The Discreet Trader

The Honors Program
Senior Capstone Project
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Contents

Abstract

This paper examines insider trading, specifically trades by corporate insiders around quarterly earnings announcements. Announcements were broken up into three categories: earnings above analyst expectations, earnings below expectations, and earnings in line with expectations. Trade data was collected from the thirty companies of the Dow Jones Industrial Average from 2012-'13. The trades were sorted by purchases and sales by date and analyzed with the earnings report of which the trades were made. Only trades in the interval from twenty days before the announcement date to twenty days after the announcement date were considered. The prediction was that corporate insiders would leverage their inside knowledge to delay trading until after the earnings announcement. They would benefit financially by trading after the announcement and draw less attention from the SEC, as they delayed trading until the announcement became public information. However, knowing how the market would react would allow them to make a meditated decision. For an announcement that was below analyst expectations, corporate insiders should buy stock after the market reaction causes the price to drop. Our findings were that corporate insiders did in fact wait until the announcement day and overall were net buyers. The study will give better insights into how corporate insiders trade and how restrictions can be made to stop this insider trading activity.

Introduction

"There is no inherent moral duty for a newly arrived grain merchant to tell the people in the city of his arrival that there are other grain merchants one day behind him." This quote was spoken by Aquinas hundreds of years ago and is still a current concern in modern ethics. However, instead of grain merchants, the modern merchants are inside traders and their grain is information. Since the 1970s and 1980s, insider trading scandals have been a priority of the Securities and Exchange Commission (SEC) to root out and discourage future abuse. Although the SEC has been able to prosecute people who have been guilty of using inside information, the culture of insider trading in business has grown and in turn the SEC has vamped up its efforts to stop it.

Throughout the course of this paper, insider trading will be discussed; what insider trading is, who can be guilty of it, as well as the differences between legal and illegal insider trading. This paper will discuss several different studies about insider trading and the impact that each study had.

Insider trading has been studied, written about, and there have even been movies and television shows about it. It is a reoccurring theme in a financially driven world. People always want more, especially in the United States where money is a big motivator and an indicator of success. To quote Michael Douglas as Gordon Gekko in the movie *Wall Street*, "Greed is good". Gordon Gekko was a man who could do no wrong when it came to trading stocks. He always seemed to be the smartest guy on Wall Street. People flocked to him to get any piece of advice that could make them wealthy. His counterparts on Wall Street were in awe of his skill at picking stocks and resented him for they could not manage the same success. The grand illusion orchestrated by Gekko came to a crash in the movie when evidence of illegal insider trading was found. Gekko's public persona as the financial guru ceased to exist and everyone was aware of the fraud that he

was. The movie showed the stark truth on how one could benefit from having non-public information at their disposal to make a fortune. Despite Hollywood's ability to produce quite imaginative plots, there was in fact some truth in *Wall Street*. Gordon Gekko did not exist, but the traits embodied by Gekko lived in the man who the fictional character was based on. The man who rose and fell as Gekko did by trading on insider information was none other than Ivan Boesky. Boesky was one of the biggest cases in history of illegal insider trading and after the news of his deceit came out, the public lost substantial faith in traders and the markets. Not only did his trading affect the market, but he even impacted the market after he stopped trading. This shows the profound affect that illegal insider trading can have on the market.

Today, many of the cases of insider trading go relatively unnoticed, as many of the suspected or charged traders do not have the public persona or flair of an Ivan Boesky or Michael Milken. The biggest cases that drew attention most recently include those of Martha Stewart, Raj Rajaratnam, and Mark Cuban (Cuban was ruled innocent of all charges). The SEC has many tough obstacles to overcome, and with each victory, a new challenge arises as traders adopt and adapt to new ways to cheat the system. One of the new ways that insiders have begun to trade on inside information include trading based on price movements. Three major ways in which the price moves that an insider can be aware of include stock repurchase agreements by firms, earnings reports, and mergers and acquisitions. The study of this paper will focus on quarterly earnings announcements and the trades made by insiders around these announcements. The rest of the paper will include the literature review, the question this paper addresses, the hypothesis stated, the method of research and the data, and the results. The hope of the paper is that it will address issues of insider trading around quarterly earnings reports and benefit the investment world.

Literature Review

Introduction

"'Insider trading' is a term that most investors have heard and usually associate with illegal conduct. But the term actually includes both legal and illegal conduct. The legal version is when corporate insiders—officers, directors, and employees—buy and sell stock in their own companies. When corporate insiders trade in their own securities, they must report their trades to the SEC. Illegal insider trading refers generally to buying or selling a security, in breach of a fiduciary duty or other relationship of trust and confidence, while in possession of material, and/or nonpublic information about the security. Insider trading violations may also include 'tipping' such information, securities trading by the person 'tipped,' and securities trading by those who misappropriate such information" (SEC). Despite popular belief, insider trading is not only done by top executives and Wall Street traders, but it can be done by any employee in a company of which the stock is being traded. The main laws dealing with insider trading are the Securities Act of 1933 and the Securities Exchange Act of 1934. The 1933 act makes it illegal to trade based on non-public information. The act of 1934 regulates trading securities in the secondary market and the illegality of using non-public information to benefit oneself. Another important aspect of the Securities Exchange Act of 1934 is that it created the Securities and Exchange Commission (SEC). The Exchange Act gives the SEC power to sanction, fine, and punish market participants who violate federal securities laws. Corporate insiders are regulated primarily in four areas: 1) restrictions against trading on inside information, 2) recapture provisions for short-swing trading profits, 3) stringent and exact rules regarding sales of restricted and control securities, and 4) personal ownership reporting obligations (Goldberg [1973]).

Insider trading is split into two categories; legal and illegal. Legal insider trading can be any employee who trades stock of their company but does so with the same general knowledge of the company that is available to the public. Another example of legal insider trading is anyone who accidentally overhears information that is non-public. The person that overheard the information can trade without being at fault for breaking any insider trading laws. Illegal insider trading is using non-public information when trading to generate profits or to prevent any losses. Illegal insider trading is often hard to prove because it is usually one person's word against another. However, in some cases the SEC has been able to prove the use of such illegal trading through non-public information by witnesses and wire-tapping.

However, illegal insider trading is not what it once was. Public opinion is that it is corporate executives selling information to buyers in returns for large sums of cash. That still happens, but a safer way of cheating the system has become popular. Instead of a few big trades where millions of dollars are made, traders today are making many trades for thousands of dollars at a time. Instead of paying their tipsters up-front, they do it through commission fees, making it even more difficult for institutions like the SEC to catch these criminals. Instead of information on the performance of a company, the traders look for big purchases or the selling of shares by large institutions. The large investment by these institutions usually have a strong effect on the share price of the company they are buying or selling. If they buy a large amount of stock, usually in the hundreds of thousands, of shares of a company, the price may go up a few dollars before the market corrects itself and goes back down to its normal price. If traders know of this transaction before the public is made aware, they can buy the stock at normal price and then sell it at the higher price making a decent sized profit. Or, if the trader is aware that the institution is going to sell-off or "dump" a large holding of stock, they can short-sell the stock making a good profit on the difference.

