

**THE RELATIONSHIP BETWEEN THE ANNOUNCEMENTS OF
CEO CHANGES AND STOCK PRICES**

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requirements for the degree of Master of Finance**

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Abstract

The Relationship between the Announcements of CEO Changes and Stock Prices

By Jiaqi LI

This paper utilized an event-study in order to investigate the effect of the announcement of CEO turnover and the stock prices. In this paper, using 100 corporate firms are listed in the NASDAQ and New York Stock Exchange are separated them into 2 groups under Global Industry Classification Standard. By analyzing the abnormal returns, average abnormal returns, and cumulative abnormal returns, we tried to establish the implication in the semi-strong form market efficient hypothesis (EMH).

The results of t-test shows that abnormal returns, average abnormal returns and cumulative abnormal returns are not significantly difference from zero, which means that the announcement of CEO changes have no impact on stock price. Furthermore, it indicates that investors cannot obtain excess returns over a period under the EMH, which means market react the public information rationally and promptly.

Table of Contents

Acknowledgements.....	ii
Abstract.....	iii
Table of Contents	iv
Chapter 1.....	1
Introduction.....	1
1.1 Background.....	1
1.2 Purpose of Study.....	1
1.3 Need for Study.....	2
1.4 Statement of Problem.....	2
1.5 Organization of paper.....	3
Chapter 2.....	4
Literature Review.....	4
Background.....	4
2.1 Impact on ex-ante day.....	4
2.2 Impact on announcement day.....	5
2.3 Impact on ex-post day.....	6
2.5 Signaling.....	7
2.6 Shareholders' reaction.....	8
Summary.....	9
Chapter 3.....	11
Methodology.....	11
3.1 Sample selection.....	12
3.2 Time horizons and models.....	13
3.21 Time horizons.....	13
3.22 Models.....	14
3.23 Effects.....	16
Chapter 4.....	19
Results and Analysis.....	19
Group 1: IT firms.....	19
Group 2: Consumer Staples firms.....	20
Chapter 5.....	22
Conclusion and Recommendation.....	22

Challenges	22
Recommendation.....	23
Figure	24
Figure1	24
Figure2	24
Figure 3.....	25
Figure 4.....	25
Figure 5.....	26
Figure 6.....	26
Figure 7.....	27
Figure 8.....	27
Appendix A.....	28
Appendix B.....	29
References.....	30

Chapter 1

Introduction

1.1 Background

The effect of management changes on stock prices has been investigated for several decades. As a decision-maker, Chief Executive Officers (CEOs) are able to change their firm's destiny because they are in a position to make vital decisions. Reuters reported, for example, the Chief Executive Officer of Duke Energy, Jim Rogers, was dismissed from the top job at the company (July 3, 2012). This announcement caused a drop in their stock price by 1.6 percent. In addition, the CEO's background, preferences, skills, and strategies affect the performance of the firm's stock. They believe is that a corporate executive's background, ability, and experience are highly correlated with the performance of a firm. For instance, according to Associated Press, in order to regain shareholder trust, Wal-Mart hired former KPMG executive, Tim Flynn, after the Mexican scandal (July 30, 2012). Wal-Mart shares increased 46 cents after this step.

1.2 Purpose of Study

It is essential to figure out the relationship between CEO turnover and stock prices. CEO turnover occurs when a manager retires, resigns, dies, or is fired. Announcements of changes in CEOs are shown in foot notes, rather than financial statements. It means that this kind of information, to some extent, does not influence

the balance sheet, income statement or cash flow statements. However, CEO turnover conveys a signal to the stock market, leading to fluctuations in stock prices. Secondly, whether or not this major event affects stock prices depends on the type of event. Investors believe that a capable and experienced CEO brings a huge amount of benefits to the firm.

1.3 Need for Study

The news about a firm's corporate events is the guideline for investors, before investing. Investors believe that the announcements of a CEO turnover have negative impact on the equity. One reason is that good performing of one firm will not announce this kind of news, unless the firm is in trouble. Take Computer Sciences Corp. as an example. Mike Lawrie has been hired as a new CEO, who is expected to cover the net loss of \$158 million in the last quarter. However, this decision did not appeal to its investors in the short-term. The stock price still went down dramatically.

1.4 Statement of Problem

This paper will focus on the relationship between CEO changes and stock prices. Usually, there are three major reasons why CEOs' leave their positions: First, health problems. Some of them are too old to complete their jobs so that retirement is appropriate for them. Second, CEOs are fired by the board of the firms due to inefficiency and ineffectiveness. Third, compensation to CEOs has been a critical issue in recent years. Various industries have different compensation packages to CEOs.

1.5 Organization of paper

This paper is composed of five chapters. Chapter 1 is the general introduction about the relationship between announcements of CEO changes and the stock prices. Chapter 2 reviews the literature on this subject, which significantly focusses on the impact of CEO turnover on firms' performance and stock market. Chapter 3 explains the models and methodology, which are considered on this area, including sources of data collection and model selection. Chapter 4 is the analysis of results, containing statistical analysis of the model estimation and the implication for market efficiency. Chapter 5 provides the conclusion and recommendation and states the limitations of the study.

