

Does the acquisition increase shareholder wealth?: Evidence  
from the case of BJC acquiring BigC, in Thailand

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การซื้อกิจการเพิ่มมูลค่าให้ผู้ถือหุ้นหรือไม่: กรณีศึกษา BJC ซื้อกิจการ Big C ในประเทศไทย



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Thailand  
By                                      Miss Saraphan Choowattanapakorn  
Field of Study                      Business and Managerial Economics  
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ลายมือชื่อนิติ .....  
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The study aims to investigate whether BJC taking over BigC transactions creates any wealth to shareholders in the short run and long run reflecting in two measures, stock measures and accounting measures. The stock returns are evaluated by using an event study approach to answer three questions in the short time. The first question is the length of time the market absorbs information reflects in the movement of stock price trading surroundings the event date. The finding suggests that there is the possibility of rumors spreading before the announced date for CPALL, Big C and Makro. Secondly, for the short-term shareholders gain for the bidder and the target, CPALL transaction illustrates the negative returns for the target in every window period while the bidder enjoys the abnormal returns in 3 different window periods. In the BJC case, the implication is that both sides of the investors have a positive outlook on the deal. In contrast, Makro investors view the deal as distorting value merger with the cumulative negative returns in every window period. The third examination suggests that diversifying is preferred by the investors on both sides.

On the other hand, the accounting approach can confirm a profitability strategy in M&A. It can also examine the improvement in performance. The transaction of BJC causes the decline in performance less than the CPALL case. This may be caused by the higher premium CPALL giving to the target. Moreover, diversification seems to be the better strategy. Finally, margin ratios disclose the consequence from BJC modern trade segment that, on average, are less than the prior EBT margins of BigC. However, the CPALL case reveals the decline in profitability of the bidder but the increase for the target. The decrease in the profitability ratios of bidders can be due to the accounting effect that leads to the increase in assets and the higher burdens of debt used to finance the transactions.

Field of Study:	Business and Managerial Economics	Student's Signature .....
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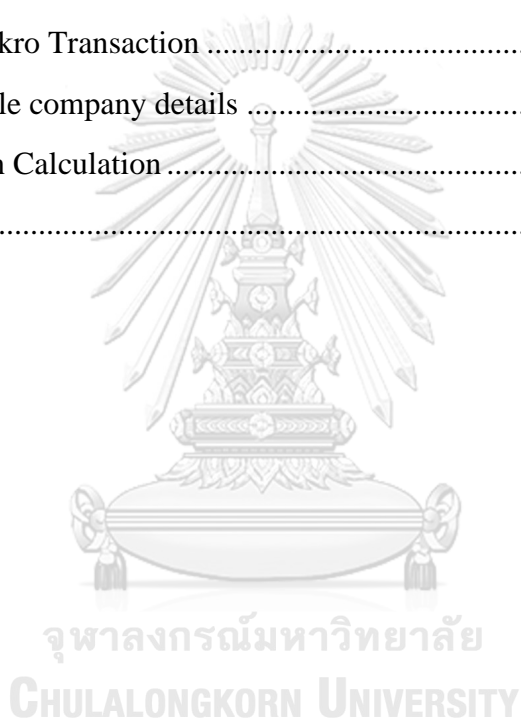
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## TABLE OF CONTENTS

	<b>Page</b>
ABSTRACT (THAI) .....	iii
ABSTRACT (ENGLISH).....	iv
ACKNOWLEDGEMENTS.....	v
TABLE OF CONTENTS.....	vi
LIST OF FIGURES .....	viii
Executive Summary .....	1
1. Introduction.....	4
1.1 Company background.....	4
1.2 significant of the problem.....	6
1.3 Research questions.....	7
1.4 Research objectives .....	7
1.5 Scopes of Study .....	8
1.6 Possible benefits .....	9
2. Theoretical Foundation.....	10
3. Methodologies.....	13
3.1 Hypothesis .....	13
3.2 Stock returns Sample .....	13
3.3 Accounting measures Sample.....	14
4. BJC M&A Story and Opinions from Financial Advisors.....	16
5. Competitors in the industry.....	18
6. Key Financial Performance.....	19
7. Result from Event study - BJC acquired BigC .....	26
8. Result from Event study - CPALL acquired Makro .....	28
9. Results from accounting measures -BJC acquired BigC.....	30
10. Results from accounting measures - CPALL acquired Makro .....	31

11. Conclusion .....	32
12. Recommendations.....	34
REFERENCES .....	36
13. Literatures Sources.....	37
14. Information Sources.....	39
15. Appendixes .....	42
BJC acquire BigC .....	42
Details of Accounting Measures BigC & BJC .....	43
CPALL and Makro Transaction .....	44
Other comparable company details .....	48
Abnormal return Calculation.....	50
VITA.....	73





## LIST OF FIGURES

	<b>Page</b>
Figure 1: Key Segmental Ratios of BJC .....	17
Figure 2: Profit Margin Ratios of Industry & BigC.....	20
Figure 3: Assets Turnover Ratios Industry & BigC.....	21
Figure 4: Profitability Ratios of Industry & BigC .....	22
Figure 5: Working Capital management ratios of the industry & BigC.....	23
Figure 6: Long Term Solvency Ratios of Industry & BigC.....	24
Figure 7: BJC Key Income Statements .....	24
Figure 8: BJC Key Balance Sheet Ratios .....	25
Figure 9: Abnormal return prior event date– BJC & BigC deal.....	27
Figure 10: Cumulative Abnormal Return – BJC & BigC deal .....	27
Figure 11: Abnormal Return before event date-CPALL & Makro deal.....	28
Figure 12:Cumulative Abnormal Return - CPALL & Makro deal.....	29
Figure 13: EBT/Assets - BJC & Big C deal .....	30
Figure 14: EBT Margin - BJC & BigC deal .....	30
Figure 15: EBT/ Assets - CPALL & Makro Deal.....	32
Figure 16: EBT Margin - CPALL & Makro Deal .....	32

## Executive Summary

Berli Jucker PCL. (BJC) is a listed company in Stock Exchanges of Thailand (SET), belonging to the service industry. BJC has a strong culture to drive growth from inorganic strategy. The firm has undergone many merger and acquisition deals since the company was founded. BJC has diverse business units ranging from upstream to downstream categorized into four main units. The first one is packaging supply chain which glass containers are the majority. Consumer supply chain is the second group that covers household products and snacks. The third category is health care and technology. The last camp is modern trade under the brand name of Big C that was acquired in 2016. This deal is rewarded as “Best Thailand Deal” from FinancialAsia – achievement awards. It was the best move of the company from suppliers to sellers to customers.

This study is important due to two main reasons. Firstly, the difference in business and market environments between developing and developed countries creates the distinguishable motives and results in acquisitions. Thus, the study of a Thai company can contribute to the M&A literatures in emerging markets. Secondly, the company has to sacrifice the time of management to consider the appropriateness in bidding transactions, despite many advantages from engaging in M&A, ranging from utilizing the current managing systems to accounting and taxes benefits, involving in acquisition considerations. Moreover, there is one-time cost of hiring independent consultants to give professional opinions on valuations and suitability in engaging the deal. Therefore, this inorganic expansion costs monetary expense and opportunity costs.

During the period of 2013-2016, there were two dominant deals in the retail industry. The first one is the acquisition of Makro by CPALL in 2013. The latter one is the acquisition of BigC by BJC in 2016. Both deals impact the competitiveness in the industry due to their considerable size. This paper focuses on the impacts from BJC and BigC deals while using the deal of CPALL acquiring Makro as the comparison transaction. The study aims to investigate whether BJC takeover BigC transaction creates wealth to shareholders in the short run and long run reflecting in two measures, stock measures and accounting measures. The stock returns are evaluated by using an event study approach to answer three questions in the short time. The first question is the length of time the market absorbs information reflects in the movement of stock price trading surroundings the event date. CPALL investors as the bidder roles received information two days prior to the announcement date while in the BJC case, BigC investors as the target roles react one day before the announcement date. The result from the BJC deal also shows that the majority of investors reacted on the announcement on the event date with the significant abnormal returns of 8.95% for the target and slightly higher for the acquirer at 10.30%, while the results from Makro deal suggest that there are no gains from any party on the event date. The bidder shareholders receive marginally positive abnormal returns two days prior the event date, while Makro has the negative abnormal returns of 5.43% on the day before the event date. Three cases suggest the possibility of rumors before the announcement date for CPALL, Big C and Makro.

In addition, the short-term shareholders gain for the bidder and the target is the second inquiry. The result from the acquisition of BigC reveals that the target has positive returns in two window period, 7 days[-3,+3] and 11 days[-5,+5], but the acquirer results in the positive abnormal returns only in the 7 days [-3,+3] period before recover in the 23 days period[-11,+11]. However, the gain in the 7 days period of acquirer is higher than the target at 5.93% and 4.74%. The result from the CPALL transaction illustrates the negative returns for the target in every window period while the bidder enjoys the abnormal returns in 3 different window periods, [-3,+3], [-5,+5], and [-11,+11]. This result is similar to Jensen and Ruback, 1983 that target shareholders receive premium. According to Bashir et. Al, 2011, it supports the results that acquirers gain in both 7 days and 11 days event window period while the target experience losses in both windows. The results are comparable to the CPALL case, but the BJC consequence shows only the shorter window gains. The outcomes from target perspective is only similar for the case of Makro but different in the case of BigC that has positive gains in both window periods. These phenomena reflect the investors point of view towards the deal synergies comparing to the price. In the BJC case, the implication is that both sides of the investors have positive outlook on the deal. In contrast, Makro investors view the deal as distorting value merger with the cumulative negative returns in every window period.

The third examination is on the preference expanding strategy whether diversifying or concentrating is a better strategy from investor reactions. According to Cummins and Weiss, 2004, diversified mergers have superior value for acquirers while concentration creates gains for the target. Potential benefits of diversification are related to tax and debt capacity. For example, diversified firms can utilize tax saving by offsetting losses in some business units against gains in others. Comparing between CPALL case, which is the concentrating deal, and BJC case, which is the diversifying expansion, BJC case results in the higher cumulative returns in the 7 days and 11 days window period than CPALL case. Both window periods are good measures for the short-term prospect from investors. Therefore, diversifying is preferred by the investors on both target and acquirer.

On the other hand, accounting measures are used to assess the long-term performance to analyze three aspects from M&A impacts. The accounting approach can confirm a profitability strategy in M&A and examine the improvement in performance comparing to the premium paid recorded in the increase in assets by proving from the fact of historical performance of EBT over assets. The transaction of BJC causes the decline in performance less than the CPALL case. The EBT over assets ratios of BJC modern trade segment remain close to the average of Big C performance which is the pre-acquisition performance. However, CPALL performance has dropped significantly after the takeovers. This may be caused by the higher premium CPALL gives to the target but the plans to create earnings offsetting the premium are not as expected, resulting in the possibility of goodwill impairment. It implies that the bidder overvalues the target. Hence, diversification seems to be the better strategy. This result is different from the findings of Berger and Ofek, 1995 that acquisitions in similar businesses increase value, but diversification strategies enervate the firm profitability due to overinvestment behaviors.

The final investigation examines the synergies from the M&A deals revealing in margin ratios. The consequence from BJC modern trade segment is, on average, less

than the prior EBT margins of BigC. However, the CPALL case reveals an interesting result that while the bidder profitability decreases, the target profitability increases. It may be due to the industry factors as the results of BigC in the same period also increase. The decrease in the profitability ratios of bidders can be due to the accounting effect that leads to the increase in assets and the higher burdens of debt used to finance the transactions.

There are five recommendations regarding this paper. The first one is a limitation that this study focuses on only one transaction. It cannot be inferred to the overall Thai market. The second one is the period of study long-term impacts should be extended to capture the possibility that the company realizes the synergies later than three years. Thirdly, stock prices may be affected by other factors so further investigation should be conducted. Fourthly, the regulators should pay attention on asymmetric information among investors. Finally, the regulations in Thailand are in the developing stages. The disclosure of information and guidelines are limited.



## 1. Introduction

### 1.1 Company background

Berli Jucker Public Company Limited (BJC) was founded as a partnership by foreigners over a century ago. The company originally started its operation in various industries, including rice milling, mining, timber, shipping, and others. The founder initially engaged in the importing business in Thailand. In 1974, the company changed the business ownership type into the listed company being one of the first seven companies that are born with the exchanges system in Thailand. Currently, BJC aims to be a provider of integrated supply chain solutions in the region, providing top quality products and services that are involved in everyday life of people. To achieve this vision, the firm plans to build and extend a cost-effective distribution network, to be a preferred partner of choices to all clients, and to receive an admirable return on investment. BJC's credit rating is A+ with a negative outlook from the Tris rating institution, showing strong financial health of the company.

There are significant milestones leading it to be an integrated firm covering upstream to downstream of the supply chain. In 2001, Thai Charoen Corporation Group (TCC Group), one of the largest conglomerates in Thailand, acquired BJC as the only major shareholder with a portion of 83.5%. As of 2 December 2020, the major shareholder is the TCC company holding 72.13%. In 2008, the company entered the acquisition of JC Foods SDN BHD corporation, a potato chip and snack producer in Malaysia. Two years later, BJC acquired Thai Malaya Glass company, a glass packaging producer, becoming the largest producer in the Southeast Asia region. After then for one year, the company first moved into retail business by purchasing the bookstore business, Asian Book company, a leading book importer and distributor in this region. In 2016 and 2017, BJC expanded its retail portfolio by acquiring BigC Supercenter company, a modern trade operator in Thailand.

From above mentioned considerable timelines, BJC experienced abundant mergers and acquisitions deals (M&A) within Thailand and overseas, mainly in the region, to become a cross-industrial company. The businesses that BJC involves can be grouped into five different types. Introducing from upstream to downstream, the first business is packaging which includes glass, aluminum, and plastic packages. The production of food and household products are categorized in the consumer product group, the second group of BJC's business. The third business is distributing healthcare and Technical products that account for only 5.6% of the total revenues in 2019. The modern trade business under the brand of BigC is the fourth business type of BJC. There is around 1% of the revenues in 2019 that is categorized in the other type of business gathering the different retail businesses other than BigC in this last group.

Packaging business has around 13% portion in BJC's revenues 2019, dominating as the second-largest source of income. The competitors are a few, but the competition is high. BJC's glass sector with the market share of 37% in 2019 is the largest producer through inorganic growth from the acquisition in 2010 and organic growth with over THB 2,000 million investment in 2016. The utilization rate of glass

factories is over 70%, leading the company to be competitive in terms of production cost. This industry required high investment and constant backlog to be efficient in the production lines. BJC's main customers include both external and related parties which help stabilize the incomes in this business unit. Major raw materials in the packaging business are over 90% from a domestic source.

Consumer Product production is the third largest income source of BJC. This segment can be divided into food, non-food products, logistic service, and Vietnam operation. For the food sector, it can be categorized into snacks, drinks, fruits in containers, and dairy products. According to Nielsen in 2019, there are three major players in the snacks sector that account for 47.6% of the overall industry shares. BJC is the second in the list with the market share of 10% under the primary brand of Tasto, Dozo, etc. The main target customers of this business unit are teenagers and young people. Major sources of raw materials are 80% from domestic with over 50 diverse suppliers. Additionally, non-food products include personal care items, household products, stationery, and distribution service. This segment ranges from Parrot soaps to Double-A xerox paper. BJC is the largest tissue paper producer since 2006 under the brand of Cellox. The competition is very high in this type of business due to the high volume of rivals that offer competitive advertising and promotional campaigns. Thus, the factories are not highly utilized in the packaging sector. Furthermore, BJC owns six warehouses with over 80,000 square meters of the area to operate a logistic service business mainly serving within a group with about 90% proportion. The transportation can be chosen either by not-controlled temperature or controlled temperature carriages.

Healthcare and Technical business unit involves selling medicine that imports from foreign sources and domestically produces in Thailand. This industry is affected by the price announcement of the Ministry of Public Health in Thailand, leading to the decline in price in 2019. BJC aims to expand this business to neighboring countries such as Vietnam, Myanmar, and Cambodia. The domestic target groups are hospitals and clinics. This business segment also covers chemical division for food & cosmetic ingredients and industrial chemicals & refrigerants.

BJC's modern trade business is the largest income source of the company, approximately 71% sales portion and 64% earnings before interest, taxes, depreciation, and amortizations(D&A) (EBITDA) in 2019. The revenues come from the operation of BJC business and rental income. BJC operation is categorized into four different operations. The first one is a grocery store under the brand name of BigC selling food and household products. The other three types are pharmacy, online business, and Business to Business(B2B) business. BigC can be separated into five different groups due to the target customers and the variety of products. To capture the middle to high-income customers, BigC offers BigC extra and BigC food place stores. BigC extra has 15 stores in 2019 concentrating in Bangkok and major cities in the hypermarket offering premium and imported products with cheap price which is the heart of BigC brand. BigC food place with three stores in Bangkok offers ready-to-eat food, organic food, and healthy products. For middle to low-income customers, the company offers BigC Supercenter, BigC market, and mini BigC spreading all over Thailand. 135 stores of BigC Supercenter in Thailand and one in Cambodia introduce the hypermarket that focuses on various products at a cheap price. BigC market is different from other supermarkets in terms of selling electrical products together with food and household

products that are offered in traditional supermarkets. Mini BigC brand can be considered as a community store and convenience store. Over 3,500 suppliers and over 270,000 products selling in BigC make the logistic management consequential as a key success in this business. To deliver products from suppliers to BigC stores, there are two possible ways, sending directly or sending to the distribution centers (DC) of BigC. BigC owns and runs three DCs in Thailand and rents with the managerial service one DC. In addition, BigC introduces the Big Card membership rewards campaign to increase customer loyalty. The number of members increases rapidly to 22 million users.

Modern trade industry in Thailand is foreseen as a potential to grow in the future due to the change in living lifestyle from shopping in local retail stores in the market to the one-stop-shopping supermarket as BigC. However, there are strong competitors in Thailand that the comparable number of stores expanding all over Thailand as much as BigC that has 151 stores. In the hypermarket industry, Tesco Lotus, an England owned company, is the direct rival with 213 stores covering Thailand. An indirect competitor is Siam MAKRO targeting on wholesale customers with 88 stores. Among supermarket players, BigC with 62 stores must compete with Tesco Lotus that has 178 stores and Tops that offers products in 125 different stores. In the small size stores segment, BigC with 1,016 stores also has a strong competitor like 7-11 convenience store operating over 11,000 different locations.

Other businesses under BJC 's umbrella are foreign operations that are not categorized in any aforementioned segments. Book and magazine business offers via 60 own branches and distributes to over 300 other partner stores.

There are some challenges for BJC to manage its risk exposure. Due to the various types of businesses operating by BJC, the company has to ensure the strong human resources management to supply enough manpower that meets the ability requirement to enhance the efficiency and ensure the effectiveness of the operations. The company is unavoidable in the raw materials price fluctuation because of the limited inventory space for each business. The competitiveness in some industries is very immense. However, the modern trade entrance of BJC helps diminish the competition by gaining insight information on customer needs strengthening the exciting businesses in upstream.

## **1.2 significant of the problem**

M&A is initiated from the United States over many decades ago before expanding to other continents. It is introduced to other developed countries where a strong economic environment and potentials facilitate the transactions. In developing countries, M&A just became famous due to the development of the economy and the convergence of the business world. However, the difference in market efficiency between developing and developed countries may be challenging. Thus, it is interesting to study the effects of M&A transactions in Thailand, a developing country. This study is important due to two main reasons. Firstly, the difference in business and market environments between developing and developed countries creates the distinguishable motives and results in acquisitions. Thus, the study of a Thai company can contribute to the M&A literatures in emerging markets. Lastly, despite many advantages from engaging in M&A, ranging from utilizing the current managing

systems to accounting & taxes benefits, involved in acquisition considerations, the company has to sacrifice the time of management to consider the appropriateness in bidding transactions. Moreover, there is one-time costs of hiring independent consultants to give professional opinions on valuations and suitability in engaging the deal. Therefore, this inorganic expansion is costly in monetary expense and opportunity costs. Meaning, M&A may not be the best strategy for expanding a company to increase profitability. The study has implications on whether management should spend their valuable time considering M&A deals or focus on other efficiency improvement projects.

### **1.3 Research questions**

Does the acquisition of BigC by BJC create shareholder wealth or not?

### **1.4 Research objectives**

Objectives aiming to essay the increase in shareholders' wealth can be presented in the following;

1. To study the length of time market responding to M&A announcement
2. To identify if there are any gains from M&A deal of BigC from the perspective of bidder and bidding firms
3. To study whether the diversifying M&A or concentrating M&A will be a better strategy

The first objective regarding the timing that Thai market responds to announcements can be compared to the results from developed countries and other developing countries. This finding implies the anticipation and efficiency of the trading market in Thailand, an emerging country. The second objective is identifying short-term gains and long-term gains from both investors. The short-term gains can be viewed from the stock price reaction measuring by abnormal returns surrounding the announcement date. The gain target shareholders received is mainly premium at the announcement date (Cummins and Weiss2004). This phenomenon is possibly caused by the limited disclosure of the bidder performance during the announcement date. Practically, the company will reveal the potential valuations of bidding firms in order to convince shareholders that the purchase price is reasonable. However, these valuations are calculated only from bidding firm aspects. While the long-term aspect is evaluated from the accounting measures which reveals the actual performance improvement after the acquisitions.

Moreover, it is worth studying whether the diversifying deal or concentrating deal is worth more in the standpoint of investors. The company can imply from the stock returns enclosing the announcement date because market measures reveal the immediate thought of investors. However, stock measures are only the expectation of investors from the announcement information. There is no proof in performance improvement from the transactions. Thus, in the medium term, investors tend to focus on the performance of the merged firm whether the improvement in performance is



high enough to offset the premium the bidder had paid for merging. This premium is usually distributed in properties, plants, equipment, intangible assets, and goodwill<sup>1</sup>.

### 1.5 Scopes of Study

The company objective changes from maximizing shareholders' value to maximizing stakeholder's wealth in order to capture the contribution to society. However, this paper intends to study the effect of M&A transactions to only shareholders who are the owners of the firm. The shareholder usually receives gains through two different measures which are stock price in terms of capital gains or losses and dividend payment from the performance of the company. According to market efficiency theory, the stock price is anticipated to absorb new information from company announcements, rumors, and expectations from investors. Investors with positive outlook on the additional information will purchase the share, but those who foresee the negative future will sell the stock if they are holding one. This property of simultaneously selling and buying of share makes market measures a good indicator for short-term gains or losses for investors. Bashir et. Al, 2011 found that the usage of estimation period less than one year is the good representative of short-term risk. Thus, this paper will use the timeframe of one-year period from M&A announcement for acquirer and acquiring firms. The announcement date, hereafter called the event date [0], is the first date an acquirer announced the transaction to public sources. The event window periods are various in this study to identify the timeframe abnormal returns occurring.

Event study analysis measures the effect of events on stock returns surrounding the event date. The market return data is the closing price of stocks and index from S&P CapitalIQ<sup>2</sup>. The closed price is the one excluding the adjustment of dividend returns to assuage the impact of adjusting method and dividend policy of the company. This method will be used in this study to evaluate gains or losses enclosing announcement date. Schewert, 1981 supported the use of market value as the powerful tool in studying the effect of events from the reflection of new information in stock price. There are arguments between monthly and daily stock returns that accurately capture the impacts. Rau and Vermaelen, 1998 used monthly stock return due to the longer of estimation period and the window period to conduct long-term investigation, while Goergen and Renneboog, 2003 used daily returns in studying the short-term effect of new information. Brown and Warner, 1985 also supports that daily returns have the superior power in capturing the fluctuation of returns than monthly data. This study will be based on daily return of the target and bidder as the measurement of gains or losses during the event periods.

On the other hand, the shareholder's wealth has a tendency towards the firm value. If firm value increases, the shareholders' wealth will also increase. Additionally, the dividend payout to shareholders relies more on the profitability of the firm. The source of dividend payout comes from the net profit of the firm, a measure after

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<sup>1</sup> Purchase method the company can appraise new valuation of assets in PPE. They can also book any valuable premium in intangible assets. The premium that cannot be defined obviously will be booked under goodwill account. According to Thai standard, the company need to test impairment for goodwill account, but they are not required to impair it annually as same as the tangible and intangible assets.

<sup>2</sup> The gathering information platform is similar to Bloomberg Terminal.

payment to debtors. It can be either payout as dividend payment or accumulate as an internal source of funds under the equity portion. Therefore, accounting measures are used to identify gains or losses from post-merger performance improvement. There are various types of measures ranging from numerous cash flow ratios to different earnings ratios. However, Healy et. Al.1991 argues the preference usage of cash flow measure over accrual measures as it mitigates the impact of financing of the acquisition and the method of accounting for the transaction. Sharma and Ho, 2002 found the pattern that earning based measures show losses while cash flow-based returns have positive results. They added that the possible reasons are an artefact of measurement of operating performance due to the selection of accounting methods. The influential accounting choices related to M&A transactions are write-off or capitalization goodwill, related expenses, and the revaluation of assets.

Even though cash flow measures mitigate the impacts of accounting policy selection by management such as depreciation, amortizations, and policies recording the M&A transaction, BJC does not disclose cash flow information by segment. Whereas the earnings before taxes are disclosed together with segmental assets by operations. It is generally understood that a firm uses assets to create values. So, the company tends to invest to maintain or expand the business each year. By comparing merely the profitability year by year, it will not be able to differentiate gains from operations or the business expansion. Thus, to indicate the post-merger improvement, the ratios of earnings before taxes over assets of the modern trade segment of BJC are used to compare to the pre-merging performance of Big C. The data used for analysis are mainly from annual reports of the company. Timeframes used for accounting measures is three-year prior acquisition of Big C and three-year post-merger performance. Accounting measures also mirror situations of economy and industry specification factors; therefore, industry median is used as the benchmark to compare with performance of the company.

### **1.6 Possible benefits**

Several benefits apparently from this study are presented in the following bullets.

1. The benefits on regulations improvement to efficiency of the market
2. The benefits for management to decide whether they should spend time considering M&A deals or others.
3. The benefits for a company to have evidence supporting whether to invest in concentrating or diversifying business

Firstly, the stock measure will reveal the efficiency of the market reacting to new information whether the public methods conveying messages to investors are effective or there are any rumors releasing in the market before the announcement date. Authorities can modify the regulations to ensure that there is no asymmetric information among investors. Secondly, to enter in M&A transactions is expensive in terms of internal resource usage or hiring external advisors. Internally, management has to devote a significant amount of time to consider the potential target before filtering in due diligence process. M&A transactions commonly take several months from start to finish. Thus, it is time consuming for managers to focus on M&A deals rather than improving existing operation of business. The support from this study will help

managers to identify whether they should sacrifice their valuable time considering M&A projects or they should spend on improving the efficiency of business operations.

