

Buying Outperformance: Do Share Repurchase Announcements Lead to Higher Returns?

Authors

"It is our belief that a company's board has a responsibility to recognize opportunities to increase shareholder value, which includes allocating capital to execute large and well-timed buybacks."

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On April 26, 2013, the board of Tibco Software [NASDAQ: TIBX] authorized and announced a share repurchase plan worth approximately 10% of its outstanding market value. The announcement followed a four week slide over which their stock price declined by 4%. Initial market response was mildly positive - the following trading day the share price increased 0.7%. What followed was stronger. Over the next four weeks the price climbed 11%, and after twelve weeks had risen 25%. To be fair, the overall market was also up. After accounting for overall market return, as well as concurrent premiums attributable to value, size, and momentum, TIBX's abnormal return over 60 trading days after the buyback announcement was a substantial 13%.

Anecdotes about individual stocks capture the imagination, but sensible investors realize selection bias and stock-specific factors are often at play. We prefer to examine average effects of signals across broad universes of stocks over long time frames. Share repurchase programs are an interesting candidate for study as a stock screen, as they have become increasingly prevalent over the years, replacing dividends as a common method of returning shareholder capital. We examine the returns surrounding buyback announcements to test whether, and when, buyback programs signal subsequent outperformance and shareholder value. We find:

- **Buyback announcements precede excess returns.** Stocks on average outperformed the equally weighted Russell 3000 by 0.60% over one month, and by 1.38% over one year periods following buyback announcements. Stocks also outperformed their sector and peer groups of similar size and value over the period Jan 2004 – July 2013.
- **Outperformance is greatest among small caps or larger % buyback magnitudes.** We find a significant interaction with capitalization, as well as with relative magnitude of the buyback relative to firm size, suggestive of liquidity effects. Among large caps, excess returns are realized quickly in the initial days following an announcement, but outperformance trails off over longer periods unless other factors are in play. Relative magnitude of the buyback is one useful conditioning factor. Large cap firms announcing buybacks of greater than 5% of its shares show statistically significant abnormal returns of 1.39% over the next 60 trading days after an announcement.
- **Reported Insider trading and buyback announcement signals are complementary.** We find synergy when insider buying and buyback announcements agree. Backtest strategies going long firms with net insider buying AND share repurchase announcements yield excess monthly returns of 0.95% over our test period. Buyback firms with contrary insider selling yield excess returns statistically indistinguishable from zero.
- **In Europe, we find post-buyback outperformance over twelve months, but no significant excess return after 1 month.** Seasonal clustering of announcements in springtime is one potential explanation for the lack of observed short term outperformance.

1 Existing Buyback Research, Revisited

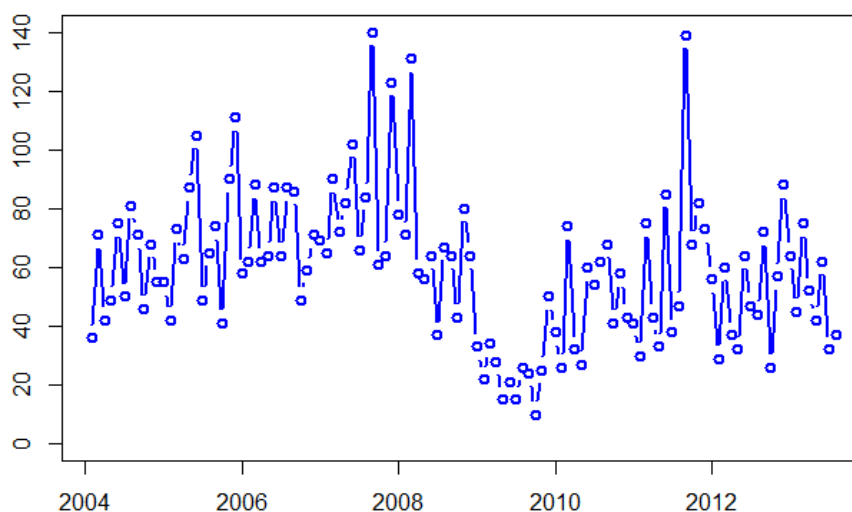
A wealth of academic research has been conducted over the years on the information content of buyback announcements and their effect on shareholder value. One notable paper by Ikenberry, Lakonishok, and Vermaelen, “Market Underreaction to Open Market Share Repurchases”, was written in 1994 before the buyback programs were as prevalent as they are today, but it is a useful reference and template for a fresh analysis.

In that landmark study, Ikenberry, et al found that publicly-traded shares of repurchasing firms outperformed the market over one and twelve month horizons, and also beat comparable benchmarks including matched portfolios of companies with similar size and value profiles. To test whether their 1994 findings still hold true in more recent times, we apply their methodology over the time period January 2004 through July 2013.

We begin by identifying the dates of all buyback announcements by Russell 3000 companies, and apply a conservative lag to allow for practical implementation. Assume an investor purchases publicly traded shares on the calendar month end following the announcement [with minimum 1 day lag; so if an announcement is made on the last trading day of the month, purchase is delayed until the following month end.] We then measure the forward 1 and 12 month returns of that investment and compare it to an assortment of benchmarks. We compare buyback firms’ returns with the equal-weighted market return, and also relative to peers in the same sector, size decile [by market cap], value quintile, and to peers within a 10 x 5 matrix of matching size and value.

For simplicity, we recognize all buyback transactions announced by companies, regardless of the repurchase method used. Repurchase types include the more popular open market transaction method, or other less common methods such as the Dutch auction system. The number of actionable announcements per month is reasonable for practical portfolio formation, with roughly 20 to 140 buyback announcements per month in the Russell 3000 over the research period frame 2004-2013, as shown in Figure 1:

Figure 1 Number of Buyback Announcements per Month, Russell 3000



Source: S&P Capital IQ Transactions Database & Quantamental Research. Data through July 2013.

1.1 Results

Using this methodology we confirm the findings of Ikenberry et al, over a more recent time window. Firms in a broad US universe that announce buyback programs subsequently outperform the market, sector, size, and value comparables on a statistically and economically significant basis, over both one month and one year horizons. The left panel of Table 1 below shows the average one month forward return of a portfolio formed each month-end of firms which announced buybacks earlier in the month. Each row shows performance in excess of a different peer group benchmark. The last three columns show the mean, t-statistic, and hit rate of the excess monthly returns over the test period. The rightmost panel shows similar results with a 12 month holding period.

Table 1: Excess 1M & 12M Returns Following Buyback Announcement – Russell 3000

Forward Return in excess of:	Mean Return		Hit Rates	
	1 Month	12 Month	1 Month	12 Month
Market	0.60%***	1.38%**	65%***	54%
Sector	0.57%***	1.64%**	64%***	57%
Size Decile	0.56%***	1.02%	65%***	50%
Value Quintile	0.65%***	1.82%***	67%***	55%
Size & Value	0.54%***	1.04%*	65%***	48%

Universe: Russell 3000, Timeframe: January 2004 – July 2013, p-value: ***1% ** 5% * 10%

Source: S&P Capital IQ Quantamental Research.

Past performance is not a guarantee of future results

As the second column of Table 1 shows, monthly returns in excess of peers range from 0.54% to 0.65%, significant at the 1% level. We also find outperformance over 12 month periods [third column.] Except for the excess return on size comparables, all other 12-month excess returns were statistically significant. Monthly outperformance hit rates all exceed 64%, with all of them significant at the 1% level. The hit rates for 12-month excess returns were not statistically significant, though they were all above 50%.

1.2 Portfolio Formation Backtest and Lookback Horizons, and Signal Decay

It's informative to look at how this signal decays across time, and how it works in a portfolio formation backtest. We test the use of a lookback horizon for open plans – holding onto previously purchased stocks and selling if the repurchase program has been completed, or after a set time has passed since the announcement. Table 2 summarizes the performance of five monthly rebalanced strategies that buy and/or hold shares in companies who have an active share repurchase program that was announced in the past 1, 3, 6, or 12 months. The “no limit” portfolio holds all stocks with a currently active buyback program in place, no matter how old.

