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The Effect of Consumer Boycotting on the Stock Market

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The Effect of Consumer Boycotting on the Stock Market

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Abstract

Our work seeks to determine if the act of a consumer boycott has a significant effect on the stock price of target firms and to determine what aspects of the firm either contribute positively or negatively to this effect. Most research suggests that the effects of a boycott on stock price can be highly varied with little to no explanation for this variance. We analyzed the abnormal stock returns of our 23 sample firms in the 30 day period leading up to the boycott and after the commencement of the boycott. We've found the results that the market overall does not react significantly to consumer boycotting. However, our results show that the firms having a bad reputation before the boycott, larger market capital, and frequent past scandals are more likely to have significant or marginally significant market reactions.

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What is a Boycott?

There are many different permutations of what may be considered a boycott. These permutations have grown and evolved ever since the industrial revolution. There are boycotts where an individual simply refuses to purchase good of a company, ones where people refuse to buy from a company and attempt to induce others to that same end, and there are boycotts where employees refuse to work for a company (Christ). The first type of boycott is unimportant simply due to a lack of scale and public knowledge. The second type of boycott is perhaps what many people think of when they think of boycotting: a consumer boycott.

A prime example of a consumer boycott is the recent Nike/Kaepernick controversy. As Rathbone (2018) discusses, this scenario gained real steam when Nike released a controversial ad which featured Colin Kaepernick, a controversial football player. This caused an instant backlash from certain groups and it became commonplace to post images and video to social media showing the violent destruction of Nike merchandise. This is not the first time that boycotts were started in relation to the issues of civil rights. In *Southern Changes*, Garrow (1985) recounts one of the most memorable boycotts in US history, the Montgomery Bus Boycott. In this case, thousands took to the streets with signs and posters in hand to boycott the segregation in the public transportation of Montgomery, Alabama.

Consumer boycotts, as well as boycotts in general, can vary greatly in almost every aspect. The most prominent aspect is in duration. As Post (1985) explains, Nestle was the target of a seven-year boycott that didn't come to an end until October of 1984. This boycott was formulated due to perceived marketing abuses that Nestle was performing. Specifically, Nestle was marketing their infant formula products in under-developed nations with questionable methods. In contrast to the Nestle boycott, Wright (2000) discusses a far shorter boycott in

Environmental Politics. Tuna was being inhumanely harvested and so a push was made to only purchase humanely captured tuna. This boycott affected Heinz, as the owner of Star-Kist, a great deal. In almost no time at all, Heinz announced that they would only be selling humanely captured tuna. The company even began using that fact as a selling point in their advertisements. This effectively ended the boycott of Star-Kist just as soon as it began, although boycotts of other inhumane tuna remained.

The final type of boycott is more often thought of as a strike and there are countless examples of this throughout the 1900s. These types of boycotts were responsible for ingraining some of the basic workers' rights that now are standard across the developed world. Davis et al (2000) discuss one of the largest strikes in history, the Pullman Strike of 1894. A decade of violence and mistreatment sat as a powder keg for the Pullman Strike. When this keg ignited, the strike was so impactful that it essentially shut down rail traffic in West Chicago. A similar occurrence was the government postal strike of 1970. Shannon (1978) discusses how more than 150,000 employees, approximately 20% of the postal workforce, just stopped working. The effects of this strike were deemed so severe, that the Postal Reorganization Act of 1970 was passed, essentially outlawing future strikes from the Postal Service.

Boycotts have even been known to toe the line between being a consumer or union boycott. Dunne and Streshinky (2008) discuss one such example. The California Grape Strike of the 1960s began when workers in the National Farmworkers Association walked off of the farms they were working on to protest being the lowest-paid workers in the United States. So it began as a union boycott, but this quickly changed as news of the plight spread around the United States. Millions of consumers joined in with the boycotters and began refusing to buy

grapes until the wrong was righted. It ended up as a massive consumer/union hybrid strike that shook the Californian grape industry.

Previous Research

The effectiveness of boycotting has been a topic that has engrossed the attention of many researchers over the years. This is likely due, in part, to the inability of researchers to definitively show if and how a boycott has the potential to harm target firms. These numerous researchers utilized many different types of samples and methodologies to achieve their results.