Thirdly, assuming from the theory that investors can create a diversified portfolio without any additional costs. However, there are related costs and limitations to construct the diversified portfolio for investors in reality. Moreover, the company wants to diversify the business risk to ensure the smooth earnings announcement, in turn, the increase in stock price. Thus, it is attractive to study the investors' point of view reacting to the M&A announcement whether the investors believe it is a positive strategy or a negative strategy. Diversification expansion by using M&A strategy has both pros and cons. The benefits can be the fleet performance improvement from day one. The risk of trial and error to find the suitable business strategy is relieved because the target company has proved the strategy. If the target is a listed firm, acquirers also have advantages from the ability to analyze public information to determine any strengths and weaknesses where they can improve. Buying the existing company helps the bidder immediately gain a customer base, own well-known products and licenses, and associate with existing suppliers. The disadvantages are the premium and tremendous efforts to successfully close one M&A deal. Thus, the study of performance increase over the premium paid accumulated in assets reveals whether the premium is overpaid, or the deal is acquired at a reasonable price. Moreover, the premium and the reason for M&A deals are regularly the expected synergies. These synergies are reflected in the improvement of profitability post-mergers. Thus, the study of increase in profitability implies whether M&A deals create synergies or not. The company can use this as empirical evidence to determine whether the M&A expansion is the good strategy or not.

This study contributes to the literatures in three following ways. Firstly, this paper will provide empirical evidence on the impact of M&A to shareholders in emerging countries which currently have limited study related to this article. Secondly, market measures with different event window periods provide the timeframe market used to respond to news. It implies the efficiency of Thailand stock market responding to recent information. Lastly, an investigation on the prior operating performance and post-performance provide a potential outlook in the medium term whether the improvement in performance of merged firm is negative or positive from the evidence of a developing country.

## **2. Theoretical Foundation**

Agency problem concept in corporate finance explains a conflict of interest when one party acts on the interest of another party. Agents are expected to make decisions for the best interests of principals. However, incentives of agents measured by short term performance may lead agents to act adversely. The structure of organizations, regulations, and incentive designation can reduce the agency issues. This problem usually relates to the issue between management as agents and stockholders as principals. Bhaumik and Selarka, 2012 used empirical evidence from India to show that the concentration of ownership can reduce manager and owner agency problems, but it may create other forms of conflict such as between majority shareholders and minority

shareholders. Regarding agency issue, managers may have a tendency towards mergers than internal investment projects which may provide better positive returns in the future. It is because performance improvement after merger is more distinct with the shorter period of time in line with the compensation schemes of most firms.

Based on finance theory, value of assets is the present value of the expected cash flow the firm has potential to generate. Moreover, finance theory is based on many assumptions. The first one is the diversification of investors. Investors are assumed to have an ability to construct a diversified portfolio without transaction costs. Thus, two separate firms generate the same returns as one merged firm. It implies that merger is not necessary to generate a positive return. Secondly, it is assumed that trading on the stock market has no friction costs, agency costs, and information asymmetry. However, costs and asymmetric information between investors exist in the market causing mergers to potentially generate superior returns.

Discarding the consideration of unsystematic risk, CAPM model describes the relationship of expected return of stocks and systematic risk measured by beta. Beta is measured by the volatility of the stock price related to the market movements. The fundamental concept is about the additional returns to compensate the additional risks investors confront. The goal of CAPM model is to assess the proper valuation of stock when comparing risks and time value of money with expected return risk adjusted. This modern finance theory is based on two important assumptions. Firstly, stock markets are efficient, meaning relevant information is quickly and commonly known to all investors disregarding the size of their ownership. Secondly, it assumes that investors are risk-averse who are rational in maximizing return and minimizing risk as much as they can. However, we are unable to identify the inefficiencies of the market leading to M&A transactions. It is possible that the bidders hold superior information and attempt to take advantage of the undervalue situation of the targets by entering M&A transactions. Apart from these assumptions, CAPM model is widely used to compare between time series and across companies.

According to accounting standards, there are two possible methods to consolidate financial statements from M&A transactions depending on management decisions. Firstly, the pooling interests consolidate the assets of targets using book value. The difference of book value and payment is realized under the equity section. Secondly, the purchase accounting method allows bidding firms to revalue the tangible and intangible assets of the target before booking and the difference is realized under goodwill accounts when premium is paid. The impact of these accounting methods can be seen in profitability of the following years. Purchase accounting method will disclose lower in profitability than pooling approach due to the depreciations and amortizations from appraisal of assets. Thus, assets to profit ratios will be lower than the pooling method due to both numerators and denominators difference.

According to the announcement of Thailand Federation of Accounting Professions (TFAC), transactions after 1<sup>st</sup> January 2008 are booked by using solely a purchase method. The announcement annulled the use of the pooling method in Thailand. Meaning, the company adhering to Thai accounting standards has only one choice of booking the M&A transactions. Purchase approach is based on fair value appraisal of the target which reflects the true value of assets acquirer paid and expected

premium. Acquirer starts from revaluing tangible assets before pricing the intangible assets that bidders believe it exist. The leftover premium from the transaction is gathered under a goodwill account. This mandatory creates the more comparative level with peers in the industry.

A market efficiency theory is related to the market that seizes anticipated operating performance in share price during any announcement date period. Cleary and Atkinson, 2018 defined an efficient market as the one which asset prices reflect new information quickly and reasonably. Thus, an efficient market is a market that reflects both past and present information.

In management theory, there are two major drivers for M&A transactions. The first one is the benefits from synergies which are the salient motive for firms to take decisions on M&A strategy over the internal expansion. Synergies can be classified into two main groups, the operating synergies and informational synergies (Goergen and Renneboog, 2003). Operating synergies can be categorized in either economies of scales or economies of scope benefits. Economies of scales occur from efficiencies from size after combinations e.g. a higher debt capacity (Lewellen, 1971). In contrast, economies of scope relate to the cost saving from production management, for example knowledge sharing for more than one product between merged firms (Teece, 1980). The informational synergies involve the higher in consolidated value of assets than the stock market attributes to the assets. The second driver is the gain from displacing inefficient managers. Finally, it is possible that acquiring firms see potential opportunities in disabusing inefficient management. By merging companies, the bidding firms have the right to replace management teams and recover the poor performance. Synergies and displacing managers commonly imply the improvement in profitability.

Trade Competition Act B.E. 2560 of Thailand became effective on 5 October 2017 after using the old version for more than 18 years. The former act has been viewed as non-existent enforcement as no one has been punished from this law before. The main addition from the previous act is the inclusion of State Enterprises, Private Organizations or any government agencies under the law. This regulation aims to control the market dominance that is illegally exercised. The criteria is taken over from the previous act of business operators who have the market share in the recent year-end at least 50 percent or who are the first three business operators having market share in total of at least 75 percent. And both cases have a turnover more than THB 1 billion. The testing is held every three years. Adding from the new law, the intra group company must be included in the calculation. The dominance operator is prohibited from unfairly fixing prices, imposing unfair conditions on trading partners, unreasonably reducing service provision, purchase, and intervening others business without good reasons.

## 3. Methodologies

### 3.1 Hypothesis

Two measurements play different roles in identifying the impact of M&A events. Stock returns measure short term impacts by evaluating the absorbance of market expectations in stock price. Both shareholders can instantly gain or lose by selling stock encompassing the event date. While accounting model measures impacts on performance of the company after merging by using historically financial data. Thus, it is the medium to long term measurement abiding for the company to show obvious improvement in their profitability. This paper supposes three hypotheses. The first two are from the stock returns perspective that M&A creates positive abnormal return surroundings the event date for target shareholders and acquirer shareholders. The last one is the accounting returns aspect of BJC's post-merger which profitable performance increases in three years after the transaction year.

### 3.2 Stock returns Sample

In order to test the hypothesis of short-term effect, this paper intends to evaluate the abnormal stock returns surroundings the event date. An abnormal return is the change of an actual stock price comparing with the theoretical return from CAPM model. Several factors need to be identified in CAPM model to calculate the theoretical return. First of all, three-month treasury bills should be used as the risk-free rate returns in line with short-term measuring effect (Goergen and Renneboog 2003). The data of 3-month treasury bills from Thailand originates from Thai Bond Market Association (ThaiBMA). The yields are relied on the average bids quoted by primary dealers, after 15% data cut-off from top and bottom when ranked by value. Market returns is the second factor that is based on the actual returns of SET Index. The index represents all the movement of listed firms in the Stock Exchanges of Thailand (SET). It is appropriate to be used as a benchmark of the market returns. The third factor is the beta, a measurement of systematic risk of the firm relative to market risk. This risk is evaluated by using Ordinary Least Square (OLS) analysis. The historical time frame using to calculate the risk is different in many studies. Asquith, 1983 used 460 trading days to find systematic risks as beta to evaluate the entire process of M&A value creation which is the long-term story. Nonetheless, the stock price tends to disclose the recent risk of the firm in the short period. Longer period may take long term factors into account making the measures not the good proxy of reaction in short-term measurement. This study uses estimation period of 239 days, [-244, -6] similar to Brown and Warner 1985. In another word, the window period captures the risk from 244 trading days to 6 days before the announcement date.

To identify the gains shareholders received by holding corporate stocks before the event date, cumulative abnormal returns (CAR) is calculated by totaling the abnormal returns before the event date to dates around the event in various window periods. In other words, CAR is the capital gains investor received from selling the stock after the event is announced. Although, there is no theory explaining the

appropriate event window period to seize the abnormal return. Many researchers use the period less than one month before the event and less than two weeks period after the announcement date. Asquith 1983 used 11 days window period [-5, +5] aiming to accumulate CAR five days before the event date and five days after the event date, while Goergen and Renneboog 2003 used 20 days window period [-10, +10] as the event period. This paper evaluates both choices of investors by calculating CAR for the window period of 3-month and 1-month prior the announcement date to the event date. Another direction is evaluated in 90 days [-45, +45], 20 days [-10, +10], 14 days [-7, +7], 11 days [-5, +5], and 6 days [-3, +3] window period.

Abnormal returns are measured by the following equation:

$$AR_{it} = R_{it} - E(R_{it}) \dots \dots \dots \text{Equation I}$$

Where,

$AR_{it}$  is the abnormal return for the stock  $i$  at time  $t$  (%)

$R_{it}$  is the actual returns of stock  $I$  at time  $t$  (%)

$E(R_{it})$  is the expected returns of stock  $i$  at time  $t$  from CAPM model (%)

$T$  is the time period,  $T=0$  is the event date

The CAPM model is employed for the parameter estimations:

$$E(R_{it}) = R_f + \beta (R_{mt} - R_f) \dots \dots \dots \text{Equation II}$$

Where,

$R_f$  is the 3-month treasury bills as the representative of risk free rate (%)

$\beta$  is the systematic risk measures from OLS model

$R_{mt}$  is the market return (SET Index) at time  $t$  (%)

Since this paper aims to provide empirical evidence from the case study that BJC takes over BigC as an example from a developing country, to identify the impact of strategy alternatives, CPALL acquiring BigC transactions is used as the comparable transaction. However, the study does not cover all merging transactions occurring in Thailand. Thus, the test statistic of abnormal returns and the average abnormal returns are omitted in the calculation from this paper. This is different from most of the literatures using event study to identify the impacts of M&A transactions which covered various company samples.

### 3.3 Accounting measures Sample

Accounting model is the method of comparing performance before transaction with performance after transaction. There are numerous ways to measure the post-merger performance increase. It can be conducted by using cash flow or accrual accounting measures. Both have pros and cons. Cash flow method assesses the effect of M&A without taking into account the difference in accounting methods, while accounting approach is convenience to obtain and analyze because of the restriction from accounting standards which secures the consistency. Healy et. Al,1991 used the

combining cash flow performance ratios of the target and acquirer performance compared to the merged firm performance ratios. However, due to the limited disclosure of BJC information, this paper will be based on the earning measures of earnings before taxes (EBT) which the company has disclosed by business segments. The fact is that BJC has undergone many M&A deals more than the acquisition of BigC impacting the firm overall performance. Thus, to alleviate the impact, this study will not follow the conventional way but will rather use the earning of the modern trade segment revealed from the company's annual reports.

In the transaction year, there are costs related to the due diligences process<sup>3</sup>. The one-time costs are recorded as expenses in profit and loss statements. Studying accounting measures in the year of the event is biased with lower profitability compared with other years. Cornett and Tehranian, 1992 suggested to omit event year in the consideration controlling the difference of accounting choices and alleviate the impact of related costs. Therefore, the year of 2016 when BJC entered the M&A transactions with BigC would be discarded in the consideration. The profitability tends to increase overtime by the growth of the business. The source of the growth is the assets used to generate returns. The higher the assets, the more ingredients for firms to generate products and returns. Thus, to commensurate time series and peer's comparison, the ratio of EBT over the assets is used as the measurement. Moreover, the suitable time periods for pre-transaction and post-transaction to assess the effect are miscellaneous. Sharma and Ho, 2002 adopted six-year periods, three year prior the events year and three-year post-merger. The pre-value is also calculated by combining the target performance with the bidders without eliminating related transactions. This is because the related transaction is one source of synergies firms gaining from M&A which should be displayed in the merged firm's performance.

However, BJC entered an immense deal of acquiring METRO in 2014, and accounting performance in 2014 was possibly irregular base year revealing the normality of business performance. Thus, the pre-acquisition that can be used as a benchmark is only year 2015 which is not the good statistical inference of ordinary business. To solve this issue, this paper used solely three-year pre-merger performance of BigC compared with the three-year post-merger performance of only the sector of the modern trade of BJC. This method requires no merging of accounting for the pre-transaction. Hence, the accounting method compares BigC performance during 2013-2015 with BJC's modern trade segment of 2017-2019.

The company's performance is also impacted by other external factors such as economy and industry specifications. Thus, to avoid the impact of these factors, performance of the industry is used as the benchmark to compare BJC and BigC performance.

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<sup>3</sup> Due Diligence process is an investigation, audit, or review performed to confirm the facts of matter under consideration – meaning by James Chen, 2020



#### 4. BJC M&A Story and Opinions from Financial Advisors

BJC has been involved in many M&A transactions in various industries since the company was established. As this paper centers on the transactions of taking over the BigC business, the M&A transactions within five years before and after the transactions should be considered. To ensure the focus on the significant events that may affect the measures of this study, the transaction with the size of over \$30 million is featured. In 2013, BJC acquired Thai An Vietnam Joint stock with the size of \$33.22 million. In 2014, the transaction of acquiring METRO Cash & Carry Vietnam Co. (METRO) is considerable with a deal size of \$874.7 million. The target operates a chain of wholesale stores in Vietnam. This is the footprint that points out the direction to expand to Vietnam of BJC. In 2016, BJC announced its move to the modern trade industry in Thailand from the acquisition of BigC on February 7<sup>th</sup>, which hereafter is called the event date. The total value of \$3.37 billion in this takeover is the biggest in BJC's milestones<sup>4</sup>. Jarrell and Poulsen, 1989 found in their study that when the increase in target size is relative to the bidder, the acquirers get larger appreciation in stock price. To facilitate the smooth operation of BigC, BJC also acquired C-Distribution Asia Pte. Ltd. which is the supporting arm of BigC with the amount of \$31 million. Later in 2017, the company acquired the rest shares of BigC before delisting from the exchanges with the size of \$107.3 Million.

The transaction of acquiring BigC is interesting in various aspects. The first aspect is the enormous size of the deal relative to BJC size in 2016. The premium BJC giving to sellers is 11.4%<sup>5</sup> over the trading price one day before the announcement date. The second aspect is the nature of the company that has undergone heaps of M&A transactions. Hogarty, 1970 pointed out that heavily merging firms show lower performance than average investment firms in the industry. The movement into the new business segment of the company is the last interesting fact. This acquisition resulted in the expanding to downstream supply chains of BJC. The company got closer to its consumers. While the market expected the increase in performance, studies regarding the supply chains are dubious, especially by adding the different factors such as the development of markets into consideration. Therefore, the study of this transaction aims to contribute practical evidence for a developing country in the finding of value creation of M&A strategy.

TCC, the largest holding proportion in BJC of 73.83% in 2016, entered the agreement as an agent to acquire 58.55% stake of BigC from Geant International BV and Saowanee Holdings Company Limited who holds 26.46% of BigC share. The value was expected to not exceed 122,160,663,488 THB from 483,077,600 shares. In 2016, the majority shareholder of BJC was TCC corporation limited holding 73.83% of share outstanding. The deal was disclosed as a friendly takeover. According to Loughran and Vijn, 1997, tender offers and hostile takeovers give higher returns than friendly deals. The source of funds is financed from a bridge loan of not over 12 million THB. The

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<sup>4</sup> the Exchange rate as of 7<sup>th</sup> February 2016 1 USD = 36.24 THB

<sup>5</sup> The offering price per share is at the maximum of 252.88 Baht per share and the trading price as of 7 February, 2016 is 249 Baht per share

company planned to raise funds from shareholders to pay the debts in the following stage.

Additionally, Maybank Kim Eng Securities (Thailand) Public Company Limited and Jay Capital Advisory Limited are the financial advisors in this deal. Both advisors disclosed independent opinion regarding the appropriateness of the deal to shareholders following the requirement of The Securities & Exchange Commission of Thailand for the acquiring and selling transaction of over 15%-50%. The advisors deem it an appropriate deal with four advantages outweighed some possible risks. Firstly, BJC seemed to have capability to expand in the modern trade business and BigC is the proper target due to its rank in the second place with more than 700 stores nationwide. The logistic process and customers based are solid. BigC profitability and dividend payout are robust. Secondly, BJC has the access to product distribution channels to gain synergies by supplying more products from existing business through BigC channels.

Moreover, BJC can become the original equipment manufacturer for BigC products. Thirdly, the expansion into new business segments from producers to traders helps diversify the risk for BJC. The deal also supports the strategy of the company to become the leader in producing and distributing household appliances. By engaging in this takeover, BJC will gain four more distribution centers to increase its supply chain infrastructure. The final positive reason is the reasonable price of the transaction. The valuation by using discounted cash flow model reveals range of appropriate price of 275.96 THB per share<sup>6</sup> while the proposing price is 252.88 THB per share. Expressly, BJC purchased BigC price with 9% discount from the theoretically intrinsic value. On the other hand, the possible risks are the flaw from poor operations, goodwill impairments, possible dilutions from capital raising, and higher interest burdens from the increase in debts.

Revenues Portions	2012	2013	2014	2015	2016	2017	2018	2019
Packaging Products	43.6%	40.6%	38.9%	40.9%	15.0%	12.9%	13.3%	12.7%
Consumer Products	28.8%	35.8%	35.9%	37.7%	12.9%	11.2%	11.1%	11.8%
Healthcare Products	18.5%	16.5%	18.4%	16.7%	5.9%	5.4%	5.3%	5.5%
Modern Trade Segments	0.0%	0.0%	0.0%	0.0%	64.3%	68.8%	69.2%	69.3%

EBT Portions	2012	2013	2014	2015	2016	2017	2018	2019
Packaging Products	46.7%	52.9%	43.5%	46.6%	31.7%	27.8%	6.8%	21.3%
Consumer Products	18.2%	13.7%	11.3%	26.1%	6.5%	8.5%	2.7%	11.1%
Healthcare Products	20.3%	17.0%	17.6%	11.2%	7.6%	7.8%	2.3%	8.2%
Modern Trade Segments	0.0%	0.0%	0.0%	0.0%	64.5%	66.7%	16.3%	64.3%

Assets Portions	2012	2013	2014	2015	2016	2017	2018	2019
Packaging Products	53.6%	52.6%	46.8%	44.5%	7.1%	7.7%	7.7%	8.0%
Consumer Products	19.0%	22.3%	21.0%	22.0%	3.5%	3.6%	3.7%	3.9%
Healthcare Products	11.4%	9.5%	11.3%	10.4%	1.8%	1.8%	2.9%	2.9%
Modern Trade Segments	0.0%	0.0%	0.0%	0.0%	69.7%	67.0%	79.1%	80.6%

*Figure 1: Key Segmental Ratios of BJC*

Source: Financial Notes from BJC Annual Reports

<sup>6</sup> The discounted cash flow model is the approach used to estimate the expected cash flow in a certain timeframe before discounting back to the present value. Details are elaborated in appendix

BJC's main source of revenues comes from packaging products with the average fraction of 41% in five years prior to the acquisition year. This division is also accounted for half of the company earnings before taxes in line with the 49% allotment of company assets. The second source of income is the consumer products which grew year overtime offsetting the decrease portion of the first source. The second category is the products particularly selling to modern trade channels. This implies the potential synergies of the company to merge with BigC. Before 2016, BJC was disinterested in the modern trade business.

After the acquisition of BigC in 2016, modern trade business became the predominant source of income for BJC with approximately 70% of the group revenues. Over 60% of profitability that comes from this segment is fundamental for BJC. Assets weight is moved from the concentration in packaging production to modern trade stores. As of 2019, the stores were classified in hypermarket 151 stores, supermarket 62 stores, convenience stores 1,016 stores. As most of the BigC store type is hypermarket, a great number of areas is required to service wholesalers.

## 5. Competitors in the industry

According to the independent financial advisor report from the transaction of acquiring BigC, advisors disclosed the market comparable approach which adopts the average trading multiple to determine the appropriate price. This paper selects some of the rivals from the list of this report. The selection is limited to only domestic players because of the scope of the study in domestic deals. The different propinquity country between target and acquirer also has an impact in M&A profitability. Goergen and Renneboog, 2003 pointed out that the acquisitions in the same country result in higher return than the continental counterparts.

The first peer is Home Product Center Public Company Limited (HMPRO) operates as a home enhancement retailer in Thailand and Malaysia. The company trades in a range of goods and materials for construction, refurbishment, renovation, and enhancement of buildings. It also offers 3D design, installation, maintenance, home improvement, cleaning, home makeover, warehousing, facilities, and distribution services. Additionally, the company rents space and on . 31 December 2019, it had 113 branches. The company was founded in 1995 and is headquartered in Nonthaburi, Thailand.

The second rival is COL Public Company Limited (COL) which engages in the retail distribution of stationery supplies and office equipment in Thailand. The company operates through two segments, Retail Shops and Non-Store. It offers stationery, office supplies, and office furniture. The company also provides goods for hotel, restaurant, and catering businesses. It sells its private brand products under ONE, ME.STYLE, SUNVO, NEO, and FURRADEC through catalog, call center, e-commerce and e-procurement, website, and retail stores. The company was firstly known as Officemate Public Company Limited and changed its name to COL Public Company Limited in April 2015. COL Public Company Limited is headquartered in Bangkok, Thailand.

The third peer is Siam Makro Public Company Limited (Makro) operates cash and carry trade centers under the name Makro in Thailand. Makro's trade centers sell food and non-food products to their registered members. The company's trade centers also cover small and medium size businesses, retailers, and institutions. As of December 31, 2018, it managed 122 Makro stores and 7 frozen shops. Makro was founded in 1988 and the headquarter is located in Bangkok, Thailand. Currently, Makro is a subsidiary of CP ALL Public Company Limited.

The last peer is CP ALL Public Company Limited (CPALL) together with its subsidiaries. Under the name '7-Eleven', the company operates and franchises convenience stores to other retailers primarily in Thailand. It operates through three segments: Convenience Stores, Cash and Carry, and Other. The company is involved in the manufacture and sale of convenience and frozen foods, and bakery products. As of December 31, 2019, CPALL operated 11,712 stores. CPALL was established in 1988 and is headquartered in Bangkok, Thailand.

In 2013, CPALL engaged in the acquisition of Makro. The target customers are different from CPALL. Makro solely focuses on selling to wholesalers who tend to purchase at discounted prices. In the similarity, both firms have analogous suppliers. This deal is considered to be the expansion within the same industry and both companies are rivals of BJC. In such a way, the transaction is a good representative to use as a delegate to compare with the deal of BJC acquiring BigC which is the diversifying deal.

## 6. Key Financial Performance

### Key Performance Industry & BigC

Johnson, 1978 and Pinches et. Al, 19763 classified financial ratios into 7 main groups in order to study the short-term impact. Those ratios are returns on investments, capital intensive, inventory intensive, financial leverage, receivable intensives, short-term liquidity, and cash position. Even though most of the literatures regarding managerial finance group ratios in various ways, this paper aiming for the longer period analysis introduces some of their ratios and also adds more long-term aspects.

Key Financial Ratios - Margin									
Millions Baht	2011	2012	2013	2014	2015	2016	2017	2018	2019
<b>Margin Analysis BigC</b>									
Gross Margin %	22.6%	21.5%	23.3%	23.5%	22.8%				
EBITDA Margin %	15.8%	15.2%	16.0%	16.1%	16.0%				
EBIT Margin %	9.7%	9.1%	10.0%	10.2%	9.6%				
Net Income Margin %	4.6%	5.0%	5.3%	5.3%	5.2%				
<b>Margin Analysis Makro</b>									
Gross Margin %	10.3%	10.6%	10.8%	10.6%	11.1%	10.7%	11.5%	11.6%	11.8%
EBITDA Margin %	5.2%	5.1%	5.1%	5.4%	5.7%	5.2%	5.5%	5.3%	5.1%
EBIT Margin %	4.2%	4.1%	4.1%	4.4%	4.5%	4.1%	4.3%	4.1%	3.9%
Net Income Margin %	2.6%	3.1%	3.3%	3.5%	3.5%	3.1%	3.3%	3.1%	3.0%
<b>Margin Analysis COL</b>									
Gross Margin %	27.1%	27.2%	27.8%	28.7%	29.8%	30.7%	31.9%	37.8%	38.3%
EBITDA Margin %	5.5%	7.0%	7.7%	7.7%	6.6%	6.7%	7.9%	10.7%	11.2%
EBIT Margin %	3.9%	5.2%	5.7%	5.5%	4.5%	4.4%	5.7%	8.1%	8.3%
Net Income Margin %	2.0%	3.8%	4.5%	4.5%	3.6%	3.3%	4.1%	6.6%	6.7%
<b>Margin Analysis HMPRO</b>									
Gross Margin %	30.9%	30.9%	31.3%	30.7%	30.7%	30.6%	31.4%	29.2%	29.8%
EBITDA Margin %	13.5%	13.2%	13.6%	13.5%	13.6%	13.9%	14.7%	15.6%	16.2%
EBIT Margin %	10.2%	9.9%	9.8%	9.1%	8.9%	9.2%	10.0%	11.2%	11.9%
Net Income Margin %	6.6%	7.2%	7.2%	6.5%	6.2%	6.7%	7.6%	8.5%	9.2%
<b>Margin Analysis CPALL</b>									
Gross Margin %	27.5%	29.0%	25.9%	24.1%	24.5%	24.8%	25.2%	25.1%	25.3%
EBITDA Margin %	8.5%	8.4%	6.9%	7.2%	8.0%	8.0%	8.3%	8.0%	7.7%
EBIT Margin %	6.4%	6.8%	5.3%	5.5%	6.2%	6.3%	6.4%	6.1%	5.8%
Net Income Margin %	5.0%	5.6%	3.7%	2.8%	3.4%	3.7%	4.1%	4.0%	3.9%

Figure 2: Profit Margin Ratios of Industry & BigC

Source: Annual reports of the companies

According to figure 2, margin ratios are calculated by earnings over revenues in the matching year. Considering the similar type of products offered to customers, BigC with the average gross profit margin of 22.7% for the period 2011-2015 is higher than Makro with the average of 10.7% in the same period. This is due to the different target customers of both firms which have an impact on the mark-up profit on selling price. BigC aims to service retailers who are willing to pay a premium to purchase in the small lot. The intention of purchasing the product is for personal use. Contrarily, Makro targets wholesalers who purchase with the motive to resell to retailers. However, the net profit margin is not much different between both firms. This may be caused by the number of BigC stores of over seven hundred in 2016 compared with Makro that had 82 stores by the end of 2014. A number of stores implies the greater assets, resulting in the larger depreciations & amortization costs and interest expenses used to fund the assets.