Table 2: Monthly Backtest: Long Firms with Active Repurchase Programs, by Announcement Lookback Horizon

Monthly Backtest - Buy firms with active buybacks at month end with lookback horizon

Universe	Signal Lookback Period	Mean excess return	Hit Rate	Avg. # Port. Stocks
Russell 3k	1 month	0.49% **	63% ***	57
Russell 3k	3 month	0.30% **	57%	165
Russell 3k	6 month	0.19%	53%	313
Russell 3k	12 month	0.09%	54%	559
Russell 3k	no limit	0.07%	51%	1326

Time period: January 2004 – Oct 2013 p-value: ***1% ** 5% * 10%

Fama-French adjusted excess returns for significant results available in Appendix Table 12

Source: S&P Capital IQ Quantamental Research. Past performance is not a guarantee of future results

Age of the buyback announcement is important. Though excess returns are positive for all lookback horizons, we find statistically significant active returns only at the 1 and 3 month horizons, indicating that a buy-and-hold strategy may be best with a 3 month maximum lookback horizon for announcements.

1.3 Interaction with Market Capitalization

Of practical concern for institutional investors, we found a significant interaction with market capitalization. Buyback outperformance has been strongest for smaller capitalization stocks, and weaker as market capitalization increases. We note this effect through a cross-sectional regression of forward returns versus the buyback signal and factors such as Beta, Size, Book-to-Price, and Momentum. Although we found no statistically significant loadings on those factors, we did find significant loading on the interaction of buybacks and size. Table 10 in the Appendix reports regression results for these factors, while Table 11 in the Appendix reports the results of regression against the interaction of buybacks and size.

Notably, the size interaction effect eliminates the average outperformance of buybacks in large caps. We find no significant excess return in the Russell 1000 at the 1 or 12 month forward level with our conservative methodology [with lags and no conditioning filters].

In the next section, we explore why this lagged methodology shows weak performance for large caps by using an event study methodology to examine daily market responses. We also examine the use of magnitude as a conditioning factor where large-cap outperformance does exist.

2 Event Studies with Buybacks in Large Caps

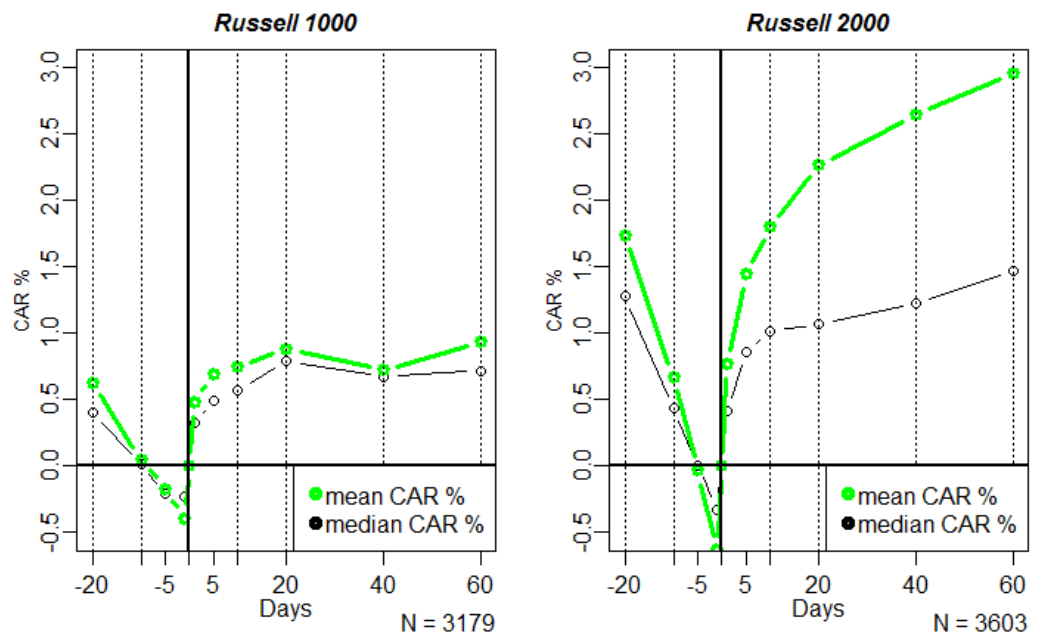
Event study methods allow us to more finely examine how stock returns respond in the trading days before and after a buyback announcement. For this event study, we use the date of the buyback announcement as the “event date”. Our methodology is as follows:

- Collect all event dates and security identifiers for the universe over the time frame
- Calculate cumulative raw returns for each stock/event over 20 days pre- and 60 days post-event.
- Convert raw returns to abnormal returns by accounting for “normal” returns that are attributable to other factors over that time period. We estimate normal returns around an event using cross sectional percentile regression, controlling for average market returns as well as the stock’s Beta, size, book-to-price, and momentum.
- Align the event abnormal returns by event time. Actual event time is defined as t=0, returns over 20 trading days prior to the event as t-20, and returns over 60 post-event trading days as t+60.
- Aggregate abnormal returns for each t period, computing median, mean, t-statistic and hit rate
- Plot and report aggregate abnormal return statistics.

2.1 Event Comparison: Large versus Small Capitalization

Using this methodology, we can examine firm capitalization effects on event return performance and timeliness, and observe differences between the large cap Russell 1000 and the small cap Russell 2000. Figure 2 illustrates the difference in magnitude and timeliness:

Figure 2: Cumulative Abnormal Returns Surrounding Buyback Announcements



Cumulative Abnormal Returns Surrounding a Buyback Announcement

Russell 1000, Jan 2004 - Jul 2013

t	-20	-1	1	5	20	60
median	0.40%	-0.23%	0.32%	0.49%	0.79%	0.72%
mean	0.62%***	-0.39%***	0.48%***	0.69%***	0.89%***	0.94%***
hit rate	53%***	43%***	58%***	57%***	56%***	52%***

Russell 2000, Jan 2004 - Jul 2013

t	-20	-1	1	5	20	60
median	-1.28%	0.33%	0.41%	0.86%	1.07%	1.48%
mean	-1.73%***	0.63%***	0.77%***	1.44%***	2.27%***	2.96%***
hit rate	43%***	56%***	58%***	58%***	56%***	54%***

Source: S&P Capital IQ Quantamental Research, p-value: ***1% ** 5% * 10%
 Past performance is not a guarantee of future results

The figures illustrate both similarities and differences between the cap universes. We observe a significant market response immediately following an announcement event for both large and small capitalization universes. In the large cap universe, mean abnormal returns peak after 3 days, and then remain relatively flat in succeeding days. In contrast, in the small cap universe we see mean abnormal returns steadily accumulate over the 60 days following the announcement event. The more liquid and efficient large cap stocks incorporate the news more quickly than in the small cap universe.

This explains the lack of excess return in the lagged signal Russell 1000 study discussed in Section 1.3. By conservatively lagging until the calendar month end, the method misses the abnormal return performance in the first few days post buyback announcement.

Interestingly, in both universes we see negative average returns in the days prior to the repurchase plan announcement. One possible explanation is that firms may selectively choose to announce repurchase programs at a time when their stock prices are falling. This may be either to capitalize on management’s perceptions of stock selling at bargain prices, or perhaps is an attempt to halt the price slide with a positive announcement. This observation is consistent with prior academic studies which examine timing of announcements. For further reading, we recommend Chan, Ikenberry, Lee, & Wang’s “Share Repurchases as a Potential Tool to Mislead Investors” [2009].

2.2 Interaction with Planned Size of Buyback Program

The rapid incorporation of buyback announcement information into prices of large caps suggests a challenge in constructing a practical and profitable investment strategy using buyback data within a large cap universe. So far we have not considered one important aspect of a share repurchase program: the magnitude of the announced buyback program relative to the market capitalization of the firm.