(CNNMoney). This type of trading has become much more frequent in the market, and very few traders have been prosecuted for using this type of illegal trading. This type of scam is hard to track as the traders have become smarter at covering their tracks. Institutions are now changing the way they invest in hopes of reducing the amount of illegal profits made by these traders. Institutions are now slowly buying up small amounts of shares of a stock or a fund instead of buying large amounts at one time. Institutions are tightening the lips of their employees in hopes to reduce any leaks of potential investments. Institutions are starting to use electronic trading systems to avoid the human middleman who could learn of such information and inform others of the potential trade. Traders tend to be more discreet around inside information today when sharing information. They might call up a contact and hint at a company, but usually refrain from saying anything directly.

There are several types of news that insider traders base their trades on. The news that affects stock prices of a company can include mergers and acquisitions, stock repurchases by the company, and earnings reports. This paper will focus on inside traders' activity around earnings reports. An unexpected positive or negative report will cause the stock price of a company to fluctuate. This will cause non-insiders to buy or sell the stock depending on whether it is a positive or negative report. Corporate insiders learn of what the earnings will be, if it will be higher or lower than expected, and base their actions on how the market will react. If they know the report will be lower than expected, then the trader will wait to buy shares of stock after the announcement when the shares are at a lower price. If the earnings announcement is going to be higher than expected, then the trader will hold off on selling his or her shares until after the announcement is made to maximize profit. This paper will provide an overview of each type of trading based on news,

including what the news is, how stock prices are affected, and the studies done on each one. The results will be compared as will the methodology for each researcher.

IT & Repurchase Announcements:

The study done by Foued Hamouda and Mounira Ben Arab [2011], titled *Board of Directors and Insider Trading with Share Repurchase Programs*, focuses on insider trading practices by the board of directors of Fortune 500 firms. The study focuses on repurchase agreements done by companies between 1998-2004, and how directors on the boards of these companies used information to gain abnormal returns. The study looks from 1998 to 2004, where the amount of share repurchases by companies grew at an annual rate of 37.1%, whereas dividends during that time only grew by an annual rate of 7.9%. Another reason the study stops at 2004 is that in 2004 a law was put into effect to mandate companies to announce the repurchase agreement in advance.

The hypothesis of the study was that there would be an increase in refrained selling (that is board members would delay selling their shares until after the announcement) by board members before a share repurchase and a decrease in holdings after the share repurchase announcement. To test the hypothesis, the researchers first hand collected data using Lexis-Nexis, which has data on repurchase agreements and the Insider Filing Data Files (Form 4), which tracks insider trades. The study gathered data on 105 firms and 130 repurchase agreements. From there they were able to gather some correlations based on the data. One correlation was that the board members that were independent directors (those who did not work for the company), only agreed to repurchase agreements that benefited the shareholder. Another factor in the study is that the director of the

board, the chairman, has significant influence on the board. An independent chairman will focus on repurchase agreement that help the shareholders. A correlation from the study shows that a chairman that is also the CEO, will increase board member trading before and after repurchase agreement announcements as well as have more repurchase agreements by the firm than an independent chairman. To limit insider trading based on share repurchase announcements, in theory, the responsibilities of the CEO and chairman would have to be split up. Another relationship found in the study was the amount of stock options board members had. The more options members had, the less likely they were to get involved in trading on share repurchase agreements. This is because with a greater amount of shares, their concern lies with the long-term growth of the company, and like other shareholders, want what is best for shareholders. Directors who have fewer stock options are more likely to buy shares before agreements and sell shares after.

The Conclusion from the study is that insiders accelerate net selling in the six months after the share repurchase agreement announcement. There is also evidence of buying shares at a lower price before the announcement and selling the shares at the higher price after the announcement.

IT & Earnings Announcements:

Yong-Chul Shin and Weimin Wang [2011] conducted a study about corporate insiders, specifically CEOs, CFOs, and COOs, and their trading patterns around earnings announcements. They published their study in an article, *The Timing of Insider Trades around Earnings Announcements: Evidence from CEOs, CFOs, and COOs.* The goal of the paper was to determine whether top managers of a firm execute the timing of their trades based on their insider knowledge of both current earnings reports (that is earnings reports that are upcoming) and future earnings reports.

The authors state that top executives possess private information about the earnings of the firm because they are the drivers of corporate policy as well as overseeing the operations and finance of the firm. It is illegal for insiders to trade based on insider information, but it can be hard to prove in a court of law. They may have legitimate reasons for trading shares for personal consumption, diversification of wealth, and liquidity purposes. This allows managers to trade on news and conceal it as a legitimate transaction.

The method that is different in this research study is that the authors examine insider trades around two earnings announcement periods, rather than just a single period earnings announcement. The study states that for optimal returns, a trader would have to time their trades based on both the current period earnings report and the future period earnings report. An example of this would be if the current period earnings announcement is going to be bad, but the future period earnings announcement will be good, insiders will hold off buying or selling stock before the first report and then when prices dip after a bad earnings report, buy up shares and wait until they appreciate after the future good announcement. This will also make it more difficult for the SEC to track on trades made based on future periods rather than the current periods.

Furthermore, the study separates trades made by CEOs, CFOs, and COOs. The research in the report shows that only CFOs buy more shares after a bad report in anticipation of a good future report, and sell more shares after a good report when the future report is anticipated to be bad. When the current period earnings report is expected to be good as well as the future period report, all three managers buy more shares before the first report is released. There is empirical evidence that CFOs use their increased knowledge of the firm's financial performance to take advantage of future earnings prospects. Not only do CFOs have great influence in financial decisions of the

firm, but the CFO trades with more financial information than the CEO or COO. Thus CFOs leverage their financial knowledge to exploit differences in current and future earnings announcements to maximize profits.

The predictions of the study are thus: Managers will:

1. Purchase more shares before good earnings report, in anticipation of good future earnings prospects.
2. Purchase more shares after bad earnings report, in anticipation of good future earnings prospects.
3. Sell more shares after good earnings report, in anticipation of bad future earnings prospects.
4. Sell more shares before bad earnings report, in anticipation of bad future earnings prospects.
5. Sell fewer shares before good earnings report, in anticipation of good future earnings prospects.
6. Sell fewer shares after bad earnings report, in anticipation of good future earnings prospects.
7. Buy less shares after good earnings report, in anticipation of bad future earnings prospects.
8. Buy less shares before bad earnings report, in anticipation of bad future earnings prospects.

These predictions assume that managers that have information on current and future earnings reports will act on it or at least factor it in to their decision making process.

After making their hypotheses, the authors gathered the data. They gathered insider trading data from the Insider Trading Database by Thomson Financial and gathered data on company financials obtained from COMPUSTAT. The data ranges from 1992 to 2001 and ends in 2001 because the Sarbanes Oxley Act (SOX) of 2002[1] changed the disclosure practice of insider trades. This changed the power of the data of insider trading after SOX was passed because insiders trades were more easily scrutinized. All of the trades in this study pertained to open market purchases or sales by CEOs, CFOs, and COOs. This study separates purchases and sales, rather than using net sales. The data reported that insiders are net sellers, with a mean difference of $624,593.00. This is consistent with prior studies, which also indicate that insiders are net sellers. Also the typical company being studied is a small cap firm with a median market value of $635 million. After the trades data were run, it was found that 51% of all insider trades occur 30 days after the earnings announcement, 18% in the 30 days leading up to the announcement, and 31% of trades happen in the middle 30 days of the quarter. Many firms place restrictions on trades before the announcement to limit trades. Information asymmetry is higher in the period before the announcement, so it is much riskier for an insider to trade during this period without causing suspicion. Thus trading after the announcement dismisses a lot of suspicion. In terms of mean dollar amount of trades as a percentage of total market value of the firm, it is much larger in the period before the announcement than the other periods.

