

SHORT TERM STOCK PRICE CORRELATION TO EARNINGS SURPRISE FOR BIOTECHNOLOGY FIRMS

- **Goal:** Determine whether short-term stock price (1wk before, 1dy after, 1wk after, & w/o/w 1wk after earnings release) is affected by earnings surprise
- **Data:** Earnings data from Zacks.com, historical stock prices from Yahoo! Finance. Used the top 30 biotech holdings of from the IBB (NASDAQ Biotech Index)
- **Method:** Linear regression of earnings surprise (%) to % change in stock price 1wk leading to earnings release, 1 day after, 1 week after, and w/o/w 1 week after earnings release
 - After initially doing this and finding little correlation, I did the linear regression again but I removed earnings surprises with magnitude greater than 10%. Then I also adjusted stock prices to stock prices of IBB (NASDAQ Biotech ETF) to account for systemic changes in stock price
- **Conclusion:** The strongest correlation to earnings surprise was a moderate positive correlation between earnings surprise and % change in stock price w/o/w 1 week after earnings release adjusted by IBB ($R^2 = 0.3328$). All the other linear regressions had R^2 values of 0.25 or lower. It is difficult to predict the market with such a simplistic model, but there is a weak positive correlation between earnings surprise and % change in stock price 1 wk before to 1wk after earnings release
 - Possible stronger results if more data points
 - Other factors that are not accounted for
 - Adjust for market cap, EPS, or shares outstanding