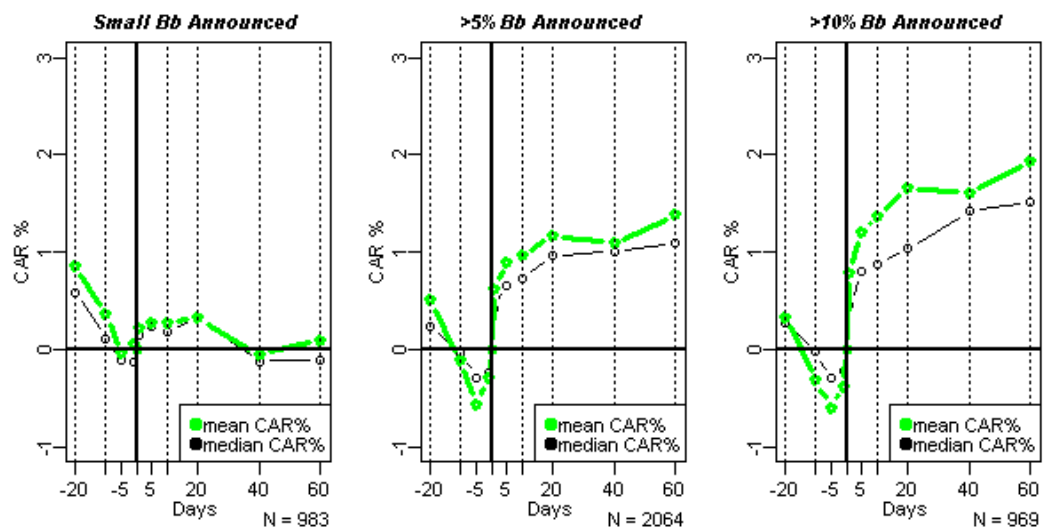
When announcing a new program firms may announce the size of the planned buyback in terms of number of shares authorized for repurchase, or total monetary spend authorized. We group

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announcement events into 3 categories: less than 5% of CSO (common shares outstanding), greater than 5%, and greater than 10%. In cases where the firm announces an authorized monetary value, we convert to percentage by dividing planned dollars by the company’s market cap one day prior to the announcement.

Figure 3 illustrates the abnormal returns within the large cap Russell 1000 around announcement events, categorized by the relative magnitude of the announced buyback.

Figure 3: Cumulative Abnormal Returns by Buyback Planned Size – Russell 1000



Mean Cumulative Abnormal Return Relative to Buyback Announcement Day

Trading Days After	-20	-1	1	5	20	60
Small buyback < 5%	0.86%***	-0.05%	0.21%**	0.28%*	0.32%	0.10%
Buyback > 5% of SO	0.51%***	-0.57%***	0.63%***	0.90%***	1.16%***	1.39%***
Buyback > 10% of SO	-0.33%	0.59%***	0.79%***	1.20%***	1.66%***	1.94%***

Universe: Russell 1000, Timeframe January 2004 – July 2013, p-value: ***1% ** 5% * 10%

Source: S&P Capital IQ Quantamental Research

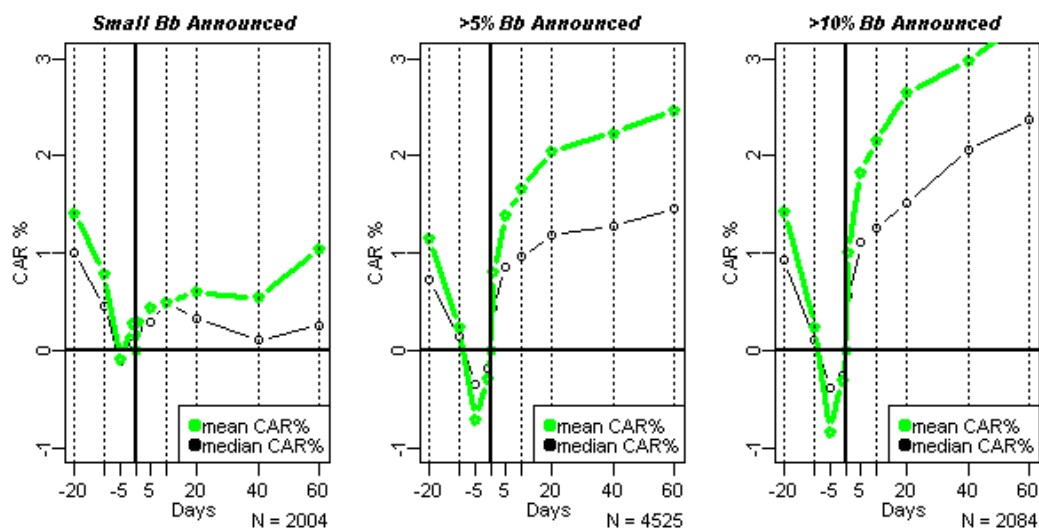
Past performance is not a guarantee of future results

Note the difference in event return performance when sorted by the magnitude of the authorized plan. For smaller buyback announcements (depicted in the left plot) the market initially reacts with statistically significant positive returns, but cumulative abnormal returns subsequently flatten out, and decline to near zero after 60 days. This suggests the smaller sized plans were not able to sustain the initial positive market reaction.

For announced buybacks of greater than 5% or 10% of shares, we note a pronounced abnormal return throughout the sixty trading days following the announcement. This suggests that relative magnitude of buyback authorizations may be a useful overlay filter to be used in screening, even for larger cap stocks.

For completeness, Figure 4 illustrates the same test, applied to the broad cap Russell 3000. As expected, the buyback magnitude filter is even more effective on a broader universe that includes small caps.

Figure 4: Cumulative Abnormal Returns by Buyback Planned Size – Russell 3000



Russell 3000

Mean Cumulative Abnormal Return Relative to Buyback Announcement Day

Trading Days After	-20	-1	1	5	20	60
Small buyback < 5%	-1.41% ***	-0.28% **	0.30% ***	0.44% ***	0.60% ***	1.04% ***
Buyback > 5% of SO	-1.15% ***	0.28% ***	0.80% ***	1.39% ***	2.04% ***	2.46% ***
Buyback > 10% of SO	-1.43% ***	0.31% **	1.01% ***	1.83% ***	2.64% ***	3.43% ***

Universe: Russell 1000, Timeframe January 2004 – July 2013, p-value: ***1% ** 5% * 10%

Source: S&P Capital IQ Quantamental Research

Past performance is not a guarantee of future results

2.3 Backtests with Magnitude of Planned Buyback as a Filter

Table 3 reports buyback backtest results of a strategy incorporating the magnitude filter within the large cap Russell 1000 universe. Some explanation of the panels:

The left panel shows the average excess returns of using a buyback announcement as a portfolio formation signal without filtering on magnitude. [This is similar to Table 2 but with the large cap sub-universe.] As noted previously, we find no significant outperformance in the Russell 1000 over the period with an unfiltered and lagged buyback signal.

The right panel shows the backtest results of adding an authorized magnitude filter to the strategy. The right panel represents the mean return of a strategy buying announcement firms authorizing greater than 5% buybacks, while shorting the firms authorizing a repurchase of less than 5%. We find economically and statistically significant spread returns with this backtest strategy, using a three or six month lookback horizon for buy and hold.

**Table 3: Monthly Backtest for Russell 1000 & 3000:
Long only on all Announcements, versus Long/Short on Magnitude of Buyback**

Russell 1000 - Long Only					Russell 1000 Long/Short BB Greater/Less than 5% of CSO			
Universe	Signal Lookback Period	Mean excess return	Hit Rate	Avg. # Port. Stocks	Signal Lookback Period	Monthly spread return	Hit Rate	Avg. # Long / Short
Russell 1k	1 month	0.03%	54%	27	1 month	0.58%	55%	16/8
Russell 1k	3 month	-0.04%	52%	79	3 month	0.57%**	57%	50/25
Russell 1k	6 month	-0.03%	55%	150	6 month	0.46%***	58%*	99/47

Russell 3000 - Long Only					Russell 3000 Long/Short BB Greater/Less than 5% of CSO			
Universe	Signal Lookback Period	Mean excess return	Hit Rate	Avg. # Port. Stocks	Signal Lookback Period	Monthly spread return	Hit Rate	Avg. # Long / Short
Russell 3k	1 month	0.49%**	63%***	57	1 month	0.78%**	58%*	36/17
Russell 3k	3 month	0.30%**	57%	165	3 month	0.43%**	58%*	109/51
Russell 3k	6 month	0.19%	53%	313	6 month	0.41%***	64%***	213/96

Time period: January 2004 – July 2013 p-value: ***1% ** 5% * 10%

Fama-French adjusted excess returns for significant results available in Appendix Table 12

Source: S&P Capital IQ Quantamental Research

Past performance is not a guarantee of future results

Even though the 1 month lookback horizon has the largest mean excess returns (right panel), the return is not statistically significant. When we use a short 1-month lookback window, only a small number of positions are included in the portfolio, and this concentrated portfolio leads to a higher return volatility. This impacts statistical significance negatively. Longer lookback/holding periods of 3 and 6 months allow for more companies in the portfolio for increased stability of returns and lower turnover. We also noted outperformance when using buyback magnitude as a filter in the small cap 2000. Again for the sake of brevity, we limit our presentation here to the large cap Russell 1000, where the challenge for achieving outperformance is greater.

