Executive Compensation: Further Investigation into Option Award Vesting Dates

by

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I. Abstract

This study examines the stock price returns before and after the vesting dates of options granted to executives as part of compensation packages. This data is then used to investigate executives' ability to influence timing of corporate earnings and news releases to maximize the value of the options grant to them. I use a sample of 6,372 observations and then further stratify this main sample into smaller subsamples based on certain criteria and "moneyness" of the options. In the money options and the vesting date of the options falling before August 29th, 2002 prove to be the most significant factors. In certain subsamples I find that there are positive cumulative abnormal returns prior to the vesting date and negative cumulative abnormal returns after the vesting date. Further investigation into several examples from the sample finds that positive earnings and news announcements were given prior to the vesting date and negative earnings and news announcements were issued only after the vesting date. This is evidence that executives use their influence over corporate actions to increase stock prices before the vesting date in order to attain a higher realized value for their options and tend to hold back negative earnings and news until after the vesting date so that stock prices do not fall and erase value before the options can be exercised.

II. Introduction

Stock options have been arguably the most used form of executive compensation in today's corporate era. Stock options are instruments which allow the holder to buy the underlying stock at a pre-determined price, the strike price, at a certain time (Hull, Options Futures and Other Derivatives). If the strike price is below the market price then the options are in the money and the holder can then sell his/her stock for a profit. However, in order to exercise these options the holder or executives must wait for them to vest over a certain period before being able to exercise. These financial instruments are issued to corporate executives as means of aligning their interests with the long term interests of company's shareholders, thereby narrowing the gap created by the long standing principle/agent problem. The theory is that executives will strive to enhance long term growth of the company because they will desire a higher stock price at which to exercise their options. However, there are several flaws with this form of compensation.

Research by Yermack (1997) shows that the timing of options awards to executives correlates favorably to positive earnings releases. After examining stock returns of 620 stock option awards to CEOs of Fortune 500 companies from 1992 to 1994 he finds that there are significant abnormal returns to these stocks. In fact, 15 days after the option grant date there are abnormal returns of over 1% and 50 days after the grant date there are abnormal returns of more than 2%. Furthermore, Lie (2005) finds that many executives were able to achieve such opportunistic option grant dates by backdating the options to times when the stock was at extremely depressed prices. His results show that from 1999 to 2002 his sample of stocks had cumulative abnormal losses of over 4% 30 days before the grant date and cumulative abnormal gains of over 4% 30 days after the grant date. This empirical evidence suggests that further investigation of the executive compensation process would be worthwhile.

III. Examination of Option Vesting Dates

Since executives allegedly manipulate and take advantage of the option grant process to try to maximize the value of their stock options there is a high probability that the same sort of trickery is present around the vesting date of the options granted to executives. Earnings management around the vesting date, however, should be not an easy task as investors are now aware of vesting dates and can see patterns of executives pushing forward good news prior to vesting dates and pushing back bad news until after the vesting date. It is indeed, surprising that executives still manage to manipulate company earnings and news releases to attain an unfairly high value for the options that are part of their executive compensation packages.

The understanding of how executives act around the vesting date of options granted to them may be an important step in understanding and applying the proper incentives to compensate managers. It may not only be enough to monitor option grant dates but also vesting

dates to make certain that executives are indeed acting in the best interest of firm shareholders, and not solely themselves (this is something that I will discuss further later on in the discussion). I define the vesting date as the first date at which an executive can exercise the options that were awarded to him or her on the grant date. After the vesting date the options can be exercised at any time that they are in the money up until the expiration date. Typically vesting happens on one of the first few annual anniversaries of the grant date. However, due to the sheer size of the data and the thousands of disclosure documents that would need to be read, I am limited to make an assumption about the exact vesting date time.

It can be argued that the vesting date of the options is equally as important as the grant date because this is the point in time when the executive can first exercise his/her options and monetize that value that has been built into them. If the price had appreciated before the vesting date but dropped as the vesting period came to an end this would mean a lot of foregone value and compensation for executives. Therefore if executives planned to exercise their options as soon as it was possible they would do anything in their power to increase the value of their compensation. If the options are out of the money or not very far in the money the executive essentially needs to wait until the stock price rises and thereby wastes time and foregoes compensation that he/she could have collected earlier. Therefore it is 1) beneficial to executives if stock prices rally right before the vesting date of the options so that they could exercise the options and retain the maximum possible value, and 2) executives may try to postpone negative news announcements or negative earnings releases until after the vesting date so that the stock price does not decrease right before this date. It is these dates and periods of time in between spikes and troughs in the stock price returns that I define as opportunistic times when vesting

occurs. This is similar to the type of earnings management discussed by (Yermack 1995) except the concept is applied to the vesting date of the options.

It is the purpose of this study to examine the hypothesis that executives timed corporate actions or news releases and thereby managed earnings around the vesting dates of stock options granted between 1992 and 2006 to increase the value, at the vesting date, of options granted to them. Essentially, based on their ability to time earnings releases and corporate actions executives can front run their trading and cash out of their options at the most opportune times to realize value. More specifically, I test the hypothesis that there are abnormal positive returns prior to the vesting date and negative abnormal returns after the vesting date. Furthermore, I then investigate news releases occurring around the vesting date to better understand executives' ability to time these releases to manipulate stock price.

As part of this study I gather over 130,000 option award observations from 1992 to 2006. By using the CRSP, Compustat Executive Compensation, and Eventus databases I filter the observations to roughly 6,000 unscheduled options awards (to be further explained below). In Eventus I use the default market model test to determine abnormal returns. In my queries the market model is estimated by ordinary least squares with data from a 255-trading day estimation period ending 90 days before the event date.[1] It is important to use unscheduled observations in order to prevent overlap with grant dates from other years. This enhances the validity of the data and allows for more accurate testing of the vesting dates in question. I calculate vesting dates on the assumption that the options vested one year after the date the options were granted.

The evidence for the subsample of observations where the options were in the money and the CEO was in office on the vesting date returns striking results. 60 days prior to the assumed vesting date stocks witness cumulative abnormal returns of nearly 1% and then 60 days after the

[1] Eventus User's Guide (January 2007)

vesting date stocks show cumulative abnormal returns of over -2%. I then examine the individual observations and find many with gains of over 50% prior to the vesting date and declines of similar proportions after the vesting date. Additionally, a further subsample including only observations with vesting dates falling before August, 29th 2002, the effective date of the Sarbanes-Oxley legislation, yields results with cumulative abnormal returns of more than 2% before the vesting date and cumulative abnormal losses of more than 2% after the vesting date. The following sections investigate news releases and corporate announcements around the vesting date of the options. These articles show that positive earnings or corporate news was released prior to the vesting date while negative news was suppressed until after the vesting date. This allowed executives to benefit from upswings in stock price, exercise their options to extract the maximum value, and then allow the stock price to fall only after they had done so.

There may be, however, reason for this hypothesis to be incorrect. Numerous factors affect stock price movements at any given moment. For instance, because exact vesting date information is difficult to ascertain the test is forced to assume one. Naturally, such assumptions may lead to errors and insignificant results. In addition, although the observations were filtered for only unscheduled award dates some of these may come close to scheduled dates and grant and vesting dates may be in close proximity. Therefore, grant dates not vesting dates may be driving stock returns in some instances. However, even if these coincidences exist, the large sample size still effectively produces significant results. Finally, I will conclude with a brief discussion about CEO's reasoning behind such actions and the issues of aligning shareholders' and managers' interests.

IV. Sampling

The Securities and Exchange Commission publically disclosed further detail about companies' executive compensation information in 1992 so that specific stock option award dates became known for the first time. Since that time companies had to file proxy statements with the SEC which, although they did not directly state grant dates or vesting dates, could be used to infer specific grant dates and hence make assumptions about the vesting dates of the options.

I used the Compustat Executive Compensation database to gather all of the publically disclosed executive compensation information from 1992 to 2006. This query provided me with over 130,000 option awards observations, what I will refer to as observations for the remainder of this study. I then exclude any results that do not have valid ticker symbols or have incomplete data. The first step I take is to filter out any observations that are awards granted to non CEOs because I assume that only CEOs have the ability to control news releases and company information while many other executives who are given stock options as part of compensation packages do not. I do this by eliminating any observations in Excel that did not list a date when the CEO started in his/her position. After this step I am left with 35,527 observations.

Because the nature of my study only investigates vesting dates I need to stratify the sample to only include grant dates that did not happen on the same day or within seven calendar days of any other grant date of any other option award in a particular companies' history. The reason for this is that if a vesting date and a grant date coincided I would implicitly not only be testing the vesting date but also the grant date of another award which may influence stock price returns because an executive may have been targeting a specific grant date at an opportunistic time. If the date is an unscheduled grant date I can assume that the vesting date will also not occur within seven days of any other grant date and therefore the stock price movements within

that time span could be used to judge the effects of the vesting of the options. In order to help me with this task I create a macro in Excel using VBA. I use several loops within the macro to check each option award for each company against any other award in that company's history. The loops cycle through all of the observations looking for a common ticker symbol per company until the ticker is different in the two columns at which point the loop in the original column moves on and the same process repeats itself. This narrows the observations for my sample to 6,372 awards, of which 4,629 are usable due to lack of return information in Eventus.