Moreover, COL and HMPRO have higher gross profit margin than BigC due to the difference in products selling to customers. Even though COL and HMPRO operate in the retail industry, COL focuses on stationery products while HMPRO offers construction products and housing improvement. Both firms should have lower storage and caring costs contrasting with some portions of fresh food selling in BigC and Makro. However, COL seems to have higher SG&A<sup>7</sup> expenses causing the net income margin lower than BigC during 2011-2015. CPALL satisfies retail customers similar to BigC but its business type is different. CPALL targets convenience stores

<sup>7</sup> Selling, General and Administrative Costs.

while BigC is a bigger size store such as a supermarket. This fact facilitates CPALL to charge higher prices than BigC. The premium illustrates in higher gross profit margin than BigC, on an average of 26.2%

Key Financial Ratios - Assets Turnover									
	2011	2012	2013	2014	2015	2016	2017	2018	2019
<b>Asset Turnover BigC</b>									
Total Asset Turnover	1.7x	1.3x	1.4x	1.4x	1.4x				
Fixed Asset Turnover	3.8x	3.2x	3.2x	3.2x	3.1x				
<b>Asset Turnover Makro</b>									
Total Asset Turnover	3.6x	3.7x	3.8x	3.6x	3.4x	3.4x	3.3x	3.2x	3.4x
Fixed Asset Turnover	7.3x	7.3x	7.5x	6.8x	6.1x	6.0x	6.0x	6.1x	6.6x
<b>Asset Turnover COL</b>									
Total Asset Turnover	NA	1.5x	1.4x	1.4x	1.4x	1.5x	1.4x	1.2x	1.2x
Fixed Asset Turnover	NA	16.7x	14.2x	13.6x	14.2x	10.0x	7.5x	6.6x	6.7x
<b>Asset Turnover HMPRO</b>									
Total Asset Turnover	1.6x	1.6x	1.4x	1.3x	1.2x	1.2x	1.3x	1.2x	1.3x
Fixed Asset Turnover	3.2x	2.9x	2.2x	2.1x	2.1x	2.1x	2.2x	2.2x	2.3x
<b>Asset Turnover CPALL</b>									
Total Asset Turnover	3.1x	3.1x	1.5x	1.2x	1.2x	1.3x	1.4x	1.4x	1.5x
Fixed Asset Turnover	10.9x	11.9x	6.4x	4.9x	4.8x	4.8x	4.8x	4.8x	5.0x
<b>Median industry</b>									
Total Asset Turnover	3.1x	2.3x	1.4x	1.3x	1.3x	1.4x	1.4x	1.3x	1.4x
Fixed Asset Turnover	7.3x	9.6x	6.9x	5.8x	5.5x	5.4x	5.4x	5.5x	5.8x

*Figure 3: Assets Turnover Ratios Industry & BigC*  
Sources: Annual Reports of the companies

From figure 3, the ratio of assets turnover is the fraction of sales over assets. BigC assets turnover is lower than Makro due to the high number of assets portion more than revenues generated. Makro seems to have better efficiency in utilizing fixed assets<sup>8</sup> to generate returns more than BigC as shown in the fixed assets turnover. The other comparable companies demonstrate the similarity of total assets turnover but only CPALL displays the highest ability to generate incomes from fixed assets before involving in the acquisition transaction with Makro which decreases its capability from the average of 10 times to only 4 times. The pre-acquisition performance appears efficiently due to the nature of the business that operates in the small area shops. BigC and Makro as grocery players have higher occupancy areas to allow customers shopping in the stores for the pushcart. Therefore, after acquiring Makro, the business nature of CPALL has changed the number of fixed assets turnover by weighing the lower performance of Makro into account.

<sup>8</sup> Fixed assets include Properties, plants, and equipment.

Key Financial Ratios - Profitability									
	2011	2012	2013	2014	2015	2016	2017	2018	2019
<b>Profitability BigC</b>									
Return on Assets %	7.4%	5.3%	6.2%	6.2%	5.8%				
Return on Equity %	24.1%	22.0%	20.3%	18.3%	15.5%				
<b>Profitability Makro</b>									
Return on Assets %	9.3%	9.4%	9.8%	9.9%	9.6%	8.7%	9.0%	8.0%	8.2%
Return on Equity %	27.6%	34.4%	39.3%	41.3%	39.8%	36.1%	36.4%	31.5%	30.9%
<b>Profitability COL</b>									
Return on Assets %	NA	5.0%	4.8%	4.7%	4.0%	4.0%	5.1%	6.2%	6.2%
Return on Equity %	NA	9.8%	9.3%	9.3%	8.0%	7.6%	9.0%	12.1%	12.0%
<b>Profitability HMPRO</b>									
Return on Assets %	10.5%	9.8%	8.5%	7.3%	6.8%	7.1%	7.8%	8.7%	9.4%
Return on Equity %	27.9%	29.6%	27.1%	23.3%	21.5%	24.0%	27.1%	29.1%	30.1%
<b>Profitability CPALL</b>									
Return on Assets %	12.6%	13.1%	5.0%	4.1%	4.8%	5.2%	5.5%	5.5%	5.5%
Return on Equity %	40.4%	45.2%	35.1%	30.3%	36.0%	33.2%	28.6%	23.5%	21.8%
<b>Median industry</b>									
Return on Assets %	10.5%	9.6%	6.8%	6.0%	5.8%	6.1%	6.7%	7.1%	7.2%
Return on Equity %	27.9%	32.0%	31.1%	26.8%	28.7%	28.6%	27.8%	26.3%	25.9%

Figure 4: Profitability Ratios of Industry & BigC  
Sources: Annual Reports of the companies

Figure 4 exhibits the profitability ratios which are calculated by taking the portion of net income over assets or equity. They aim to measure the effectiveness of using assets and funds from the owners. Return on assets (ROA) results in the allied return with the assets turnover ratios that Makro has a higher utilization rate of assets. Moreover, return on equity (ROE) implies that CPALL used to be the most effective player who engendered returns from equity funds with the average of 43% during 2011-2012. After entering the M&A deal, Makro became the most productive among its peers in terms of using funds from investors to generate returns. BigC is the second from the bottom list in ROE ratio.

On Figure 5, the average days sales outstanding (ADS) is calculated by the fraction of account receivable<sup>9</sup> over sales before multiplying with 365 days of the year. However, the average days inventory (ADI) and the average days payable (ADP) are different in the fraction of costs of goods sold instead of sales due to the linkage with purchase from suppliers. Cash conversion cycle days is the summation of day sales outstanding and inventory days outstanding before deducting the days of a payable outstanding. The table reveals an interesting pattern that comparable retail firms have negative average cash conversion cycle days. This is caused by the nature of the business that purchases products from suppliers with credit terms longer than the credit terms giving to account receivables. BigC has a higher ADS than Makro and CPALL which have more tendency from their business operation to receive cash more. Makro selling policy focuses on cash payment whereas CPALL as a convenience store

<sup>9</sup> Account receivable is the value of products the firm has delivered or transferring risk to customers without receiving cash payment yet.

operator has smaller spending amount per bill than grocery business facilitating the payment in cash.

Big C inventories have longer duration in the warehouse than Makro and CPALL with the average duration of 2011-2015 of 35, 28, 26 days respectively. The ADI ratios of COL and HMPRO are not good comparable benchmarks for BigC due to its longer shelves' life of products. CPALL has higher bargaining power over suppliers more than Makro but less than BigC with the average ADP ratios of 72, 80, 55 days subsequently.

Key Financial Ratios - Working Capital									
	2011	2012	2013	2014	2015	2016	2017	2018	2019
<b>Short Term Liquidity BigC</b>									
Avg. Days Sales Out.	6.2	6.9	8.0	9.7	6.9				
Avg. Days Inventory Out.	29.4	34.6	34.0	37.1	39.7				
Avg. Days Payable Out.	70.0	83.3	82.6	81.8	84.3				
Avg. Cash Conversion Cycle	- 34.4	- 41.9	- 40.5	- 34.9	- 37.6				
<b>Short Term Liquidity Makro</b>									
Avg. Days Sales Out.	0.6	0.7	0.7	0.8	0.8	0.9	1.3	1.9	1.8
Avg. Days Inventory Out.	26.8	25.8	26.9	29.4	31.2	31.5	29.5	29.5	28.7
Avg. Days Payable Out.	57.2	55.7	52.4	55.5	55.7	55.3	56.3	54.8	50.8
Avg. Cash Conversion Cycle	- 29.8	- 29.3	- 24.7	- 25.3	- 23.6	- 22.9	- 25.5	- 23.4	- 20.2
<b>Short Term Liquidity COL</b>									
Avg. Days Sales Out.	NA	12.9	11.1	10.4	10.5	10.9	11.5	13.8	13.9
Avg. Days Inventory Out.	NA	75.8	74.5	76.3	76.0	75.0	77.6	102.0	112.2
Avg. Days Payable Out.	NA	94.6	97.1	97.2	97.4	97.8	98.6	114.8	112.8
Avg. Cash Conversion Cycle	NA	- 5.9	- 11.6	- 10.5	- 10.9	- 11.9	- 9.5	1.0	13.3
<b>Short Term Liquidity HMPRO</b>									
Avg. Days Sales Out.	2.4	2.7	2.9	2.2	1.9	2.0	1.5	1.3	1.4
Avg. Days Inventory Out.	70.1	69.7	73.7	74.8	76.7	77.8	82.9	80.4	79.7
Avg. Days Payable Out.	91.3	87.2	91.8	90.3	95.2	95.3	97.1	94.1	91.7
Avg. Cash Conversion Cycle	- 18.8	- 14.8	- 15.2	- 13.3	- 16.6	- 15.4	- 12.7	- 12.4	- 10.6
<b>Short Term Liquidity CPALL</b>									
Avg. Days Sales Out.	1.1	1.0	0.9	0.9	0.8	0.8	1.0	1.3	1.2
Avg. Days Inventory Out.	23.7	23.2	25.2	27.3	28.1	27.9	27.0	26.4	26.2
Avg. Days Payable Out.	70.6	74.2	72.0	73.4	72.0	69.5	70.6	70.6	67.1
Avg. Cash Conversion Cycle	- 45.8	- 49.9	- 45.9	- 45.2	- 43.0	- 40.8	- 42.5	- 43.0	- 39.7
<b>Median industry</b>									
Avg. Days Sales Out.	1.1	1.9	1.9	1.5	1.4	1.4	1.4	1.6	1.6
Avg. Days Inventory Out.	26.8	47.8	50.3	52.1	53.6	53.2	53.5	54.9	54.2
Avg. Days Payable Out.	70.6	80.7	81.9	81.8	83.6	82.4	83.8	82.3	79.4
Avg. Cash Conversion Cycle	- 29.8	- 22.1	- 20.0	- 19.3	- 20.1	- 19.2	- 19.1	- 17.9	- 15.4

Figure 5: Working Capital management ratios of the industry & BigC

Sources: Annual Reports of the companies

From figure 6, BigC capital structure densely relied on equity more before the takeover in 2016 causing the company to have a higher ability in paying interest. This results in the higher ratios of EBIT over interest expenses<sup>10</sup> CPALL exposes the highest portion of debt from the acquisition of Makro in 2013 while Makro halves capital structure between debts and equity after the M&A. HMPRO massively relied on debt funding more than equity during the period of 2013-2018 with the average of 85.7% debt portion before decreasing in 2019 to 63%.

<sup>10</sup> This ratio is normally referred to interest coverage ratios



Key Financial Ratios - Long Term Solvency									
	2011	2012	2013	2014	2015	2016	2017	2018	2019
<b>LT Solvency BigC</b>									
Total Debt/Equity	155.2%	91.8%	71.8%	59.1%	26.2%				
EBIT / Interest Exp.	6.0x	6.0x	9.1x	11.5x	13.4x				
<b>LT Solvency Makro</b>									
Total Debt/Equity	22.7%	20.5%	30.5%	45.1%	50.8%	52.5%	50.8%	58.6%	40.9%
EBIT / Interest Exp.	65.6x	55.3x	64.0x	37.5x	29.7x	25.2x	23.1x	23.2x	26.4x
<b>LT Solvency COL</b>									
Total Debt/Equity	8.0%	0.1%	NA	NA	NA	NA	NA	0.1%	NA
EBIT / Interest Exp.	41.5x	92.9x	NA	NA	NA	NA	NA	NA	NA
<b>LT Solvency HMPRO</b>									
Total Debt/Equity	37.1%	55.6%	77.0%	88.4%	85.1%	96.5%	80.8%	86.7%	63.3%
EBIT / Interest Exp.	26.6x	25.0x	15.1x	10.0x	9.2x	11.1x	14.4x	18.4x	19.8x
<b>LT Solvency CPALL</b>									
Total Debt/Equity	0.0%	NA	562.1%	566.2%	454.7%	317.3%	208.2%	154.5%	134.5%
EBIT / Interest Exp.	NA	NA	6.9x	2.4x	2.9x	3.4x	3.9x	4.5x	4.9x
<b>Median industry</b>									
Total Debt/Equity	15.4%	20.5%	77.0%	88.4%	85.1%	96.5%	80.8%	72.6%	63.3%
EBIT / Interest Exp.	41.5x	55.3x	15.1x	10.0x	9.2x	11.1x	14.4x	18.4x	19.8x

Figure 6: Long Term Solvency Ratios of Industry & BigC  
Sources: Annual Reports of the companies

### Key Performance BJC

BJC Millions Baht	2013	2014	2015	2016	2017	2018	2019
Total Revenue	42,707	41,829	42,893	127,343	151,747	158,879	160,741
Cost Of Goods Sold	32,131	32,363	33,071	102,735	120,706	126,173	127,120
Gross Profit	10,576	9,467	9,822	24,607	31,041	32,705	33,621
Selling General & Admin Ex	7,017	7,011	7,179	24,324	30,686	32,263	33,223
Operating Income	3,559	2,577	3,188	9,430	12,612	13,439	13,600
Interest Expense	575	556	493	5,203	4,528	4,719	4,971
EBT Excl. Unusual Items	3,172	2,350	3,488	5,510	8,059	8,652	8,583
Net Income	2,426	1,680	2,792	3,307	5,211	6,650	7,278
EBITDA	5,519	4,522	5,237	15,337	19,775	20,844	21,115
<b>Margin Analysis</b>							
Gross Margin %	24.8%	22.6%	22.9%	19.3%	20.5%	20.6%	20.9%
SG&A Margin %	16.4%	16.8%	16.7%	19.1%	20.2%	20.3%	20.7%
EBITDA Margin %	12.9%	10.8%	12.2%	12.0%	13.0%	13.1%	13.1%
EBIT Margin %	8.3%	6.2%	7.4%	7.4%	8.3%	8.5%	8.5%
Net Income Margin %	5.7%	4.0%	6.5%	2.6%	3.4%	4.2%	4.5%

Figure 7: BJC Key Income Statements  
Source: Annual Reports

According to figure 7, gross profit margins and operating margin ratios fluctuated before the acquisition of BigC in 2016. This may be due the oscillate demand for products from selling channels. However, after the acquisition of BigC, BJC earnings ratios became more stable, according to the evidence in 2017-2019. There is one interesting fact from this table. While the SG&A margin increased after the acquisition and the gross profit margins did not show the strong improvement comparing to the historical record, EBITDA<sup>11</sup> margins and EBIT<sup>12</sup> margins suggested a strong improvement of around 1% in 2017 from year 2015. Nevertheless, the bottom

<sup>11</sup> EBITDA stands for earnings before interests, taxes, depreciation and amortization.

<sup>12</sup> EBIT is earnings before interests and taxes.

line does not result in the intense improvement in net income profitability ratios. This phenomenon can be due to the effect of other takeover transactions than BigC deals as BJC engaged in M&A several years as mentioned in BJC M&A timeline above.

BJC Millions Baht	2013	2014	2015	2016	2017	2018	2019
Total Receivables	8,694	8,939	9,650	11,884	13,393	15,166	13,993
Inventory	8,443	7,410	7,244	19,882	19,132	21,310	22,019
Total Current Assets	19,315	17,763	18,380	35,993	38,542	43,360	42,921
Net Property, Plant & Equipment	18,607	18,042	18,589	62,399	66,354	66,455	67,375
Total Assets	44,503	43,428	44,701	308,701	315,059	324,060	325,804
Accounts Payable	5,094	4,647	4,788	21,652	21,641	23,555	23,241
Total Current Liabilities	14,835	18,204	15,313	51,851	50,254	90,286	75,881
Total Liabilities	26,804	25,411	23,950	197,553	203,886	208,286	206,068
Total Equity	17,699	18,017	20,750	111,148	111,173	115,774	119,736
Total Debt	16,676	16,232	14,975	152,234	156,897	159,906	157,755
Net Debt	14,896	15,109	13,845	148,744	152,529	153,628	151,409

BJC Accounting Ratios	2013	2014	2015	2016	2017	2018	2019
<b>Profitability</b>							
Return on Assets %	5.4%	3.7%	4.5%	3.3%	2.5%	2.6%	2.6%
Return on Capital %	7.0%	4.7%	5.7%	3.9%	3.0%	3.1%	3.1%
Return on Equity %	15.4%	11.5%	17.8%	6.6%	5.4%	6.4%	6.6%
<b>Asset Turnover</b>							
Total Asset Turnover	1.0x	1.0x	1.0x	0.7x	0.5x	0.5x	0.5x
Fixed Asset Turnover	2.4x	2.3x	2.3x	3.1x	2.4x	2.4x	2.4x
<b>Short Term Liquidity</b>							
Current Ratio	1.3x	1.0x	1.2x	0.7x	0.8x	0.5x	0.6x
Avg. Days Sales Out.	64.6	68.6	70.2	24.8	21.8	23.5	22.4
Avg. Days Inventory Out.	86.9	89.4	80.9	48.3	59.0	58.5	62.2
Avg. Days Payable Out.	51.7	56.7	52.3	41.9	65.9	64.3	66.8
Avg. Cash Conversion Cycle	99.8	101.3	98.8	31.2	15.0	17.7	17.8
<b>Long Term Solvency</b>							
Total Debt/Equity	94.2%	90.1%	72.2%	137.0%	141.1%	138.1%	131.8%
EBIT / Interest Exp.	6.2x	4.6x	6.5x	1.8x	2.8x	2.8x	2.7x

Figure 8: BJC Key Balance Sheet Ratios

Source: Annual Reports of BJC

According to figure 8, in profitability ratios, BJC's ROA decreases from the average of 4.5% to average of 2.5% in the post-merging periods. The returns on equity also presented the similar direction as the ROA. The total assets utilization declines from the increase of goodwill accounts while the tangible assets usage remains in the identical level of the pre-acquisition years. Looking at the working capital management, the average account receivable days and inventories day decline immensely while the average account payable days increase significantly due to the change of the business nature from producers to mainly rely on retail business. It is in line with what Gombola and Ketz, 1983 pointed out that retail firms tend to show less receivables than manufacturing firms. The cash conversion cycle also undoubtedly reduces from the benefits of negative cash cycles of retail business. The company financed the transaction with debt reflecting in the capital structure that increased in 2016 and remained in that certain level in the following years. The ability to payout interest of the company declines but still remains at a healthy level.

## 7. Result from Event study - BJC acquired BigC

According to Appendix, the estimation period of 239 days prior to the announcement date is used to calculate the systematic risk of the company relative to market risk. BJC's beta is 0.84 compared to the beta of the target company at 0.51. The interpretation from these systematic results is that BJC has the undiversified risk of 0.84 comparing 1 risk measure of the market, while BigC risk is half of the market as 0.51. Both firms tend to have lower risk than the market, but BigC has lower risk than BJC. The lower risk measures imply that the company has lower earnings fluctuation and regular dividend payout. The stability in earnings causes less risk in business operations that are either steady by nature or due to the managerial performance that results in constant earnings streams.

On the event date, the market absorbed the expected synergies from the deals driving the price of target up to 8.95%. Researchers essaying in abundant sundry industries and developed countries averred unanimous results that target shareholders receive premium from the capital gains above the pre-announcement stock price (Kaplan and Weisbach, 1992; Jensen and Ruback, 1983). However, from the perspective of the acquirer, there are paucity studies regarding the denouement of the wealth of bidding shareholders as a result from M&A. From figure...., bidder gains are 10.30% which is more than the gains of the target. Moreover, this can be due to some significant abnormal returns during twenty days prior to the event date. In sixteen days before the announcement date, target generate abnormal returns of 14.42% and bidders' gains of 0.15%. It can be the possible reason for target yielding the lower abnormal returns on the event date that the stock price already absorbed the rumors regarding the takeovers. Furthermore, there is also a momentous abnormal return of 11% six days after the announcement date for the acquirer. The possible acumen can be the release of addition in terms of the appropriateness of the deal from the company or analysts.

There are two possible directions for investors to perform during the announcement date. The choice can be selling the stock at the event date or waiting for more information regarding the deal and deciding to sell it several days later. The selection of investors depends on many factors such as knowledge, information received, and intention of investment whether short term or long term. Loughran and Vigh, 1997 also emphasized that target's shareholders selling out immediately after announcement date profits more than holding until the payment period.

To be able to assess the gains of shareholders, cumulative abnormal returns (CAR) are calculated in different timeframes. The result from figure 10 shows that regarding the analysis only the pre-event date return, target illustrates 7.95% positive CAR returns in 22 days [-21,0] before the announcement, though, an acquirer creates only a small positive return at 0.40%. On the other hand, examining both prior and post event date timeframe, target has lower CAR than acquiring in the 7 days window periods [-3, +3] at 4.74% and 5.93%, respectively. The implication of this result is if the shareholders of the target hold stock three days prior to the event date and sell it

three days after that, they promptly generate CAR of 4.74% while the shareholders of acquirers holding the same amount of time result in a higher rate at 5.93%. The results are in line with the study of Jarrell and Poulsen, 1989 that found positive returns for acquirers. However, the extension of the window period to 11 days [-5, +5] results in a different way. Only the target shareholders gain 3.59% CAR returns whereas the acquirers yield small negative returns of 0.94%. Bashir et. Al, 2011 also used the same window period to study the evidence from Pakistan finding the result of bidder's gain and loss for target shareholders. It is opposite from the study in a developed country and the result from this paper. If the period is broadened to 23 days period [-11, +11], only an acquirer received a limited CAR of 0.69%. The period has longer distant from the event date. It is attainable that the stock price absorbing other information disregarding the takeover transaction or the gains is because of the transaction information.

Daily Abnormal Return			Daily Abnormal Return		
Event Day	Target (BigC)	Acquirer (BJC)	Event Day	Target (BigC)	Acquirer (BJC)
-20	-1.35%	-1.85%	0	8.95%	10.30%
-19	-0.54%	-0.10%	1	-0.96%	0.01%
-18	-0.38%	-0.27%	2	-0.32%	-1.65%
-17	-0.86%	-2.23%	3	-0.96%	-1.46%
-16	14.42%	0.15%	4	-0.52%	-4.95%
-15	4.20%	-0.17%	5	-0.35%	-0.26%
-14	-4.08%	4.61%	6	-0.73%	10.91%
-13	1.72%	-2.04%	7	-0.26%	1.85%
-12	-2.69%	-0.76%	8	-1.33%	-2.60%
-11	-1.61%	-0.97%	9	-1.69%	-3.90%
-10	0.19%	-0.20%	10	-0.91%	-0.58%
-9	-1.14%	-1.01%	11	-0.93%	-1.30%
-8	-1.10%	-0.90%	12	-0.35%	-0.32%
-7	-1.10%	-0.13%	13	-0.66%	-2.21%
-6	-4.22%	0.47%	14	-0.69%	3.24%
-5	2.13%	-2.23%	15	-0.85%	0.90%
-4	-2.40%	0.55%	16	-1.78%	-2.04%
-3	-1.84%	-1.41%	17	-1.21%	-1.76%
-2	-2.25%	0.97%	18	-0.30%	1.11%
-1	2.13%	-0.82%	19	-1.29%	-1.88%
0	8.95%	10.30%	20	0.07%	-2.31%

Figure 9: Abnormal return prior event date– BJC & BigC deal

Source: S&P CapitalIQ

Cumulative Abnormal Returns (CAR)		
Window Period	Target (BigC)	Acquirer (BJC)
-3,+3	4.74%	5.93%
-5,+5	3.59%	-0.94%
-11,+11	-11.24%	0.69%
-45,+45	-41.51%	-41.51%
-21,0	7.95%	0.40%
-61,0	-14.86%	-7.22%

Figure 10: Cumulative Abnormal Return – BJC & BigC deal

Source: S&P CapitalIQ

## 8. Result from Event study - CPALL acquired Makro

Daily Abnormal Return			Daily Abnormal Return		
Event Day	Target (MAKRO)	Acquirer (CPALL)	Event Day	Target (MAKRO)	Acquirer (CPALL)
-20	0.75%	-4.77%	0	-0.71%	-3.04%
-19	-5.65%	-1.46%	1	-0.74%	-1.32%
-18	-4.88%	0.80%	2	-1.93%	-1.09%
-17	3.88%	-0.48%	3	-2.32%	2.71%
-16	-4.79%	1.18%	4	-1.56%	0.02%
-15	-0.62%	-1.65%	5	3.69%	0.19%
-14	1.00%	1.04%	6	-1.29%	1.56%
-13	-2.32%	-1.17%	7	-2.36%	0.86%
-12	-0.34%	-0.11%	8	-2.36%	-0.53%
-11	5.81%	-0.91%	9	-9.29%	-0.16%
-10	-6.65%	-2.28%	10	-5.68%	1.26%
-9	-0.49%	-2.09%	11	2.62%	0.34%
-8	-2.72%	2.62%	12	-1.28%	-1.24%
-7	-4.17%	-2.12%	13	-1.66%	-0.70%
-6	-3.09%	-1.26%	14	12.11%	-0.71%
-5	-7.16%	-0.15%	15	-1.19%	-0.54%
-4	-6.59%	-0.18%	16	0.60%	0.62%
-3	-0.30%	3.80%	17	-2.73%	-6.83%
-2	-1.53%	1.46%	18	-2.73%	0.62%
-1	-5.43%	1.12%	19	7.83%	-10.64%
0	-0.71%	-3.04%	20	-3.26%	3.81%

Figure 11: Abnormal Return before event date-CPALL & Makro deal

Source: S&P CapitalIQ

In 2013, CPALL announced the engagement in acquisition with Makro. The announcement date for this transaction is 25 March 2013. The window period of 239 days, [-244, -6] is used to calculate the systematic risk. CPALL turned out to have a lower beta than Makro. During the estimation period of this deal, CPALL risk is approximately similar to market risk which is measured by SET Index. Makro yields 1.15 beta showing the excessive risk than the market. Both stock's systematic risks from this transaction are higher than the transaction of BigC acquisition. However, if considering the systematic risk in similar period, beta of CPALL and Makro are significantly lower than those of BJC and BigC, 0.2 and 0.06, respectively. The beta of Makro in 2016 is not a good illustration of the industry risk due to its low liquidity of trading. Approximately 98% of the issued stocks are held by CPALL and Siam Makro holding (Thailand) Limited in 2016 compared to the fraction to funds and minority shareholders prior the acquisition.