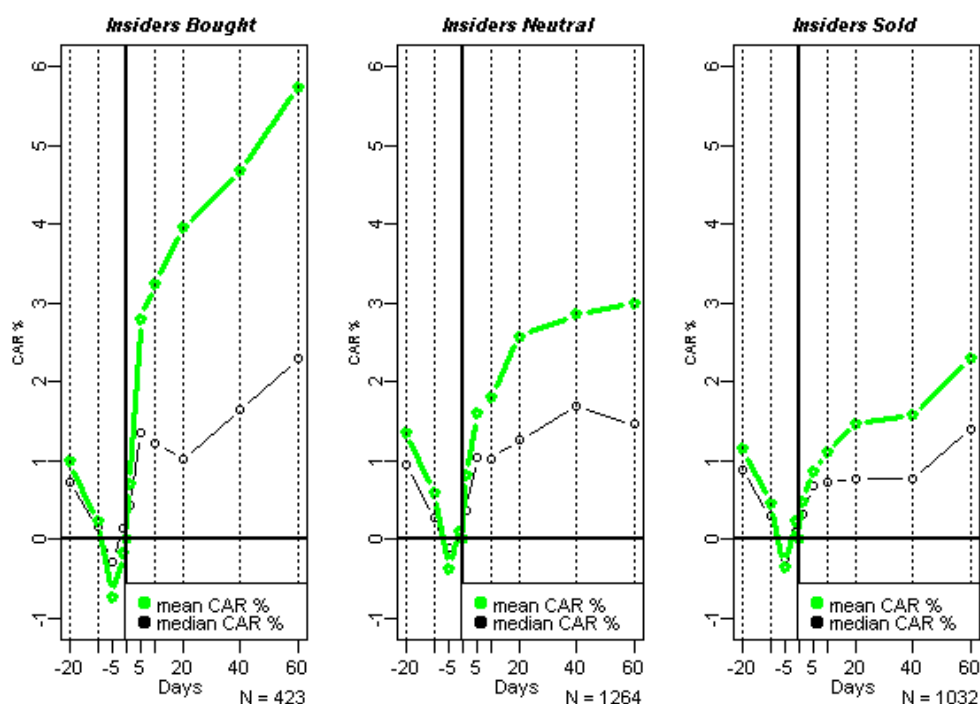
3 Interaction with Insider Trading Signals

Intuition suggests that if inside executives truly possess superior information about undervaluation of their firm, corporate buyback announcements and legal insider trades should agree. In 2012, Chan, Ikenberry, Lee, and Wang discussed this connection in “Informed Traders: Linking Legal Insider Trading and Share Repurchases.” Their paper suggests a complementary link between insider trades, share buyback programs, and subsequent share price outperformance.

3.1 Event Studies with Insider Trading Interaction

To test this intuition we overlay buyback announcement events with information in net insider trading buy/neutral/sell activity [as discussed in our October 2013 “Informative Insider Trading”]. We categorize buyback announcements into three groups, based on the trailing 3 month net insider activity [as of calendar month end prior to the announcement.] Figure 5 presents buyback announcement event results, grouped according to trailing net insider trading activity prior to the announcement. Note the time period for these plots is Sep. 2008 – May 2013, to match availability of insider trading data. We include the entire broad cap Russell 3000 universe for consistency with the prior paper, and due to need for larger sample sizes for statistical significance. We also consider all buybacks regardless of magnitude, in order to test as an independent factor.

Figure 5: Buyback Announcements & Net Insider Trading Activity



Mean CAR Around Buyback Announcement, by Trailing Insider Activity

Trading Days After BB Annc.	-20	-1	1	5	20	60
& Insiders 3M Net Bought	1.00%*	-0.72%***	0.70%**	2.80%***	3.96%***	5.74%***
& Insiders 3M Net Neutral	1.37%***	-0.37%***	0.83%***	1.60%***	2.58%***	3.01%***
& Insiders 3M Net Sold	1.16%***	-0.35%***	0.48%***	0.88%***	1.48%***	2.29%***

Universe: Russell 3000. Timeframe: September 2008 – May 2013 p-value: ***1% ** 5% * 10%

Source: S&P Capital IQ Quantamental Research. Past performance is not a guarantee of future results.

We see a clear difference consistent with the intuition of synergy between insider activity and buybacks. The strongest performance following a buyback announcement occurs when insiders agree - buying shares with their personal money as well as with the firm's. The weakest outperformance, though still positive, is when insiders have been personally selling prior to launching company buying.

3.2 Backtests with Insider Trading & Buyback Interaction

We also examine practical backtest performance of portfolios formed based on trailing insider buy/neutral/sell activity and buyback signals. We backtest a 3x2 matrix of strategies: 3 portfolio strategies formed solely on trailing net insider buy/neutral/sell activity, and another 3 similar subset portfolios which also include a filter for buyback announcements in the prior three months.

Table 4 presents average monthly active returns for portfolios based on these 6 strategies. The top row shows average portfolio excess returns from buying stocks based solely on net insider trading over the trailing 3 months. The second row displays returns when a filter for a buyback announcement in the past 3 months is added. The final row shows the incremental effect of adding the buyback filter to the insider trading strategies. We use the broad cap Russell 3000 universe for consistency with the prior paper and to insure an adequate number of stocks in the portfolios with multiple filters.

Table 4: Backtest Portfolio Performance, by Trailing Insider & Buyback Activity

Average Monthly Excess Returns of Portfolios

3 Month Trailing Activity	Insiders Bought	Insiders Neutral	Insiders Sold	Spread Buy-Sell
Insider Sort Only	0.21%	0.05%	-0.36%*	0.53%
And Buyback Announced:	0.95%**	0.23%	0.19%	0.76%*

Average Number of Stocks in Portfolio

3 Month Trailing Activity	Insiders Bought	Insiders Neutral	Insiders Sold
Insider Sort Only	508	1458	979
And Buyback Announced:	32	84	75

Universe: Russell 3000. Timeframe: September 2008 - May 2013 p-value: ***1% ** 5% * 10%

Fama-French adjusted excess returns for significant results available in Appendix Table 12

Source: S&P Capital IQ Quantamental Research

Past performance is not a guarantee of future results

The strongest excess returns in the backtest occur when both a net insider buy and firm repurchase announcement occur together: We observe 0.95% average monthly excess return, which is statistically significant at the 5% level.

In contrast, when a mixed message occurs - a buyback program is announced in conjunction with net insider selling in the previous 3 months - we find negligible outperformance of 0.19% [second row, third column], which is not statistically different from zero.

4 Buybacks In Europe and Australia

S&P Capital IQ began actively collecting European and Australia buyback transactions in 2005, while collection for Asia and the Rest of World began in 2009. We focus here on backtest results for Europe and Australian universes due to the longer history which affords greater statistical power. We hope to focus on Asian buybacks at a later date.