After having filtered the original returns to include only options awarded to CEOs and unscheduled award dates that are not within seven days of any other award date I use the CRSP database to obtain the closing prices for stocks on the assumed vesting dates of each award. I run queries in CRSP for event dates that are equal to each of the first four anniversaries of the option grant date which I inferred from the original data. In addition to closing price data from CRSP I also obtain several other key pieces of information that help me recall subsamples within my general sample of 6,372 observations. This enables me to run cumulative abnormal return tests in Eventus based on several different factors which help understand reasoning and motivations behind manipulating corporate actions around vesting dates, which I will discuss further later.

I find the date on which a given CEO came into office and when the CEO left office to determine if that CEO was in office on the vesting date. It is important for the CEO to be in office on the vesting date to insure that he/she has control over company decisions at the time. I also obtain the value of each award via proxy by multiplying the number of options given by the exercise price of the options. I test sub samples to determine if higher value awards are more likely to show evidence of abnormal returns. Finally, and most importantly, I test to see if the

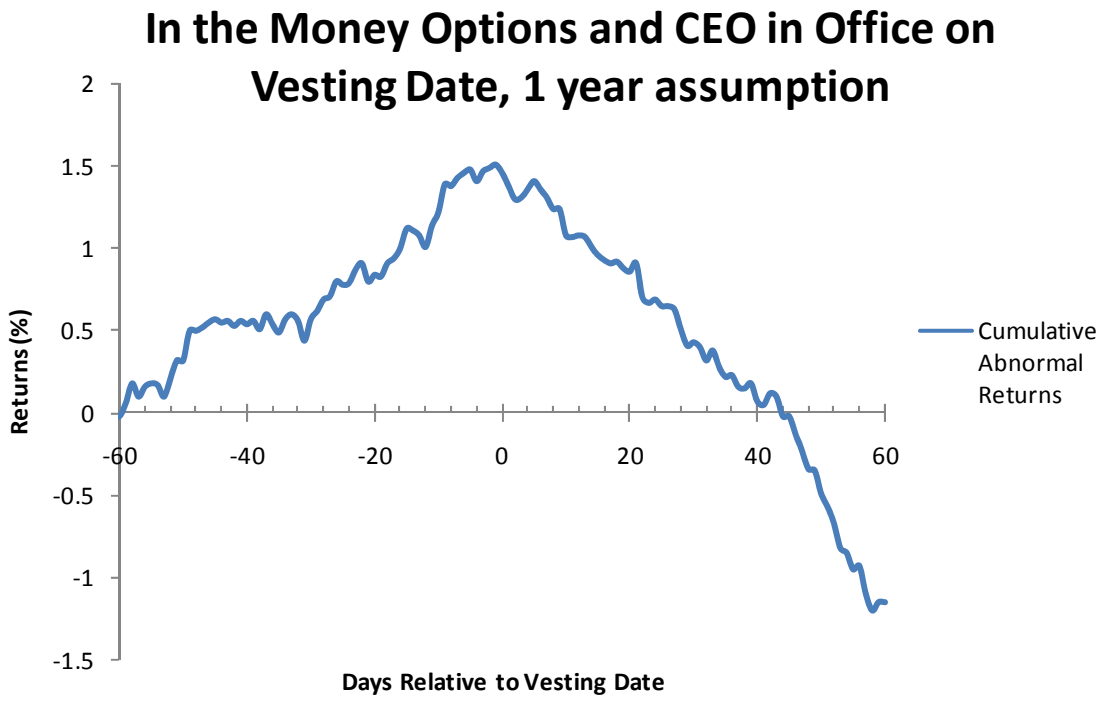
option was in the money on the vesting date. If the option is far out of the money it may not prove worthy for an executive to manipulate stock price because that may not be enough to cause the option to come into the money. Whereas, if the option is in the money the CEO can increase the upside he/she stands gain and will definitely be able to realize the most value if the vesting date falls on an opportunistic time.

By using the different factors discussed above I create multiple subsamples with various combinations of each of the factors. I do this to test individual and combined effects on stock prices given the different characteristics. For example I assume a one year anniversary vesting date and filter the results to include only CEOs that were in office at the time of the vesting date. Then I can change the vesting date assumption to the second, third, or fourth anniversary of the grant date and run the query again. Or I can also filter the subsample with a one year vesting date assumption to include results with only CEOs in office at the time of vesting date and high option value. I repeat this process several times until I find sub samples with interesting results.

The most interesting results were yielded by the samples that assumed a one year anniversary vesting date assumption, options that were in the money on the vesting date, awards where the CEO was in office on the vesting date, and where the vesting date fell before August, 29th 2002. Once I obtain stock return results I cross check these to find the observations with swings in stock price of over 50% before or after the vesting date. I then use Factiva to find articles released by the companies that issued these awards. The results from this query and others will be presented in the next section.

V. Empirical Results

To test the significance of stock price movements around a vesting date I look for cumulative abnormal returns of the stock price. I divide the before and after window into different lengths of time to help better understand when most of the outperformance took place and therefore interpret which news release may have triggered the stock to move. Generally, I use 60 days prior to the event date and 60 days after the event date as the overall window. I then divide the 60 day period into both prior to and after one day from the event date, then two days to nineteen days, and then from twenty days to sixty days from the event date. I find significant cumulative abnormal returns of more than 1% before the vesting date and cumulative abnormal losses of more than 2% after the event date. These are found in the subsample that is characterized by the options being in the money, the CEO was in office at the time of the vesting date, and I assumed that the vesting date happened one year after the grant date.



Eventus (R) Software from Cowan Research, L.C.

Market Model, Equally Weighted Index

Days	N	Mean Cumulative Abnormal Return	Precision Weighted CAAR	Positive: Negative	Patell Z	Portfolio Time-Series (CDA) t	Generalized Sign Z
(-60,-20)	2229	0.87%	0.65%	1152:1077>>>	2.144*	1.466$	4.172***
(-19,-2)	2229	0.64%	0.61%	1178:1051>>>	3.053**	1.611$	5.275***
(-1,0)	2229	-0.02%	0.06%	1070:1159	0.852	-0.185	0.693
(+1,+19)	2229	-0.60%	-0.38%	1060:1169	-1.861*	-1.477$	0.269
(+20,+60)	2222	-2.03%	-1.02%	1030:1192	-3.373***	-3.420***	-0.865

The symbols $,*,**, and *** denote statistical significance at the 0.10, 0.05, 0.01 and 0.001 levels, respectively, using a 1-tail test. The symbols (,< or),> etc. correspond to $,* and show the significance and direction of the generalized sign test.|

This output was generated from a subsample of 2,306 observations out of the total sample of more than 6,000 observations. I highlight this subsample first because it makes the most logical sense that this subsample would show significant results. The intuition is that CEOs whose options are in the money want to create more value for themselves and bump up the stock price so that they can immediately exercise the option to monetize the value. CEOs whose options are out of the money have less incentive to push up stock price because they are unsure of how much it will increase and therefore may not even be able to exercise even if they influence corporate actions to increase stock price. Therefore it may not be "worth it" to them because the risks to their reputation would outweigh the monetary gains they may stand to make. It is also logical to examine only observations where CEOs are still in office on the assumed vesting date because if they are not they have no influence over the corporation and therefore cannot even attempt to time earnings or other news releases. If observations with out of the money options and CEOs that were not in office on the vesting date were taken into account this would not lead to significantly high returns and losses before and after to the vesting date. The sample which includes only CEOs in office without moneyness considerations includes 3,798 observations and a sample that only includes options that are in the money on vesting date has 2,588 observations.

What are also interesting to investigate are the disaggregated results when testing separately in the money options and options with the CEO in office on the vesting date. When

testing solely for in the money options there is a more than 1% mean cumulative abnormal return 60 days prior to the vesting date and a more than 2% mean cumulative abnormal loss 60 days after the event date. Please refer to graph and table in Appendix A.

From this I interpret that the moneyness of the options has a very important influence on the returns of stock prices. It seems as though stock prices show abnormal returns only when CEOs' options are in the money. Therefore it must mean that executives are only willing to try to manipulate stock prices if their options are already in the money. This may be because they figure if the options are already in the money they can easily justify moving corporate announcements or actions around the vesting date because they already have value in their options and can argue that they do not need to synthetically create it. However, they still have motivation to manipulate news releases because CEOs with in the money options may be getting ready to retire or use the proceeds for personal expense and would like to add to the value their options generate and therefore advantageously time corporate announcements.

When setting the criteria to only evaluate data when the CEO was in office on the vesting date the results confirm the hypothesis that the "moneyness" of the options is a major factor in determining whether not there were there are abnormal returns prior to the vesting date and abnormal losses after the vesting date. (Please see Appendix B for a graph and table of the results.) However, this leaves the question of how the CEOs manage to manipulate earnings and news releases if they are not in office at the time of the vesting date. Do CEOs still have extraordinary influences over executives at the firm that replace them or are these results just correlated by coincidence? For instance if option grants were given to the next CEO (something I have not screened for in my data). Perhaps the answer is that most CEOs that are in office do not wish to manage earnings to achieve better stock performance prior to the vesting date of their

options hence the results for the only CEO in Office test are inconclusive. But when the combination of CEOs being in office and the option awards being in the money the CEOs have the desire to manipulate earnings and news announcements because they see that they can get a great value for their compensation.