According to figure 11, before the event date, only the bidder shows the positive abnormal returns three days in a consecutive period before showing the negative return of 3.04% on the announcement date. Whereas the target produced the lower negative return of 0.71% on the event date. This may be caused by the reason that Jarrell and Poulsen, 1989 mentioned that the wealth of the acquirer may not increase during the announcement date due to the limited information regarding the positions of the bidder. Normally, authorities require bidders to provide independent valuation reports related to the target wealth situation to investors. This report has little information of the possible valuation of the bidders from the deal. However, following the event date,

there is more information released from analysis according to the appropriateness in terms of synergies and offering prices. This deal attracted investors' intention in the market due to the size of the deal and the distress of monopoly power in retail business of CPALL. The market expected high synergies from this deal due to the expansion which is similar to the existing business with the correspondence in terms of suppliers and products but the distinction in target customers. Supply chain management theory suggests that consolidated firms should gain market power in the concentrated investment in specific geography or products. The results from this expectation were disclosed in the recovery of CPALL trading price on the third day after the event date and continued to increase for 5 days in the roll.

Cumulative Abnormal Returns (CAR)		
Window Period	Target (MAKRO)	Acquirer (CPALL)
-3,+3	-12.95%	3.63%
-5,+5	-24.58%	3.51%
-11,+11	-54.25%	0.79%
-45,+45	-185.23%	-16.80%
-21,0	-48.25%	-12.84%
-61,0	-154.44%	-9.28%

*Figure 12: Cumulative Abnormal Return - CPALL & Makro deal*  
Source: S&P CapitalIQ

Figure 12 reveals that target shareholders are lost from holding the stock from different periods to the event date. The loss is accumulated in three-month holding period more than one-month ownership, negative 154.4% and negative 48.25%, accordingly. Conversely, bidder has substantially lower negative returns of negative 12.84% in one-month period before decreasing to negative 9.28% for three-month holding period. In the view of encircling the event period, the acquirer shows positive returns in three different window periods with the highest CAR close to the event date in the interval of 7 days [-3, +3] of CAR 3.63%. For the 11 days of consideration, CPALL investors gain 3.51% accumulated abnormal returns. The results are different from the results in some studies using developed countries' sample. Healy et. Al, 1991 found that the bidders resulted in negative returns while Franks et. Al, 1991 shows neither gains or losses for the bidders.

Agarwal and Mandelker, 1987 suggested that the concentration of ownership is one of the factors causing the bidding firm to yield positive returns. It adumbrated that the low stake of management is the causality of agency problems having a propensity to take over a destroyed-value transaction for short term accretion in financial profit rather than focusing on the long-term profitability of the company. TCC held BJC 73.83% compared to CPALL that is held by CP group and CPF for 43.8%. BJC has higher ownership concentration than CPALL at the time of merging. It is expected that BJC shows the higher positive returns. Compared to the deal of BJC acquiring BigC, both investors gain in the short term holding, [-3, +3] timeframes. But only the acquirer gains in the 11 days period. In CPALL merging transactions, the bidder solely gets

positive returns. Therefore, the result from this study is different from the empirical evidence in United States.

## 9. Results from accounting measures -BJC acquired BigC

EBT/Assets	Transaction		Peers - Benchmark				Peers Median
	BigC	BJC-Moden trade	CPALL	MAKRO	HMPRO	COL	
2013	7.2%		4.2%	14.9%	10.7%	7.5%	9.1%
2014	7.0%		3.9%	14.1%	9.4%	7.5%	8.4%
2015	7.4%		5.1%	14.2%	9.4%	6.2%	7.8%
2016	6.8%		5.7%	12.8%	9.8%	5.8%	7.8%
2017		7.04%	6.5%	13.1%	11.8%	7.0%	9.4%
2018		6.84%	6.7%	12.0%	12.6%	9.7%	10.9%
2019		7.27%	7.1%	12.6%	14.6%	9.7%	11.2%

Figure 13: EBT/Assets - BJC & Big C deal

Source: Annual Reports of the companies

Even though, Corneet and Tehranian, 1992 supported the use of market measures with their finding that the correlation between abnormal returns during event period and other performance measures are highly correlated. The study of accounting measures in the takeovers of both deals by this paper is useful due to the differences in market and economy environments. From figure 13, BigC's EBT over assets<sup>13</sup> ratios three years prior the transaction year is, on average, 7.2% compared with the median of the industry of 8.5%. Even though, the median<sup>14</sup> of the industry is impacted by the outstanding ratios from Makro, the fact that its operation intimately matches the operation of BigC the most. Makro and modern trade ratios in BigC and BJC moved in the same direction from 2013 to 2019 while the performance of CPALL, HMPRO and COL moved with no pattern correlated with BigC ratios. From 2017-2019, the average of EBT/Assets is 7.05% which reveals a small percentage of decrease in the ability to employ assets in order to create earnings. By considering Makro as a benchmark, the performance of Makro also decreases with a similar movement of BigC while CPALL shows the opposite results in some years relative to Makro and BigC.

EBT Margin	Transaction		Peers - Benchmark				Peers Median
	BigC	BJC-Moden trade	CPALL	MAKRO	HMPRO	COL	
2013	5.5%		4.7%	4.2%	9.4%	6.0%	5.4%
2014	5.5%		3.5%	4.3%	8.4%	5.9%	5.1%
2015	5.3%		4.3%	4.4%	8.2%	4.8%	4.6%
2016	5.5%		4.6%	3.9%	8.7%	4.4%	4.5%
2017		3.30%	5.0%	4.1%	9.7%	5.4%	5.2%
2018		2.79%	4.9%	3.9%	10.8%	8.7%	6.8%
2019		2.97%	4.9%	3.8%	11.7%	9.0%	7.0%

Figure 14: EBT Margin - BJC & BigC deal

Source: Annual Reports of the companies

<sup>13</sup> Total assets including current assets and long-term assets in the Financial statements of positions

<sup>14</sup> This paper uses median to measure the central tendency due to the expectation of mitigating outliers effect.

According to figure 14, EBT margins are the earnings before taxes over the revenues in the same year. As the year of transactions is 2016 which is omitted in the considerations, the timeframe used to compare is between 2013-2015 for the pre-acquisition margins and between 2017-2019 for the post-merging years. BJC modern trade segmental performance which is the performance of BigC after the acquisition is lower with the average margin of 3% compared to the performance of BigC prior to the transaction that has the average ratios of 5.4%. The decrease in margins is supported by Makro performance that reveals insignificantly a decline from 4.3% to 3.9% on the allied time period. However, the decrease is lower in Makro compared to BigC and BJC segmental margins. While CPALL disclosed slightly increasing performance between pre and post-acquisition with the average margins of 4.2% and 4.9%, substantially. The median of the industry also shows the similar pattern with the prior margins of 5% versus 6.3% post-merging years. The possible reasons for the decline in performance after the merged year are higher burden of interest payments from the M&A deal, assets revaluations causing the increase in assets portion and the decrease in earnings from D&A. This result is similar to the study of Hogarty, 1987 that found that merged firms are not profit, even though the management and economic theory presume that merged firms should disclose improvement in profitability.

## 10. Results from accounting measures - CPALL acquired Makro

As reported in figure 15, the core deliberation is the performance from CPALL and Makro M&A case. The transaction year is changed to 2013 so three years prior to the event year are 2010-2012 and three years of post-merger are 2014-2016. Performance of CPALL<sup>15</sup> declines significantly from the average of 19.6% EBT/Assets ratios to 4.9% while Makro shows slightly improvement in the utilization of assets with the average of 13.1% to 13.7%. The result is in line with BigC performance that increases on average from 0.7% to 8.7% in the post-merging years. However, the industry presents the opposite result with the marginally shrinking in the performance from 9% to 8.7% in the same direction with CPALL but the magnitude is different. It implies the lower ability of CPALL to use assets to generate earnings. It is caused by the inflated in goodwill accounts, fixed assets, and intangible assets which result in the higher expenses trimming the performance to generate profit. This result opposes the results from Cornett and Tehranian, 1992 studying in the banking industry that illustrated the improvement in merged firm performance. Though, the researchers conducted the study by using the ratios of cash flow returns on assets which are not impacted by accounting policy.

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<sup>15</sup> Performance of CPALL is the consolidated performance which includes the performance of Makro into account.



EBT/Assets	Transaction		Peers - Benchmark			
	CPALL	MAKRO	BigC	COL	HMPRO	Peers Median
2010	19.3%	11.1%	10.0%		13.9%	12.0%
2011	20.0%	13.6%	7.1%	8.1%	14.2%	8.1%
2012	19.6%	14.5%	6.9%	5.9%	13.5%	6.9%
2013	4.2%	14.9%	8.7%	7.5%	10.7%	8.7%
2014	3.9%	14.1%	8.8%	7.5%	9.4%	8.8%
2015	5.1%	14.2%	9.0%	6.2%	9.4%	9.0%
2016	5.7%	12.8%	8.3%	5.8%	9.8%	8.3%

Figure 15: EBT/ Assets - CPALL & Makro Deal

Source: Annual Reports of the companies

As shown in figure 16, the EBT margins for CPALL and Makro transactions are computed the period of 2010-2012 compared with 2014-2016 to identify any improvement in profitability of the transactions. Performance of CPALL versus the merging firm diminishes from the average of 7.1% to 4.2% while the performance of the target firm increases from 3.8% to 4.2%. It is in the similar direction with BigC performance and the industry which show inappreciably increase in the margins from 5.5% to 6.7% and from 6.3% to 6.7%, respectively. The drop in margins ratios of CPALL implies the overspending of investment in the transaction of acquiring Makro causing the company assets to increase more than the ability of the company to utilize them in order to generate returns. The result is similar to Sharma and Ho, 2002 who revealed that merged firms are not profit.

EBT Margin	Transaction		Peers - Benchmark			
	CPALL	MAKRO	BigC	COL	HMPRO	Peers Median
2010	6.8%	3.2%	5.4%		9.3%	7.3%
2011	7.1%	4.2%	5.9%	4.0%	10.0%	5.9%
2012	7.5%	4.1%	5.4%	5.6%	9.8%	5.6%
2013	4.7%	4.2%	6.7%	6.0%	9.4%	6.7%
2014	3.5%	4.3%	6.9%	5.9%	8.4%	6.9%
2015	4.3%	4.4%	6.5%	4.8%	8.2%	6.5%
2016	4.6%	3.9%	6.6%	4.4%	8.7%	6.6%

Figure 16: EBT Margin - CPALL & Makro Deal

Source: Annual Reports of the companies

## 11. Conclusion

During the period of 2013-2016, there were two dominant deals in the retail industry. The first one is the acquisition of Makro by CPALL in 2013. The latter one is the acquisition of BigC by BJC in 2016. Both deals impact the competitiveness in the industry due to their considerable size. This paper focuses on the impacts from BJC and BigC deals while using the deal of CPALL acquiring Makro as the comparison transaction. The study aims to investigate whether BJC taking over BigC transactions

create wealth to shareholders in the short term and long term reflecting in two measures, stock measures and accounting measures. The stock returns are evaluated by using an event study approach to answer three questions in the short time. The first one is the length of time the market absorbs information reflects in the movement of stock price trading surroundings the event date. CPALL investors as the bidder roles received information two days prior to the announcement date while in the BJC case, BigC investors as the target roles reacted one day before the announcement date. The result from the BJC deal also shows that the majority of investors reacts on the announcement at the event date with the significant abnormal returns of 8.95% for the target and slightly higher for the acquirer at 10.30%. While the results from Makro deal suggest that there are no gains from either party on the event date, the bidder shareholders receive marginally positive abnormal returns two days prior to the event date. While, Makro has the negative abnormal returns of 5.43% in the day before the event date. Three cases suggest the possibility of rumors before the announcement date for CPALL, Big C, and Makro.

In addition, the short-term shareholders gain for the bidder and the target is the second inquiry. The result from the acquisition of BigC reveals that the target has positive returns in two window period, 7 days[-3, +3] and 11 days[-5, +5], but the acquirer results in the positive abnormal returns only in 7 days [-3, +3] period before recovering in the 23 days period [-11, +11]. However, the gain in the 7 days period of the acquirer is higher than the target at 5.93% and 4.74%. The result from CPALL transaction illustrates the negative returns for the target in every window period while the bidder enjoys the abnormal returns in 3 different window periods, [-3, +3] [-5, +5] [-11, +11]. This result is similar to Jensen and Ruback, 1983 that target shareholders receive premium. According to Bashir et. Al, 2011, it supports the results of acquirers that gain in both 7 days and 11 days event window periods while the target experience loses in both windows. The results are comparable to the CPALL case, but the consequence of BJC shows only the shorter window gains. The outcomes from target perspective is only similar to the case of Makro but different in the case of BigC that has positive gains in both window periods. These phenomena reflect the investors' point of view towards the deal synergies compared to the price. In the BJC case, the implication is that both sides of the investors have a positive outlook on the deal. In contrast, Makro investors view the deal as distorting value merger with the cumulative negative returns in every window period.

The third examination is on the preference expanding strategy whether diversifying or concentrating is a better strategy from investor reactions. According to Cummins and Weiss, 2004, diversified mergers have superior value for acquirers while concentration creates gains for the target. Potential benefits of diversification are related to tax and debt capacity. For example, diversified firms can utilize tax saving by offsetting losses in some business units against gains in others. Comparing between CPALL case, the concentrating deal, and BJC case, with the diversifying expansion, BJC case results in the higher cumulative returns in the 7 days and 11 days window period than CPALL case. Both window periods are good measures for the short-term prospect from investors. Therefore, diversifying is preferred by the investors on both target and acquirer.

On the other hand, accounting measures are used to assess the long-term performance to analyze three aspects from M&A impacts. The accounting approach

can confirm a profitability strategy in M&A, and examine the improvement in performance comparing to the premium paid recorded in the increase in assets by proving from the fact of historical performance of EBT over assets. The transaction of BJC causes the decline in performance less than the CPALL case. The EBT over assets ratios of BJC modern trade segment remain close to the average of BigC performance which is the pre-acquisition performance. However, CPALL performance has dropped significantly after the takeovers. This may be caused by the higher premium CPALL gives to the target but the plans to create earnings offsetting the premium are not as expected, resulting in the possibility of goodwill impairment. It implies that the bidder is over valuing the target. Hence, diversification seems to be the better strategy. This result is different from the findings of Berger and Ofek, 1995 that acquisitions in similar business increase value, but diversification strategies enervate the firm profitability due to overinvestment behaviors.

The final investigation examines the synergies from the M&A deals revealing in margins ratios. The consequence from BJC modern trade segment is, on average, less than the prior EBT margins of BigC. However, the CPALL case reveals an interesting result that while the bidder profitability decreases, the target profitability increases. It may be due to the industry factors as results of BigC in the same period also increase. The decrease in the profitability ratios of bidders can be due to the accounting effect that leads to the increase in assets and the higher burdens of debt used to finance the transactions.

## 12. Recommendations

There are five main recommendations from this study. The first one is a limitation that this research focuses on only a transaction of BJC acquiring BigC which do not disclose the helicopter view of the M&A perspective in Thailand. The extension in the study of other transactions in the market with various industry samples should be a good inference for the M&A market in Thailand. The use of the industry transaction will allow the test of significance of the results in the statistical terms. Additionally, the information disclosed in Thailand is not detailed and reflects the actual situations such as the type of takeovers and sources of fund to support the transactions. The M&A deals in Thailand mostly states the type of takeovers as friendly whereas in the developed countries there are various types of takeover disclosures. The sources of funds are commonly the bridge loans which are the short-term funding to guarantee in the bidding process. Long-term borrowings or capital injection from shareholders sources should be elaborated in detail. These two factors have significant impacts on the post-merger performance.

Secondly, the long-term performance evaluation by using the accounting measures should be extended to more than three years to capture any possible benefits generated from the mergers. However, due to the limited time period we have, the evaluation of only three years may not be adequate to deliberate the results of performance increase from takeover. Thirdly, there are other factors that impact the success of the M&A. For example, the culture integration of post-merger can impact the performance and synergies creations. The disruptions from technology are the

second instance that can cause the failure of synergy plans. Moreover, the accounting measures should be based on either earnings that are not affected by the interest and D&A or cash flow measures. The use of EBT has limitations in terms of the inclusion of accounting policy and approach of funding distorting the actual value creation. Assets can be calculated in many different ways to avoid the impact of inflating from accounting measurements. However, due to the limited information disclosed by BJC, this study used the EBT which absorbed the accounting policy and assets revaluation into consideration.

Thirdly, the stock price may be affected by other factors such as company news other than the announcement of mergers. Thus, the deep investigation in news and cause of the stock price movement should be considered. Stock measures are sensitive to market sentiment and emotions of investors. This should be aware in terms of analysis. Stock price is also unable to provide sources of gains from the M&A. It only reveals the expectation of the markets reacting to the new information. This study is unable to differ between the real economic gains and the market inefficiency. It is possible that the takeover is caused by the inside information that the target company is under value. After taking over the target, the price moves up to its intrinsic value without any benefits caused by the M&A transactions. For example, the case of Makro is ambiguous due to the trend of significant abnormal returns 19 days prior to the event date. Further studies on the company's other related news and financial situations should be conducted.

Fourthly, regulators relating to market efficiency should conduct further investigation on the root causes of the abnormal gains prior to the public announcement. It implies that Thai stock market may have asymmetric information among investors. Minority investors may experience unfairness in the stock market. It also affects the trust of foreign investors to invest in Thailand. Thus, there are some recommendations regarding this issue. The first one is the strict control of the working team, who has superior information, covering all levels in the company working on the deal. Secondly, regulators should establish good practical guidelines for corporations to follow in terms of the information revealing, for example limiting the number of people to know the announcement dates and limiting the trading of those people. Lastly, the regulators should trace and find the root cause of any deal that results in the significant abnormal returns.

Finally, in terms of the antitrust law, authorities should investigate the gain of profit after takeovers carefully to ensure that the company does not gain monopoly power from the acquisitions. This identification is difficult in Thailand due to the confusion of market shares calculation. The regulators should have a clear guideline and publicly announce market shares as developed countries usually performs.

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## 15. Appendixes

### BJC acquire BigC

#### Key financial Statement of BigC & BJC

Big C SuperCenter Before The Transaction				
Key Financial Income Statements				
Millions Baht	2012	2013	2014	2015
Total Revenue	122,394	130,971	135,401	133,576
Gross Profit	26,374	30,481	31,782	30,402
SG&A	18,577	20,936	21,793	21,335
Operating Income	7,797	9,545	9,989	9,067
Net Income	6,074	6,976	7,235	6,898

Source: Annual Reports

Big C SuperCenter Before The Transaction				
Key Financial Statements of positions				
Millions Baht	2012	2013	2014	2015
<b>Assets</b>				
Total Receivables	4,051	4,750	4,170	2,353
Inventory	9,196	9,535	11,552	10,918
Total Current Assets	22,411	21,782	27,314	15,951
Net Property, Plant & Equipment	38,654	42,479	42,230	43,039
<b>Total Assets</b>	<b>94,163</b>	<b>97,164</b>	<b>102,778</b>	<b>92,862</b>
<b>Liabilities and Equity</b>				
Accounts Payable	22,823	22,794	24,546	22,801
Total Current Liabilities	36,980	37,156	42,102	34,819
<b>Total Liabilities</b>	<b>62,276</b>	<b>60,126</b>	<b>60,632</b>	<b>46,191</b>
Total Debt	29,262	26,580	24,898	12,213
Net Debt	20,482	19,406	13,484	9,781
<b>Total Equity</b>	<b>31,887</b>	<b>37,038</b>	<b>42,147</b>	<b>46,671</b>

Source: Annual Reports

#### Details of Event study BigC & BJC

OLS Model BJC

Regression Statistics	
Multiple R	0.40
R Square	0.16
Adjusted R Squ:	0.16
Standard Error	0.02
Observations	239

ANOVA					
	df	SS	MS	F	Significance F
Regression	1	0.01	0.01	45.97	0.00
Residual	237	0.07	0.00		
Total	238	0.09			

	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%	Lower 95.0%	Upper 95.0%
Intercept	0.00	0.00	0.08	0.93	-	0.00	0.00	0.00
X Variable 1	0.84	0.12	6.78	0.00	0.60	1.08	0.60	1.08

Source: S&P CapitalIQ

## OLS BigC

Regression Statistics	
Multiple R	0.26
R Square	0.07
Adjusted R Squa	0.06
Standard Error	0.02
Observations	239

## ANOVA

	df	SS	MS	F	Significance F
Regression	1	0.01	0.01	17.46	0.00
Residual	237	0.07	0.00		
Total	238	0.07			

	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%	Lower 95.0%	Upper 95.0%
Intercept	0.00	0.00	0.32	0.75	0.00	0.00	0.00	0.00
X Variable 1	0.51	0.12	4.18	0.00	0.27	0.74	0.27	0.74

Source: S&amp;P CapitalIQ

## Details of Accounting Measures BigC &amp; BJC

Millions Baht	Transaction		Peers - Benchmark				
	Revenues	BigC	BJC-Moden trade	CPALL	MAKRO	HMPRO	COL
2013		126,922		272,286	129,087	41,005	8,685
2014		131,230		357,766	141,828	49,156	9,378
2015		129,407		391,817	155,217	53,990	10,244
2016		117,341		434,712	172,093	58,753	11,138
2017			221,961	471,069	185,804	61,785	11,517
2018			269,386	508,212	191,997	63,926	10,325
2019			272,475	550,901	209,772	65,253	10,535

Millions Baht	Transaction		Peers - Benchmark				
	EBT	BigC	BJC-Moden trade	CPALL	MAKRO	HMPRO	COL
2013		6,976		12,884	5,363	3,857	525
2014		7,235		12,652	6,161	4,151	551
2015		6,898		16,930	6,825	4,417	492
2016		6,409		20,159	6,762	5,095	486
2017			7,319	23,554	7,706	5,987	624
2018			7,508	25,152	7,474	6,922	900
2019			8,098	26,764	7,895	7,604	953

Millions Baht	Transaction		Peers - Benchmark				
	Assets	BigC	BJC-Moden trade	CPALL	MAKRO	HMPRO	COL
2013		97,164		304,008	36,104	35,942	6,961
2014		102,778		326,410	43,666	44,313	7,354
2015		92,862		329,083	47,910	46,991	7,895
2016		93,645		352,268	52,859	51,746	8,321
2017			103,962	360,299	58,976	50,949	8,862
2018			109,847	373,742	62,065	54,811	9,239
2019			111,389	375,617	62,641	52,049	9,797

Source: Annual Reports

<b>Big C SuperCenter Before The Transaction</b>				
<b>Key Financial Statements of positions</b>				
<b>Millions Baht</b>	<b>2012</b>	<b>2013</b>	<b>2014</b>	<b>2015</b>
<b>Assets</b>				
Total Receivables	4,051	4,750	4,170	2,353
Inventory	9,196	9,535	11,552	10,918
Total Current Assets	22,411	21,782	27,314	15,951
Net Property, Plant & Equipment	38,654	42,479	42,230	43,039
<b>Total Assets</b>	<b>94,163</b>	<b>97,164</b>	<b>102,778</b>	<b>92,862</b>
<b>Liabilities and Equity</b>				
Accounts Payable	22,823	22,794	24,546	22,801
Total Current Liabilities	36,980	37,156	42,102	34,819
<b>Total Liabilities</b>	<b>62,276</b>	<b>60,126</b>	<b>60,632</b>	<b>46,191</b>
Total Debt	29,262	26,580	24,898	12,213
Net Debt	20,482	19,406	13,484	9,781
<b>Total Equity</b>	<b>31,887</b>	<b>37,038</b>	<b>42,147</b>	<b>46,671</b>

Source: Annual Reports

## **CPALL and Makro Transaction**

### **Company profile**

CP ALL Public Company Limited, together with its subsidiaries, operates and franchises convenience stores under the 7-Eleven name to other retailers primarily in Thailand. It operates through three segments: Convenience Stores, Cash and Carry, and Other. The company is involved in the manufacture and sale of convenience and frozen foods, and bakery products; sale and maintenance of retail equipment; information technology, as well as marketing and advertising activities; provision of research and development services; and cash and carry and e-commerce business, as well as operates as a life and accident insurance broker. It also distributes commercial cards and tickets, catalog merchandises, and equipment for retailing and software development; and offers bill payment collection, information technology, logistics, smart purse cards, investment, educational institution, human resources development, and training and business seminar services, as well as healthcare and medical specialist's consultation services. As of December 31, 2019, CP ALL Public Company Limited operated 11,712 stores. The company was formerly known as C.P. Seven Eleven Public Company Limited and changed its name to CP ALL Public Company Limited in 2007. CP ALL Public Company Limited was founded in 1988 and is headquartered in Bangkok, Thailand.

Siam Makro Public Company Limited operates cash and carry trade centers under the Makro name in Thailand. The company's trade centers sells food and non-food products to registered members, including small and medium size businesses, retailers, caterers, professional sectors, and institutions. It also imports, exports, trades

in, and distributes food products; and provides freight, delivery, rental, and storage services. As of December 31, 2018, it operated 122 Makro stores and 7 frozen shops. The company was founded in 1988 and is headquartered in Bangkok, Thailand. Siam Makro Public Company Limited is a subsidiary of CP ALL Public Company Limited.

### Deal details CPALL acquired Makro

CPALL signed the agreement to acquire an additional 64.35% stake in MAKRO from Shv Nederland B.v. and others for approximately THB 121 billion on April 23, 2013. CP ALL planed to acquire 154.4 million shares of Siam Makro Public Company for THB 787 per share. The transaction will be funded from the cash flows from the operations and credit facilities support from financial institutions by bridge loan of THB 180 billion for acquisition. Frank & Harris, 1989 pointed out that cash acquisition shows higher returns than equity or mixed sources. This can be explained by the signaling theory that equity announcement may imply the overvalued stock price of bidding firm. Comparing with the transaction of BJC, CPALL should have high returns due to the less possibility of dilution effects to shareholder by using some portion of cash from operations. The transaction is disclosed as friendly similarly to BJC takeovers. In 2013, the ownership of CP in CPALL is totally 43.8% breaking into 32.5% by CPF subsidiaries (hereafter, CPF) and 11.3% of Charoen Pokphand Group (CP Group). The concentration of ownership can create agency problem causing the managers to overthinking in the investment opportunity and forego the interesting ones. On the other hand, the less portions of ownership can create the short-sight decision making strategy. According to Agarwal & Mandelker, 1987, the concentration of ownership in bidding firms yields positive returns. Therefore, by considering this aspect, BJC has higher percentages of ownership during the time of engagement implying that BJC should generate higher positive returns more than CPALL transaction. The conflicting results in terms of ownerships and source of funded will be evaluated in this paper using accounting measures.