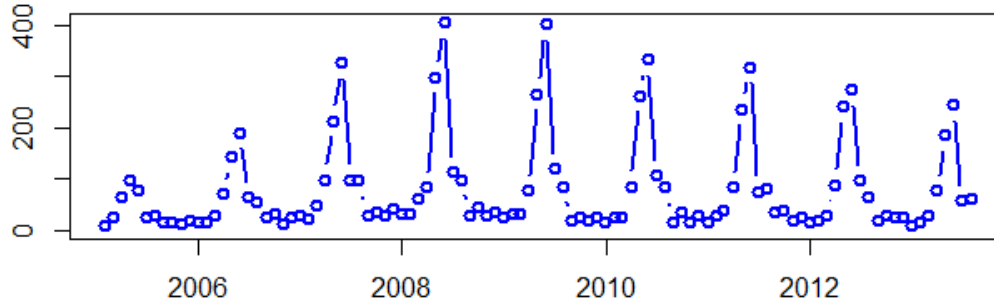
We note two differences between the developed Europe and Australia regions and the United States in regards to buyback announcements:

- [1] Seasonal clustering of buyback announcements in Europe & Australia
- [2] No significant outperformance in the 1 month period following a lagged buyback announcement in Europe & Australia. In the 1 year period following an announcement, we observe economically significant outperformance, but this is only marginally statistically significant.

4.1 Seasonal Clustering of Announcements

In the US, announcements tend to be evenly distributed throughout the calendar year (as shown previously in Figure 1.) In Europe and Australia, the timing is more seasonal. Figure 6 shows the number of announcements by month across the combined BMI-Europe DM and BMI-Australia universes. The number of announcements is highly concentrated in the months of April and May of each calendar year, as many companies announce repurchase programs at the time of their annual earnings releases and shareholder meetings.

Figure 6: Number of Buyback Announcements per Month, BMI-Europe & Australia



Source: S&P Capital IQ Transactions Data and Quantamental Research. Data through July 2013.

4.2 BMI-Europe and Australia Excess Returns following Announcement

We repeat the methodology described in section 1 with Europe & Australia: assume purchase of firms at calendar month end following a buyback announcement, and measure 1 and 12 month returns in excess of various peer benchmarks. Table 5 presents our findings for BMI-Developed Europe & Australia for the time period of January 2005 through July 2013.

Table 5: Excess Returns after Buyback Announcement - BMI-Europe & Australia

1M Fwd. Return in excess of:	Monthly mean excess return	t-statistic	Hit Rate	12M Fwd. Return in excess of:	12M mean excess return	t-statistic	Hit Rate
Market	-0.07%	-0.3	50%	Market	1.46% *	1.7	58%
Sector	-0.09%	-0.5	50%	Sector	1.05%	1.2	54%
Size Decile	-0.14%	-0.7	49%	Size Decile	1.09%	1.4	53%
Value Quintile	-0.12%	-0.6	48%	Value Quintile	1.22%	1.4	55%
Size & Value	-0.14%	-0.7	48%	Size & Value	0.99%	1.3	54%

Time period: January 2005 – July 2013 p-value: ***1% ** 5% * 10%

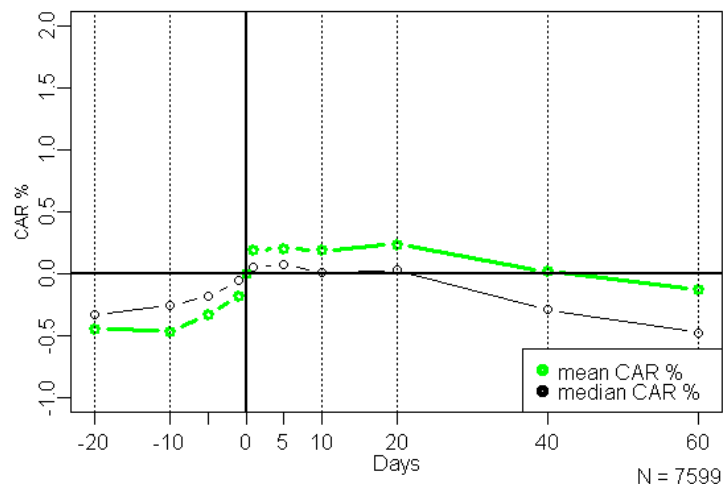
Source: S&P Capital IQ Quantamental Research. Past performance is not a guarantee of future results

As mentioned, we observe no significant outperformance at the 1 month time frame following the announcement. This is not surprising, given the clustering of announcements around the same time of the calendar year, which increases the difficulty for announcing firms to differentiate from peers in the short run. We do find economically significant positive excess returns at the 12 month horizon, although they are only statistically significant in excess of the market at the 10% confidence level.

4.3 Event Study for BMI-Europe and Australia Announcements

We repeat our event study methodology (as discussed in Section 3) and find that excess/abnormal returns around buyback announcements are not significant in the short run in Europe & Australia. Seasonal clustering of announcements is one possible explanation. Figure 7 below illustrates event performance for buybacks in Europe and Australia.

Figure 7: Abnormal Returns Around Buybacks in Europe and Australia
BMI - Europe DM & Australia



Cumulative Abnormal Returns Surrounding a Buyback Announcement
BMI-Europe DM & Australia Jan 2005 - Jul 2013

Days	-20	-1	1	5	20	60
median	-0.34%	-0.06%	0.06%	0.07%	0.03%	-0.48%
mean	-0.45%***	-0.18%***	0.19%***	0.20%***	0.24%**	-0.13%
t-stat	-4.3	-4.7	6.2	3.7	2.3	-0.8
hitrate	53%***	52%***	52%***	51%	50%	48%***

Time period: January 2005 – July 2013 p-value: ***1% ** 5% * 10%

Source: S&P Capital IQ Quantamental Research. Past performance is not a guarantee of future results

5 Buyback Transactions Data Review

In recent years, firms have increasingly begun substituting share repurchase programs for dividends for a combination of reasons. Grullon and Michaely [“Dividends, Share Repurchases, and the Substitution Hypothesis” [2000]], partly attributed this trend to favorable market reaction repurchases when the tax penalty on dividends is higher. They also note that the introduction of SEC rule 10b-18 in 1982, which initially established safe harbor provisions and rules for firms to enact repurchase programs which gradually led to firms adopting buybacks without fear of manipulation charges. Others [Chan, et al] have noted the flexibility of buyback programs and utility as a tool to signal [or mislead] investors.

In response to this trend, S&P Capital IQ began collecting data on buyback announcements as part of its Transactions data collection in October of 2003. Coverage began with North America and expanded to Europe and Australia in 2005, and to the rest of the world including Asia, Latin America, and Africa in 2009.

Our research for this paper is based on this S&P Capital IQ Transactions M&A dataset which contains data for over 47,000 buyback announcements. The data set includes, among other items, announcement date, authorized size of the buyback in shares or total dollar value, actual executed buyback sizes, current status, transaction features such as open market repurchase, tender offer, fixed price or Dutch auction, the publicly traded issue to be repurchased if applicable, and the text of the announcement. A number of tables and figures describing the current coverage and profile of the transactions data are provided in the Appendix for further exploration.

5.1 Distribution of Buyback Announcements by Sector, Year, and Region

Since 2008, the percentage of companies in the Russell 3000 announcing a new buyback program has varied from 8% to 21%, with the lowest percentage in the post-financial crisis year of 2009. The sectors with the largest proportion of announcing companies have been the Consumer and Information Technology Sectors. Utilities have the lowest proportion of programs announced.

Outside of the United States, we find that the proportion of buyback announcing firms is higher. In each of the past six years, 24% to 33% of companies in the S&P BMI-EAFE index have announced a repurchase program. Just as in the US, consumer sectors have a relatively higher proportion of repurchase programs. The proportion is comparably higher in Telecom and Utilities sectors.

A summary of the percentage of companies with buyback announcements by year, sector, and regional index can be found in Appendix Table 9.

6 Conclusion

US firms that authorize and announce share repurchase programs, aka buybacks, have historically shown statistically and economically significant outperformance following the announcements, and according to our research this trend has continued over the past nine years. Outperformance is greatest in smaller market capitalization stocks, and historically has continued even past the first few trading days following the announcement. In larger capitalization stocks, market response to repurchase announcements has been much faster, with the bulk of market response for announcements, on average, occurring in the first few trading days.

We also identify two significant interaction factors that have differentiated outperformance of buyback firms: the magnitude of the planned buyback, and the concurrence of corporate insider net buying near the time of the repurchase announcement have been shown to be informative overlays associated with enhanced post-buyback performance.

At this time we do not find significant short-term outperformance following buyback announcements in Europe and Australia. We do find economically significant outperformance over a longer time horizon of one year post-announcement. This outperformance is marginally statistically significant, partly due to a shorter data history. We hope to revisit buybacks in Asian markets at a later date.