VI. Other Tests

The first test I ran after generating the sample of observations was a test of the whole sample with 6,372 observations of stock option grants to CEOs. I ran the query in Eventus twice using both the 1 year vesting date and 4 year anniversary vesting date assumption. However both of these results proved inconclusive on a market model basis; see graph and table of results for the one year assumption test in Appendix C.

After finding these results I started to test more stratified and specific sub samples from the overall sample. Like the results I spoke about above I thought of other ways to stratify the sample to investigate more targeted samples. It would be difficult to ascertain significant results from such a large sample because there is so much variance across the market and there are many correlations between different factors that drive stock returns. By isolating specific characteristics of the stock option awards I was able to investigate which conditions of stock option awards lead to abnormal returns of stock prices around the vesting date. Consequently, I was able to determine the conditions which drive executives and CEOs to manipulate stock prices which I will speak about below in the coming sections.

It would seem likely that option awards with high overall value would be the main candidates where the stock would have cumulative abnormal returns and losses. This is because if the options have a high value then it would make more sense for executives to manipulate corporate actions around the vesting date to maximize their return. As a proxy for Black-Scholes

option value I simply multiplied the exercise price of the options by the number of options granted to the CEO in the award. The higher exercise price the more a stock would need to rise to be in the money and for it to even be able to be monetized. The desire of CEOs to raise the stock price so that they could monetize some sort of value would be compounded if the award was large and many options were given. Therefore I hypothesized that options with high estimated values would show evidence of abnormal returns around the vesting date.

I ran several queries to investigate high option value assuming that the vesting date was on the first anniversary. I also separated high option value into higher than $10,000,000 and higher than $50,000,000 expecting that the higher the option value the more abnormal returns would be displayed. The 74 observations using the $50,000,000 and one year criteria returned abnormal losses of more than 8% prior to the vesting date and relatively flat abnormal returns after the vesting date.

High Option Value over $50,000,000, 1 Year Assumption

Eventus (R) Software from Cowan Research, L.C.

Market Model, Equally Weighted Index

Days	N	Mean Cumulative Abnormal Return	Precision Weighted CAAR	Positive: Negative	Patell Z	Portfolio Time-Series (CDA) t	Generalized Sign Z
(-60,-20)	49	-1.92%	-1.53%	24:25	-0.649	-0.541	0.155
(-19,-2)	49	-6.85%	-4.70%	22:27	-3.030**	-2.906**	-0.417
(-1,0)	49	-0.28%	-0.31%	24:25	-0.608	-0.353	0.155
(+1,+19)	49	-1.28%	-0.73%	30:19>	-0.437	-0.529	1.871*
(+20,+60)	47	1.80%	1.87%	25:22	0.802	0.507	0.730

The symbols $,*,**, and *** denote statistical significance at the 0.10, 0.05, 0.01 and 0.001 levels, respectively, using a 1-tail test. The symbols (,< or),> etc. correspond to $,* and show the significance and direction of the generalized sign test.

This was interesting data but inconclusive due to the limited amount of observations. Next I ran the query modifying the criteria from option values of over $50,000,000 to over $10,000,000. The 701 size sample showed moderate cumulative abnormal losses both before and after the event date which was again disproved the hypothesis.

High Option Value over $10,000,000, 1 Year Assumption

Eventus (R) Software from Cowan Research, L.C.

Market Model, Equally Weighted Index

Days	N	Mean Cumulative Abnormal Return	Precision Weighted CAAR	Positive: Negative	Patell Z	Portfolio Time-Series (CDA) t	Generalized Sign Z
(-60,-20)	491	-2.26%	-1.67%	224:267	-2.647**	-2.490**	-1.094
(-19,-2)	491	-1.68%	-1.20%	243:248	-2.878**	-2.804**	0.623
(-1,0)	491	0.19%	0.17%	242:249	1.247	0.971	0.532
(+1,+19)	491	-0.18%	-0.08%	244:247	-0.175	-0.298	0.713
(+20,+60)	487	0.10%	-0.28%	241:246	-0.451	0.114	0.618

The symbols $,*,**, and *** denote statistical significance at the 0.10, 0.05, 0.01 and 0.001 levels, respectively, using a 1-tail test. The symbols (,< or),> etc. correspond to $,* and show the significance and direction of the generalized sign test.

The next hypothesis that I wanted to test was that option awards with only one observation per company would exhibit advantageous stock performance around the vesting date yielding cumulative abnormal returns before the vesting date and losses after the vesting date. The reasoning behind this is that since the CEO only received one award package they would be more likely to want to maximize value from these options. Also there would not be any overlap from award dates and vesting dates of other awards so the data would be more isolated. However, assuming one year vesting dates, a sample of 332 observations exhibited 2% cumulative abnormal losses 60 days before the vesting date and inconclusive returns after the vesting date.

Companies with Only One Award Date, 1 Year Assumption

Eventus (R) Software from Cowan Research, L.C.

Market Model, Equally Weighted Index

Days	N	Mean Cumulative Abnormal Return	Precision Weighted CAAR	Positive: Negative	Patell Z	Portfolio Time-Series (CDA) t	Generalized Sign Z
(-60,-20)	254	-1.12%	-0.11%	114:140	-0.142	-1.021	-1.097
(-19,-2)	254	-1.04%	-0.74%	115:139	-1.443$	-1.430$	-0.971
(-1,0)	254	0.13%	0.36%	121:133	2.103*	0.527	-0.218
(+1,+19)	254	-0.12%	0.13%	124:130	0.252	-0.161	0.159
(+20,+60)	253	0.15%	0.36%	126:127	0.465	0.140	0.472

The symbols $,*,**, and *** denote statistical significance at the 0.10, 0.05, 0.01 and 0.001 levels, respectively, using a 1-tail test. The symbols (,< or),> etc. correspond to $,* and show the significance and direction of the generalized sign test.

Lie (2005) had also stratified his observations into time periods. I thought this would be interesting criteria to examine as well. Since, stock option based compensation was extremely popular during the dotcom boom more so than it was during the beginning of the 1990s I thought

it would be worthwhile to examine the period from 1999-2002. I ran Eventus queries for two sample sets. One with the grant date of the option award falling in this period, and one with the vesting date falling in this period. Both showed inconclusive results.

Vesting Date Falling Between 1999 and 2002, 1 Year Assumption

Eventus (R) Software from Cowan Research, L.C.

Market Model, Equally Weighted Index

Days	N	Mean Cumulative Abnormal Return	Precision Weighted CAAR	Positive: Negative	Patell Z	Portfolio Time-Series (CDA) t	Generalized Sign Z
(-60,-20)	1689	-1.01%	-1.18%	802:887	-2.543**	-1.298$	-0.103
(-19,-2)	1689	0.08%	-0.30%	836:853)	-0.960	0.151	1.554$
(-1,0)	1689	-0.14%	-0.03%	804:885	-0.294	-0.794	-0.005
(+1,+19)	1689	-0.09%	-0.30%	857:832>>	-0.935	-0.165	2.577**
(+20,+60)	1684	-1.27%	-1.32%	790:894	-2.838**	-1.621$	-0.572

The symbols $,*,**, and *** denote statistical significance at the 0.10, 0.05, 0.01 and 0.001 levels, respectively, using a 1-tail test. The symbols (,< or),> etc. correspond to $,* and show the significance and direction of the generalized sign test.

Grant Date Falling Between 1999 and 2002, 1 Year Assumption

Eventus (R) Software from Cowan Research, L.C.

Market Model, Equally Weighted Index

Days	N	Mean Cumulative Abnormal Return	Precision Weighted CAAR	Positive: Negative	Patell Z	Portfolio Time-Series (CDA) t	Generalized Sign Z
(-60,-20)	1695	-1.27%	-1.51%	800:895	-3.193***	-1.635$	-0.627
(-19,-2)	1695	-0.11%	-0.21%	842:853)	-0.678	-0.210	1.415$
(-1,0)	1695	-0.12%	-0.05%	793:902	-0.465	-0.686	-0.968
(+1,+19)	1695	-0.24%	-0.24%	855:840>	-0.749	-0.458	2.047*
(+20,+60)	1692	-1.13%	-1.11%	777:915<	-2.352**	-1.453$	-1.677*

The symbols $,*,**, and *** denote statistical significance at the 0.10, 0.05, 0.01 and 0.001 levels, respectively, using a 1-tail test. The symbols (,< or),> etc. correspond to $,* and show the significance and direction of the generalized sign test.

However, when combining the date test with previous criteria strikingly different results are obtained. I ran a test for option awards with a 1 year vesting date assumption where the options were in the money, the CEO was in office, and where the vesting date fell between 1999 and 2002. Here I found cumulative abnormal returns of over 1.5% 60 days prior to the vesting date and cumulative abnormal losses of over 6% after the vesting date. This again confirms that hypothesis that stock prices rally prior to the vesting date of options and fall afterward. It is further interesting to see such large abnormal losses after the vesting date in a period of huge stock returns during the dotcom bubble. (Please see Appendix D for a graph and table or the results.)

