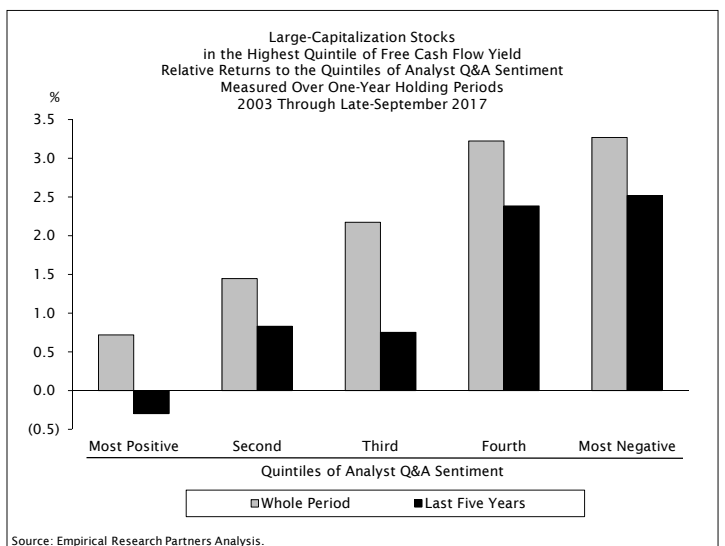
- ...But at investment horizons returns are modest because most the alpha comes in the first month:



- Long-term investors should look for bullishness in value stocks and skepticism in growth stocks:



- High free cash flow yields in the face of analyst disbelief has been a good combination:



Earnings Calls: FOMO and MOMO

The Fear of Missing Out

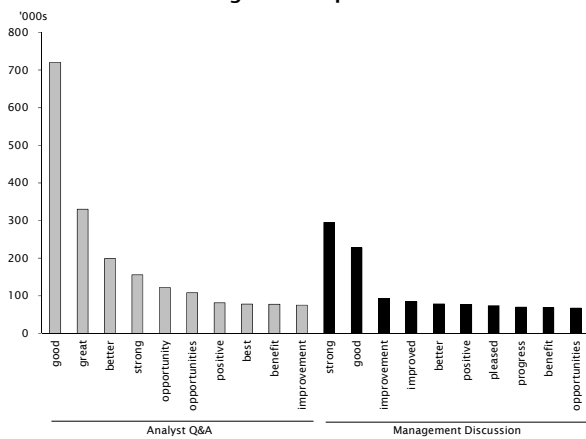
In less than a week another earnings season kicks off, setting in motion one of the strangest rituals on Wall Street. For almost five solid weeks the best and brightest of our industry will spend endless hours glued to their phones, listening intently as company managements recite a meticulously-lawyered script, followed by questions from sell-side analysts. Call any portfolio manager these days and the answer is always the same: “I’d love to, but let’s wait until after earnings.”

Is there anything to be gleaned from actually listening to every call, or does our industry’s limitless appetite stem mostly from a deep-seated Fear of Missing Out? Last year we did some work to try to answer that question, parsing the language used in conference calls to systematically extract clues about future returns.¹ In this report we build on that effort by studying the interaction between a stock’s earnings surprise, its announcement-day share price reaction, and the sentiment embedded in its post-earnings conference call.

To measure the sentiment in conference calls we apply Natural Language Processing (NLP) techniques to conference call transcripts, which these days are available a few hours after the call. Our database is marked up in XML, allowing us to identify different parts of a call, for example the management discussion at the beginning or the analyst Q&A session that follows.

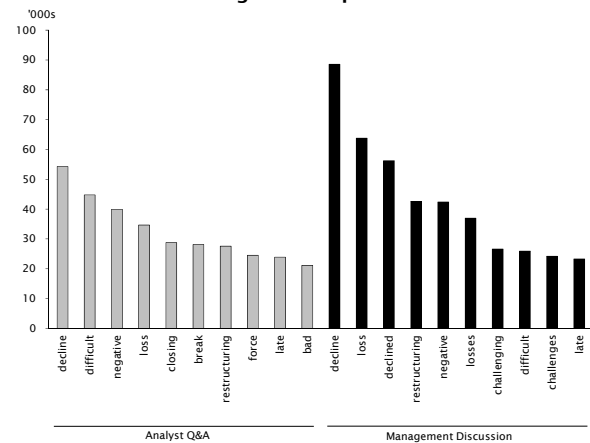
There are many ways to infer the tone of textual data, ranging from simple word counts to complex machine learning-based algorithms like those we leaned on in our recent work on news sentiment.² Here we err on the side of transparency and use a dictionary that a couple of academics have laboriously compiled, that classifies each word in the English language as positive, negative, or neutral depending on its connotations in *financial* usage.³ Using that dictionary we can compute net sentiment as the number of positive words in a body of text less the number of negative words, divided by the total number of words. Exhibits 1 and 2 show the most common positive and negative words used in the management discussion and analysts Q&A section of conference calls, over our sample period from 2004 to the present.

**Exhibit 1: Large-Capitalization Stocks
Most Frequently Used Positive Words
on Conference Calls: Top Ten
2004 Through Late-September 2017**



Source: FactSet Research Systems, Empirical Research Partners Analysis.

**Exhibit 2: Large-Capitalization Stocks
Most Frequently Used Negative Words
on Conference Calls: Top Ten
2004 Through Late-September 2017**



Source: FactSet Research Systems, Empirical Research Partners Analysis.

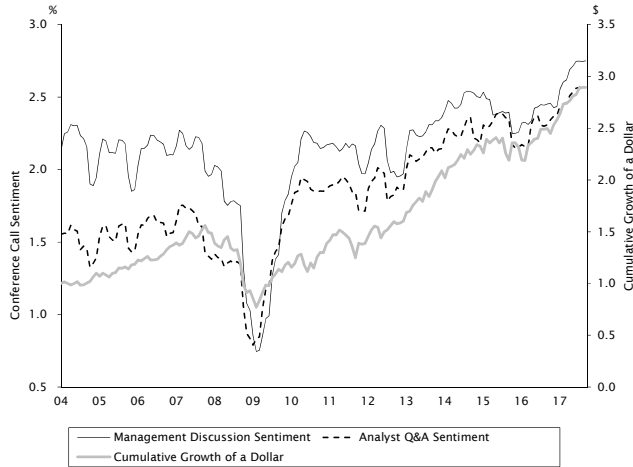
To verify our net sentiment metric captures something akin to “mood” we plotted the aggregate conference call sentiment for our large-cap universe along with the market’s return (see Exhibit 3). As we’d expect, net sentiment in conference calls closely tracks the market, with the sentiment gleaned from managements’ prepared remarks usually more bullish than the Q&A session with analysts. That gap has narrowed over time though, and in the post-Crisis era the differential in tone between managements and analysts has converged (see Exhibit 4).

¹ *Stock Selection: Research and Results* January 2016. “The Sound of Failure: Parsing Conference Call Language for Red Flags.”

² *Investment Ideas from the Ivory Tower* August 2017. “Big Data: Robot Newsreaders and Self-Driving Sectors.”

³ Loughran, T., and Bill McDonald, 2011. “When is a Liability Not a Liability? Textual Analysis, Dictionaries, and 10-Ks.” *Journal of Finance*, Vol. 66, pp. 35-65.

