The Impact of Announcements of Discovery of New Product on Stock Prices:

Case for the Fast Food Industry of Canada and the U.S.A.

by

Yuanyuan Jiao

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Saint Mary's University

Approved: Dr. Francis Boabang

Faculty Advisor

Approved: Dr. Francis Boabang

MFin Director

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Abstract

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This study examines the impact of new product announcements from 8 fast food companies on share prices. All these announcements were from 2009-2013. Using historical stock price data, an analysis of the existence of abnormal returns was conducted to determine whether or not product announcements impact the stock prices. The results showed that although some companies suffer a negative cumulative abnormal return due to these announcements, there was a positive average cumulative abnormal return in this industry in 2003. Moreover, the means of abnormal returns in the event window (Day-2 to Day+2) imply that sample companies have negative average excess returns during this period, but there seems an significantly increasing trend of excess returns in the following period. The T-test result equally confirms the significance of abnormal returns in this study, meaning that announcements of new food discovery play an indispensable role in the Canada and U.S. fast food market.

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Chapter 1: Introduction

1.1 Purpose of Study

The objective of this study is to examine the impact of announcements of discovery of new products on the share prices of fast food companies in American and Canadian markets. To solve this problem, this paper collects data from eight popular fast food companies in the American and Canadian fast food market and compares the daily stock returns and benchmark returns before and after each new item announcement, thereby computing the excess returns for sample companies. Furthermore, this study will analyze the cumulative abnormal returns for each sample firm and the whole industry to measure the statistical impact of these announcements. Meanwhile, a significance test for abnormal returns of the sample companies will be conducted to examine the results.

1.2 Background

Full service, quick service and fast casual are three main segments of restaurant industry, which account for the majority of industry's income sources. The quick service restaurant, also known as the fast food restaurant, is comprised of more than 200,000 restaurant locations with a total of $190 billion in revenues. Major companies include US-based giants McDonald's, Wendy's Company, YUM! Brands (KFC, Pizza Hut, Taco Bell) and Jack in the Box, Tim Hortons (Canada), Greggs (UK), and Seven & i Food Systems (Japan).

In the U.S.A., the domination of McDonald's in fast food industry continued till 2011. McDonald's takes up 17% share of fast food industries, including company-owned and various franchisees combined shares, as stated on the Euromonitor International website. In 2012, McDonald's gained half a percentage point over the

course of the year and achieved 6% sales with US$34.2 billion. Yum! Brands, Inc., the world's largest restaurant company, has over 39,000 restaurants in more than 130 countries and territories. The Company's restaurant brands include KFC, Pizza Hut and Taco Bell.

The fast food industry in Canada is comprised of more than 81,000 restaurant locations with combined revenues of more than $60 billion annually, according to the Statistics Canada. Unlike many other foreign markets, where McDonald's is the leader in fast food sales, Canadian fast food industry is now led by the domestic brand, Tim Hortons, which ranked first in terms of value sales, outlets and transaction volume in 2011. In value terms, Tim Hortons accounted for 25% share of sales in 2011, followed by McDonald's and Subway with value share of 11% and 6% respectively. As euromonitor international website suggests, fast food in Canada is predicted to grow by a compound annual growth rate (CAGR) of 2% during the forecast period to reach sales of C$23.6 billion by 2016. The number of outlets is expected to increase by a CAGR of 2% during this time period to reach 37,804 by 2016. In addition, the independent locations of fast food companies are predicted to increase marginally faster than chained locations.

According to the Fast-Food & Quick-Service Restaurants Report, the profits that fast food companies earn mainly depend on their efficient operations and high volume food sales. Large fast food companies may have advantages in terms of product marketing, purchasing food materials and corporate financing, while small ones can compete effectively through offering superior food or more individualized services. However, this industry is becoming more fragmented in the new global age. A

convincing example is that 50 largest companies make up for only 20 percent of revenue in the global fast food market. Since this industry is well known for offering inexpensive food to consumers within minutes, as the fast food industry becomes increasingly competitive, companies need to seek for various methods to differentiate themselves, thereby maintaining their competitiveness in the global market.

1.3 Need for Study

Although the announcements of discovery of new products play an indispensable role in the promotion of food sales and the maintenance of consumer loyalty, the negative impact caused by such announcements should not be neglected. This is because such announcements as discovery of new products can raise market expectations towards the company. However, when new items come out, consumers may find out they are not as good as expected, thereby leading to the decrease in the share price of the company.

In order to make the best use of such new-product announcements, many fast food companies committed to conducting researches to find out whether such new item announcements can generate abnormal returns for the company. Some even studied the best time range for the announcements, which can maximize the timing effect on the share prices and achieving the more value for the company.

According to Sood and Tellis (2009), announcements about commercialization activities such as the new-product-launching events can result in negative returns, as the new products the company discovers may fall below expectations. These announcements of such commercial information can, on the other hand, generate positive returns. This is

because such positive announcements serve as a market signal, which shows the competitiveness of a company and the strength a company has to explore innovational products (Tellis and Johnson 2007).The rival arguments for whether such announcements as new item launch can generate positive or negative returns suggest a need for empirical researches to solve this conflict.

1.4 Statement of Problem

With the aim of maximizing the value of the company, shareholders should know whether the introduction of new products can generate abnormal returns and boost the wealth of shareholders. This paper looks to address this issue by answering the question: whether announcements of discovery of new products can generate positive cumulative abnormal returns in fast food industry. In order to solve this problem, an event study will be conducted using stock return data from two trading days prior through two trading days after each announcement. This detailed process can be seen in the methodology section.

The main reason as to why such result is expected is that the innovations in food items can satisfy various needs of target consumers such as young people, children and families. Furthermore, with the faster working pace in the modern society, consumers such as white-collar workers are more willing to purchase fast-food items, which can save their time, thereby enhancing their working efficiency when they come back to work.