I further investigated why such drastic results occur at the tail end of the range between 1999 and 2002. The reason I believe this occurs is that the Sarbanes-Oxley Act became effective in mid 2002, on August 29th, to be exact. This act required companies to disclose much more information about their accounting and management policies, thereby exposing them to greater scrutiny on management pay and compensation packages. To test this date I added the criteria of whether or not the vesting date of the option award occurred before or after August 29th, 2002. My hypothesis is that there will be evidence of much more advantageous vesting dates which fall before this date as opposed to afterward. The next four tests include two tests which simply test the August 29th, 2002 date by itself, assuming a 1 year vesting period, and also two tests which add the date criteria to the test of in the money options with CEOs in office that was successful before.

Testing only the August 29th date proved insignificant. This is most likely because so many other observations are included in this sample that it is not concentrated on specific criteria similar to the results of the all inclusive test. This evidence further demonstrates that earnings management around vesting dates seems to be more of an opportunistic action occurring only when the CEO has opportunity to greatly increase his/her compensation and when he/she has easy access to company decisions.

Before August 29th, 2002, 1 year

Eventus (R) Software from Cowan Research, L.C.

Market Model, Equally Weighted Index

Days	N	Mean Cumulative Abnormal Return	Precision Weighted CAAR	Positive: Negative	Patell Z	Portfolio Time-Series (CDA) t	Generalized Sign Z
(-60,-20)	2543	-0.66%	-0.61%	1207:1336	-1.906*	-1.194	0.226
(-19,-2)	2543	0.08%	-0.11%	1288:1255>>>	-0.528	0.226	3.443***
(-1,0)	2543	-0.10%	-0.02%	1209:1334	-0.297	-0.831	0.305
(+1,+19)	2543	-0.22%	-0.25%	1270:1273>>	-1.146	-0.589	2.728**
(+20,+60)	2533	-0.28%	-0.18%	1253:1280>	-0.551	-0.504	2.245*

The symbols $,*,**, and *** denote statistical significance at the 0.10, 0.05, 0.01 and 0.001 levels, respectively, using a 1-tail test. The symbols (,< or),> etc. correspond to $,* and show the significance and direction of the generalized sign test.

After august 29th, 2002, 1 year

Eventus (R) Software from Cowan Research, L.C.

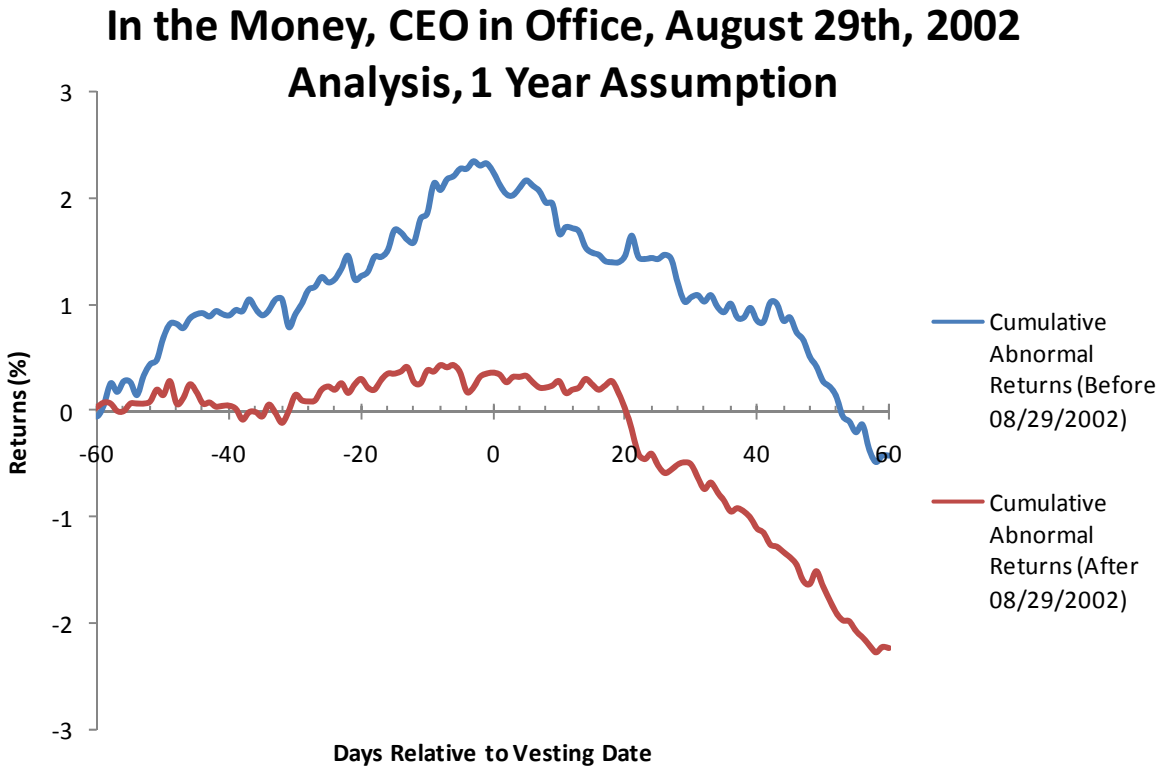
Market Model, Equally Weighted Index

Days	N	Mean Cumulative Abnormal Return	Precision Weighted CAAR	Positive: Negative	Patell Z	Portfolio Time-Series (CDA) t	Generalized Sign Z
(-60,-20)	1579	-0.02%	-0.48%	783:796	-1.424$	-0.032	1.081
(-19,-2)	1579	-0.26%	0.02%	776:803	0.073	-0.705	0.728
(-1,0)	1579	0.05%	0.06%	751:828	0.846	0.438	-0.531
(+1,+19)	1579	0.51%	0.40%	799:780>	1.762*	1.362$	1.886*
(+20,+60)	1578	-0.27%	0.13%	781:797	0.379	-0.489	1.004

The symbols $,*,**, and *** denote statistical significance at the 0.10, 0.05, 0.01 and 0.001 levels, respectively, using a 1-tail test. The symbols (,< or),> etc. correspond to $,* and show the significance and direction of the generalized sign test.

On the other hand, testing the August 29th, 2002 date along with the previous criteria of the options being In the Money and the CEO being in office proved to be highly interesting. The sample which tested the period prior to August 29th showed cumulative abnormal returns of over 2% prior to the vesting date and cumulative abnormal losses of over 2% after the vesting date. The period after August 29th did not have such a large impact showing inconclusive cumulative abnormal returns prior to the vesting date and cumulative abnormal losses of over 2% after the vesting date (these data are summarized below).

From these samples it seems to me that options awards with vesting dates before the date when the Sarbanes-Oxley Act became effective show much more evidence of earnings and news management than the other samples I have tested thus far. It seems obvious that CEOs would try to take more advantage of corporate earnings to increase value of their compensation packages when they had to release less information about them to investor as opposed to afterward, when they would come under much more intense scrutiny for any wrong doing and could possibly lose their jobs. This again enforces the argument that CEOs will only act a certain way when the expected return of their payoff is greater than the expected return if they did not do anything. Similarly to in the money options, if CEOs can increase their pay with a great amount of certainty without the chance of news breaking about their actions they are much more likely to do so.



In the Money Options, CEO in Office, Vesting Date Before August 29th, 2002, 1 Year

Eventus (R) Software from Cowan Research, L.C.

Market Model, Equally Weighted Index

Days	N	Mean Cumulative Abnormal Return	Precision Weighted CAAR	Positive: Negative	Patell Z	Portfolio Time-Series (CDA) t	Generalized Sign Z
(-60,-20)	1377	1.22%	0.90%	711:666>>>	2.154*	1.609$	3.561***
(-19,-2)	1377	1.02%	0.79%	745:632>>>	2.884**	2.023*	5.397***
(-1,0)	1377	-0.06%	0.04%	660:717	0.400	-0.361	0.807
(+1,+19)	1377	-0.85%	-0.68%	653:724	-2.401**	-1.646*	0.429
(+20,+60)	1370	-1.83%	-1.07%	639:731	-2.579**	-2.413**	-0.150

The symbols $,*,**, and *** denote statistical significance at the 0.10, 0.05, 0.01 and 0.001 levels, respectively, using a 1-tail test. The symbols (,< or),> etc. correspond to $,* and show the significance and direction of the generalized sign test.

In the Money Options, CEO in Office, Vesting Date After August 29th, 2002, 1 Year

Eventus (R) Software from Cowan Research, L.C.