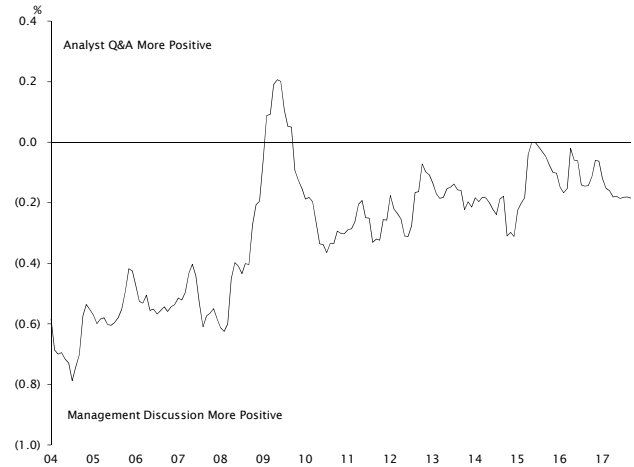
**Exhibit 3: Large-Capitalization Stocks
Conference Call Net Sentiment and
Growth of a Dollar Invested¹
2004 Through Late-September 2017**



Source: FactSet Research Systems, Empirical Research Partners Analysis.

¹ Conference call sentiment is the equally-weighted average of the sentiment extracted from the most recent conference call for each stock in the universe at a given point in time. Cumulative return is capitalization-weighted.

**Exhibit 4: Large-Capitalization Stocks
Differential Between Analyst Q&A Sentiment and
Management Discussion Sentiment¹
2004 Through Late-September 2017**

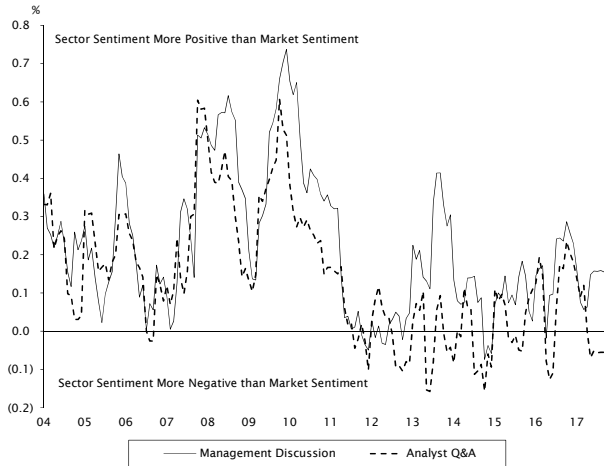


Source: FactSet Research Systems, Empirical Research Partners Analysis.

¹ Conference call sentiment is the equally-weighted average of the sentiment extracted from the most recent conference call for each stock in the universe at a given point in time.

Prevailing sentiment is, of course, readily changeable. For example, Exhibits 5 and 6 plot the evolution of conference call sentiment for technology and financial stocks. In the aftermath of the Crisis sentiment in the two sectors diverged sharply but in the ensuing decade it's gradually converged again. As part of our research we tested whether changes in net sentiment at the sector-level can predict future sector returns but we didn't find any alpha; it turns out market- and sector-level sentiment is mostly contemporaneous with returns.

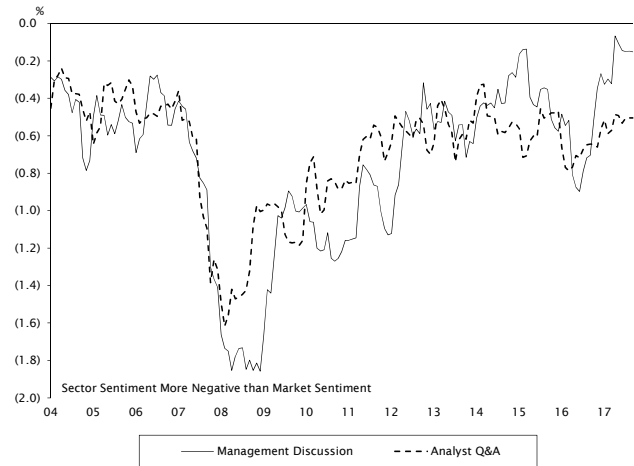
**Exhibit 5: Large-Capitalization Technology Stocks
Conference Call Relative Net Sentiment¹
2004 Through Late-September 2017**



Source: FactSet Research Systems, Empirical Research Partners Analysis.

¹ Relative conference call sentiment is the equally-weighted average of the sentiment extracted from the most recent conference call for each stock in the sector at a given point in time divided by the same for the entire market.

**Exhibit 6: Large-Capitalization Financial Stocks
Conference Call Relative Net Sentiment¹
2004 Through Late-September 2017**



Source: FactSet Research Systems, Empirical Research Partners Analysis.

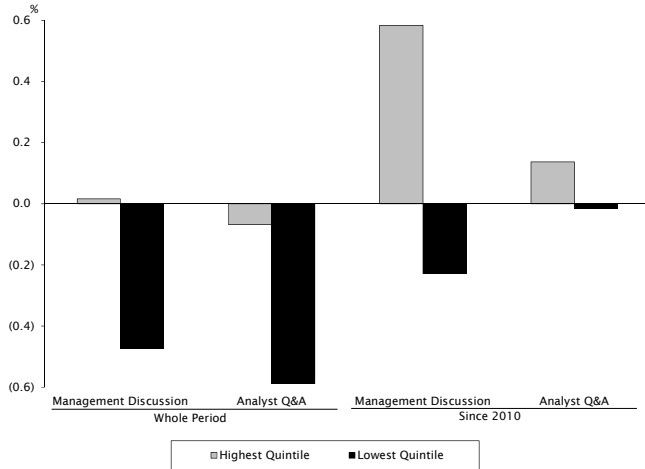
¹ Relative conference call sentiment is the equally-weighted average of the sentiment extracted from the most recent conference call for each stock in the sector at a given point in time divided by the same for the entire market.

The Mood on the Street

But what about at the *stock-level*? The most obvious signal would be to buy stocks with high conference call sentiment and avoid or short stocks with low sentiment. There's been a smattering of academic research over the years that suggest such a strategy has some efficacy. In our own testing we did indeed find a modest return spread over the following quarter between stocks with the most-bullish management and/or analyst sentiment compared to those with the most-bearish sentiment (see Exhibit 7).

However, the conference call isn't the only source of new information on earnings day: we also get to observe the announcement-day reaction of the company's share price and the earnings surprise relative to analyst expectations.⁴ So to be useful the conference call sentiment has to add something extra on top. It turns out it does: stocks with the triple crown of a big earnings beat *and* a favorable announcement-day share price pop *and* positive conference call sentiment have outperformed by almost a percentage point in the three months following the earnings announcement (see Exhibit 8). Having momentum on all three dimensions simultaneously is what matters. Forget FOMO, what you want is triple MOMO.

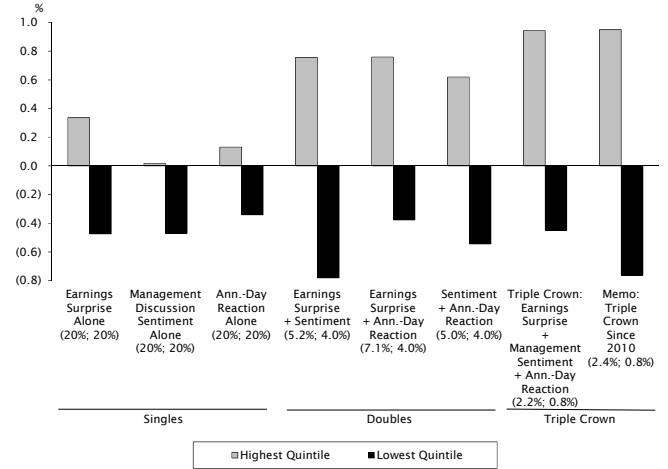
Exhibit 7: Large-Capitalization Stocks
Relative Returns to the Highest and Lowest Quintiles of Conference Call Sentiment Measured Over Three-Month Holding Periods¹ 2003 Through Late-September 2017



Source: FactSet Research Systems, Empirical Research Partners Analysis.