### Key Financial Statements CPALL Makro UNIVERSITY

Key Financial Income Statements CPALL										
Millions Baht	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Total Revenue	140,437	161,259	197,195	284,230	370,749	405,735	451,632	489,165	526,855	570,712
Gross Profit	39,041	44,396	57,104	73,573	89,306	99,411	112,111	123,341	132,223	144,649
SG&A	30,050	34,012	43,736	58,384	68,750	74,096	83,816	92,033	100,195	111,562
Operating Income	8,991	10,384	13,368	15,189	20,556	25,315	28,295	31,309	32,028	33,087
Net Income	6,663	8,008	11,049	10,503	10,200	13,682	16,677	19,908	20,930	22,343
Key Financial Balance Sheets CPALL										
Millions Baht	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
<b>Assets</b>										
Total Receivables	1,706	1,363	2,899	4,525	5,980	5,696	7,659	8,313	9,446	9,447
Inventory	6,518	8,642	9,148	19,916	22,167	25,072	26,743	27,430	29,570	31,538
Total Current Assets	30,713	36,404	48,854	53,963	64,684	56,973	69,899	66,573	74,994	71,923
Net Property, Plant & Equipment	14,525	14,994	18,094	71,273	80,201	89,447	99,127	106,394	111,287	116,082
<b>Total Assets</b>	47,904	55,341	72,168	304,008	326,410	329,083	352,268	360,299	373,742	375,617
<b>Liabilities and Equity</b>										
Accounts Payable	21,613	24,393	32,580	54,734	59,312	62,624	66,959	74,742	78,790	78,550
Total Current Liabilities	27,369	30,479	41,025	200,798	92,015	101,131	113,818	112,107	123,752	112,917
<b>Total Liabilities</b>	29,946	33,642	44,812	271,037	291,352	287,407	292,665	280,070	273,923	267,250
Total Debt	-	2	-	185,337	198,480	189,486	189,106	167,038	154,263	145,705
Net Debt	- 20,151	- 24,093	- 35,056	159,654	165,044	166,566	154,287	136,774	118,773	115,185
<b>Total Equity</b>	17,958	21,699	27,355	32,970	35,058	41,676	59,603	80,229	99,819	108,368

Key Financial Income Statements Makro										
Millions Baht	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Total Revenue	88,651	99,628	114,891	129,644	141,828	155,217	172,093	185,804	191,997	209,772
Gross Profit	8,503	10,226	12,130	13,971	15,057	17,280	18,370	21,452	22,358	24,760
SG&A	5,641	6,076	7,419	8,598	9,386	10,930	12,026	14,347	15,481	17,410
Operating Income	2,862	4,150	4,711	5,373	6,290	7,043	7,033	8,044	7,780	8,185
Net Income	1,881	2,604	3,534	4,299	4,922	5,378	5,413	6,178	5,942	6,245

Key Financial Balance Sheets Makro										
Millions Baht	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
<b>Assets</b>										
Total Receivables	886	970	1,245	1,456	1,906	1,797	2,400	2,890	3,405	3,583
Inventory	5,898	7,212	7,276	9,792	10,628	12,954	13,485	13,043	14,361	14,774
Total Current Assets	12,227	14,585	14,688	16,436	17,406	17,326	18,529	20,413	22,999	23,333
Net Property, Plant & Equipment	12,406	14,824	16,499	18,098	23,655	27,039	30,319	31,305	31,553	31,579
<b>Total Assets</b>	<b>25,492</b>	<b>30,319</b>	<b>32,291</b>	<b>36,104</b>	<b>43,666</b>	<b>47,910</b>	<b>52,859</b>	<b>58,976</b>	<b>62,065</b>	<b>62,641</b>
<b>Liabilities and Equity</b>										
Accounts Payable	12,812	15,596	15,728	18,177	20,629	22,164	24,458	26,120	25,178	26,425
Total Current Liabilities	15,949	20,249	21,001	24,540	27,975	28,684	33,704	37,118	34,094	32,749
<b>Total Liabilities</b>	<b>16,316</b>	<b>20,639</b>	<b>21,428</b>	<b>25,083</b>	<b>30,879</b>	<b>33,703</b>	<b>37,118</b>	<b>40,965</b>	<b>42,809</b>	<b>41,907</b>
Total Debt	1,355	2,202	2,228	3,360	5,765	7,219	8,269	9,156	11,283	8,487
Net Debt	- 3,939	- 4,087	- 3,828	- 1,651	1,201	4,990	5,718	4,793	6,188	3,644
<b>Total Equity</b>	<b>9,176</b>	<b>9,681</b>	<b>10,863</b>	<b>11,021</b>	<b>12,787</b>	<b>14,207</b>	<b>15,742</b>	<b>18,011</b>	<b>19,257</b>	<b>20,734</b>

Source: Annual Reports

## Details of Even Study CPALL& Makro

### OLS- CPALL 2013

Regression Statistics	
Multiple R	0.44
R Square	0.20
Adjusted R Square	0.19
Standard Error	0.02
Observations	239

ANOVA					
	df	SS	MS	F	Significance F
Regression	1	0.01	0.01	57.79	0.00
Residual	237	0.06	0.00		
Total	238	0.08			

	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%	Lower 95.0%	Upper 95.0%
Intercept	0.00	0.00	0.38	0.70	0.00	0.00	0.00	0.00
X Variable 1	1.00	0.13	7.60	0.00	0.74	1.26	0.74	1.26

### OLS- Makro 2013

Regression Statistics	
Multiple R	0.42
R Square	0.18
Adjusted R Square	0.17
Standard Error	0.02
Observations	239

ANOVA					
	df	SS	MS	F	Significance F
Regression	1	0.02	0.02	50.83	0.00
Residual	237	0.09	0.00		
Total	238	0.11			

	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%	Lower 95.0%	Upper 95.0%
Intercept	0.00	0.00	0.29	0.77	0.00	0.00	0.00	0.00
X Variable 1	1.15	0.16	7.13	0.00	0.83	1.47	0.83	1.47

## OLS - CPALL 2016

Regression Statistics	
Multiple R	0.12
R Square	0.02
Adjusted R	0.01
Standard E	0.02
Observatic	239

ANOVA					
	df	SS	MS	F	Significance F
Regressor	1	0.00	0.00	3.64	0.06
Residual	237	0.06	0.00		
Total	238	0.06			

	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%	Lower 95.0%	Upper 95.0%
Intercept	0.00	0.00	0.15	0.88	- 0.00	0.00	- 0.00	0.00
X Variable	0.21	0.11	1.91	0.06	- 0.01	0.43	- 0.01	0.43

## OLS - Makro 2016

Regression Statistics	
Multiple R	0.05
R Square	0.00
Adjusted R Square	- 0.00
Standard Error	0.01
Observations	239

ANOVA					
	df	SS	MS	F	Significance F
Regression	1	0.00	0.00	0.53	0.47
Residual	237	0.03	0.00		
Total	238	0.03			

	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%	Lower 95.0%	Upper 95.0%
Intercept	- 0.00	0.00	- 0.23	0.82	- 0.00	0.00	- 0.00	0.00
X Variable 1	0.06	0.08	0.73	0.47	- 0.10	0.22	- 0.10	0.22

Source: S&amp;P CapitalIQ

## Details of Accounting Measures CPALL &amp; Makro

Millions Baht	Transaction		Peers - Benchmark			
	Revenues	CPALL	MAKRO	BigC	COL	HMPRO
2010		134,954	88,188	74,059		24,840
2011		155,360	99,102	109,548	5,780	29,177
2012		188,702	114,333	120,062	6,786	35,435
2013		272,286	129,087	126,922	8,685	41,005
2014		357,766	141,828	131,230	9,378	49,156
2015		391,817	155,217	129,407	10,244	53,990
2016		434,712	172,093	117,341	11,138	58,753

Millions Baht	Transaction		Peers - Benchmark			
	EBT	CPALL	MAKRO	BigC	COL	HMPRO
2010		9,224	2,840	3,972		2,303
2011		11,051	4,128	6,417	233	2,927
2012		14,139	4,672	6,502	379	3,483
2013		12,884	5,363	8,492	525	3,857
2014		12,652	6,161	9,012	551	4,151
2015		16,930	6,825	8,390	492	4,417
2016		20,159	6,762	7,775	486	5,095



Millions Baht	Transaction		Peers - Benchmark		
	Assets	CPALL	MAKRO	BigC	COL
2010	47,904	25,492	39,533		16,592
2011	55,341	30,319	90,726	2,881	20,678
2012	72,168	32,291	94,163	6,405	25,868
2013	304,008	36,104	97,164	6,961	35,942
2014	326,410	43,666	102,778	7,354	44,313
2015	329,083	47,910	92,862	7,895	46,991
2016	352,268	52,859	93,645	8,321	51,746

Source: Annual Reports

### Other comparable company details

### Key Financial Statements HMPRO

Key Financial Income Statements HMPRO										
Millions Baht	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Total Revenue	25,915	30,502	36,969	42,725	51,209	56,243	61,144	64,234	66,050	67,424
Gross Profit	7,863	9,428	11,410	13,379	15,736	17,243	18,739	20,185	19,293	20,125
SG&A	5,409	6,306	7,756	9,196	11,058	12,260	13,129	13,746	11,927	12,098
Operating Income	2,453	3,123	3,653	4,183	4,677	4,984	5,611	6,439	7,366	8,027
Net Income	1,638	2,005	2,671	3,068	3,313	3,499	4,125	4,886	5,613	6,177
<b>Margin Analysis</b>										
Gross Margin %	30.3%	30.9%	30.9%	31.3%	30.7%	30.7%	30.6%	31.4%	29.2%	29.8%
SG&A Margin %	20.9%	20.7%	21.0%	21.5%	21.6%	21.8%	21.5%	21.4%	18.1%	17.9%
EBITDA Margin %	12.7%	13.5%	13.2%	13.6%	13.5%	13.6%	13.9%	14.7%	15.6%	16.2%
EBIT Margin %	9.5%	10.2%	9.9%	9.8%	9.1%	8.9%	9.2%	10.0%	11.2%	11.9%
Net Income Margin %	6.3%	6.6%	7.2%	7.2%	6.5%	6.2%	6.7%	7.6%	8.5%	9.2%

Key Financial Balance Sheets HMPRO										
Millions Baht	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
<b>Assets</b>										
Total Receivables	662	986	1,316	1,589	2,013	2,045	2,318	2,192	2,343	2,232
Inventory	3,714	4,382	5,353	6,506	8,031	8,365	9,672	10,343	10,245	10,421
Total Current Assets	5,889	7,455	8,132	9,221	12,791	13,367	15,900	15,242	19,006	15,690
Net Property, Plant & Equipment	8,514	10,812	14,847	23,235	26,352	27,655	29,540	29,422	29,327	29,637
<b>Total Assets</b>	16,592	20,678	25,868	35,942	44,313	46,991	51,746	50,949	54,811	52,049
<b>Liabilities and Equity</b>										
Accounts Payable	4,937	5,945	6,698	8,644	9,657	10,860	11,895	11,901	12,151	11,716
Total Current Liabilities	7,634	9,116	11,588	14,331	16,777	19,464	22,491	20,378	23,651	22,289
<b>Total Liabilities</b>	10,354	12,557	15,941	23,225	28,611	30,088	34,256	32,315	34,897	30,911
Total Debt	2,742	3,012	5,523	9,787	13,876	14,377	16,875	15,063	17,262	13,388
Net Debt	1,324	1,035	4,232	8,980	11,441	11,679	13,155	12,558	11,024	10,528
<b>Total Equity</b>	6,238	8,121	9,927	12,716	15,702	16,903	17,490	18,635	19,914	21,138

Key Financial Balance Sheets HMPRO										
Millions Baht	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
<b>Profitability</b>										
Return on Assets %	10.1%	10.5%	9.8%	8.5%	7.3%	6.8%	7.1%	7.8%	8.7%	9.4%
Return on Equity %	28.6%	27.9%	29.6%	27.1%	23.3%	21.5%	24.0%	27.1%	29.1%	30.1%
<b>Asset Turnover</b>										
Total Asset Turnover	1.7x	1.6x	1.6x	1.4x	1.3x	1.2x	1.2x	1.3x	1.2x	1.3x
Fixed Asset Turnover	3.0x	3.2x	2.9x	2.2x	2.1x	2.1x	2.1x	2.2x	2.2x	2.3x
<b>Short Term Liquidity</b>										
Current Ratio	0.8x	0.8x	0.7x	0.6x	0.8x	0.7x	0.7x	0.7x	0.8x	0.7x
Avg. Days Sales Out.	2.3	2.4	2.7	2.9	2.2	1.9	2.0	1.5	1.3	1.4
Avg. Days Inventory Out.	66.9	70.1	69.7	73.7	74.8	76.7	77.8	82.9	80.4	79.7
Avg. Days Payable Out.	88.6	91.3	87.2	91.8	90.3	95.2	95.3	97.1	94.1	91.7
Avg. Cash Conversion Cycle	- 19.4	- 18.8	- 14.8	- 15.2	- 13.3	- 16.6	- 15.4	- 12.7	- 12.4	- 10.6
<b>Long Term Solvency</b>										
Total Debt/Equity	43.9%	37.1%	55.6%	77.0%	88.4%	85.1%	96.5%	80.8%	86.7%	63.3%
Total Liabilities/Total Assets	62.4%	60.7%	61.6%	64.6%	64.6%	64.0%	66.2%	63.4%	63.7%	59.4%
EBIT / Interest Exp.	23.7x	26.6x	25.0x	15.1x	10.0x	9.2x	11.1x	14.4x	18.4x	19.8x

Source: Annual Reports

## Key Financial Statements COL

Key Financial Balance Sheets COL									
Millions Baht	2011	2012	2013	2014	2015	2016	2017	2018	2019
<b>Profitability</b>									
Return on Assets %	NA	5.0%	4.8%	4.7%	4.0%	4.0%	5.1%	6.2%	6.2%
Return on Equity %	NA	9.8%	9.3%	9.3%	8.0%	7.6%	9.0%	12.1%	12.0%
<b>Asset Turnover</b>									
Total Asset Turnover	NA	1.5x	1.4x	1.4x	1.4x	1.5x	1.4x	1.2x	1.2x
Fixed Asset Turnover	NA	16.7x	14.2x	13.6x	14.2x	10.0x	7.5x	6.6x	6.7x
<b>Short Term Liquidity</b>									
Current Ratio	1.5x	1.2x	1.2x	1.3x	1.3x	1.1x	1.2x	1.4x	1.5x
Avg. Days Sales Out.	NA	12.9	11.1	10.4	10.5	10.9	11.5	13.8	13.9
Avg. Days Inventory Out.	NA	75.8	74.5	76.3	76.0	75.0	77.6	102.0	112.2
Avg. Days Payable Out.	NA	94.6	97.1	97.2	97.4	97.8	98.6	114.8	112.8
Avg. Cash Conversion Cycle	NA	5.9	11.6	10.5	10.9	11.9	9.5	1.0	13.3
<b>Long Term Solvency</b>									
Total Debt/Equity	8.0%	0.1%	NA	NA	NA	NA	NA	0.1%	NA
Total Liabilities/Total Assets	54.3%	33.8%	34.4%	34.0%	35.8%	36.5%	34.6%	32.3%	32.0%
EBIT / Interest Exp.	41.5x	92.9x	NA	NA	NA	NA	NA	NA	NA

Remark: NA stand for not applicable or the information is not materistic

Key Financial Balance Sheets COL									
Millions Baht	2011	2012	2013	2014	2015	2016	2017	2018	2019
<b>Assets</b>									
Total Receivables	1,048	398	572	556	582	680	783	960	1,060
Inventory	871	1,266	1,411	1,531	1,631	1,711	1,823	2,027	2,265
Total Current Assets	2,298	2,393	2,799	3,127	3,625	3,123	3,591	3,957	4,499
Net Property, Plant & Equipment	284	564	711	735	787	1,560	1,680	1,701	1,656
<b>Total Assets</b>	<b>2,881</b>	<b>6,405</b>	<b>6,961</b>	<b>7,354</b>	<b>7,895</b>	<b>8,321</b>	<b>8,862</b>	<b>9,239</b>	<b>9,797</b>
<b>Liabilities and Equity</b>									
Accounts Payable	1,152	1,719	1,850	1,963	2,141	2,259	2,293	2,167	2,293
Total Current Liabilities	1,545	2,079	2,311	2,421	2,736	2,946	2,967	2,857	2,949
<b>Total Liabilities</b>	<b>1,565</b>	<b>2,167</b>	<b>2,394</b>	<b>2,503</b>	<b>2,825</b>	<b>3,041</b>	<b>3,066</b>	<b>2,983</b>	<b>3,137</b>
Total Debt	105	5	-	-	-	-	-	9	-
Net Debt	- 272	- 717	- 813	- 1,029	- 1,403	- 672	- 938	- 912	- 1,070
<b>Total Equity</b>	<b>1,316</b>	<b>4,239</b>	<b>4,567</b>	<b>4,851</b>	<b>5,071</b>	<b>5,280</b>	<b>5,796</b>	<b>6,256</b>	<b>6,660</b>

Key Financial Income Statements COL									
Millions Baht	2011	2012	2013	2014	2015	2016	2017	2018	2019
Total Revenue	6,081	7,089	9,083	9,866	10,816	11,764	12,204	11,071	11,312
Gross Profit	1,648	1,931	2,523	2,831	3,225	3,609	3,892	4,183	4,333
SG&A	1,417	1,623	2,046	2,342	2,741	3,085	3,192	3,291	3,388
Operating Income	234	368	515	542	483	523	699	892	944
Net Income	121	272	409	439	394	384	502	733	762
<b>Margin Analysis</b>									
Gross Margin %	27.1%	27.2%	27.8%	28.7%	29.8%	30.7%	31.9%	37.8%	38.3%
SG&A Margin %	23.3%	22.9%	22.5%	23.7%	25.3%	26.2%	26.2%	29.7%	30.0%
EBITDA Margin %	5.5%	7.0%	7.7%	7.7%	6.6%	6.7%	7.9%	10.7%	11.2%
EBIT Margin %	3.9%	5.2%	5.7%	5.5%	4.5%	4.4%	5.7%	8.1%	8.3%
Net Income Margin %	2.0%	3.8%	4.5%	4.5%	3.6%	3.3%	4.1%	6.6%	6.7%

Source: Annual Reports

## Abnormal return Calculation

### Abnormal return BJC

	Dates	% Return SET	% Return BJC	3M T-Bill	Risk premium	CAPM Return	Abnormal Return
-267	Jan-06-2015	-0.38%	-1.84%	2.02%	-2.40%	0.00%	-1.84%
-266	Jan-07-2015	1.57%	2.50%	2.01%	-0.44%	1.64%	0.86%
-265	Jan-08-2015	1.39%	1.22%	2.00%	-0.61%	1.49%	-0.27%
-264	Jan-09-2015	0.51%	-0.60%	2.00%	-1.49%	0.75%	-1.35%
-263	Jan-12-2015	0.12%	-1.21%	2.00%	-1.88%	0.42%	-1.63%
-262	Jan-13-2015	0.25%	-1.84%	1.99%	-1.74%	0.53%	-2.37%
-261	Jan-14-2015	-0.76%	-2.50%	1.98%	-2.75%	-0.32%	-2.18%
-260	Jan-15-2015	0.01%	0.64%	1.98%	-1.97%	0.33%	0.32%
-259	Jan-16-2015	-0.37%	-0.64%	1.98%	-2.35%	0.01%	-0.64%
-258	Jan-19-2015	1.16%	1.92%	1.98%	-0.82%	1.29%	0.63%
-257	Jan-20-2015	-0.02%	-1.89%	1.98%	-1.99%	0.30%	-2.19%
-256	Jan-21-2015	0.15%	0.00%	1.98%	-1.83%	0.44%	-0.44%
-255	Jan-22-2015	1.49%	1.28%	1.98%	-0.48%	1.57%	-0.29%
-254	Jan-23-2015	2.43%	1.90%	1.98%	0.46%	2.36%	-0.46%
-253	Jan-26-2015	-0.63%	-0.62%	1.98%	-2.60%	-0.21%	-0.41%
-252	Jan-27-2015	0.09%	2.50%	1.97%	-1.88%	0.40%	2.10%
-251	Jan-28-2015	0.19%	0.00%	1.98%	-1.79%	0.48%	-0.48%
-250	Jan-29-2015	-0.40%	0.61%	1.99%	-2.39%	-0.02%	0.63%
-249	Jan-30-2015	-0.32%	-2.42%	1.99%	-2.31%	0.05%	-2.47%
-248	Feb-02-2015	0.09%	-1.86%	1.99%	-1.89%	0.40%	-2.26%
-247	Feb-03-2015	1.25%	2.53%	1.99%	-0.73%	1.37%	1.16%
-246	Feb-04-2015	-0.17%	-1.85%	1.99%	-2.16%	0.18%	-2.03%
-245	Feb-05-2015	0.51%	1.89%	1.99%	-1.48%	0.74%	1.14%
-244	Feb-06-2015	0.36%	0.00%	1.99%	-1.63%	0.62%	-0.62%
-243	Feb-09-2015	-0.73%	-1.85%	1.99%	-2.72%	-0.30%	-1.55%
-242	Feb-10-2015	-0.43%	-1.26%	1.99%	-2.42%	-0.04%	-1.22%
-241	Feb-11-2015	0.64%	1.91%	1.99%	-1.36%	0.85%	1.06%
-240	Feb-12-2015	0.52%	0.00%	1.99%	-1.48%	0.75%	-0.75%
-239	Feb-13-2015	0.15%	-1.25%	2.00%	-1.84%	0.45%	-1.70%
-238	Feb-16-2015	-0.49%	0.00%	2.00%	-2.49%	-0.09%	0.09%
-237	Feb-17-2015	-1.26%	0.00%	2.00%	-3.26%	-0.74%	0.74%
-236	Feb-18-2015	0.97%	1.27%	2.00%	-1.03%	1.14%	0.13%
-235	Feb-19-2015	-0.20%	-1.88%	2.00%	-2.20%	0.15%	-2.03%
-234	Feb-20-2015	0.22%	0.64%	2.00%	-1.78%	0.50%	0.13%
-233	Feb-23-2015	-0.60%	-1.27%	2.00%	-2.60%	-0.18%	-1.09%
-232	Feb-24-2015	0.30%	0.00%	2.00%	-1.70%	0.57%	-0.57%
-231	Feb-25-2015	-0.58%	1.28%	2.00%	-2.58%	-0.17%	1.45%
-230	Feb-26-2015	0.27%	-0.63%	2.00%	-1.73%	0.54%	-1.18%
-229	Feb-27-2015	-0.41%	0.00%	1.99%	-2.40%	-0.02%	0.02%
-228	Mar-02-2015	-0.31%	-1.91%	1.98%	-2.29%	0.06%	-1.97%
-227	Mar-03-2015	-1.22%	-2.60%	1.98%	-3.20%	-0.71%	-1.89%
-226	Mar-05-2015	-0.61%	-0.67%	1.97%	-2.58%	-0.19%	-0.47%
-225	Mar-06-2015	0.96%	2.01%	1.97%	-1.00%	1.12%	0.89%
-224	Mar-09-2015	-0.55%	0.00%	1.96%	-2.51%	-0.14%	0.14%
-223	Mar-10-2015	-1.84%	-3.95%	1.96%	-3.80%	-1.23%	-2.72%
-222	Mar-11-2015	0.84%	2.05%	1.83%	-0.99%	1.00%	1.06%
-221	Mar-12-2015	0.03%	-1.34%	1.78%	-1.75%	0.31%	-1.66%
-220	Mar-13-2015	-0.18%	-0.68%	1.77%	-1.96%	0.13%	-0.81%
-219	Mar-16-2015	-1.69%	-2.05%	1.77%	-3.46%	-1.13%	-0.92%
-218	Mar-17-2015	-0.18%	2.80%	1.77%	-1.95%	0.13%	2.66%
-217	Mar-18-2015	1.23%	1.36%	1.77%	-0.54%	1.32%	0.04%
-216	Mar-19-2015	0.04%	-2.68%	1.77%	-1.73%	0.32%	-3.00%
-215	Mar-20-2015	-0.14%	2.07%	1.77%	-1.91%	0.17%	1.90%
-214	Mar-23-2015	-0.65%	-2.70%	1.77%	-2.42%	-0.26%	-2.44%
-213	Mar-24-2015	-0.37%	0.69%	1.77%	-2.14%	-0.02%	0.72%
-212	Mar-25-2015	-0.11%	-1.38%	1.77%	-1.88%	0.19%	-1.57%
-211	Mar-26-2015	-1.08%	-2.10%	1.77%	-2.85%	-0.63%	-1.47%
-210	Mar-27-2015	-0.08%	3.57%	1.77%	-1.85%	0.22%	3.35%
-209	Mar-30-2015	0.09%	-2.07%	1.77%	-1.69%	0.36%	-2.43%
-208	Mar-31-2015	0.63%	3.52%	1.77%	-1.14%	0.81%	2.71%
-207	Apr-01-2015	1.30%	1.36%	1.77%	-0.47%	1.38%	-0.02%
-206	Apr-02-2015	0.44%	-0.67%	1.77%	-1.33%	0.65%	-1.32%
-205	Apr-03-2015	0.25%	2.03%	1.77%	-1.52%	0.49%	1.53%
-204	Apr-07-2015	0.88%	-0.66%	1.76%	-0.89%	1.02%	-1.68%
-203	Apr-08-2015	-0.30%	-4.00%	1.76%	-2.06%	0.03%	-4.03%