As for the results, after some statistical analysis is conducted a few patterns are recognized. For the CEO/COO of a company, there was more buying before good earnings reports and in anticipation of good future prospects (prediction 1). There was less buying before good earnings

[1]Sox changed the reporting window of trades from 40 days after the trade to 2 days after the transaction.

reports when the future earnings report was bad (prediction 7). There was also less buying before bad earnings reports and bad future reports (prediction 8). As for the CFO, there was more selling after good earnings report in anticipation of bad future reports (prediction 3). There was also more buying after a bad earnings report in anticipation of good future earnings reports (prediction 2). There was no evidence supporting prediction 4. The evidence shows that CFOs' trading is the most opportunistic because they have the most information on current and future earnings reports. The report shows how the top level executives are able to obtain abnormal returns using their inside knowledge of future earnings. It also highlights the difference in trading patterns between CEOs/COOs and CFOs.

Effective Methods in Limiting Insider Trading

There have been a few studies conducted based on incentives for insiders trading on their private information and what methods can be used to decrease those incentives. One of those studies examines how implementing a general counsel (GC) to monitor employee trades can reduce illegal trades. The study was titled *Corporate Governance and the Information Content of Insider Trades* and was written by Alan D. Jagolinzer, David F. Larcker, and Daniel J. Taylor [2011]. The study focused on restrictions placed on traders by the firms. Many firms have restricted trading windows, which are time periods where employees are not allowed to trade, usually before an earnings or big company news announcement. However, the study shows that during these restricted trading windows, insider profits are higher, but if the trades need to be approved by the general counsel, profits are significantly lower. The traders that make higher profits do not require general counsel approval. A hypothesis can be made that the GC is just for show, to make it look like the company

is serious. The numbers indicate that insider trades that do not require GC approval average .03% risk-adjusted returns. Other firms however, have general counsels that strictly monitor trades, and in fact need to approve a trade for it to go through. This reduces the incentive greatly to trade on inside information, as the risk-adjusted return for insider trades that require GC approval is -.01%. This is a .04% difference, which is quite large over time. The conclusion of this study is that active monitoring by a general counsel significantly reduces insider trading profits and that restricted trade windows do not appear binding for those with a loose GC.

Another study that examined a correlation between corporate insiders and insider trading was *Insider Activity, Tenure Length, and Managerial Compensation* by A. Can Inci [2012]. The study shows the correlation between length of employment and profit on insider trades. Managers that have a shorter tenure generally have a higher profit margin on insider trades. A theory for this is that managers who have shorter tenures have to rely on insider trading as part of their compensation. Managers with longer tenure have a longer period to grow their salary and thus have lower profit margins on trades. Firms that restrict insider trades tend to provide managers with a higher traditional compensation to cover the opportunity cost of the foregone opportunity to trade on insider information. If the firms liberalize insider trading, then they can expect to pay managers a lower traditional compensation.

As tenure increases, compensation, bonuses, and perquisites all increase, so the incentive to trade off of inside information decreases. There is a negative correlation between insider trading activity and tenure length. The study looked at the following:

1. Insider trading leads to positive and significant profit consistently.
2. Insider trading profit and tenure are negatively related across all types of insiders.

3. Insider trading profit has increased in recent years, especially after SEC rule 10b 5-1 in 2000.
4. Managers with longer tenure engage in insider trading transactions that have lower profits.
5. Managers with shorter tenures rely on insider profits as compensation, so insider trading profits are greater.
6. Different measurements of insider profits, such as calendar day returns of insider transactions, holding period returns across different horizons, or weighted average cumulative abnormal returns give consistent support to the above conjectures.
7. The results of the above propositions should be robust to various well-known empirical models, such as CAPM model, the Fama and French [1993] three-factor model, or the Carhart [1997] four-factor model.

The data is based on Form 4 filings of the SEC open market trades by officers, directors, and owners of more than 10% shares between the years of 1975 to 2011. Stock returns are obtained from the Center for Research Security Prices (CRSP). The sample size consisted of 1,294,618 reported insider purchase trades. A Conclusion from this study was that compensation based partly on insider trades is one way to reduce information asymmetry as the market could track the trades and adjust expectations to company news based on purchases or sales.

Similarities

Many of the sources reviewed had similarities. All dealt with similar data; that is trade sales and purchases, trade dates, and the title of the insider who made the trades. Some of the positions were more specific than others, but almost all dealt with some higher ranking employee. Of all the studies that were looked at, many of the authors had similar approaches. The authors first came up with a hypothesis. These included insiders acting on their information to make a financial gain.

The reports differed on what specific information each trader focused on. After the hypothesis was made, the data was collected. Stock trading information was gathered from a database, as well as filings made by insiders declaring the sales and purchases made. The trading data was over a span of years, each varying in length and had a large number of trades for a larger sample size, so the data would be more representative. Then the data was analyzed using various statistics models to find patterns. The authors often had several hypotheses about what the data would portray. For most of the studies, their hypotheses were correct, and the data proved several of the hypotheses wrong. After they had analyzed the data, each finished with a conclusion, wrapping up their study and perhaps making a recommendation to help fix asymmetrical information, or unfair trading.

Differences

The sources that were evaluated shared similarities, but in most cases had a lot of differences. Many of the studies had different theories on which type of information was more valuable to insiders. Some focused on earnings announcements, some on share repurchases, and some on corporate activity such as mergers and acquisitions. The data was fairly consistent, although some of the studies looked at sales and purchases separately, while others combined them and analyzed them as net sales. Some of the articles were strictly on economical inefficiency of insider trading and some had some aspects of morality. The articles provided a lot of information on the specific types of insider trading whereas the books focused more on laws and the effects of insider trading on the market. Between the sources a larger picture is formed on insider trading.

Motivation

This study will be beneficial in analyzing whether insiders are using information on earnings announcements to benefit themselves. It will look at not just top level executives, but other officers and lower level executives as well. It will also determine if the SEC has been effective in recent years on limiting abnormal returns by insiders, or if insiders are still using their information to profit. General Counsels will also have to be examined for the firms being analyzed because they will impact whether traders are trading more often.

Question

The question was first posed to me by Professor David Ketcham. He mentioned that he was curious about the topic of insider trading by corporate insiders. Typically, how the SEC catches insider trading is that traders draw attention by trading before earnings announcements as well as after. By trading before and after they maximize their earnings potential. If the announcement will be a lower than expected announcement, or a negative one, then traders will sell their stock before the stock price drops following the announcement and buy the stock after the announcement. The chart below demonstrates what the SEC typically looks for.