Chapter 2

Literature Review

Background

Generally, there are five internal events affecting stock prices: mergers and acquisitions, financial reports, dividend policy changes announcements, the development or approval of a new innovative product, and the hiring or firing of company executives. Changing a top-management, for example, Chief Executive Officer, will bring unexpected change on the performance of stock prices. Past studies can be categorized into five main parts: 1) impact on ex-ante day, 2) impact on announcement day, 3) impact on ex-post day, 4) signaling, and 5) shareholders' reaction.

2.1 Impact on ex-ante day

In this field of study, scholars focus on both the CEO change announcements and stock prices by studying cumulative abnormal returns over a period. Cumulative Abnormal Returns (CARs) refers to cumulative the daily excess security returns over the market returns for a given time period.

Lubatkin, Chung, Rogers and Owers (1989) used 1,187 CEO successions from 1971 to 1985, and found that investors' revising their expectations drive down a firm's stock price by an average of 1 percent during the pre-announcement period and an

additional 3.5 percent during the 50-day post-announcement period.

2.2 Impact on announcement day

Corporate news regarding a departure of the managers or an appointment of the new one are announced simultaneously, so it causes positive or negative price effects for these changes surrounding the announcement day. Furtado and Karan (1990) pointed out that there is negative correlation between CEO turnover and stock prices. Also their event studies showed that over 30% of all CEOs turnovers were announced at the same time with release of earnings report and other important economic news that influence share prices.

The following study illustrates two effects associated with the announcement of management changes by Bonnier and Bruner (1989). Based on Warner et al. (1988) and Jensen and Warner (1988) studies, the first one effect is from informational perspective, which could be negative if the change suggests that the firm's performance was worse than the market had realized. The other one is real effect, which would be positive if the change is in shareholders' interest. After eliminating the dividend issues from their sample data, Bonnier and Bruner got the significantly positive results from the data set. Changing CEOs is associated with 2.4 percent higher returns, compared with a return of 1.232 percent resulting from other senior officers' turnover.

Warner, Watts, and Wruck (1988) tested 269 NYSE and AMEX firms in the period 1963-1978 for shares performance and top management changes. The performances of daily abnormal returns (90 trading days) appear unimpressive response to the changes. However, the performance of monthly abnormal returns cannot prove that market reaction directly linked to the announcement of a management change.

Johnson, Magee, Nagarajan, and Newman (1985) analyzed much more specific area of executive changes (i.e. sudden executive deaths). They used the sample of 53 sudden deaths of senior corporate executives (i.e. chairman of the board, chief executive officer, or president) which occurred between January 1, 1971 and December 31, 1982. The empirical results showed that normal excess returns are not statistically different from zero, and then they added the dispersion of standardized excess returns for the announcement period. Finally, the outcomes support the idea about relation between share price adjustments and the unexpected deaths of senior corporate executives.

2.3 Impact on ex-post day

After the event, there are few investors and scholars paying attention to the post-announcement. According to the efficient market hypothesis (EMH) theory, the stock market react the changes rationally and promptly. As Lubatkin, Chung, Rogers and Owers said, the excess returns of post-announcement of CEO changes perform weaker than those surrounding the pre-announcement and announcement day. They

separated five time horizons to test cumulatively excess daily returns, the first two periods have been discussed in the previous part. From the third horizon and the fourth horizon, they found a positive and significant correlation between the characteristics of the manager and abnormal returns, separately. But in the fifth horizon, the performance was weak.

2.5 Signaling

Replacing a top manager of a firm sends a message to the public. This replacement of the “special human capital” [Johnson, Magee, Nagarajan, and Newman, (1985)] signals about a company’s current outstanding performance and its future prospects. They predicted that the unexpected death of an executive with significant share ownership may signal an increase in the probability of a takeover, and thus may give rise to a positive share price adjustment. Nevertheless, the evidence showed that these firms experienced a modest negative stock price reaction to the executive's death.

Furtado and Karan (1990) indicate that two actions seem to occur after management turnover. The first one is that firms may take "earnings baths" in an improved performance. That means the executives’ skills are approved in the earning reports through operations of their firms. The other one is that the connection between firms’ response to the uncertainty environment and its characteristics to find a new top manager. If the top-manager cannot catch up with the changing world, he or she has to be fired sooner or later. However, the empirical results tell different stories. They

found significantly positive abnormal returns were caused by outsider changes instead of CEO (insider) changes. Similarly, Borstadt (1985) and Mahajan and Lummer (1993) also found no significant effects of CEOs changes from their tests.

In 1989, Bonnier and Bruner studied the relationship between the stock price and the CEOs turnover in distressed firm by employing cross-section hypothesis. They introduced 3 factors to explain this hypothesis, and origin of the successor is one of them. The null hypothesis is that the appointment of an outsider brings negative effect on stock performance. One reason is that investors were signaled the companies need to employ a more qualified manager from the outside world.

