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Executives Misconducts and Their Consequences on the Associated Companies' Stock Markets

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Dissertation written under the supervision of Geraldo Cerqueira

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Abstract

Corporate scandals drive news and media outbursts which temporarily catch the public's interest; however, they may have a more significant effect on the business world. The purpose of this dissertation is to determine how executives misconduct affect the stock market price of their associated companies. All scandals that occurred between January 2013 and March 2019 within companies from S&P 500 and NASDAQ indexes were considered, with two exceptional cases. For this purpose, an event study methodology was applied. The findings suggest that corporate scandals committed by executives negatively affect the stock price of the concerned companies.

Scandals were grouped by characteristics to outline various patterns. Related to type, financial scandals cause a more significant impact on the value of companies than personal misconduct. In terms of industries, technology is more negatively influenced by the occurrence of a scandal than other industries. Regarding the position of the executives in the company, scandals concerning individuals in top positions affect more the stock price than scandals exercised by lower executives. The last characteristic, being a former or current executive within the company, led to inconclusive results regarding the value of the company following a scandal.

In order to determine which characteristics, the market has penalised most severely in these companies under study, a regression analysis was carried out. The results are consistent in showing that an executive holding a top position is a crucial negative factor when a scandal is announced.

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Resumo

Os escândalos corporativos geram notícias e explosões na impressa que captam temporariamente o interesse do público, mas que podem ter um efeito mais significativo no mundo dos negócios. O objetivo desta dissertação é determinar como é que a indevida conduta dos executivos afeta o preço no mercado acionários das empresas associadas aos mesmos. Todos os escândalos ocorridos entre janeiro de 2013 e março de 2019 em empresas dos índices S&P 500 e NASDAQ foram considerados, com dois casos excecionais. Para tal, foi aplicada uma metodologia de estudo de eventos. As conclusões sugerem que os escândalos empresariais cometidos por executivos afetam negativamente o preço das empresas em questão.

Os escândalos foram agrupados por características para delinear vários padrões. Relativamente ao tipo, os escândalos financeiros causam um impacto maior no valor das empresas do que a indevida conduta pessoal. Em termos industriais, a tecnologia é negativamente mais influenciada pela ocorrência de um escândalo do que as outras indústrias. Quanto à posição dos executivos na empresa, os escândalos relativos a indivíduos em posições de topo afetam mais o preço acionário do que os escândalos exercidos por executivos inferiores. A última característica, ser ex-executivo ou atual-executivo na empresa, gerou resultados inconclusivos quanto ao valor da empresa após um escândalo.

Para determinar quais características o mercado penalizou mais severamente nestas empresas em estudo, foi realizada uma análise de regressão. Os resultados são consistentes em mostrar que um executivo com uma posição de topo é um fator crucial negativo aquando anúncio de um escândalo empresarial.

Título: Indevida Conduta dos Executivos e as suas consequências no mercado acionário das empresas associadas
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Glossary

CMRM	Constant mean return model
MM	Market return model
AR	Abnormal return
CAR	Cumulated abnormal return
SAR	Standardized abnormal return
ACSAR	Average cumulative standardized abnormal return

1. Introduction

Corporate scandals related to financial misconduct already have its popularity recognized, such as fraud, insider dealing, bribery, money laundering, between others. Enron and WorldCom are historically known as examples of this type of scandal. However, after October 2017, hence after the prominence of #MeToo, scandals related to personal misconduct such as sexual harassment, sexual assault, or even physical abuse are recurrent.

#MeToo is a movement founded in 2006 by Tarana Burke, a civil rights activist, to help survivors of sexual violence, especially among young and black women. This hashtag based movement begins to emerge around the world after Alyssa Milano, actress, tweeted: "If all the women who have been sexually harassed or assaulted wrote 'me too' as a status, we might give people a sense of the magnitude of the problem." This tweet came after the allegations of sexual assault by the Hollywood mogul and producer, Harvey Weinstein. To fully understand the extent of Milano's action, a year after the initial tweet, #MeToo hashtag was used over 19 million times on Twitter. It represents more than 55000 uses per day.

Knowing the power which a scandal can have on the company's values, the purpose of this dissertation is to investigate how Executive's misconduct affects the market value of the company. Moreover, taking into account the lack of relevant research around the subject, this dissertation will show an academic value on this "hot" topic. For example, previous literature has been focussing, almost exclusively, on financial misconduct scandals in general, without specifying any distinction between which position is the scandal been exercise by, if it is by regular employees or if it comes from a more higher rank employee such as executives for instance. Accordingly, this study will cover all types of scandals committed by executives, including the growing number of personal misconduct scandals being disclosed, adding value to previous literature. Despite the lack of past research on this subject, the reason why this dissertation will only analyse scandals exercised by executives is due to the more significant impact an executive action has in comparison to similar actions done by regular workers.

To achieve the goal of this dissertation, an event study methodology is applied. Normal performance is estimated by Constant Mean Return and Market Return Models. Parametric tests are conducted to infer whether abnormal returns and cumulative abnormal returns are significantly different from zero. Non-parametric tests are performed to check the robustness

of the previous results, being the Generalized Signal Test and the Rank Test selected for this purpose.

To understand the effects of corporate scandals with different features, corporate scandals were grouped by characteristics. Thus, there is a broader group with all of the corporate scandals to understand the overall effect. The other groups are structured by types of scandal; the industry to which a company belongs; the type of executive position; and if the executive is a former or a current employee.

From past literature, the common conclusion lies in a significant negative impact on the companies' stock price once executives have committed corporate scandals. Furthermore, related to the type of scandal, it is expected that financial misconduct scandals still hold a more negative influence than personal misconduct scandals. This because the first ones are commonly associated with fines and penalties for the companies, meaning more losses to the company and therefore, for the investors. Regarding the position of the executive, it is projected that top position executives will have higher negative abnormal returns than the lower position executives. Hence, the top position has a higher decision power and so more newsworthy. In respect to current or former executives, it anticipated that current employees affect more negatively the value of the company after the scandal is announced. The reason behind this expectation is that current employees are the ones responsible for driving added value to the company. Concerning the industries, significant differences are not expected to be found since there is no specific industry that has more relevance in the market than others.

This dissertation is composed of a literature review about corporate scandals, and its impact on the company's value as well as in the overall economy. Afterward, in section three, data and variables are described. Section four presents all the methodology supporting the results. Then, in section five, all the results and findings of this study are shown. Finally, conclusions will be presented in section six, as well as some potential limitations of the study and suggestions for future research.

2. Literature Review

2.1. Corporate Scandals

Corporate scandals occur whenever negative information about the company is disclosure, which consequently affects the investors' opinion about the company in terms of efficiency, transparency, politic effectiveness, and credibility of its managers. Ordinarily, it is related to some prohibited act done under the rules of good governance.

According to Kuhn and Aschcraft (2003), there are three types of corporate scandals. The first one, the most commonly known, is associated with fraudulent accounting practices, such as mishandling company earnings for individual purpose, booking earnings for fictitious transactions, creating phantom affiliates or unique entities to cover the debt, or misleading results to avoid tax practices. The second type concerns the misuse of stock options and questionable loans in publicly traded companies, for instance, insider trading or option backdating. The last type has to do with collusive relationships between supposedly independent parties such as financial analysts, banks, auditors, managers, and the board of directors.

Regarding theoretical explanation which justifies the goal to commit corporate scandal, there are two primary considerations.

Firstly, the economic view explains that agents commit corporate crimes in an attempt to maximize their own utility (i.e., their personal gain). Chain, Tsai, and Li (2015) also claim that executives might commit corporate crimes when the individual utility from the misbehaviour is higher than the utility derived from the executive compensation scheme. Watts, Maniam, and Leavell (2018) identify that narcissistic and self-confident individuals tend to be more likely to commit corporate crimes, but they also recognized that the higher the position in the company, the higher are the opportunities to commit illegalities.

Secondly, the resource-based perspective proposes that corporate scandal is yield by default internal factors within the firm, which lead it more inherently disposed to commit corporate illegalities. For instance, Kochan (2002) specific highlights five internal characteristics as poor organization culture and structure, lack of character from the firms' employees and the pressure to excel in the short term formed by market forces and requirements. Moreover, Key (1999) argues that by definition culture is the shared beliefs of a company's members, hence the existence or inexistence of ethical values will be reflected in the beliefs its members and

consequently, will be reflected their behaviours. Baucus (1989) similarly claims that the organization's culture influence how ethical decisions are made, and the pressure to adapt people behaviour to organizational culture may also lead to unethical conduct. Furthermore, Jory, Ngo, Wang, and Saha (2015) alleges that the competitive nature of the business exercise a massive pressure on companies' management to the extent of executives losing their jobs if they fail to deliver some specific targets. To prevent this situation, some managers engage in illegal practices to satisfy investors.

On the other hand, Narayanan, Schipani, and Seyhun (2006) discover that many executives engage in option backdating practices to increase their options awards further. They compared the executive compensation gained illegally with the damage shareholders have suffered from the misconduct release. The Authors discover that executive benefit resulted in illegal behaviour averages $2.5 million per firm over a five-year period, and once those practices were publicly known, the average loss by the shareholders rounds $400 million per firm. Jensen (2005) also claims that sometimes executives participate in value-destroying activities to boost the value of the shares, therefore, also according to Karoff, Lee, and Martin (2006), such activities can indeed be tremendously costly since firms lose real value when they are caught.

2.2. How corporate scandals affect the company's value and the overall economy

Several types of research have been conducted to analyse the impact of corporate scandals in the stock price of a company. Long and Rao (1995) study the effects of unethical behaviour, including scandal, bribery, employee discrimination, illegal payments, environmental pollution, and insider trading on shareholder wealth. The authors discover that the costs of reported unethical corporate behaviour result in significantly negative abnormal returns to shareholders. Likewise, Rao and Hamilton (1996) conclude that once their unethical conduct publicly exposed a company, it is stock price would fall. Murphy, Shrieves, and Tibbs (2009) also found negative stock price reactions after the announcements of alleged misconduct.

Karpoff and Lott (1993) find that either the firm's or government's announcements of alleged or actual corporate misconduct correspond to an economically and statistically significant loss in the company's stock price. Karoff, Lee, and Martin (2006) examined 585 firms targeted by SEC for financial misconduct, and they discovered that the imposed market' penalties were much more substantial than the penalties imposed on the firms via the legal and regulatory system. With a similar conclusion, Armour, Mayer, and Polo (2011) found that companies

involved in corporate scandals experience significant abnormal losses on stock prices of approximately nine times the penalties and compensation paid.

Jain, Jain, and Rezaee (2010) analysed stock market reactions to option backdating probe announcements, and, for the 245 implicated companies, they detected negative abnormal returns. These results were more modest for an internal investigation than for SEC announcements, and the most severe results were from the Department of Justice Investigations. Bernile, Jarrell, and Mulcahey (2006) found that exposure to options backdating experience negative abnormal returns around the announcement dates. Likewise, Narayanan, Schipani, and Seyhun (2006) discovered an adverse market reaction after the disclosure of option backdating. Janney and Gove (2011) examined the market reaction to the firm's acknowledgment of involvement in the US stock option backdating scandal. Firms involved in CSR are less prone to experience a corporate scandal; nevertheless, the wrong-doing of this firm are penalized with hashed sanctions. They also find evidence that stock price drops less severely if the company itself does the discloser.

Jory, Ngo, Wang, and Saha (2015) conduct more profound research about the corporate scandal as they did not restrict their sample on only financially motivated scandals, they include personal nature and sexual harassment scandals. All scandals had involved a CEO, directly or indirectly. They find that the announcement-period cumulative abnormal return is always negative and significant. They also conclude that the days following the announcement increases the stock price volatility in the short-term only if the company does not apply corrective actions after the scandal.

Regarding the difference between financial and other types of scandals, Doherty, Dowling, and Miller (2011) discovered that people respond less negatively to moral scandals than to financial ones, when they do not involve abusive power; otherwise, it substantially affects responses to both types of scandals.

Besides the impact that these corporate scandals have on firms, they also have an impact on society. A more extreme view made by Watts, Maniam and Leavell (2018) exhibits evidence that companies within the same industry which are subject to negative publicity, not only affects the company's net income but as well as investor's decision on how to apply their money, which consequently increases the government's duty to look for answers related to this event. As an anticipatory answer, the government will create new regulations in order to prevent future corporate scandals. Garzert (2015) also argues that the direct economic cost of corporate financial misconduct can be a minor element of its overall negative consequences. By reducing

the trust in financial markets, financial misconduct may decrease stock market participation and potentially increase the cost of capital for all firms.

2.3. Summary

Previous research shown above suggests that the market reacts negatively to corporate scandals, although those covered scandals were almost all related to financial misconduct. Only Long and Rao (1995), Rao and Hamilton (1996) and Jory, Ngo, Wang, and Saha (2015) address scandals that were not financially motivated. Long and Rao (1995) included employee discrimination and environmental pollution announcements. Rao and Hamilton (1996) comprised employee discrimination, environmental pollution, and business ethics scandals. At last, Jory, Ngo, Wang, and Saha (2015) admitted all types of scandals – like extramarital affairs or sexual harassment - linked to CEOs' involvement.

This dissertation extends the literature review by analysing corporate scandals where only executives were involved, and the motivation was not only financially in order to see if the conclusions would remain the same despite the type of scandal.

3. Data and Variables

3.1. Data

In this dissertation, an "event" is defined when there is news related to a corporate scandal involving a company´s executive, therefore, by definition, those that show high levels of social pressure around the top managers' related scandal. All analysed events were extracted from companies within S&P 500 or NASDAQ indexes between January 2013 and March 2019, with two exceptions as it will be specified further ahead.

The primary sources of the database are the SEC, Financial Times, New York Times, Wall Street Journal, Bloomberg, Reuters, and VOX. Although the presence in one of those journals/websites is not a mandatory criterion, it is the biggest significant factor. After analysing the media pressure, a small group of companies was established. All observations were checked for its presence in Thomson Reuters Eikon News Tab. In total, there are 40 individual observations, with two exceptions, Retrophin, and National Beverage. They were included in the sample due to the number of new and pressure related to them.

All stock prices were retrieved from Thomson Reuters Eikon, and the final sample includes 40 top managers' related scandals.

3.2. Variables

This section shows how data was organized, since corporate scandals have different characteristics, and therefore can be grouped in different ways.

Consequently, those corporate scandals are divided into two types: financial misconduct scandals and personal, inappropriate conduct scandals. Financial misconduct scandals are the ones involving financial illegalities like fraud, insider trading, bribery, money laundering, misleading investors between others. The inappropriate personal scandals are the ones concerning people's improper behaviour as internal misconduct, sexual harassment, sexual abuse, rape allegation, among others.

The scandals are also grouped by their industry. There are six industries in the database: Consumer Cyclicals, Consumer Non-Cyclicals, Financials, Healthcare, Industrials, and Technology.

Another relevant feature is the type of position that the executive has in the company. There are two types of positions: top position and lower position. In order to better understand this feature, top positions are Founders, CEOs, CFOs, CIOs, Nº2, Presidents, and Vice Presidents. Lower executive positions are the remaining ones.

The last group reflects the executive's presence: whether the executive is a current or a former worker of the company.

Table 1 outlines all the corporate scandals and the characteristics mentioned.

Nº	Name of the company	Type	Industry	Position	Former
1	Tesla Inc	Financial	Consumer Cyclicals	CEO	Current
2	Apple Inc	Financial	Technology	Executive	Former
3	Goldman Sachs Group Inc	Financial	Financials	Executive	Former
4	Goldman Sachs Group Inc	Financial	Financials	Executive and Executive	Former
5	Goldman Sachs Group Inc	Financial	Financials	Executive	Former
6	Qualcomm Inc	Financial	Technology	Executive	Former
7	Walgreens Boots Alliance Inc	Financial	Consumer Non-Cyclicals	CEO and CFO	Former
8	Micron Technology Inc	Financial	Technology	Executive	Current
9	Cognizant Technology Solutions Corp	Financial	Technology	President and Executive	Former
10	Microsoft Corp	Financial	Technology	Executive	Current
11	L3 Technologies Inc	Financial	Industrials	Executive and Executive	Former
12	Citizens Financial Group Inc	Financial	Financials	Executive	Former
13	Equifax Inc	Financial	Industrials	CIO	Former
14	Equifax Inc	Financial	Industrials	Executive	Former
15	Tiffany & Co	Financial	Consumer Cyclicals	Executive	Former
16	Raymond James Financial Inc	Financial	Financials	Executive	Former
17	Franklin Resources Inc	Financial	Financials	Founder	Former
18	Fifth Third Bancorp	Financial	Financials	CFO	Former
19	United Continental Holdings Inc	Financial	Industrials	CEO	Current
20	**Retrophin**	**Financial**	**Healthcare**	**CEO (founder)**	**Former**
21	CBS Corp	Personal	Consumer Cyclicals	CEO	Current
22	CBS Corp	Personal	Consumer Cyclicals	Executive	Current
23	Bank of America Corp	Personal	Financials	Executive	Former
24	Tesla Inc	Personal	Consumer Cyclicals	Executive	Current
25	Amazon.com Inc	Personal	Consumer Cyclicals	Executive	Former
26	JD.com Inc	Personal	Technology	CEO	Current
27	Walt Disney Co	Personal	Consumer Cyclicals	CEO (founder)	Current
28	Walt Disney Co	Personal	Consumer Cyclicals	Executive	Current
29	Walt Disney Co	Personal	Consumer Cyclicals	Executive	Former
30	Alphabet Inc	Personal	Technology	Executive	Current
31	Wynn Resorts Ltd	Personal	Consumer Cyclicals	CEO (founder)	Former
32	Morgan Stanley	Personal	Financials	Executive	Current
33	Morgan Stanley	Personal	Financials	Executive	Current
34	Microsoft Corp	Personal	Technology	Executive	Current
35	Ford Motor Co	Personal	Consumer Cyclicals	Executive	Current
36	Monster Beverage Corp	Personal	Consumer Non-Cyclicals	Vice President	Current
37	Nike Inc	Personal	Consumer Cyclicals	Nº2	Current
38	Tapestry Inc	Personal	Consumer Cyclicals	Executive	Current
39	Intel Corp	Personal	Technology	CEO	Current
40	**National Beverage**	**Personal**	**Consumer Non-Cyclicals**	**CEO (founder)**	**Current**

Table 1: This table shows all corporate scandals committed by executives between January 2013 and March 2019, from US companies listed in S&P 500 or NASDAQ indexes. The two exceptions are identified in bold.

Information regarding the name of executives involved and the date of the announcement of the scandal are presented in Appendix A. In addition, information on the indices to which the companies belong is given in Appendix B.

3.3. Summary of Statistics

For a better understanding of the sample distribution, Table 2 includes several panels.
Panel A validates the Index where the companies are listed, Panel B summarizes the types of scandals, Panel C shows the scandals by industry, Panel D consider the presence of top executives in the scandal, Panel E presents the number of current and former executives involved in corporate misconduct, and, at last Panel F displays the number of personal misconduct scandal before and after #MeToo. In Appendix C, there is an analysis related to the number of people involved in corporate scandals in each company and each industry.

As it can be acknowledged by Panel A the majority of scandals relies on S&P500, 60% of the companies are only listed in S&P500 whereas 8% are only listed in NASDAQ, 28% is listed in both Indexes and 5% of the sample represent the two exceptions, i.e., the ones that are listed neither in S&P500 nor in NASDAQ.
Regarding the type of scandals, there are 20 cases of financial misconduct and other 20 related to inappropriate personal conduct. Regarding the industry, Consumer Cyclicals is the most representative one with 13 scandals, followed by Financials with 10 and 9 corporate scandals for Technology. Those types of industries represent more than 80% of the sample.
Looking specific for an executive position, 18 corporate scandals were committed by top position executives, whereas 22 were committed by lower position ones. Moreover, 50% of the scandals were performed by current executives and 50% by former executives.
Focusing only on personal scandals, an impressive result was found; 95% of those were only disclosed after #MeToo gained strength.
The last Panel only provides 31 companies, despite the fact there are 40 corporate scandals in total, meaning that there are companies in which their executives committed more than one corporate scandal. In total, 7 companies show more than one corporate scandal during the sample period: Goldman Sachs, Walt Disney, Tesla, Microsoft, Equifax, CBS, and Morgan Stanley. However, by more carefully looking at the number of executives involved in scandals, there are 46 executives implicated. Eleven companies have more than 1 executive involved, being Goldman Sachs, Walt Disney, and Alphabet, the organizations with more persons

involved. The same process for the industry, Consumer Cyclicals, Financials and Technology has more than 11 executives engaged in corporate scandals.