Appendix

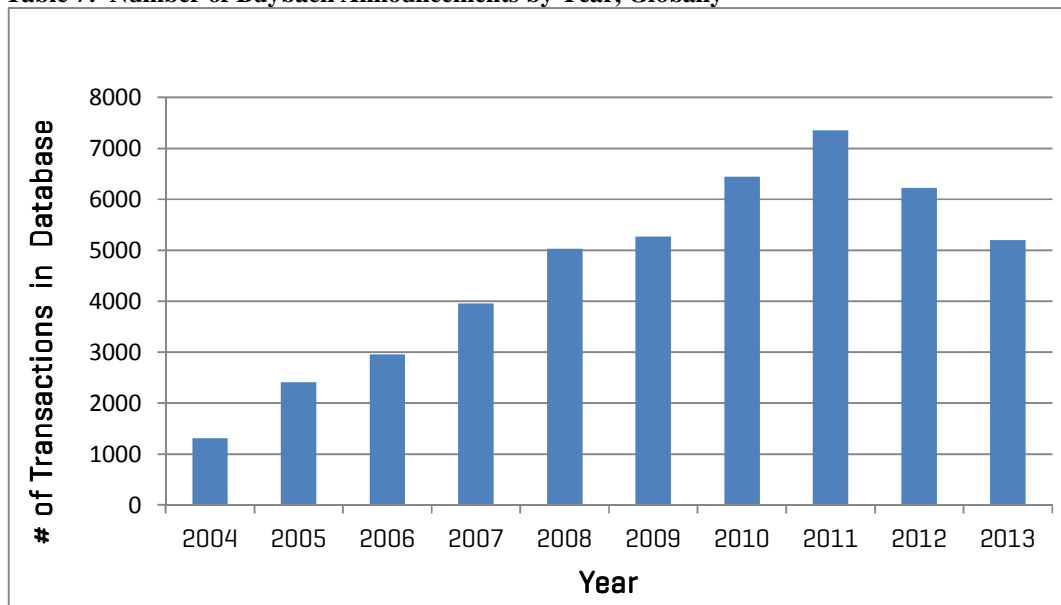
Table 6: Database Coverage of Buyback Transactions, By Region

Region	No of Buyback Transactions	% of Buyback Transactions
Unites States and Canada	13771	29%
Asia/Pacific Developed Markets*	11637	24%
Africa/Middle East	1967	4%
Asia/Pacific Emerging Markets	5057	11%
Europe	14528	31%
Latin America/Caribbean	679	1%
Total	47,602	100%

*Countries in Asia/Pacific Developed Markets include: Australia, Hong Kong, Japan, South Korea, New Zealand, and Singapore

Source: S&P Capital IQ Transactions Database and Collections Team as of November 6, 2013

Table 7: Number of Buyback Announcements by Year, Globally



Source: S&P Capital IQ Transactions M&A Database. Data through October 2013.

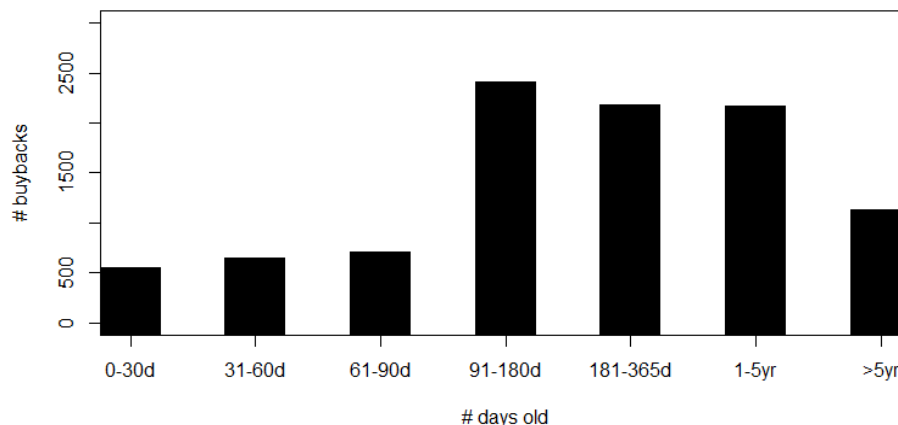
**Table 8: Number of Buyback Transactions, by Type
Jan 2004 - Oct 2013**

Type of Buyback	Number	%
Market Repurchase	43,553	91%
Negotiated Buyback	1,791	4%
Fixed Price Buyback	1,577	3%
Tender Offer	792	2%
Tender Offer - Dutch Auction	313	1%
Other	94	0%

Source: S&P Capital IQ Transactions Database

The timeframe of announced buyback programs varies – while most programs are completed in less than 12 months, some companies leave their authorized programs open longer, giving the company more flexibility to repurchase shares at will, without the need to alert the markets every year. Figure 8 displays the current age of open buyback programs listed in our database, as of November 2013.

Figure 8: Age of Active Buybacks



Source: S&P Capital IQ Transactions Database, as of November 2013

Table 9: Percentage of Companies in Russell 3000 Index with a Buyback Announcement, by Year and GICS Sector

Sector											
Year	All	Energy	Mat.	Indust.	Cons Disc.	Cons. Stap.	Health	Fin	IT	Tel.	Util.
2008	21%	15%	21%	21%	21%	18%	16%	18%	34%	20%	8%
2009	8%	5%	3%	6%	8%	13%	11%	9%	9%	11%	2%
2010	16%	8%	14%	12%	19%	20%	15%	14%	23%	11%	9%
2011	21%	9%	22%	22%	23%	27%	16%	21%	25%	18%	9%
2012	17%	10%	14%	18%	23%	15%	13%	18%	23%	9%	1%
2013	15%	10%	12%	12%	19%	20%	11%	14%	19%	18%	7%

Percentage of Companies with a Buyback Announcement by Year and GICS Sector

Universe: S&P BMI: EAFE

Sector											
Year	All	Energy	Mat.	Indust.	Cons Disc.	Cons. Stap.	Health	Fin	IT	Tel.	Util.
2008	24%	26%	18%	24%	24%	26%	23%	25%	26%	51%	22%
2009	30%	26%	18%	30%	33%	34%	27%	32%	30%	49%	34%
2010	33%	29%	21%	33%	36%	38%	26%	35%	30%	52%	42%
2011	31%	29%	20%	31%	35%	34%	24%	36%	30%	51%	37%
2012	31%	29%	22%	31%	34%	30%	24%	36%	29%	37%	34%
2013	25%	25%	17%	25%	28%	26%	19%	30%	24%	37%	25%

Source: S&P Capital IQ Transactions Database

Regression of R3k buyback signal versus common quantitative factors.

As a test to confirm that the alpha following buyback announcements is not simply a proxy for other known factors suggested by Fama, French, and Carhart, we regressed 1 month forward returns against the buyback signal as well the stock’s cross-sectional quintile scores of Market Beta, Market Capitalization, B/P, and 12 month momentum.

Table 10 below reports the results of monthly cross-sectional regression coefficients versus the announcement signal [0 or 1] and quintile scores of other common factors [1 to 5]. Note only the announcement variable shows statistically significant loading, indicating that buyback outperformance is not explained away by overlap with the other variables.

Table 10: Cross-Sectional Regression of Forward Returns vs. Buyback Announcement & Factor Quintiles

	Mean Regression Coefficient	t-statistic	p-value of Coefficient
(Intercept)	0.93%	1.0	31%
BB Announce	0.68%***	4.0	0%
Market Beta	-0.02%	-0.2	84%
Book-to-Price	-0.06%	-1.0	32%
Size	0.06%	0.8	43%
12M Price Mom.	-0.02%	-0.2	86%

Universe: Russell 3000, Time Frame: January 2004- July 2013 p-value: ***1% ** 5% * 10%

Source: S&P Capital IQ Quantamental Research

Past performance is not a guarantee of future results

Regression of R3k buyback signal versus size and interaction of size & buyback

Using a similar method as described above, we cross-sectionally regress forward returns versus the presence of a buyback announcement [0 or 1], the stock’s size quintile [1 to 5], and the interaction of the two variables [0:1 x 1:5]. Note we find significant negative loading on the interaction, which indicates lower returns with larger cap announcement firms.