2.6 Shareholders' reaction

Shareholders' wealth is tight to firm's value. Each movement of the firms draws attention to shareholders. In general, changing CEOs sends a poor signal to the market that this firm's business cycle is declining. However, some researches on this issue exposed divergent conclusions.

Unexpected managers' deaths were reflected in a positive share reaction, if the shareholders can get more favorable wealth, said by Johnson, Magee, Nagarajan, and Newman in 1985. Otherwise, they were reflected in a negative outcome. They considered two situations: discontinued employment and incumbent employment. Even though they assumed the first employment brings adverse shareholders wealth

effect and the later one leads to positive consequence, they concluded that it is too complicated to explain the contradictory outcomes.

“Shareholder wealth effect of management changes” was published by Mahajan and Lummer (1993). They used 498 announcements of management changes from the common equity firms during 1972 to 1983 periods. They separated all management changes into two groups based on the instigated sources: internally and externally. So they can figure out the stock price reaction to management changes whether from internally or externally instigated. After testing three hypotheses in these two groups, the outcomes indicate variance abnormal returns. There were negative abnormal returns when the changes were internally instigated by the corporate power. No abnormal returns were observed when the CEOs chose voluntary departure. Significantly positive abnormal returns were correlated with the unexpected deaths, which support the view of Johnson, Magee, Magarajan, and Newman (1985).

Summary

Firstly, most of the authors assume that there are negative returns between the announcement of CEO changes and stock prices, whereas the statistical results are various. Secondly, some studies indicate negative outcomes and others show positive. One reason is that they focus on different sides of this event. Furthermore, each single side change at one place in a deterministic nonlinear system can result in large differences to a later state, known as “the butterfly effect”. Thirdly, a diverse market

in various countries has a different data set. Different market timing (i.e. announcement date, effective date) and uncertainty factors (such as government policy, natural disasters, and personal factor, etc.) lead to diverse conclusions. Fourthly, there is no evidence indicating that the CEO turnovers affect the stock market, but it is undeniable that this announcement can convey some messages to the market regarding the firm's operations and situation.

Overall, each research focuses on specific factors with relative function, even though the macro view of this research is similar. For example, Bonnier and Bruner (1989) concentrated on stock prices reaction in distressed firms, but John et al. (1985) analyzed the stock price reaction to sudden executive deaths. What is more, Beatty and Zajac (1987) wrote about CEO change and firm performance in large corporation, which is similar to the topic of Watts et al. (1987).

Furthermore, the data from most of the previous research is from CRSP (the Center for Research in Security Prices), and authors frequently collect the relevant announcement date of the events from the Wall Street Journal. Although this paper is not going to use the same data sources from CRSP, these points of view from previous studies will be applied in the later chapters. Chapter 3 will explore the models and methodology about the correlation between CEO turnover and stock prices.

Chapter 3

Methodology

This paper predicts that the termination of the management relationship influences shareholder wealth under the assumption that the United States stock market is efficient, and supports the efficient market hypothesis. Market efficiency is described as follows: first, stock prices adjust quickly to reflect new information (such as announcement of CEO changes); second, stock prices adjust accurately to reflect new information; third, market reaction to new information can be tested by using the CAR(Cumulative Abnormal Return).

Furthermore, this paper examines the impact of CEO turnover by using event-study methodology. There are 3 segments included in the sample space, 1) pre-event period, assumed to be immune to the event; 2) event-date (period $t=0$), on which the event occurred; 3) post-event period (the information period), which reflects the impact of the event occurred.

The following are the assumptions of event study. First of all, the stock market is assumed to be semi-strong efficient based on the EMH theory that all public information has been reflected into a stock's current share price. Secondly, no material information is available in advance. Otherwise, investors with inside information can take advantage of them, and earn abnormal returns. Thirdly, there is

only one event happening during announcement period. Based on the assumptions above, it can be summarized that abnormal returns react to the announcement when abnormal returns are greater than zero.

3.1 Sample selection

The sample consists of 2 groups, securities listed on National Association of Securities Dealers Automated Quotations (NASDAQ), group 1, and on New York Stock Exchanges (NYSE) over the period from 2007 to 2012, group 2. 50 firms from the first group belong to Information and Technology (IT) under Global Industry Classification Standard (GICS). The second group of 50 companies' is from Consumer Staples Sector. The event data are gathered from the *Wall Street Journal*, *New York Times*, regional newspaper, and the form 10-K's filled with the Securities Exchange Commission (SEC). The one and only event of CEO departure from his position at the announcement date are selected.

Table 1-a

Distributions of the announcements in the IT Sector during 2007~2012 (50 observations)

Year	Number of announcements	Year	Number of announcements
2007	3	2010	9
2008	6	2011	22
2009	2	2012	8

Table 1-b

Distributions of the announcements in the Consumer Staples Sector during 2007~2012 (50 observations)

Year	Number of announcements	Year	Number of announcements
2007	10	2010	6
2008	6	2011	13
2009	6	2012	9

Table 1-a and Table 1-b show the distributions of events by years and by the number of announcements over 2007 to 2012. It is obvious that the largest number of announcements were appeared on 2011 in these two sectors.