¹ For after-market announcements returns are measured from close on following day, otherwise from close on day of announcement.

Exhibit 8: Large-Capitalization Stocks
Relative Returns to Select Earnings Announcement Factors¹ Measured Over Three-Month Holding Periods² 2003 Through Late-September 2017



Source: FactSet Research Systems, Empirical Research Partners Analysis.

¹ Combination factors require a stock to appear in the most extreme quintile of each factor. Numbers in parentheses are the share of stocks falling into that category and the share expected in a random draw, respectively.

² For after-market announcements returns are measured from close on following day, otherwise from close on day of announcement.

To put that alpha in context, we compared the performance of triple crown stocks with a handful of "traditional" factors, assessed over the same timeframe and three-month holding period (see Exhibit 9). On face value the triple crown stocks stack up well, but keep in mind only around 2.5% of stocks have all three attributes, whereas the quintiles of all the other factors contain 20% of the universe. That makes the performance of free cash flow yield particularly noteworthy.

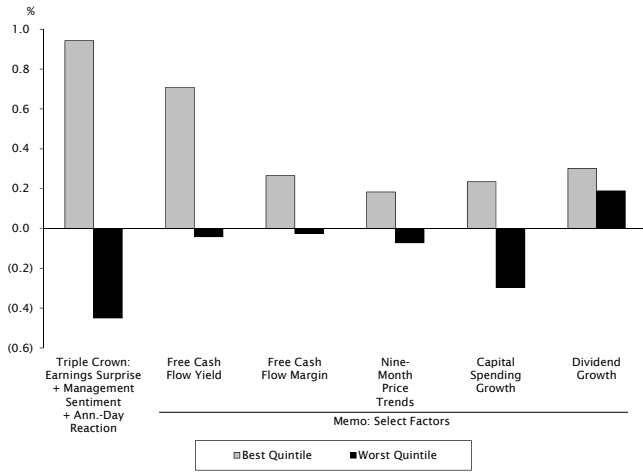
Blink and You'll Miss It

One of the oft-cited challenges with Big Data-derived signals is their ephemeral nature; many require holding periods measured in days or even ticks to harvest any alpha. We took a look at how much of the alpha in our earnings announcement factors is accrued in each of the first three months after the reporting date (see Exhibits 10 and 11). It turns out almost all of the alpha comes in the first month, and in some cases there's actually a mild reversal in months two and three. For example, stocks in the worst quintile of all three factors (right-hand bars in Exhibit 11) underperform by about (80) basis points in the first month on average but investors tend to overreact to the gloom and the stocks bounce back a little in the following two months.

As we lengthen the holding period to one year the performance advantage of the triple crown stocks moderates vis-à-vis other factors because very little extra alpha is accrued after the first month (see Exhibit 12). On the other hand, stocks with high free cash flow yields have done very well over one-year holding periods because the alpha is steadily earned over the duration of the investment horizon rather than front-loaded. We also explored using the change in sentiment instead of the level, but the outcome was about the same (see Exhibit 13).

⁴ For after-market announcements we use the following day's reaction.

Exhibit 9: Large-Capitalization Stocks
Relative Returns to Select Factors¹
Measured Over Three-Month Holding Periods²
2003 Through Late-September 2017

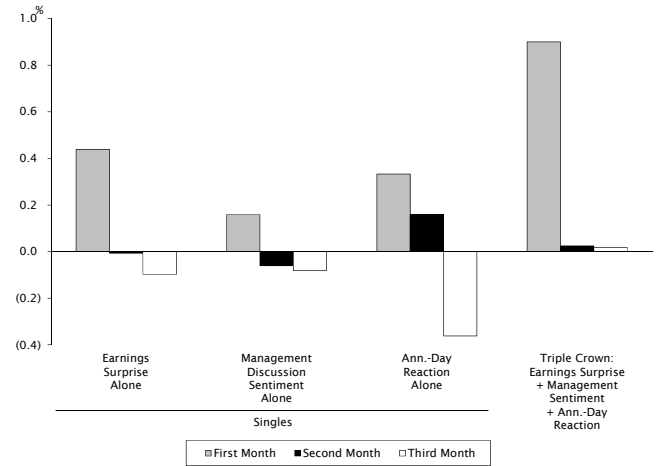


Source: FactSet Research Systems, Empirical Research Partners Analysis.

¹ Triple Crown requires a stock to appear in the most extreme quintile of each factor.

² For after-market announcements returns are measured from close on following day, otherwise from close on day of announcement. For other factors, portfolio formation happens at the end of each month.

Exhibit 10: Large-Capitalization Stocks
Relative Returns to the Highest Quintile of
Select Earnings Announcement Factors¹
Measured Over Three-Month Holding Periods²
2003 Through Late-September 2017

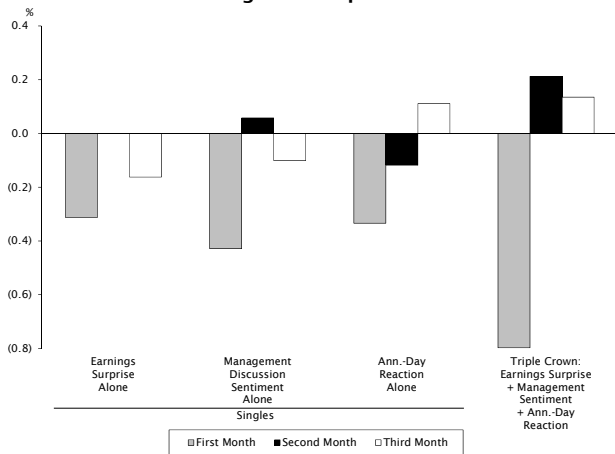


Source: Empirical Research Partners Analysis.

¹ Triple Crown requires a stock to appear in the most extreme quintile of each factor.

² For after-market announcements returns are measured from close on following day, otherwise from close on day of announcement.

Exhibit 11: Large-Capitalization Stocks
Relative Returns to the Lowest Quintile of Select
Earnings Announcement Factors¹
Measured Over Three-Month Holding Periods²
2003 Through Late-September 2017

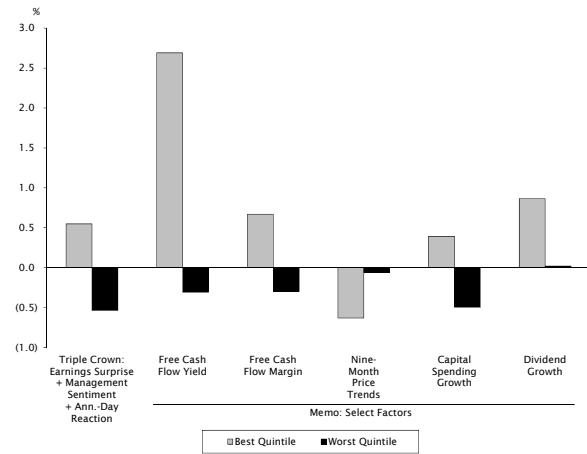


Source: FactSet Research Systems, Empirical Research Partners Analysis.