Panel A:

Index	Nº Scandals	%
S&P500	35	88%
NASDAQ	14	35%
Only S&P500	24	60%
Only NASDAQ	3	8%
Both	11	28%
None	2	5%

Panel B:

Type	Nº Scandals	%
Financial	20	50%
Personal	20	50%
	Sum: 40	

Panel C:

Industry	Nº Scandals	%
Consumer Cyclicals	13	33%
Financials	10	25%
Technology	9	23%
Industrials	4	10%
Consumer Non-Cyclicals	3	8%
Healthcare	1	3%
	Sum: 40	

Panel D:

Executive Position	Nº Scandals	%
Top Position	18	45%
Lower Position	22	55%
	Sum: 40	

Panel E:

Current or Former	Nº Scandals	%
Current	20	50%
Former	20	50%
	Sum: 40	

Panel F :

Personal Scandals	Nº Scandals	%
After #MeToo	19	95%
Before #MeToo	1	5%
	Sum: 20	

Panel G:

	Number of scandals in each company	Nº Scandals	%
1	Goldman Sachs Group Inc	3	8%
2	Walt Disney Co	3	8%
3	Tesla Inc	2	5%
4	Microsoft Corp	2	5%
5	Equifax Inc	2	5%
6	CBS Corp	2	5%
7	Morgan Stanley	2	5%
8	Apple Inc	1	3%
9	Qualcomm Inc	1	3%
10	Walgreens Boots Alliance Inc	1	3%
11	Micron Technology Inc	1	3%
12	Cognizant Technology Solutions Corp	1	3%
13	L3 Technologies Inc	1	3%
14	Citizens Financial Group Inc	1	3%
15	Tiffany & Co	1	3%
16	Raymond James Financial Inc	1	3%
17	Franklin Resources Inc	1	3%
18	Fifth Third Bancorp	1	3%
19	United Continental Holdings Inc	1	3%
20	Retrophin	1	3%
21	Bank of America Corp	1	3%
22	Amazon.com Inc	1	3%
23	JD.com Inc	1	3%
24	Alphabet Inc	1	3%
25	Wynn Resorts Ltd	1	3%
26	Ford Motor Co	1	3%
27	Monster Beverage Corp	1	3%
28	Nike Inc	1	3%
29	Tapestry Inc	1	3%
30	Intel Corp	1	3%
31	National Beverage	1	3%
		Sum: 40	

Table 2: This table shows the database's summary statistics in 7 panels described above.

4. Methodology

4.1. Event Study Methodology

An event study uses financial market data to analyses the impact of a specific event on the value of the company by its share price. With this methodology, it is possible to understand if there is an abnormal change in the market price associated with an unanticipated event, inferring the significance of the event.

The first published event study was from James Dolley (1933), who examined the impact of stock splits on market prices. However, it was Ball and Brown (1968) and Fama, Fischer, Jensen, and Roll (1969) who introduced the standard method nowadays used. The first ones considered the earnings' information, and the second ones tested the effects of stock splits on the stock prices, controlling for confounding events.

For McWilliams and Siegel (1997) three assumptions are underlying an event study: Market efficiency, unanticipated event, and isolation of confounding effects. The first one implies that the effects of an event should immediately be reflected in the stock prices because markets ought to include all the information available for traders. Regarding the second assumption, the event under study must be unanticipated. Therefore, the market did not have any previous information about the event, reflecting the implications immediately on the market price as described in the first assumption. With this, it is expected that the stock market only reacts to the information that investors receive about the event on the announcement day. In what concerns the last assumption, it is mandatory to be sure that there are no confounding effects during the event window, as other events might be overlapping this particular event study, influencing the companies' financial performance.

Even though there is no unique structure, there is a general flow of analysis presented by Macklinlay (1997) in 7 steps. Firstly, an event of interest is defined as well as the event window (i.e., the examination period over the companies' stock prices). The second step involves the definition of the selection criteria for the inclusion of companies in the study. Thirdly, to analyse the event's impact, it is necessary the measure of the abnormal return, for which the normal return is also needed. There are several options for modelling the normal returns, being the most common ones the Constant Mean Return Model and the Market Return Model. After designing the model, the fourth step, it is essential to define the estimation window, where the parameters are estimated. Generally, the estimation window precedes the event window, to prevent the

event's influence in the estimation of the normal performance model. Therefore, it is possible to calculate the abnormal returns (ARs) and the cumulative abnormal returns (CARs).

The fifth stage serves to test the sample for the abnormal and cumulative abnormal returns, being of high relevance, define the null hypothesis and the techniques for aggregating the individual company abnormal returns. There are several tests - parametric and non-parametric tests - to infer the statistical significance of ARs and their quality depends on the characteristics of the inherent data. Potential problems can emerge when testing the hypothesis. They should be taken into account because ARs is, frequently, not independent and/or they do not have identical variance. Binder (1998) summarizes this subject as follows: abnormal return estimators often have a cross-sectional correlation in the event horizon, heterogeneity variance across companies, correlation across time for an individual company, or even higher variance during the event-period than comparing to the surrounding periods. Although it is essential to be aware of such characteristics, it is often possible to merely ignore them as, in practice, they are minor.

In the sixth phase, results are introduced, finishing this analysis with the seventh phase, the interpretation and the conclusion of the results.

Proceeding this general flow, the conclusions from the event study are valid if readers are confident that the researcher has genuinely identified the abnormal returns associated with the event.

4.2. Constructing Abnormal Returns and Parametric Tests

To test the market reaction to the scandal, it is essential to compute the Cumulative Abnormal Returns (CARs). In order to do that, some steps must be followed.

The first step is to compute the Abnormal Returns (ARs), using formula 1:

$$AR_{it} = R_{it} - E(R_{it}|X_t) \quad (1)$$

Where

AR_{it}= Abnormal Returns

R_{it}= Actual Return

$E(R_{it}|X_t)$= Normal returns respectively for time period *t*

To estimate the normal performance, two statistical models were computed: The Constant Mean Return Model and the Market Model.

Constant Mean Return Model (CMRM) is probably the simplest model, therefore, in some cases can even be more successful than sophisticated models. The expected return $E[R_{it}]$ is assumed to be constant, and it is computed by the mean of R_{it} from the estimation window with T days:

$$E[R_{it}] = \frac{1}{T}\sum_{t=1}^{T} R_{it} \tag{2}$$

The abnormal return of company i on day t (AR_{it}) can be calculated the following way:

$$AR_{it} = R_{it} - E[R_{it}] \tag{3}$$

Alternatively, the Market Model (MM) uses the market portfolio to predict the returns of a security *i*. In this case, the normal performance is defined as:

$$R_{it} = \alpha_i + \beta_i R_{mt} + \varepsilon_{it} \tag{4}$$

Where

R_{it}= Return of a security *i*

R_{mt}= Actual Return

α_i= intercept term

β_i= systematic risk

ε_{it}= zero mean error term

With this model, the Abnormal Return of company i on day t (AR_{it}) can be calculated the following way:

$$AR_{it} = R_i - (\alpha_i + \beta_i R_{mt}) \tag{5}$$

This methodology represents a potential improvement over the CMRM by eliminating a portion of the returns that are related to market variations. Thus, the variance of the abnormal return is reduced, and more accurate are the results. The advantage of using the Market Model will

depend on the R^2 of the regression: the higher the R^2, the greater is the reduction of the variance of the abnormal returns, and the higher is the gain of using this model. In this dissertation, both models are applied since CMRM is useful to compare results from the MM.

In order to test the null hypothesis of no abnormal returns, AR_{it} is divided by the standard deviation of the Abnormal Returns of company *i* from the estimation window:

$$t_{AR_i} = \frac{AR_{it}}{SD_{AR_i}} \tag{6}$$

Where Standard Deviation is:

$$SD_{AR_{it}} = \left[\frac{1}{T-2}\sum_{t=1}^{T}(AR_{it})^2\right]^{0.5} \tag{7}$$

The significance level is form on $T-2$ degrees of freedom.

To achieve all inferences of the event, the abnormal returns have to be aggregated. This aggregation is based in two dimensions – through time and across companies. Firstly, as MacKinlay (1997) said, it is necessary to compute the aggregation through time – the cumulative abnormal return. This concept aggregates all measured effects of the event on the stock price of company $i's$, and it is calculated as:

$$CAR_i = \sum_{T=1}^{K} AR_{it} \tag{8}$$

The significance of the CAR_i can be tested as:

$$t_{CAR_i} = \frac{CAR_i}{SD_{CAR_i}} \tag{9}$$

Where Standard Deviation of CAR is:

$$SD_{CAR_i} = \left(k \times SD_{AR_i}^2\right)^{0.5} \tag{10}$$

Where

$SD_{AR_i}^2$= variance of residuals from the estimation window

Additionally, to compute the aggregation across securities, another concept was introduced – the Standardized Abnormal Return (SAR). This process gives to each abnormal return the same variation, by dividing the abnormal return by its standard deviation:

$$SAR_{it} = \frac{AR_{it}}{SD_{it}} \tag{11}$$

With SD_{it} being:

$$SD_{it} = \left\{ SD_{AR_i}^2 \times \left[1 + \frac{1}{T} + \frac{(R_{mt} - \overline{R_m})^2}{\sum_{t=1}^{T} (R_{mt} - \overline{R_m})^2} \right] \right\}^{0.5} \tag{12}$$

Where

$SD_{AR_i}^2$= Residual variance

R_{mt}= Market return on day t

$\overline{R_m}$ = Average return on the market portfolio

The standardized abnormal returns can be cumulated over the time period of the event window and can be calculated as:

$$CSAR_i = \left(\frac{1}{k^{0.5}} \right) \sum_{t=1}^{k} SAR_{it} \tag{13}$$

Assuming that the values of CAR_i are independent and identically distributed when CAR_i is divided by its standard deviation, its values are identically distributed. The average effect of the event on all companies in the sample on day t is given by the average standardized cumulative abnormal returns (ACSAR), and it is calculated as:

$$ACSAR_t = \frac{1}{n} \times \frac{1}{SD_{CSAR}} \sum_{i=1}^{n} CSAR_{it} \tag{14}$$

Where SD_{CSAR} is:

$$SD_{CSAR} = \left[\frac{(T-2)}{(T-4)} \right]^{0.5} \tag{15}$$

To test the hypothesis of $ACSAR_t$ being significantly different from zero can be computed as:

$$Z_{ACSAR} = ACSAR_t \times n^{0.5} \quad (16)$$

If $ACSAR_t$ is statistically significant, it is possible to infer that the event had an impact on the stock price of the n firms.

The aggregation of abnormal returns assumes that there are no overlaps between the windows of security events, which allows to aggregate the AR without having problems related to a zero covariance. In this dissertation, this problem does not apply since the event window of all securities are different.

4.3. Non-parametric tests

Parametric tests are perceived to be less accurate at testing the null hypothesis of no abnormal returns since it depends on the assumption of normality. Non-parametric tests are an alternative approach as they do not require such demanding restrictions about return distributions and potentially, produce more powerful results. Those tests are typically used in-line with parametric tests to authenticate the results as not driven by outliers. Therefore, they provide robustness checks for parametric ones. This situation is especially significant for small samples due to the impact a single firm's returns can have on the sample statistic. Based on Rani, Yadav, and Jain (2016), I used the generalized sing test and rank test.

The generalized sign test presented by Cowan (1992) is a developed version of the sign test. The sign test is a binomial test that assesses if the frequency of positive abnormal returns equals 50%. The generalized sign test, instead of assuming a fraction of 0.5, adjusts the fraction to positive abnormal returns in the estimation period. Hence, it investigates if the number of stocks with positive cumulative abnormal returns in the event window surpasses the number expected in the absence of abnormal returns, that is, a period unaffected by the event. The advantage of this test is the not required symmetry of the cross-sectional abnormal return distribution and the more reliability as the length of the event window increases.

The expected number is based on the fraction of positive abnormal returns in the estimation period:

$$\hat{p} = \frac{1}{n}\sum_{j=1}^{n}\frac{1}{T}\sum_{t=1}^{T} S_{jt} \tag{17}$$

And

$$S_{jt} = \begin{cases} 1 & if\ AR_{jt} > 0 \\ 0 & otherwise \end{cases} \tag{18}$$

Where T is the estimation window

The generalized sign test uses the normal approximation to the binomial distribution with parameter $\hat{p}$. It is calculated as:

$$Z_G = \frac{w - n\hat{p}}{\lfloor n\hat{p}\,(1-\hat{p})\rfloor^{\frac{1}{2}}} \tag{19}$$

Where

w= number of stocks in the event window for which the cumulative abnormal return is positive

Under the null hypothesis, there is no difference between the proportion of positive returns in the event window and its proportion of positive returns in the estimation window.

The rank test developed by Corrado (1989), based on a residuals' ranking, exams the existence of abnormal returns. This test considers the combined estimation and the event window as a single set of returns. Then, assigns a rank to each firm. Rank one is attributed to the smallest residual.

The issue relies on the construction: the ranks of the residuals of different days are dependent. However, Campbell and Weasley (1993) argue that for a short event window, the effect of ignoring the dependence should be insignificant. The test statistics is specified as:

$$Z_{Rank} = \frac{\left[\left(\frac{1}{N}\sum_{i=1}^{N} k_{i0}\right) - \tilde{k}\right]}{S_k} \tag{20}$$

With

$$\tilde{k} = \frac{L+1}{2} \qquad S_k = \sqrt{\frac{1}{L}\sum_{\tau=T_1+1}^{T_2}\left(\frac{1}{N}\sum_{i=1}^{N}\left(K_{it} - \tilde{k}\right)\right)^2} \tag{21}$$

Where

k_{i0}= Rank of company i on day zero assuming no abnormal

$\tilde{k}$= Expected rank of the company *i*

N= Number of companies

L= Total number of observations in the estimation and event window

S_k= standard deviation

K_{it}= Rank of the abnormal return of company *i* at time t

$\tau = T_1 + 1$ to $\tau = T_2$ = Beginning and the end of the event window

4.4. Regressions

Additionally, the impact of specific criterions in the results of CARs of the companies was analysed. This step will help this dissertation to understand which corporate scandals' characteristics will the market penalize harder. The regression analysis allows us to establish these conclusions.

The impact on the company' results of the type of industry, type of scandal, type of position of the executive and whether the executive is a former or a current employee was assessed.

First of all, to analyse the impact of the industry in the CARs, this dissertation includes the CAR as a dependent variable and industries dummies as independent variables. As previously mentioned, there are 6 different industries; therefore, 5 dummies were created in the regression, as followed:

$$CAR_i = \alpha + \beta_1 Fin_i + \beta_2 Tec_i + \beta_3 Ind_i + \beta_4 ConNC_i + \beta_5 Hea_i + \varepsilon_i \quad (22)$$

Where:

α = constant

ε_i = error term

Fin_i, Tec_i, Ind_i, $ConNC_i$ and Hea_i indicate the following industries: Financials, Technologies, Industrials, Consumer Non-Cyclicals, and Healthcare.

The intuition behind is: if $\beta_1 = 1$, the enterprise is in the financial industry and $\beta_1 = 0$ if it is not; If $\beta_2 = 1$, the company is in the technology industry and $\beta_2 = 0$ if it is not; if $\beta_3 = 1$ the corporation is in the industrial industry and $\beta_3 = 0$ if it is not; if $\beta_4 = 1$ the firm is in the consumer non-cyclical industry and $\beta_4 = 0$ if it is not; and for last; if $\beta_5 = 1$ the company is in the healthcare industry and $\beta_5 = 0$ if it is not. As well, α absorbs the impact of the industry Consumer Cyclicals.

The second regression intends to seek the impact which the type of scandals have on CARs:

$$CAR_i = \alpha + \beta_1 FinType_i + \varepsilon_i \quad (23)$$

Where

α = constant

ε_i = error term

$FinType_i$ indicates financial corporate scandals.

The rationality behind this equation is: if $\beta_1 = 1$, the scandal is financial and if $\beta_1 = 0$, otherwise. Additionally, α absorbs the impact of personal scandals.

The same logic was applied for the type of position of the executive:

$$CAR_i = \alpha + \beta_1 LowPos_i + \varepsilon_i \quad (24)$$

Where

α = constant

ε_i = error term

$LowPos_i$ indicates executives with a lower position

The subjacent logic is: if $\beta_1 = 1$, scandal is committed by an executive with lower position, and if $\beta_1 = 0$, otherwise. In addition, α absorbs the impact of the scandals committed by executives with a higher position.

The last regression interprets the influence of an executive being a former/current employee on the company:

$$CAR_i = \alpha + \beta_1 Form_i + \varepsilon_i \quad (25)$$

Where

α = constant

ε_i = error term

$Form_i$ indicates scandals committed by a former employee

The insight underlying it is: if $\beta_1 = 1$, a scandal is committed by a former employee and if $\beta_1 = 0$, otherwise. Moreover, α absorbs the impact of the scandals committed by current executives.

4.5. Estimation and Event Window

In previous sections, it was defined that the estimation window is used for the expected returns' calculation. According to Mackinlay (1997), the estimation window with 250 prior days from the corporate scandal was used. It is a commonly used the period prior to the event window for the estimation window and does not include any overlap between these two to prevent the event from having any influence in the estimated returns. The characterization of the event window is rather complex, as McWilliams and Siegel (1997) described. The length of the event window must be select in order to capture the abnormal returns of the event without including any confounding effects. The day before the event should be analysed since information may be leak out before the announcement and, because it is likely that investors do not react immediately to the announcements, the event window may also include the day after the event. In addition, the event window can be extended to understand whether the event created prolong significant negative abnormal returns allowing to see how long it took to recover from the scandal. Consequently, to understand the impact of the announcement of inappropriate behaviour in the market price of the companies, this study analyses three different event windows.

The first window of the event goes from the day before to the third day after the scandals disclose – (-1,3). The reason for this length is to capture cases where the information was leaked before the announcement and to access if there is a prolonged effect of the scandal.

The other event window ranges from the day of the announcement to three days after the event – (0,3). In this case, this dissertation does not include any day before the announcement day as companies avoid to leak information about such scandals publicly. For instance, in terms of financial scandals, the announcements are made by government agencies, and they are expected to be more reliable and therefore harder to have information leakage. Regarding inappropriate personal scandals, companies often try to hide these cases and, when it is not possible, they minimize them by changing the type of inappropriate behaviour that the executive has committed.

The last window of the event goes from the day before the event to the day after – (-1,1), to understand the short-term impact of the scandal.

The advantage of having these three event windows besides the comparison between them is the validation of the assumptions described at the beginning of this methodology.

4.6. Hypothesis

Based on previous literature, corporate scandals committed by executives are expected to hold a significant negative impact on the market value of their companies.

Accessing the type of corporate scandals, as literature review mentioned, it is expected that financial misconduct scandals still hold a more negative influence than personal misconduct scandals since the latter are commonly associated with fines and penalties for the companies, turning into more losses to the company and therefore for the investors. Nevertheless, it is expected to discover some significant results in personal misconduct, since this type of scandal is more visible now than before. This is again in-line with the changing awareness created from movements like #Metoo.

Moreover, it is expected that corporate scandals committed by top position executives produce a more negative effect on returns than the scandals committed by lower position executives, not only because they are a bigger target of media reactions, but mainly due to the fact that top executives like CEOs, CFOs, Founders, Presidents, among others, representing how the company is managed and which values emerge from such direction. Therefore, illegal actions from such higher-position organizational hierarchy make investors doubt management skills and lack of trust in the specific company.

Furthermore, scandals exercised by current executives are expected to influence more the company's value than the scandals committed by former executives. The reason behind this expectation is that current employees show the actual values the company is driven by. In the case of former executives' scandals, a lot of times, companies already know the existence of the scandal before going to the public. Therefore, they had time to implement strategies to change these values and, consequently prevent the existence of corporate scandals.

Those conclusions are expected to be achieved in all results from this dissertation.

4.7. Confounding Events

It is crucial to ensure that the results are only caused by the event and not influenced by another confounding event. A reduced length of the event window reduces that likelihood. The fact that

almost all companies in this database belong to the largest US companies means that they are mostly international, which makes them more likely to be affected by confounding effects.
To deal with this situation, Foster (1980) suggests eliminating the abnormal returns of the day of the confounding event.
The confounding events identified are further analysed in the Validation section.

5. Results

As mentioned before, 40 corporate scandals were analysed. Through the three-event windows, many scandals have individual negative significant abnormal and cumulative abnormal returns. However, to take more inferences, is essential to understand the effect of the scandals not only in an individual way but also in a group way. Moreover, it is also vital to conclude which features would imply a more significant impact on companies after the scandal's announcement. Consequently, a regression analysis will be present.

Therefore, in this section, it will be presented the individual ARs and the CARs, a study of the corporate scandals grouped, and the regression analysis. The analysed groups are all corporate scandals together, the different types of corporate scandal, the different industries, the different executives' positions, and for last, the different situations in the company - current or former executives.

5.1. Individual Corporate Scandals

Taking into account the large size of the database, the individual analysis of each corporate scandal would be time-consuming, and it would not bring any practical advantage. Nevertheless, all the ARs, CARs, and the respective T-starts are presented in Appendix D.

As previously mentioned, throughout the three-event windows, there are several negative ARs and CARs.

Figure 1 presents the CARs for both models – CMRM and MM - in three graphs, correspondent to each event window. To effortlessly visualize the results, as some values are small and challenging to understand in the graphs, table 3 illustrates a summary statistic about the CARs.