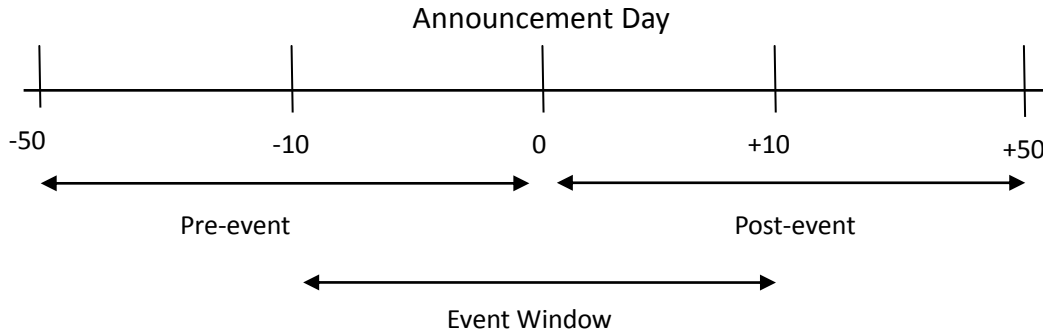
3.2 Time horizons and models

3.2.1 Time horizons

Identifying events and relevant event periods are the first step of the event-study. The announcement of CEO changes is the researched event, and its announcement date is defined as $t=0$. Pre-announcement period is from $t=-180$ to $t=0$ days. The continuing price movements to the new information are observed in the event window, the period of 50 days before and after the announcement day ($t=-50$ to $t=+50$). Post-announcement period indicates the investors' reaction after the event in the short-term, which is from $t=0$ to $t=180$ days.

Figure 1

Different time horizons surrounding the announcement date



As Figure 1 shows, there are 3 time-horizons in this event study: pre-event, post-event and event window.

3.22 Models

The single-factor model (Fama (1976)) is used to calculate daily abnormal return. The event date (day 0) is defined as the day of the CEOs turnover or the first day following the event, if the change occurred on a non-trading day.

The market model establishes a linear relationship behavior excess security return and excess market returns.

$$r_{i,t} = \alpha_i + \beta_i * r_{m,t} + \varepsilon_{i,t} \quad (1)$$

Where:

$r_{it} = R_{it} - \widehat{R}_{it}$, the excess actual security return (R_{it} is daily return of each firm at time t, \widehat{R}_{it} is expected return of each firm at time t)

α_i = The interception of the regression model or constant term

β_i = The slope of the regression model specific to the firm

$r_{mt} = R_{mt} - \widehat{R}_{mt}$, the excess market return (R_{mt} is daily return of the market at time t , \widehat{R}_{mt} is expected return of the market at time t)

ε_{it} = Random error term or residual on firm i at time t

The excess security return ($r_{i,t}$) and excess market return ($r_{m,t}$) are calculated as

follows

$$R_{i,t} = \frac{P_{i,t+1} - P_{i,t}}{P_{i,t}}$$
$$R_{m,t} = \frac{P_{m,t+1} - P_{m,t}}{P_{m,t}}$$

Where:

$R_{i,t}$ = Daily return of each firm at time t

$P_{i,t+1}$ = Closed stock price of each firm at time $t+1$

$P_{i,t}$ = Closed stock price of each firm at time t

$R_{m,t}$ = Daily return of the market at time t

$P_{m,t+1}$ = Closed price of market index at time $t+1$

$P_{m,t}$ = Closed price of market index at time t

The pre-event data can be employed to estimate α_i and β_i , and then to forecast the returns for the post-event periods. (Assume α_i and β_i are constant)

$$\hat{r}_{i,t} = \alpha_i + \beta_i * r_{m,t} \quad (2)$$

Where $\hat{r}_{i,t}$ is the expected excess return of each firm at time t .

The Abnormal Return (AR) is calculated by subtracting expected return ($\hat{r}_{i,t}$) from actual return ($r_{i,t}$),

$$AR_{i,t} = r_{i,t} - \hat{r}_{i,t} \quad (3)$$

Average Abnormal Return (AAR) for a given time period t,

$$AAR_{i,t} = \frac{1}{n} \sum_{i=1}^n AR_{i,t} \quad (4)$$

Cumulative Abnormal Return (CAR) for the period t,

$$CAR_{i,t} = CAR_{i,t-1} + AR_{i,t} \quad (5)$$

3.23 Effects

In order to test whether these outcomes significant or not, this paper applies t-statistic to justify the results of AR, AAR and CAR, respectively.

Abnormal Return (AR)

If the market is efficient and rational, the Abnormal Return (AR) is equal to zero (i.e. $AR=0$). Hence, the null hypothesis

(H_0 : the announcement of CEO changes has no effect on the stock price) and alternative hypothesis

(H_a : the announcement of CEO changes has effect on the stock price) are as follows:

H_0 : $AR_{i,t} = 0$, this event not influence the stock price at time t

H_a : $AR_{i,t} \neq 0$, this event influence the stock price at time t

T-test: $t = \frac{\overline{AR} - 0}{S_{AR}}$

Where S_{AR} is the standard deviation of AR

Average Abnormal Return (AAR)

If AAR is equal to zero, the announcement of CEO turnover cannot influence stock prices at all.