The effectiveness of consumer boycotts can often be surmised by looking at the market price of target firms; i.e. if the firm's share price drops, the boycott was effective. Tyran and Engelmann (2002) researched the relation between price increases and boycotts in consumer environments. They set up an experimental environment of a simplified market. Their findings showed that a consumer goods price increase will often lead to a call to boycott. They further found that such a boycott is ineffective at keeping market prices down. The only real effect of the boycott was to reduce market efficiency. Continuing with market efficiency, Pruitt and Friedman (1986) ran a time-series methodology on 21 consumer boycotts to see what effect they had on shareholder wealth. They found that, following the announcement of a consumer boycott, there was a significant decline in stock prices of the target firm. The average drop in value for the target firm was more than \$120 million over the two-month period following the announcement.

With the prevalence of the internet and social media, it is now easier than ever for boycotts to begin. As for the effectiveness of these internet-grown boycotts, Koku (2012) performed extensive research on this topic. They concluded that consumer boycotts launched by individuals through the internet are wholly ineffective at achieving their goals. As this is an

emerging topic however, more research is likely required in this area before definitive conclusions can be drawn.

Union boycotts/strikes are a far more structured form of boycott than consumer boycotts. These boycotts are often larger and thought to be more effective than consumer boycotts. Pruitt, Wei, and White published an article for the *Journal of Labor Research* (1988) focusing on the effects of union-sponsored boycotts upon the market stock prices of firms. They utilized the market-model approach to look at abnormal stock price movements over a period of time surrounding a boycott's announcement. Their research, "strongly suggests that union boycotts initially lead to economically and statistically significant losses in the stock prices of the target firms. However, the short-term price damage inflicted by boycott announcements is almost completely erased by price rebounds over the ensuing 15 trading days" (Pruitt, 1988). This is a stark contrast to the overwhelming effectiveness seen in select union boycotts. Witt and Wilson (1999) discuss one such effective example, the Teamsters' UPS strike of 1997. The strikers were able to achieve their desired goals due to the intense public support this strike received. This seems to suggest that while the majority of union-sponsored boycotts are ineffective, they do have the ability to effect real change.

A boycott can also exist when businesses or countries are the participants in the boycott. In these cases, the target of the boycott is often a country that has participated in some act deemed unsavory. One of the largest examples of this situation is when many parts of the world began boycotting South Africa due to their policy of apartheid. Teoh, Welch, and Wazzan (1996) performed an extensive study of the effects of the many boycotts of South Africa during the late 1980s. They utilized event-study methodology to find that, "the announcement of legislative or shareholder pressure had no discernible effect on the valuation of banks and

corporations with South African operations or on the South African financial markets” (Teoh 1996). This is in contrast to Gandal’s (1997) findings on the effectiveness of the Arab boycott on Israel. He found a significant effect on the consumer welfare of Israel stemming from the boycott. This further goes to show the inconsistent nature of boycotts no matter how large they may be.

It can be confusing why some boycotts seem to achieve overwhelming successes while others fall flat. In pursuit of clarification on this matter; King (2008) looked at a dataset of boycotts from 1990-2005, all against large and successful organizations, and used a two-stage Heckman probit model to shed light on this matter. The results he found showed that activists were more likely to boycott firms that previously had been boycotted, were large firms, and had a positive reputation. He also found that the level of media attention is positively correlated to the likelihood of concession to demands and that firms that previously faced a loss in reputation were more likely to concede to demands. Neilson (2010) further comments on King’s work by discussing how the logic behind boycotting focuses on the discrediting of market forerunners with the intention of influencing industrial actions as a whole.

Behavioral Finance

Since the general consensus is that boycotts are often ineffective, it begs the question as to why people continue to participate in boycotts. This bizarre decision can be better understood when one does not view the market as a perfect organism but instead draws from the field of behavioral finance. Behavioral finance combines traditional financial theory with elements of psychology to better understand the decision making of market participants.