¹ Triple Crown requires a stock to appear in the most extreme quintile of each factor.

² For after-market announcements returns are measured from close on following day, otherwise from close on day of announcement.

Exhibit 12: Large-Capitalization Stocks
Relative Returns to Select Factors¹
Measured Over One-Year Holding Periods²
2003 Through Late-September 2017



Source: FactSet Research Systems, Empirical Research Partners Analysis.

¹ Triple Crown requires a stock to appear in the most extreme quintile of each factor.

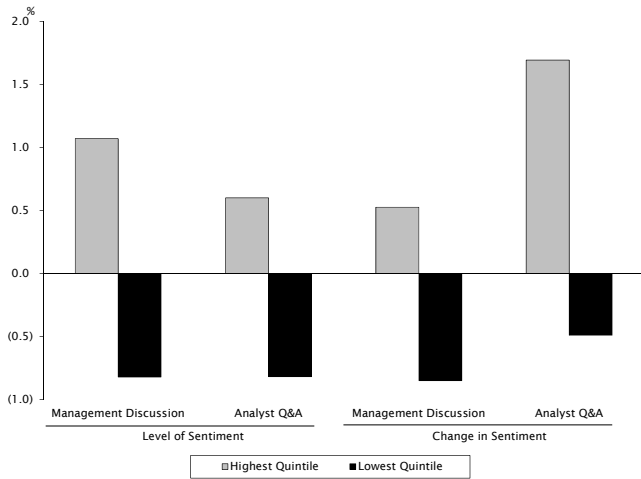
² For after-market announcements returns are measured from close on following day, otherwise from close on day of announcement. For other factors, portfolio formation happens at the end of each month.

One of the side effects of the industry's current infatuation with Big Data is the belief, now cited as dogma, that datasets only have value if few people know about them. We disagree. The extraordinary free cash flow margins that U.S. companies have produced in the Bretton Woods II era are no secret, after all they're reported four times per year in plain view for all to see (see Exhibit 14). And yet buying stocks priced to high free cash flow yields has consistently produced long-term alpha, not because the free cash flows are some elusive Edge, visible only to a select few, but rather because investors have overpriced their mean reversion, underestimating how globalization and automation would allow U.S. manufacturers to continually squeeze more profits out of less capital. In a world with low nominal growth rates the winning strategy has been to go long the record-setting ROE of U.S. companies, recognizing that those returns are extra-valuable in a world that isn't growing very fast (see Exhibit 15). Sometimes Big Ideas are better than Big Data.

We're Playing in a Salary-Cap League Now

The problem with trying to play the short-term information game is that the competition is so fierce that it's implausible that any one investor can consistently win at it. Close to four-fifths of the U.S. equity market is professionally managed, and has been for a long time now (see Exhibit 16). At the same time, investors with short-term objectives, like many hedge funds and tactical traders of ETF products, have become a significant part of market turnover (see Exhibit 17). We're not playing high school football anymore, with wide-open receivers on every play. Now we're in the NFL where parity rules and we're lucky if we get one blown coverage per game. Playbooks don't stay secret for long and if someone finds a trick play the rest of the league will be onto it long before the playoffs start.

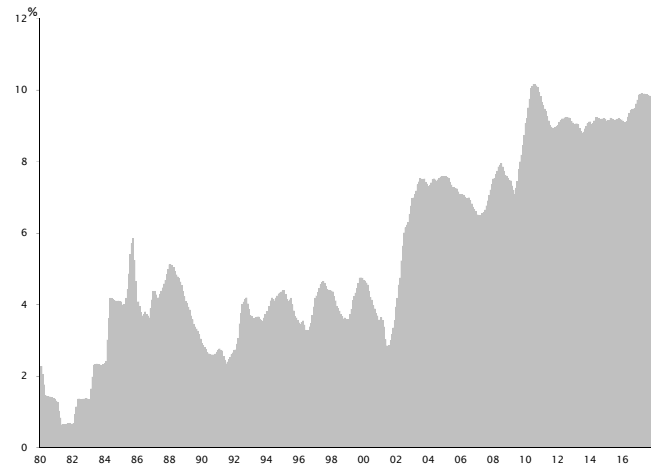
Exhibit 13: Large-Capitalization Stocks
Relative Returns to the Highest and Lowest Quintiles of
Conference Call Sentiment Level and Change¹
Monthly Data Compounded to Annual Periods
2003 Through Late-September 2017



Source: FactSet Research Systems, Empirical Research Partners Analysis.

¹ Change measured as sentiment of most recent conference call relative to that of all calls in the prior 12 months.

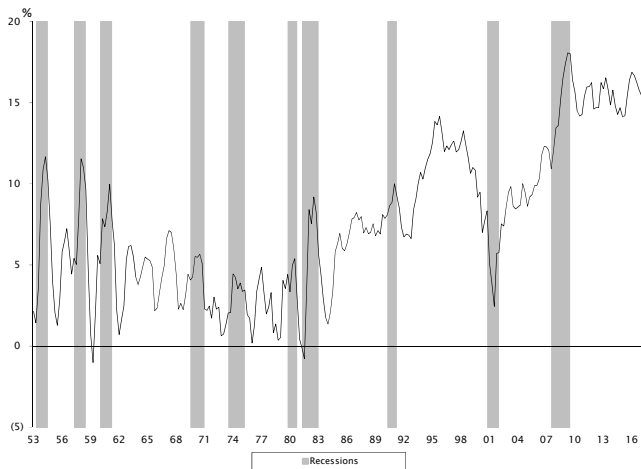
Exhibit 14: Large-Cap "Core" Stocks
Free Cash Flow Margins¹
1980 Through September 2017



Source: Corporate Reports, Empirical Research Partners Analysis.

¹ Excluding financials, energy, industrial commodities and utilities; based on trailing four-quarter data smoothed on a trailing three-month basis.

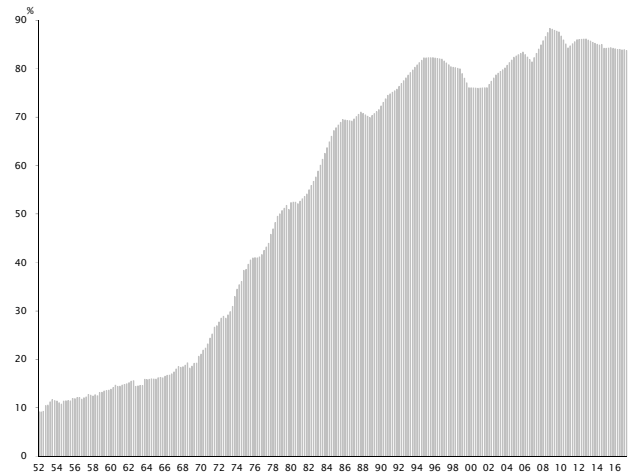
Exhibit 15: The Large-Capitalization Core of the Market¹
ROEs Less Nominal-U.S. GDP Growth
1953 Through Q2 2017E



Source: Bureau of Economic Analysis, National Bureau of Economic Research,

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

Exhibit 16: The U.S.
Professionally-Managed Share of Equities
Outstanding¹
1952 Through Q2 2017

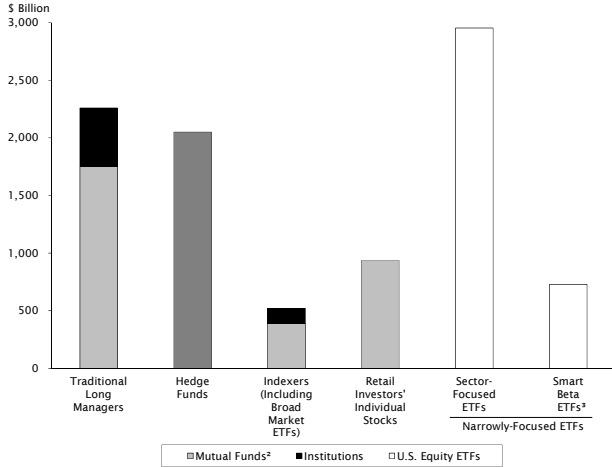


Source: Empirical Research Partners Analysis.