$H_0: AAR_{i,t} = 0$, average abnormal return cannot be obtained over period t

$H_a: AAR_{i,t} \neq 0$, average abnormal return can be obtained over period t

$$\text{T-test: } t = \frac{\overline{AAR} - 0}{S_{AAR}}$$

Where S_{AAR} is the standard deviation of AAR.

Cumulative Abnormal Return (CAR)

This paper uses CAR model to test 3 time-horizons to obtain the reliable results.

Cumulative abnormal return can be realized in the long-term, as long as AR is not equal to zero.

$H_0^1: CAR_{i,t} = 0$, Cumulative abnormal return cannot be realized during pre-event periods.

$H_a^1: CAR_{i,t} \neq 0$, Cumulative abnormal return can be realized during pre-event periods.

$H_0^2: CAR_{i,t} = 0$, Cumulative abnormal return cannot be realized during event window.

$H_a^2: CAR_{i,t} \neq 0$, Cumulative abnormal return can be realized during event window.

$H_0^3: CAR_{i,t} = 0$, Cumulative abnormal return cannot be realized during post-event periods.

$H_a^3: CAR_{i,t} \neq 0$, Cumulative abnormal return can be realized during post-event periods.

T-test: $t = \frac{\overline{CAR} - 0}{S_{CAR}}$

Where S_{CAR} is the standard deviation of CAR.

Chapter 4

Results and Analysis

100 corporate firms are separated into 2 groups. As mentioned above in chapter 3, coefficient α and β can be estimated by pre-event data. Under the assumption that α and β are constant over a certain period, they can be used in the post-event data ($t=-50$ to $t=0$) and event-window ($t=-10$ to $t=10$) during 2007~2012. The daily stock price returns have been calculated. And then, the abnormal returns are obtained by the difference between the actual return and the expected return during a period.

Group 1: IT firms

The total observations of this group are 9676, and six variables are included (see figure 1). Excess security return ($r_{i,t}$) and excess market return ($r_{m,t}$) models, $R_{i,t} = \frac{P_{i,t+1} - P_{i,t}}{P_{i,t}}$ and $R_{m,t} = \frac{P_{m,t+1} - P_{m,t}}{P_{m,t}}$, are employed to calculate the daily return, which is based on the previous stock price. The abnormal returns are obtained via calculating daily returns and expected returns (see figure 3). The highest abnormal return is 0.01 while the lowest abnormal return is -0.01. The t-statistic for cumulative abnormal return indicates that the average t-value is 0.88, which is greater than t critical value of -2 and less than the critical value of 2 at 5% significant level (see figure 4). What is more, the p-value is 0.382, which is greater than 0.05 at 95% level. Thus, we cannot reject the null hypothesis, which is no significant difference between

abnormal return and zero, as well as the difference between CAR and zero. Furthermore, R-squared and adjusted R² are equal to zero, which also implies that there is no correlation between the announcement of CEO changes and stock prices.

Group 2: Consumer Staples firms

7571 observations and six variables are included in this group (see figure 5). Daily returns are achieved by excess security return and excess market return models (see figure 7). The outcomes of the abnormal returns are negative. -0.06 is the highest abnormal returns, and -0.08 is the lowest abnormal returns. After using the t-statistic for the results, the average value of cumulative abnormal returns is -1.0, which is in the middle of the t-critical value of -2 and the critical value of 2 at 5% significant level (see figure 8). Moreover, the p-value is 0.324, which is similar with that of group 1. Thus, we accept the null hypothesis, which is the announcement of CEO changes has no effect on the stock price, as well as CARs cannot be realized during a period. Furthermore, R-squared and adjusted R² are exactly equal to zero, which also implies that the announcement of CEO changes cannot influence stock prices.

In summary, these 2 groups depict the similar results regarding the relationship between the announcement of CEO changes and the stock prices. Both of them prove that the market is efficient and support the semi-strong form of EMH. Because the null hypothesis cannot be rejected, no one can earn excess return based on the inside information (i.e. CEO turnover). Compared abnormal return between group 1

and group 2 (figure 3 and figure 7), it shows that the abnormal returns of group 1 are fluctuated heavily. However, the group 2 stays at the same level during a period. Even though there is a significant difference between these 2 groups, t-test finally shows the same answer.

Chapter 5

Conclusion and Recommendation

This paper investigates the performance of firms' stock prices in terms of the announcement of CEO turnover in American stock market from 2007 to 2012. 50 firms of each group are collected randomly from NASDAQ and New York Stock Exchange. To make an accurate result, the daily returns, instead of monthly or quarterly, on the United States' stock market are used. Through calculating this data, the outcomes are supportive to semi-strong form of EMH that stock prices react to the momentous information promptly and rationally. No one can earn the abnormal return under this situation.