This study compares the stock returns of fast food companies and determines whether these announcements can increase stock prices with positive abnormal returns,

decrease stock prices with negative abnormal returns, or have no effect on the share prices with zero abnormal returns. If these announcements are positively related to stock returns, shareholders could earn more profit through the consistently discovery of new food items. In contrast, if there is a negative reaction or no reaction of stock returns to these announcements, then shareholders would better to maintain the current food items on the list to maintain the companies' profitability in the fast food market.

With the data collected from 94 new-item announcements in the American and Canadian fast food markets, we can obtain the excess daily returns for each company by comparing the realized returns and benchmark returns. In addition, we apply the event window methodology to set event window and estimation window, which can evaluate whether these announcement events can generate positive abnormal returns for individual company and the whole industry. The event study method is a frequently applied statistical method that is used to measure the influence of an event on the securities of a company. Moreover, a T test will be conducted to examine the significance of excess returns for sample companies.

In this study, eight fast food companies are selected including McDonald's, Starbucks, Yum! Brands Inc., Tim Hortons, Wendy's Company, Chipotle Mexican Grill, Inc., Jack in the Box Inc., and A&W restaurant. In order to avoid exchange problems, this study concentrates on the daily returns of each selected company in Canada and U.S.A. respectively. Meanwhile, thanks to the market model and event study method, more accurate results can be gained when calculating abnormal returns of fast food companies.

Chapter 2: Literature Review

2.1 Definition of New Product innovation

According to Van de Ven and Poole (1989), the whole process of innovation can be defined as "the temporal sequence of events that occur as people interact with others to develop and implement their innovation ideas within an institutional context". Herzog (2008) proposes a three-step process of product innovation, including front-end of innovation, idea realization and development and commercialization. In 2007, Hauschildt and Salomo identified two common themes in various definitions of product innovation, which are as follows: "new product or service"; "markedly differ from the preceding status". They also argued that an invention is not an innovation unless it is commercially exploited. In addition, Rogers (1998) stated that the new product or service resulting from innovation has to generate extra benefit to the institution in some way. The benefit do not need to be commercial but can be an improvement in existing processes.

Product innovations in the food industry emphasize two key points: product innovation and process innovations (Avermaete, Viaene et al. 2003). In product innovation, it is necessary to understand that no matter how innovative a change is, it is worthless if it does not translate into commercial benefit i.e. sales revenue. Most companies look to the retail sector for product sales. Due to the intense competition in retail industry, the value proposition of the particular product has to be strong enough to warrant attention. For instance, a UK dairy firm First Milk released their new product which was a combination of the best features from competing products. The value proposition was so strong that they got 5 out of 6 retailers to list the product. Thus, a

newly-launched product will be regarded successful if there is a positive market reaction.

Earle & Earle (2000), defined a new model to classify various food products. They argued that an innovative product should be the one “new to the world”, which can show the improvements in functions and efficiency in costs. They also defined three innovation levels, including “incremental, major and radical changes”. In addition, they used the product platform to group similar products. It is a derivative change as long as the product changes a firm makes are within the existing platform. They also mentioned that new platforms can be formed with radical innovations.

Most companies in the food industry tend to make incremental adjustments to their existing items rather than to make radical changes on products such as creating a brand new item. This is because development on food items has long been considered a very risky venture. However, the ironical fact is that a truly innovative item can make a great difference on the value of a company. Winger & Wall (2006) and Tetra Pak (2004) mentioned several factors that determine the success rate of a company in the fast food market. Tetra Pak also summarized four key points that a successful newly launched product has in common. First, the product must have its own noticeable advantages over existing ones, such as adding a new flavor or creating a new mix. Second, the distinctive information should be informed to different target consumers through breakthrough advertising. Third, it can fully satisfy various demands for the youth, women and families. Fourth, the product should be discovered by a reliable company with good reputation, thereby raising its consumer loyalty.

Tetra Pak also states a few key elements that make up for the success of a food item in the progress of product development. The elements are as follows:

- a product with superior or unique characteristics;
- a product that truly reflects consumers' tastes and preferences;
- a product integrated with different cultures;
- a cost-efficient product;
- careful planning at the product concept stage;
- a product with effective management support;
- involvement with senior personnel;
- a product with thorough market researches;
- broad product marketing and advertising

Scholars suggest that it is crucial for a fast food company to have a good understanding of consumers' latest needs and expectations through market surveys and researches, which can make a great difference to its future performance in the stock market. Involvement with outside agencies and external expertise also play an important role. There is conflict on how much a senior management involvement can influence the product outcome of a firm. Nevertheless, thanks to the differences in industry structure and the whole market conditions, the key elements mentioned above are not equally significant for all countries.

2.2 Previous Studies

The previous researches include those that can prove some impact of announcements such as new items launches on the stock price, which suggests the value of these announcements still need to be investigated.

Dos Santos et al. (1993), stated there were no significant impact of announcements on firm's securities in the technology industry in the years between 1981 and 1988. Also, no excess returns was found in full industry samples or subsamples in the technology market by using event study methods. On the other hand, by calculating the NPV of new investment, Dos argued that the product innovation in technology area can enhance the overall value of a company.

Dos also mentioned that if new product announcements raise the stock price, then the company's market value will be promoted. By examining stock price reactions on these announcements, he reported that "the two-day average cumulative excess return for the full sample is only 0.09%, while the corresponding average excess returns for the manufacturing and finance industry subsamples are 0.40% and -0.08%, respectively. According to the reported Z-values, these average excess returns are not statistically significantly different from zero" (p.10).

According to Koku, et al (1997), the announcement, on average, exerts a crucial signaling impact on share returns. In addition, the degree of such influence varies from industry to industry. Nevertheless, the impact of these announcements of new products on firms' market risk is not significant. Through the analysis of latest release event in the company, it was reported that no apparent impact is post on the market risks of the

firm. In addition, focused on the influence of stock returns by new release events, Koku found that disseminating the new product information can make a difference on the share prices. Furthermore, it is suggested that firms need to select an appropriate financing mode and securities time when they plan to launch a new product, thereby maximizing market returns.