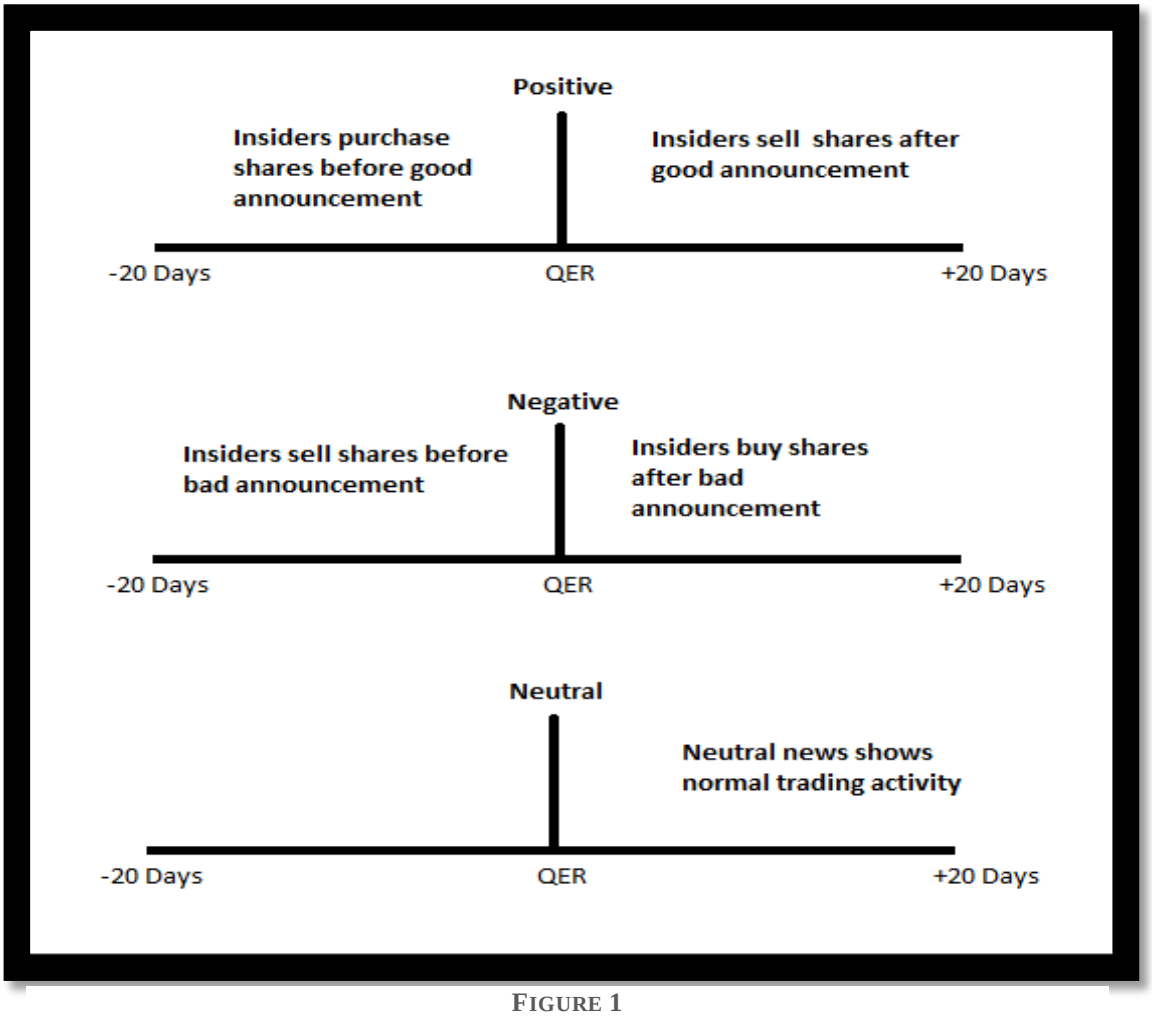


FIGURE 1

Professor Ketcham suggested the idea of corporate insiders delaying their trades of their own company stock until after a quarterly announcement in order to maximize their monetary gain. Since the traders delayed their trades until after the quarterly announcement came out and became public information, could it be considered insider trading since they delayed their activity until the information they held became public? I decided that since they made the decision based on private information and delayed their actions until the news became financially favorable to them, that it was insider trading. An example would be if John Doe, an officer of Company A, was planning on buying company stock, he would wait until after a bad earnings report came out that caused the stock price to drop. He would then buy the stock at a low instead of paying the higher price he would have paid before the missed earnings report had come out. It is unfair because of all of the traders that bought the stock right before the earnings report came out unaware that Company A would miss their earnings. Or if John Doe planned on selling his stock, he would wait until after a positive, or higher than expected earnings announcement came out to sell his stock at a higher

price than he would have normally received for the sale of his stock. Below is the actions I believe would result from insiders' trading post announcement dates.

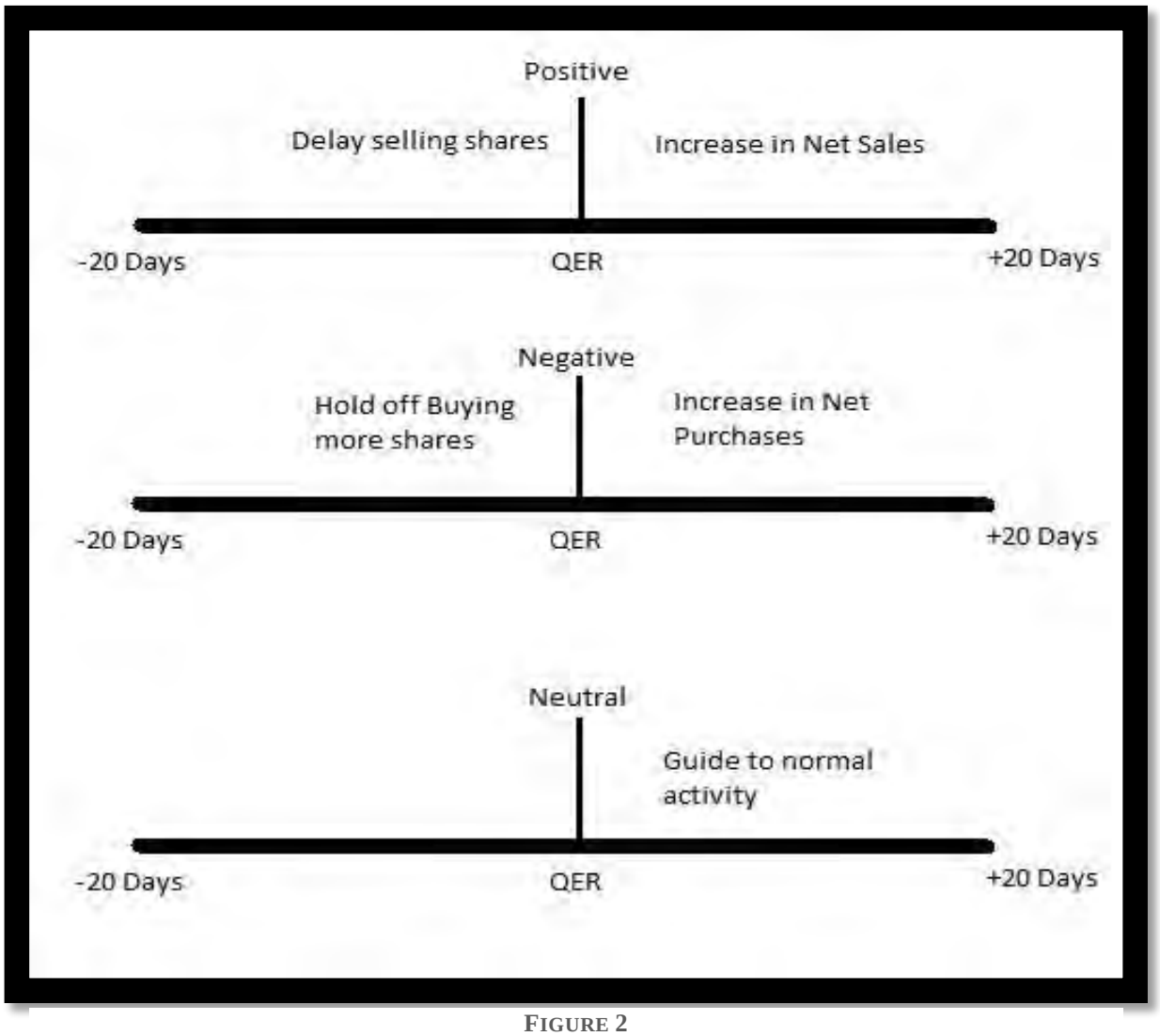


FIGURE 2

Method

In order to answer our question, research would need to be conducted. In order to conduct a study based on corporate insiders trading patterns around different earnings reports companies would have to be selected. The decision was to go after fairly large corporations, so enough information