¹ Excludes closely-held s-and c-corps.

We came across a fascinating academic paper that directly studied whether the short-term trades of institutional investors add any value.⁵ The research drew on anonymous trade-level data from almost 1,000 institutions over the course of a decade (see Exhibit 18). Only half their trades were held for more than six months and less than a third lasted more than a year. On average only the trades held for about nine months or longer generated significant alpha (see Exhibit 19). But here's the kicker: the trades that were held for less than three months *would* have been profitable on average if only they'd been held for a year (see Exhibit 20). So the stock-picking was good but a lack of patience turned what could have been a win into a loss. Overall the study left us even more convinced that playing a short-term game is probably going to be futile for most managers.

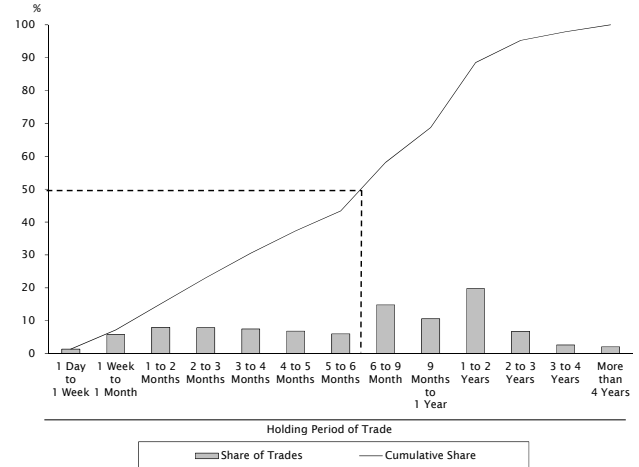
Exhibit 17: Traditional Long Managers (Institutions and Mutual Funds), Hedge Funds, Retail Investors and Narrowly-Focused ETFs Dollar Value of U.S. Equity Turnover¹ 2016



Source: Federal Reserve Board, Greenwich Associates, Securities and Exchange Commission, Investment Company Institute, Empirical Research Partners Analysis.

¹ Measured one-way.
² Including the equity portion of target date and balanced funds.
³ Includes value, growth, yield and other smart beta products.

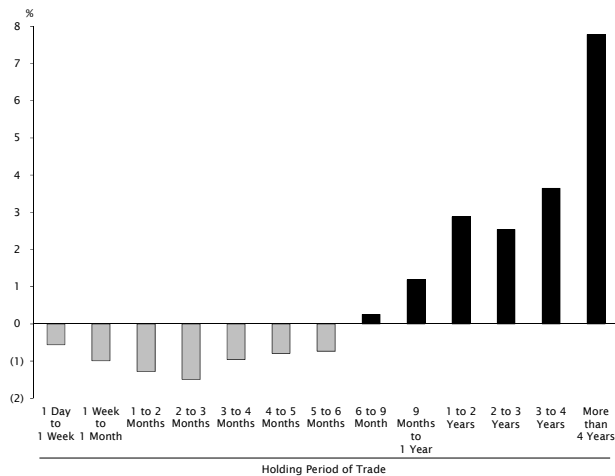
Exhibit 18: U.S. Institutional Round-Trip Trades Share of Trades by Holding Period¹ 1999 Through 2009



Source: Chakrabarty, B., Moulton, P., and Charles Trzcinka, 2017. "The Performance of Short-Term Institutional Trades." *Journal of Financial and Quantitative Analysis*, Vol. 52, No. 4, pp. 1403-1428.

¹ Based on sample of trade-level data from almost 1,000 institutional investors. Holding periods are based on a first-in, first-out (FIFO) assumption, which errs on the side of assuming longer holding periods.

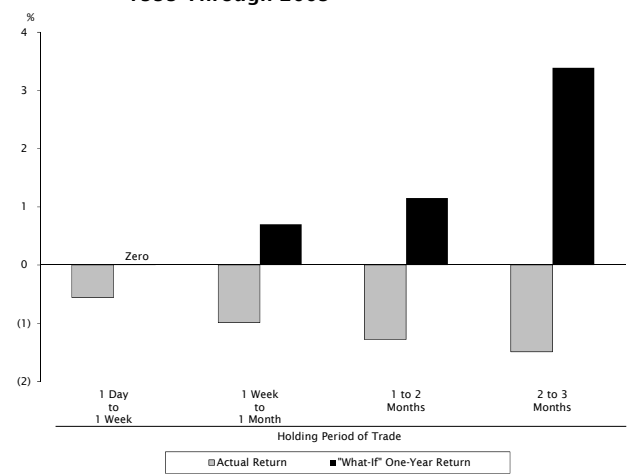
Exhibit 19: U.S. Institutional Round-Trip Trades Average Relative Return by Holding Period¹ 1999 Through 2009



Source: Chakrabarty, B., Moulton, P., and Charles Trzcinka, 2017. "The Performance of Short-Term Institutional Trades." *Journal of Financial and Quantitative Analysis*, Vol. 52, No. 4, pp. 1403-1428.

¹ Relative returns adjusted for the market, size, book-to-price, and one-year momentum factors. Returns are unannualized.

Exhibit 20: U.S. Institutional Round-Trip Trades Average Relative Return by Holding Period and Hypothetical Return Had Stock Been Held For a Year¹ 1999 Through 2009



Source: Chakrabarty, B., Moulton, P., and Charles Trzcinka, 2017. "The Performance of Short-Term Institutional Trades." *Journal of Financial and Quantitative Analysis*, Vol. 52, No. 4, pp. 1403-1428.

¹ Relative returns adjusted for the market, size, book-to-price, and one-year momentum factors. Returns are unannualized.

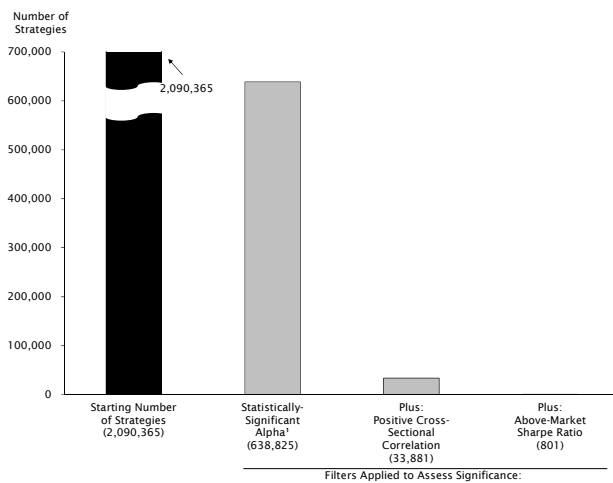
⁵ Chakrabarty, B., Moulton, P., and Charles Trzcinka, 2017. "The Performance of Short-Term Institutional Trades." *Journal of Financial and Quantitative Analysis*, Vol. 52, No. 4, pp. 1403-1428.