Sood and Tellis (2009) mentioned that the actual reward towards product innovation is the generated abnormal returns in the stock market. They also believed the impact of innovations of discovery of new products on overall value of a company can be estimated by several indicators such as product sales, stock returns and monthly income.

In a previous report, Sood and Tellis applied an event study method and argued that there is a positive market reaction to these announcements of discovery of new product, as the cumulative average abnormal returns they got are more than zero. They found that the cumulative average abnormal returns are 0.4% for companies in various industries on the announcement date, which are the highest returns with no significant different from those after more than five days. They believed these announcements can result in positive returns as such events stimulate market expansion and improve the competitive positions of firms. Sood and Tellis reported that "if the returns to the entire innovation project could be estimated from a single, target event during the project, then returns for other events would not be significantly different from zero. That target event would be critical with important implications for firms and investors. On the other hand, if firms continue to experience incremental returns to various events over the innovation project, ignoring certain events would result in underestimating the total returns to

innovation. It would also mean that firms should pay close attention to all innovation-related events and optimize their announcement strategy." (p.444)

Lee et al explored the stock performance of a firm after the announcements of new products and concluded that a good timing of announcements determines the future market reactions and stock returns (2000). With a regression analysis, Lee found the earlier a company launches the announcements of discovery of new product, the more significant impact will have on the wealth of shareholders. Furthermore, although these announcements can pose a negative effect on shareholders' wealth if the timing is not appropriate, such effects are limited on the durability of their wealth.

Zantout and Chaganti argued that the influence of the announcements of discovery of new products on share prices, to some extent, depend on the first-movers, because they can achieve long-term competitive advantages (1996). Besides, they studied the market performance of companies and found the companies with new-product launches can achieve positive abnormal returns on the announcement date while their competitors suffer negative abnormal returns. It is also found that the extent and durability of first-mover advantages can determine the company's abnormal returns through a cross-sectional regression analysis of 1481 announcement samples. Similarly, Chaney and Devinney (1992) found that there is a significant cumulative average abnormal return of 0.6% over a three-day period centered on the product announcement date. Woolridge and Snow (1990) calculated a significant two-day abnormal return of 0.69% with 241 announcement samples. Zantout and Chaganti also mentioned that the statistically abnormal returns that these announcements of new discovery of product generate can be positive, negative or zero.

Furthermore, it is reported that the companies can generate an abnormal return of 1.15% within two days, while their rivals suffer an abnormal return of -0.454% during the same period. These results support the opinion on the competitive advantages of the first-mover, suggesting that these announcements of discovery of new products can bring profit to the market. On the other hand, the first-movers can utilize their unique advantages to explore more product characteristics in specific area. It is also mentioned that the advantages of first movers are more apparent and significant in the high-technology market.

Chaney, et al also studied the impact of events of new product introduction on the firms' market value with an event methodology (1991). He reported that these kind of announcement release can make up for approximately 0.75% of abnormal returns within three days centered by the announcement date. The result of individual industry may vary. On the other hand, there are statistically negative abnormal returns over the 10-year period time after the new-product announcements.

Chapter 3: Methodology and Data Source

3.1 Event Study Model

The main method that this study applies is the event study method, which was first reported by Fama et al. (1969). This methodology seeks to compare the company performance with and without an event, thereby examining whether this event can generate abnormal returns for a company. The event study method is based on the market efficiency theory. Fama (1976), stated that all the market information can be fully reflected by the stock prices, and thereby the prices of securities are fairly priced. It is also mentioned that the stock price can immediately and accurately respond to an event if it is a "semi-strong form" market. Therefore, it is feasible to examine the impact of an announcement of new product through the observation of corresponding stock prices in a short run.

Many researches have been conducted to measure the quantitative impact of an event on the value of firms through event study method. Bruner (1999), investigated the impact of a takeover announcement on the stock prices of a target company through an event study method. Yermack (1997) applied the event study method in large sample studies, which are used to measure the influence of an event on share prices of different samples. He mentioned several examples of such kind of event study as the impact of company policy announcement on the share prices of firms in different industries. In addition, Barber and Lyon (1996) and Benkraiem et al.(2009), argued that the event study method can also be used to examine the effect of an event on a company's accounting performance and its trading volume of stocks respectively. Engle and Ng (1993) also studied the impact of a kind of event on the firm's stock volatility. Moreover,

Steiner and Heinke (2001), considered an event study to demonstrate the effect of an announcement on bond returns.

In this study, we will conduct a firm-level analysis with the event study method, through which it is more convenient to describe the mean abnormal returns and capture the performances of stocks in the fast food industry. It is assumed that, in this study, the asset prices in the stock market can immediately and completely reflect the product announcements with rational market reactions. We set an event period (Day-2 through Day+2) around each particular product-announced date, thereby capturing the stock performance during this time. In addition, we will calculate the abnormal returns and cumulative abnormal returns based on the daily stock prices. At last, we will conduct a T-test with Stata Program to examine the significance of abnormal returns.

However, we have to admit that in reality the introduction of new products is not the only factor that determines the stock prices of a company. The impact of other factors such as the government policy announcement and company's dividend policy announcement cannot be ruled out in our analysis process. Therefore, the results we obtain may come with some unavoidable uncertainty and statistical error.

3.2 Data Collection Procedure

Eight fast food companies are used to conduct this analysis: McDonald's Co. (MCD), Yum! Brands Inc. (YUM), Wendy's Co. (WEN), Jack in the Box Inc. (JACK), Chipotle Mexican Grill Inc. (CMG), Starbucks Co. (SBUX), Tim Hortons Inc. (THI.TO) and A&W restaurant (AW-UN.TO). To reduce the randomness of events, we collect more than ten announcements of new products in 2009-2013 from each company, the

detailed information of which can be found from the press release section on its official website. In order to obtain the daily return during this period, we select the corresponding on stock prices from yahoo finance website.