Source: S&P CapitalIQ

	Dates	% Return SET	% Return BJC	3M T-Bill	Risk premium	CAPM Return	Abnormal Return
-202	Apr-09-2015	0.02%	0.00%	1.76%	-1.74%	0.30%	-0.30%
-201	Apr-10-2015	0.18%	0.00%	1.75%	-1.58%	0.43%	-0.43%
-200	Apr-16-2015	1.43%	-1.39%	1.75%	-0.31%	1.48%	-2.87%
-199	Apr-17-2015	-0.20%	1.41%	1.74%	-1.94%	0.11%	1.30%
-198	Apr-20-2015	-0.42%	3.47%	1.74%	-2.15%	-0.07%	3.54%
-197	Apr-21-2015	0.58%	-1.34%	1.73%	-1.15%	0.76%	-2.11%
-196	Apr-22-2015	-1.10%	-1.36%	1.73%	-2.83%	-0.65%	-0.71%
-195	Apr-23-2015	-0.46%	0.69%	1.73%	-2.19%	-0.11%	0.80%
-194	Apr-24-2015	0.69%	0.00%	1.73%	-1.04%	0.85%	-0.85%
-193	Apr-27-2015	-0.43%	0.68%	1.72%	-2.15%	-0.08%	0.77%
-192	Apr-28-2015	-1.12%	-2.72%	1.72%	-2.84%	-0.66%	-2.06%
-191	Apr-29-2015	-0.59%	2.10%	1.57%	-2.16%	-0.24%	2.34%
-190	Apr-30-2015	0.28%	1.37%	1.53%	-1.25%	0.48%	0.89%
-189	May-06-2015	-0.45%	0.00%	1.53%	-1.98%	-0.13%	0.13%
-188	May-07-2015	-1.42%	-2.70%	1.53%	-2.95%	-0.95%	-1.76%
-187	May-08-2015	0.81%	0.00%	1.53%	-0.71%	0.93%	-0.93%
-186	May-11-2015	-0.61%	-1.39%	1.53%	-2.14%	-0.27%	-1.12%
-185	May-12-2015	-1.04%	1.41%	1.53%	-2.56%	-0.63%	2.03%
-184	May-13-2015	0.69%	-2.08%	1.53%	-0.84%	0.82%	-2.91%
-183	May-14-2015	0.10%	2.84%	1.53%	-1.43%	0.33%	2.51%
-182	May-15-2015	0.99%	0.00%	1.52%	-0.54%	1.07%	-1.07%
-181	May-18-2015	-0.12%	-2.07%	1.52%	-1.64%	0.15%	-2.21%
-180	May-19-2015	1.03%	0.70%	1.52%	-0.49%	1.11%	-0.40%
-179	May-20-2015	-0.38%	-0.70%	1.52%	-1.90%	-0.08%	-0.62%
-178	May-21-2015	0.40%	0.00%	1.52%	-1.11%	0.58%	-0.58%
-177	May-22-2015	-0.16%	-0.70%	1.51%	-1.67%	0.11%	-0.82%
-176	May-25-2015	-1.03%	-0.71%	1.51%	-2.54%	-0.62%	-0.09%
-175	May-26-2015	-0.67%	-0.71%	1.50%	-2.18%	-0.33%	-0.39%
-174	May-27-2015	0.19%	0.72%	1.50%	-1.31%	0.40%	0.32%
-173	May-28-2015	-0.48%	-2.14%	1.49%	-1.98%	-0.16%	-1.98%
-172	May-29-2015	0.16%	3.65%	1.49%	-1.32%	0.38%	3.27%
-171	Jun-02-2015	-1.28%	-3.52%	1.47%	-2.76%	-0.84%	-2.68%
-170	Jun-03-2015	0.35%	1.46%	1.48%	-1.13%	0.53%	0.93%
-169	Jun-04-2015	0.60%	0.72%	1.49%	-0.89%	0.74%	-0.02%
-168	Jun-05-2015	1.10%	2.14%	1.49%	-0.38%	1.17%	0.98%
-167	Jun-08-2015	0.06%	3.50%	1.49%	-1.43%	0.29%	3.21%
-166	Jun-09-2015	-1.06%	1.35%	1.49%	-2.54%	-0.65%	2.00%
-165	Jun-10-2015	0.79%	0.67%	1.49%	-0.70%	0.90%	-0.23%
-164	Jun-11-2015	0.72%	2.65%	1.49%	-0.77%	0.84%	1.81%
-163	Jun-12-2015	-0.43%	-1.29%	1.49%	-1.92%	-0.13%	-1.16%
-162	Jun-15-2015	-0.42%	0.65%	1.49%	-1.91%	-0.11%	0.77%
-161	Jun-16-2015	0.09%	-1.30%	1.49%	-1.39%	0.32%	-1.62%
-160	Jun-17-2015	0.77%	-3.29%	1.48%	-0.72%	0.88%	-4.17%
-159	Jun-18-2015	-0.45%	-3.40%	1.48%	-1.93%	-0.14%	-3.27%
-158	Jun-19-2015	-1.10%	-2.82%	1.48%	-2.58%	-0.69%	-2.13%
-157	Jun-22-2015	0.84%	3.62%	1.48%	-0.64%	0.95%	2.68%
-156	Jun-23-2015	-0.06%	2.10%	1.48%	-1.53%	0.19%	1.91%
-155	Jun-24-2015	1.00%	0.68%	1.48%	-0.48%	1.08%	-0.39%
-154	Jun-25-2015	0.08%	0.00%	1.48%	-1.40%	0.30%	-0.30%
-153	Jun-26-2015	-0.09%	0.68%	1.48%	-1.58%	0.16%	0.52%
-152	Jun-29-2015	-0.45%	-1.35%	1.48%	-1.93%	-0.14%	-1.21%
-151	Jun-30-2015	-0.44%	2.74%	1.48%	-1.92%	-0.13%	2.87%
-150	Jul-02-2015	-0.86%	-4.67%	1.48%	-2.34%	-0.48%	-4.18%
-149	Jul-03-2015	-0.14%	0.70%	1.48%	-1.62%	0.12%	0.58%
-148	Jul-06-2015	-1.10%	-2.78%	1.48%	-2.58%	-0.68%	-2.09%
-147	Jul-07-2015	0.72%	0.71%	1.48%	-0.77%	0.84%	-0.12%
-146	Jul-08-2015	-0.91%	-0.71%	1.48%	-2.39%	-0.53%	-0.18%
-145	Jul-09-2015	0.16%	0.00%	1.48%	-1.32%	0.37%	-0.37%
-144	Jul-10-2015	0.84%	-0.71%	1.48%	-0.64%	0.94%	-1.65%
-143	Jul-13-2015	0.39%	1.44%	1.47%	-1.08%	0.56%	0.88%
-142	Jul-14-2015	-0.15%	0.71%	1.46%	-1.61%	0.11%	0.60%
-141	Jul-15-2015	-0.11%	-1.41%	1.45%	-1.56%	0.14%	-1.55%
-140	Jul-16-2015	-0.37%	-0.71%	1.45%	-1.82%	-0.08%	-0.64%
-139	Jul-17-2015	-0.13%	0.72%	1.45%	-1.58%	0.12%	0.60%
-138	Jul-20-2015	-0.85%	0.00%	1.45%	-2.30%	-0.48%	0.48%

Source: S&amp;P CapitalIQ

	Dates	% Return SET	% Return BJC	3M T-Bill	Risk premium	CAPM Return	Abnormal Return
-137	Jul-21-2015	-1.31%	-1.43%	1.45%	-2.76%	-0.87%	-0.56%
-136	Jul-22-2015	0.03%	0.00%	1.45%	-1.42%	0.26%	-0.26%
-135	Jul-23-2015	-0.22%	-0.72%	1.45%	-1.67%	0.05%	-0.77%
-134	Jul-24-2015	-0.46%	-0.73%	1.45%	-1.91%	-0.15%	-0.58%
-133	Jul-27-2015	-1.78%	-1.47%	1.45%	-3.23%	-1.26%	-0.21%
-132	Jul-28-2015	-0.32%	0.00%	1.45%	-1.76%	-0.03%	0.03%
-131	Jul-29-2015	0.67%	0.00%	1.44%	-0.77%	0.79%	-0.79%
-130	Jul-31-2015	1.60%	-0.75%	1.45%	0.15%	1.57%	-2.32%
-129	Aug-03-2015	0.13%	0.75%	1.44%	-1.31%	0.34%	0.41%
-128	Aug-04-2015	-0.69%	-0.75%	1.44%	-2.12%	-0.34%	-0.40%
-127	Aug-05-2015	0.29%	-0.75%	1.44%	-1.14%	0.48%	-1.23%
-126	Aug-06-2015	-0.40%	0.00%	1.44%	-1.84%	-0.11%	0.11%
-125	Aug-07-2015	-0.13%	0.00%	1.44%	-1.56%	0.13%	-0.13%
-124	Aug-10-2015	-0.61%	-0.76%	1.44%	-2.04%	-0.28%	-0.48%
-123	Aug-11-2015	-0.83%	-0.76%	1.44%	-2.27%	-0.47%	-0.30%
-122	Aug-13-2015	-0.30%	-2.31%	1.44%	-1.73%	-0.02%	-2.29%
-121	Aug-14-2015	0.70%	0.79%	1.44%	-0.74%	0.81%	-0.03%
-120	Aug-17-2015	-0.37%	-0.78%	1.44%	-1.80%	-0.08%	-0.70%
-119	Aug-18-2015	-2.56%	-1.57%	1.44%	-4.00%	-1.92%	0.35%
-118	Aug-19-2015	0.47%	-1.60%	1.44%	-0.96%	0.63%	-2.23%
-117	Aug-20-2015	-0.48%	-0.81%	1.44%	-1.91%	-0.17%	-0.64%
-116	Aug-21-2015	-0.50%	0.00%	1.44%	-1.94%	-0.19%	0.19%
-115	Aug-24-2015	-4.73%	-3.28%	1.44%	-6.17%	-3.74%	0.46%
-114	Aug-25-2015	1.75%	0.00%	1.44%	0.31%	1.70%	-1.70%
-113	Aug-26-2015	-0.29%	0.85%	1.45%	-1.73%	-0.01%	0.86%
-112	Aug-27-2015	2.87%	0.84%	1.45%	1.43%	2.65%	-1.81%
-111	Aug-28-2015	0.58%	0.83%	1.45%	-0.87%	0.72%	0.11%
-110	Aug-31-2015	1.21%	0.00%	1.45%	-0.24%	1.24%	-1.24%
-109	Sep-01-2015	-1.45%	-0.83%	1.45%	-2.90%	-0.98%	0.16%
-108	Sep-02-2015	0.74%	-0.83%	1.45%	-0.71%	0.85%	-1.69%
-107	Sep-03-2015	0.80%	0.84%	1.45%	-0.65%	0.91%	-0.07%
-106	Sep-04-2015	-0.92%	-0.83%	1.45%	-2.37%	-0.54%	-0.29%
-105	Sep-07-2015	0.05%	0.00%	1.45%	-1.40%	0.27%	-0.27%
-104	Sep-08-2015	0.58%	0.84%	1.45%	-0.88%	0.72%	0.12%
-103	Sep-09-2015	1.23%	0.00%	1.46%	-0.23%	1.27%	-1.27%
-102	Sep-10-2015	-0.01%	0.83%	1.46%	-1.47%	0.23%	0.61%
-101	Sep-11-2015	-1.03%	4.13%	1.46%	-2.50%	-0.63%	4.77%
-100	Sep-14-2015	-0.33%	-3.97%	1.47%	-1.80%	-0.04%	-3.93%
-99	Sep-15-2015	-0.47%	1.65%	1.48%	-1.95%	-0.16%	1.81%
-98	Sep-16-2015	0.81%	-0.81%	1.49%	-0.67%	0.92%	-1.73%
-97	Sep-17-2015	0.57%	0.00%	1.48%	-0.91%	0.72%	-0.72%
-96	Sep-18-2015	0.04%	0.00%	1.48%	-1.44%	0.28%	-0.28%
-95	Sep-21-2015	0.17%	-0.82%	1.49%	-1.31%	0.38%	-1.20%
-94	Sep-22-2015	-0.96%	-0.83%	1.49%	-2.45%	-0.57%	-0.26%
-93	Sep-23-2015	-0.30%	0.83%	1.49%	-1.79%	-0.01%	0.85%
-92	Sep-24-2015	-0.21%	0.00%	1.49%	-1.70%	0.07%	-0.07%
-91	Sep-25-2015	0.33%	3.31%	1.50%	-1.17%	0.51%	2.79%
-90	Sep-28-2015	-1.79%	0.80%	1.50%	-3.29%	-1.27%	2.07%
-89	Sep-29-2015	-0.24%	1.59%	1.50%	-1.75%	0.04%	1.55%
-88	Sep-30-2015	0.01%	5.47%	1.50%	-1.49%	0.25%	5.22%
-87	Oct-01-2015	-0.29%	-2.96%	1.50%	-1.79%	0.00%	-2.96%
-86	Oct-02-2015	0.09%	-2.29%	1.50%	-1.41%	0.32%	-2.61%
-85	Oct-05-2015	1.25%	2.34%	1.50%	-0.25%	1.29%	1.05%
-84	Oct-06-2015	0.55%	-1.53%	1.50%	-0.95%	0.70%	-2.23%
-83	Oct-07-2015	1.68%	0.78%	1.50%	0.18%	1.65%	-0.87%
-82	Oct-08-2015	-0.11%	-0.77%	1.49%	-1.60%	0.15%	-0.92%
-81	Oct-09-2015	1.38%	0.78%	1.46%	-0.09%	1.39%	-0.62%
-80	Oct-12-2015	0.08%	1.54%	1.46%	-1.38%	0.30%	1.24%
-79	Oct-13-2015	-0.41%	-0.76%	1.45%	-1.86%	-0.11%	-0.65%
-78	Oct-14-2015	-0.11%	3.82%	1.45%	-1.57%	0.14%	3.68%
-77	Oct-15-2015	1.44%	2.94%	1.45%	-0.01%	1.44%	1.50%
-76	Oct-16-2015	-0.49%	1.43%	1.45%	-1.94%	-0.18%	1.60%
-75	Oct-19-2015	-0.10%	-2.11%	1.45%	-1.55%	0.15%	-2.26%
-74	Oct-20-2015	0.12%	2.16%	1.46%	-1.33%	0.34%	1.82%
-73	Oct-21-2015	-0.20%	2.11%	1.46%	-1.66%	0.07%	2.05%

Source: S&amp;P CapitalIQ

	Dates	% Return SET	% Return BJC	3M T-Bill	Risk premium	CAPM Return	Abnormal Return
-72	Oct-22-2015	0.02%	0.00%	1.46%	-1.44%	0.25%	-0.25%
-71	Oct-26-2015	0.57%	-1.38%	1.47%	-0.90%	0.71%	-2.09%
-70	Oct-27-2015	-0.01%	4.20%	1.46%	-1.47%	0.23%	3.97%
-69	Oct-28-2015	-1.04%	0.67%	1.47%	-2.51%	-0.64%	1.31%
-68	Oct-29-2015	-1.36%	-4.00%	1.47%	-2.83%	-0.91%	-3.09%
-67	Oct-30-2015	0.35%	4.17%	1.47%	-1.12%	0.53%	3.63%
-66	Nov-02-2015	1.32%	-1.33%	1.47%	-0.15%	1.34%	-2.68%
-65	Nov-03-2015	-0.05%	1.35%	1.47%	-1.52%	0.19%	1.16%
-64	Nov-04-2015	0.76%	-0.67%	1.47%	-0.71%	0.88%	-1.54%
-63	Nov-05-2015	-0.72%	-3.36%	1.47%	-2.19%	-0.37%	-2.99%
-62	Nov-06-2015	0.10%	2.08%	1.47%	-1.37%	0.32%	1.77%
-61	Nov-09-2015	-0.85%	-1.36%	1.47%	-2.32%	-0.47%	-0.89%
-60	Nov-10-2015	-0.30%	-2.76%	1.47%	-1.77%	-0.01%	-2.74%
-59	Nov-11-2015	-0.59%	0.00%	1.47%	-2.06%	-0.26%	0.26%
-58	Nov-12-2015	-0.42%	2.84%	1.47%	-1.89%	-0.12%	2.95%
-57	Nov-13-2015	-0.13%	2.76%	1.47%	-1.61%	0.13%	2.63%
-56	Nov-16-2015	0.45%	-0.67%	1.47%	-1.03%	0.61%	-1.28%
-55	Nov-17-2015	0.11%	4.05%	1.48%	-1.36%	0.33%	3.72%
-54	Nov-18-2015	-0.96%	-0.65%	1.48%	-2.44%	-0.57%	-0.08%
-53	Nov-19-2015	0.59%	0.00%	1.48%	-0.88%	0.73%	-0.73%
-52	Nov-20-2015	0.64%	0.00%	1.48%	-0.84%	0.78%	-0.78%
-51	Nov-23-2015	0.03%	-1.31%	1.49%	-1.46%	0.26%	-1.57%
-50	Nov-24-2015	-0.67%	-1.32%	1.49%	-2.16%	-0.32%	-1.00%
-49	Nov-25-2015	-0.25%	0.00%	1.50%	-1.75%	0.03%	-0.03%
-48	Nov-26-2015	-1.13%	0.00%	1.50%	-2.63%	-0.71%	0.71%
-47	Nov-27-2015	-0.20%	-0.67%	1.50%	-1.69%	0.08%	-0.75%
-46	Nov-30-2015	-0.25%	0.00%	1.50%	-1.75%	0.03%	-0.03%
-45	Dec-01-2015	-0.20%	0.00%	1.50%	-1.70%	0.07%	-0.07%
-44	Dec-02-2015	-1.29%	-0.68%	1.50%	-2.79%	-0.85%	0.17%
-43	Dec-03-2015	0.09%	-2.72%	1.50%	-1.41%	0.31%	-3.03%
-42	Dec-04-2015	-0.53%	2.10%	1.50%	-2.03%	-0.20%	2.30%
-41	Dec-08-2015	-1.99%	-2.05%	1.50%	-3.49%	-1.43%	-0.62%
-40	Dec-09-2015	-0.70%	-5.59%	1.50%	-2.20%	-0.35%	-5.25%
-39	Dec-11-2015	-1.30%	-1.48%	1.50%	-2.80%	-0.85%	-0.63%
-38	Dec-14-2015	-1.04%	-0.75%	1.50%	-2.54%	-0.63%	-0.12%
-37	Dec-15-2015	2.60%	2.27%	1.50%	1.09%	2.42%	-0.15%
-36	Dec-16-2015	-0.11%	-0.74%	1.50%	-1.61%	0.15%	-0.89%
-35	Dec-17-2015	0.86%	0.00%	1.50%	-0.64%	0.97%	-0.97%
-34	Dec-18-2015	-1.94%	-1.49%	1.50%	-3.44%	-1.39%	-0.11%
-33	Dec-21-2015	-1.59%	-1.52%	1.50%	-3.10%	-1.10%	-0.42%
-32	Dec-22-2015	-0.22%	3.08%	1.50%	-1.72%	0.06%	3.02%
-31	Dec-23-2015	1.02%	-1.49%	1.50%	-0.49%	1.10%	-2.59%
-30	Dec-24-2015	0.76%	0.76%	1.50%	-0.75%	0.88%	-0.12%
-29	Dec-25-2015	-0.10%	1.50%	1.50%	-1.60%	0.16%	1.34%
-28	Dec-28-2015	0.23%	2.22%	1.50%	-1.27%	0.43%	1.79%
-27	Dec-29-2015	-0.16%	-1.45%	1.50%	-1.66%	0.10%	-1.55%
-26	Dec-30-2015	0.33%	2.94%	1.50%	-1.17%	0.52%	2.42%
-25	Jan-04-2016	-1.91%	-4.29%	1.48%	-3.39%	-1.37%	-2.92%
-24	Jan-05-2016	-0.80%	-0.75%	1.47%	-2.27%	-0.43%	-0.31%
-23	Jan-06-2016	0.53%	0.75%	1.47%	-0.93%	0.68%	0.07%
-22	Jan-07-2016	-2.79%	-1.49%	1.46%	-4.26%	-2.11%	0.62%
-21	Jan-08-2016	1.58%	0.00%	1.45%	0.12%	1.56%	-1.56%
-20	Jan-11-2016	-0.78%	-2.27%	1.46%	-2.24%	-0.42%	-1.85%
-19	Jan-12-2016	1.68%	1.55%	1.45%	0.23%	1.65%	-0.10%
-18	Jan-13-2016	1.86%	1.53%	1.45%	0.41%	1.79%	-0.27%
-17	Jan-14-2016	-1.20%	-3.01%	1.44%	-2.64%	-0.77%	-2.23%
-16	Jan-15-2016	-1.38%	-0.78%	1.43%	-2.81%	-0.93%	0.15%
-15	Jan-18-2016	-0.06%	0.00%	1.41%	-1.47%	0.17%	-0.17%
-14	Jan-19-2016	1.68%	6.25%	1.40%	0.28%	1.64%	4.61%
-13	Jan-20-2016	-1.35%	-2.94%	1.40%	-2.75%	-0.90%	-2.04%
-12	Jan-21-2016	-0.27%	-0.76%	1.41%	-1.68%	0.00%	-0.76%
-11	Jan-22-2016	1.80%	0.76%	1.42%	0.38%	1.74%	-0.97%
-10	Jan-25-2016	-0.03%	0.00%	1.41%	-1.43%	0.20%	-0.20%
-9	Jan-26-2016	0.03%	-0.76%	1.41%	-1.38%	0.25%	-1.01%
-8	Jan-27-2016	0.81%	0.00%	1.41%	-0.60%	0.90%	-0.90%

Source: S&amp;P CapitalIQ

	Dates	% Return SET	% Return BJC	3M T-Bill	Risk premium	CAPM Return	Abnormal Return
-7	Jan-28-2016	0.79%	0.76%	1.41%	-0.62%	0.89%	-0.13%
-6	Jan-29-2016	0.98%	1.52%	1.40%	-0.43%	1.05%	0.47%
-5	Feb-01-2016	-0.28%	-2.24%	1.40%	-1.68%	-0.01%	-2.23%
-4	Feb-02-2016	-0.93%	0.00%	1.40%	-2.33%	-0.55%	0.55%
-3	Feb-03-2016	0.50%	-0.76%	1.41%	-0.90%	0.65%	-1.41%
-2	Feb-04-2016	0.41%	1.54%	1.41%	-0.99%	0.57%	0.97%
-1	Feb-05-2016	0.71%	0.00%	1.41%	-0.70%	0.82%	-0.82%
0	Feb-08-2016	0.10%	10.61%	1.41%	-1.31%	0.31%	10.30%
1	Feb-09-2016	-0.28%	0.00%	1.41%	-1.68%	-0.01%	0.01%
2	Feb-10-2016	0.06%	-1.37%	1.41%	-1.35%	0.28%	-1.65%
3	Feb-11-2016	-1.84%	-2.78%	1.39%	-3.23%	-1.32%	-1.46%
4	Feb-12-2016	-0.33%	-5.00%	1.40%	-1.73%	-0.05%	-4.95%
5	Feb-15-2016	0.93%	0.75%	1.40%	-0.46%	1.01%	-0.26%
6	Feb-16-2016	0.07%	11.19%	1.40%	-1.33%	0.29%	10.91%
7	Feb-17-2016	-0.07%	2.01%	1.40%	-1.47%	0.17%	1.85%
8	Feb-18-2016	0.47%	-1.97%	1.40%	-0.93%	0.62%	-2.60%
9	Feb-19-2016	1.98%	-2.01%	1.40%	0.58%	1.89%	-3.90%
10	Feb-23-2016	0.42%	0.00%	1.40%	-0.98%	0.58%	-0.58%
11	Feb-24-2016	0.46%	-0.68%	1.41%	-0.94%	0.61%	-1.30%
12	Feb-25-2016	0.11%	0.00%	1.41%	-1.30%	0.32%	-0.32%
13	Feb-26-2016	0.72%	-1.38%	1.41%	-0.69%	0.83%	-2.21%
14	Feb-29-2016	-0.80%	2.80%	1.41%	-2.21%	-0.44%	3.24%
15	Mar-01-2016	1.09%	2.04%	1.41%	-0.31%	1.14%	0.90%
16	Mar-02-2016	1.36%	-0.67%	1.40%	-0.04%	1.37%	-2.04%
17	Mar-03-2016	1.03%	-0.67%	1.40%	-0.38%	1.09%	-1.76%
18	Mar-04-2016	0.01%	1.35%	1.40%	-1.39%	0.24%	1.11%
19	Mar-07-2016	1.18%	-0.67%	1.40%	-0.23%	1.21%	-1.88%
20	Mar-08-2016	-1.51%	-3.36%	1.40%	-2.91%	-1.05%	-2.31%
21	Mar-09-2016	1.17%	0.69%	1.40%	-0.23%	1.20%	-0.51%
22	Mar-10-2016	-0.83%	2.76%	1.40%	-2.23%	-0.48%	3.23%
23	Mar-11-2016	1.04%	1.34%	1.39%	-0.35%	1.10%	0.25%
24	Mar-14-2016	0.06%	-2.65%	1.39%	-1.33%	0.27%	-2.92%
25	Mar-15-2016	-0.81%	-0.68%	1.39%	-2.20%	-0.46%	-0.22%
26	Mar-16-2016	-0.37%	2.05%	1.39%	-1.76%	-0.09%	2.14%
27	Mar-17-2016	0.17%	-2.01%	1.38%	-1.20%	0.37%	-2.38%
28	Mar-18-2016	0.20%	0.00%	1.36%	-1.16%	0.39%	-0.39%
29	Mar-21-2016	0.77%	0.00%	1.36%	-0.59%	0.87%	-0.87%
30	Mar-22-2016	0.26%	-0.68%	1.36%	-1.10%	0.43%	-1.12%
31	Mar-23-2016	1.07%	0.69%	1.35%	-0.28%	1.12%	-0.43%
32	Mar-24-2016	-0.48%	1.37%	1.36%	-1.83%	-0.18%	1.55%
33	Mar-25-2016	-0.76%	-0.68%	1.36%	-2.11%	-0.42%	-0.26%
34	Mar-28-2016	-0.41%	-1.36%	1.37%	-1.78%	-0.13%	-1.23%
35	Mar-29-2016	0.28%	0.00%	1.38%	-1.10%	0.45%	-0.45%
36	Mar-30-2016	1.25%	0.00%	1.38%	-0.13%	1.27%	-1.27%
37	Mar-31-2016	-0.18%	0.00%	1.38%	-1.56%	0.07%	-0.07%
38	Apr-01-2016	-0.50%	-2.07%	1.37%	-1.87%	-0.20%	-1.87%
39	Apr-04-2016	-0.03%	0.70%	1.37%	-1.40%	0.19%	0.51%
40	Apr-05-2016	-1.91%	-1.40%	1.36%	-3.27%	-1.38%	-0.02%
41	Apr-07-2016	-1.23%	0.00%	1.36%	-2.59%	-0.81%	0.81%
42	Apr-08-2016	0.95%	1.42%	1.36%	-0.40%	1.02%	0.40%
43	Apr-11-2016	0.01%	1.40%	1.36%	-1.34%	0.23%	1.17%
44	Apr-12-2016	1.14%	0.69%	1.35%	-0.22%	1.17%	-0.48%
45	Apr-18-2016	0.96%	-0.68%	1.35%	-0.39%	1.03%	-1.71%
46	Apr-19-2016	1.23%	0.69%	1.35%	-0.12%	1.25%	-0.56%
47	Apr-20-2016	-0.07%	0.68%	1.35%	-1.42%	0.16%	0.53%
48	Apr-21-2016	0.63%	0.00%	1.35%	-0.72%	0.75%	-0.75%
49	Apr-22-2016	-0.92%	-0.68%	1.35%	-2.27%	-0.55%	-0.13%
50	Apr-25-2016	-0.15%	0.00%	1.35%	-1.50%	0.09%	-0.09%
51	Apr-26-2016	0.71%	0.68%	1.36%	-0.64%	0.82%	-0.13%
52	Apr-27-2016	-0.49%	3.40%	1.36%	-1.85%	-0.19%	3.59%
53	Apr-28-2016	-0.84%	-1.97%	1.36%	-2.20%	-0.49%	-1.48%
54	Apr-29-2016	0.34%	0.67%	1.36%	-1.03%	0.50%	0.17%
55	May-03-2016	-0.48%	-1.33%	1.36%	-1.84%	-0.18%	-1.15%
56	May-04-2016	-0.51%	-0.68%	1.36%	-1.88%	-0.21%	-0.46%
57	May-09-2016	0.25%	-2.72%	1.36%	-1.11%	0.43%	-3.15%