	Negative CARs		Negative Significant CARs		Positive Significant CARs	
	CMRM	MM	CMRM	MM	CMRM	MM
(-1,3)	13	26	2	6	1	0
(0,3)	10	24	3	6	4	1
(-1,1)	14	22	4	5	1	0

Table 3: This table shows CARs' summary statistics for both models – CMRM and MM - for the three-event windows: (-1,3), (0,3), and (-1,1). The summary statistics are how many negative CARs are in the 40 corporate scandals, how many negative and significant CAR there are in the sample, and the same for positive and significant CARs.

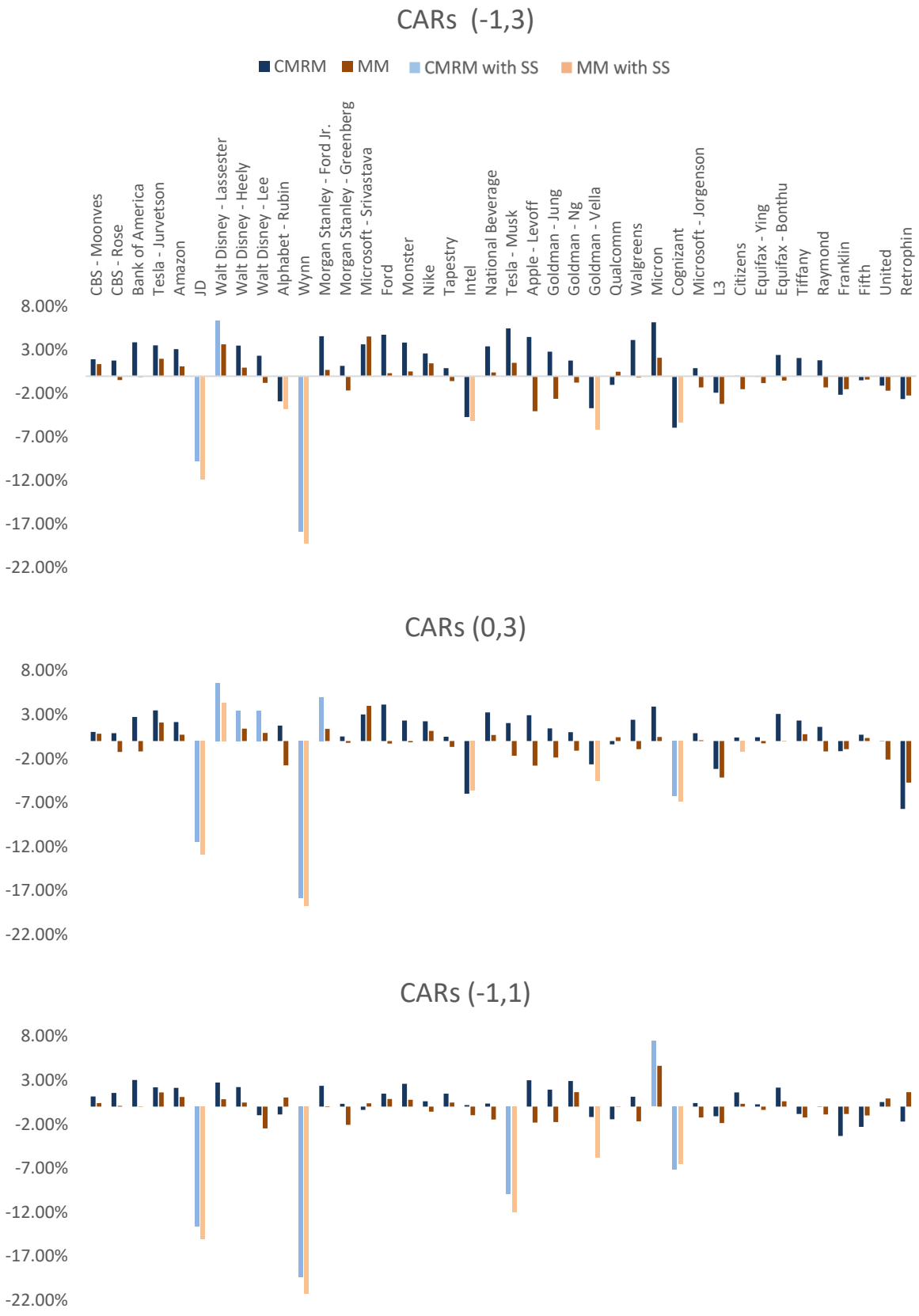

Figure 1: This figure shows the CARs' graphs for both models – CMRM and MM- for the three-event windows: (-1,3), (0,3), and (-1,1). The lighter colours represent the companies which their CAR is significant at least at 10% of significance. SS stands from statistical significance.

By looking to the graphs and this table, it is possible to conclude that MM proves to show more negative CARs for the three-event windows than CMRM. Similarly, in significance terms, MM displays more cases of negative and significant CARs and less episodes of positive and significant CARs than CMRM, for every event window. Those results are elucidated by the fact that CMRM includes a portion of the returns that is related to variation in the market's return. In this case, produces more positive CARs than negatives, showing that, in general, the market is growing. It is essential to highlight that in MM more than half of the sample has negative CAR, as opposed to the CMRM where approximately a quarter of the sample show negative CARs. The reason for this is exclusively related to the market presence in CMRM since all scandals happened on distinct dates. Therefore, there is no confounding event that affects all of the scandals simultaneously.

5.2. All Corporate Scandals

To analyse the overall impact of scandals, ACSARs were calculated. Depending on the chosen event window, there are different significance levels attached to them, as Table 4 illustrates.

		CMRM		MM	
Window	Day	ACSAR	Z	ACSAR	Z
(-1,3)	-1	0.17278	1.09274	-0.01372	-0.08680
	0	-0.03653	-0.23107	-0.40712	-2.57487 **
	1	-0.07772	-0.49154	-0.48451	-3.06432 ***
	2	0.14519	0.91824	-0.34888	-2.20653 **
	3	0.26319	1.66458 *	-0.32955	-2.08424 **
(0,3)	0	-0.56902	-3.59883 ***	-0.23104	-1.46121
	1	-0.59174	-3.74251 ***	-0.31800	-2.01121 **
	2	-0.39924	-2.52505 **	0.11062	0.69960
	3	-0.36608	-2.31530 **	0.40700	2.57407 **
(-1,1)	-1	0.17278	1.09274	-0.01372	-0.08680
	0	-0.03653	-0.23107	-0.40712	-2.57487 ***
	1	-0.07772	-0.49154	-0.48451	-3.06432 ***

Table 4: This table shows the average cumulative standardized abnormal returns of all companies that an executive commits a corporate scandal grouped for CMRM and MM, for the three-event windows: (-1,3), (0,3), and (-1,1). The z test determines whether the null hypothesis of no ACSAR is equal to zero is rejected or not.

*Rejects the null hypothesis at the 10% significance level
** Rejects the null hypothesis at the 5% significance level
*** Rejects the null hypothesis at the 1% significance level

Starting with the event window (-1,3), it is conceivable to understand that in MM, all of ACSAR are negative and they are all significant at least at 5% level after the scandal is announced. In respect to CRMR, there are negative ACSAR on the day of the announcement and in the day

after, but with no significance. On the other hand, on the third day after the announcement, the ACSAR is significantly but positive.

In the event window (0,3), the CMRM holds since the day of the scandal, negative and significant ACSAR. Especially the day and the day after the announcement with the most significantly negative results. Regarding MM, the first two days of the event have negative ACSAR, but only the day after the scandals disclose confirms a significant result at 5% level, probably showing delay in investors' reaction. The second and third days of the event has positive ACSAR. The third day after the announcement is significant at 5% level, showing recovery from the hit.

In the last event window, (-1,1), the CMRM yield negative ACSAR for the day of the announcement and the day after. However, both results are not significant. In the MM, both the day and the day after the announcement are negative and significant ACSARs at 1% level.

To sum up, CMRM only shows evidence of negative impact from the corporate scandal in the event window (0,3), whereas MM shows a negative impact in all event windows. Because CMRM has a portion of the market's returns makes results of MM more reliable of the isolated impact of the executives misconducts. Therefore, it is possible to argue that corporate scandals committed by executives affect the company's market stock price.

To check the robustness from previous parametric results, this section analyses the results of the non-parametric tests and establish a relation to the parametric tests. The results are present in table 5.

	Generalized Sign Test		Rank	
Window	CMRM	MM	CMRM	MM
(-1,3)	1.13285	-1.64445	0.92519	1.26049
(0,3)	1.95222 *	-1.13739	0.99209	1.35611
(-1,1)	0.81175	-0.37851	1.05077	1.51996

Table 5: This table shows the results for non-parametric tests - Generalized Sign Test and Rank Test – for all companies grouped for CMRM and MM, for the three event windows: (-1,3), (0,3), and (-1,1).

When applying CMRM, the event window (-1,3) and (-1,1) do not provide any statistical evidence. However, in the event window (0,3), the generalized sign test shows that the proportion of positive returns in the event window is statistically different from its proportion of positive returns in the estimation window at 10% confidence level for all companies.

Regarding MM, there are no signs of differences between the event window nor the estimation window.
The rank test does not reveal any statistical evidence in neither of the models across all event windows. As a consequence, the null hypothesis of absent abnormal returns cannot be rejected.

The results obtained for both models as well as for the three-event windows present inconsistency across the parametric and the non-parametric tests. In CMRM, parametric tests express to be statistical significance in the event window (0,3) and in MM, parametric tests confirm statistically negative results in all event windows. Though, generalized sign test only shows significance in CMRM and when the event window is (0,3). The rank test is not significant in any model.
These differences can be explained by the fact that the generalized sign test does not take into account the magnitude of the values. Corrado (1989) describes the rank test for a one-day event window and, in this dissertation, a three, four, and five days of event window are applied. Additionally, Cowan (1992) states that as the size of the event window increases, the rank test's power decreases faster than the sign test. Moreover, those results do not come up as a surprise since each corporate scandal is unique. The way each company deals with the executives' illegalities, the magnitude of the government's penalties (in the cases of financial misconduct), and the different media coverage suffered by each company will influence the investors' reaction differently.

Succinctly, even that the parametric and non-parametric do not show consistent results because of theoretical flaws or even because of the specifications of the event, the overall conclusion is that executives' misconduct affect the stock price of the companies.

5.3. Group of Corporate Scandals divided by their Type

As previously mentioned, there are two types of corporate scandals: personal misconduct and financial misconduct. This section interprets the results by grouping the scandals in these two categories as table 6 presents.

Observing the event window (-1,3) concerning CMRM, only personal misconduct has negative ACSAR one day after the scandal announcement, although not significant. Conversely, the group of financial misconduct does not show negative results on any day of the event window.

Regarding MM, all event windows, either personal or financial misconduct, have negative ACSARs. For the personal misconduct, only the day after the announcement is significant. For financial misconduct, every day is significatively influencing the market price of the companies with the exception of the second day after the announcement.

			CMRM		MM	
Window	Sample	Day	ACSAR	Z	ACSAR	Z
(-1,3)	Personal Misconduct	-1	0.16444	0.73540	-0.01807	-0.08082
		0	0.10474	0.46843	-0.33945	-1.51809
		1	-0.03305	-0.14782	-0.53108	-2.37508 **
		2	0.17181	0.76835	-0.36544	-1.63429
		3	0.40752	1.82248 *	-0.26006	-1.16301
	Financial Misconduct	-1	0.18112	0.80998	-0.00937	-0.04192
		0	-0.17781	-0.79521	-0.47479	-2.12334 **
		1	-0.12239	-0.54732	-0.43794	-1.95852 *
		2	0.11857	0.53024	-0.33233	-1.48621
		3	0.11887	0.53159	-0.39904	-1.78455 *
(0,3)	Personal Misconduct	0	-0.47588	-2.12820 **	-0.02927	-0.13091
		1	-0.65419	-2.92562 **	-0.24358	-1.08933
		2	-0.42012	-1.87885 *	0.16493	0.73757
		3	-0.29097	-1.30126	0.72827	3.25693 ***
	Financial Misconduct	0	-0.66217	-2.96131 ***	-0.43280	-1.93555 *
		1	-0.52930	-2.36709 **	-0.39242	-1.75494 *
		2	-0.37837	-1.69211 *	0.05631	0.25182
		3	-0.44119	-1.97307 **	0.08572	0.38335
(-1,1)	Personal Misconduct	-1	0.16444	0.73540	-0.01807	-0.08082
		0	0.10474	0.46843	-0.33945	-1.51809
		1	-0.03305	-0.14782	-0.53108	-2.37508 **
	Financial Misconduct	-1	0.18112	0.80998	-0.00937	-0.04192
		0	-0.17781	-0.79521	-0.47479	-2.12334 **
		1	-0.12239	-0.54732	-0.43794	-1.95852 *

Table 6: This table shows the average cumulative standardized abnormal returns of personal misconduct scandals and financial misconduct scandals for CMRM and MM, for the three-event windows: (-1,3), (0,3), and (-1,1). The z test determines whether the null hypothesis of no ACSAR is equal to zero is rejected or not.

For the event window (0,3), CMRM establishes a significant negative impact on both types of scandal. With MM, personal misconduct shows negative impact on the day of the announcement, and the day after, but providing no significant level. Moreover, the last day of the event window shows significant positive values, presenting signs of recovery from the hit. In regards to financial misconduct, the day of the announcement, and the day after, affect significantly negative the stock price of the companies at 10% level of confidence. The other two days are not significant.

Related to the event window (-1,1), CMRM presents similar results for both misconducts, although their significance is null.

All in all, the event window (0,3) is the only case of CMRM that shows a negative influence from both types of scandals on the companies' stock price. In the case of using MM, financial scandals always produce a negative impact on the stock price of the companies regardless of the choice of the event window. When applying the same model, personal scandals present the same conclusion than financial scandals for the event windows (-1,3) and (-1,1). Having this said, it is possible to see and conclude, that in all cases, financial misconduct has a more lengthy and robust effect on the company's value than in personal misconduct.

This section studies the robustness of the parametric results, analysing the results of the non-parametric tests Generalized Sign Test and Rank Test. All results are presented in table 7.

		Generalized Sign Test		Rank	
Window	Misconduct	CMRM	MM	CMRM	MM
(-1,3)	Personal	1.68020 *	0.47943	0.04403	0.74296
	Financial	-0.27366	-2.81068 ***	1.72412 *	1.75692 *
(0,3)	Personal	2.14027 **	0.03220	0.01062	0.77780
	Financial	0.63250	-1.46543	1.86068 *	1.90288 *
(-1,1)	Personal	1.22012	0.92665	-0.03743	0.80734
	Financial	-0.27366	-1.46543	2.10280 **	2.25801 **

Table 7: This table shows the results for non-parametric tests - Generalized Sign Test and Rank Test – for personal misconduct and financial misconduct scandals for CMRM and MM, for the three-event windows: (-1,3), (0,3), and (-1,1).

According to the table, by using CMRM, the generalized sign test is significant at least 10% in the event window from (-1,3) and (0,3) for personal misconduct. On the other hand, using the MM, the generalized sign test shows significant at 1% level for financial misconduct in the event window (-1,3).

For those three cases, the number of stocks with positive cumulative abnormal returns in the event window exceeds the number expected in the estimation window.

The rank test shows statistical evidence for both models in all event windows for financial misconduct. In the event windows (-1,3) and (0,3) this significance is at 10% level and for (-1,1) this level of confidence is around 5%. Therefore, the null hypothesis of absent abnormal returns can be rejected for financial misconduct.

The obtained results show some discrepancy across the parametric and the non-parametric tests. For financial misconduct, parametric tests show statistical significance in MM for all event windows as well as in CMRM for the event window (0,3). For personal misconduct, using CMRM, it is not shown the same significance level from (-1,3) and (-1,1). The same applies to MM from the event window (0,3). In the case of non-parametric tests, the generalized sign test presents personal misconduct to be only significant, in CMRM, in the event windows (-1,3) and (0,3). Financial misconduct it is significant at (-1,3) once MM is used.
The differences between this test and the parametric test can be once more explained by the fact that this test does not take into consideration the test's magnitude, but the sign.
Moreover, looking at the Rank test, financial misconduct is always significant, whereas personal misconduct is never significant. Therefore, this test for financial misconduct scandals shows similar conclusions to parametric tests and does not hold the same conclusions for personal misconduct, since significant results are not found.

In summary, financial misconduct causes a more negative impact on the value of companies than personal misconduct. Such a result was expected since investors are aware that this type of scandal is associated with fines and penalties. Above and beyond, investors may be afraid that the executive has committed more illegalities that have not yet been disclosed and, thus, affect the company concerned and its investments.

The difference in this topic might not be related to the media coverage that both types of scandal have. As was possible to see in the latest times, personal scandals are having a lot of media coverage and thus, social pressure. However, this pressure is not being sufficient to change investors' view about the companies' performance only because an executive committed personal misconduct.

5.4. Group of Corporate Scandals divided by Industries

As mentioned before, the study covers six industries. Once all corporate scandals grouped within its industry, it is possible to analyse the impacts in the economy of different industries. It should be taken into consideration that there is only one company of Healthcare in the database.

From the event window (-1,3), presented in table 8, one can see that neither Financials, Healthcare, nor Industrials shows any statistical significance under both models.

			CMRM		MM	
Window	Sample	Day	ACSAR	Z	ACSAR	Z
(-1,3)	Consumer Cyclicals	-1	0.22071	0.79579	-0.01365	-0.04920
		0	0.01041	0.03752	-0.40195	-1.44925
		1	-0.18406	-0.66363	-0.66887	-2.41166 **
		2	0.39646	1.42945	-0.17842	-0.64331
		3	0.55335	1.99515 **	-0.13481	-0.48606
	Consumer Non-Cyclicals	-1	0.72695	1.25911	0.27606	0.47815
		0	0.75757	1.31214	0.15203	0.26332
		1	0.51550	0.89287	-0.19030	-0.32961
		2	0.71374	1.23623	-0.07498	-0.12987
		3	0.98565	1.70720 *	0.07364	0.12754
	Financials	-1	0.00245	0.00776	-0.30283	-0.95764
		0	-0.01236	-0.03908	-0.47245	-1.49401
		1	0.18265	0.57759	-0.39324	-1.24352
		2	0.28655	0.90614	-0.44009	-1.39167
		3	0.31948	1.01029	-0.43938	-1.38943
	Healthcare	-1	1.10351	1.10351	0.54427	0.54427
		0	0.44180	0.44180	0.46190	0.46190
		1	-0.21197	-0.21197	0.20472	0.20472
		2	-0.14990	-0.14990	0.06161	0.06161
		3	-0.25380	-0.25380	-0.21623	-0.21623
	Industrials	-1	0.01753	0.03506	0.11313	0.22626
		0	0.19580	0.39159	-0.02625	-0.05249
		1	0.06966	0.13931	-0.16350	-0.32700
		2	-0.03848	-0.07696	-0.41248	-0.82497
		3	-0.09637	-0.19274	-0.45194	-0.90388
	Technology	-1	0.07365	0.22095	0.09242	0.27727
		0	-0.55231	-1.65693 *	-0.79424	-2.38271 **
		1	-0.46174	-1.38523	-0.63695	-1.91085 *
		2	-0.44993	-1.34978	-0.60241	-1.80723 *
		3	-0.24204	-0.72612	-0.58139	-1.74418 *

Table 8: This table shows the average cumulative standardized abnormal returns of each industry for CMRM and MM, for the event windows (-1,3). The industries are Consumer Cyclicals, Consumer Non-Cyclicals, Financials, Healthcare, Industries, and Technology. The z test determines whether the null hypothesis of no ACSAR is equal to zero is rejected or not.

Consumer Cyclicals, using CMRM, displays significant ACSAR on the third day after the announcement but with positive impact. Contrarily, for MM, any day of the event window presents negative ACSAR, being significant at 5% level in the day after the announcement only. For Consumer Non-Cyclicals, neither of the models express the impact on the value of the

company resulting from the scandal. There is a significant result for CMRM on the third day after the announcement, but it is positive.
In the Technology industry, the CMRM shows negative ACSAR from all days of the event window after the announcement. However, only the day of the announcement's result is significant. In what concerns MM, all days after the announcement are negative and significant at least 10% level. The day of the announcement is the one with the most negative ACSAR and with the highest significance – 5% level.

With this event window, only Technology shows a negative impact from the scandal's announcement in the CMRM. In the case of MM being applied, Consumer Cyclicals and Technology are the two industries that show negative influence from the event, but it is the Technology industry that shows a lengthy and stronger effect from the corporate scandal.

Applying the event window (0,3), different conclusions can be taken. The results can be analysed in table 9 presented below.

Industrials do not show any statistical significance for either of the models, while Consumer Non-Cyclicals, Financials, Healthcare are significant except if the results are taken from CMRM.
Consumer Cyclicals, in the CMRM, in any event window, confirm negative ACSARs. However, only the announcement day and the day after are significant. In the MM, only the day of the announcement and the day after have negative ACSARs, but only the day after the announcement is significant. In this case, at 5% level. It is possible to verify some delay in investors' reaction. The other two days also have significant ACSARs but with positive results, showing that companies start recovering from the scandals on the second day after the announcement.
In terms of the Consumer Non-Cyclicals industry, for MM, all ACSARs are positive, and the last day of the event is significant at 5% level, providing no impact from the scandals. Regarding Financials, as previously mentioned, no significant ACSAR was found for CMRM. In addition to that, MM show statistically significant results for the second and third day after the announcement, with a positive effect.
Concerning Healthcare, MM shows negative and significant ACSARs at 5% level on the third day after the announcement.