Market Model, Equally Weighted Index

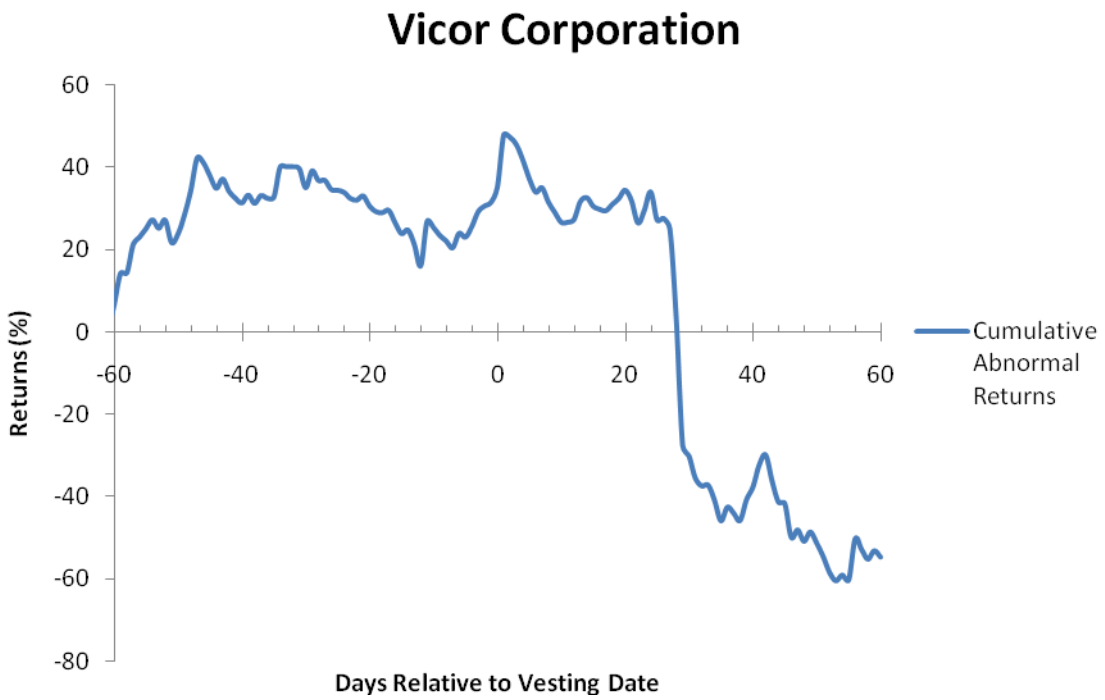
Days	N	Mean Cumulative Abnormal Return	Precision Weighted CAAR	Positive: Negative	Patell Z	Portfolio Time-Series (CDA) t	Generalized Sign Z
(-60,-20)	852	0.30%	0.32%	441:411>	0.729	0.432	2.222*
(-19,-2)	852	0.01%	0.37%	433:419>	1.271	0.032	1.673*
(-1,0)	852	0.03%	0.08%	410:442	0.871	0.221	0.096
(+1,+19)	852	-0.19%	0.01%	407:445	0.040	-0.393	-0.110
(+20,+60)	852	-2.35%	-0.94%	391:461	-2.176*	-3.337***	-1.207

The symbols $,*,**, and *** denote statistical significance at the 0.10, 0.05, 0.01 and 0.001 levels, respectively, using a 1-tail test. The symbols (,< or),> etc. correspond to $,* and show the significance and direction of the generalized sign test.

VII. Further Investigation of In the Money and CEO in Office Results

Beyond determining whether or not stock returns around vesting dates exhibit cumulative abnormal returns, which signifies that executives manipulate corporate actions around these dates to enhance the value of their own vested options, I want to explore more specifically what kind of announcements tend the be manipulated. I plan to do this by examining individual observations which are examples of very advantageous vesting dates. Because the stock price changes so drastically in these scenarios it seems likely that these variations were caused by company specific information. The question I ask is whether this information was deliberately timed by the executives to benefit themselves.

The first example I want to examine is Vicor Corporation. The table below illustrates that the stock experienced more than 30% cumulative abnormal returns prior to the vesting date and cumulative abnormal losses of over 85% after the vesting date.



Eventus (R) Software from Cowan Research, L.C.

Market Model, Equally Weighted Index

VICOR CORPORATION
PERMNO=76128 Event Date=19991223

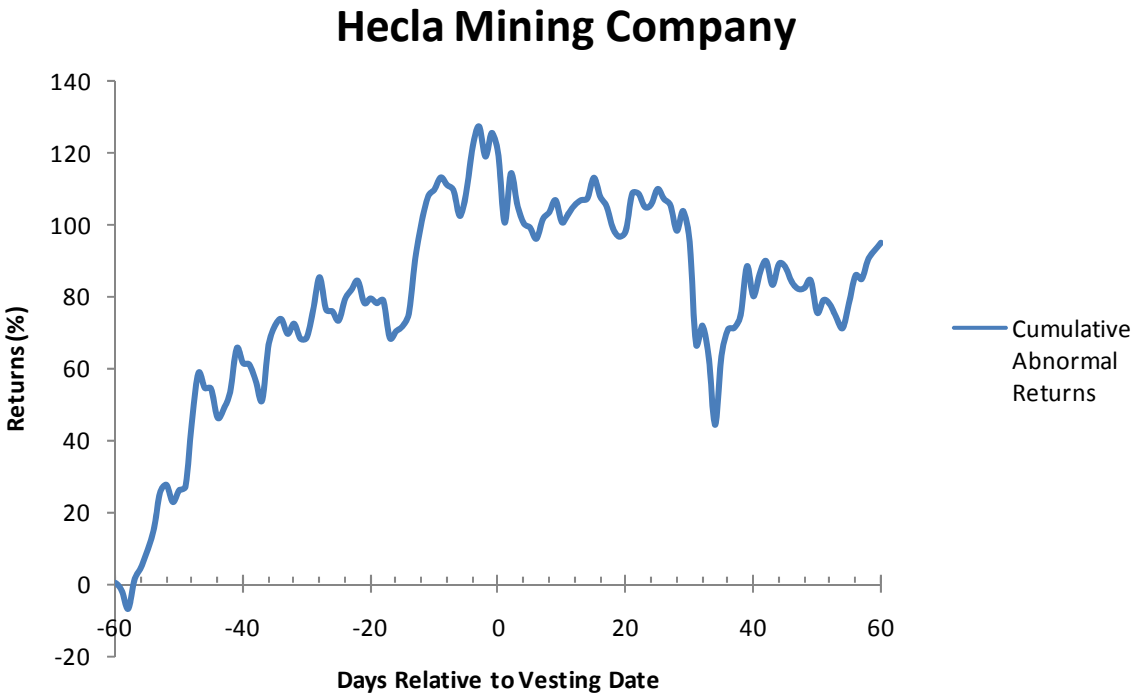
Days	Cumulative Abnormal Return	Standardized Cumulative Abnormal Return
(-60,-20)	30.41%	1.032
(-19,-2)	0.04%	0.003
(-1,0)	4.52%	0.694
(+1,+19)	-2.73%	-0.134
(+20,+60)	-86.87%	-2.946**

The symbols $,*,**, and *** denote statistical significance at the 0.10, 0.05, 0.01 and 0.001 levels, respectively, using a 1-tail test.

By examining the articles published about the firm or that mentioned the firm by using the Factiva database I find that the earnings release before the vesting date tried not to mention negative results, focused on positive earnings, and cited markedly higher increases in earnings than the 4th quarter release after the vesting date.[2] However the 4th quarter earnings release missed estimates and reported reduced orders from two main customers.[3] It is hard to believe that such news only came up or was known in one quarter. A more prudent approach that would favor shareholders would be to include guidance on the next quarter results or a more negative outlook for the future in the earnings release that took place before the vesting date. However, according the Compustat database, only 130 options were awarded for a value of about $1,500 so this may suggest these results are also inconclusive as to the meager amount of the option grant.

Another example I found in the subsample was Hecla Mining Company. As shown by the graph and table below the company's stock experienced over 100% cumulative abnormal gains before the vesting date of the June 7th, 2001 option grant and approximately 25% cumulative abnormal losses afterward.

[2] Business Wire (13th October 1999)
[3] Dow Jones Business News (4th February 2000)



Eventus (R) Software from Cowan Research, L.C.

Market Model, Equally Weighted Index

HECLA MINING CO
PERMNO=32651 Event Date=20020607

Days	Cumulative Abnormal Return	Standardized Cumulative Abnormal Return
(-60,-20)	79.48%	1.767*
(-19,-2)	39.54%	1.324$
(-1,0)	0.84%	0.082
(+1,+19)	-23.18%	-0.755
(+20,+60)	-1.67%	-0.035

The symbols $,*,**, and *** denote statistical significance at the 0.10, 0.05, 0.01 and 0.001 levels, respectively, using a 1-tail test.

By examining press releases and articles published about Hecla Mining Company around the time of the vesting date I gather a better idea of the reasoning behind the abnormal returns to the stock. Prior to the vesting date, in May Hecla reported healthy revenue increases and overall

growth across the company.[4] However, only six calendar days after the vesting date Hecla announced a tender offer for its Preferred B Shares.[5] This deal would convert one Preferred B Share into 7 shares of Hecla Common stock and effectively dilute the common stock shareholder base. This caused the price of the stock to depreciate shortly after the vesting date. In this situation it is not difficult to recognize the motivation to hold back such news until after the vesting date so that the value of the options would not decrease sufficiently just before it could be monetized. Furthermore, unlike the Vicor Corporation option grant which was rather small this grant is for 200,000 options which would amount to a realized value of about $764,000 at the vesting date. Clearly, this is evidence of management of news releases by the executive of Hecla Mining Company to increase his/her potential gain on exercise of the option grant.