Klein, Smith, and John (2004) performed a deep dive into the many facets that explain why consumers boycott despite the seeming ineffectiveness of boycotting in general. They

discussed how a boycotter's willingness to boycott combined with how effective they perceive the boycott to be goes a long way in determining whether or not they will choose to participate in a boycott. This effectiveness is often highly exaggerated, explaining why people boycott even if it won't do anything meaningful. They highlighted that, "consumers also need to realize intrinsic rewards of boycott participation, potentially boosting or maintaining self-esteem by, for example, avoiding guilt and responding to social pressure (self-enhancement)" (Klein 2004). Following with this research, Albrecht, Campbell, and Heinrich (2013) additionally found that involvement in a cause is a huge factor in a person's desire to join a boycott. They also found that brand commitment negatively influences boycotting intentions.

Boycotts do not need to be effective to be prevalent. All that needs to exist is either the appearance of effectiveness or social pressure. It is easy for someone to believe that boycotts as their prevalence seem to suggest usefulness. As for social pressure, this modern era of information and social activism work as great catalysts to push someone to participate actively in boycotting.

Efficient Market Hypothesis

Before discussing how the market reacts to events and information, one would be remiss not to know of the efficient market hypothesis. This hypothesis came into being in the 1960s thanks to the work of Eugene Fama.

The efficient market hypothesis creates three classifications for a market on efficiency; weak, semi-strong, and strong. A weak market is one in which prices reflect all historical information, a semi-strong market is one in which prices reflect all public information, and a strong market is one in which prices reflect all public and nonpublic information (Fama 1970). It is clear, since insiders can generate abnormal returns based on their nonpublic information, that

the United States financial market is not a strong market in terms of efficiency. The general consensus is that the market is semi-strong. This means that whenever new information is released publicly, prices should immediately change to reflect this. The efficient market hypothesis is related to the idea of a “random walk”. This means that new information affects stock prices regardless of the previous price and thus leading to an unpredictable momentum of change. This “random walk hypothesis” was first popularized by Malkiel (1973) in his book, *A Random Walk Down Wall Street*.

These hypotheses have not been without their critics. Lo and Mackinlay (2002) calculated that the correlation of recent stock price movements weren't zero. This means that there was not actually a true “random walk” when it came to stock prices. This finding was further supported when Lo, Mamaysky, and Wang (2000) found some predictive capabilities in stock prices based on previous movements. While these and many other researchers have been able to show that a perfect “random walk” is nonexistent, that does not negate the educational and informational benefits of using the “random walk hypothesis” as a starting point when looking at the movements of capital markets.

In opposition to the efficient market hypothesis, Ball and Brown (1968) were among the first to notice an abnormality. There was often a “post-earnings announcement drift. This means that good news was causing an upward drift in stock price while bad news would cause a downward drift in stock price. This drift took time before it reached equilibrium. This is inconsistent with the efficient market hypothesis's statement that new information is immediately reflected in stock price. Misspecification of the capital asset pricing model was initially proposed as an explanation of this abnormality. Bernard and Thomas (1989) performed extensive research concluding that this explanation was ineffective. Instead, they find that the

price delay may be based slightly on transaction costs but heavily on an incomplete updating of earnings expectations. This again undermines the concept of the efficient market hypothesis that information is immediately reflected in price.

Sample

The sample consists of 23 boycotts of 23 companies. This sample consists of only well-known companies that are traded on the New York Stock Exchange. As for the boycotts themselves; two occurred in 2010, one in 2012, two in 2016, six in 2017, eleven in 2018, and one in 2019. These 23 companies represent the exhaustive list of boycotts found during simple online research for which the necessary data was available. This sample is intended to span the gauntlet of all consumer boycotts in recent years. Despite this, as a result of how we located these boycotts, to be included in our sample; the boycott must have received some amount of online attention.

Methodology

Our research is focused on determining if boycotts have an effect on the equity markets for a firm. The stand-in for the commencement of the boycott that we will look at as the epicenter is the earliest report on the boycott by a high profile organization that can be found online. To determine the effects of a boycott on stock prices, we will be looking at the abnormal returns for the stock price. Abnormal returns are calculated by first determining the normal market over the period under question. This is done by examining an index's return as a stand-in for the market; in this case, we will be looking at the S&P 500 as our index. Each company's unique beta will then be applied to the market return to derive the expected return. The difference between this expected return and the actual return for the company is the abnormal return.

We will then look at the means of the abnormal return for two periods; 30 days before the beginning of the boycott and the day of and 2 days after the boycott begins. These will be compared with a means difference test to see if the presence of a boycott has a significant effect on the stock returns for target firms. A means difference test is more appropriate in this circumstance than the use of regression analysis as our sample size of 23 data points is too small to be meaningfully regressed.