The last industry, Technology, shows similar results between models. A negative and significant ACSARs of at least 5% level are shown every day.

			CMRM		MM	
Window	Sample	Day	ACSAR	Z	ACSAR	Z
(0,3)	Consumer Cyclicals	0	-0.57562	-2.07543 **	-0.22336	-0.80534
		1	-0.83401	-3.00705 ***	-0.57130	-2.05985 **
		2	-0.21266	-0.76677	0.54856	1.97788 **
		3	-0.15954	-0.57524	0.98808	3.56257 ***
	Consumer Non-Cyclicals	0	-0.06085	-0.10540	0.34420	0.59617
		1	-0.42782	-0.74101	0.16559	0.28681
		2	-0.24543	-0.42510	0.70008	1.21258
		3	-0.05544	-0.09602	1.47547	2.55559 **
	Financials	0	-0.36529	-1.15514	-0.01960	-0.06198
		1	-0.26751	-0.84593	0.31519	0.99671
		2	-0.33348	-1.05456	0.57218	1.80940 *
		3	-0.33969	-1.07420	0.71449	2.25942 **
	Healthcare	0	0.10883	0.10883	-0.47816	-0.47816
		1	-0.13397	-0.13397	-1.46892	-1.46892
		2	-0.24282	-0.24282	-1.40166	-1.40166
		3	-0.51331	-0.51331	-1.66907	-1.66907 *
	Industrials	0	-0.14958	-0.29917	0.26005	0.52009
		1	-0.27933	-0.55867	0.10441	0.20883
		2	-0.54077	-1.08155	-0.09298	-0.18597
		3	-0.56098	-1.12196	-0.23141	-0.46282
	Technology	0	-1.21700	-3.65100 ***	-0.85960	-2.57880 ***
		1	-0.84642	-2.53927 **	-0.87672	-2.63016 ***
		2	-0.74757	-2.24272 **	-0.97280	-2.91839 ***
		3	-0.69430	-2.08291 **	-0.61576	-1.84728 *

Table 9: This table shows the average cumulative standardized abnormal returns of each industry for CMRM and MM, for the event windows (0,3). The industries are Consumer Cyclicals, Consumer Non-Cyclicals, Financials, Healthcare, Industries, and Technology. The z test determines whether the null hypothesis of no ACSAR is equal to zero is rejected or not.

For this event window, in the CMRM, only Consumer Cyclicals and Technology suffered an impact from the scandal, but it is the industry Technology that shows the strongest and lengthy influence from the scandals' announcement. Looking into the MM, Consumer Cyclicals and Healthcare display some impact from the event but, like CMRM, is the industry Technology that shows the strongest and lengthy influence from the announcement of corporate scandals.

Afterward, the industry results considering the last event window (-1,1) are presented in Table 10. Consumer Non-Cyclicals, Financials, Healthcare, and Industrials do not present any

significance level in any model. In addition, Consumer Cyclicals does not prove to be statistically significant for CMRM.

			CMRM		MM	
Window	Sample	Day	ACSAR	Z	ACSAR	Z
(-1,1)	Consumer Cyclicals	-1	0.22071	0.79579	-0.01365	-0.04920
		0	0.01041	0.03752	-0.40195	-1.44925
		1	-0.18406	-0.66363	-0.66887	-2.41166 **
	Consumer Non-Cyclicals	-1	0.72695	1.25911	0.27606	0.47815
		0	0.75757	1.31214	0.15203	0.26332
		1	0.51550	0.89287	-0.19030	-0.32961
	Financials	-1	0.00245	0.00736	-0.30283	-0.95764
		0	-0.01236	-0.03707	-0.47245	-1.49401
		1	0.18265	0.54795	-0.39324	-1.24352
	Healthcare	-1	1.10351	1.10351	0.54427	0.54427
		0	0.44180	0.44180	0.46190	0.46190
		1	-0.21197	-0.21197	0.20472	0.20472
	Industrials	-1	0.01753	0.03506	0.11313	0.22626
		0	0.19580	0.39159	-0.02625	-0.05249
		1	0.06966	0.13931	-0.16350	-0.32700
	Technology	-1	0.07365	0.22095	0.09242	0.27727
		0	-0.55231	-1.65693 *	-0.79424	-2.38271 **
		1	-0.46174	-1.38523	-0.63695	-1.91085 *

Table 10: This table shows the average cumulative standardized abnormal returns of each industry for CMRM and MM, for the event windows (-1,1). The industries are Consumer Cyclicals, Consumer Non-Cyclicals, Financials, Healthcare, Industrials, and Technology. The z test determines whether the null hypothesis of no ACSAR is equal to zero is rejected or not.

It is possible to state that for Consumer Cyclicals in the MM, the day after the announcement has a negative and significant ACSAR at 5% level of confidence. For Technology, in the case of CMRM, the day of the announcement is negative and significant at 10% level of confidence. Under MM's case, this industry has a significantly negative ACSAR for the day of the announcement, and the day after it, showing negative influence on the value of the company after the hit of the scandal.

In this event window, taking into account CMRM alone, only Technology shows some impact from the executives' scandals announcements. Regarding MM, Consumer Cyclicals and Technology suffer a negative influence from the event. Though, it is Technology, like in the other two event windows, that seems to suffer more from the scandals' announcement.

Depending on the event window and the chosen model, the conclusions are somehow different. But it is interesting to note that Consumer Cyclicals, in the case of MM, for all event windows show negative impact from the scandals. However, it is the industry Technology that regardless of the model and the event window, significant and negative results on the company are provided by the corporate scandal committed by its executives.

To understand the robustness of the previous analysis, the following table 11 summarizes the non-parametric results.

		Generalized Sign Test		Rank	
Window	Industry	CMRM	MM	CMRM	MM
(-1,3)	Consumer Cyclicals	2.37974 **	0.91438	-0.1885	-0.62934
	Consumer Non-Cyclicals	1.18818	0.50391	0.87119	-0.47860
	Financials	0.64797	-2.43976 **	-1.4622	-2.90064 ***
	Healthcare	-0.96077	-0.97628	-5.6214 ***	4.16205 ***
	Industrials	-1.43355	-1.49675	0.45433	-1.93911 *
	Technology	-0.83525	-1.00000	-2.1684 **	-2.28382 *
(0,3)	Consumer Cyclicals	2.37974 **	0.91438	-0.22979	-0.71381
	Consumer Non-Cyclicals	1.18818	-0.65184	1.00785	-0.61006
	Financials	1.29336	-1.80704 *	-1.62157	-3.13366 ***
	Healthcare	-0.96077	-0.97628	-7.37639 ***	4.98517 ***
	Industrials	-0.41250	-0.45444	0.44345	-2.43711 **
	Technology	-0.15948	-0.33333	-2.58006 ***	-2.67678 ***
(-1,1)	Consumer Cyclicals	0.68154	0.91438	-0.34605	-0.99875
	Consumer Non-Cyclicals	1.18818	-0.65184	1.23236	-0.75986
	Financials	0.64797	-1.17432	-2.01327 **	-3.88616 ***
	Healthcare	-0.96077	1.02430	-5.80375 ***	5.38640 ***
	Industrials	0.60854	0.58786	0.36643	-2.34116 **
	Technology	-0.83525	-1.00000	-2.94885 ***	-2.90683 ***

Table 11: This table shows the results for non-parametric tests - Generalized Sign Test and Rank Test for each industry for CMRM and MM, for the three-event windows: (-1,3), (0,3), and (-1,1).

The Generalized Sign Test, using CMRM, is significant at 5% level for Consumer Cyclicals in the event Windows (-1,3) and (0,3), but it seems that those results derive from the number of positive abnormal returns, and not from the expected negative abnormal returns. The results of the same test for the case of MM show significance in the event window (-1,3) at 5% level and in the event window (0,3) at 10% level of confidence, in the case of Financials industry. It is again shown inconsistency with the parametric tests. But not strangely as the Generalized Sign Test only takes into consideration the sign of the results and not their magnitude.

In terms of the Rank Test, because this one considers the magnitude of the values, more significant results can be retrieved. In the CMRM, Healthcare and Technology are significant

in all event windows, and Financial is also significant in the event window (-1,1) at 5% level. In the case of using MM, only Consumer Cyclicals and Consumer Non-Cyclicals are not significant in any event windows. Furthermore, in this model, Healthcare rejects the null hypothesis of no abnormal returns, but it seems to come with positive abnormal returns.

The most similar result from both types of tests – parametric and non-parametric – is still the industry Technology, since the Rank Test have similar results to the parametric tests. The justification for this result can come by the fact that this industry is always innovating, meaning that it is highly dependent on investment to use on R&D. Moreover, it is also probable that this is the industry that people know more about since they are using technology in almost every moment of their daily life, and thus has more media coverage. That because, people, nowadays, are highly dependent on this type of companies and they create a relationship of trust. When a scandal happens, people fell that this relation broke. The latest example is the privacy scandal committed by Facebook and Cambridge Analytics where their shares went down nearly 40%. To better understand, this industry involves companies like Google (Alphabet Inc), Amazon, Apple, Microsoft, between others.

5.5. Group of Corporate Scandals divided by the Executive's Position

To understate the different impact of being a top position executive and a lower position executive, this section groups all the corporate scandals by their executives' position and analyses the respective ACSARs. All results are presented in the following Table 12.

When starting with the event window (-1,3), it is possible to observe that in CMRM, both executives' position does not present any negative nor statistically significance. By looking into MM, the top position shows negative ACSARs every day from the event window, but only the day of the announcement is significant, at 5% level. The lower position has negative results in every day since the day of the announcement, but it is only significant from the day after the announcement forward. This situation is again related to the delay of investors' reaction.
Regarding the event window (0,3), for CMRM, all results are negative, but only the day of the announcement is significant for top position executives, in this case, at 1%level of confidence. The lower executive position shows negative and significant ACSARs, at least 5% level, every day since the day of the announcement. On the contrary, MM has only an unfavourable result

on the day of the scandal's announcement for the top position. The second and the third day after the announcement also have significant results, but positive, already showing some recovery from the hit. Additionally, the lower position shows negative ACSARs for all days of the event, with only the day after the announcement being significant.

Regarding the event window (-1,1), CMRM does not show to be statistical significance for either of the executives' positions. Oppositely, MM has a negative ACSAR for all days of the event window for the top position, but ACSAR is only significant on the day of the announcement. In the case of a lower position, only the day after the announcement presents a negative and significant ACSAR.

			CMRM		MM	
Window	Sample	Day	ACSAR	Z	ACSAR	Z
(-1,3)	Top	-1	0.15407	0.65366	-0.15634	-0.66327
		0	-0.18057	-0.76608	-0.57919	-2.45730 **
		1	0.16257	0.68973	-0.27455	-1.16480
		2	0.30259	1.28379	-0.33000	-1.40009
		3	0.48524	2.05868	-0.21747	-0.92265
	Lower	-1	0.18809	0.88220	0.10296	0.48292
		0	0.08131	0.38137	-0.26634	-1.24925
		1	-0.27432	-1.28668	-0.65630	-3.07833 ***
		2	0.01640	0.07692	-0.36433	-1.70886 *
		3	0.08152	0.38237	-0.42125	-1.97582 **
(0,3)	Top	0	-0.66326	-2.81396 ***	-0.40968	-1.73811 *
		1	-0.22546	-0.95653	0.12875	0.54623
		2	-0.29065	-1.23313	0.45300	1.92190 *
		3	-0.16449	-0.69786	0.93394	3.96238 ***
	Lower	0	-0.49193	-2.30734 **	-0.08488	-0.39811
		1	-0.89143	-4.18118 ***	-0.68352	-3.20600 ***
		2	-0.48809	-2.28936 **	-0.16951	-0.79508
		3	-0.53102	-2.49071 **	-0.02414	-0.11323
(-1,1)	Top	-1	0.15407	0.65366	-0.15634	-0.66327
		0	-0.18057	-0.76608	-0.57919	-2.45730 **
		1	0.16257	0.68973	-0.27455	-1.16480
	Lower	-1	0.18809	0.88220	0.10296	0.48292
		0	0.08131	0.38137	-0.26634	-1.24925
		1	-0.27432	-1.28668	-0.65630	-3.07833 ***

Table 12: This table shows the average cumulative standardized abnormal returns of corporate scandals committed by top position executives grouped or scandals committed lower position executives grouped for CMRM and MM, for the three-event windows: (-1,3), (0,3), and (-1,1). The z test determines whether the null hypothesis of no ACSAR is equal to zero is rejected or not.

To ensure the quality of the parametric results, non-parametric tests were conducted. The following table 13 shows these results.

The Generalized Sign Test only shows significant results at 10% level for the top executive's position in the event window (-1,3) for MM, and in the event window (0,3) for CMRM. In addition, with this last event window with the same model, the GST is also high for the lower position.

Regarding Rank Test, the top position is significant for all event windows in the MM, and in the CMRM, it is only significant in the event window (-1,1).

		Generalized Sign Test		Rank	
Window	Position	CMRM	MM	CMRM	MM
(-1,3)	Top	1.28992	-1.80113 *	1.47749	1.67817 *
	Lower	0.64901	-0.17754	0.56067	0.96633
(0,3)	Top	1.76626 *	-0.38663	1.61877	1.86343 *
	Lower	1.50977	-0.60845	0.58647	1.01188
(-1,1)	Top	0.81359	-0.38663	1.68649 *	2.04964 **
	Lower	0.64901	0.25338	0.62002	1.14592

Table 13: This table shows the results for non-parametric tests - Generalized Sign Test and Rank Test – of corporate scandals committed by top position or lower position executives, for CMRM and MM, for the three-event windows: (-1,3), (0,3), and (-1,1).

Predictably, the Generalized Sign Test shows less significant results than the Rank Test because it does not consider magnitude. Furthermore, it is possible to state that in these non-parametric tests, the lower position is never statistically significant.

To conclude, even though these results are not similar to the parametric ones, it is logical that scandals commit by top executives affect more than scandals exercised by lower executives. The Top Executives are CEOs, CFOs, Founders, Presidents, among others who typically have stronger media coverage. Consequently, investors react quicker and more often against executives of companies they intend to invest in, considering them as not trustable.

5.6. Group of Corporate Scandals divided by Current or Former Executive

This section serves the purpose of analysing the group of companies that have a corporate scandal committed by a former or a current executive by focusing on how this affects the value of the companies in the market. Having a look to the three-event windows in Table 14, different

results were taken, but one of the conclusions still holds: former executives have the power to affect the value of the company.

			CMRM			MM		
Window	Sample	Day	ACSAR	Z		ACSAR	Z	
(-1,3)	Former	-1	0.31445	1.40625		0.01824	0.08156	
		0	-0.18137	-0.81113		-0.66911	-2.99234	***
		1	-0.23321	-1.04294		-0.84443	-3.77640	***
		2	0.03879	0.17345		-0.58302	-2.60735	***
		3	0.27981	1.25136		-0.43843	-1.96070	**
	Current	-1	0.03111	0.13913		-0.04568	-0.20431	
		0	0.10830	0.48435		-0.14514	-0.64908	
		1	0.07777	0.34779		-0.12459	-0.55720	
		2	0.25159	1.12514		-0.11475	-0.51316	
		3	0.24657	1.10270		-0.22067	-0.98687	
(0,3)	Former	0	-0.97726	-4.37043	***	-0.58150	-2.60057	***
		1	-1.06314	-4.75450	***	-0.73903	-3.30506	***
		2	-0.69300	-3.09921	***	-0.25197	-1.12686	
		3	-0.50944	-2.27829	**	0.29257	1.30841	
	Current	0	-0.16079	-0.71908		0.11943	0.53411	
		1	-0.12035	-0.53821		0.10303	0.46078	
		2	-0.10548	-0.47174		0.47321	2.11625	**
		3	-0.22272	-0.99604		0.52142	2.33188	**
(-1,1)	Former	-1	0.31445	1.40625		0.01824	0.08156	
		0	-0.18137	-0.81113		-0.66911	-2.99234	***
		1	-0.23321	-1.04294		-0.84443	-3.77640	***
	Current	-1	0.03111	0.13913		-0.04568	-0.20431	
		0	0.10830	0.48435		-0.14514	-0.64908	
		1	0.07777	0.34779		-0.12459	-0.55720	

Table 14: This table shows the average cumulative standardized abnormal returns of corporate scandals committed by current or former executives grouped for CMRM and MM, for the three-event windows: (-1,3), (0,3), and (-1,1). The z test determines whether the null hypothesis of no ACSAR is equal to zero is rejected or not.

By analysing the event window (-1,3), in the CMRM, both former and current executives are not statistically significant, even though former executives present a negative ACSAR for announcement day and the day after. Regarding MM, former executives, after the announcements have all ACSARs negative and significant at least 5% level. The current executive also presents negative ACSAR, but they are not significant.

In terms of the event window (0,3), CMRM has negative and significant ACSARs for the group of companies with scandals committed by former executives. For the group of current executives, all ACSARs are negative, although not significant. Related to the MM, former executives have negative and significant ACSARs at 1% level on the day of the announcement and the day after. Concerning current executives in the MM, the results of the second and the

third day after the announcement are significant at 5% level, but they are positive. Therefore, it does not show any negative impact from the announcement of the misconduct.
Regarding the event window (-1,1), it is possible to see that, in the CMRM, corporate scandals do not harm companies whether corporate scandals were committed by former or current executives because there is not any statistically significant result. For MM, former executives show negative and significant ACSARs at 1% level since the day of the announcement. In the case of current executives, even all ACSARs from the event window are negative, no statistical evidence was found.

As previous sections, to check the robustness of the parametric results, the following table 15 shows the performed two non-parametric results: Generalized Sign Test and Rank Test.

		Generalized Sign Test		Rank	
Window	Executive	CMRM	MM	CMRM	MM
(-1,3)	Former	1.29222	-0.38285	1.04782	1.48722
	Current	0.10360	-1.94515 *	0.85497	1.08376
(0,3)	Former	1.29222	-0.83011	1.11900	1.58013
	Current	1.46682	-0.60058	0.91871	1.17444
(-1,1)	Former	0.37575	-0.38285	1.04782	1.04782
	Current	0.55801	-0.15238	0.85497	0.85497

Table 15: This table shows the results for non-parametric tests - Generalized Sign Test and Rank Test – of corporate scandals committed by current or former executives grouped, for CMRM and MM, for the three-event windows: (-1,3), (0,3), and (-1,1).

The Generalized Sign Test only shows significant results in the MM, for current executives in the event window (-1,3). With respect to the Rank test, neither CMRM nor MM show significant results.

The obtained results show some contradiction conclusions between the parametric and non-parametric results. In addition to that, besides the theoretical flaws of the tests to explain these differences, it was expected that corporate scandals committed by current executives would have more influence on the value of the company after the scandal. However, such a result was not found, neither in the parametric nor in the non-parametric tests. Moreover, it is difficult to understand if the distinction between former and current executive creates different implications on the value of the company after the scandal.

5.7. Regressions

The section aims to analyse which features will imply a bigger impact in corporations after the corporate scandal is disclosed, that is: which features of the scandal the market will penalise more severely. The chosen elements from the four regressions were previously mentioned in this thesis, in section 4.4. Afterward, an interpretation of those results will be made in order to understand which of those will yield a more significantly negative result. The following table 16 presents all the results for the event window (-1,1). The other two event windows are presented in Appendix E.

This event window, (-1,1), show some significant results in both models.

Event Window (-1,1)

		CMRM		MM	
Regression	Explanatory Variables	Coefficients	T-Stat	Coefficients	T-Stat
Industry	Intercept	-0,01201	-0,87855	-0,02440	-1,78055 *
	Dummy Financials	0,01725	0,83242	0,01395	0,67109
	Dummy Technology	-0,00187	-0,08773	0,00254	0,11838
	Dummy Consumer Non-Cyclicals	0,02553	0,80890	0,01653	0,52223
	Dummy Industrials	0,01656	0,58772	0,02250	0,79623
	Dummy Healthcare	-0,00505	-0,09877	0,04073	0,79427
	Observations		40		40
	R^2		0,04548		0,04125
Type Sexual vs Financial	Intercept	-0,00551	-0,51633	-0,01799	-1,68692 *
	Dummy Financial Type	0,00167	0,11087	0,00430	0,28517
	Observations		40		40
	R^2		0,00032		0,00214
Position of executive	Intercept	-0,02395	-2,29768 **	-0,03165	-2,95564 ***
	Dummy Lower Position	0,03505	2,49398 ***	0,02874	1,99091 **
	Observations		40		40
	R^2		0,14066		0,09446
Current vs former	Intercept	0,00121	0,11460	-0,00524	-0,50460
	Dummy Former	-0,01177	-0,78631	-0,02119	-1,44122
	Observations		40		40
	R^2		0,01601		0,05183

Table 16: This table shows the results of CARs OLS regression for CMRM and MM, on an established explanatory variable, for the event window (-1,1).