Please refer to the appendix for several other company specific examples.

VIII. Summary

Following on research conducted by David Yermack, Erik Lie, and others on stock option grant dates I decided to examine stock option vesting dates with the notion that executives attempt to take advantage of the vesting dates of the options that are granted to them similarly to exploiting the process of determining the grant date of stock option awards given to executives as compensation. I start with a sample of 6,371 option grants of which only 4,629 had usable return information. I then subdivide the sample in smaller samples to isolate certain criteria of the stock option grants and the vesting date. I test whether the options are in the money, whether the CEO is in office at the vesting date, whether the vesting date is before or after August 29th, 2002[6], and other less significant criteria.

[4] Business News Americas (1st May 2002)
[5] Business Wire (13th June 2002)
[6] The date on which the Sarbanes-Oxley Law came into effect and more heavily scrutinized corporate actions.

When I test the whole sample for abnormal returns around the vesting date I do not find significant returns to merit further investigation. However, I find that when I apply the criteria mentioned above to the sample set this yields significant results. In the subsample filtering for in the money options and the CEO being in office on the vesting date there is evidence of significant cumulative abnormal returns of more than 1% before the vesting date and cumulative abnormal losses of more than 2% after the event date. In addition when I add the criteria of the vesting date falling before the Sarbanes-Oxley Law went into effect there are cumulative abnormal returns of over 2% prior to the vesting date and cumulative abnormal losses of over 2% after the vesting date; which further corroborates the results of the first test. Furthermore I then provide examples of individual companies where executives appear to have been lucky enough to have the vesting date fall at a point where the stock experienced very high abnormal returns prior to the vesting date and then unfortunately experienced very steep losses after the vesting date.

IX. Discussion

My hypothesis to the reasoning behind this is that executives desire to extract the maximum value from their compensation awards. Although some executives tried to manipulate the option grant date to receive the options with an embedded high value, they can only effectively monetize these gains after the vesting date. Therefore executives try to inflate the stock price before the vesting date, or prevent it from falling, in order to preserve the realized value of their option awards. This is done through earnings management or timing of news releases about the company. What is also interesting is that when I disaggregate the three criteria and test them by themselves only the sample with in the money options shows significant abnormal returns. This means that CEOs only wish to manipulate corporate actions or news releases when there is

already some value built into their stock options. By looking at the results from the CEO in office test and the prior to August 29th, 2002 test it seems as though there is not enough reason for CEOs to manipulate news or earnings. Essentially if the options are not in the money there is not enough certainty that the options will indeed be in the money and the value could be realized. If the CEO is not already guaranteed a payout he/she will not attempt to manipulate news or earnings, but if there is a chance of improving already realizable value the CEO is willing to take on such risks to greatly improve his/her wealth.

To enhance these claims I also look at whether or not executives at these highlighted firms exercised their options directly after the assumed vesting date. However, due to time constraints, I was unable to find data that showed that executives did indeed exercise the option in the month after the vesting date. I also do not test each of the queries using multiple vesting period assumptions. I initially ran the whole sample with various vesting date assumptions but after returning significant and rational results when using the one year vesting assumption and other filters I did not run any tests keeping the filters constant and altering the vesting date assumption. This would be an interesting test to run to corroborate the results across various vesting period assumptions depending on the conventions used in assigning vesting dates in option grants.

When examining the individual results of companies in the sample with in the money options, the CEO being in office, and the vesting date falling before August 29th, 2002 I realize that most of the companies are not large cap firms or even Fortune 500 candidates, but in fact most are relatively smaller capitalization companies. Hence I propose that executives of small cap companies have a higher tendency to massage earnings or manage news releases in order to maximize the value of the stake they hold in the business. Since small cap companies are

inherently more risky and the stock is more volatile it would be easier to mask violent swings in price as opposed to the stalwarts of the Fortune 500. Therefore there is both a higher payoff to these managers and less risk; which leads to higher incentives.

The topic of incentives and managers' reasoning behind managing earnings and corporate news is one that I would like to conclude this article with. Brandenburger and Polack (1996) propose that the information asymmetry between the market and the executive causes the executive to act in a way that is less beneficial to the shareholders and to long term returns to the market than if there was perfect information available to both sides. If the game is played efficiently it reaches a Nash Equilibrium when the executive maximizes his/her own firms future profits based on the information granted to him/her instead of what the market believes (which has less information about the inner workings of the firm than the executive).

I propose that in the scenario at hand the executive is once again in a game against the market and there is again asymmetric information between the two players. In Brandenburger and Polak's article the executive was acting inefficiently due to the market's payoff expectations where in this scenario the executive is acting inefficiently because of his/her own payoff expectations. Essentially, in both scenarios, all parties would be better off if the executive focused on long term profits to the firm without being influenced by either party's payoff expectations. In the case of executives acting on behalf of their own benefits when vesting dates approach if they ignored this opportunity to maximize their own profits they would make decisions that are better for the firm and hence raise stock prices over the longer term, maximize their own value in the stock options, and maximize the markets' and investors' value because stock prices would be fairly valued not inflated and deflated by timing of earnings or news releases.

The question is how to attain this altruistic equilibrium; if it is even attainable as human beings are generally selfish creatures. One argument is that in the current state of the world the market does not properly value option vesting date information and hence market traders discount it when analyzing a company's expected stock price on a given day. Hence, the market has an information disadvantage to the executives, which the executives then expose. If, effectively, the market incorporated vesting dates into its valuation of stock prices this information gap would be closed. Hence, stocks would rally before vesting dates without the need for executives to manage earnings. If stocks rallied executives would be able to attain higher values for their options while at the same time refraining from managing earnings in a way that was harmful to overall long term stock returns. In such a perfect world, it would be a win, win situation.

Acknowledgements

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Jessie Rosenzweig, for helping organize the program!

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The Leonard N. Stern School of Business, for providing me with a solid education on which to begin my career in the finance industry.

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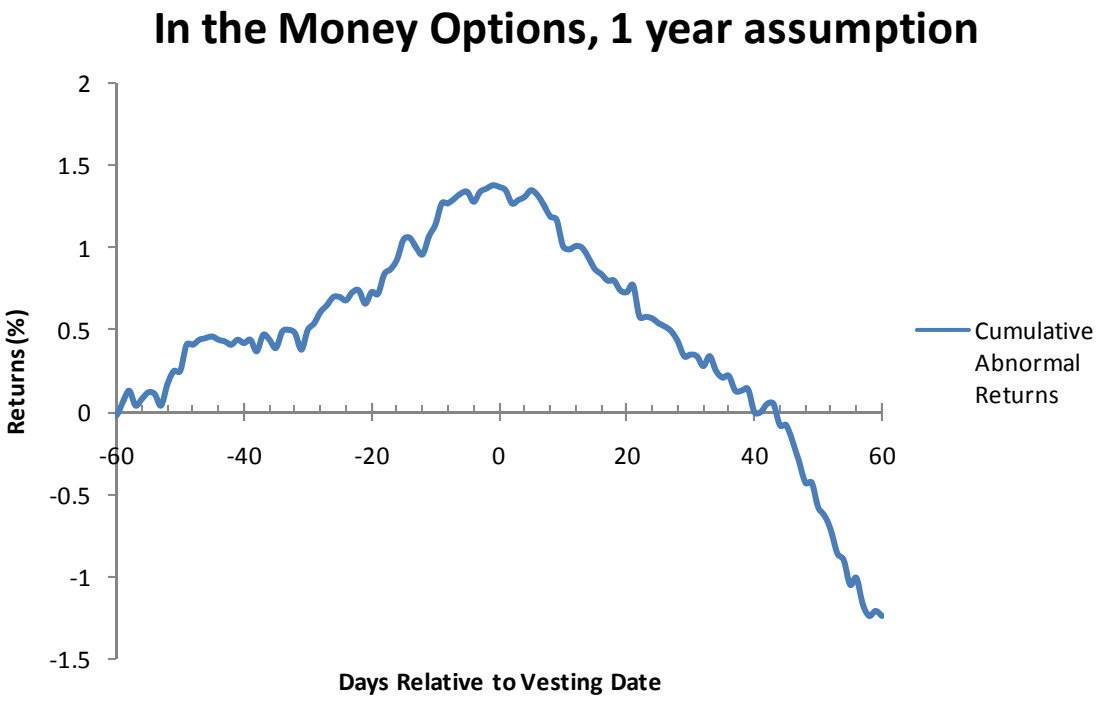
Appendix A:



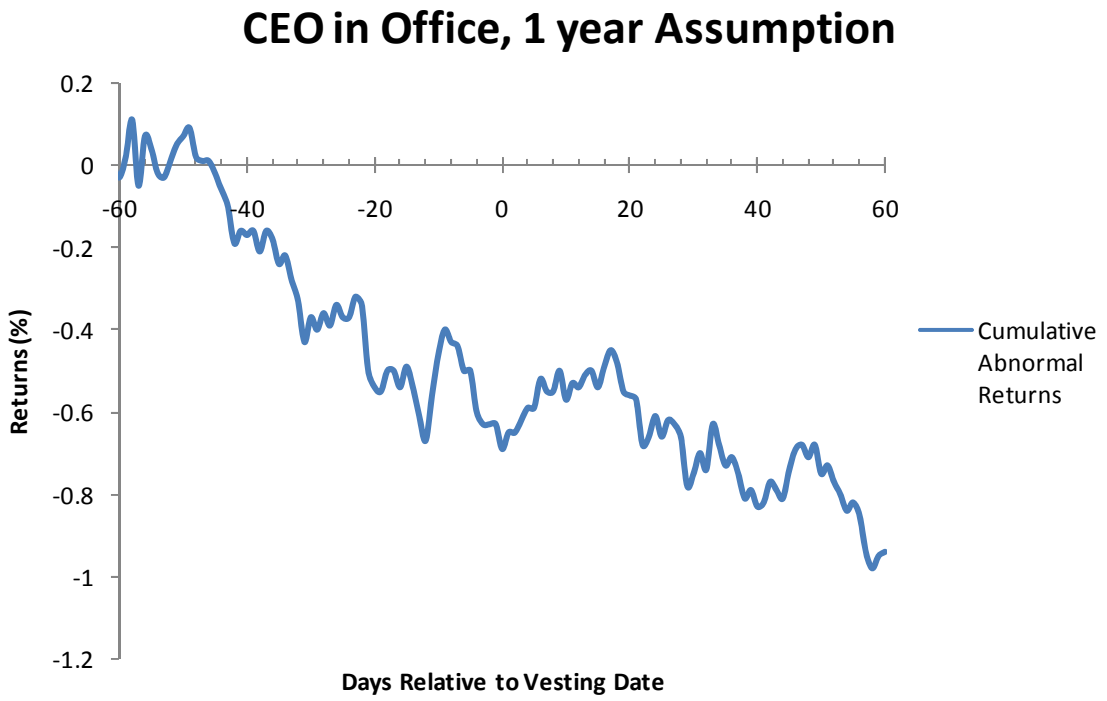
Eventus (R) Software from Cowan Research, L.C.

Market Model, Equally Weighted Index

Days	N	Mean Cumulative Abnormal Return	Precision Weighted CAAR	Positive: Negative	Patell Z	Portfolio Time-Series (CDA) t	Generalized Sign Z
(-60,-20)	2504	0.72%	0.58%	1288:1216>>>	2.036*	1.239	4.193***
(-19,-2)	2504	0.64%	0.61%	1321:1183>>>	3.211***	1.657*	5.514***
(-1,0)	2504	0.01%	0.07%	1206:1298	1.190	0.074	0.911
(+1,+19)	2504	-0.64%	-0.43%	1187:1317	-2.241*	-1.624$	0.151
(+20,+60)	2496	-1.98%	-0.94%	1161:1335	-3.282***	-3.388***	-0.740

The symbols $,*,**, and *** denote statistical significance at the 0.10, 0.05, 0.01 and 0.001 levels, respectively, using a 1-tail test. The symbols (,< or),> etc. correspond to $,* and show the significance and direction of the generalized sign test.|

Appendix B:



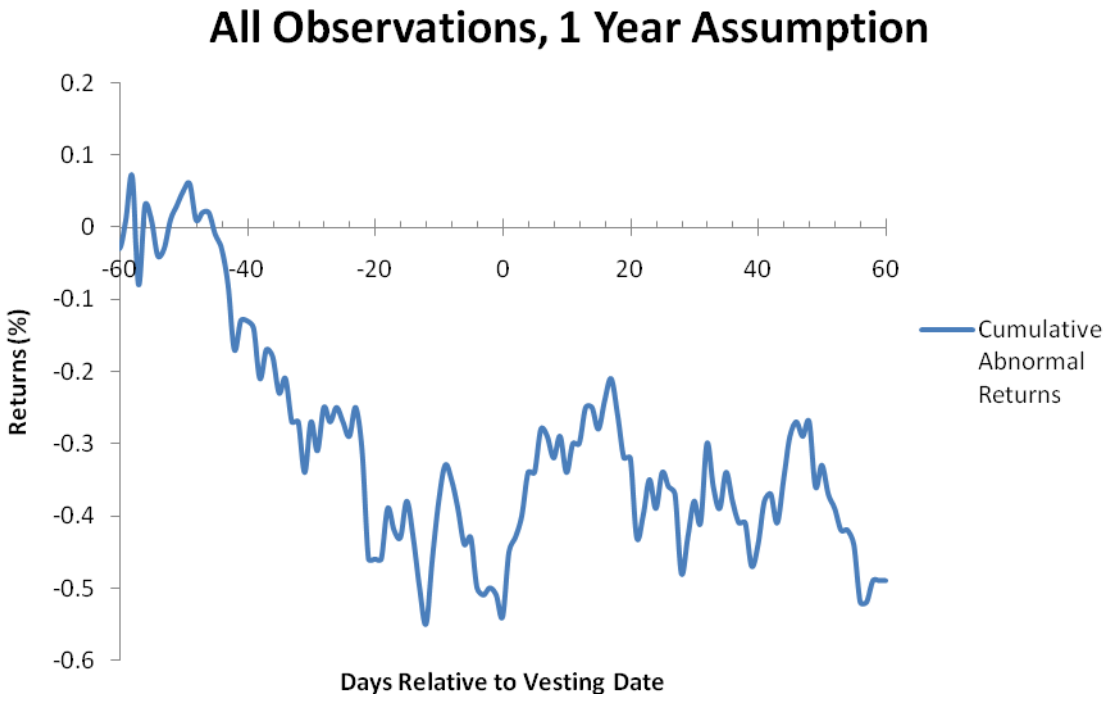
Eventus (R) Software from Cowan Research, L.C.

Market Model, Equally Weighted Index

Days	N	Mean Cumulative Abnormal Return	Precision Weighted CAAR	Positive: Negative	Patell Z	Portfolio Time-Series (CDA) t	Generalized Sign Z
(-60,-20)	4100	-0.53%	-0.59%	1982:2118	-2.560**	-1.191	0.961
(-19,-2)	4100	-0.09%	-0.07%	2033:2067>>	-0.451	-0.319	2.556**
(-1,0)	4100	-0.06%	-0.02%	1956:2144	-0.324	-0.561	0.148
(+1,+19)	4100	0.14%	0.18%	2079:2021>>>	1.170	0.474	3.994***
(+20,+60)	4090	-0.39%	-0.08%	2038:2052>>	-0.339	-0.869	2.864**

The symbols $,*,**, and *** denote statistical significance at the 0.10, 0.05, 0.01 and 0.001 levels, respectively, using a 1-tail test. The symbols (,< or),> etc. correspond to $,* and show the significance and direction of the generalized sign test.

Appendix C:



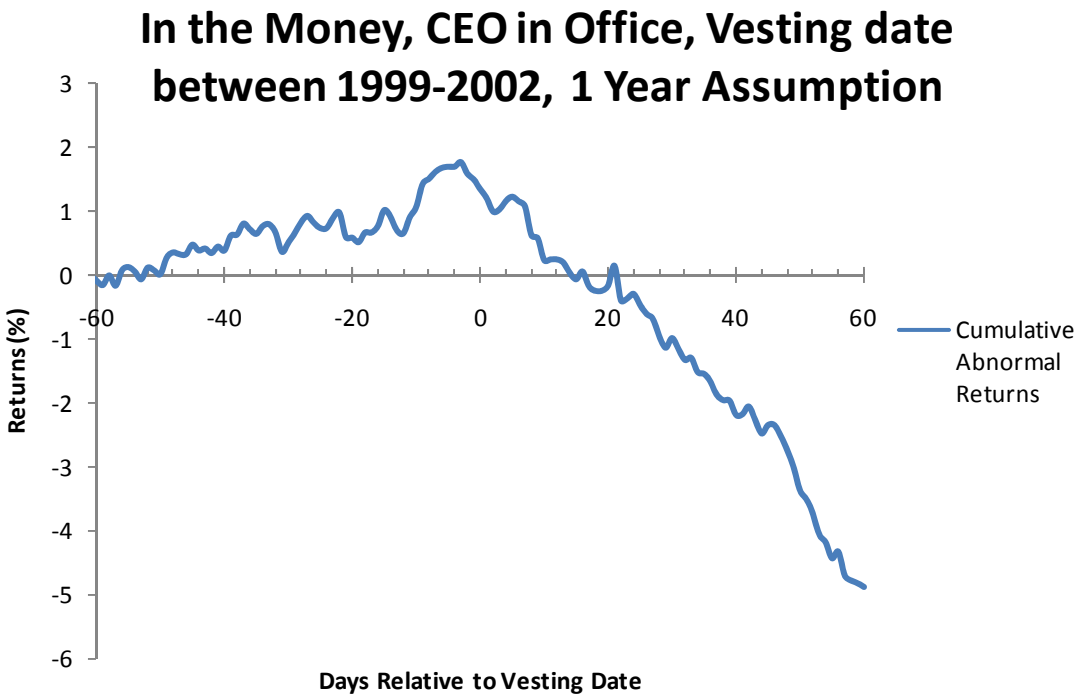
Eventus (R) Software from Cowan Research, L.C.