In the process of data selection, any announcement involved in the new food items including beverages during this period will be collected as one important sample. Furthermore, such announcements that new food items will be launched in a specific region are excluded in the sample-collection process. Also, announcements such as a previous food items coming back to menu are not taken into consideration. Overall, 94 announcement samples are used for the measure of the impact of these events on stock returns of the eight selected fast food companies.

3.3 The Analysis of Event Study Model

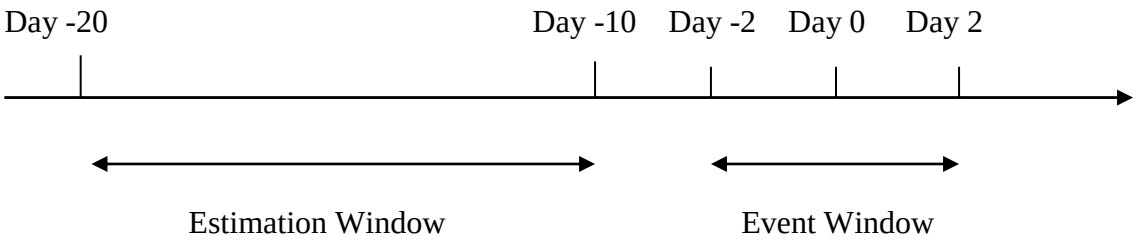
This study investigates the quantitative impact of announcement of new items on share prices in the Canada and U.S. fast food markets through the event study method. There are five main steps in the procedure of event study analysis.

First, we set the announcement date as “Day 0”, which is the event date in this study. Based on the particular announcement date and announcement events, stocks of the eight fast food companies will be classified into a few subsample groups. The announcement date for each company may vary due to different company strategies.

Second, we identify a specific time line for the announcement event. In other words, the event window and estimation window for the event study must be carefully set. Through some tests, we finally set the time range of Day-2 to Day+2 around the announcement date (Day 0) as the event window, which is used to capture the

performance of share prices of each firm. Figure 3.1 can illustrate the time range of event window and estimation window.

Figure 3.1 Time Line of the Event Study



The time range of event window may depend on the specific purpose of studies. For example, Bruner (1999) and Small et al.(2007), set a 2-day(-1,0) and a 3-day(-1,1) as the short event window period respectively in the studies of some event. On the other hand, some researches prefer a longer event window period, which may cover several months or years around the event date. Gregory (1997), used a 60 months as an event widow and Hertzel et al.(2002) studied a 36-month test period.

As shown in Figure 1, the estimation window is set between Day-20 and Day-10, within which the expected returns of each company's stock can be assessed. Since the data size is small, the estimation window period we choose is reasonably short.

Third, we estimate the daily stock returns for the sample companies and the market returns in the fast food industry. The daily stock returns over the event window period can be calculated through Formula 3.1.

$$R_{i,t}=(P_{i,t}-P_{i,t-1})/\ P_{i,t-1} \qquad (3.1)$$

where $R_{i,t}$ refers to the stock return on a particular date, t; $P_{i,t}$ is the price of stock(i) on date t; $P_{i,t-1}$ is the price of stock(i) at one day prior to date t.

In addition, based on the Dow Jones Industrial Average (^DJI) Index, it is easy to calculate the daily market returns in the fast food industry. In order to cover the time range of both event window and estimation window, we collect the daily market price from Jan, 2009 through Aug, 2013. The daily market return serves as a benchmark return that used to compare with the actual daily stock return within the test period. Through a benchmark return, we can gain the expected returns that are uninvolved in announcement events. The daily market return can be obtained through Formula 3.2.

$$R_{m,t} = (P_{m,t} - P_{m,t-1}) / P_{m,t-1} \quad (3.2)$$

where $R_{m,t}$ refers to the market return on a particular date, t; $P_{m,t}$ is the index of stock in the fast food industry on date t; $P_{m,t-1}$ is the index of stock in the industry on date t-1.

Fourth, the average abnormal returns and the cumulative abnormal returns should be computed to evaluate the impact of announcement events on firm value. Through Stata, which is commonly applied data analysis software, we gain the excess return in the fast food industry of Canada and U.S. market. The principle of such calculation is that the statistical number of abnormal return is the difference between the realized stock return and the benchmark return, as shown in Formula 3.3.

Abnormal Return (AR) = Realized Stock Return – Benchmark Return (3.3)

Then we compute the average daily abnormal return during the event window period (Day-2 to Day+2) through Formula 3.4.

$$\text{Average Abnormal Return} = \sum \text{Abnormal Return} / n \quad (3.4)$$

where n represents the number of the sample companies in the study.

Next, the cumulative abnormal return over the test period can be calculated through Formula 3.5.

$$\text{Cumulative Abnormal Return} = \sum \text{Average Abnormal Return} / n \quad (3.5)$$

where n is the number of the sample companies in the study.

The average abnormal return measures the impact of an announcement that is launched in a specific time period, while cumulative abnormal return is used to describe the sum of all abnormal returns during the whole period. Thus, the cumulative abnormal return is a better indicator to measure the overall impact of an event release. It is worth mentioning that in an efficient market, both the average abnormal return and the cumulative abnormal return should be zero.

Fifth, the significance of excess returns (or abnormal returns) should be examined by T-test through Stata Software, the result of which will be analyzed in more detail in the next chapter. Barber and Lyon(1997), suggested that many event studies apply the parametric test of tstatistics to assess the significance of excess returns. Benkraiem et al.(2009), applied a rank test, which is a non-parametric test, to confirm his results in studies.

Thitima Sitthipongpanich(2009), suggested that for a particular company (i), whether the abnormal return is different from zero could be examined through t-statistics as Formula 3.6.