Fake Factors

Another problem with trying to out-datamine the next guy is that the risk of overfitting is tremendous. We read another fantastic paper that tested ever possible one-, two-, and three-way combination of the Compustat variables, for a total of over two million potential trading signals.⁶ Obviously the vast majority of these random combinations don't have any real-world economic rationale, but even so something like 600,000 of them showed statistically significant alpha when using the standard definition of significance, a t-statistic of around two (see Exhibit 21).⁷

Applying a requirement that the cross-sectional correlation between the signal and future returns be positive cuts the number of significant signals to 38,000, and requiring the strategy's Sharpe ratio be greater than the market's cuts it all the way down to 801. But even after whittling the list down to 801 potential signals the vast majority are likely to be "fake factors" for one simple reason: you started out by testing two million factors so you're guaranteed to find lots of signals that appear statistically significant purely due to random chance. Adjust for that fact and more than 90% of these hot new factors are probably fakes (see Exhibit 22). There's a real risk that everyone in the Big Data ecosystem is so invested in finding "alpha" that a lot of ideas that appear superficially statistically significant get hyped up even though they're nothing more than the random outcome of lots of computers pouring over an almost infinite combination of variables. In the Compustat database it only took Little Data, 156 variables in all, to come up with over two million potential signals to test; imagine how many you can come up with from Big Data.

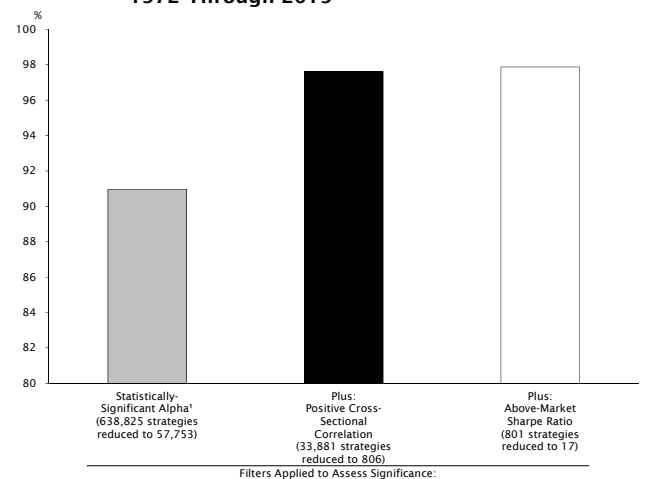
Exhibit 21: U.S. Stocks
Number of Potential Alpha Strategies that Appear Significant Under Classical Hypothesis Testing 1972 Through 2015



Source: Chordia, T., Goyal, A., and Alessio Saretto, 2017. "p-Hacking: Evidence from Two Million Trading Strategies." Working Paper.

¹ 5% level used. Alpha is based on the Fama-French-Carhart model which adjusts for the market, size, book-to-price, and momentum factors.

Exhibit 22: U.S. Stocks
Share of 2.1 Million Potential Alpha Strategies that are "Fake" After Adjusting for Multiple Hypothesis Testing 1972 Through 2015



Source: Chordia, T., Goyal, A., and Alessio Saretto, 2017. "p-Hacking: Evidence from Two Million Trading Strategies." Working Paper.

¹ 5% level used. Alpha is based on the Fama-French-Carhart model which adjusts for the market, size, book-to-price, and momentum factors.

But Don't Smash the Robotic Looms Just Yet

Having said that, going to the Luddite extreme and dismissing Big Data completely as a passing fad isn't the right approach either. There are certain to be some needles hidden in the Big haystack, even for long-term investors. Returning to the conference calls, there are in fact some promising avenues that favor investors over traders. First, the efficacy of conference call sentiment is much higher outside the U.S., where information is less evenly distributed and the competition for alpha is less vicious (see Exhibit 23). That's a promising topic for future research.

Second, what's discussed on conference calls can be helpful when it buttresses a theory on how the world works. For example, if the company management or the analysts on the call discuss the return of capital – via buybacks for example – that's been worth about a percentage point of alpha over the following year (see Exhibit 24). What's interesting is that a *discussion* about returning capital has been a good thing for future returns, even if the company hasn't yet done so. In Exhibit 25 we sorted stocks based on their change in their shares outstanding over the prior

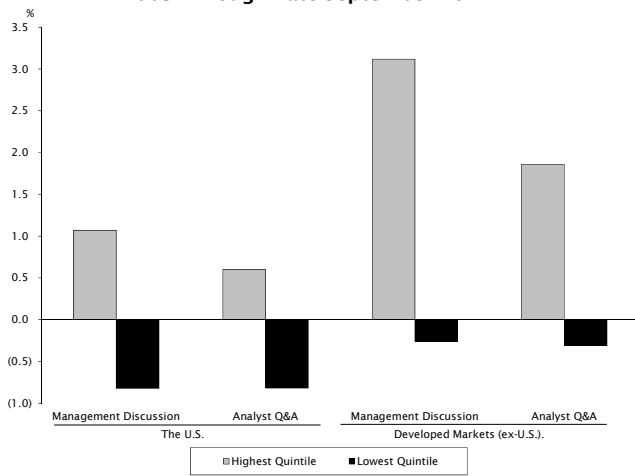
⁶ Chordia, T., Goyal, A., and Alessio Saretto, 2017. "p-Hacking: Evidence from Two Million Trading Strategies." Working Paper.

⁷ For example one of the best performing signals sorts stocks based on their Other Total Liabilities less Sale of Property divided by Shares Outstanding

year, meaning companies in the left-hand bars are those that have already done big buybacks in the past and those on the right-hand side have already diluted their shareholders by issuing equity over the past year. If there's no discussion of returning capital in the analyst Q&A, the black bars, then what the company has already delivered colors the future returns, with big buybacks outperforming big dilutions. But if return of capital is discussed in the Q&A what the company did in the past doesn't matter, see the grey bars.

We found a similar result for companies where return of capital is discussed by the management in their prepared remarks, with the exception of the very biggest diluters (see Exhibit 26). We've long found that favoring managements who are judicious in deploying their capital leads to long-term outperformance. But usually to assess their behavior we have to wait and see what they actually do with the firm's capital. By extracting clues on what they *might* do from conference call discussions we can get an early read on what future capital deployment looks like, and that's been worth something, even over investment horizons.

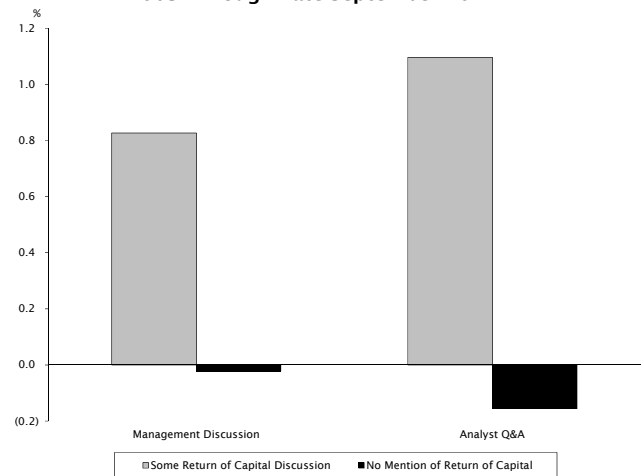
Exhibit 23: Developed Markets
Relative Returns to the Highest and Lowest Quintiles of Conference Call Sentiment by Region
Monthly Data Compounded to Annual Periods
2003 Through Late-September 2017¹



Source: FactSet Research Systems, Empirical Research Partners Analysis.