could be obtained. It was agreed that the Dow Jones Industrial Average (DJIA) would give a large enough sample (30 of the largest US publicly traded firms). Having chosen the target firms, the date range for the years 2012 and 2013 was chosen. That would give the study two more recent years for firms in the DJIA and enough trade activity data by insiders could be collected from those years. The two years would provide the study with eight quarterly earnings reports per company, or two hundred and forty reports in total. After the reports were gathered, they had to be sorted into three categories; above expectations (positive), below expectations (negative), or in line with expectations (neutral). Using FactSet, the reports were sorted by company, by the earnings category (positive, negative, or neutral) and by date. On FactSet an earnings report will have analyst feedback post report as well as change in the stock price following the statement to indicate how the report faired against expectations. After all of the reports were organized, the corporate trade information was collected. After everything was put together, the findings were checked to see if they matched expectations.

Data

The data consisted of thirty companies, two hundred and forty earnings reports, and two years of corporate trades. Having selected the companies, the data was then organized by eight earnings reports for each company. After looking into FactSet, the report had the date next to it and either a Positive, Negative, or Neutral ranking next to it indicating the change in expected earnings. To the right is an example of how the reports were organized. With each report was also the company

QER	QER Date	Outcome
2012 Q1	25-Apr-12	**Neutral**
2012 Q2	25-Jul-12	**Lower**
2012 Q3	24-Oct-12	**Neutral**
2012 Q4	30-Jan-13	**Lower**
2013 Q1	24-Apr-13	**Neutral**
2013 Q2	24-Jul-13	**Neutral**
2013 Q3	23-Oct-13	**Higher**
2013 Q4	29-Jan-14	**Higher**

FIGURE 3

name and ticker (QER stands for Quarterly Earnings Report). This was done for each of the thirty companies. Figure 3 shows the reports for the company Boeing (BA).

After all of the earnings reports were organized, the trading data was then collected. It was gathered from the NASDAQ website. The trades came from corporate insiders and were made up from directors, officers, executives, VPs, and team members ranging from human resources to finance to operations. From there it was sorted through excel. It was filtered into two columns, Purchases and Sales. The trade date was recorded at first, leaving out the value of the trades. The first goal was to see if more trades happened in line with what our expectations were. Below is an example as to how the trades were sorted.

Purchase Dates	Sale Dates
3/12/2014	3/17/2014
3/12/2014	3/14/2014
3/12/2014	3/14/2014
2/18/2014	2/28/2014
2/11/2014	2/18/2014
2/11/2014	2/18/2014
11/18/2013	12/17/2013
10/24/2013	11/21/2013
9/16/2013	11/21/2013
9/11/2013	11/20/2013
9/11/2013	11/18/2013
9/11/2013	11/18/2013
9/11/2013	9/16/2013

FIGURE 4

After all of the trade data was sorted, the trades were organized by date and then referenced with the quarterly earnings reports to see if the trades fell within the time frame the study was testing. The study focused on dates for trades twenty days before the earnings report came out and twenty

days after the report was released which is shown in Appendix A through Appendix C of the appendix. This gave forty-one days' worth of trading, including day zero, or the day that the earnings were announced. To measure all of the corporate insider trading patterns all of the trades were added together. The reports were first separated into three groupings; positive, negative, and neutral. The focus was not on the actual dates, but the dates relative to the earnings announcement. So it did not matter that the trade date was on March 6, 2012, but that the trade date was ten days before the earnings announcement came out. If another trade date happened during the third quarter, say September 8, 2012, but was also ten days before the earnings announcement, then it too would fall under ten days before the announcement and the count for ten days before the announcement would be two. This process would be continued for each grouping of announcement types until all of the trades and quarterly earnings announcements were accounted for.

Although there was a group of thirty companies, two were eliminated from the analysis. GE and Johnson and Johnson were eliminated because of the lack of trading data that was available to get a full understanding of normal trading in corporations. That left 224 reports. Of those reports, there were 58 positive earnings announcements 37 negative earnings announcements, and 129 neutral reports. Of the trading data that fell within those earnings announcements dates, there was a total of 2,074 trades. There were 1,349 trades that were for purchasing of the stock and 725 trades for selling of the stock. After all of the data had been sorted I moved on to the analysis of the data.

Results

The results that were received were mixed. Insiders did in fact make more purchases after a negative quarterly earnings announcement. Before any the announcements came out there was little to no activity, which shows that corporate insiders were neither buying nor selling stock before the negative announcement, but delayed their actions until after the announcement was released. Of all of the trades 20 days before and 20 days after, 65% of the trades were purchases and 35% were sales. Of those trades, only 12.15% of trades fell between 20 days before the earnings announcement through one day before the announcement. The other 87.85% of trades came on the day of the announcement until 20 days after the announcement. The breakup of trade data can be seen in the appendix on the table Appendix D.

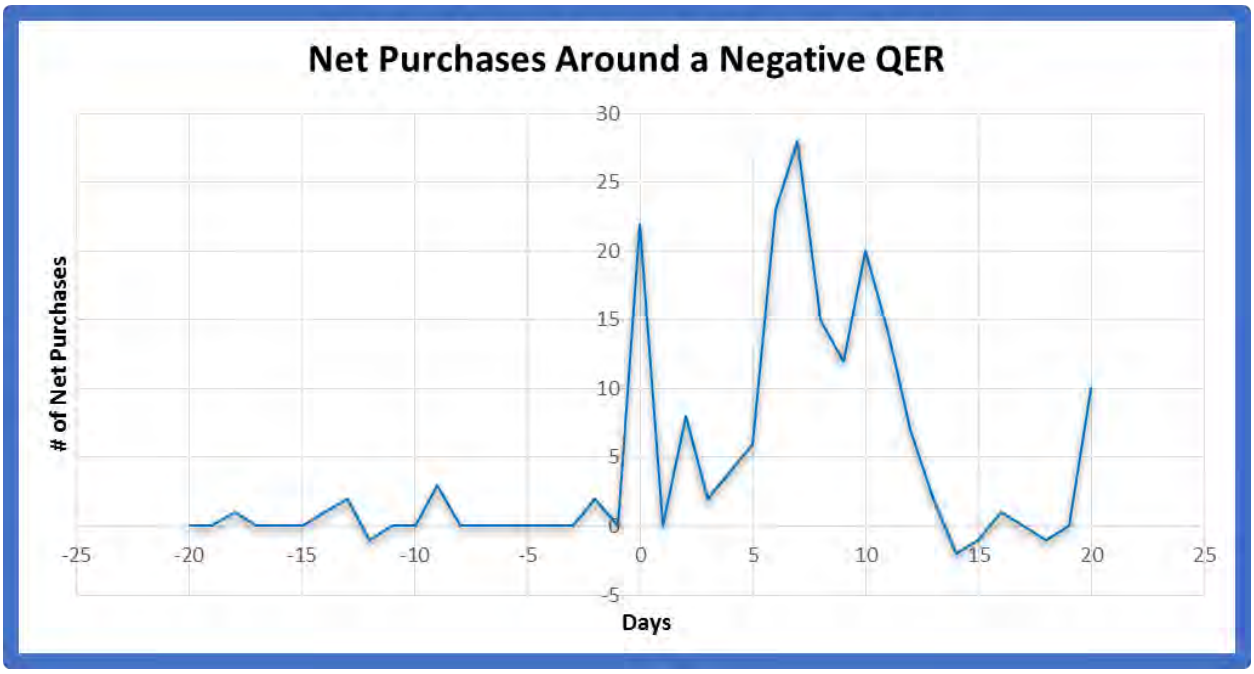


FIGURE 5

As can be seen in the Figure 5, the days between zero and ten days after announcements accounted for most of the trade activity. There were initial purchases the day of the report and then a lot of