Source: S&amp;P CapitalIQ

	Dates	% Return SET	% Return BJC	3M T-Bill	Risk premium	CAPM Return	Abnormal Return
58	May-10-2016	-0.29%	0.70%	1.36%	-1.65%	-0.02%	0.72%
59	May-11-2016	-0.56%	1.39%	1.36%	-1.92%	-0.25%	1.64%
60	May-12-2016	1.22%	-3.42%	1.36%	-0.14%	1.24%	-4.67%
61	May-13-2016	-0.33%	0.71%	1.36%	-1.69%	-0.06%	0.77%
62	May-16-2016	0.21%	1.41%	1.36%	-1.15%	0.40%	1.01%
63	May-17-2016	0.64%	-1.39%	1.38%	-0.74%	0.76%	-2.15%
64	May-18-2016	-0.43%	1.41%	1.39%	-1.82%	-0.14%	1.55%
65	May-19-2016	-1.05%	0.69%	1.40%	-2.44%	-0.65%	1.35%
66	May-23-2016	-0.30%	-0.69%	1.41%	-1.71%	-0.03%	-0.66%
67	May-24-2016	0.19%	1.39%	1.42%	-1.24%	0.38%	1.00%
68	May-25-2016	0.97%	3.42%	1.43%	-0.47%	1.04%	2.38%
69	May-26-2016	0.29%	-6.62%	1.44%	-1.15%	0.47%	-7.09%
70	May-27-2016	0.79%	0.71%	1.44%	-0.65%	0.89%	-0.18%
71	May-30-2016	0.81%	2.82%	1.44%	-0.62%	0.91%	1.91%
72	May-31-2016	0.01%	-2.05%	1.45%	-1.44%	0.24%	-2.30%
73	Jun-01-2016	-0.60%	1.40%	1.45%	-2.05%	-0.27%	1.67%
74	Jun-02-2016	0.59%	0.00%	1.45%	-0.87%	0.73%	-0.73%
75	Jun-03-2016	0.87%	3.45%	1.45%	-0.58%	0.96%	2.49%
76	Jun-06-2016	0.49%	4.00%	1.45%	-0.96%	0.64%	3.36%
77	Jun-07-2016	-0.07%	-6.41%	1.43%	-1.50%	0.17%	-6.58%
78	Jun-08-2016	0.22%	5.48%	1.42%	-1.21%	0.41%	5.07%
79	Jun-09-2016	-0.68%	-1.30%	1.40%	-2.09%	-0.35%	-0.95%
80	Jun-10-2016	-0.45%	1.32%	1.39%	-1.84%	-0.15%	1.47%
81	Jun-13-2016	-0.51%	-2.60%	1.39%	-1.90%	-0.21%	-2.39%
82	Jun-14-2016	0.44%	0.00%	1.38%	-0.94%	0.59%	-0.59%
83	Jun-15-2016	0.48%	1.33%	1.37%	-0.90%	0.62%	0.71%
84	Jun-16-2016	-1.65%	-0.66%	1.37%	-3.02%	-1.17%	0.51%
85	Jun-17-2016	0.72%	0.00%	1.36%	-0.65%	0.82%	-0.82%
86	Jun-20-2016	0.05%	0.00%	1.36%	-1.31%	0.26%	-0.26%
87	Jun-21-2016	0.62%	3.31%	1.36%	-0.74%	0.74%	2.57%
88	Jun-22-2016	-0.43%	-0.64%	1.36%	-1.78%	-0.14%	-0.50%
89	Jun-23-2016	0.82%	3.87%	1.36%	-0.53%	0.91%	2.96%
90	Jun-24-2016	-1.62%	6.21%	1.36%	-2.97%	-1.14%	7.35%
91	Jun-27-2016	0.79%	-0.58%	1.36%	-0.57%	0.88%	-1.46%
92	Jun-28-2016	0.92%	5.88%	1.36%	-0.44%	0.99%	4.89%
93	Jun-29-2016	0.36%	-5.56%	1.36%	-1.00%	0.52%	-6.08%
94	Jun-30-2016	0.16%	-4.12%	1.36%	-1.20%	0.35%	-4.47%
95	Jul-04-2016	0.66%	-0.61%	1.36%	-0.70%	0.77%	-1.39%
96	Jul-05-2016	-0.31%	0.00%	1.35%	-1.66%	-0.04%	0.04%
97	Jul-06-2016	0.17%	0.00%	1.35%	-1.18%	0.36%	-0.36%
98	Jul-07-2016	0.28%	1.23%	1.35%	-1.06%	0.46%	0.78%
99	Jul-08-2016	-0.07%	-3.05%	1.35%	-1.42%	0.15%	-3.20%
100	Jul-11-2016	0.88%	-3.14%	1.35%	-0.47%	0.95%	-4.10%
101	Jul-12-2016	0.44%	0.00%	1.34%	-0.90%	0.59%	-0.59%
102	Jul-13-2016	0.18%	1.30%	1.34%	-1.16%	0.37%	0.93%
103	Jul-14-2016	0.75%	7.05%	1.34%	-0.59%	0.84%	6.21%
104	Jul-15-2016	0.22%	4.79%	1.34%	-1.12%	0.40%	4.39%
105	Jul-20-2016	1.21%	-1.71%	1.35%	-0.14%	1.23%	-2.94%
106	Jul-21-2016	-0.49%	-1.74%	1.35%	-1.83%	-0.19%	-1.55%
107	Jul-22-2016	0.43%	0.59%	1.35%	-0.92%	0.58%	0.02%
108	Jul-25-2016	0.23%	2.94%	1.35%	-1.12%	0.41%	2.53%
109	Jul-26-2016	-0.52%	-2.86%	1.35%	-1.87%	-0.22%	-2.64%
110	Jul-27-2016	0.70%	0.00%	1.35%	-0.65%	0.81%	-0.81%
111	Jul-28-2016	0.61%	3.53%	1.36%	-0.75%	0.73%	2.80%
112	Jul-29-2016	-0.03%	3.98%	1.36%	-1.39%	0.19%	3.79%
113	Aug-01-2016	-0.75%	-3.83%	1.35%	-2.11%	-0.41%	-3.41%
114	Aug-02-2016	-1.00%	3.98%	1.35%	-2.35%	-0.62%	4.60%
115	Aug-03-2016	0.67%	-1.64%	1.36%	-0.69%	0.78%	-2.42%
116	Aug-04-2016	0.03%	4.44%	1.35%	-1.32%	0.24%	4.20%
117	Aug-05-2016	0.71%	4.26%	1.35%	-0.64%	0.82%	3.44%
118	Aug-08-2016	1.55%	-2.04%	1.35%	0.20%	1.52%	-3.56%
119	Aug-09-2016	0.39%	0.52%	1.35%	-0.97%	0.54%	-0.02%
120	Aug-10-2016	-0.01%	-1.04%	1.35%	-1.36%	0.21%	-1.25%
121	Aug-11-2016	0.29%	3.14%	1.36%	-1.07%	0.46%	2.68%
122	Aug-15-2016	-0.23%	-8.12%	1.36%	-1.58%	0.03%	-8.15%

Source: S&amp;P CapitalIQ



	Dates	% Return SET	% Return BJC	3M T-Bill	Risk premium	CAPM Return	Abnormal Return
123	Aug-16-2016	-0.75%	1.10%	1.37%	-2.11%	-0.41%	1.51%
124	Aug-17-2016	-0.38%	-1.64%	1.37%	-1.75%	-0.10%	-1.54%
125	Aug-18-2016	1.00%	1.67%	1.37%	-0.36%	1.06%	0.60%
126	Aug-19-2016	-0.53%	1.09%	1.37%	-1.90%	-0.23%	1.32%
127	Aug-22-2016	0.03%	-1.08%	1.37%	-1.34%	0.25%	-1.33%
128	Aug-23-2016	0.05%	0.00%	1.38%	-1.32%	0.27%	-0.27%
129	Aug-24-2016	0.49%	2.19%	1.38%	-0.89%	0.63%	1.56%
130	Aug-25-2016	-0.22%	-1.07%	1.38%	-1.60%	0.03%	-1.10%
131	Aug-26-2016	0.34%	0.00%	1.38%	-1.04%	0.51%	-0.51%
132	Aug-29-2016	-0.34%	-2.70%	1.38%	-1.72%	-0.06%	-2.64%
133	Aug-30-2016	0.13%	0.56%	1.41%	-1.28%	0.33%	0.22%
134	Aug-31-2016	0.15%	-0.55%	1.42%	-1.27%	0.35%	-0.91%
135	Sep-01-2016	-0.56%	0.00%	1.42%	-1.99%	-0.24%	0.24%
136	Sep-02-2016	-1.18%	0.00%	1.43%	-2.62%	-0.76%	0.76%
137	Sep-05-2016	-1.90%	-3.33%	1.44%	-3.34%	-1.37%	-1.97%
138	Sep-06-2016	0.29%	2.87%	1.44%	-1.15%	0.48%	2.40%
139	Sep-07-2016	-0.65%	0.00%	1.44%	-2.09%	-0.31%	0.31%
140	Sep-08-2016	-2.14%	-3.35%	1.44%	-3.58%	-1.56%	-1.79%
141	Sep-09-2016	-0.69%	-1.16%	1.44%	-2.13%	-0.35%	-0.80%
142	Sep-12-2016	-2.31%	-4.09%	1.44%	-3.75%	-1.71%	-2.38%
143	Sep-13-2016	2.48%	1.22%	1.44%	1.04%	2.31%	-1.09%
144	Sep-14-2016	0.78%	2.41%	1.44%	-0.66%	0.89%	1.52%
145	Sep-15-2016	0.36%	1.18%	1.45%	-1.09%	0.53%	0.64%
146	Sep-16-2016	1.07%	0.58%	1.45%	-0.38%	1.13%	-0.55%
147	Sep-19-2016	0.92%	0.00%	1.45%	-0.53%	1.01%	-1.01%
148	Sep-20-2016	-1.27%	-2.31%	1.45%	-2.72%	-0.83%	-1.48%
149	Sep-21-2016	0.91%	-0.59%	1.45%	-0.55%	1.00%	-1.59%
150	Sep-22-2016	1.27%	2.98%	1.45%	-0.19%	1.30%	1.68%
151	Sep-23-2016	-0.87%	-1.73%	1.45%	-2.32%	-0.50%	-1.24%
152	Sep-26-2016	-0.18%	0.00%	1.45%	-1.64%	0.08%	-0.08%
153	Sep-27-2016	-0.05%	-0.59%	1.45%	-1.50%	0.19%	-0.78%
154	Sep-28-2016	-0.66%	-0.59%	1.45%	-2.11%	-0.32%	-0.27%
155	Sep-29-2016	0.80%	2.98%	1.45%	-0.65%	0.90%	2.07%
156	Sep-30-2016	-0.55%	2.89%	1.45%	-2.00%	-0.23%	3.12%
157	Oct-03-2016	0.52%	2.81%	1.45%	-0.93%	0.67%	2.14%
158	Oct-04-2016	1.26%	1.64%	1.45%	-0.18%	1.29%	0.35%
159	Oct-05-2016	0.01%	-0.54%	1.45%	-1.44%	0.24%	-0.78%
160	Oct-06-2016	0.26%	0.00%	1.45%	-1.19%	0.45%	-0.45%
161	Oct-07-2016	-0.63%	-1.08%	1.45%	-2.08%	-0.30%	-0.79%
162	Oct-10-2016	-3.15%	-6.01%	1.45%	-4.59%	-2.41%	-3.60%
163	Oct-11-2016	-1.02%	0.58%	1.45%	-2.46%	-0.62%	1.20%
164	Oct-12-2016	-2.50%	2.31%	1.45%	-3.95%	-1.86%	4.18%
165	Oct-13-2016	0.47%	1.69%	1.45%	-0.98%	0.63%	1.07%
166	Oct-14-2016	4.59%	8.33%	1.45%	3.14%	4.08%	4.25%
167	Oct-17-2016	-0.02%	-0.51%	1.45%	-1.47%	0.22%	-0.73%
168	Oct-18-2016	0.01%	-2.06%	1.46%	-1.44%	0.25%	-2.31%
169	Oct-19-2016	0.59%	1.58%	1.46%	-0.87%	0.73%	0.85%
170	Oct-20-2016	0.43%	1.04%	1.46%	-1.03%	0.60%	0.44%
171	Oct-21-2016	0.51%	3.08%	1.46%	-0.95%	0.66%	2.41%
172	Oct-25-2016	0.41%	3.48%	1.47%	-1.06%	0.58%	2.91%
173	Oct-26-2016	-0.95%	-2.40%	1.47%	-2.42%	-0.56%	-1.84%
174	Oct-27-2016	0.42%	3.94%	1.47%	-1.05%	0.59%	3.35%
175	Oct-28-2016	-0.26%	-2.84%	1.47%	-1.73%	0.02%	-2.86%
176	Oct-31-2016	0.09%	2.93%	1.47%	-1.39%	0.31%	2.62%
177	Nov-01-2016	0.59%	-0.95%	1.47%	-0.88%	0.73%	-1.68%
178	Nov-02-2016	-0.39%	-1.44%	1.47%	-1.86%	-0.09%	-1.34%
179	Nov-03-2016	-0.37%	0.49%	1.47%	-1.84%	-0.08%	0.56%
180	Nov-04-2016	-0.49%	-1.93%	1.47%	-1.96%	-0.18%	-1.75%
181	Nov-07-2016	1.12%	1.97%	1.47%	-0.35%	1.17%	0.80%
182	Nov-08-2016	0.50%	0.48%	1.47%	-0.96%	0.66%	-0.18%
183	Nov-09-2016	-0.03%	0.48%	1.47%	-1.49%	0.21%	0.27%
184	Nov-10-2016	0.32%	0.96%	1.47%	-1.15%	0.50%	0.45%
185	Nov-11-2016	-1.30%	-1.42%	1.47%	-2.77%	-0.86%	-0.56%
186	Nov-14-2016	-1.69%	0.48%	1.48%	-3.17%	-1.18%	1.67%
187	Nov-15-2016	0.49%	-1.44%	1.48%	-0.98%	0.65%	-2.09%

Source: S&amp;P CapitalIQ

	Dates	% Return SET	% Return BJC	3M T-Bill	Risk premium	CAPM Return	Abnormal Return
188	Nov-16-2016	-0.12%	1.46%	1.47%	-1.60%	0.13%	1.32%
189	Nov-17-2016	-0.05%	1.44%	1.48%	-1.53%	0.19%	1.24%
190	Nov-18-2016	0.00%	0.94%	1.48%	-1.48%	0.24%	0.71%
191	Nov-21-2016	0.30%	0.00%	1.48%	-1.18%	0.49%	-0.49%
192	Nov-22-2016	0.50%	0.47%	1.48%	-0.98%	0.66%	-0.19%
193	Nov-23-2016	0.72%	0.00%	1.48%	-0.76%	0.84%	-0.84%
194	Nov-24-2016	-0.42%	0.47%	1.48%	-1.89%	-0.11%	0.58%
195	Nov-25-2016	0.69%	0.93%	1.48%	-0.79%	0.82%	0.11%
196	Nov-28-2016	0.03%	1.38%	1.48%	-1.45%	0.26%	1.12%
197	Nov-29-2016	-0.24%	-1.81%	1.48%	-1.72%	0.04%	-1.85%
198	Nov-30-2016	0.87%	-3.23%	1.49%	-0.61%	0.97%	-4.20%
199	Dec-01-2016	0.14%	0.95%	1.49%	-1.35%	0.36%	0.59%
200	Dec-02-2016	-0.71%	-0.47%	1.49%	-2.20%	-0.36%	-0.12%
201	Dec-06-2016	0.99%	0.95%	1.50%	-0.51%	1.07%	-0.12%
202	Dec-07-2016	0.27%	-0.47%	1.50%	-1.23%	0.46%	-0.93%
203	Dec-08-2016	0.32%	0.47%	1.50%	-1.18%	0.51%	-0.04%
204	Dec-09-2016	0.06%	-1.41%	1.50%	-1.44%	0.29%	-1.70%
205	Dec-13-2016	0.25%	-1.43%	1.51%	-1.25%	0.46%	-1.88%
206	Dec-14-2016	-0.59%	-2.42%	1.51%	-2.09%	-0.25%	-2.17%
207	Dec-15-2016	-0.11%	0.50%	1.51%	-1.61%	0.15%	0.34%
208	Dec-16-2016	0.19%	-0.49%	1.51%	-1.33%	0.40%	-0.89%
209	Dec-19-2016	-0.01%	0.00%	1.52%	-1.52%	0.24%	-0.24%
210	Dec-20-2016	-0.71%	-3.47%	1.52%	-2.22%	-0.35%	-3.12%
211	Dec-21-2016	-0.20%	-1.03%	1.52%	-1.72%	0.07%	-1.10%
212	Dec-22-2016	-0.29%	-1.04%	1.52%	-1.81%	0.00%	-1.03%
213	Dec-23-2016	0.39%	3.66%	1.52%	-1.13%	0.57%	3.09%
214	Dec-26-2016	0.35%	1.01%	1.52%	-1.17%	0.54%	0.47%
215	Dec-27-2016	0.12%	1.00%	1.52%	-1.39%	0.35%	0.65%
216	Dec-28-2016	-0.50%	0.50%	1.51%	-1.02%	0.66%	-0.16%
217	Dec-29-2016	0.87%	-0.99%	1.50%	-0.63%	0.97%	-1.95%
218	Dec-30-2016	0.33%	0.00%	1.50%	-1.17%	0.52%	-0.52%

Source: S&P CapitalIQ

## 16.4.2 Abnormal return BigC

	Dates	SET Index	% Return SET	Big C Closed price	% Return Big (3M T-Bill Risk premium)	CAPM Return	Abnormal Return		
-267	Jan-06-2015	1477.58	-0.38%	238.00	-1.7%	2.02%	-2.40%	0.80%	-2.46%
-266	Jan-07-2015	1500.75	1.57%	244.00	2.5%	2.01%	-0.44%	1.79%	0.74%
-265	Jan-08-2015	1521.62	1.39%	244.00	0.0%	2.00%	-0.61%	1.69%	-1.69%
-264	Jan-09-2015	1529.42	0.51%	242.00	-0.8%	2.00%	-1.49%	1.25%	-2.07%
-263	Jan-12-2015	1531.21	0.12%	244.00	0.8%	2.00%	-1.88%	1.05%	-0.22%
-262	Jan-13-2015	1534.97	0.25%	241.00	-1.2%	1.99%	-1.74%	1.11%	-2.34%
-261	Jan-14-2015	1523.24	-0.76%	237.00	-1.7%	1.98%	-2.75%	0.59%	-2.25%
-260	Jan-15-2015	1523.38	0.01%	235.00	-0.8%	1.98%	-1.97%	0.98%	-1.83%
-259	Jan-16-2015	1517.74	-0.37%	240.00	2.1%	1.98%	-2.35%	0.79%	1.34%
-258	Jan-19-2015	1535.37	1.16%	243.00	1.3%	1.98%	-0.82%	1.57%	-0.32%
-257	Jan-20-2015	1535.09	-0.02%	244.00	0.4%	1.98%	-1.99%	0.97%	-0.56%
-256	Jan-21-2015	1537.36	0.15%	245.00	0.4%	1.98%	-1.83%	1.05%	-0.64%
-255	Jan-22-2015	1560.34	1.49%	245.00	0.0%	1.98%	-0.48%	1.73%	-1.73%
-254	Jan-23-2015	1598.33	2.43%	250.00	2.0%	1.98%	0.46%	2.21%	-0.17%
-253	Jan-26-2015	1588.31	-0.63%	251.00	0.4%	1.98%	-2.60%	0.66%	-0.26%
-252	Jan-27-2015	1589.81	0.09%	246.00	-2.0%	1.97%	-1.88%	1.02%	-3.02%
-251	Jan-28-2015	1592.81	0.19%	243.00	-1.2%	1.98%	-1.79%	1.08%	-2.30%
-250	Jan-29-2015	1586.40	-0.40%	240.00	-1.2%	1.99%	-2.39%	0.78%	-2.01%
-249	Jan-30-2015	1581.25	-0.32%	241.00	0.4%	1.99%	-2.31%	0.82%	-0.40%
-248	Feb-02-2015	1582.70	0.09%	234.00	-2.9%	1.99%	-1.89%	1.03%	-3.93%
-247	Feb-03-2015	1602.54	1.25%	242.00	3.4%	1.99%	-0.73%	1.62%	1.80%
-246	Feb-04-2015	1599.81	-0.17%	235.00	-2.9%	1.99%	-2.16%	0.90%	-3.79%
-245	Feb-05-2015	1607.92	0.51%	236.00	0.4%	1.99%	-1.48%	1.24%	-0.81%
-244	Feb-06-2015	1613.63	0.36%	233.00	-1.3%	1.99%	-1.63%	1.16%	-2.43%
-243	Feb-09-2015	1601.77	-0.73%	232.00	-0.4%	1.99%	-2.72%	0.61%	-1.04%
-242	Feb-10-2015	1594.96	-0.43%	229.00	-1.3%	1.99%	-2.42%	0.77%	-2.06%
-241	Feb-11-2015	1605.11	0.64%	231.00	0.9%	1.99%	-1.36%	1.31%	-0.43%
-240	Feb-12-2015	1613.40	0.52%	229.00	-0.9%	1.99%	-1.48%	1.25%	-2.11%
-239	Feb-13-2015	1615.89	0.15%	226.00	-1.3%	2.00%	-1.84%	1.07%	-2.38%
-238	Feb-16-2015	1608.04	-0.49%	231.00	2.2%	2.00%	-2.49%	0.74%	1.47%
-237	Feb-17-2015	1587.75	-1.26%	229.00	-0.9%	2.00%	-3.26%	0.35%	-1.22%
-236	Feb-18-2015	1603.14	0.97%	236.00	3.1%	2.00%	-1.03%	1.48%	1.58%
-235	Feb-19-2015	1599.96	-0.20%	237.00	0.4%	2.00%	-2.20%	0.89%	-0.47%
-234	Feb-20-2015	1603.45	0.22%	241.00	1.7%	2.00%	-1.78%	1.10%	0.59%
-233	Feb-23-2015	1593.89	-0.60%	240.00	-0.4%	2.00%	-2.60%	0.69%	-1.10%
-232	Feb-24-2015	1598.66	0.30%	238.00	-0.8%	2.00%	-1.70%	1.14%	-1.97%
-231	Feb-25-2015	1589.33	-0.58%	239.00	0.4%	2.00%	-2.58%	0.69%	-0.27%
-230	Feb-26-2015	1593.55	0.27%	240.00	0.4%	2.00%	-1.73%	1.12%	-0.70%
-229	Feb-27-2015	1587.01	-0.41%	234.00	-2.5%	1.99%	-2.40%	0.78%	-3.28%
-228	Mar-02-2015	1582.14	-0.31%	229.00	-2.1%	1.98%	-2.29%	0.82%	-2.96%
-227	Mar-03-2015	1562.84	-1.22%	226.00	-1.3%	1.98%	-3.20%	0.36%	-1.67%
-226	Mar-05-2015	1553.33	-0.61%	227.00	0.4%	1.97%	-2.58%	0.67%	-0.22%
-225	Mar-06-2015	1568.29	0.96%	230.00	1.3%	1.97%	-1.00%	1.46%	-0.14%
-224	Mar-09-2015	1559.71	-0.55%	228.00	-0.9%	1.96%	-2.51%	0.69%	-1.56%
-223	Mar-10-2015	1531.04	-1.84%	220.00	-3.5%	1.96%	-3.80%	0.04%	-3.55%
-222	Mar-11-2015	1543.84	0.84%	224.00	1.8%	1.83%	-0.99%	1.33%	0.49%
-221	Mar-12-2015	1544.34	0.03%	224.00	0.0%	1.78%	-1.75%	0.90%	-0.90%
-220	Mar-13-2015	1541.55	-0.18%	221.00	-1.3%	1.77%	-1.96%	0.79%	-2.13%
-219	Mar-16-2015	1515.57	-1.69%	223.00	0.9%	1.77%	-3.46%	0.02%	0.88%
-218	Mar-17-2015	1512.84	-0.18%	222.00	-0.4%	1.77%	-1.95%	0.79%	-1.23%
-217	Mar-18-2015	1531.50	1.23%	228.00	2.7%	1.77%	-0.54%	1.50%	1.20%
-216	Mar-19-2015	1532.13	0.04%	224.00	-1.8%	1.77%	-1.73%	0.90%	-2.65%
-215	Mar-20-2015	1529.96	-0.14%	227.00	1.3%	1.77%	-1.91%	0.80%	0.54%
-214	Mar-23-2015	1520.01	-0.65%	222.00	-2.2%	1.77%	-2.42%	0.55%	-2.75%
-213	Mar-24-2015	1514.45	-0.37%	221.00	-0.5%	1.77%	-2.14%	0.69%	-1.14%
-212	Mar-25-2015	1512.80	-0.11%	226.00	2.3%	1.77%	-1.88%	0.82%	1.44%
-211	Mar-26-2015	1496.41	-1.08%	229.00	1.3%	1.77%	-2.85%	0.33%	1.00%
-210	Mar-27-2015	1495.22	-0.08%	227.00	-0.9%	1.77%	-1.85%	0.84%	-1.71%
-209	Mar-30-2015	1496.51	0.09%	229.00	0.9%	1.77%	-1.69%	0.92%	-0.04%
-208	Mar-31-2015	1505.94	0.63%	230.00	0.4%	1.77%	-1.14%	1.19%	-0.76%
-207	Apr-01-2015	1525.58	1.30%	241.00	4.8%	1.77%	-0.47%	1.54%	3.25%
-206	Apr-02-2015	1532.23	0.44%	241.00	0.0%	1.77%	-1.33%	1.10%	-1.10%
-205	Apr-03-2015	1536.05	0.25%	239.00	-0.8%	1.77%	-1.52%	1.00%	-1.83%
-204	Apr-07-2015	1549.53	0.88%	240.00	0.4%	1.76%	-0.89%	1.32%	-0.90%
-203	Apr-08-2015	1544.86	-0.30%	243.00	1.3%	1.76%	-2.06%	0.72%	0.53%