Challenges

There are some challenges existing when the returns are calculated. Firstly, the errors of the employed models may be large, because it is troublesome to find the data about the stock price before and after the announcement date. Secondly, heterogeneity cannot be avoided. Thirdly, quantifying this kind of announcement of CEO changes also brings a lot of trouble, because it causes errors when transferring into a data set. Fourthly, the assumption of the coefficient of α and β may be wrong, because uncertainty factors can be contained. Fifthly, this paper just considers one and only one event occurs surrounding the announcement date. Sixthly, this paper does not mention much more details about the reasons of CEO's

departure.

Recommendation

The t-statistics of the results indicate that the announcement of CEO changes has no impact on the stock prices because abnormal returns are closed to zero. The results also prove that the United States' stock market is an efficient, which support the EMH. In other words, investors cannot obtain abnormal returns before or after the announcement date.

In order to confirm the accuracy of these outcomes, we can choose different stock market, such as London Stock Exchange (Canadian market), Hong Kong Stock Exchange (Chinese market), Australian Securities Exchange (Australian market), and Tokyo Stock Exchange (Japanese market), etc. Besides, the size of the data can be larger so as to employ z-statistics to testify the results.

Figure

Figure1

Description of IT firms

```
obs:          9,676
vars:          6          28 Aug 2012 12:52
size:         222,548
```

variable name	storage type	display format	value label	variable label
company_id	byte	%10.0g		IT company's ID number
date	int	%dd_m_CY		the date of stock prices
price	double	%10.0g		daily stock prices
year	int	%10.0g		the year of the announcement
announcement_~e	int	%dd_m_CY		announcement dates
return	double	%10.0g		daily return based on the daily stock prices

Sorted by:

Figure2

Summarize the data of IT firms

```
. summ
```

Variable	Obs	Mean	Std. Dev.	Min	Max
company_id	9676	21.76126	12.89471	1	50
date	9676	18631.7	478.6154	17156	19193
price	9676	20.77959	57.35145	.015	636.23
year	9676	2010.066	1.35876	2007	2012
announcement_~e	9676	18495.42	480.6357	17283	19185
return	9645	.0660113	5.514981	-1	538.661

Figure 3

Abnormal returns for IT firms

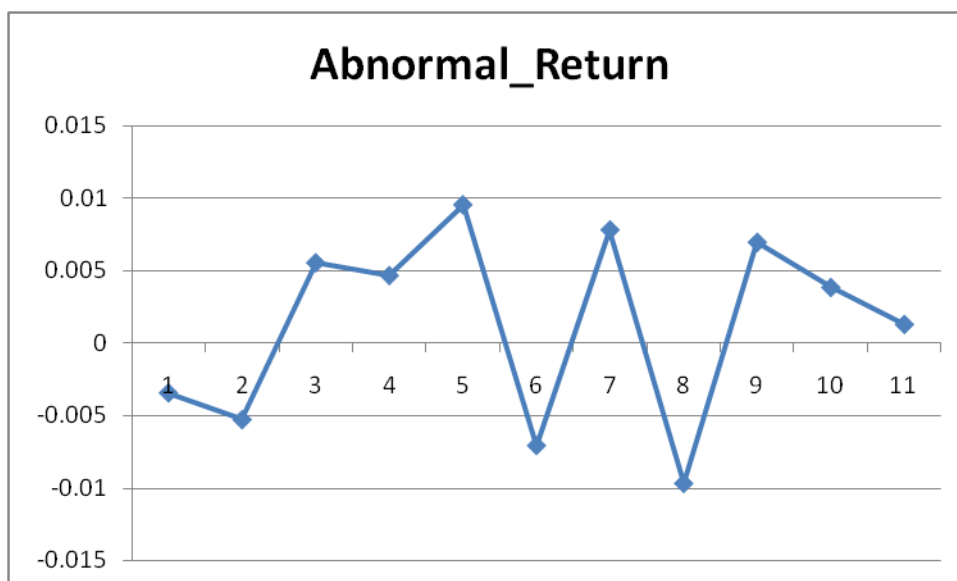


Figure 4

T-test for IT firms' Cumulative Abnormal Returns

```
. reg cumulative_abnormal_return if dif==0
```

Source	SS	df	MS	
Model	0	0	.	Number of obs = 50
Residual	.632150669	49	.012901034	F(0, 49) = 0.00
Total	.632150669	49	.012901034	Prob > F = .