net purchases on days five, six and ten. To clarify, net purchases is equal to the purchases on day x minus the sales on day x. Net Purchases on $Day_x = PD_x - SD_x$.

As for trades around a positive report, there was a result different from our hypothesis. There were more purchases than sales after the report, however the results were more volatile than with the positive report.

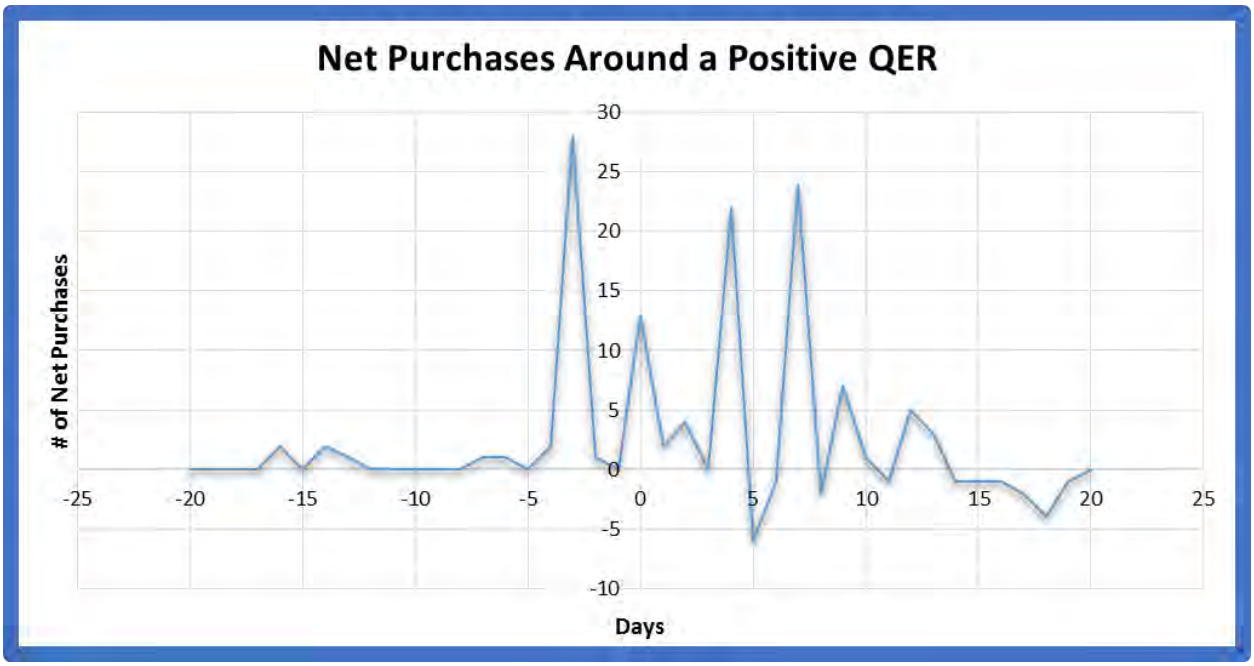


FIGURE 6

In Figure 6 shown above, the net purchases are not quite what was expected. There are more purchases than sales, causing net purchases to be positive. The equation for net purchases is: Net Purchases on $Day_x = PD_x - SD_x$.

To check what the graph normally looks like, the net purchases around a neutral earnings announcement were calculated. Below is what the graph for trades around a normal earnings announcement looked like.

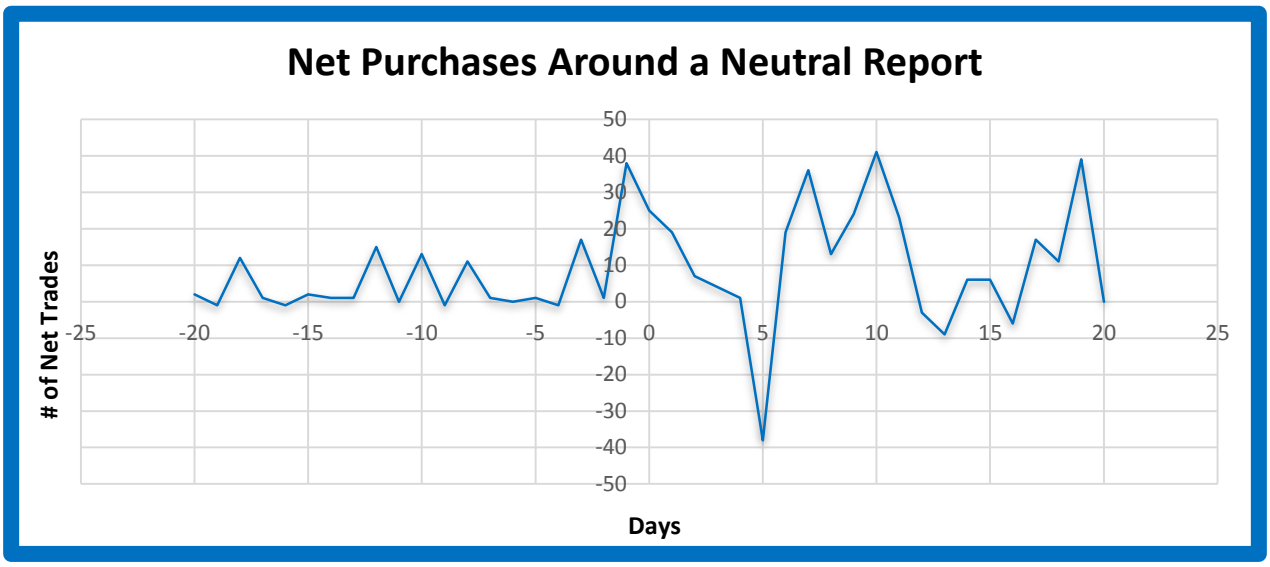


FIGURE 7

The Graph has more trades after the announcement and the majority of them seem to be positive, indicating more purchases than trades. The graph shows the same equation that was used in the net purchases equation (Net Purchases on $Day_x = PD_x - SD_x$).