Market Model, Equally Weighted Index

Days	N	Mean Cumulative Abnormal Return	Precision Weighted CAAR	Positive: Negative	Patell Z	Portfolio Time-Series (CDA) t	Generalized Sign Z
(-60,-20)	4629	-0.48%	-0.56%	2229:2400	-2.555**	-1.086	0.776
(-19,-2)	4629	-0.04%	-0.06%	2309:2320>>>	-0.391	-0.145	3.130***
(-1,0)	4629	-0.04%	0.01%	2220:2409	0.286	-0.417	0.511
(+1,+19)	4629	0.21%	0.17%	2344:2285>>>	1.135	0.686	4.160***
(+20,+60)	4617	-0.16%	0.06%	2306:2311>>>	0.253	-0.353	3.214***

The symbols $,*,**, and *** denote statistical significance at the 0.10, 0.05, 0.01 and 0.001 levels, respectively, using a 1-tail test. The symbols (,< or),> etc. correspond to $,* and show the significance and direction of the generalized sign test.

Appendix D:



In the Money Options, CEO in Office, Vesting Date Falling Between 1999 and 2002, 1 Year

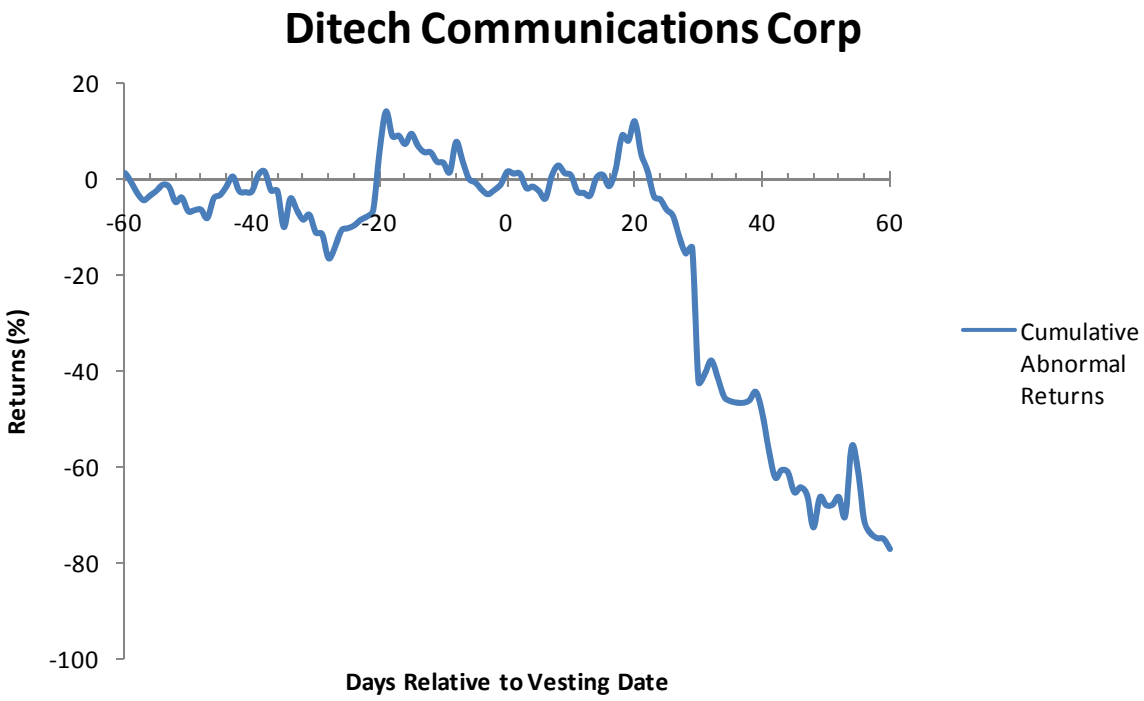
Eventus (R) Software from Cowan Research, L.C.

Market Model, Equally Weighted Index

Days	N	Mean Cumulative Abnormal Return	Precision Weighted CAAR	Positive: Negative	Patell Z	Portfolio Time-Series (CDA) t	Generalized Sign Z
(-60,-20)	729	0.56%	0.29%	376:353>>	0.414	0.481	2.364**
(-19,-2)	729	1.00%	0.71%	383:346>>	1.537$	1.301$	2.883**
(-1,0)	729	-0.23%	-0.04%	339:390	-0.284	-0.920	-0.382
(+1,+19)	729	-1.60%	-1.43%	340:389	-3.020**	-2.031*	-0.307
(+20,+60)	724	-4.63%	-3.78%	296:428<<<	-5.422***	-4.012***	-3.408***

The symbols $,*,**, and *** denote statistical significance at the 0.10, 0.05, 0.01 and 0.001 levels, respectively, using a 1-tail test. The symbols (,< or),> etc. correspond to $,* and show the significance and direction of the generalized sign test.

Appendix E:



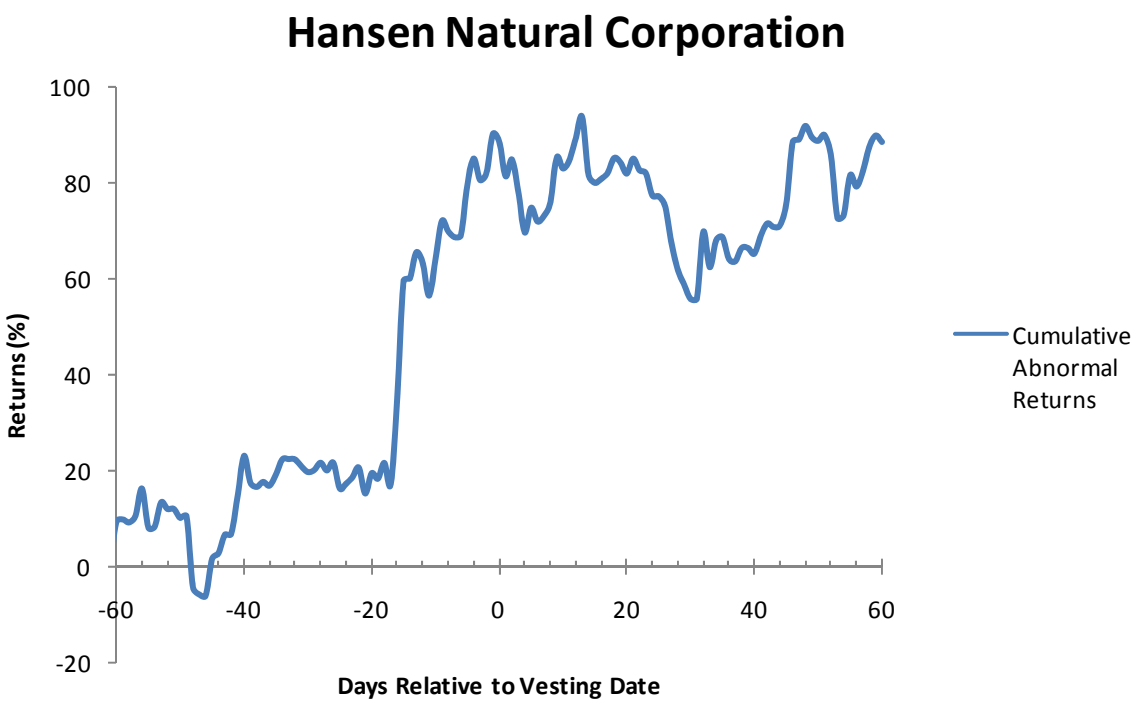
Eventus (R) Software from Cowan Research, L.C.

Market Model, Equally Weighted Index

DITECH COMMUNICATIONS CORP
PERMNO=86959 Event Date=20040923

Days	Cumulative Abnormal Return	Standardized Cumulative Abnormal Return
(-60,-20)	5.72%	0.191
(-19,-2)	-8.06%	-0.410
(-1,0)	3.78%	0.576
(+1,+19)	6.48%	0.321
(+20,+60)	-85.03%	-2.865**

The symbols $,*,**, and *** denote statistical significance at the 0.10, 0.05, 0.01 and 0.001 levels, respectively, using a 1-tail test.



Eventus (R) Software from Cowan Research, L.C.

Market Model, Equally Weighted Index

HANSEN NATURAL CORP
PERMNO=88031 Event Date=20040528

Days	Cumulative Abnormal Return	Standardized Cumulative Abnormal Return
(-60,-20)	4.35%	0.187
(-19,-2)	56.89%	3.524***
(-1,0)	6.65%	1.245
(+1,+19)	-9.03%	-0.552
(+20,+60)	-11.05%	-0.459

The symbols $,*,**, and *** denote statistical significance at the 0.10, 0.05, 0.01 and 0.001 levels, respectively, using a 1-tail test.