By looking at CMRM, the top position has a negative and significant T-stat at 5% level, and the lower position has a positive and significant coefficient at 1% level. This means that a company that has a top executive involved in a scandal will be harshly punished by the market.

On the contrary, a scandal involving a lower position executive, does not affect the company negatively.

Regarding MM, only the regression which tests whether being a current or former executive there is not any feature that the market is punishing the company after the corporate scandal is announced since does not have any feature found significant.
In the industry's regression, the interception, i.e., the coefficient that absorbs the impact of the industry Consumer Cyclicals has negative and significant T-stat at 10% level.
In addition to that, the regression where the type of scandal is analysed, the interception is significant at 10% and is negative. The interception, in this case, absorbs the impact of the sexual type of corporate scandals.
Moreover, it was found significant T-stats in the regression where the executive's position is analysed. The top position executives have a negative and significant result at 1% level of confidence, and the lower position executives have a positive and significant T-stat at 5% level. Hence, this last type does not show any negative impact of the scandal. Therefore, it is possible to argue that if the company that suffers a corporate scandal is from the cyclical consumer industry or if the scandal is of the sexual type or even if it is committed by a top position executive, the company will have a more severe impact with the scandal.

By looking at Appendix E, it can be seen that in both event windows – (0,3) and (-1,3) - a top executive position implies bigger damage to the companies after the scandal's announcement. Also, in the event window (0,3), in the regression where the industry is analysed, Healthcare is negative and significant at 10% level in the CMRM. However, as already mentioned, industry healthcare only has one company in all dataset.

Succinctly, with these results, it is possible to outline that the main result is the impact that the companies suffer with the top executive's position. In both models, this feature has the most negative coefficients. It seems that is the most important feature for the market when it is present with a corporate scandal committed by an Executive.

It is also possible to note that when the length of the event window is minimized, more significant results were recognized. This is expected because, with a larger event window, there is time for the market to react to all new information once the market is updated to the second.

5.8. Validation

As mentioned in the methodology, it is vital to ensure that the following assumptions, provided by McWilliams and Siegel (1997), are being respected: Market efficiency, unanticipated event, and isolation of confounding effects. Tough, these assumptions are often violated, affecting the results of the study. To make sure the results of the corporate scandals committed by executives follow these assumptions, the validation of the findings is performed in this section.

5.8.1. Market Efficiency

This section tries to determine if the effects of the corporate scandals committed by executives are immediately reflected in the stock market prices, or if investors responded with delay to the announcements.

The results of all the three-event windows show significant slow reactions of the investors for Consumer Cyclicals and lower position scandals for MM. Furthermore, personal scandals show a slow reaction from the investors in two event windows: (-1,3) and (-1,1). Some other late reactions were discovered, but there was not any pattern between the event windows. Due to this reason, they were not considered.

The reason why Consumer Cyclicals have a delayed reaction from investors has to do with the fact that of the 13 analysed scandals, only two of them are financial scandals, and the rest are personal scandals. By analysing this correlation with personal scandals, out of the 20 corporate scandals analysed, 11 come from personal scandals, i.e., more than 50% of these scandals come from Consumer Cyclicals. Therefore, this result shows that there is a correlation between these two categories. Moreover, delay in investors' reactions to personal misconduct can come from the fact that when investors are presented to this type of scandals, they will try to understand what happened precisely. Understand which type of implications this episode have on the company's performance, and what is going to happen to the executive, for example, if he/she is going to be fired.

In relation to the position of lower executives, it is easy to understand why this position shows a delayed reaction from investors. They usually have fewer media coverage than the position of higher executives.

However, all these results do not invalidate the assumption of market efficiency. In all cases, the day of the announcement presents negative reactions, they are just not significant, but they become the day after the announcement.

5.8.2. Anticipation

In a perfect economical world, markets would not have access to information until it was released. However, investors may get information before the real announcement of the scandal. In an attempt to analyse this question, this dissertation includes the day before the scandals' announcement in two event windows: (-1,3) and (-1,1).

By analysing all the results, only the corporate scandal committed by executives in Google presents negative abnormal returns different from zero in both event windows. The reason for this is going to be further analysed, since a confounding effect is present.

5.8.3. Confounding Events

In this section, this dissertation analyses the presence of confounding events within the event windows. The fact that the event windows are relatively short reduces the probability of the event being affected by them.

In any case, all the database was analysed. The investigation reveals two possible confounding events. Firstly, on 14th November of 2017, Tesla factory workers have filed a lawsuit alleging racism and unsafe conditions. This announcement was made one day after the announcement of the personal misconducted, but there was not find any negative significant abnormal return from the scandal or the lawsuit. Thus, the scandal is included. Secondly, on the same day that the personal scandal committed in Alphabet was announced, the Q3 earnings were announced. Therefore, the calculations were performed excluding this scandal. The results show that there is almost no difference between the conclusions with or without this scandal. Consequently, to have a bigger and more complete database, it was decided to include the scandal.

6. Conclusions

This dissertation intends to extend prior research on corporate misconduct committed by executives and its effects on the value of their companies. All the examined corporate scandals are from US companies from the S&P 500 and NASDAQ between January 2013 and March 2019. The previous literature focuses almost exclusively on the analysis of financial firms' scandals. Nevertheless, with society more open to diversity and the current change of awareness, movements like #MeToo appear. In this sense, the corporate scandals considered in this study are not limited to any particular characteristic; the only condition being their relation to a firm's executive.

To test whether companies that suffer from a corporate scandal committed by an executive experienced significant loss during the event, an event study methodology was applied by using stock market data extracted from Thomson Reuters. By applying three-event windows – (-1,3), (0,3) and (-1,1) – and two models, CMRM and MM, this dissertation finds that corporate scandals negatively affect the stock price of the respective companies. In addition to that, between personal and financial misconduct scandals, financial scandals show the most negative impact on the stock performance of their companies, as expected. These results were confirmed by checking the robustness of the parametric tests through non-parametric tests.

From all the industries where executives committed scandals, Technology provided a negative impact on the value of the companies regardless of the model and the chosen event window. Moreover, Consumer Cyclicals show some negative stimulus on their respective companies in all event windows for MM. Through the non-parametric tests, different conclusions are taken since more industries present significant results. However, the only consistent result was again Technology, since the Rank Test is significant in both models for all event windows in this industry. These results were not expected since it was not expected that some industries had more power than others. Though, this dissertation finds out that the industry that is more negatively influenced by corporate scandals committed by executives is Technology.

Regarding the executive's position, parametric tests do not find the difference between the top and lower position. Nevertheless, it discovers that both positions are affected by corporate scandals. That way, by checking the robustness of these results, the non-parametric tests find that lower executive position does not affect the value of the companies when the scandal is disclosed. This result is expected since top position executives have more decision power and more media coverage.

When analysing the difference between scandals committed by a former or a current executive, some inconsistency is found. The parametric tests find statistically significant for former executives. However, when non-parametric tests are considered, the only found statistically evidence was of current executives, in the Generalized Sing Test for MM. Therefore, it is difficult to understand if this distinction between former and current executives makes a difference in the value of the company after the scandal. This not follows the hypothesis of this dissertation, as it was expected that current executives would influence more negatively the company's stock price than the scandals committed by former executives

To conclude, regression analysis was done to understand which features would imply a harder market reaction on the company's stock price after the corporate scandal is announced. The event window (-1,1) is the event window that shows more statistically evidence. When using CMRM, top executives negatively affect the value of the company in the market. In the case when MM is applied, being from the industry Consumer Cyclicals, or a scandal committed by a top executive or even personal misconduct scandals imply bigger impact on the value of the companies after the scandals' announcement. The top executive position also shows statistical significance for MM in the other two event windows.

Although this dissertation presents valuable insights, some limitations can be addressed and may open areas for future research.

Due to the lack of databases corresponding to the topic, it is difficult to know which companies suffered from a scandal committed by one of their executives. Thus, the fact that it was necessary to search one by one limits the size of the sample. In this case, it only involves companies listed in S&P500 and NASDAQ. This has many implications, like the length of the chosen database or the data analysis. The industry analysis is an example of that since industry Healthcare only has one company in this database. In addition to that, the fact that personal misconduct scandals are many times suppressed by the companies where they are committed in order not to ruin their reputations, it limits the personal scandals sample. Moreover, due to financial misconduct scandals, executives have often resigned or been fired by the time when the company discovers that the government is investigating it, may have occurred in the meantime, some leakage or even be anticipated by investors. This situation can minimize investor reactions when the scandal is announced.

Finally, for future research, increasing the database for a longer length and with more listed companies could benefit the insights. It would be interesting to analyse this topic for different

countries, to compare the different reactions between them. Finally, it would be interesting to understand if the current social movements, such as #MeToo, are already able to influence the opinion of investors differently when faced with a scandal of personal misconduct. This could be done by comparing the reactions of investors when they nowadays face personal misconduct scandals with similar reactions ten years ago.

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8. Appendices

Appendix A

Nº	Name of the company	Date	Executives Involved
1	Tesla Inc	27/09/18	Elon Musk
2	Apple Inc	13/02/19	Gene Levoff
3	Goldman Sachs Group Inc	31/05/18	Woojae "Steve" Jung
4	Goldman Sachs Group Inc	01/11/17	Roger Ng | Tim Leissner
5	Goldman Sachs Group Inc	30/11/18	Andrea Vella
6	Qualcomm Inc	23/09/13	Jing Wang
7	Walgreens Boots Alliance Inc	28/09/18	Gregory Wasson | Wade Miquelon
8	Micron Technology Inc	29/09/17	Anand Jayapalan
9	Cognizant Technology Solutions Corp	30/09/16	Gordon Coburn | Steven Schwartz
10	Microsoft Corp	19/12/13	Brian D. Jorgenson
11	L3 Technologies Inc	28/04/17	David Pruitt | Mark Wentlent
12	Citizens Financial Group Inc	18/11/15	Tara Lynn Petrucci
13	Equifax Inc	14/03/18	Jun Ying
14	Equifax Inc	28/06/18	Sudhakar Reddy Bonthu
15	Tiffany & Co	02/07/13	Ingrid Lederhaas-Okun
16	Raymond James Financial Inc	06/09/18	Joel N. Burstein
17	Franklin Resources Inc	14/01/15	Charles Johnson
18	Fifth Third Bancorp	04/12/13	Daniel Poston
19	United Continental Holdings Inc	08/09/15	Jeff Smisek
20	**Retrophin**	**17/12/15**	**Martin Shkreli**
21	CBS Corp	06/08/18	Les Moonves
22	CBS Corp	20/11/17	Charlie Rose
23	Bank of America Corp	19/01/18	Omeed Malik
24	Tesla Inc	13/11/17	Steve Jurvetson
25	Amazon.com Inc	12/10/17	Roy Price
26	JD.com Inc	03/09/18	Richard Liu
27	Walt Disney Co	21/11/17	John Lasseter
28	Walt Disney Co	08/12/17	Jon Heely
29	Walt Disney Co	09/01/18	Stan Lee
30	Alphabet Inc	25/10/18	Andy Rubin | Richard DeVaul | Amit Singhal
31	Wynn Resorts Ltd	26/01/18	Steve Wynn
32	Morgan Stanley	07/12/17	Harold Ford Jr.
33	Morgan Stanley	27/04/18	Douglas Greenberg
34	Microsoft Corp	05/08/13	Vineet Kumar Srivastava
35	Ford Motor Co	21/02/18	Raj Nair
36	Monster Beverage Corp	23/01/18	John Kenneally
37	Nike Inc	15/03/18	Trevor Edwards
38	Tapestry Inc	21/05/18	Giovanni Morelli
39	Intel Corp	21/06/18	Brian Krzanich
40	**National Beverage**	**03/07/18**	**Nick Caporella**

Table 1**:** This table shows the scandals and more information related to name of executives involved and the date of the announcement.

Appendix B

Nº	Name of the company	S&P500	NASDAQ	Both/None
1	Tesla Inc	No	Yes	
2	Apple Inc	Yes	Yes	Both
3	Goldman Sachs Group Inc	Yes	No	
4	Goldman Sachs Group Inc	Yes	No	
5	Goldman Sachs Group Inc	Yes	No	
6	Qualcomm Inc	Yes	Yes	Both
7	Walgreens Boots Alliance Inc	Yes	Yes	Both
8	Micron Technology Inc	Yes	Yes	Both
9	Cognizant Technology Solutions Corp	Yes	Yes	Both
10	Microsoft Corp	Yes	No	
11	L3 Technologies Inc	Yes	No	
12	Citizens Financial Group Inc	Yes	No	
13	Equifax Inc	Yes	No	
14	Equifax Inc	Yes	No	
15	Tiffany & Co	Yes	No	
16	Raymond James Financial Inc	Yes	No	
17	Franklin Resources Inc	Yes	No	
18	Fifth Third Bancorp	Yes	No	
19	United Continental Holdings Inc	Yes	Yes	Both
20	**Retrophin**	**No**	**No**	**None**
21	CBS Corp	Yes	No	
22	CBS Corp	Yes	No	
23	Bank of America Corp	Yes	No	
24	Tesla Inc	No	Yes	
25	Amazon.com Inc	Yes	Yes	Both
26	JD.com Inc	No	Yes	
27	Walt Disney Co	Yes	No	
28	Walt Disney Co	Yes	No	
29	Walt Disney Co	Yes	No	
30	Alphabet Inc	Yes	Yes	Both
31	Wynn Resorts Ltd	Yes	Yes	Both
32	Morgan Stanley	Yes	No	
33	Morgan Stanley	Yes	No	
34	Microsoft Corp	Yes	No	
35	Ford Motor Co	Yes	No	
36	Monster Beverage Corp	Yes	Yes	Both
37	Nike Inc	Yes	No	
38	Tapestry Inc	Yes	No	
39	Intel Corp	Yes	Yes	Both
40	**National Beverage**	**No**	**No**	**None**

Table 1**:** This table shows the scandals and information related to the indices to which the companies belong.

Appendix C

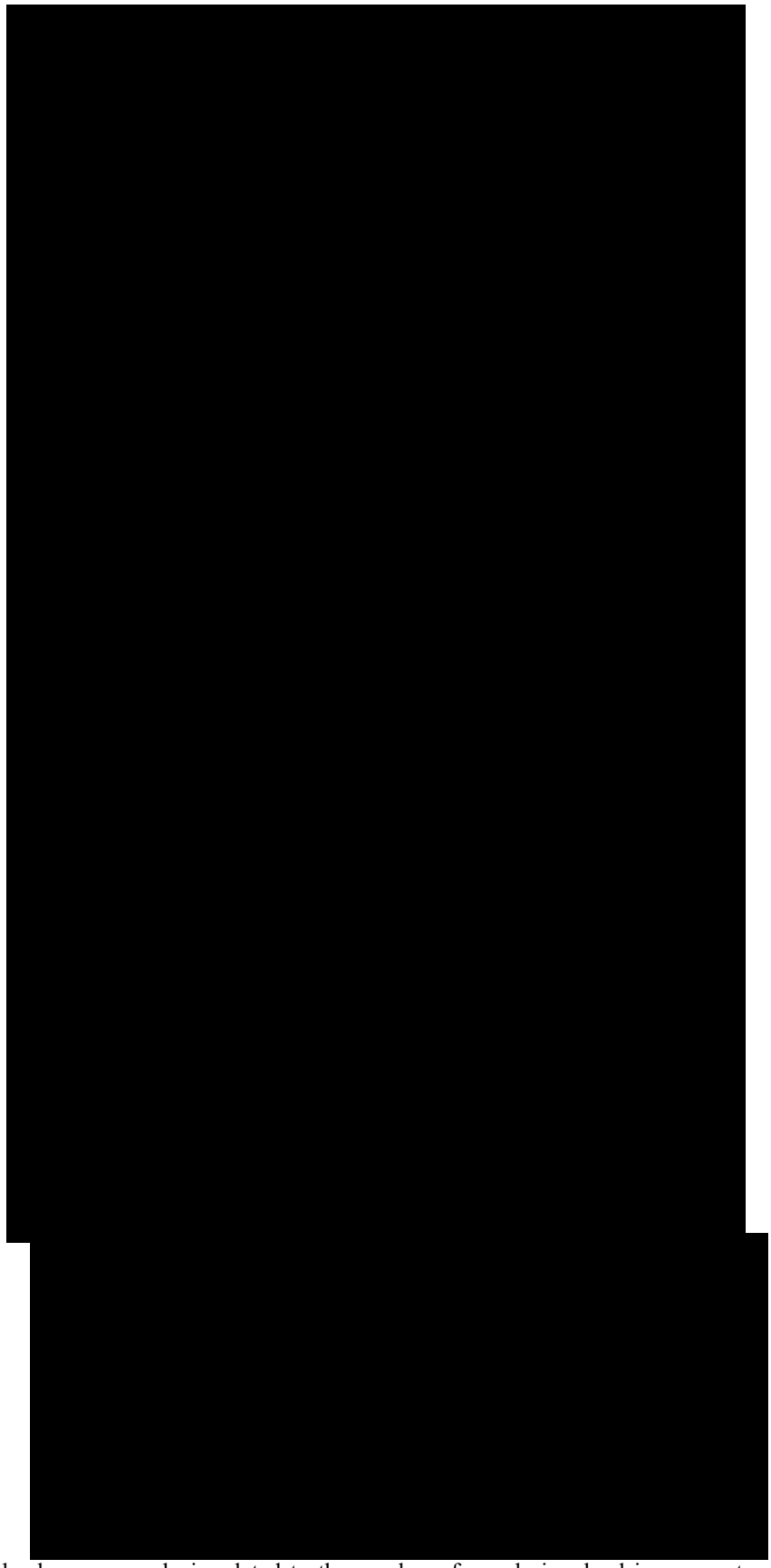

Table 1: This table shows an analysis related to the number of people involved in corporate scandals in each company and each industry.

Appendix D

			CMRM				MM			
Company	Window	Day	AR	T-Stat	CAR	T-Stat	AR	T-Stat	CAR	T-Stat
CBS - Moonves	(-1,3)	-1	0,89981%	0,51053	0,89981%	0,51053	0,57287%	0,00199	0,57287%	0,34750
		0	-0,51793%	-0,29386	0,38187%	0,15320	-0,75822%	-0,45993	-0,18535%	-0,07950
		1	0,76531%	0,43421	1,14718%	0,37578	0,58097%	0,35241	0,39562%	0,13855
		2	-0,04753%	-0,02697	1,09965%	0,31196	0,00999%	0,00606	0,40561%	0,12302
		3	0,83647%	0,47459	1,93612%	0,49126	0,98639%	0,59833	1,39200%	0,37762
	(0,3)	0	-0,51793%	-0,29413	-0,51793%	-0,29413	-0,75822%	-0,46048	-0,75822%	-0,46048
		1	0,76531%	0,43460	0,24737%	0,09933	0,58097%	0,35283	-0,17725%	-0,07612
		2	-0,04753%	-0,02699	0,19984%	0,06552	0,00999%	0,00607	-0,16726%	-0,05865
		3	0,83647%	0,47501	1,03631%	0,29425	0,98639%	0,59905	0,81913%	0,24873
	(-1,1)	-1	0,89981%	0,51053	0,89981%	0,51053	0,57287%	0,00199	0,57287%	0,34750
		0	-0,51793%	-0,29386	0,38187%	0,15320	-0,75822%	-0,45993	-0,18535%	-0,07950
		1	0,76531%	0,43421	1,14718%	0,37578	0,58097%	0,35241	0,39562%	0,13855
CBS - Rose	(-1,3)	-1	0,90996%	0,69783	0,90996%	0,69783	0,78779%	0,00500	0,78779%	0,63505
		0	-1,12044%	-0,85924	-0,21048%	-0,11414	-1,56966%	-1,26533	-0,78187%	-0,44567
		1	1,75536%	1,34615	1,54488%	0,68401	0,86482%	0,69714	0,08294%	0,03860
		2	-0,57409%	-0,44026	0,97079%	0,37224	-0,85349%	-0,68801	-0,77054%	-0,31057
		3	0,84055%	0,64460	1,81134%	0,62122	0,32592%	0,26273	-0,44462%	-0,16029
	(0,3)	0	-1,12044%	-0,85904	-1,12044%	-0,85904	-1,56966%	-1,26432	-1,56966%	-1,26432
		1	1,75536%	1,34583	0,63492%	0,34421	0,86482%	0,69659	-0,70484%	-0,40145
		2	-0,57409%	-0,44015	0,06083%	0,02693	-0,85349%	-0,68746	-1,55833%	-0,72469
		3	0,84055%	0,64445	0,90138%	0,34554	0,32592%	0,26252	-1,23241%	-0,49634
	(-1,1)	-1	0,90996%	0,69783	0,90996%	0,69783	0,78779%	0,00500	0,78779%	0,63505
		0	-1,12044%	-0,85924	-0,21048%	-0,11414	-1,56966%	-1,26533	-0,78187%	-0,44567
		1	1,75536%	1,34615	1,54488%	0,68401	0,86482%	0,69714	0,08294%	0,03860
Bank of America	(-1,3)	-1	1,16156%	0,85770	1,16156%	0,85770	1,10785%	0,01163	1,10785%	1,04958
		0	0,96179%	0,71019	2,12335%	1,10867	-0,17192%	-0,16288	0,93593%	0,62699
		1	0,89297%	0,65938	3,01632%	1,28592	-0,90325%	-0,85573	0,03269%	0,01788
		2	0,13679%	0,10100	3,15311%	1,16414	-0,59908%	-0,56757	-0,56640%	-0,26830
		3	0,73198%	0,54050	3,88509%	1,28296	0,48819%	0,46251	-0,07821%	-0,03314
	(0,3)	0	0,96179%	0,70951	0,96179%	0,70951	-0,17192%	-0,16252	-0,17192%	-0,16252
		1	0,89297%	0,65874	1,85476%	0,96750	-0,90325%	-0,85384	-1,07517%	-0,71867
		2	0,13679%	0,10091	1,99155%	0,84822	-0,59908%	-0,56631	-1,67425%	-0,91376
		3	0,73198%	0,53998	2,72353%	1,00457	0,48819%	0,46148	-1,18606%	-0,56059
	(-1,1)	-1	1,16156%	0,85770	1,16156%	0,85770	1,10785%	0,01163	1,10785%	1,04958
		0	0,96179%	0,71019	2,12335%	1,10867	-0,17192%	-0,16288	0,93593%	0,62699
		1	0,89297%	0,65938	3,01632%	1,28592	-0,90325%	-0,85573	0,03269%	0,01788
Tesla - Jurvetson	(-1,3)	-1	0,06940%	0,03063	0,06940%	0,03063	-0,09910%	0,00005	-0,09910%	-0,04547
		0	4,16525%	1,83844	4,23465%	1,32164	3,72737%	1,71026	3,62827%	1,17718
		1	-2,05489%	-0,90698	2,17976%	0,55547	-2,02119%	-0,92740	1,60708%	0,42573
		2	0,91164%	0,40238	3,09140%	0,68224	1,40586%	0,64506	3,01293%	0,69122
		3	0,45488%	0,20077	3,54629%	0,70000	-1,01579%	-0,46608	1,99714%	0,40981
	(0,3)	0	4,16525%	1,84841	4,16525%	1,84841	3,72737%	1,72018	3,72737%	1,72018
		1	-2,05489%	-0,91190	2,11036%	0,66222	-2,02119%	-0,93278	1,70617%	0,55677
		2	0,91164%	0,40456	3,02200%	0,77427	1,40586%	0,64880	3,11203%	0,82919
		3	0,45488%	0,20186	3,47688%	0,77147	-1,01579%	-0,46879	2,09624%	0,48371
	(-1,1)	-1	0,06940%	0,03063	0,06940%	0,03063	-0,09910%	0,00005	-0,09910%	-0,04547
		0	4,16525%	1,83844	4,23465%	1,32164	3,72737%	1,71026	3,62827%	1,17718
		1	-2,05489%	-0,90698	2,17976%	0,55547	-2,02119%	-0,92740	1,60708%	0,42573