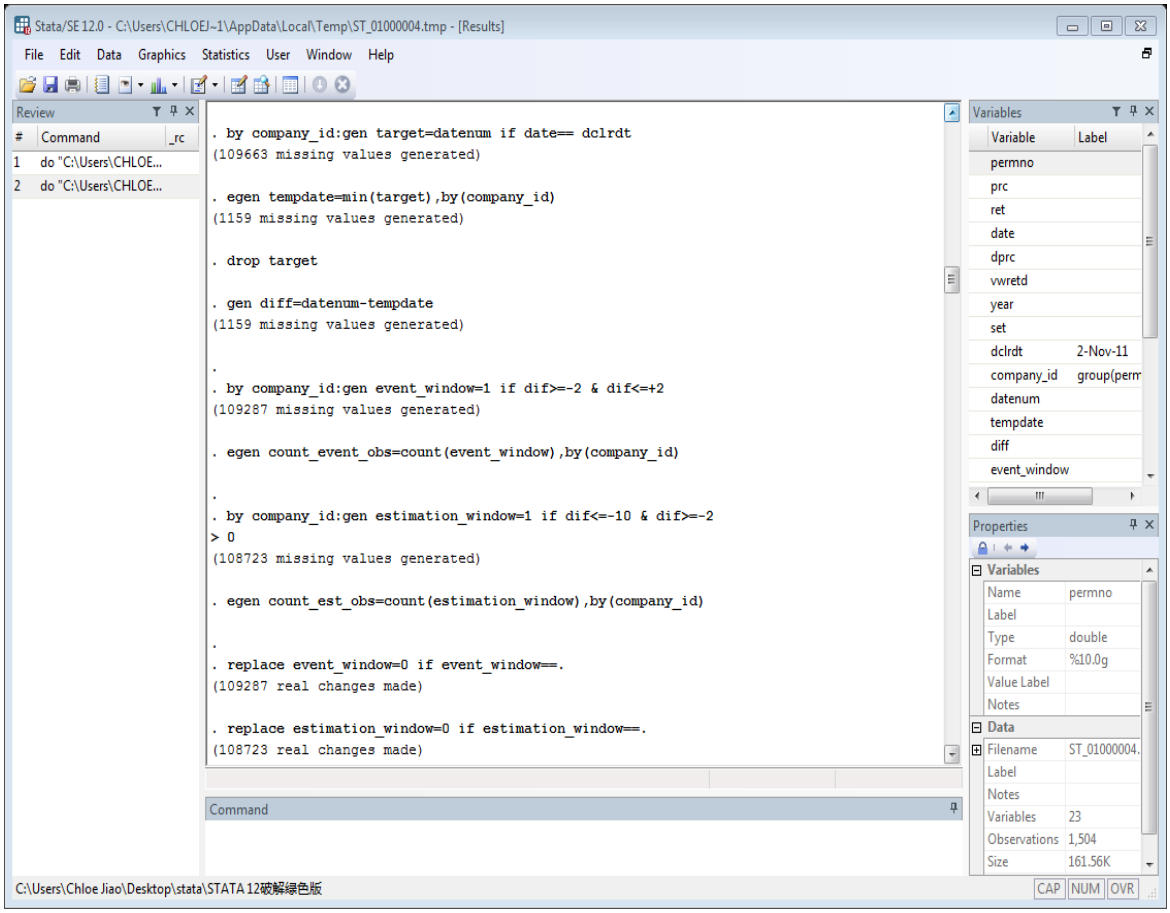
$$T_{AR} = \text{Abnormal Return}_{i,t}/S_e \quad (3.6)$$

In this study, instead of using Formula 3.6, we conduct the T-test through Stata orders to test the significance of excess returns.

Chapter 4: Results and Analysis

This section looks to describe and analyze the results of the event study model, which derives from firms' announcement list in the Appendix A. In this study, we collect 94 observations in total and deal with a large amount of data by running Stata Software. Figure 4.1 is the screenshot of the stata-running process, which shows how we set the event window and estimation window.

Figure 4.1 Screenshot of setting time line of event study



As shown in Figure 4.1, some missing values are generated in the process of data processing. This can rule out some data that do not match the specific requirements in the study, thereby making the final results more accurate. It can be noticed that there are

109287 missing values generated in the event window, while there are 108723 missing values in the estimation window. After cleaning dataset, it is apparent that there are 1504 observations in total with a mean of 47.5 and a standard deviation of 27.14295, as seen from Figure 4.2.

Figure 4.2 Results of sample companies

```
.
. gen predicted_return=.
(1504 missing values generated)

. egen id=group(company_id)

. sum id, de
```

group(company_id)

Percentiles		Smallest		
1%	1	1		
5%	5	1		
10%	10	1	Obs	1504
25%	24	1	Sum of Wgt.	1504
50%	47.5		Mean	47.5
		Largest	Std. Dev.	27.14295
75%	71	94		
90%	85	94	Variance	736.7399
95%	90	94	Skewness	0
99%	94	94	Kurtosis	1.799728

4.1 Results of Cumulative Abnormal Returns

Through a series of Stata orders, we can easily obtain the results of cumulative abnormal returns for each sample company from 2009 through 2013, as demonstrated in Table 4.1.

Table 4.1 Cumulative Abnormal Return of Sample Firms

Company	2009	2010	2011	2012	2013
McDonald's Co.	-0.04095	-0.01016	0.02726	0.01167	-0.00429
Yum! Brands Inc.	-0.03115	-0.00281	0.01440	-0.05530	-0.06189
Tim Hortons Inc.	-0.02197	0.00811	-0.00085	0.01973	-0.02569
Wendy's Co.	0.00512	0.00701	-0.11074	-0.01084	0.01749
Jack in the Box Inc.	0.01108	-0.01846	0.00095	-0.00250	0.01484
Chipotle Mexican Grill Inc.	-	-	0.01897	-0.07515	0.04723
Starbucks Co.	0.06214	-0.04555	0.02295	0.02300	0.01145
A&W restaurant	-	-0.00729	0.00004	-0.02231	0.01586
Sum of Cumulative Abnormal Return	-0.01573	-0.06915	-0.02702	-0.11170	0.01501
Mean of Cumulative Abnormal Return	-0.00262	-0.00988	-0.00338	-0.01396	0.001876

From Table 4.1, it is obvious that three companies include McDonald's Co., Yum! Brands Inc., and Tim Hortons Inc. suffer a negative cumulative abnormal returns in 2013, which are -0.00429, -0.06189 and -0.02569 respectively. Yum! Brands Inc., in particular suffers the most, the reason behind which could be it faces an increasing

amount of costs as it consistently expands its global market scale. The negative numbers imply that with an increasing frequency of new-product introduction, the costs incurred outweigh its positive impact on the share prices for the three companies. On the other hand, other fast food companies enjoy positive cumulative abnormal returns in year, with Chipotle Mexican Grill Inc. having the most cumulative abnormal return at 0.04723, followed by A&W restaurant with 0.01586. These positive numbers suggest that during the past five years, values of companies such as Chipotle Mexican Grill Inc. and A&W restaurant respond positively to the announcements of discovery of new food items, accompanied by the increase of stock prices in the market.