We hand split these companies into levels for more focused testing based on four factors; previous reputation, frequency or magnitude of past scandals, market cap, and the attention the boycott received. For factors that had a subjective nature; research was conducted in order to attempt to reach as impartial a ruling as possible but there will always remain some subjectivity. In terms of previous reputation; level 1 consisted of firms believed to have a poor reputation in the eyes of the general public, level 2 were average firms for which people hold no strong feeling one way or the other, and level 3 were firms that were seen as shining examples of good conduct by the general populous. When considering past scandals; level 1 consisted of firms that experienced an abnormally low frequency of past scandals and no major scandals, level 2 consisted of the average firm in terms of scandal, and level 3 consisted of firms whose names are synonymous with either frequent or major scandals; British Petroleum for example would rate easily as a level 3 firm in this regards. For market cap, firms were split into four mathematic quartiles. Lastly, attention was determined based on the frequency and prominence of media attention to the boycott. Level 1 meaning relatively few mentions in news media over a very brief period; level 2 meant several more prominent mentions over a longer period of time (at least two days), and level 3 was consistent prominent mention in news media continuing for at least 5 days.

Hypotheses

H1:

Our first hypothesis is that there will be no significant difference in the means of the 30 day period before the boycott and the 3 day period after the commencement when looking at all of the 23 boycotts together.

H2:

Our second hypothesis is that there will be a significant difference in the means of the 30 day period before the boycott and the 3 day period after the commencement when looking at firms that had a poor reputation before the boycott began.

H3:

Our third hypothesis is that there will be a significant difference in the means of the 30 day period before the boycott and the 3 day period after the commencement when looking at high market cap firms.

H4:

Our fourth hypothesis is that there will be a significant difference in the means of the 30 day period before the boycott and the 3 day period after the commencement when looking at firms that previously to the boycott had been involved in numerous scandals.

H5:

Our fifth hypothesis is that there will be a significant difference in the means of the 30 day period before the boycott and the 3 day period after the commencement when looking at boycotts that received a high level of public attention.

Results

H1:

The results of the tests for our first hypothesis (as seen in Table 1) had a t-stat of $-.06$ and a p-value of $.952$. These values are highly insignificant, which means there is no significant effect of consumer boycotting on stock returns. These findings are in line with our proposed hypothesis.

H2:

For our second hypothesis; we split our firms into three distinct levels based on their previous reputation up until the boycott. Level 1 meant that the firm had an overall poor reputation and was thought of as shady or unethical by the general public. This level consisted of four firms. Level 2 meant that the firm had neither a particularly good or bad reputation prior to the boycott and was overall a standard firm in the eyes of the public. This level consisted of fifteen firms. Level 3 meant that the firm had an overall positive reputation as was looked at in a favorable light by the public either do to charitable works, ethical behavior, or any other reasons. This level consisted of four firms. We then tested each level with a means difference test assuming equal variances.

The results of our tests for level 1 (as seen in table 2) had a t-stat of 2.27 and a p-value of $.064$. This means that with 90% confidence it can be concluded that there is some effect on the stock price of a firm after the commencement of a boycott if the firm was already regarded poorly by the public.

The results of our tests for level 2 (as seen in table 2) had a t-stat of $-.024$ and a p-value of $.98$. These values are highly insignificant and so we are unable to conclude if a boycott affects the stock price of a firm of which the public holds no previous judgment either positively or negatively.

The results of our tests for level 3 (as seen in table 2) had a t-stat of -1.057 and a p-value of .33. These values are insignificant. This means we are unable to conclude that a boycott affects the stock price of a firm of which the public holds a positive judgment of.

These results support our second hypothesis.

H3:

For our third hypothesis; we split our firms into four quartiles based on their market cap; quartile 1 being the smallest market caps and quartile 4 being the largest market caps. There were six firms in quartile 1, six firms in quartile 2, five firms in quartile 3, and 6 firms in quartile 4. We then performed a means difference test with each of the quartiles; assuming equal variances.