Overall there was a trend with more purchases than sales. The trend in net purchases could have been caused from the overall upward trend in the market during the time of the study. The market had been coming off of a slump from the recession and investors were confident that the market would continue to trend upward, so this could be the case for net purchases by corporate insiders. There was a total of 1,349 stock purchases and 725 stock sales between the two years of data. In the graphs Appendix E, Appendix F, and Appendix G, I looked at the cumulative trades around each type of announcement. As was predicted, there was little to no trading before the announcement and the day of the announcement and onwards, the trading picks up quite steadily. All have a trend in net purchases, though a neutral report had a more gradual slope with trades also

coming before the earnings announcement. Running a t-test on the trades for the dates before the announcement to the trades after the announcement, it was found that only the trades around a negative report were significantly different. The t-stat to test whether the variance was significant was used. The average trade from the 20 days before the announcement was 0.4. The mean of trades on or after the announcement date was 8.09, showing a large average difference in trades before and after a negative quarterly earnings announcement.

There could be a pattern of more purchases than sales for a few reasons. Corporate insiders might have had stock options that let them purchase shares at a fixed price, so when there was a positive announcement they saw the price moving upward and decided to purchase it at their lower price in order to maximize their options. Another reason the results could not be results could not be reflective to what was predicted was the data could be incomplete. The source that the trade data was pulled from could have not had all of the trades and thus would have skewed the information.

There are a few things that could be done to further analyze the data. The share volume of trades could be measured as well as the market value taken into consideration. This would give a more precise idea to what the traders were actually gaining. There could have been more purchases than sales on any given day, but the sales could have been worth more than the purchases. This will be further looked upon as this study is refined.

Overall, the results did not entirely reflect the predicted hypothesis, but the data will be further analyzed such as looking at market value transactions (volume of shares of Stock A x the price of Stock A) and comparing them on positive, negative, and neutral earnings announcements.

Conclusion

This study showed that corporate insiders are overall net buyers. This could perhaps also have to do with the time period that the focus of the study was on. In 2012-'13, the stock market was on a steady climb upwards from its big drop during the recession. Investors were confident that the market had already hit the low and was only going up. Had the study been conducted for the years 2006-'07 or '08, the result could have differed, such that insiders were net sellers, as the market was collapsing during this time. It would be interesting to look at those years and determine if that is the case. The results showed that almost all traders tended to delay their trades until after the quarterly earnings announcement had been made. Reasons for this could be to avoid drawing suspicion from the SEC, or to financially benefit. The increase in net purchases after a negative announcement fully aligned with our expectations, especially when looking at the cumulative trades in Appendix F. It is interesting to see how significant the results were when there was just about no trades at all before the negative announcement and then a large amount of net purchases the day of the announcement until the fifth to tenth day were trading dropped off afterward.

It was interesting to find that there was almost no trades leading up to any of the announcements. Almost all traders were waiting until the announcements were made and then trading. This could have to do with avoiding suspicion from the SEC. Traders have seen what the full might of the SEC can bring and can be hesitant to deal with them. By trading after the announcement, they can avoid suspicion and still use their inside information to make premeditated favorable trades. If they know the stock is going to do well because of an increase in earnings above expectations, then they can wait to sell their stock at a high. Another interesting pattern is that trading slowed down around ten days after each type of announcement (positive, negative, or neutral). This shows that

traders take advantage of the stock while it still is moving around from the announcement. After the first week or so, the news becomes irrelevant and the investors look forward to the next announcement. By taking advantage while the stock is still being more heavily traded, corporate insiders can maximize their profits.

It is the hope that this study has an impact in the investment world. By looking at the patterns of corporate insiders, the SEC can have a better idea on how to regulate their trading. Imposing trade restrictions would be the most effective, or by imposing a general counsel to monitor and approve/disapprove trades. It will also add to the discussion if upper level management should receive stock compensation (agency theory). If corporate insiders truly do use their information for financial gains, then awarding stock could further the abuse by these insiders, which would be bad for stockholders in the long run.

Appendices

Appendix A

Positive QER (58 Reports)			
Days	# of Purchases	# of Sales	Net Purchases
-20	1	1	0
-19	1	1	0
-18	1	1	0
-17	1	1	0
-16	12	10	2
-15	2	2	0
-14	4	2	2
-13	1	0	1
-12	0	0	0
-11	3	3	0
-10	0	0	0
-9	0	0	0
-8	0	0	0
-7	1	0	1
-6	1	0	1
-5	0	0	0
-4	4	2	2
-3	28	0	28
-2	1	0	1
-1	0	0	0
0	13	0	13
1	12	10	2
2	17	13	4
3	4	4	0
4	28	6	22
5	12	18	-6
6	14	15	-1
7	51	27	24
8	6	8	-2
9	13	6	7
10	10	9	1
11	3	4	-1
12	5	0	5
13	11	8	3
14	5	6	-1
15	3	4	-1
16	3	4	-1
17	2	4	-2
18	3	7	-4
19	1	2	-1
20	5	5	0

Appendix B

Negative QER (37 Reports)			
Days	# of Purchases	# of Sales	Net Purchases
-20	0	0	0
-19	0	0	0
-18	1	0	1
-17	0	0	0
-16	1	1	0
-15	0	0	0
-14	1	0	1
-13	2	0	2
-12	0	1	-1
-11	0	0	0
-10	0	0	0
-9	3	0	3
-8	0	0	0
-7	0	0	0
-6	0	0	0
-5	4	4	0
-4	0	0	0
-3	0	0	0
-2	2	0	2
-1	0	0	0
0	22	0	22
1	0	0	0
2	29	21	8
3	6	4	2
4	8	4	4
5	19	13	6
6	32	9	23
7	34	6	28
8	22	7	15
9	16	4	12
10	21	1	20
11	15	1	14
12	12	5	7
13	8	6	2
14	2	4	-2
15	1	2	-1
16	4	3	1
17	1	1	0
18	2	3	-1
19	0	0	0
20	13	3	10