¹ Developed Markets (ex-U.S.) data begin in 2005 and returns are USD hedged.

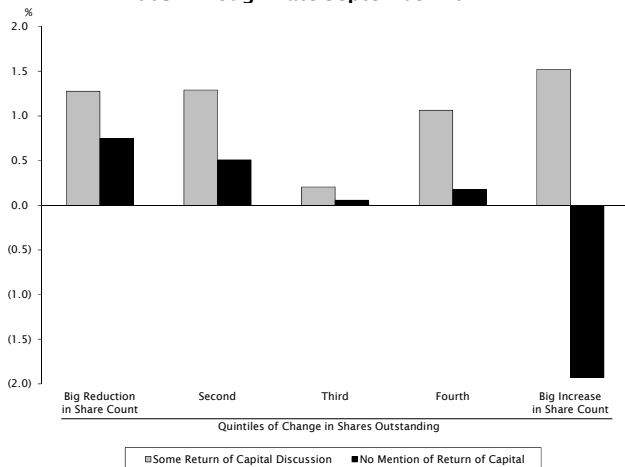
Exhibit 24: Large-Capitalization Stocks
Relative Return Contingent on whether Return of Capital was Discussed¹
Measured Over One-Year Holding Periods
2003 Through Late-September 2017



Source: FactSet Research Systems, Empirical Research Partners Analysis.

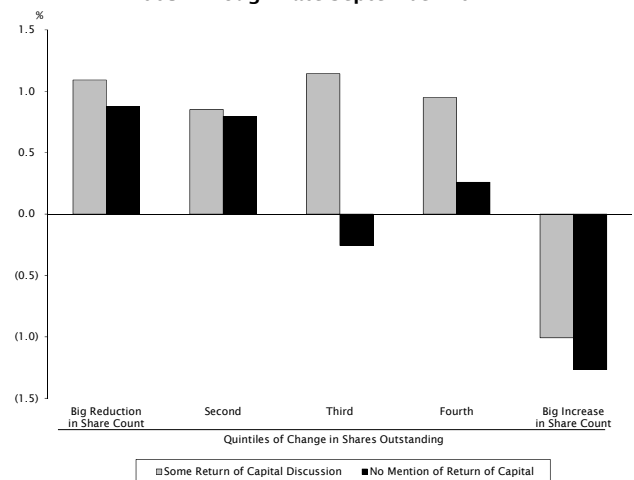
¹ Approximately one-third of the conference calls discuss return of capital.

Exhibit 25: Large-Capitalization Stocks
Relative Returns to the Quintiles of Change in Shares Outstanding
Contingent on Whether Return of Capital was Discussed in Analyst Q&A
Measured Over One-Year Holding Periods
2003 Through Late-September 2017



Source: FactSet Research Systems, Empirical Research Partners Analysis.

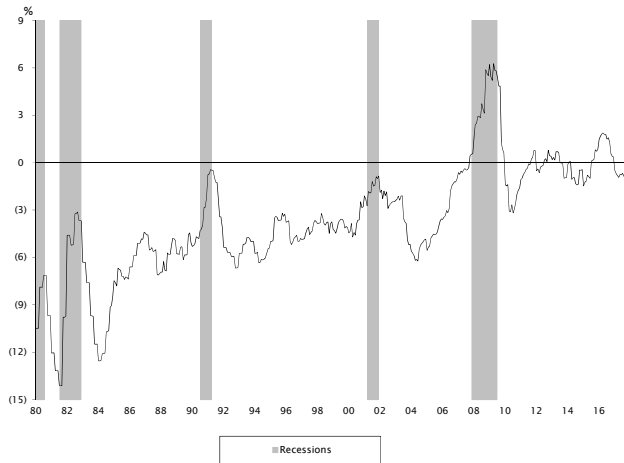
Exhibit 26: Large-Capitalization Stocks
Relative Returns to the Quintiles of Change in Shares Outstanding
Contingent on Whether Return of Capital was Discussed in Management Discussion
Measured Over One-Year Holding Periods
2003 Through Late-September 2017



Source: FactSet Research Systems, Empirical Research Partners Analysis.

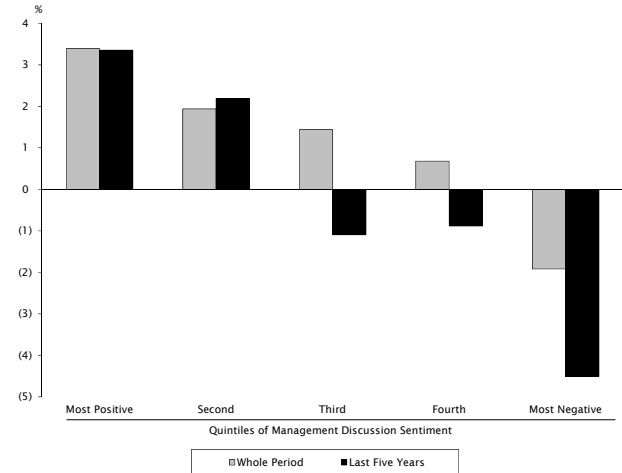
However, the really important point here is that all of this only makes sense if we have an economic rationale for why returning capital might be a good thing. In our case one of the critical reasons is shown in Exhibit 27: in the post-Crisis era the cutoff to make the top quintile of buybacks has been very close to the nominal GDP growth rate. That's made the return generated from big buybacks much more valuable, because growth of the economic sort is so hard to come by. Mechanistically a machine learning algorithm could sniff out that mentioning return of capital on a conference call has been good for future returns and bet on it, but it can't fully understand *why*. The risk is that the robots miss the fact that the relationship is readily changeable, if for example nominal growth accelerates.

Exhibit 27: Large-Capitalization Stocks
Lower Bound of the Best Quintile of Reduction in Shares Outstanding
Less the Year-over-Year Changes in Nominal GDP
1980 Through September 2017



Source: Bureau of Economic Analysis, National Bureau of Economic Research, Empirical Research Partners Analysis.

Exhibit 28: Large-Capitalization Stocks
in the Lowest Quintile of Price-to-Book
Relative Returns to the Quintiles of Management Discussion Sentiment
Measured Over One-Year Holding Periods
2003 Through Late-September 2017



Source: FactSet Research Systems, Empirical Research Partners Analysis.

Optimism Fuels Value, Skepticism is Healthy in Growth

We also noticed that management sentiment can serve as a useful indicator for a potential turnaround in a value stock, particularly one that screens as inexpensive on a deep-value metric like price-to-book (see Exhibit 28). The chart sorts stocks in the lowest quintile of price-to-book by the sentiment extracted from the management discussion section of the call. Given many of these stocks fell to low multiples because things have gone wrong, at the very least you want management to believe things are getting better. Interestingly, the opposite applies for growth stocks (see Exhibit 29). For stocks already held to lofty expectations it's better when managements are dour, perhaps because excessive bullishness means they're drunk on their own Kool-Aid.