The results of our tests for quartile 1 (as seen in table 3) had a t-stat of -1.33 and a p-value of .21. These values are nearing significance but are not significant. Therefore we are unable to conclude if a boycott affects the stock price of quartile 1 market cap firms but as the values were almost significant; more research should be conducted to determine one way or the other with regards to small market cap companies.

The results of our tests for quartile 2 (as seen in table 3) had a t-stat of 1.514 and a p-value of .16. These values are significant with a confidence of 80% and so we can reject the null hypothesis and conclude that there is likely some measure of an effect on stock price for companies in quartile 2 of market cap.

The results of our tests for quartile 3 (as seen in table 4) had a t-stat of -.359 and a p-value of .729. These values are highly insignificant and therefore we cannot conclude that a boycott has any material effect on the stock price of a target firm in quartile 3 of market cap.

The results of our tests for quartile 4 (as seen in table 4) had a t-stat of 1.178 and a p-value of .26. These values are nearing significance but are not significant. Therefore we are unable to conclude if a boycott affects the stock price of quartile 4 market cap firms but as the values were almost significant; more research should be conducted to determine one way or the other with regards to the effect of a boycott on the stock prices of large market cap companies.

These results are inconclusive with respect to our third hypothesis.

H4:

For our fourth hypothesis; we split our firms into three distinct levels based on the frequency and magnitude of scandals prior to the commencement of the boycott. Level 1 means that the firm had infrequent or minor scandals. This level consisted of nine firms. Level 2 meant that the firm had an average number of average severity scandals. This level consisted of ten firms. Level 3 meant that the firm had frequent or large scandals in their past. This level consisted of four firms. We then tested each level with a means difference test assuming equal variances.

The results for level 1 (as seen in table 5) had a t-stat of -1.238 and a p-value of .234. This is close to being significant but falls outside the level of significance. This is therefore inconclusive and more research will need to be conducted to determine if firms that were unknown for having scandals are affected more by boycotts.

The results for level 2 (as seen in table 5) had a t-stat of .57 and a p-value of .576. This is highly insignificant and therefore we are unable to conclude that a boycott has any material effect on the stock price of a “normal” company with respect to previous scandals.

The results for level 3 (as seen in table 5) had a t-stat of 2.397 and a p-value of .054. This is significant and with a confidence of 90% it can be said that there is some effect on the stock

price of firms due to a boycott if the company had a higher than normal frequency or magnitude of scandals in their past.

These results are consistent with our fourth hypothesis.

H5:

For our fifth hypothesis; we split our firms into three distinct levels of attention the boycott or scandal leading to the boycott received from the media and the public. Level 1 means that the boycott or scandal received little attention; an example of this would be the boycott receiving only a passing mention in a few news outlets and only being mentioned once or twice. This level consisted of eight firms. Level 2 meant that the boycott or scandal received moderate attention; i.e. many news outlets mentioned the scandal several time. This level consisted of nine firms. Level 3 meant that the boycott or scandal received significant attention; meaning continual airing in almost all news outlets over a sustained period. This level consisted of six firms. We then tested each level with a means difference test assuming equal variances.

The results for level 1 (as seen in table 6) had a t-stat of $-.182$ and a p-value of $.858$. These values are highly insignificant which means we cannot conclude that a boycott has any meaningful effect on the stock price of firms if it does not receive much public or media attention.

The results for level 2 (as seen in table 6) had a t-stat of 1.558 and a p-value of $.139$. These values are significant with a confidence of 80% we can conclude that a boycott has some significant effect on the stock price of a firm if it received a moderate amount of attention.

The results for level 3 (as seen in table 6) had a t-stat of $-.518$ and a p-value of $.616$. These values are highly insignificant and so we cannot say that a boycott has any significant

effect on the stock price of firms if the boycott or scandal leading to the boycott received a great deal of public or media attention.

These results are in contrast to our fifth hypothesis.

Discussion

Limitations

There are inherent limitations in any research involves boycotts; namely in regards to the sample being examined. There are countless “boycotts” that encompass only very limited groups or are in other ways so insignificant that to include them in any research would serve only to skew and invalidate the work. This inherently limits any research on boycotts to having only an unfortunately few number of cases to observe. This is further limited by needing to focus on a certain limited time period with one’s sample; otherwise natural changes over time in many factors such as engagement, advances in information technology, etc. will harm the significance of the results.