			CMRM				MM			
Company	Window	Day	AR	T-Stat	CAR	T-Stat	AR	T-Stat	CAR	T-Stat
Amazon	(-1,3)	-1	0,97343%	0,78829	0,97343%	0,78829	0,43352%	0,00178	0,43352%	0,40976
		0	0,77929%	0,63108	1,75272%	1,00365	0,68778%	0,65008	1,12130%	0,74942
		1	0,38413%	0,31107	2,13685%	0,99907	-0,03690%	-0,03487	1,08441%	0,59176
		2	0,52232%	0,42298	2,65916%	1,07671	-0,01082%	-0,01023	1,07359%	0,50737
		3	0,46056%	0,37296	3,11972%	1,12984	0,06595%	0,06233	1,13953%	0,48168
	-0,3	0	0,77929%	0,63042	0,77929%	0,63042	0,68778%	0,64986	0,68778%	0,64986
		1	0,38413%	0,31074	1,16342%	0,66550	-0,03690%	-0,03486	0,65089%	0,43487
		2	0,52232%	0,42254	1,68574%	0,78733	-0,01082%	-0,01022	0,64007%	0,34917
		3	0,46056%	0,37257	2,14629%	0,86814	0,06595%	0,06231	0,70601%	0,33354
	(-1,1)	-1	0,97343%	0,78829	0,97343%	0,78829	0,43352%	0,00178	0,43352%	0,40976
		0	0,77929%	0,63108	1,75272%	1,00365	0,68778%	0,65008	1,12130%	0,74942
		1	0,38413%	0,31107	2,13685%	0,99907	-0,03690%	-0,03487	1,08441%	0,59176
JD	(-1,3)	-1	1,63464%	0,74830	1,63464%	0,74830	1,00675%	0,00552	1,00675%	0,54808
		0	-5,30754%	-2,42968	-3,67290%	-1,18891	-5,79189%	-3,15312	-4,78514%	-1,84204
		1	-9,96851%	-4,56336	-13,64141%	-3,60540	-10,29644%	-5,60540	-15,08158%	-4,74030
		2	4,27907%	1,95886	-9,36234%	-2,14294	4,06674%	2,21394	-11,01484%	-2,99825
		3	-0,43402%	-0,19868	-9,79636%	-2,00556	-0,84226%	-0,45853	-11,85710%	-2,88678
	(0,3)	0	-5,30754%	-2,42750	-5,30754%	-2,42750	-5,79189%	-3,15124	-5,79189%	-3,15124
		1	-9,96851%	-4,55927	-15,27605%	-4,94039	-10,29644%	-5,60206	-16,08833%	-6,18952
		2	4,27907%	1,95711	-10,99698%	-2,90387	4,06674%	2,21262	-12,02159%	-3,77626
		3	-0,43402%	-0,19851	-11,43100%	-2,61408	-0,84226%	-0,45826	-12,86385%	-3,49947
	(-1,1)	-1	1,63464%	0,74830	1,63464%	0,74830	1,00675%	0,00552	1,00675%	0,54808
		0	-5,30754%	-2,42968	-3,67290%	-1,18891	-5,79189%	-3,15312	-4,78514%	-1,84204
		1	-9,96851%	-4,56336	-13,64141%	-3,60540	-10,29644%	-5,60540	-15,08158%	-4,74030
Walt Disney - Lassester	(-1,3)	-1	-0,18112%	-0,13363	-0,18112%	-0,13363	-0,66656%	0,00373	-0,66656%	-0,55901
		0	1,30503%	0,96283	1,12391%	0,58633	0,10272%	0,08614	-0,56384%	-0,33437
		1	1,59778%	1,17881	2,72169%	1,15933	1,38818%	1,16420	0,82434%	0,39914
		2	2,71580%	2,00367	5,43749%	2,00584	2,12411%	1,78138	2,94845%	1,23635
		3	0,96368%	0,71098	6,40116%	2,11204	0,70425%	0,59062	3,65270%	1,36996
	(0,3)	0	1,30503%	0,96350	1,30503%	0,96350	0,10272%	0,08612	0,10272%	0,08612
		1	1,59778%	1,17964	2,90281%	1,51543	1,38818%	1,16390	1,49090%	0,88390
		2	2,71580%	2,00507	5,61861%	2,39497	2,12411%	1,78092	3,61501%	1,74991
		3	0,96368%	0,71148	6,58228%	2,42985	0,70425%	0,59047	4,31926%	1,81070
	(-1,1)	-1	-0,18112%	-0,13363	-0,18112%	-0,13363	-0,66656%	0,00373	-0,66656%	-0,55901
		0	1,30503%	0,96283	1,12391%	0,58633	0,10272%	0,08614	-0,56384%	-0,33437
		1	1,59778%	1,17881	2,72169%	1,15933	1,38818%	1,16420	0,82434%	0,39914
Walt Disney - Heely	(-1,3)	-1	0,10405%	0,10580	0,10405%	0,10580	-0,42431%	0,00196	-0,42431%	-0,46214
		0	-0,68483%	-0,69636	-0,58079%	-0,41759	-1,35726%	-1,47828	-1,78157%	-1,37209
		1	2,78818%	2,83511	2,20739%	1,29589	2,24473%	2,44488	0,46316%	0,29125
		2	0,85533%	0,86973	3,06273%	1,55714	0,40441%	0,44047	0,86757%	0,47246
		3	0,46125%	0,46901	3,52397%	1,60250	0,12349%	0,13450	0,99106%	0,48274
	(0,3)	0	-0,68483%	-0,70071	-0,68483%	-0,70071	-1,35726%	-1,48392	-1,35726%	-1,48392
		1	2,78818%	2,85280	2,10334%	1,52176	2,24473%	2,45420	0,88747%	0,68609
		2	0,85533%	0,87516	2,95868%	1,74779	0,40441%	0,44215	1,29188%	0,81547
		3	0,46125%	0,47194	3,41992%	1,74959	0,12349%	0,13502	1,41537%	0,77373
	(-1,1)	-1	0,10405%	0,10580	0,10405%	0,10580	-0,42431%	0,00196	-0,42431%	-0,46214
		0	-0,68483%	-0,69636	-0,58079%	-0,41759	-1,35726%	-1,47828	-1,78157%	-1,37209
		1	2,78818%	2,83511	2,20739%	1,29589	2,24473%	2,44488	0,46316%	0,29125

			CMRM				MM			
Company	Window	Day	AR	T-Stat	CAR	T-Stat	AR	T-Stat	CAR	T-Stat
Walt Disney - Lee	(-1,3)	-1	-1,12050%	-1,07850	-1,12050%	-1,07850	-1,66633%	0,02870	-1,66633%	-1,72208
		0	0,24022%	0,23121	-0,88028%	-0,59912	-0,28718%	-0,29679	-1,95351%	-1,42756
		1	-0,11457%	-0,11028	-0,99485%	-0,55285	-0,51815%	-0,53549	-2,47166%	-1,47476
		2	1,70144%	1,63766	0,70659%	0,34005	0,88023%	0,90968	-1,59143%	-0,82234
		3	1,64639%	1,58467	2,35297%	1,01284	0,83973%	0,86783	-0,75170%	-0,34742
	(0,3)	0	0,24022%	0,23072	0,24022%	0,23072	-0,28718%	-0,29505	-0,28718%	-0,29505
		1	-0,11457%	-0,11004	0,12565%	0,08533	-0,51815%	-0,53235	-0,80533%	-0,58506
		2	1,70144%	1,63417	1,82709%	1,01316	0,88023%	0,90435	0,07490%	0,04443
		3	1,64639%	1,58129	3,47348%	1,66807	0,83973%	0,86274	0,91463%	0,46985
	(-1,1)	-1	-1,12050%	-1,07850	-1,12050%	-1,07850	-1,66633%	0,02870	-1,66633%	-1,72208
		0	0,24022%	0,23121	-0,88028%	-0,59912	-0,28718%	-0,29679	-1,95351%	-1,42756
		1	-0,11457%	-0,11028	-0,99485%	-0,55285	-0,51815%	-0,53549	-2,47166%	-1,47476
Alphabet - Rubin	(-1,3)	-1	-4,62304%	-2,81674	-4,62304%	-2,81674	-1,00003%	0,01054	-1,00003%	-1,05390
		0	4,95624%	3,01975	0,33319%	0,14355	1,55845%	1,64240	0,55842%	0,41613
		1	-1,23744%	-0,75395	-0,90424%	-0,31808	0,46512%	0,49017	1,02354%	0,62277
		2	-3,96285%	-2,41449	-4,86709%	-1,48272	-3,78783%	-3,99186	-2,76429%	-1,45659
		3	1,98873%	1,21170	-2,87837%	-0,78430	-0,98940%	-1,04269	-3,75369%	-1,76912
	(0,3)	0	4,95624%	2,97324	4,95624%	2,97324	1,55845%	1,63873	1,55845%	1,63873
		1	-1,23744%	-0,74234	3,71880%	1,57749	0,46512%	0,48908	2,02357%	1,50459
		2	-3,96285%	-2,37731	-0,24405%	-0,08453	-3,78783%	-3,98295	-1,76426%	-1,07107
		3	1,98873%	1,19303	1,74468%	0,52331	-0,98940%	-1,04036	-2,75366%	-1,44775
	(-1,1)	-1	-4,62304%	-2,81674	-4,62304%	-2,81674	-1,00003%	0,01054	-1,00003%	-1,05390
		0	4,95624%	3,01975	0,33319%	0,14355	1,55845%	1,64240	0,55842%	0,41613
		1	-1,23744%	-0,75395	-0,90424%	-0,31808	0,46512%	0,49017	1,02354%	0,62277
Wynn	(-1,3)	-1	0,04131%	0,02284	0,04131%	0,02284	-0,42735%	0,00108	-0,42735%	-0,25162
		0	-10,09329%	-5,58173	-10,05199%	-3,93073	-11,95579%	-7,03954	-12,38314%	-5,15563
		1	-9,29253%	-5,13890	-19,34452%	-6,17637	-8,85153%	-5,21175	-21,23467%	-7,21856
		2	4,86985%	2,69309	-14,47467%	-4,00235	5,82764%	3,43130	-15,40703%	-4,53581
		3	-3,35276%	-1,85412	-17,82743%	-4,40900	-3,80732%	-2,24174	-19,21435%	-5,05949
	(0,3)	0	-10,09329%	-5,81399	-10,09329%	-5,81399	-11,95579%	-7,37462	-11,95579%	-7,37462
		1	-9,29253%	-5,35273	-19,38582%	-7,89607	-8,85153%	-5,45983	-20,80732%	-9,07533
		2	4,86985%	2,80515	-14,51598%	-4,82755	5,82764%	3,59463	-14,97968%	-5,33462
		3	-3,35276%	-1,93127	-17,86874%	-5,14642	-3,80732%	-2,34844	-18,78700%	-5,79414
	(-1,1)	-1	0,04131%	0,02284	0,04131%	0,02284	-0,42735%	0,00108	-0,42735%	-0,25162
		0	-10,09329%	-5,58173	-10,05199%	-3,93073	-11,95579%	-7,03954	-12,38314%	-5,15563
		1	-9,29253%	-5,13890	-19,34452%	-6,17637	-8,85153%	-5,21175	-21,23467%	-7,21856
Morgan Stanley - Ford Jr.	(-1,3)	-1	-0,39874%	-0,29197	-0,39874%	-0,29197	-0,65460%	0,00406	-0,65460%	-0,62067
		0	1,49336%	1,09346	1,09462%	0,56674	0,66147%	0,62718	0,00686%	0,00460
		1	1,24804%	0,91383	2,34266%	0,99035	-0,07055%	-0,06690	-0,06369%	-0,03486
		2	-0,01036%	-0,00759	2,33230%	0,85387	-0,89324%	-0,84694	-0,95693%	-0,45367
		3	2,26314%	1,65710	4,59544%	1,50481	1,69284%	1,60510	0,73591%	0,31205
	(0,3)	0	1,49336%	1,10027	1,49336%	1,10027	0,66147%	0,63145	0,66147%	0,63145
		1	1,24804%	0,91952	2,74141%	1,42820	-0,07055%	-0,06735	0,59091%	0,39888
		2	-0,01036%	-0,00764	2,73104%	1,16172	-0,89324%	-0,85270	-0,30233%	-0,16663
		3	2,26314%	1,66741	4,99418%	1,83978	1,69284%	1,61602	1,39051%	0,66371
	(-1,1)	-1	-0,39874%	-0,29197	-0,39874%	-0,29197	-0,65460%	0,00406	-0,65460%	-0,62067
		0	1,49336%	1,09346	1,09462%	0,56674	0,66147%	0,62718	0,00686%	0,00460
		1	1,24804%	0,91383	2,34266%	0,99035	-0,07055%	-0,06690	-0,06369%	-0,03486

			CMRM				MM			
Company	Window	Day	AR	T-Stat	CAR	T-Stat	AR	T-Stat	CAR	T-Stat
Morgan Stanley - Greenberg	(-1,3)	-1	0,67777%	0,44926	0,67777%	0,44926	-1,41814%	0,02058	-1,41814%	-1,45141
		0	-0,28103%	-0,18628	0,39674%	0,18595	-1,07661%	-1,10187	-2,49475%	-1,80544
		1	-0,09247%	-0,06129	0,30427%	0,11644	0,40956%	0,41917	-2,08518%	-1,23213
		2	0,73839%	0,48944	1,04266%	0,34556	-0,15745%	-0,16115	-2,24264%	-1,14763
		3	0,15800%	0,10473	1,20066%	0,35592	0,62307%	0,63769	-1,61957%	-0,74128
	(0,3)	0	-0,28103%	-0,18620	-0,28103%	-0,18620	-1,07661%	-1,09722	-1,07661%	-1,09722
		1	-0,09247%	-0,06127	-0,37350%	-0,17499	0,40956%	0,41740	-0,66705%	-0,48070
		2	0,73839%	0,48924	0,36489%	0,13958	-0,15745%	-0,16047	-0,82450%	-0,48514
		3	0,15800%	0,10469	0,52289%	0,17323	0,62307%	0,63500	-0,20143%	-0,10264
	(-1,1)	-1	0,67777%	0,44926	0,67777%	0,44926	-1,41814%	0,02058	-1,41814%	-1,45141
		0	-0,28103%	-0,18628	0,39674%	0,18595	-1,07661%	-1,10187	-2,49475%	-1,80544
		1	-0,09247%	-0,06129	0,30427%	0,11644	0,40956%	0,41917	-2,08518%	-1,23213
Microsoft - Srivastava	(-1,3)	-1	0,66267%	0,46273	0,66267%	0,46273	0,59423%	0,00280	0,59423%	0,47114
		0	-0,62779%	-0,43837	0,03489%	0,01723	-0,41082%	-0,32572	0,18341%	0,10283
		1	-0,41054%	-0,28667	-0,37565%	-0,15144	0,19457%	0,15427	0,37798%	0,17302
		2	1,49746%	1,04564	1,12181%	0,39167	1,92720%	1,52801	2,30518%	0,91385
		3	2,54731%	1,77872	3,66912%	1,14578	2,27350%	1,80257	4,57868%	1,62350
	(0,3)	0	-0,62779%	-0,43844	-0,62779%	-0,43844	-0,41082%	-0,32558	-0,41082%	-0,32558
		1	-0,41054%	-0,28672	-1,03833%	-0,51276	0,19457%	0,15420	-0,21625%	-0,12118
		2	1,49746%	1,04581	0,45913%	0,18513	1,92720%	1,52732	1,71095%	0,78286
		3	2,54731%	1,77902	3,00644%	1,04984	2,27350%	1,80177	3,98445%	1,57886
	(-1,1)	-1	0,66267%	0,46273	0,66267%	0,46273	0,59423%	0,00280	0,59423%	0,47114
		0	-0,62779%	-0,43837	0,03489%	0,01723	-0,41082%	-0,32572	0,18341%	0,10283
		1	-0,41054%	-0,28667	-0,37565%	-0,15144	0,19457%	0,15427	0,37798%	0,17302
Ford	(-1,3)	-1	0,61680%	0,46831	0,61680%	0,46831	0,64780%	0,00377	0,64780%	0,58189
		0	0,14608%	0,11091	0,76289%	0,40957	0,14328%	0,12870	0,79108%	0,50246
		1	0,71132%	0,54007	1,47421%	0,64623	0,07428%	0,06672	0,86535%	0,44878
		2	1,08682%	0,82517	2,56102%	0,97224	-1,02598%	-0,92159	-0,16063%	-0,07214
		3	2,20400%	1,67340	4,76503%	1,61796	0,50991%	0,45802	0,34928%	0,14031
	(0,3)	0	0,14608%	0,11087	0,14608%	0,11087	0,14328%	0,12862	0,14328%	0,12862
		1	0,71132%	0,53988	0,85740%	0,46015	0,07428%	0,06668	0,21755%	0,13810
		2	1,08682%	0,82488	1,94422%	0,85196	-1,02598%	-0,92104	-0,80843%	-0,41901
		3	2,20400%	1,67280	4,14822%	1,57422	0,50991%	0,45775	-0,29853%	-0,13400
	(-1,1)	-1	0,61680%	0,46831	0,61680%	0,46831	0,64780%	0,00377	0,64780%	0,58189
		0	0,14608%	0,11091	0,76289%	0,40957	0,14328%	0,12870	0,79108%	0,50246
		1	0,71132%	0,54007	1,47421%	0,64623	0,07428%	0,06672	0,86535%	0,44878
Monster	(-1,3)	-1	1,52141%	1,13055	1,52141%	1,13055	0,69337%	0,00372	0,69337%	0,53656
		0	1,16375%	0,86478	2,68516%	1,41091	0,60437%	0,46769	1,29774%	0,71012
		1	-0,08800%	-0,06539	2,59716%	1,11425	-0,52270%	-0,40450	0,77503%	0,34627
		2	-0,54263%	-0,40323	2,05453%	0,76335	-1,03035%	-0,79733	-0,25531%	-0,09879
		3	1,79752%	1,33573	3,85205%	1,28012	0,79739%	0,61706	0,54208%	0,18760
	(0,3)	0	1,16375%	0,86290	1,16375%	0,86290	0,60437%	0,46743	0,60437%	0,46743
		1	-0,08800%	-0,06525	1,07575%	0,56402	-0,52270%	-0,40427	0,08167%	0,04466
		2	-0,54263%	-0,40235	0,53312%	0,22823	-1,03035%	-0,79689	-0,94868%	-0,42362
		3	1,79752%	1,33283	2,33064%	0,86406	0,79739%	0,61672	-0,15129%	-0,05851
	(-1,1)	-1	1,52141%	1,13055	1,52141%	1,13055	0,69337%	0,00372	0,69337%	0,53656
		0	1,16375%	0,86478	2,68516%	1,41091	0,60437%	0,46769	1,29774%	0,71012
		1	-0,08800%	-0,06539	2,59716%	1,11425	-0,52270%	-0,40450	0,77503%	0,34627