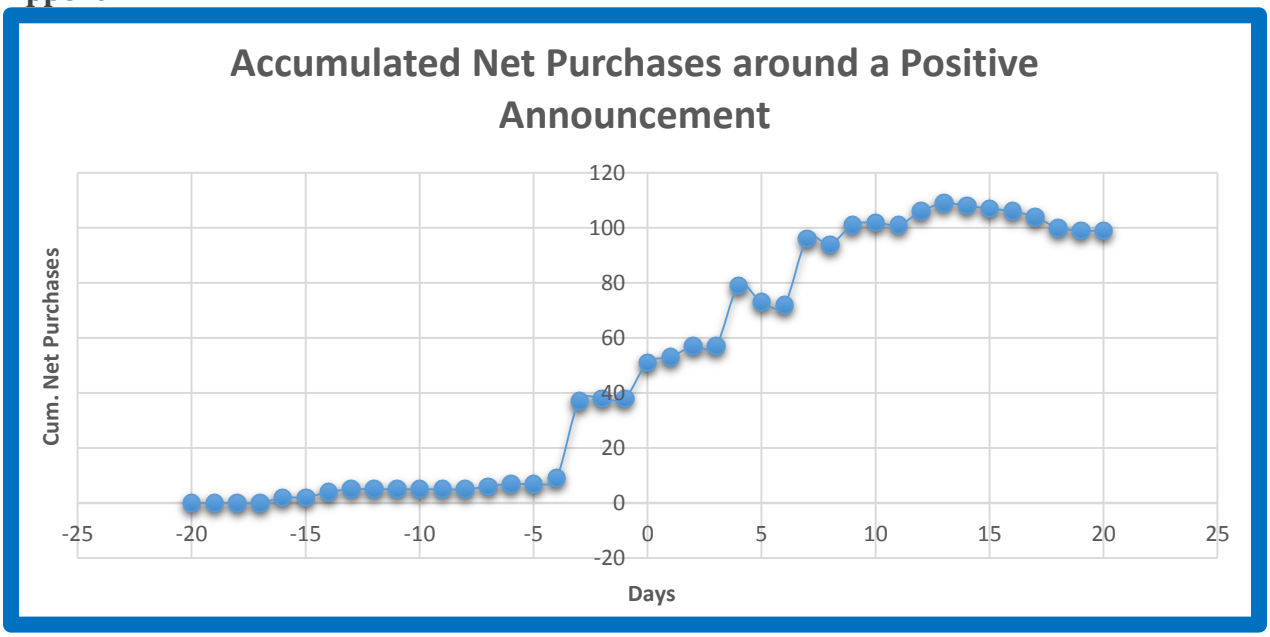
Appendix C

Neutral QER (129 Reports)			
Days	# of Purchases	# of Sales	Net
-20	3	1	2
-19	0	1	-1
-18	13	1	12
-17	1	0	1
-16	1	2	-1
-15	3	1	2
-14	2	1	1
-13	2	1	1
-12	15	0	15
-11	0	0	0
-10	14	1	13
-9	2	3	-1
-8	11	0	11
-7	2	1	1
-6	0	0	0
-5	1	0	1
-4	0	1	-1
-3	17	0	17
-2	1	0	1
-1	42	4	38
0	27	2	25
1	51	32	19
2	19	12	7
3	23	19	4
4	27	26	1
5	22	60	-38
6	48	29	19
7	60	24	36
8	44	31	13
9	29	5	24
10	52	11	41
11	42	19	23
12	8	11	-3
13	18	27	-9
14	23	17	6
15	36	30	6
16	8	14	-6
17	29	12	17
18	19	8	11
19	58	19	39
20	13	13	0

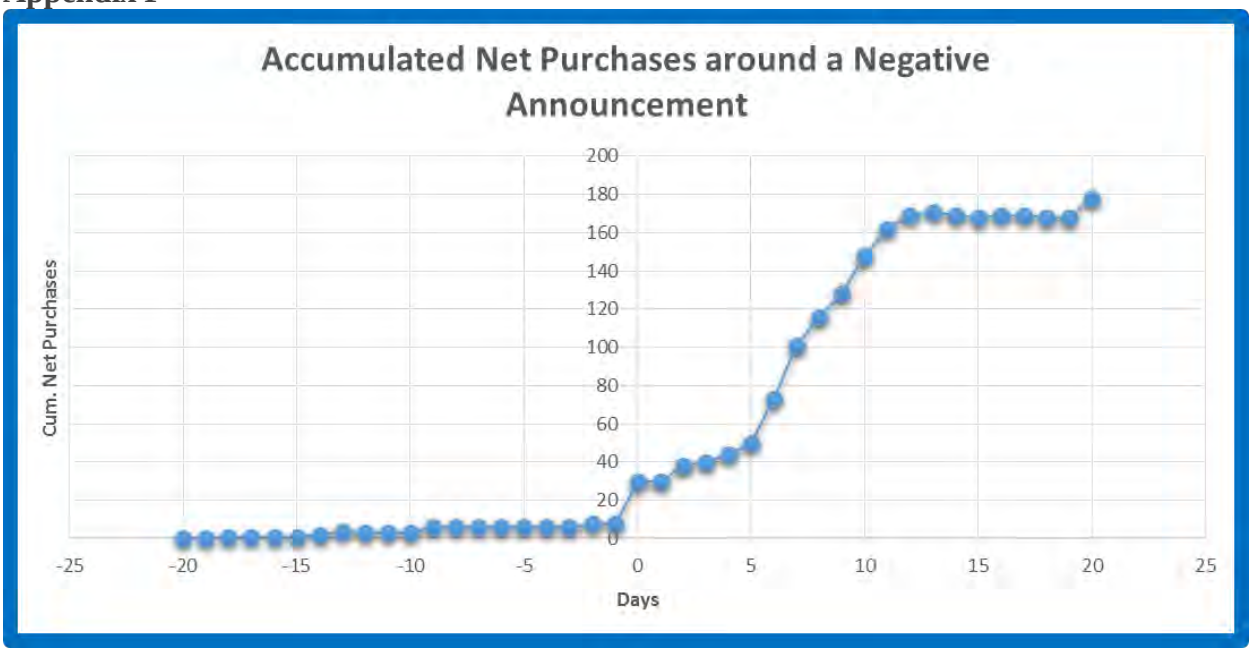
Appendix D

Trade	(20) --> (1)	0 --> +20	Total
Purchases	205	1144	**1349**
Sales	47	678	**725**
Total	**252**	**1822**	

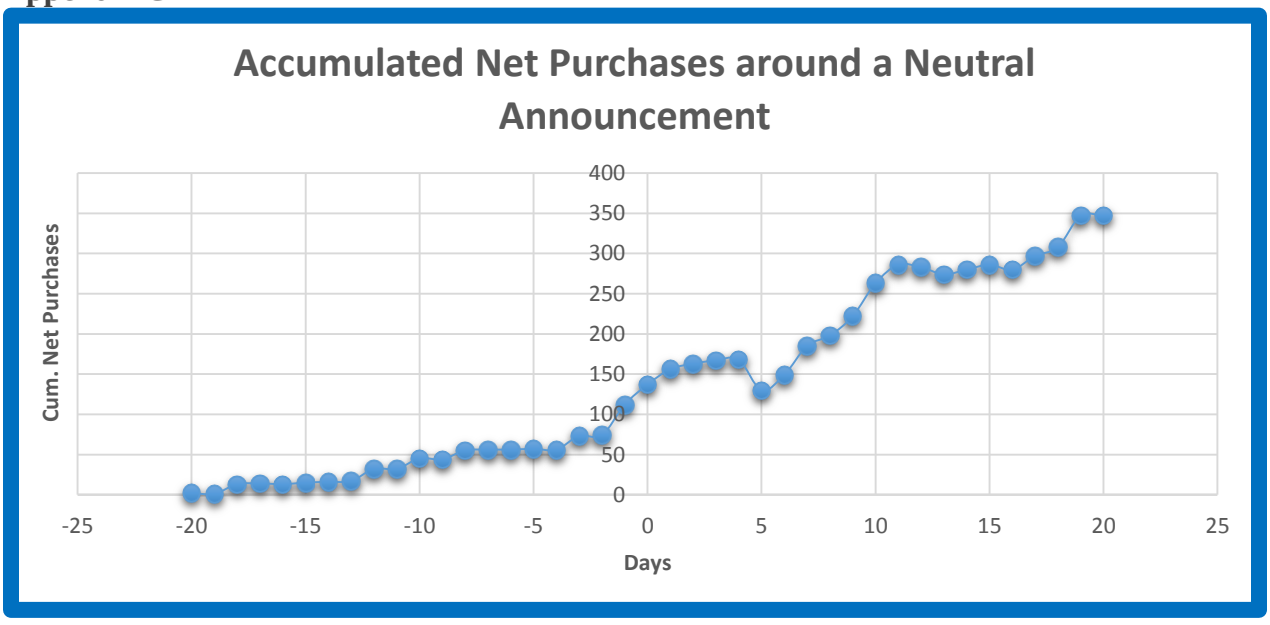
Appendix E



Appendix F



Appendix G



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