Table 11: Cross-sectional Regression of Forward Returns vs. Buyback Announcement, Size, and Interaction

	Mean Regression Coefficient	t-statistic	p-value of Coef.
(Intercept)	0.72%	0.9	37%
BB Announce	1.89%***	3.8	0%
Size Quintile	0.03%	0.3	76%
BB/Size Interaction	-0.43%***	-3.8	0%

p-value: ***1% ** 5% * 10%

Source: S&P Capital IQ Quantamental Research

Past performance is not a guarantee of future results

Factor – Adjusted Returns and Correlations with Factor Styles

As a cross-check of the uniqueness of various backtest strategy returns presented in the paper, we regress the time series of portfolio returns against the well known Fama-French factor returns [Sourced from http://mba.tuck.dartmouth.edu/pages/faculty/ken.french/data_library.html] and examine the residual returns after accounting for those known factors.

We also compare the portfolio returns against the eight Style Returns [available in the S&P Capital IQ Alpha Factor Library] and examine the correlations against existing factors.

Table 12 Presents results of these tests against the most notable backtest returns presented in this paper. We find that the backtest strategies that showed statistically significant returns also retain their significance after adjusting for Fama-French Returns. As for correlations, the basic strategies based on the announcement signal alone show the highest, but reasonable correlations with the eight Style Factors. Most notably we see negative correlations with Value and Volatility, indicating that the announcement-based strategy tends to work best when these two popular quantitative strategies do not, offering a potential hedge.

Table 12: Fama-French Adjusted Returns and Style Correlations

Russell 3000 Universe - Buyback Signal with Varying Lookback Horizon

Strategy Type	Announce. Lookback Horizon	Fama-French Adjusted Returns	Analyst Expect.	Cap. Eff	Earn. Qual.	Hist. Growth	Price Mom	Size	Value	Vol.
BB Announce Only	1 Month	0.64%***	0.43	0.4	0.36	0.48	0.41	0.01	-0.29	-0.39
BB Announce Only	3 Months	0.42%***	0.46	0.42	0.39	0.52	0.44	-0.1	-0.35	-0.41
BB Announce Only	6 Months	0.31%***	0.38	0.35	0.34	0.45	0.39	-0.08	-0.22	-0.34

Russell 1000 Universe - Buyback Signal with Magnitude Filter & Varying Lookback Horizon

Strategy Type	Announce. Lookback Horizon	Fama-French Adjusted Returns	Analyst Expect.	Cap. Eff	Earn. Qual.	Hist. Growth	Price Mom	Size	Value	Vol.
Long/Short >5%/<5% BB	1 Month	0.45%	-0.1	-0.19	-0.18	-0.16	-0.2	0.17	0.16	0.25
Long/Short >5%/<5% BB	3 Months	0.49%**	-0.23	-0.21	-0.23	-0.26	-0.45	0.22	0.13	0.26
Long/Short >5%/<5% BB	6 Months	0.39%***	-0.17	-0.21	-0.19	-0.24	-0.41	0.02	0.19	0.24

Russell 3000 Universe - Buyback Signal with Insider Activity Overlay

Strategy Type	Announce. Lookback Horizon	Fama-French Adjusted Returns	Analyst Expect.	Cap. Eff	Earn. Qual.	Hist. Growth	Price Mom	Size	Value	Vol.
BB & Insiders Bought	3 Months	1.08%***	0.39	0.28	0.25	0.38	0.16	-0.2	-0.36	-0.26
BB & Insiders Neutral	3 Months	0.45%**	0.34	0.27	0.25	0.41	0.42	0	-0.27	-0.25
BB & Insiders Sold	3 Months	0.41%**	0.4	0.43	0.39	0.47	0.49	-0.07	-0.26	-0.44

p-value: ***1% ** 5% * 10%

Source: S&P Capital IQ Quantamental Research

Past performance is not a guarantee of future results

References

- Bonaime and Ryngaert [2013], "Insider Trading and Share Repurchases: Do Insiders and Firms Trade in the Same Direction?" *Journal of Corporate Finance*, Forthcoming. Available at SSRN: http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1361738
- Carhart, "On Persistence in Mutual Fund Performance" [1997] *Journal of Finance*. Available at SSRN: http://papers.ssrn.com/sol3/papers.cfm?abstract_id=8036
- Chan, Ikenberry, Lee, and Wang, "Informed Traders: Linking legal insider trading and share repurchases" [2012] *Financial Analysts Journal*, Vol. 68, No. 1, 2012. Abstract at SSRN: http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1990500
- Chan, Ikenberry, Lee, and Wang, "Share Repurchases as a Potential Tool to Mislead Investors" [2009] *Journal of Corporate Finance*, Vol. 16, No. 2, 2010. Abstract at SSRN: http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1485583
- Fama and French [1993], "Common Risk Factors in the Returns on Bonds and Stocks", *Journal of Financial Economics* 33, 3-56
- Fama and MacBeth [1973], "Risk, Return, and Equilibrium: Empirical Tests", *Journal of Political Economy* 81, pp 607-636
- Grullon and Michaely, "Dividends, Share Repurchases, and the Substitution Hypothesis" [2000], Working Paper Series. Available at SSRN: http://papers.ssrn.com/sol3/papers.cfm?abstract_id=222730
- Grullon and Michaely, "The Information Content of Share Repurchase Programs" [2002] Working Paper Series. Available at SSRN: http://papers.ssrn.com/sol3/papers.cfm?abstract_id=206328
- Ikenberry, Lakonishok, & Vermaelen. "Market Underreaction to Open Market Share Repurchases", [1994] NBER Working Paper No. w4965. Available at SSRN: http://papers.ssrn.com/sol3/papers.cfm?abstract_id=226564
- Ma, Oyeniyi, and Chen [October 2013], "Informative Insider Trading: The Hidden Profits in Corporate Insider Filings", S&P Capital IQ Quantitative Research http://img.en25.com/Web/StandardandPoors/SP%20Capital%20IQ%20Quantamental%20Research%20-%20Informative%20Insider%20Trading%20-%20October%202013_5232.pdf
- A. Craig MacKinlay [1997], "Event Studies in Economics and Finance", *Journal of Economic Literature* Vol. XXXV pp. 13-39
- Stephens, Jagannathan, and Weisbach, "Financial Flexibility and the Choice Between Dividends and Stock Repurchases" [1999] Working Paper Series. Available at SSRN: http://papers.ssrn.com/sol3/papers.cfm?abstract_id=148548

Our Recent Research

October 2013: [Informative Insider Trading: The Hidden Profits in Corporate Insider Filings](#)

In this report, we investigate the impact of the public disclosure of insider trading on equity prices, using both an event study framework and a portfolio formation approach. Leveraging S&P Capital IQ's Ownership database, we explore several practical methods of identifying "informative" insider trades, and how to construct a portfolio of stocks using recent "informed" insider transactions. We document the following results:

- Consistent with existing literature, insider trades are shown to be predictive of future stock returns. Companies whose corporate insiders are net stock purchasers (sellers) generate positive [negative] excess returns of 0.68% [-0.19%] within one week following the announcements of insider transactions. However, a significant portion of this excess return was driven by performance in 2009.
- Outside investors can earn economically significant excess returns by trading on "informative" insider trading signals. Specifically, insider trades classified as "opportunistic", "intensive" and "directional change" predict excess returns of 0.48%, 2.47% and 0.55%, respectively, [all statistically significant at the 1% level] in the following week.
- Mimicking the net purchase actions of CEOs yielded an excess return of 1.27% over the next one week. However, this excess return was concentrated in 2008 and 2009.
- A trading strategy based on the three characteristics: opportunistic, intensive and directional change, yielded 0.36% weekly excess returns after transaction costs, statistically significant at the 1% level.

September 2013: [Beggar Thy Neighbor – Research Brief: Exploring Pension Plans](#)

Pension underfunding is a worldwide problem. There has been an unending wave of news stories about cities and states across the United States suffering from defined benefit pension funding shortfalls, but these issues extend far beyond the public sector and beyond the United States as well.