			CMRM				MM			
Company	Window	Day	AR	T-Stat	CAR	T-Stat	AR	T-Stat	CAR	T-Stat
Nike	(-1,3)	-1	0,37814%	0,24085	0,37814%	0,24085	0,35185%	0,00088	0,35185%	0,25070
		0	0,61981%	0,39478	0,99795%	0,44946	0,14606%	0,10407	0,49791%	0,25086
		1	-0,39020%	-0,24853	0,60775%	0,22349	-1,08897%	-0,77591	-0,59106%	-0,24315
		2	0,02936%	0,01870	0,63710%	0,20290	0,77076%	0,54919	0,17971%	0,06402
		3	1,99160%	1,26852	2,62871%	0,74878	1,31291%	0,93547	1,49261%	0,47562
	(0,3)	0	0,61981%	0,39475	0,61981%	0,39475	0,14606%	0,10407	0,14606%	0,10407
		1	-0,39020%	-0,24851	0,22961%	0,10340	-1,08897%	-0,77590	-0,94291%	-0,47506
		2	0,02936%	0,01870	0,25896%	0,09522	0,77076%	0,54918	-0,17215%	-0,07082
		3	1,99160%	1,26843	2,25057%	0,71668	1,31291%	0,93546	1,14076%	0,40640
	(-1,1)	-1	0,37814%	0,24085	0,37814%	0,24085	0,35185%	0,00088	0,35185%	0,25070
		0	0,61981%	0,39478	0,99795%	0,44946	0,14606%	0,10407	0,49791%	0,25086
		1	-0,39020%	-0,24853	0,60775%	0,22349	-1,08897%	-0,77591	-0,59106%	-0,24315
Tapestry	(-1,3)	-1	0,45104%	0,25614	0,45104%	0,25614	0,13013%	0,00010	0,13013%	0,07565
		0	1,48693%	0,84440	1,93797%	0,77820	1,20733%	0,70182	1,33746%	0,54975
		1	-0,46484%	-0,26398	1,47312%	0,48299	-0,87171%	-0,50672	0,46575%	0,15631
		2	-0,49172%	-0,27924	0,98140%	0,27866	-0,97037%	-0,56408	-0,50462%	-0,14667
		3	-0,04552%	-0,02585	0,93588%	0,23768	-0,04126%	-0,02399	-0,54588%	-0,14191
	(0,3)	0	1,48693%	0,84439	1,48693%	0,84439	1,20733%	0,70184	1,20733%	0,70184
		1	-0,46484%	-0,26397	1,02208%	0,41042	-0,87171%	-0,50674	0,33562%	0,13796
		2	-0,49172%	-0,27924	0,53036%	0,17389	-0,97037%	-0,56409	-0,63475%	-0,21304
		3	-0,04552%	-0,02585	0,48484%	0,13766	-0,04126%	-0,02399	-0,67602%	-0,19649
	(-1,1)	-1	0,45104%	0,25614	0,45104%	0,25614	0,13013%	0,00010	0,13013%	0,07565
		0	1,48693%	0,84440	1,93797%	0,77820	1,20733%	0,70182	1,33746%	0,54975
		1	-0,46484%	-0,26398	1,47312%	0,48299	-0,87171%	-0,50672	0,46575%	0,15631
Intel	(-1,3)	-1	1,31416%	0,71048	1,31416%	0,71048	0,53693%	0,00215	0,53693%	0,39996
		0	-2,06277%	-1,11521	-0,74861%	-0,28619	-1,62732%	-1,21219	-1,09039%	-0,57434
		1	0,90682%	0,49026	0,15821%	0,04938	0,10704%	0,07974	-0,98335%	-0,42291
		2	-3,09669%	-1,67418	-2,93848%	-0,79433	-1,55066%	-1,15509	-2,53401%	-0,94379
		3	-1,73804%	-0,93965	-4,67652%	-1,13069	-2,58938%	-1,92883	-5,12339%	-1,70675
	(0,3)	0	-2,06277%	-1,11415	-2,06277%	-1,11415	-1,62732%	-1,21211	-1,62732%	-1,21211
		1	0,90682%	0,48979	-1,15595%	-0,44148	0,10704%	0,07973	-1,52028%	-0,80071
		2	-3,09669%	-1,67259	-4,25264%	-1,32614	-1,55066%	-1,15500	-3,07094%	-1,32062
		3	-1,73804%	-0,93875	-5,99068%	-1,61785	-2,58938%	-1,92869	-5,66032%	-2,10804
	(-1,1)	-1	1,31416%	0,71048	1,31416%	0,71048	0,53693%	0,00215	0,53693%	0,39996
		0	-2,06277%	-1,11521	-0,74861%	-0,28619	-1,62732%	-1,21219	-1,09039%	-0,57434
		1	0,90682%	0,49026	0,15821%	0,04938	0,10704%	0,07974	-0,98335%	-0,42291
National Beverage	(-1,3)	-1	0,20076%	0,08714	0,20076%	0,08714	-0,25572%	0,00029	-0,25572%	-0,11429
		0	1,21922%	0,52918	1,41998%	0,43580	0,31246%	0,13965	0,05674%	0,01793
		1	-1,08473%	-0,47081	0,33525%	0,08401	-1,51858%	-0,67871	-1,46183%	-0,37721
		2	2,05337%	0,89123	2,38862%	0,51837	1,33261%	0,59559	-0,12923%	-0,02888
		3	1,05172%	0,45648	3,44034%	0,66779	0,56787%	0,25380	0,43865%	0,08767
	(0,3)	0	1,21922%	0,52974	1,21922%	0,52974	0,31246%	0,13972	0,31246%	0,13972
		1	-1,08473%	-0,47131	0,13449%	0,04132	-1,51858%	-0,67906	-1,20612%	-0,38137
		2	2,05337%	0,89218	2,18786%	0,54884	1,33261%	0,59590	0,12649%	0,03266
		3	1,05172%	0,45697	3,23958%	0,70379	0,56787%	0,25394	0,69436%	0,15525
	(-1,1)	-1	0,20076%	0,08714	0,20076%	0,08714	-0,25572%	0,00029	-0,25572%	-0,11429
		0	1,21922%	0,52918	1,41998%	0,43580	0,31246%	0,13965	0,05674%	0,01793
		1	-1,08473%	-0,47081	0,33525%	0,08401	-1,51858%	-0,67871	-1,46183%	-0,37721

			CMRM				MM			
Company	Window	Day	AR	T-Stat	CAR	T-Stat	AR	T-Stat	CAR	T-Stat
Tesla - Musk	(-1,3)	-1	3,44670%	1,12014	3,44670%	1,12014	3,22384%	0,03720	3,22384%	1,15392
		0	-0,07263%	-0,02361	3,37407%	0,77537	-1,18566%	-0,42439	2,03818%	0,51586
		1	-13,30875%	-4,32520	-9,93468%	-1,86407	-14,01436%	-5,01620	-11,97618%	-2,47491
		2	17,93992%	5,83028	8,00523%	1,30081	16,69779%	5,97669	4,72162%	0,84501
		3	-2,52276%	-0,81987	5,48247%	0,79682	-3,17105%	-1,13502	1,55057%	0,24820
	(0,3)	0	-0,07263%	-0,02355	-0,07263%	-0,02355	-1,18566%	-0,42327	-1,18566%	-0,42327
		1	-13,30875%	-4,31433	-13,38138%	-3,06734	-14,01436%	-5,00299	-15,20002%	-3,83694
		2	17,93992%	5,81563	4,55853%	0,85318	16,69779%	5,96095	1,49777%	0,30870
		3	-2,52276%	-0,81781	2,03577%	0,32997	-3,17105%	-1,13203	-1,67327%	-0,29867
	(-1,1)	-1	3,44670%	1,12014	3,44670%	1,12014	3,22384%	0,03720	3,22384%	1,15392
		0	-0,07263%	-0,02361	3,37407%	0,77537	-1,18566%	-0,42439	2,03818%	0,51586
		1	-13,30875%	-4,32520	-9,93468%	-1,86407	-14,01436%	-5,01620	-11,97618%	-2,47491
Apple - Levoff	(-1,3)	-1	1,58657%	0,75801	1,58657%	0,75801	-1,21228%	0,01128	-1,21228%	-0,93061
		0	0,30939%	0,14781	1,89596%	0,64052	-1,09813%	-0,84299	-2,31041%	-1,25412
		1	1,08918%	0,52038	2,98513%	0,82342	0,48203%	0,37003	-1,82838%	-0,81035
		2	0,50238%	0,24002	3,48751%	0,83311	-2,01281%	-1,54514	-3,84119%	-1,47435
		3	1,02412%	0,48929	4,51163%	0,96398	-0,16832%	-0,12921	-4,00951%	-1,37648
	(0,3)	0	0,30939%	0,14785	0,30939%	0,14785	-1,09813%	-0,84212	-1,09813%	-0,84212
		1	1,08918%	0,52049	1,39856%	0,47258	0,48203%	0,36965	-0,61610%	-0,33409
		2	0,50238%	0,24007	1,90094%	0,52447	-2,01281%	-1,54355	-2,62891%	-1,16395
		3	1,02412%	0,48940	2,92506%	0,69890	-0,16832%	-0,12908	-2,79723%	-1,07255
	(-1,1)	-1	1,58657%	0,75801	1,58657%	0,75801	-1,21228%	0,01128	-1,21228%	-0,93061
		0	0,30939%	0,14781	1,89596%	0,64052	-1,09813%	-0,84299	-2,31041%	-1,25412
		1	1,08918%	0,52038	2,98513%	0,82342	0,48203%	0,37003	-1,82838%	-0,81035
Goldman - Jung	(-1,3)	-1	1,38097%	0,95526	1,38097%	0,95526	-0,72536%	0,00530	-0,72536%	-0,73033
		0	-0,98855%	-0,68381	0,39242%	0,19194	-0,68369%	-0,68837	-1,40904%	-1,00317
		1	1,53627%	1,06269	1,92868%	0,77026	-0,34260%	-0,34495	-1,75164%	-1,01825
		2	1,11717%	0,77278	3,04585%	1,05346	0,02287%	0,02303	-1,72877%	-0,87031
		3	-0,23147%	-0,16012	2,81438%	0,87064	-0,86054%	-0,86644	-2,58931%	-1,16591
	(0,3)	0	-0,98855%	-0,68581	-0,98855%	-0,68581	-0,68369%	-0,68916	-0,68369%	-0,68916
		1	1,53627%	1,06579	0,54772%	0,26869	-0,34260%	-0,34535	-1,02629%	-0,73151
		2	1,11717%	0,77504	1,66489%	0,66685	0,02287%	0,02306	-1,00341%	-0,58396
		3	-0,23147%	-0,16058	1,43342%	0,49722	-0,86054%	-0,86743	-1,86395%	-0,93944
	(-1,1)	-1	1,38097%	0,95526	1,38097%	0,95526	-0,72536%	0,00530	-0,72536%	-0,73033
		0	-0,98855%	-0,68381	0,39242%	0,19194	-0,68369%	-0,68837	-1,40904%	-1,00317
		1	1,53627%	1,06269	1,92868%	0,77026	-0,34260%	-0,34495	-1,75164%	-1,01825
Goldman - Ng	(-1,3)	-1	0,80436%	0,56888	0,80436%	0,56888	0,37927%	0,00125	0,37927%	0,33027
		0	0,87839%	0,62124	1,68276%	0,84155	0,34020%	0,29626	0,71947%	0,44302
		1	1,21694%	0,86068	2,89970%	1,18403	0,92361%	0,80430	1,64308%	0,82609
		2	-0,86023%	-0,60839	2,03947%	0,72120	-1,66125%	-1,44665	-0,01817%	-0,00791
		3	-0,22803%	-0,16127	1,81144%	0,57294	-0,71021%	-0,61846	-0,72838%	-0,28366
	(0,3)	0	0,87839%	0,62113	0,87839%	0,62113	0,34020%	0,29630	0,34020%	0,29630
		1	1,21694%	0,86052	2,09533%	1,04769	0,92361%	0,80442	1,26381%	0,77833
		2	-0,86023%	-0,60828	1,23511%	0,50424	-1,66125%	-1,44687	-0,39744%	-0,19985
		3	-0,22803%	-0,16124	1,00708%	0,35606	-0,71021%	-0,61856	-1,10764%	-0,48235
	(-1,1)	-1	0,80436%	0,56888	0,80436%	0,56888	0,37927%	0,00125	0,37927%	0,33027
		0	0,87839%	0,62124	1,68276%	0,84155	0,34020%	0,29626	0,71947%	0,44302
		1	1,21694%	0,86068	2,89970%	1,18403	0,92361%	0,80430	1,64308%	0,82609

			CMRM				MM			
Company	Window	Day	AR	T-Stat	CAR	T-Stat	AR	T-Stat	CAR	T-Stat
Goldman - Vella	(-1,3)	-1	-1,02867%	-0,61821	-1,02867%	-0,61821	-1,53991%	0,02311	-1,53991%	-1,50094
		0	-1,39908%	-0,84083	-2,42775%	-1,03170	-3,16734%	-3,08719	-4,70725%	-3,24430
		1	1,22884%	0,73852	-1,19891%	-0,41600	-1,07304%	-1,04589	-5,78029%	-3,25280
		2	-3,08397%	-1,85342	-4,28288%	-1,28698	-0,14312%	-0,13950	-5,92342%	-2,88676
		3	0,61653%	0,37053	-3,66635%	-0,98540	-0,17650%	-0,17203	-6,09991%	-2,65893
	(0,3)	0	-1,39908%	-0,84116	-1,39908%	-0,84116	-3,16734%	-3,08077	-3,16734%	-3,08077
		1	1,22884%	0,73881	-0,17024%	-0,07238	-1,07304%	-1,04372	-4,24038%	-2,91645
		2	-3,08397%	-1,85416	-3,25421%	-1,12959	-0,14312%	-0,13921	-4,38350%	-2,46165
		3	0,61653%	0,37067	-2,63769%	-0,79292	-0,17650%	-0,17167	-4,56000%	-2,21769
	(-1,1)	-1	-1,02867%	-0,61821	-1,02867%	-0,61821	-1,53991%	0,02311	-1,53991%	-1,50094
		0	-1,39908%	-0,84083	-2,42775%	-1,03170	-3,16734%	-3,08719	-4,70725%	-3,24430
		1	1,22884%	0,73852	-1,19891%	-0,41600	-1,07304%	-1,04589	-5,78029%	-3,25280
Qualcomm	(-1,3)	-1	-0,60210%	-0,46910	-0,60210%	-0,46910	0,08421%	0,00006	0,08421%	0,07563
		0	-0,14207%	-0,11069	-0,74417%	-0,40997	0,32734%	0,29399	0,41155%	0,26136
		1	-0,70758%	-0,55129	-1,45175%	-0,65303	-0,42250%	-0,37945	-0,01095%	-0,00568
		2	0,32409%	0,25250	-1,12766%	-0,43929	0,62153%	0,55820	0,61058%	0,27419
		3	0,14832%	0,11556	-0,97934%	-0,34123	-0,09486%	-0,08519	0,51573%	0,20714
	(0,3)	0	-0,14207%	-0,11082	-0,14207%	-0,11082	0,32734%	0,29451	0,32734%	0,29451
		1	-0,70758%	-0,55194	-0,84965%	-0,46864	-0,42250%	-0,38011	-0,09515%	-0,06053
		2	0,32409%	0,25280	-0,52556%	-0,23669	0,62153%	0,55918	0,52638%	0,27342
		3	0,14832%	0,11569	-0,37725%	-0,14713	-0,09486%	-0,08534	0,43152%	0,19412
	(-1,1)	-1	-0,60210%	-0,46910	-0,60210%	-0,46910	0,08421%	0,00006	0,08421%	0,07563
		0	-0,14207%	-0,11069	-0,74417%	-0,40997	0,32734%	0,29399	0,41155%	0,26136
		1	-0,70758%	-0,55129	-1,45175%	-0,65303	-0,42250%	-0,37945	-0,01095%	-0,00568
Walgreens	(-1,3)	-1	1,76365%	0,98286	1,76365%	0,98286	0,77492%	0,00390	0,77492%	0,50314
		0	-0,63427%	-0,35347	1,12938%	0,44505	-1,37942%	-0,89562	-0,60449%	-0,27753
		1	-0,00494%	-0,00275	1,12444%	0,36179	-1,07085%	-0,69528	-1,67534%	-0,62802
		2	2,02010%	1,12578	3,14454%	0,87621	1,30923%	0,85005	-0,36611%	-0,11885
		3	1,02045%	0,56869	4,16500%	1,03803	0,21214%	0,13774	-0,15397%	-0,04471
	(0,3)	0	-0,63427%	-0,35279	-0,63427%	-0,35279	-1,37942%	-0,89540	-1,37942%	-0,89540
		1	-0,00494%	-0,00275	-0,63921%	-0,25141	-1,07085%	-0,69511	-2,45026%	-1,12466
		2	2,02010%	1,12362	1,38090%	0,44345	1,30923%	0,84984	-1,14104%	-0,42763
		3	1,02045%	0,56760	2,40135%	0,66784	0,21214%	0,13770	-0,92890%	-0,30148
	(-1,1)	-1	1,76365%	0,98286	1,76365%	0,98286	0,77492%	0,00390	0,77492%	0,50314
		0	-0,63427%	-0,35347	1,12938%	0,44505	-1,37942%	-0,89562	-0,60449%	-0,27753
		1	-0,00494%	-0,00275	1,12444%	0,36179	-1,07085%	-0,69528	-1,67534%	-0,62802
Micron	(-1,3)	-1	2,26723%	1,00102	2,26723%	1,00102	1,64698%	0,01333	1,64698%	0,80909
		0	3,53065%	1,55884	5,79787%	1,81010	2,39279%	1,17547	4,03977%	1,40330
		1	1,65054%	0,72874	7,44842%	1,89868	0,57772%	0,28381	4,61749%	1,30965
		2	0,82136%	0,36264	8,26978%	1,82563	0,10358%	0,05088	4,72107%	1,15963
		3	-2,08486%	-0,92050	6,18492%	1,22123	-2,61383%	-1,28406	2,10723%	0,46295
	(0,3)	0	3,53065%	1,55672	3,53065%	1,55672	2,39279%	1,17399	2,39279%	1,17399
		1	1,65054%	0,72775	5,18119%	1,61536	0,57772%	0,28345	2,97051%	1,03057
		2	0,82136%	0,36215	6,00255%	1,52803	0,10358%	0,05082	3,07409%	0,87079
		3	-2,08486%	-0,91925	3,91769%	0,86369	-2,61383%	-1,28244	0,46026%	0,11291
	(-1,1)	-1	2,26723%	1,00102	2,26723%	1,00102	1,64698%	0,01333	1,64698%	0,80909
		0	3,53065%	1,55884	5,79787%	1,81010	2,39279%	1,17547	4,03977%	1,40330
		1	1,65054%	0,72874	7,44842%	1,89868	0,57772%	0,28381	4,61749%	1,30965