The one exception to the rule of thumb that we should look for optimism in value stocks and pessimism in growth stocks is free cash flow yield (see Exhibit 30). For stocks with high free cash flow yields we actually want to buy into stocks where *analysts* are pessimistic. That's very consistent with our view that investors in aggregate have underestimated the durability of the extraordinary cash flows produced in the Bretton Woods II era. When analysts are disbelievers we should side with the companies and bet against mean reversion, at least until we see signs that the reign of the capital-lite, globalized free cash flow-producing machine is coming to an end. As we've discussed many times in our work, we don't yet see those signs.⁸

Appendix 1 on page 12 screens for stocks with high free cash flow yields where analysts have been bearish in the Q&A of the latest conference call and where return of capital was discussed by management. We're betting many of these companies will ultimately prove the analysts' skepticism wrong, particularly if their discussed return of capital pans out. Amgen, LyondellBasell, McKesson, HCA Healthcare, CA Technologies, and Owens Corning feature, among others. It's worth noting that three stocks on the list, McKesson, HCA, and Alliance Data Systems are also in our Distrusted 50 portfolio.

⁸ Portfolio Strategy August 2017. "Earning Margins Keep Expanding, Winners Keep Winning."

Exhibit 29: Large-Capitalization Stocks
Relative Returns to the Highest and Lowest Quintiles of Management Discussion Sentiment Contingent on the Value and Growth Attributes of the Stock Measured Over One-Year Holding Periods 2003 Through Late-September 2017

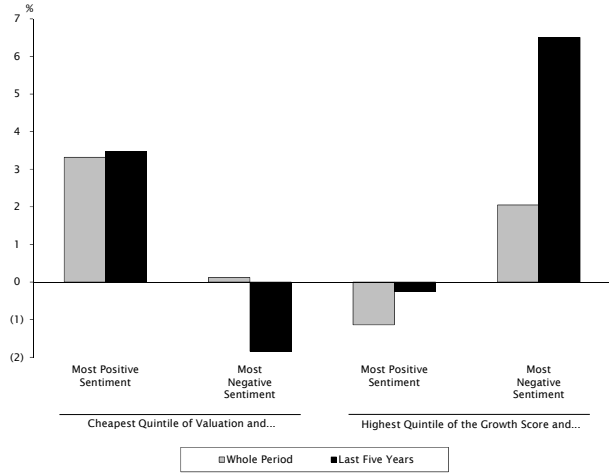
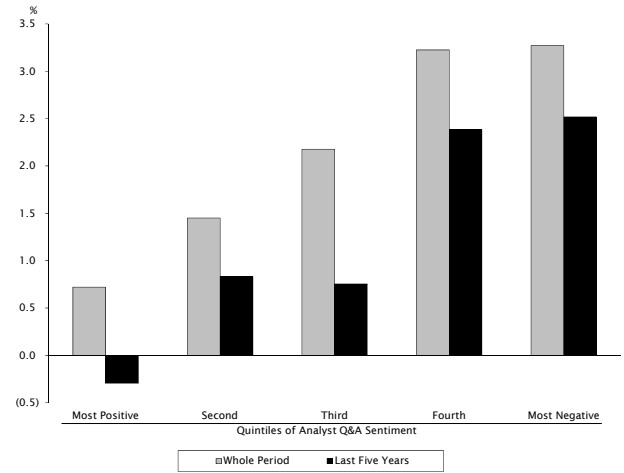


Exhibit 30: Large-Capitalization Stocks
in the Highest Quintile of Free Cash Flow Yield Relative Returns to the Quintiles of Analyst Q&A Sentiment Measured Over One-Year Holding Periods 2003 Through Late-September 2017



Source: FactSet Research Systems, Empirical Research Partners Analysis.

Source: FactSet Research Systems, Empirical Research Partners Analysis.

Appendix 1: Large-Capitalization Stocks in the Highest Quintile of Free Cash Flow Yield and the Worst Quintile of Analyst Q&A Sentiment Sorted by Whether Management Mentioned Return of Capital in Prepared Remarks As of Early-October 2017

Symbol	Company	Price	Conference Call Metrics:			Quintiles (1=Best; 5=Worst)								YTD Returns	Market Capitalization (\$ Billion)
			Free Cash Flow Yield	Analyst Q&A Sentiment (5=Most Negative; 1=Most Positive)	Return of Capital Discussed by Management (1=Discussed; 0=No Mention)	Memo: Change in Common Shares Outstanding	Valuation	Capital Deployment	Earnings Quality and Trend	Market Reaction	Core Model Rank				
AMGN	AMGEN INC	\$187.23	1	5	1	2	2	1	4	2	1	30.7	\$136.8		
LYB	LYONDELLBASELL INDUSTRIES NV	99.76	1	5	1	1	1	3	3	2	1	19.9	39.7		
MCK*	MCKESSON CORP	153.99	1	5	1	1	1	2	3	4	1	10.3	32.4		
HCA*	HCA HEALTHCARE INC	79.48	1	5	1	1	1	3	2	4	1	7.4	28.8		
CA	CA INC	33.57	1	5	1	4	1	1	3	4	2	8.2	14.1		
OC	OWENS CORNING	78.61	1	5	1	1	2	1	3	1	1	53.4	8.7		
SEE	SEALED AIR CORP	43.74	1	5	1	1	3	4	3	5	4	(2.5)	8.3		
COMM	COMMSCOPE HOLDING CO INC	33.80	1	5	1	3	3	4	1	5	3	(9.1)	6.5		
CSCO	CISCO SYSTEMS INC	33.85	1	5	0	2	2	1	3	4	1	15.0	168.7		
CAT	CATERPILLAR INC	125.51	1	5	0	4	3	1	1	1	1	38.6	74.2		
HUM	HUMANA INC	247.39	1	5	0	1	1	1	1	2	1	22.1	35.8		
FCAU	FIAT CHRYSLER AUTOMOBILES NV	17.96	1	5	0	5	1	3	2	1	1	97.7	34.9		
WMB	WILLIAMS COMPANIES INC	30.29	1	5	0	5	2	3	1	3	2	0.3	25.0		
FCX	FREPORT MCMORAN COPPER & GOLD -CL B	14.64	1	5	0	5	1	1	1	3	1	11.0	21.2		
MYL	MYLAN NV	32.53	1	5	0	5	1	5	5	5	4	(14.7)	17.4		
APA	APACHE CORP	45.44	1	5	0	4	2	1	4	5	4	(27.4)	17.3		
OMC	OMNICOM GROUP	74.70	1	5	0	2	1	1	4	4	2	(10.4)	17.2		
TXT	TEXTRON INC	54.50	1	5	0	2	2	2	2	3	2	12.4	14.4		
MSI	MOTOROLA SOLUTIONS INC	85.69	1	5	0	2	3	3	4	4	4	5.1	13.9		
ADS*	ALLIANCE DATA SYSTEMS CORP	225.75	1	5	0	1	1	1	1	5	1	(0.5)	12.5		
DVA	DAVITA INC	60.91	1	5	0	1	1	2	2	5	1	(5.1)	11.6		
BG	BUNGE LTD	69.32	1	5	0	4	1	3	3	5	3	(2.3)	9.7		
XRX	XEROX CORP	33.10	1	5	0	4	1	3	1	2	1	47.5	8.4		
HFC	HOLLYFRONTIER CORP	36.47	1	5	0	4	1	1	3	1	1	15.4	6.5		
SRCL	STERICYCLE INC	71.82	1	5	0	4	1	4	5	5	5	(6.8)	6.1		
EVHC	ENVISION HEALTHCARE CORP	44.85	1	5	0	5	1	5	5	5	5	(29.1)	5.4		
MD	MEDNAX INC	44.80	1	5	0	3	1	5	4	5	5	(32.8)	4.2		

Source: Empirical Research Partners Analysis.

* Member of the Distrusted 50 portfolio.