	R-squared = 0.0000
	Adj R-squared = 0.0000
	Root MSE = .11358

cumulative~n	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]
_cons	.0141747	.016063	0.88	0.382	-.0181052 .0464545

Figure 5

Description of Consumer Staple firms

```

obs:          7,571
vars:         6
size:        174,133
26 Aug 2012 19:21

```

variable name	storage type	display format	value label	variable label
company_id	byte	%10.0g		consumer staples firms' ID
date	int	%td..		the dates of daily stock price
price	double	%td		daily stock price
announcement_~e	int	%td..		the announcement date of CEO turnover
year	int	%10.0g		the year of announcement date
return	double	%10.0g		daily returns based on daily stock price

Sorted by:

Figure6

Summarize the data of Consumer Staples firms

Variable	Obs	Mean	Std. Dev.	Min	Max
company_id	7571	22.40087	15.29247	1	50
date	7571	18290.29	623.3239	17086	19200
price	7571	-21872.88	423.6191	-21914.9	14825
announceme~e	7571	18142.24	679.0525	17178	19159
year	7571	2009.247	1.922615	2007	2012
return	7522	.0224814	1.955442	-1	169.5552

Figure 7

Abnormal returns for Consumer Staples firms

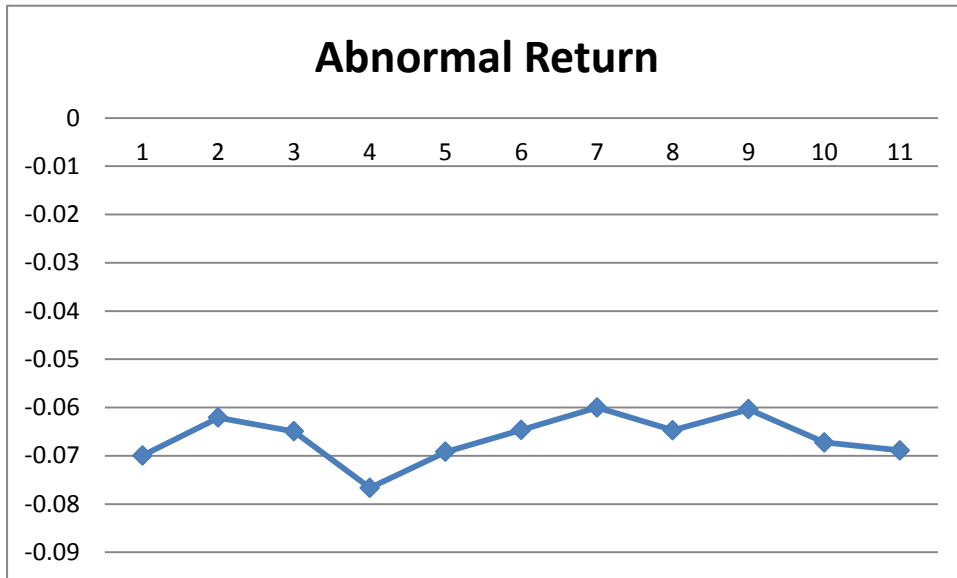


Figure 8

T-test for Consumer Staples firms' Cumulative Abnormal Returns

```
. reg cumulative_abnormal_return if dif==0
```

Source	SS	df	MS	
Model	0	0	.	Number of obs = 50
Residual	1309.61985	49	26.7269358	F(0, 49) = 0.00
Total	1309.61985	49	26.7269358	Prob > F = .
				R-squared = 0.0000
				Adj R-squared = 0.0000
				Root MSE = 5.1698

cumulative~n	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]
_cons	-.7286805	.7311215	-1.00	0.324	-2.197924 .7405632

Appendix A

50 IT firms and their announcement dates of CEO changes

	company	announcement date
1	Computer Sciences Corp. (CSC)	June5, 2012
2	IntraLinks Holdings Inc. (IL)	December15, 2011
3	Rovi Corp. (ROVI)	December15, 2011
4	Qlogic Corp. (QLGC)	November10, 2010
5	USA TECHNOLOGIES, INC.	December05, 2011
6	Rogers Corp. (ROG)	Septermber21, 2011
7	Itron Inc. (ITRI)	August31, 2011
8	Mobile Messaging Solutions (MMS)	June2, 2010
9	Verisign Inc. (VRSN-Q)	August07, 2009
10	MTS Systems Corp. (MTSC)	April03, 2012
11	Apple Inc. (AAPL)	February13, 2012
12	Mace Security International, Inc. (MACE)	December19, 2011
13	Aviat Networks Inc. (AVNW)	July18, 2011
14	SMTC Corp. (SMX-T)	March30, 2011
15	Genpact Limt. (G)	May16, 2011
16	Cavitation Technologies, Inc. (Cti)	June16, 2011
17	Yahoo! Inc. (YHOO)	January05, 2012
18	Ditech Networks Inc.	May31, 2011
19	Spark Networks Inc. (LOV)	April12, 2011
20	Aware Inc. (AWRE)	April05, 2011
21	Pulse Electronics Corp. (PULS)	January05, 2011
22	Cinedigm Digital Cinema Corp.	June23, 2010
23	Onvia Inc. (ONVI)	June14, 2010
24	FormFactor, Inc.	June04, 2008
25	EDGAR Online Inc. (EDGR)	September13, 2010
26	FalconStor Software Inc.	Jan. 19, 2011
27	AuthenTec (AUTH)	October31, 2007
28	Sunovia Energy Technologies (SUNV)	March28, 2012
29	Echelon Corp.	August19, 2010
30	Cascade Microtech (CSCD)	June18, 2010
31	Glowpoint Inc.	July15, 2010
32	LoJack Corp. (LOJN)	October17, 2011
33	Imation Corp.	Jan. 20, 2011
34	SoundBite Communications, Inc. (SDBT)	April21, 2009
35	GlideTV, Inc.	July07, 2010
36	Blue Coat Systems, Inc. (BCSI)	August16, 2011
37	GraphOn Corporation	April18, 2012
38	Victory Energy Corporation	Jan. 18, 2012
39	LoopNet, Inc.	Mar. 21, 2007
40	Cymer, Inc.	July14, 2008
41	ADTRAN(R), Inc.	April27, 2007
42	Sourcefire, Inc.	Jun16, 2008
43	PMC-Sierra, Inc. (Nasdaq:PMCS)	April02, 2008
44	j2 Global Communications, Inc.	May27, 2008
45	OSI Systems, Inc. (NASDAQ:OSIS)	Sept. 13, 2011
46	Cavium Networks INC	June23, 2008
47	Converse Technology, Inc. (Nasdaq:CMVT)	Apr. 30 2012
48	Pegasystems Inc.	Oct. 11 2011
49	Science Applications International Corporation (SAIC) (N	May24, 2011
50	Regis Corp.	July11, 2012