The sum of eight companies cumulative abnormal returns reflect that 2013 witnesses a positive cumulative abnormal return of 0.01501 in the fast food industry, while the market responds negatively to these announcements in 2009-2012. Through Formula 3.5, we obtain the means of cumulative abnormal returns for fast food industry over the past five years. During this period, only in 2013, we record a positive cumulative average abnormal return, implying a value-enhancement effect from the announcements of new items.

4.2 Results of Significance of Abnormal Returns

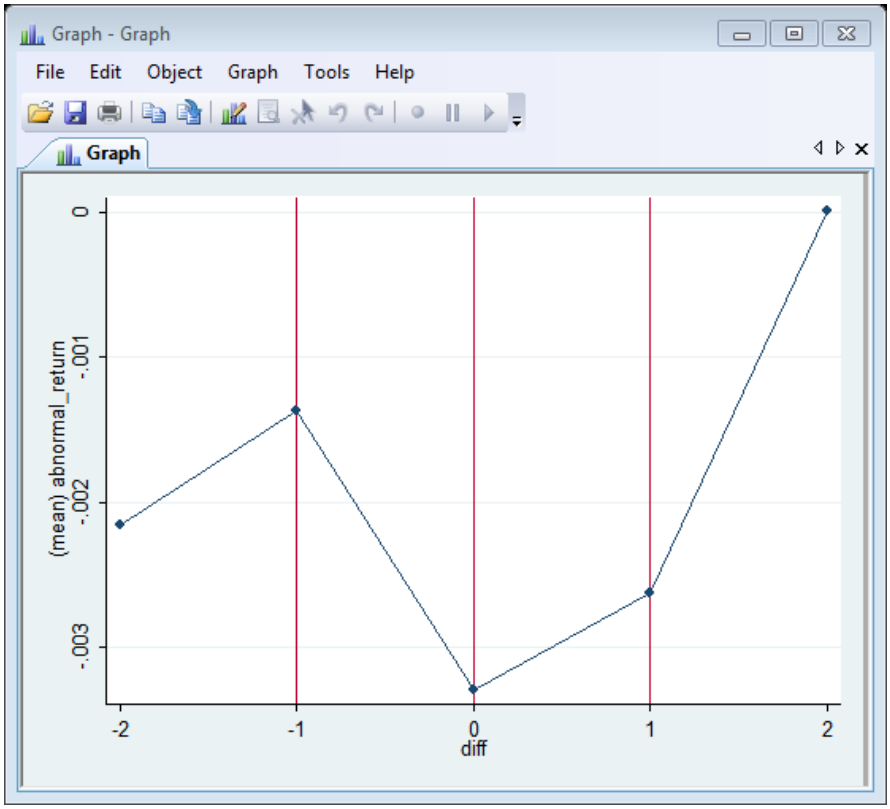
Through a T test by Stata Software, we gain Figure 4.3, which is used to measure the significance of the abnormal returns. It is apparent that the p value is 0.014, which is smaller than the significant level of 0.05. This implies that the announcements of discovery of new products play a significantly crucial role in the generation of excess returns for these fast food companies.

Figure 4.3 T- test results

```
. do "C:\Users\CHLOEJ~1\AppData\Local\Temp\STD01000000.tmp"

. sort id date

. by id: egen ar_sd = sd(abnormal_return)

. gen test =(1/3)*(cumulative_abnormal_return/ar_sd)

.
. reg cumulative_abnormal_return if dif==0, robust

Linear regression                               Number of obs =      94
                                                F(  0,    93) =    0.00
                                                Prob > F      =       .
                                                R-squared     =  0.0000
                                                Root MSE      =   .0364

------------------------------------------------------------------------------
             |               Robust
cumulative~n |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
       _cons |  -.0094301   .0037542    -2.51   0.014    -.0168851   -.0019751
------------------------------------------------------------------------------
```

In addition, Figure 4.4 describes the daily performance of average abnormal returns during the event window (Day-2 through Day+2). It can be easily noticed that the average excess returns for the eight companies have been below zero during the five days. The announcement date suffers the worst excess returns around -0.0035, after which the excess return grows generally to around -0.0028 on Day+1. Then, it increases significantly to a peak on Day+2, implying that there may be more abnormal returns in the following period. The possible reason is that in reality, market takes some time to react to the announcement event, and consequently the impact of these announcements cannot immediately be observed from the stock performance in the market.

Figure 4.4 Graph of average abnormal returns



Chapter 5: Conclusion and Recommendations

This study investigates the impact of announcements of discovery of new products on share prices for fast food companies in the Canada and U.S. market. As the introduction of new food items becomes increasingly frequent, it is crucial to find out whether such act of promotion can bring up positive abnormal returns for those companies. It is assumed that in this study the asset prices in the stock market can immediately and completely reflect the product announcements with rational market reaction. In addition, we assume the changes of stock prices are merely determined by the announcement event in the study process. Also, each announcement event of a firm is expected to be independent from that of other firms.