			CMRM				MM			
Company	Window	Day	AR	T-Stat	CAR	T-Stat	AR	T-Stat	CAR	T-Stat
Cognizant	(-1,3)	-1	0,30151%	0,17665	0,30151%	0,17665	1,55133%	0,02073	1,55133%	1,33642
		0	-13,15344%	-7,70648	-12,85192%	-5,32439	-14,27362%	-12,29621	-12,72229%	-7,74974
		1	5,73934%	3,36263	-7,11258%	-2,40593	6,15837%	5,30521	-6,56392%	-3,26467
		2	-0,51397%	-0,30113	-7,62655%	-2,23416	0,13740%	0,11836	-6,42653%	-2,76811
		3	1,71820%	1,00668	-5,90835%	-1,54810	1,10126%	0,94870	-5,32526%	-2,05160
	(0,3)	0	-13,15344%	-7,70605	-13,15344%	-7,70605	-14,27362%	-12,31085	-14,27362%	-12,31085
		1	5,73934%	3,36244	-7,41409%	-3,07139	6,15837%	5,31153	-8,11526%	-4,94927
		2	-0,51397%	-0,30111	-7,92806%	-2,68163	0,13740%	0,11850	-7,97786%	-3,97264
		3	1,71820%	1,00662	-6,20986%	-1,81905	1,10126%	0,94983	-6,87660%	-2,96550
	(-1,1)	-1	0,30151%	0,17665	0,30151%	0,17665	1,55133%	0,02073	1,55133%	1,33642
		0	-13,15344%	-7,70648	-12,85192%	-5,32439	-14,27362%	-12,29621	-12,72229%	-7,74974
		1	5,73934%	3,36263	-7,11258%	-2,40593	6,15837%	5,30521	-6,56392%	-3,26467
Microsoft - Jorgenson	(-1,3)	-1	0,03819%	0,02409	0,03819%	0,02409	-1,37286%	0,01297	-1,37286%	-0,94470
		0	-1,02824%	-0,64875	-0,99005%	-0,44170	-0,89690%	-0,61718	-2,26976%	-1,10442
		1	1,39113%	0,87771	0,40108%	0,14610	1,03914%	0,71506	-1,23062%	-0,48891
		2	-0,61524%	-0,38817	-0,21415%	-0,06756	-1,01194%	-0,69634	-2,24256%	-0,77158
		3	1,13004%	0,71298	0,91588%	0,25843	0,94841%	0,65263	-1,29415%	-0,39826
	(0,3)	0	-1,02824%	-0,64954	-1,02824%	-0,64954	-0,89690%	-0,61637	-0,89690%	-0,61637
		1	1,39113%	0,87878	0,36290%	0,16210	1,03914%	0,71412	0,14224%	0,06912
		2	-0,61524%	-0,38864	-0,25234%	-0,09203	-1,01194%	-0,69543	-0,86970%	-0,34507
		3	1,13004%	0,71384	0,87770%	0,27722	0,94841%	0,65177	0,07871%	0,02705
	(-1,1)	-1	0,03819%	0,02409	0,03819%	0,02409	-1,37286%	0,01297	-1,37286%	-0,94470
		0	-1,02824%	-0,64875	-0,99005%	-0,44170	-0,89690%	-0,61718	-2,26976%	-1,10442
		1	1,39113%	0,87771	0,40108%	0,14610	1,03914%	0,71506	-1,23062%	-0,48891
L3	(-1,3)	-1	1,28236%	1,09272	1,28236%	1,09272	0,98452%	0,00928	0,98452%	0,94293
		0	-1,23441%	-1,05185	0,04796%	0,02890	-1,32756%	-1,27148	-0,34304%	-0,23232
		1	-1,15120%	-0,98095	-1,10324%	-0,54276	-1,54693%	-1,48158	-1,88997%	-1,04508
		2	-0,31671%	-0,26987	-1,41995%	-0,60498	-0,66736%	-0,63917	-2,55733%	-1,22465
		3	-0,47145%	-0,40173	-1,89140%	-0,72077	-0,61788%	-0,59177	-3,17521%	-1,36001
	(0,3)	0	-1,23441%	-1,04978	-1,23441%	-1,04978	-1,32756%	-1,27159	-1,32756%	-1,27159
		1	-1,15120%	-0,97901	-2,38560%	-1,43457	-1,54693%	-1,48171	-2,87449%	-1,94688
		2	-0,31671%	-0,26934	-2,70231%	-1,32683	-0,66736%	-0,63922	-3,54185%	-1,95868
		3	-0,47145%	-0,40094	-3,17376%	-1,34953	-0,61788%	-0,59183	-4,15973%	-1,99218
	(-1,1)	-1	1,28236%	1,09272	1,28236%	1,09272	0,98452%	0,00928	0,98452%	0,94293
		0	-1,23441%	-1,05185	0,04796%	0,02890	-1,32756%	-1,27148	-0,34304%	-0,23232
		1	-1,15120%	-0,98095	-1,10324%	-0,54276	-1,54693%	-1,48158	-1,88997%	-1,04508
Citizens	(-1,3)	-1	-0,35426%	-0,23665	-0,35426%	-0,23665	-0,22215%	0,00042	-0,22215%	-0,18728
		0	2,30102%	1,53711	1,94675%	0,91957	0,76705%	0,64662	0,54489%	0,32481
		1	-0,34808%	-0,23252	1,59868%	0,61658	-0,23656%	-0,19942	0,30833%	0,15007
		2	-0,42558%	-0,28430	1,17309%	0,39182	-0,78369%	-0,66066	-0,47536%	-0,20037
		3	-1,11883%	-0,74740	0,05426%	0,01621	-0,99666%	-0,84019	-1,47202%	-0,55496
	(0,3)	0	2,30102%	1,53695	2,30102%	1,53695	0,76705%	0,64658	0,76705%	0,64658
		1	-0,34808%	-0,23250	1,95294%	0,92239	-0,23656%	-0,19941	0,53048%	0,31620
		2	-0,42558%	-0,28427	1,52735%	0,58901	-0,78369%	-0,66061	-0,25321%	-0,12323
		3	-1,11883%	-0,74732	0,40852%	0,13644	-0,99666%	-0,84014	-1,24987%	-0,52679
	(-1,1)	-1	-0,35426%	-0,23665	-0,35426%	-0,23665	-0,22215%	0,00042	-0,22215%	-0,18728
		0	2,30102%	1,53711	1,94675%	0,91957	0,76705%	0,64662	0,54489%	0,32481
		1	-0,34808%	-0,23252	1,59868%	0,61658	-0,23656%	-0,19942	0,30833%	0,15007

			CMRM				MM			
Company	Window	Day	AR	T-Stat	CAR	T-Stat	AR	T-Stat	CAR	T-Stat
Equifax - Ying	(-1,3)	-1	-0,49815%	-0,26885	-0,49815%	-0,26885	-0,54297%	0,00169	-0,54297%	-0,31099
		0	-0,03768%	-0,02034	-0,53583%	-0,20449	-0,13294%	-0,07614	-0,67591%	-0,27374
		1	0,78020%	0,42108	0,24437%	0,07615	0,29490%	0,16891	-0,38100%	-0,12599
		2	0,25314%	0,13662	0,49751%	0,13426	-0,42830%	-0,24531	-0,80931%	-0,23177
		3	-0,56518%	-0,30503	-0,06767%	-0,01633	0,00875%	0,00501	-0,80056%	-0,20506
	(0,3)	0	-0,03768%	-0,02037	-0,03768%	-0,02037	-0,13294%	-0,07618	-0,13294%	-0,07618
		1	0,78020%	0,42172	0,74252%	0,28380	0,29490%	0,16898	0,16196%	0,06562
		2	0,25314%	0,13683	0,99566%	0,31072	-0,42830%	-0,24542	-0,26634%	-0,08811
		3	-0,56518%	-0,30549	0,43048%	0,11634	0,00875%	0,00501	-0,25760%	-0,07380
	(-1,1)	-1	-0,49815%	-0,26885	-0,49815%	-0,26885	-0,54297%	0,00169	-0,54297%	-0,31099
		0	-0,03768%	-0,02034	-0,53583%	-0,20449	-0,13294%	-0,07614	-0,67591%	-0,27374
		1	0,78020%	0,42108	0,24437%	0,07615	0,29490%	0,16891	-0,38100%	-0,12599
Equifax - Bonthu	(-1,3)	-1	-0,64978%	-0,32720	-0,64978%	-0,32720	-0,54014%	0,00160	-0,54014%	-0,29584
		0	3,10877%	1,56543	2,45899%	0,87556	2,06218%	1,12949	1,52204%	0,58948
		1	-0,30095%	-0,15154	2,15804%	0,62740	-0,92360%	-0,50587	0,59844%	0,18924
		2	-0,17206%	-0,08664	1,98599%	0,50002	-1,17535%	-0,64376	-0,57691%	-0,15799
		3	0,45083%	0,22702	2,43682%	0,54876	0,07444%	0,04077	-0,50247%	-0,12308
	(0,3)	0	3,10877%	1,56617	3,10877%	1,56617	2,06218%	1,12967	2,06218%	1,12967
		1	-0,30095%	-0,15162	2,80782%	1,00024	-0,92360%	-0,50595	1,13858%	0,44104
		2	-0,17206%	-0,08668	2,63576%	0,76665	-1,17535%	-0,64386	-0,03677%	-0,01163
		3	0,45083%	0,22712	3,08659%	0,77750	0,07444%	0,04078	0,03767%	0,01032
	(-1,1)	-1	-0,64978%	-0,32720	-0,64978%	-0,32720	-0,54014%	0,00160	-0,54014%	-0,29584
		0	3,10877%	1,56543	2,45899%	0,87556	2,06218%	1,12949	1,52204%	0,58948
		1	-0,30095%	-0,15154	2,15804%	0,62740	-0,92360%	-0,50587	0,59844%	0,18924
Tiffany	(-1,3)	-1	-0,22996%	-0,13942	-0,22996%	-0,13942	-0,80309%	0,00484	-0,80309%	-0,60219
		0	-0,53231%	-0,32274	-0,76227%	-0,32680	-0,36671%	-0,27498	-1,16980%	-0,62026
		1	-0,06483%	-0,03931	-0,82711%	-0,28952	-0,06923%	-0,05191	-1,23903%	-0,53641
		2	1,06520%	0,64582	0,23809%	0,07218	-0,10375%	-0,07779	-1,34278%	-0,50344
		3	1,86766%	1,13234	2,10575%	0,57096	1,31344%	0,98488	-0,02934%	-0,00984
	(0,3)	0	-0,53231%	-0,32575	-0,53231%	-0,32575	-0,36671%	-0,27487	-0,36671%	-0,27487
		1	-0,06483%	-0,03967	-0,59714%	-0,25839	-0,06923%	-0,05189	-0,43594%	-0,23105
		2	1,06520%	0,65185	0,46806%	0,16537	-0,10375%	-0,07776	-0,53969%	-0,23355
		3	1,86766%	1,14292	2,33572%	0,71468	1,31344%	0,98448	0,77375%	0,28998
	(-1,1)	-1	-0,22996%	-0,13942	-0,22996%	-0,13942	-0,80309%	0,00484	-0,80309%	-0,60219
		0	-0,53231%	-0,32274	-0,76227%	-0,32680	-0,36671%	-0,27498	-1,16980%	-0,62026
		1	-0,06483%	-0,03931	-0,82711%	-0,28952	-0,06923%	-0,05191	-1,23903%	-0,53641
Raymond	(-1,3)	-1	0,24195%	0,15709	0,24195%	0,15709	-0,07872%	0,00007	-0,07872%	-0,08295
		0	-1,08794%	-0,70638	-0,84599%	-0,38840	-1,29162%	-1,36090	-1,37034%	-1,02095
		1	0,86931%	0,56443	0,02332%	0,00874	0,46737%	0,49244	-0,90297%	-0,54929
		2	0,75930%	0,49300	0,78262%	0,25407	-0,20909%	-0,22031	-1,11207%	-0,58586
		3	1,06140%	0,68915	1,84402%	0,53544	-0,16079%	-0,16941	-1,27285%	-0,59977
	(0,3)	0	-1,08794%	-0,70733	-1,08794%	-0,70733	-1,29162%	-1,36940	-1,29162%	-1,36940
		1	0,86931%	0,56519	-0,21863%	-0,10051	0,46737%	0,49551	-0,82425%	-0,61793
		2	0,75930%	0,49366	0,54067%	0,20295	-0,20909%	-0,22169	-1,03334%	-0,63253
		3	1,06140%	0,69008	1,60208%	0,52080	-0,16079%	-0,17047	-1,19413%	-0,63302
	(-1,1)	-1	0,24195%	0,15709	0,24195%	0,15709	-0,07872%	0,00007	-0,07872%	-0,08295
		0	-1,08794%	-0,70638	-0,84599%	-0,38840	-1,29162%	-1,36090	-1,37034%	-1,02095
		1	0,86931%	0,56443	0,02332%	0,00874	0,46737%	0,49244	-0,90297%	-0,54929

			CMRM				MM			
Company	Window	Day	AR	T-Stat	CAR	T-Stat	AR	T-Stat	CAR	T-Stat
Franklin	(-1,3)	-1	-0,97790%	-0,77585	-0,97790%	-0,77585	-0,57762%	0,00424	-0,57762%	-0,73416
		0	-1,42828%	-1,13317	-2,40617%	-1,34988	-0,59611%	-0,75766	-1,17374%	-1,05488
		1	-0,94479%	-0,74958	-3,35097%	-1,53495	0,34601%	0,43978	-0,82773%	-0,60740
		2	1,61482%	1,28117	-1,73615%	-0,68872	-0,12169%	-0,15466	-0,94942%	-0,60336
		3	-0,39844%	-0,31612	-2,13459%	-0,75738	-0,54943%	-0,69833	-1,49884%	-0,85196
	(0,3)	0	-1,42828%	-1,13192	-1,42828%	-1,13192	-0,59611%	-0,75714	-0,59611%	-0,75714
		1	-0,94479%	-0,74875	-2,37307%	-1,32983	0,34601%	0,43947	-0,25011%	-0,22463
		2	1,61482%	1,27975	-0,75825%	-0,34694	-0,12169%	-0,15456	-0,37179%	-0,27264
		3	-0,39844%	-0,31577	-1,15669%	-0,45834	-0,54943%	-0,69784	-0,92122%	-0,58504
	(-1,1)	-1	-0,97790%	-0,77585	-0,97790%	-0,77585	-0,57762%	0,00424	-0,57762%	-0,73416
		0	-1,42828%	-1,13317	-2,40617%	-1,34988	-0,59611%	-0,75766	-1,17374%	-1,05488
		1	-0,94479%	-0,74958	-3,35097%	-1,53495	0,34601%	0,43978	-0,82773%	-0,60740
Fifth	(-1,3)	-1	-1,18160%	-1,03504	-1,18160%	-1,03504	-0,72440%	0,00625	-0,72440%	-0,86308
		0	-0,69227%	-0,60640	-1,87388%	-1,16067	-0,44047%	-0,52479	-1,16487%	-0,98137
		1	-0,44381%	-0,38876	-2,31769%	-1,17214	0,13806%	0,16449	-1,02681%	-0,70632
		2	2,48161%	2,17379	0,16393%	0,07180	1,36997%	1,63224	0,34316%	0,20443
		3	-0,63364%	-0,55504	-0,46972%	-0,18401	-0,72109%	-0,85914	-0,37793%	-0,20137
	(0,3)	0	-0,69227%	-0,60697	-0,69227%	-0,60697	-0,44047%	-0,52637	-0,44047%	-0,52637
		1	-0,44381%	-0,38912	-1,13608%	-0,70434	0,13806%	0,16499	-0,30241%	-0,25554
		2	2,48161%	2,17582	1,34553%	0,68112	1,36997%	1,63713	1,06756%	0,73655
		3	-0,63364%	-0,55556	0,71189%	0,31208	-0,72109%	-0,86172	0,34646%	0,20701
	(-1,1)	-1	-1,18160%	-1,03504	-1,18160%	-1,03504	-0,72440%	0,00625	-0,72440%	-0,86308
		0	-0,69227%	-0,60640	-1,87388%	-1,16067	-0,44047%	-0,52479	-1,16487%	-0,98137
		1	-0,44381%	-0,38876	-2,31769%	-1,17214	0,13806%	0,16449	-1,02681%	-0,70632
United	(-1,3)	-1	-1,05316%	-0,42996	-1,05316%	-0,42996	0,44318%	0,00086	0,44318%	0,19479
		0	1,37147%	0,55992	0,31832%	0,09189	-1,09226%	-0,48008	-0,64908%	-0,20173
		1	0,20322%	0,08297	0,52154%	0,12293	1,55923%	0,68532	0,91015%	0,23096
		2	-1,41017%	-0,57572	-0,88864%	-0,18140	-1,93319%	-0,84969	-1,02304%	-0,22483
		3	-0,19801%	-0,08084	-1,08665%	-0,19840	-0,64353%	-0,28285	-1,66657%	-0,32758
	(0,3)	0	1,37147%	0,55979	1,37147%	0,55979	-1,09226%	-0,48004	-1,09226%	-0,48004
		1	0,20322%	0,08295	1,57469%	0,45448	1,55923%	0,68527	0,46697%	0,14512
		2	-1,41017%	-0,57558	0,16452%	0,03877	-1,93319%	-0,84962	-1,46622%	-0,37204
		3	-0,19801%	-0,08082	-0,03349%	-0,00684	-0,64353%	-0,28283	-2,10975%	-0,46361
	(-1,1)	-1	-1,05316%	-0,42996	-1,05316%	-0,42996	0,44318%	0,00086	0,44318%	0,19479
		0	1,37147%	0,55992	0,31832%	0,09189	-1,09226%	-0,48008	-0,64908%	-0,20173
		1	0,20322%	0,08297	0,52154%	0,12293	1,55923%	0,68532	0,91015%	0,23096
Retrophin	(-1,3)	-1	5,09093%	1,11510	5,09093%	1,11510	2,51092%	0,01493	2,51092%	0,59476
		0	-2,20951%	-0,48396	2,88142%	0,44628	0,50291%	0,11912	3,01383%	0,50479
		1	-4,58713%	-1,00475	-1,70570%	-0,21570	-1,38107%	-0,32713	1,63277%	0,22329
		2	0,30967%	0,06783	-1,39603%	-0,15289	-1,06404%	-0,25204	0,56873%	0,06736
		3	-1,23159%	-0,26976	-2,62763%	-0,25739	-2,79124%	-0,66115	-2,22251%	-0,23543
	(0,3)	0	-2,20951%	-0,48344	-2,20951%	-0,48344	0,50291%	0,11904	0,50291%	0,11904
		1	-4,58713%	-1,00367	-6,79663%	-1,05154	-1,38107%	-0,32690	-0,87815%	-0,14698
		2	0,30967%	0,06776	-6,48696%	-0,81946	-1,06404%	-0,25186	-1,94219%	-0,26542
		3	-1,23159%	-0,26947	-7,71855%	-0,84441	-2,79124%	-0,66070	-4,73343%	-0,56021
	(-1,1)	-1	5,09093%	1,11510	5,09093%	1,11510	2,51092%	0,01493	2,51092%	0,59476
		0	-2,20951%	-0,48396	2,88142%	0,44628	0,50291%	0,11912	3,01383%	0,50479
		1	-4,58713%	-1,00475	-1,70570%	-0,21570	-1,38107%	-0,32713	1,63277%	0,22329

Table 1: This table shows individual ARs, CARs and the respective T-starts for each corporate scandal

Appendix E

Event Window (0,3)

		CMRM		MM	
Regression	Explanatory Variables	Coefficients	T-Stat	Coefficients	T-Stat
Industry	Intercept	0,01109	0,87749	-0,00806	-0,68409
	Dummy Financials	-0,00149	-0,07746	-0,00248	-0,13897
	Dummy Technology	-0,02391	-1,20973	-0,02082	-1,12992
	Dummy Consumer Non-Cyclicals	0,01548	0,53007	0,00678	0,24897
	Dummy Industrials	-0,01032	-0,39593	-0,00816	-0,33584
	Dummy Healthcare	-0,08828	-1,86609 *	-0,03927	-0,89047
	Observations		40		40
	R^2		0,14159		0,06359
Type Sexual vs Financial	Intercept	0,00560	0,53841	-0,01316	-1,41825
	Dummy Financial Type	-0,00466	-0,31724	-0,00299	-0,22758
	Observations		40		40
	R^2		0,00264		0,00136
Position of executive	Intercept	-0,01340	-1,29518	-0,02533	-2,66349 ***
	Dummy Lower Position	0,03030	2,17185 **	0,01940	1,51284
	Observations		40		40
	R^2		0,11042		0,05681
Current vs former	Intercept	0,00633	0,60984	-0,01051	-1,13767
	Dummy Former	-0,00614	-0,41782	-0,00829	-0,63466
	Observations		40		40
	R^2		0,00457		0,01049

Table 1: This table shows the results of CARs OLS regression for CMRM and MM, on an established explanatory variable, for the event window (0,3).

Event Window (-1,3)

		CMRM		MM	
Regression	Explanatory Variables	Coefficients	T-Stat	Coefficients	T-Stat
Industry	Intercept	0,01599	1,23942	-0,00648	-0,54923
	Dummy Financials	-0,00605	-0,30937	-0,00852	-0,47652
	Dummy Technology	-0,02594	-1,28628	-0,02037	-1,10459
	Dummy Consumer Non-Cyclicals	0,02221	0,74547	0,00923	0,33900
	Dummy Industrials	-0,01751	-0,65846	-0,00888	-0,36540
	Dummy Healthcare	-0,04226	-0,87572	-0,01575	-0,35684
	Observations		40		40
	R^2		0,09844		0,04868
Type Sexual vs Financial	Intercept	0,00824	0,79578	-0,01304	-1,41424
	Dummy Financial Type	-0,00150	-0,10207	-0,00148	-0,11375
	Observations		40		40
	R^2		0,00027		0,00034
Position of executive	Intercept	-0,00591	-0,56156	-0,02226	-2,33234 **
	Dummy Lower Position	0,02437	1,71799 *	0,01541	1,19752
	Observations		40		40
	R^2		0,07207		0,03637
Current vs former	Intercept	0,01003	0,96933	-0,00917	-1,00152
	Dummy Former	-0,00506	-0,34605	-0,00921	-0,71109
	Observations		40		40
	R^2		0,00314		0,01313

Table 2**:** This table shows the results of CARs OLS regression for CMRM and MM, on an established explanatory variable, for the event window (-1,3).