In this brief we leverage S&P Capital IQ datasets to examine:

- Companies with the strongest and weakest pension funding status globally.
- Companies with the most optimistic return and discount rate assumptions globally.
- The relationship between projected and realized pension portfolio returns.
- The historical global trends in funding status, portfolio returns, and discount rates.

August 2013: [Introducing S&P Capital IQ Global Stock Selection Models for Developed Markets: The Foundations of Outperformance](#)

In this report, we explore the efficacy of different stock selection strategies globally and use this information to develop a suite of robust global stock selection models targeting Canada and the developed markets of Europe and Asia Pacific. Our global models were developed using S&P Capital IQ's industry leading Global Point-in-Time data, as well as the Alpha Factor Library, our web-based global factor research platform. We find that each of our Global Stock Selection Models for Developed Markets yield significant long-short spread returns and information coefficients at the 1% level. This performance is also robust providing similar statistical significance after controlling for Market Cap and Beta exposures.

July 2013: [Inspirational Papers on Innovative Topics: Asset Allocation, Insider Trading & Event Studies](#)

Inspiration drives innovation. The writings of Plutarch inspired Shakespeare, Galapagos finches inspired Darwin, and the German Autobahn inspired Eisenhower, but what inspires investment researchers to develop the next innovations for investors? When we get a new investment idea, we seek out literature on that topic to inspire us to bring the idea to fruition. This literature can help to further develop our own thoughts, polish up and expand on our priors, and avoid the pitfalls experienced by earlier researchers. Inspiration from academia enhances our ability to provide innovative solutions for our clients.

June 2013: [Supply Chain Interactions Part 2: Companies - Connected Company Returns Examined as Event Signals](#)

Leveraging Compustat customer segment data, we investigate the impact of news for customers and subsequent stock returns for their suppliers, over the time period May 2000 through April 2011 and find that:

- Shares of suppliers with major customer relationships reacted to positive and negative earnings surprise of their customers with a statistically significant 0.93% to 1.97% abnormal spread in the 5 to 60 trading days following the surprise.
- A monthly rebalanced backtest of long-short supplier portfolios based on customer momentum would have resulted in a statistically significant 0.81% average monthly return, or 0.70% after controlling for common risk factor exposures.
- The customer momentum signal historically performs best in cyclical sectors such as Materials and Consumer Discretionary.

June 2013: [Behind the Asset Growth Anomaly - Over-promising but Under-delivering](#)

In this paper, we revisit the asset growth anomaly. Our results indicate:

- Asset growth demonstrates return predictive power globally with and without controlling for size, value, 12-month price momentum, and 1-month price reversal factors.
- Information coefficient correlation analyses indicate that there are potential diversification benefits from adding asset growth to other alpha factors.
- The companies that demonstrated the highest asset growth show subsequent deterioration in their top-line and bottom-line growth rates while companies that had the lowest asset growth experience subsequent improvement in their top-line and bottom-line growth rates.

April 2013: [Complicated Firms Made Easy - Using Industry Pure-Plays to Forecast Conglomerate Returns](#)

This month we build upon the work done by Cohen and Lou in their 2010 paper, "Complicated Firms", to determine if we can exploit industry level information from pure-play firms to predict the future performance of multi-industry, complicated firms. Leveraging Compustat segment data and Standard Industrial Classification (SIC) 2 digit codes, we exploit the lag in incorporating industry level information between simple and complicated firms to forecast the future performance of complicated firms. This is done by constructing pseudo-conglomerate returns, revisions, and valuation signals that combine the relevant information of all the industries in which a complicated firm operates. These pseudo-conglomerate signals simply weight industry level information (ex: industry return) proportionately to the complicated firm's reported sales in each industry.

March 2013: [Risk Models That Work When You Need Them - Short Term Risk Model Enhancements](#)

Equity Risk models are subject to a common criticism. We examined three techniques to further enhance the S&P Capital IQ Fundamental Factor risk models: Utilized the cross sectional dispersion of stock and factor returns by adjusting model factors and stock specific volatilities, change the model production frequency from monthly to daily to capture recent data, and shorten data look back window [1 year as opposed to 2 years] resulting in a more reactive model. Dispersion based adjustments, and high frequency of model generation both improved model results, while a shortened calibration window showed no appreciable improvement.

March 2013: [Follow the Smart Money - Riding the Coattails of Activist Investors](#)

Can profits be made by following the actions of activists? One month after the commencement of activism, the strategy yielded a market-adjusted excess return of 3.4%. After controlling for market, size, value, and industry, the excess return was 2.7. Twelve months after the disclosure of activist involvement, the strategy produced an average excess return of 14.1% after controlling for market, size, value, and momentum. We did not find evidence of return reversal up to two years after activism or of diminished excess returns in 2008 -- 2012 vis-à-vis those in 2003 -- 2007.

February 2013: [Stock Selection Model Performance Review: Assessing the Drivers of Performance in 2012](#)

In this report, we review the performance of S&P Capital IQ's four U.S. stock selection models in 2012. These models were launched in January 2011, and this analysis will assess the underlying drivers of each model's performance over the 12 months ended December 31, 2012.

January 2013: [Research Brief: Exploiting the January Effect Examining Variations in Trend Following Strategies](#)

At the beginning of every year, one topic frequented by many institutional investors is the January Effect. Investors often point to January as the most pronounced example of seasonality, where longer term trend following strategies suddenly underperform and short-term reversal and mean-reversion dominate. But which strategies have performed well in January and is this performance sustainable? With several studies in the Literature documenting the January Effect on company capitalization, we decided to undertake our own review using our S&P Capital IQ Alpha Factor Library (AFL), to examine various strategies' effectiveness during the month.

December 2012: [Do CEO and CFO Departures Matter? - The Signal Content of CEO and CFO Turnover](#)

November 2012: [11 Industries, 70 Alpha Signals -The Value of Industry-Specific Metrics](#)

October 2012: [Introducing S&P Capital IQ's Fundamental Canada Equity Risk Models](#)

September 2012: [Factor Insight: Earnings Announcement Return - Is A Return Based Surprise Superior to an Earnings Based Surprise?](#)

August 2012: [Supply Chain Interactions Part 1: Industries Profiting from Lead-Lag Industry Relationships](#)

July 2012: [Releasing S&P Capital IQ's Regional and Updated Global & US Equity Risk Models](#)

June 2012: [Riding Industry Momentum – Enhancing the Residual Reversal Factor](#)

May 2012: [The Oil & Gas Industry – Drilling for Alpha Using Global Point-in-Time Industry Data](#)

May 2012: [Case Study: S&P Capital IQ – The Platform for Investment Decisions](#)

March 2012: [Exploring Alpha from the Securities Lending Market – New Alpha Stemming from Improved Data](#)

January 2012: [S&P Capital IQ Stock Selection Model Review – Understanding the Drivers of Performance in 2011](#)

January 2012: [Intelligent Estimates – A Superior Model of Earnings Surprise](#)

December 2011: [Factor Insight – Residual Reversal](#)

November 2011: [Research Brief: Return Correlation and Dispersion – All or Nothing](#)

October 2011: [The Banking Industry](#)

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July 2011: [Research Brief – A Topical Digest of Investment Strategy Insights](#)

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May 2011: [Introducing S&P Capital IQ's Global Fundamental Equity Risk Models](#)

May 2011: [Topical Papers That Caught Our Interest](#)

April 2011: [Can Dividend Policy Changes Yield Alpha?](#)

April 2011: [CQA Spring 2011 Conference Notes](#)

March 2011: [How Much Alpha is in Preliminary Data?](#)

February 2011: [Industry Insights – Biotechnology: FDA Approval Catalyst Strategy](#)

January 2011: [US Stock Selection Models Introduction](#)

January 2011: [Variations on Minimum Variance](#)

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November 2010: [Is your Bank Under Stress? Introducing our Dynamic Bank Model](#)

October 2010: [Getting the Most from Point-in-Time Data](#)

October 2010: [Another Brick in the Wall: The Historic Failure of Price Momentum](#)

July 2010: [Introducing S&P Capital IQ's Fundamental US Equity Risk Model](#)

BUYING OUTPERFORMANCE: DO SHARE REPURCHASE ANNOUNCEMENTS LEAD TO HIGHER RETURNS?

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