The data used in this study is from yahoofinance website, where we can track the daily stock prices of each firm during a particular period and the market index in the fast food industry. Based on these data, we can easily compute the cumulative abnormal returns for those companies over the past five years, thereby measuring the impact of announcement of new product on stock prices of sample firms. The results mentioned in Chapter 4 suggest that for most fast food companies, the introduction of new products can generate positive excess returns and cumulative abnormal returns, thereby enhancing the value of those companies. For these companies, it is suggested that they should create more new products to raise the value of firms by generating more cumulative excess returns. On the other hand, for some big companies such as Yum! Brands inc., Tim Hortons Inc. and McDonald's Co., the frequent launching of new products may bring up negative cumulative abnormal returns. Therefore, those companies are suggested to introduce new food items less frequently and to commit to reducing

unnecessary costs in the production and promotion process. At last, the significance test of abnormal returns in Chapter 4 confirms the significantly crucial role of announcements of new products on the share prices in this industry. Nevertheless, deeper analysis and researches on the influence of new-item announcements on stock prices should be conducted in the short future.

References

Avermaete, T., J. Viaene, E. J. Morgan and N. Crawford, 2003. Determinants of innovation in small food firms. *European Journal of Innovation Management*, Vol. 6, pp. 9-16.

Barber, B. M. and Lyon, J. D. (1996). Detecting abnormal operating performance: The empirical power and specification of test statistics. *Journal of Financial Economics*, Vol. 41, pp. 360-390.

Benkraiem, R., Louhichi, W. and Marques, P. (2009). Market reaction to sporting results. *Management Decision*, Vol. 47, pp. 101-110.

Bruner, R. F. (1999). An analysis of value destruction and recovery in the alliance and proposed merger of Volvo and Renault. *Journal of Financial Economics*, Vol. 51, pp. 125-166.

Chaney, P. K., Devinney, T. M. and Winer, R. S. (1992). New Product Innovation and Stock Price Performance. *Journal of Business Finance and Accounting*, pp. 680-696.

Dos Santos, B. L., Peffers, K., and Mauer, D. C. (1993). The Impact of Information Technology Investment Announcements on the Market Value of the Firm. *The Institute of Management Science*, Vol. 3, pp. 2-30.

Engle, R. F. (1993). Measuring and Testing the Impact of News on Volatility. *Journal of Finance*, Vol. 48, pp. 1750-1781.

Fama, E. F. (1976), "Random Walks in Stock Market Prices," *Financial Analysts Journal*, Vol. 20, pp. 50-61.

Fama, E. F., Fisher, L., Jensen, M., and Roll, R. (1969). The adjustment of stock price to new information. *International Economic Review*, Vol. 10, pp. 2-12.

Gregory, A. (1997). An Examination of the Long Run Performance of UK Acquiring Firms. *Journal of Business Finance & Accounting*, Vol. 24, pp. 980-997.

Hertzel, M., Lemmon, M., Linck, J. S. and Rees, L. (2002). Long-Run Performance following Private Placements of Equity. *Journal of Finance*, Vol. 57, pp. 2590-2620.

Koku, P. S., Jagpal, H. S., and Viswanath, P. V. (1997). The Effect of New Product Announcements and Preannouncements on Stock Price. *Market Focused Management*, Vol.2, pp. 180-202.

Lee, H., Smith, K. G., Grimm, C. M. and Schomburg, A. (2000). Timing, Order and Durability of New Product Advantages with Imitation. *Strategic Management Journal*, Vol.2 pp. 23-30

Mahmood, S., Sheikh, M. F.and Ghaffari, A. (2011). "Dividend Announcements and Stock Returns: An event study on Karachi stock exchange", *Interdisciplinary Journal of Contemporary Research in Business*, Vol.56.

Poole, M. S. and van de Ven, A. H. (1989) Using paradox to build management and organization theories. *Academy of management review*, Vol. 14, pp. 562-578.

Schweitzer, R. (1989, July/August). How Do Stock Returns React to Special Events? *Business Review*, Federal Reserve Bank of Philadelphia, pp.15-30.

Sood, A. and Tellis, G. J.(2009). Do Innovations Really Pay Off? Total Stock Market Returns to Innovation. *Marketing Science*, Vol. 28, No.3, pp. 440-450.

Steiner, M. and Heinke,V. G. (2001). Event study concerning international bond price effects of credit rating actions. *International Journal of Finance & Economics*, Vol. 6, pp. 140-153.

Tellis, Gerard J and Johnson, Joseph (2007). "The Value of Quality: Stock Market Returns to Published Quality Reviews," *Marketing Science*, Vol. 26, pp. 740-757.

Thitima, S. (2009). Understanding the Event Study. Retrieved from: http://www.jba.tbs.tu.ac.th/files/Jba130/Article/JBA130Thitima.pdf.

Weber, J., Willenborg, M. and Zhang, J. (2008). Does Auditor Reputation Matter? The

Case of KPMG Germany and ComROAD AG. *Journal of Accounting Research*, Vol. 46, pp. 945-980.

Woolridge, R. and Snow, C. (1990). Stock market reaction to strategic investment decision. *Strategic Management Journal*, September, pp.350-364.

Yahoo. (2013). AW-UN.TO Historical Prices. Retrieved August, 2013, from Yahoo Finance: http://finance.yahoo.com/q/hp?s=AW-UN.TO+Historical+Prices

Yahoo. (2013). CMG Historical Prices. Retrieved August, 2013, from Yahoo Finance: http://finance.yahoo.com/q/hp?s=CMG+Historical+Prices

Yahoo. (2013). JACK Historical Prices. Retrieved August, 2013, from Yahoo Finance: http://finance.yahoo.com/q/hp?s=JACK+Historical+Prices

Yahoo. (2013). MCD Historical Prices. Retrieved August, 2013, from Yahoo Finance: http://finance.yahoo.com/q/hp?s=MCD+Historical+Prices

Yahoo. (2013). SBUX Historical Prices. Retrieved August, 2013, from Yahoo Finance: http://finance.yahoo.com/q/hp?s=SBUX+Historical+Prices

Yahoo. (2013). THI.TO Historical Prices. Retrieved August, 2013, from Yahoo Finance: http://finance.yahoo.com/q/hp?s=THI.TO+Historical+Prices

Yahoo. (2013). WEN Historical Prices. Retrieved August, 2013, from Yahoo Finance:

http://finance.yahoo.com/q/hp?s=WEN+Historical+Prices

Yahoo. (2013). YUM Historical Prices. Retrieved August, 2013, from Yahoo Finance: http://finance.yahoo.com/q/hp?s=YUM+Historical+Prices

Yermack, D. (1997). Good Timing: CEO Stock Option Awards and Company News Announcements. *Journal of Finance*, Vol. 52, pp. 452-478.