Another limitation on any study into boycotting is determining the time that any effect they may or may not have should become noticeable. Our usage of the time notice of the consumer boycott was found prominently on the internet seemed to be successful in some respects but further research could perfect upon this issue; perhaps by lengthening the time period being observed.

H1

The results of the testing for our first hypothesis clearly reiterate the findings of other researchers with respect to boycotts. Namely, that they are often unsuccessful at having a significant effect on stock price. This is interesting as these results have remained consistent

over the years despite the clear changes in consumer activism. Even a conscious and active populous cannot seem to make boycotting effective in a general sense.

H2

Our second hypothesis points towards a “kick them while they’re down” effect of boycotting. Investors seem unwilling to trust the stock of a company under boycott if the general populous already holds them in ill regards. Perhaps investors conclude, rightly or otherwise, that boycotts hurt hated firms more significantly than firms view in other lights. Meanwhile, they are ready to believe in a firm if that firm had either no negative connotation or even a positive one. This then leads to the boycott having little to no significant effect on the stock price of the target corporation.

H3

The results of our third hypothesis seem to point to an interesting “sweet spot” where boycotting is clearly ineffective; this being the third quartile of market cap. While all our other quartiles were at or nearing significance, the third quartile was very insignificant. The significance of quartile 1 and 2 could be explained if perhaps small firms are more susceptible to the sways of unsophisticated investors. This could also be explained as investors “jumping ship” as they may be more uncertain of a small company to withstand the effects of a boycott. Quartile 4 was less significant than either 1 or 2 but still leaves the possibility that boycotts can have a meaningful effect on the stock price of the largest of corporations; more so than for moderately large firms. This needs further research as this could be related to any number of factors; such as the public awareness of the firms, the economic inefficiencies of a large corporation, or any number of other explanations.

H4

Hypothesis four's findings are very intriguing. They seem to suggest that at both a low and high level of previous scandals relating to the target firm; boycotting may be effective. This is while maintaining that "normal" firms, those being ones without an abnormal number of past scandals in either direction, are free from the stock price effects of boycotting. The significance of boycotting effects on firms with significant past scandals is in alliance with our hypothesis two finding of a "pile on effect". What is interesting is that firms who had few past scandals are also seemingly affected. This might show that investors take a boycott as a sign of things to come in this case and as an increased risk to their investment.

H5

The results of hypothesis five are the most intriguing that we found. They suggest that a limited level of attention revolving around a boycott will lead it to be ineffective; which is in alignment with common sense, but attention is still no guarantee of success. In fact, a high level of attention leads to an ineffective boycott with respect to the effect on stock price. Boycotting only had a significant effect when a moderate amount of attention surrounded the scandal. This perhaps goes to show that a boycott needs attention in order to be effective but too much attention may draw detractors and lead to little or no material effect.

Conclusion

There appears to be no significant stock price change upon the commencement of a consumer boycott in a general sense. The types of boycotts that may have a significant effect on stock price are those that are against corporations that have poor public images, have small market caps, have experienced frequent or material scandals in their past, or boycotts that receive neither too little nor too much attention from the media and the public. None of these results can be stated with a high (95%) confidence level and as such more research is needed specifically

targeting these aspects of target firms to determine concretely whether a significant connection exists or not.

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Charts

Table 1 Means Difference Test For All Companies		
	30 Days Before Average Abnormal Return	3 Days Average Abnormal Return
Mean	-5.90914E-06	0.000101806
Variance	7.15749E-06	6.50608E-05
Observations	23	23
Pooled Variance	3.61092E-05	
Hypothesized Mean Difference	0	
df	44	
t Stat	-0.06078766	
P(T<=t) one-tail	0.475901797	
t Critical one-tail	1.680229977	
P(T<=t) two-tail	0.951803594	
t Critical two-tail	2.015367574	