Appendix B

50 Consumer Staples firms and their announcement dates of CEO changes

	company	announcement date
1	Wal-Mart Stores Inc.,	Feb., 06, 2012
2	PepsiCo	Sep. 19, 2011
3	Kraft Foods Inc (NYSE: KFT)	April 13, 2010
4	MasterCard Foundation	April 02, 2008
5	Colgate-Palmolive Company	July 02, 2007
6	Estee Lauder Cos.	Nov. 08, 2007
7	Archer Daniels Midland Company (NYSE: ADM)	Feb. 06, 2007
8	SYSCO Corporation	Feb. 19, 2008
9	Hershey Foods	June 15, 2011
10	Mead Johnson Nutrition Company (NYSE: MJN)	June 15, 2012
11	Plug Power Inc. (Nasdaq: PLUG)	July 21, 2011
12	Fortune Industries, Inc. (NYSE Amex: FFI)	Jan. 18, 2010
13	Campbell Soup Co.	Jun. 23, 2011
14	Nautilus, Inc. (NYSE: NLS)	May 26, 2011
15	Prestige Brands Holdings, Inc. (NYSE: PBH)	Jan. 12, 2007
16	Bunge Limited	Feb. 25, 2011
17	J.M. Smucker Company (NYSE: SJM)	Mar. 08, 2011
18	McCormick & Company, Incorporated (NYSE: MKC)	Oct. 01, 2007
19	Church & Dwight Co., Inc. (NYSE: CHD)	May 03, 2007
20	Gentium S.p.A. (Nasdaq: GENT)	Nov. 09, 2009
21	Molson Coors Brewing Company	June 10, 2008
22	Starwood Hotels & Resorts Worldwide, Inc. (NYSE: HOT)	Aug. 31, 2007
23	Avon Products, Inc. (NYSE: AVP)	Apr. 09, 2012
24	Tyson Foods	Nov. 19, 2009
25	Constellation Brands, Inc.	June 29, 2007
26	Jamba, Inc. (NASDAQ: JMBA; NASDAQ: JMBAU; NASDAQ: JMBAW)	Nov. 17, 2008
27	Ralcorp Holdings, Inc. (NYSE: RAH)	Sep. 26, 2011
28	Cyanotech Corporation (Nasdaq: CYAN)	May 19, 2008
29	Farmer Bros. Co. (Nasdaq: FARM)	March 13, 2012
30	PriceSmart, Inc.	July 12, 2010
31	Spectrum Brands	Apr. 15, 2010
32	Weis Markets (NYSE: WMK)	Jan. 29, 2009
33	SUPERVALU INC. (NYSE: SVU)	May 12, 2011
34	Rite Aid Corporation (NYSE: RAD)	Jan. 21, 2010
35	Universal Corporation (NYSE: UVV)	Aug. 07, 2007
36	Cal-Maine Foods, Inc. (NASDAQ/NM: CALM)	Oct. 15, 2010
37	Revlon, Inc. (NYSE: REV)	Apr. 29, 2009
38	Central Garden & Pet Company (NASDAQ: CENT) (NASDAQ: CENTA),	Apr. 18, 2011
39	Schiff Nutrition International, Inc.	Feb. 25, 2011
40	Spartan Stores, Inc., (Nasdaq: SPTN)	Oct. 15, 2008
41	Diamond Foods, Inc. (Nasdaq: DMND)	May 07, 2012
42	Pantry Inc.	Feb. 15, 2012
43	Medifast, Inc. (NYSE: MED)	Feb. 02, 2012
44	LifeVantage Corporation,	Mar. 15, 2011
45	Armano Foods	Feb. 13, 2009
46	Z Trim Holdings, Inc.	Aug 21, 2007
47	Health Enhancement Products In (HEPI US)	Sep. 08, 2009
48	Fuse Science Inc.	Mar. 13, 2012
49	Pizza Inn Holdings, Inc.	June 06, 2012
50	PostRock Energy Corporation (Nasdaq: PSTR)	Nov. 18, 2011

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