Zantout, Z. and Chaganti, R. (1996). New Product Introductions, Shareholders' Wealth, and First-mover Advantages. *Financial and Strategic Decisions*, Vol. 9, No.3.

Appendix A: Announcement List of Sample Firms

Announcement		
Company Name	Date	Year
Jack in the Box Inc.	March 30, 2009	2009
Jack in the Box Inc.	April 27, 2009	2009
Jack in the Box Inc.	June 8, 2009	2009
Jack in the Box Inc.	August 3, 2009	2009
Jack in the Box Inc.	December 28, 2009	2009
Jack in the Box Inc.	March 8, 2010	2010
Jack in the Box Inc.	April 12, 2010	2010
Jack in the Box Inc.	June 28, 2010	2010
Jack in the Box Inc.	February 3, 2011	2011
Jack in the Box Inc.	April 21, 2011	2011
Jack in the Box Inc.	June 9, 2011	2011
Jack in the Box Inc.	August 1, 2011	2011
Jack in the Box Inc.	September 30, 2011	2011
Jack in the Box Inc.	October 6, 2011	2011
Jack in the Box Inc.	February 8, 2012	2012
Jack in the Box Inc.	April 19, 2012	2012
Jack in the Box Inc.	April 23, 2012	2012
Jack in the Box Inc.	May 10, 2012	2012
Jack in the Box Inc.	July 19, 2012	2012
Jack in the Box Inc.	July 23, 2012	2012
Jack in the Box Inc.	September 27, 2012	2012
Jack in the Box Inc.	October 1, 2012	2012
Jack in the Box Inc.	October 22, 2012	2012
Jack in the Box Inc.	November 29, 2012	2012
Jack in the Box Inc.	April 15, 2013	2013
Jack in the Box Inc.	April 17, 2013	2013
Jack in the Box Inc.	June 12, 2013	2013
Jack in the Box Inc.	July 30, 2013	2013
Yum! Brands Inc.	April 14, 2009	2009
Yum! Brands Inc.	December 29, 2009	2009
Yum! Brands Inc.	January 6, 2010	2010
Yum! Brands Inc.	July 15, 2010	2010
Yum! Brands Inc.	August 2, 2010	2010
Yum! Brands Inc.	November 7, 2010	2010
Yum! Brands Inc.	June 28, 2011	2011
Yum! Brands Inc.	October 18, 2011	2011
Yum! Brands Inc.	January 10, 2012	2012
Yum! Brands Inc.	June 6, 2012	2012
Yum! Brands Inc.	July 9, 2012	2012
Yum! Brands Inc.	August 31, 2012	2012

Yum! Brands Inc.	October 15, 2012	2012
Yum! Brands Inc.	April 5, 2013	2013
Tim Hortons Inc.	January 25, 2010	2010
Tim Hortons Inc.	October 25, 2010	2010
Tim Hortons Inc.	November 2, 2011	2011
Tim Hortons Inc.	March 20, 2012	2012
Tim Hortons Inc.	July 23, 2012	2012
Tim Hortons Inc.	October 2, 2012	2012
Tim Hortons Inc.	March 18, 2013	2013
Tim Hortons Inc.	July 10, 2013	2013
Wendy's Co.	July 2, 2009	2009
Wendy's Co.	September 16, 2010	2010
Wendy's Co.	October 27, 2010	2010
Wendy's Co.	November 9, 2010	2010
Wendy's Co.	February 24, 2011	2011
Wendy's Co.	March 8, 2011	2011
Wendy's Co.	June 30, 2011	2011
Wendy's Co.	January 30, 2012	2012
Wendy's Co.	March 13, 2012	2012
Wendy's Co.	June 12, 2012	2012
Wendy's Co.	January 3, 2013	2013
Wendy's Co.	May 1, 2013	2013
Wendy's Co.	July 9, 2013	2013
McDonald's Co.	April 23, 2009	2009
McDonald's Co.	May 13, 2010	2010
McDonald's Co.	July 26, 2011	2011
McDonald's Co.	March 5, 2012	2012
McDonald's Co.	September 12, 2012	2012
McDonald's Co.	January 24, 2013	2013
McDonald's Co.	March 21, 2013	2013
McDonald's Co.	May 20, 2013	2013
Chipotle Mexican Grill Inc.	April 6, 2011	2011
Chipotle Mexican Grill Inc.	August 25, 2011	2011
Chipotle Mexican Grill Inc.	March 26, 2012	2012
Chipotle Mexican Grill Inc.	January 15, 2013	2013
Chipotle Mexican Grill Inc.	April 22, 2013	2013
Starbucks Co.	June 3, 2009	2009
Starbucks Co.	May 4, 2010	2010
Starbucks Co.	July 26, 2011	2011
Starbucks Co.	March 19, 2012	2012

Starbucks Co.	June 18, 2013	2013
A&W restaurant	April 16, 2010	2010
A&W restaurant	June 1, 2010	2010
A&W restaurant	July 8, 2010	2010
A&W restaurant	August 25, 2010	2010
A&W restaurant	September 23, 2010	2010
A&W restaurant	December 6, 2010	2010
A&W restaurant	March 9, 2011	2011
A&W restaurant	May 3, 2011	2011
A&W restaurant	May 10, 2011	2011
A&W restaurant	June 27, 2011	2011
A&W restaurant	July 17, 2012	2012
A&W restaurant	July 23, 2012	2012
A&W restaurant	July 31, 2012	2012
A&W restaurant	June 24, 2013	2013