Level of Previous Reputation	Level 1 of Previous Reputation		Level 2 of Previous Reputation		Level 3 of Previous Reputation	
	30 Days Before Abnormal Return	3 Days of Abnormal Return	30 Days Before Abnormal Return	3 Days of Abnormal Return	30 Days Before Abnormal Return	3 Days of Abnormal Return
Mean	-0.000073	-0.005614	-0.000240	-0.000193	0.000940	0.006921
Variance	0.000001	0.000023	0.000010	0.000048	0.000005	0.000123
Observations	4	4	15	15	4	4
Pooled Variance	0.000012		0.000029		0.000064	
Hypothesized Mean Difference	0		0		0	
df	6		28		6	
t Stat	2.271005		-0.024282		-1.056514	
P(T<=t) one-tail	0.031790		0.490400		0.165703	
t Critical one-tail	1.943180		1.701131		1.943180	
P(T<=t) two-tail	0.063580		0.980800		0.331405	
t Critical two-tail	2.446912		2.048407		2.446912	

Table 3: t-Test: Two-Sample Assuming Equal Variances				
Market Cap Quartile	Quartile 1		Quartile 2	
	30 Days Before Abnormal Return	3 Days of Abnormal Return	30 Days Before Abnormal Return	3 Days of Abnormal Return
Mean	-0.001028	0.004432	-0.000172	-0.004722
Variance	0.000007	0.000094	0.000004	0.000050
Observations	6	6	6	6
Pooled Variance	0.000051		0.000027	
Hypothesized Mean Difference	0		0	
df	10		10	
t Stat	-1.329623		1.513962	
P(T<=t) one-tail	0.106587		0.080491	
t Critical one-tail	1.812461		1.812461	
P(T<=t) two-tail	0.213175		0.160982	
t Critical two-tail	2.228139		2.228139	

Table 4: t-Test: Two-Sample Assuming Equal Variances				
Market Cap Quartile	Quartile 3		Quartile 4	
	30 Days Before Abnormal Return	3 Days of Abnormal Return	30 Days Before Abnormal Return	3 Days of Abnormal Return
Mean	-0.000383	0.001321	0.001497	-0.000420
Variance	0.000019	0.000094	0.000001	0.000015
Observations	5	5	6	6
Pooled Variance	0.000056		0.000008	
Hypothesized Mean Difference	0		0	
df	8		10	
t Stat	-0.358957		1.177616	
P(T<=t) one-tail	0.364458		0.133108	
t Critical one-tail	1.859548		1.812461	
P(T<=t) two-tail	0.728916		0.266216	
t Critical two-tail	2.306004		2.228139	

Table 5: t-Test: Two-Sample Assuming Equal Variances						
Level of Past Scandals	Past Scandal Level 1		Past Scandal Level 2		Past Scandal Level 3	
	30 Days Before Abnormal Return	3 Days of Abnormal Return	30 Days Before Abnormal Return	3 Days of Abnormal Return	30 Days Before Abnormal Return	3 Days of Abnormal Return
Mean	-0.00019	0.00419	0.00010	-0.00082	0.00017	-0.00680
Variance	0.00001	0.00010	0.00001	0.00002	0.00000	0.00003
Observations	9	9	10	10	4	4
Pooled Variance	0.00006		0.00001		0.00002	
Hypothesized Mean Difference	0		0		0	
df	16		18		6	
t Stat	-1.23785		0.57032		2.39675	
P(T<=t) one-tail	0.11682		0.28776		0.02677	
t Critical one-tail	1.74588		1.73406		1.94318	
P(T<=t) two-tail	0.23363		0.57551		0.05353	
t Critical two-tail	2.11991		2.10092		2.44691	

Table 6 : t-Test: Two-Sample Assuming Equal Variances For Levels of Attention						
Level of Attention	Level 1 of Attention		Level 2 Of Attention		Level 3 of Attention	
	30 Days Before Abnormal Return	3 Days of Abnormal Return	30 Days Before Abnormal Return	3 Days of Abnormal Return	30 Days Before Abnormal Return	3 Days of Abnormal Return
Mean	-0.000104	0.000333	0.000917	-0.001260	-0.001259	0.001836
Variance	0.000005	0.000041	0.000004	0.000014	0.000015	0.000200
Observations	8	8	9	9	6	6
Pooled Variance	0.000023		0.000009		0.000107	
Hypothesized Mean Difference	0		0		0	
df	14		16		10	
t Stat	-0.182179		1.558106		-0.517535	
P(T<=t) one-tail	0.429027		0.069383		0.308018	
t Critical one-tail	1.761310		1.745884		1.812461	
P(T<=t) two-tail	0.858054		0.138766		0.616037	
t Critical two-tail	2.144787		2.119905		2.228139	