Source: S&amp;P CapitalIQ

	Dates	SET Index	% Return SET	Big C Closed price	% Return Big (3M T-Bill	Risk premium	CAPM Return	Abnormal Return	
-202	Apr-09-2015	1545.11	0.02%	239.00	-1.6%	1.76%	-1.74%	0.88%	-2.52%
-201	Apr-10-2015	1547.83	0.18%	236.00	-1.3%	1.75%	-1.58%	0.96%	-2.21%
-200	Apr-16-2015	1570.00	1.43%	234.00	-0.8%	1.75%	-0.31%	1.59%	-2.43%
-199	Apr-17-2015	1566.85	-0.20%	233.00	-0.4%	1.74%	-1.94%	0.76%	-1.19%
-198	Apr-20-2015	1560.32	-0.42%	233.00	0.0%	1.74%	-2.15%	0.65%	-0.65%
-197	Apr-21-2015	1569.35	0.58%	230.00	-1.3%	1.73%	-1.15%	1.15%	-2.44%
-196	Apr-22-2015	1552.01	-1.10%	234.00	1.7%	1.73%	-2.83%	0.30%	1.44%
-195	Apr-23-2015	1544.84	-0.46%	226.00	-3.4%	1.73%	-2.19%	0.62%	-4.04%
-194	Apr-24-2015	1555.46	0.69%	227.00	0.4%	1.73%	-1.04%	1.20%	-0.76%
-193	Apr-27-2015	1548.83	-0.43%	231.00	1.8%	1.72%	-2.15%	0.64%	1.12%
-192	Apr-28-2015	1531.53	-1.12%	226.00	-2.2%	1.72%	-2.84%	0.29%	-2.45%
-191	Apr-29-2015	1522.47	-0.59%	227.00	0.4%	1.57%	-2.16%	0.48%	-0.03%
-190	Apr-30-2015	1526.74	0.28%	222.00	-2.2%	1.53%	-1.25%	0.90%	-3.10%
-189	May-06-2015	1519.88	-0.45%	223.00	0.5%	1.53%	-1.98%	0.53%	-0.08%
-188	May-07-2015	1498.31	-1.42%	217.00	-2.7%	1.53%	-2.95%	0.04%	-2.73%
-187	May-08-2015	1510.51	0.81%	217.00	0.0%	1.53%	-0.71%	1.17%	-1.17%
-186	May-11-2015	1501.30	-0.61%	215.00	-0.9%	1.53%	-2.14%	0.45%	-1.37%
-185	May-12-2015	1485.72	-1.04%	209.00	-2.8%	1.53%	-2.56%	0.23%	-3.02%
-184	May-13-2015	1495.95	0.69%	215.00	2.9%	1.53%	-0.84%	1.10%	1.77%
-183	May-14-2015	1497.40	0.10%	211.00	-1.9%	1.53%	-1.43%	0.80%	-2.66%
-182	May-15-2015	1512.19	0.99%	213.00	0.9%	1.52%	-0.54%	1.25%	-0.31%
-181	May-18-2015	1510.41	-0.12%	208.00	-2.3%	1.52%	-1.64%	0.69%	-3.04%
-180	May-19-2015	1525.96	1.03%	210.00	1.0%	1.52%	-0.49%	1.27%	-0.31%
-179	May-20-2015	1520.11	-0.38%	209.00	-0.5%	1.52%	-1.90%	0.56%	-1.03%
-178	May-21-2015	1526.25	0.40%	212.00	1.4%	1.52%	-1.11%	0.95%	0.48%
-177	May-22-2015	1523.86	-0.16%	209.00	-1.4%	1.51%	-1.67%	0.67%	-2.08%
-176	May-25-2015	1508.16	-1.03%	203.00	-2.9%	1.51%	-2.54%	0.23%	-3.10%
-175	May-26-2015	1497.98	-0.67%	198.50	-2.2%	1.50%	-2.18%	0.40%	-2.62%
-174	May-27-2015	1500.84	0.19%	203.00	2.3%	1.50%	-1.31%	0.84%	1.43%
-173	May-28-2015	1493.61	-0.48%	201.00	-1.0%	1.49%	-1.98%	0.50%	-1.48%
-172	May-29-2015	1496.05	0.16%	201.00	0.0%	1.49%	-1.32%	0.82%	-0.82%
-171	Jun-02-2015	1476.87	-1.28%	197.00	-2.0%	1.47%	-2.76%	0.08%	-2.07%
-170	Jun-03-2015	1482.07	0.35%	194.00	-1.5%	1.48%	-1.13%	0.91%	-2.43%
-169	Jun-04-2015	1490.90	0.60%	197.00	1.5%	1.49%	-0.89%	1.04%	0.51%
-168	Jun-05-2015	1507.37	1.10%	199.00	1.0%	1.49%	-0.38%	1.30%	-0.28%
-167	Jun-08-2015	1508.28	0.06%	202.00	1.5%	1.49%	-1.43%	0.77%	0.74%
-166	Jun-09-2015	1492.32	-1.06%	196.50	-2.7%	1.49%	-2.54%	0.20%	-2.92%
-165	Jun-10-2015	1504.04	0.79%	198.50	1.0%	1.49%	-0.70%	1.13%	-0.12%
-164	Jun-11-2015	1514.81	0.72%	203.00	2.3%	1.49%	-0.77%	1.10%	1.17%
-163	Jun-12-2015	1508.23	-0.43%	200.00	-1.5%	1.49%	-1.92%	0.52%	-1.99%
-162	Jun-15-2015	1501.89	-0.42%	202.00	1.0%	1.49%	-1.91%	0.52%	0.48%
-161	Jun-16-2015	1503.28	0.09%	200.00	-1.0%	1.49%	-1.39%	0.78%	-1.77%
-160	Jun-17-2015	1514.79	0.77%	196.50	-1.8%	1.48%	-0.72%	1.12%	-2.87%
-159	Jun-18-2015	1508.04	-0.45%	195.50	-0.5%	1.48%	-1.93%	0.51%	-1.02%
-158	Jun-19-2015	1491.46	-1.10%	193.00	-1.3%	1.48%	-2.58%	0.18%	-1.46%
-157	Jun-22-2015	1504.06	0.84%	193.50	0.3%	1.48%	-0.64%	1.16%	-0.90%
-156	Jun-23-2015	1503.23	-0.06%	191.00	-1.3%	1.48%	-1.53%	0.70%	-2.00%
-155	Jun-24-2015	1518.26	1.00%	193.00	1.0%	1.48%	-0.48%	1.24%	-0.19%
-154	Jun-25-2015	1519.47	0.08%	194.50	0.8%	1.48%	-1.40%	0.77%	0.01%
-153	Jun-26-2015	1518.03	-0.09%	192.50	-1.0%	1.48%	-1.58%	0.69%	-1.71%
-152	Jun-29-2015	1511.19	-0.45%	189.50	-1.6%	1.48%	-1.93%	0.51%	-2.06%
-151	Jun-30-2015	1504.55	-0.44%	193.00	1.8%	1.48%	-1.92%	0.51%	1.34%
-150	Jul-02-2015	1491.62	-0.86%	186.50	-3.4%	1.48%	-2.34%	0.30%	-3.67%
-149	Jul-03-2015	1489.59	-0.14%	188.50	1.1%	1.48%	-1.62%	0.67%	0.41%
-148	Jul-06-2015	1473.23	-1.10%	187.00	-0.8%	1.48%	-2.58%	0.18%	-0.97%
-147	Jul-07-2015	1483.77	0.72%	190.50	1.9%	1.48%	-0.77%	1.10%	0.78%
-146	Jul-08-2015	1470.25	-0.91%	190.50	0.0%	1.48%	-2.39%	0.27%	-0.27%
-145	Jul-09-2015	1472.57	0.16%	189.50	-0.5%	1.48%	-1.32%	0.81%	-1.34%
-144	Jul-10-2015	1484.90	0.84%	190.00	0.3%	1.48%	-0.64%	1.15%	-0.89%
-143	Jul-13-2015	1490.65	0.39%	193.00	1.6%	1.47%	-1.08%	0.92%	0.66%
-142	Jul-14-2015	1488.40	-0.15%	191.50	-0.8%	1.46%	-1.61%	0.64%	-1.42%
-141	Jul-15-2015	1486.74	-0.11%	192.00	0.3%	1.45%	-1.56%	0.66%	-0.40%
-140	Jul-16-2015	1481.26	-0.37%	190.50	-0.8%	1.45%	-1.82%	0.53%	-1.31%
-139	Jul-17-2015	1479.31	-0.13%	191.00	0.3%	1.45%	-1.58%	0.65%	-0.39%
-138	Jul-20-2015	1466.71	-0.85%	191.00	0.0%	1.45%	-2.30%	0.29%	-0.29%

Source: S&amp;P CapitalIQ

	Dates	SET Index	% Return SET	Big C Closed price	% Return Big (3M T-Bill	Risk premium	CAPM Return	Abnormal Return	
-137	Jul-21-2015	1447.44	-1.31%	190.00	-0.5%	1.45%	-2.76%	0.05%	-0.58%
-136	Jul-22-2015	1447.84	0.03%	189.50	-0.3%	1.45%	-1.42%	0.73%	-0.99%
-135	Jul-23-2015	1444.66	-0.22%	189.00	-0.3%	1.45%	-1.67%	0.61%	-0.87%
-134	Jul-24-2015	1438.08	-0.46%	186.00	-1.6%	1.45%	-1.91%	0.49%	-2.08%
-133	Jul-27-2015	1412.55	-1.78%	183.00	-1.6%	1.45%	-3.23%	-0.18%	-1.43%
-132	Jul-28-2015	1408.07	-0.32%	178.50	-2.5%	1.45%	-1.76%	0.55%	-3.01%
-131	Jul-29-2015	1417.49	0.67%	180.00	0.8%	1.44%	-0.77%	1.05%	-0.21%
-130	Jul-31-2015	1440.12	1.60%	183.50	1.9%	1.45%	0.15%	1.52%	0.42%
-129	Aug-03-2015	1442.04	0.13%	185.50	1.1%	1.44%	-1.31%	0.78%	0.31%
-128	Aug-04-2015	1432.16	-0.69%	185.50	0.0%	1.44%	-2.12%	0.36%	-0.36%
-127	Aug-05-2015	1436.36	0.29%	184.00	-0.8%	1.44%	-1.14%	0.86%	-1.67%
-126	Aug-06-2015	1430.58	-0.40%	183.50	-0.3%	1.44%	-1.84%	0.51%	-0.78%
-125	Aug-07-2015	1428.79	-0.13%	183.00	-0.3%	1.44%	-1.56%	0.65%	-0.92%
-124	Aug-10-2015	1420.13	-0.61%	183.00	0.0%	1.44%	-2.04%	0.40%	-0.40%
-123	Aug-11-2015	1408.32	-0.83%	185.00	1.1%	1.44%	-2.27%	0.29%	0.80%
-122	Aug-13-2015	1404.15	-0.30%	185.00	0.0%	1.44%	-1.73%	0.56%	-0.56%
-121	Aug-14-2015	1413.92	0.70%	186.00	0.5%	1.44%	-0.74%	1.06%	-0.52%
-120	Aug-17-2015	1408.74	-0.37%	186.00	0.0%	1.44%	-1.80%	0.53%	-0.53%
-119	Aug-18-2015	1372.61	-2.56%	186.00	0.0%	1.44%	-4.00%	-0.59%	0.59%
-118	Aug-19-2015	1379.12	0.47%	189.50	1.9%	1.44%	-0.96%	0.95%	0.93%
-117	Aug-20-2015	1372.53	-0.48%	190.00	0.3%	1.44%	-1.91%	0.47%	-0.21%
-116	Aug-21-2015	1365.61	-0.50%	190.00	0.0%	1.44%	-1.94%	0.46%	-0.46%
-115	Aug-24-2015	1301.06	-4.73%	185.50	-2.4%	1.44%	-6.17%	-1.68%	-0.69%
-114	Aug-25-2015	1323.88	1.75%	185.00	-0.3%	1.44%	0.31%	1.60%	-1.87%
-113	Aug-26-2015	1320.08	-0.29%	186.00	0.5%	1.45%	-1.73%	0.57%	-0.03%
-112	Aug-27-2015	1358.03	2.87%	188.00	1.1%	1.45%	1.43%	2.17%	-1.09%
-111	Aug-28-2015	1365.94	0.58%	192.00	2.1%	1.45%	-0.87%	1.01%	1.12%
-110	Aug-31-2015	1382.41	1.21%	198.50	3.4%	1.45%	-0.24%	1.33%	2.06%
-109	Sep-01-2015	1362.39	-1.45%	194.00	-2.3%	1.45%	-2.90%	-0.01%	-2.25%
-108	Sep-02-2015	1372.45	0.74%	197.50	1.8%	1.45%	-0.71%	1.09%	0.72%
-107	Sep-03-2015	1383.48	0.80%	197.00	0.3%	1.45%	-0.65%	1.12%	-1.38%
-106	Sep-04-2015	1370.75	-0.92%	199.00	1.0%	1.45%	-2.37%	0.25%	0.76%
-105	Sep-07-2015	1371.40	0.05%	203.00	2.0%	1.45%	-1.40%	0.74%	1.27%
-104	Sep-08-2015	1379.32	0.58%	201.00	-1.0%	1.45%	-0.88%	1.01%	-2.00%
-103	Sep-09-2015	1396.29	1.23%	199.50	-0.7%	1.46%	-0.23%	1.34%	-2.09%
-102	Sep-10-2015	1396.16	-0.01%	201.00	0.8%	1.46%	-1.47%	0.72%	0.03%
-101	Sep-11-2015	1381.72	-1.03%	198.00	-1.5%	1.46%	-2.50%	0.20%	-1.69%
-100	Sep-14-2015	1377.15	-0.33%	197.50	-0.3%	1.47%	-1.80%	0.56%	-0.81%
-99	Sep-15-2015	1370.65	-0.47%	196.50	-0.5%	1.48%	-1.95%	0.49%	-1.00%
-98	Sep-16-2015	1381.80	0.81%	197.00	0.3%	1.49%	-0.67%	1.15%	-0.89%
-97	Sep-17-2015	1389.70	0.57%	196.50	-0.3%	1.48%	-0.91%	1.02%	-1.28%
-96	Sep-18-2015	1390.32	0.04%	200.00	1.8%	1.48%	-1.44%	0.76%	1.03%
-95	Sep-21-2015	1392.73	0.17%	199.50	-0.2%	1.49%	-1.31%	0.82%	-1.07%
-94	Sep-22-2015	1379.32	-0.96%	200.00	0.3%	1.49%	-2.45%	0.25%	0.00%
-93	Sep-23-2015	1375.17	-0.30%	200.00	0.0%	1.49%	-1.79%	0.59%	-0.59%
-92	Sep-24-2015	1372.35	-0.21%	200.00	0.0%	1.49%	-1.70%	0.63%	-0.63%
-91	Sep-25-2015	1376.83	0.33%	201.00	0.5%	1.50%	-1.17%	0.90%	-0.40%
-90	Sep-28-2015	1352.13	-1.79%	197.00	-2.0%	1.50%	-3.29%	-0.17%	-1.82%
-89	Sep-29-2015	1348.84	-0.24%	200.00	1.5%	1.50%	-1.75%	0.62%	0.90%
-88	Sep-30-2015	1349.00	0.01%	201.00	0.5%	1.50%	-1.49%	0.75%	-0.25%
-87	Oct-01-2015	1345.15	-0.29%	200.00	-0.5%	1.50%	-1.79%	0.60%	-1.10%
-86	Oct-02-2015	1346.35	0.09%	200.00	0.0%	1.50%	-1.41%	0.79%	-0.79%
-85	Oct-05-2015	1363.17	1.25%	199.00	-0.5%	1.50%	-0.25%	1.37%	-1.87%
-84	Oct-06-2015	1370.69	0.55%	196.00	-1.5%	1.50%	-0.95%	1.02%	-2.53%
-83	Oct-07-2015	1393.66	1.68%	194.50	-0.8%	1.50%	0.18%	1.59%	-2.35%
-82	Oct-08-2015	1392.15	-0.11%	194.50	0.0%	1.49%	-1.60%	0.68%	-0.68%
-81	Oct-09-2015	1411.33	1.38%	199.00	2.3%	1.46%	-0.09%	1.42%	0.89%
-80	Oct-12-2015	1412.49	0.08%	198.50	-0.3%	1.46%	-1.38%	0.76%	-1.01%
-79	Oct-13-2015	1406.69	-0.41%	199.50	0.5%	1.45%	-1.86%	0.51%	-0.01%
-78	Oct-14-2015	1405.08	-0.11%	199.50	0.0%	1.45%	-1.57%	0.66%	-0.66%
-77	Oct-15-2015	1425.32	1.44%	199.50	0.0%	1.45%	-0.01%	1.45%	-1.45%
-76	Oct-16-2015	1418.38	-0.49%	202.00	1.3%	1.45%	-1.94%	0.47%	0.78%
-75	Oct-19-2015	1416.91	-0.10%	202.00	0.0%	1.45%	-1.55%	0.67%	-0.67%
-74	Oct-20-2015	1418.63	0.12%	203.00	0.5%	1.46%	-1.33%	0.78%	-0.29%
-73	Oct-21-2015	1415.80	-0.20%	200.00	-1.5%	1.46%	-1.66%	0.62%	-2.10%

Source: S&amp;P CapitalIQ

	Dates	SET Index	% Return SET	Big C Closed price	% Return Big (3M T-Bill	Risk premium	CAPM Return	Abnormal Return	
-72	Oct-22-2015	1416.14	0.02%	201.00	0.5%	1.46%	-1.44%	0.73%	-0.23%
-71	Oct-26-2015	1424.16	0.57%	200.00	-0.5%	1.47%	-0.90%	1.01%	-1.51%
-70	Oct-27-2015	1424.05	-0.01%	200.00	0.0%	1.46%	-1.47%	0.72%	-0.72%
-69	Oct-28-2015	1409.26	-1.04%	200.00	0.0%	1.47%	-2.51%	0.20%	-0.20%
-68	Oct-29-2015	1390.04	-1.36%	198.00	-1.0%	1.47%	-2.83%	0.04%	-1.04%
-67	Oct-30-2015	1394.94	0.35%	200.00	1.0%	1.47%	-1.12%	0.91%	0.10%
-66	Nov-02-2015	1413.34	1.32%	201.00	0.5%	1.47%	-0.15%	1.39%	-0.89%
-65	Nov-03-2015	1412.62	-0.05%	201.00	0.0%	1.47%	-1.52%	0.70%	-0.70%
-64	Nov-04-2015	1423.42	0.76%	202.00	0.5%	1.47%	-0.71%	1.11%	-0.62%
-63	Nov-05-2015	1413.16	-0.72%	201.00	-0.5%	1.47%	-2.19%	0.36%	-0.86%
-62	Nov-06-2015	1414.54	0.10%	196.00	-2.5%	1.47%	-1.37%	0.78%	-3.26%
-61	Nov-09-2015	1402.57	-0.85%	195.00	-0.5%	1.47%	-2.32%	0.30%	-0.81%
-60	Nov-10-2015	1398.38	-0.30%	195.00	0.0%	1.47%	-1.77%	0.58%	-0.58%
-59	Nov-11-2015	1390.15	-0.59%	196.00	0.5%	1.47%	-2.06%	0.43%	0.08%
-58	Nov-12-2015	1384.29	-0.42%	198.00	1.0%	1.47%	-1.89%	0.52%	0.51%
-57	Nov-13-2015	1382.46	-0.13%	198.00	0.0%	1.47%	-1.61%	0.66%	-0.66%
-56	Nov-16-2015	1388.62	0.45%	197.50	-0.3%	1.47%	-1.03%	0.95%	-1.21%
-55	Nov-17-2015	1390.17	0.11%	199.00	0.8%	1.48%	-1.36%	0.79%	-0.03%
-54	Nov-18-2015	1376.82	-0.96%	199.50	0.3%	1.48%	-2.44%	0.24%	0.01%
-53	Nov-19-2015	1384.97	0.59%	200.00	0.3%	1.48%	-0.88%	1.03%	-0.78%
-52	Nov-20-2015	1393.84	0.64%	199.00	-0.5%	1.48%	-0.84%	1.06%	-1.56%
-51	Nov-23-2015	1394.22	0.03%	200.00	0.5%	1.49%	-1.46%	0.75%	-0.25%
-50	Nov-24-2015	1384.92	-0.67%	201.00	0.5%	1.49%	-2.16%	0.40%	0.10%
-49	Nov-25-2015	1381.46	-0.25%	200.00	-0.5%	1.50%	-1.75%	0.61%	-1.11%
-48	Nov-26-2015	1365.81	-1.13%	196.00	-2.0%	1.50%	-2.63%	0.17%	-2.17%
-47	Nov-27-2015	1363.13	-0.20%	201.00	2.6%	1.50%	-1.69%	0.64%	1.91%
-46	Nov-30-2015	1359.70	-0.25%	200.00	-0.5%	1.50%	-1.75%	0.61%	-1.11%
-45	Dec-01-2015	1357.01	-0.20%	201.00	0.5%	1.50%	-1.70%	0.64%	-0.14%
-44	Dec-02-2015	1339.45	-1.29%	200.00	-0.5%	1.50%	-2.79%	0.09%	-0.58%
-43	Dec-03-2015	1340.62	0.09%	198.00	-1.0%	1.50%	-1.41%	0.78%	-1.78%
-42	Dec-04-2015	1333.57	-0.53%	193.00	-2.5%	1.50%	-2.03%	0.48%	-3.00%
-41	Dec-08-2015	1306.98	-1.99%	189.00	-2.1%	1.50%	-3.49%	-0.27%	-1.81%
-40	Dec-09-2015	1297.82	-0.70%	185.50	-1.9%	1.50%	-2.20%	0.39%	-2.24%
-39	Dec-11-2015	1280.92	-1.30%	185.50	0.0%	1.50%	-2.80%	0.08%	-0.08%
-38	Dec-14-2015	1267.61	-1.04%	184.50	-0.5%	1.50%	-2.54%	0.22%	-0.76%
-37	Dec-15-2015	1300.51	2.60%	184.00	-0.3%	1.50%	1.09%	2.05%	-2.33%
-36	Dec-16-2015	1299.12	-0.11%	190.50	3.5%	1.50%	-1.61%	0.69%	2.84%
-35	Dec-17-2015	1310.34	0.86%	203.00	6.6%	1.50%	-0.64%	1.18%	5.38%
-34	Dec-18-2015	1284.92	-1.94%	204.00	0.5%	1.50%	-3.44%	-0.24%	0.73%
-33	Dec-21-2015	1264.44	-1.59%	203.00	-0.5%	1.50%	-3.10%	-0.06%	-0.43%
-32	Dec-22-2015	1261.66	-0.22%	198.00	-2.5%	1.50%	-1.72%	0.63%	-3.10%
-31	Dec-23-2015	1274.50	1.02%	201.00	1.5%	1.50%	-0.49%	1.26%	0.26%
-30	Dec-24-2015	1284.15	0.76%	204.00	1.5%	1.50%	-0.75%	1.13%	0.37%
-29	Dec-25-2015	1282.93	-0.10%	201.00	-1.5%	1.50%	-1.60%	0.70%	-2.17%
-28	Dec-28-2015	1285.87	0.23%	204.00	1.5%	1.50%	-1.27%	0.86%	0.63%
-27	Dec-29-2015	1283.78	-0.16%	203.00	-0.5%	1.50%	-1.66%	0.66%	-1.15%
-26	Dec-30-2015	1288.02	0.33%	202.00	-0.5%	1.50%	-1.17%	0.91%	-1.40%
-25	Jan-04-2016	1263.41	-1.91%	200.00	-1.0%	1.48%	-3.39%	-0.23%	-0.76%
-24	Jan-05-2016	1253.34	-0.80%	199.00	-0.5%	1.47%	-2.27%	0.32%	-0.82%
-23	Jan-06-2016	1260.04	0.53%	199.00	0.0%	1.47%	-0.93%	1.00%	-1.00%
-22	Jan-07-2016	1224.83	-2.79%	194.00	-2.5%	1.46%	-4.26%	-0.69%	-1.82%
-21	Jan-08-2016	1244.18	1.58%	196.50	1.3%	1.45%	0.12%	1.52%	-0.23%
-20	Jan-11-2016	1234.50	-0.78%	194.50	-1.0%	1.46%	-2.24%	0.33%	-1.35%
-19	Jan-12-2016	1255.30	1.68%	196.50	1.0%	1.45%	0.23%	1.57%	-0.54%
-18	Jan-13-2016	1278.61	1.86%	199.00	1.3%	1.45%	0.41%	1.66%	-0.38%
-17	Jan-14-2016	1263.29	-1.20%	197.50	-0.8%	1.44%	-2.64%	0.11%	-0.86%
-16	Jan-15-2016	1245.85	-1.38%	226.00	14.4%	1.43%	-2.81%	0.01%	14.42%
-15	Jan-18-2016	1245.05	-0.06%	237.00	4.9%	1.41%	-1.47%	0.66%	4.20%
-14	Jan-19-2016	1266.01	1.68%	231.00	-2.5%	1.40%	0.28%	1.54%	-4.08%
-13	Jan-20-2016	1248.98	-1.35%	235.00	1.7%	1.40%	-2.75%	0.01%	1.72%
-12	Jan-21-2016	1245.61	-0.27%	230.00	-2.1%	1.41%	-1.68%	0.56%	-2.69%
-11	Jan-22-2016	1268.03	1.80%	230.00	0.0%	1.42%	0.38%	1.61%	-1.61%
-10	Jan-25-2016	1267.70	-0.03%	232.00	0.9%	1.41%	-1.43%	0.68%	0.19%
-9	Jan-26-2016	1268.07	0.03%	231.00	-0.4%	1.41%	-1.38%	0.71%	-1.14%
-8	Jan-27-2016	1278.29	0.81%	231.00	0.0%	1.41%	-0.60%	1.10%	-1.10%

Source: S&amp;P CapitalIQ

	Dates	SET Index	% Return SET	Big C Closed price	% Return Big (3M T-Bill	Risk premium	CAPM Return	Abnormal Return	
-7	Jan-28-2016	1288.40	0.79%	231.00	0.0%	1.41%	-0.62%	1.10%	-1.10%
-6	Jan-29-2016	1300.98	0.98%	224.00	-3.0%	1.40%	-0.43%	1.19%	-4.22%
-5	Feb-01-2016	1297.34	-0.28%	230.00	2.7%	1.40%	-1.68%	0.55%	2.13%
-4	Feb-02-2016	1285.30	-0.93%	225.00	-2.2%	1.40%	-2.33%	0.23%	-2.40%
-3	Feb-03-2016	1291.77	0.50%	223.00	-0.9%	1.41%	-0.90%	0.95%	-1.84%
-2	Feb-04-2016	1297.11	0.41%	220.00	-1.3%	1.41%	-0.99%	0.90%	-2.25%
-1	Feb-05-2016	1306.29	0.71%	227.00	3.2%	1.41%	-0.70%	1.05%	2.13%
0	Feb-08-2016	1307.57	0.10%	249.00	9.7%	1.41%	-1.31%	0.74%	8.95%
1	Feb-09-2016	1303.96	-0.28%	248.00	-0.4%	1.41%	-1.68%	0.56%	-0.96%
2	Feb-10-2016	1304.74	0.06%	249.00	0.4%	1.41%	-1.35%	0.73%	-0.32%
3	Feb-11-2016	1280.74	-1.84%	246.00	-1.2%	1.39%	-3.23%	-0.24%	-0.96%
4	Feb-12-2016	1276.49	-0.33%	246.00	0.0%	1.40%	-1.73%	0.52%	-0.52%
5	Feb-15-2016	1288.40	0.93%	248.00	0.8%	1.40%	-0.46%	1.16%	-0.35%
6	Feb-16-2016	1289.36	0.07%	248.00	0.0%	1.40%	-1.33%	0.73%	-0.73%
7	Feb-17-2016	1288.47	-0.07%	249.00	0.4%	1.40%	-1.47%	0.66%	-0.26%
8	Feb-18-2016	1294.59	0.47%	248.00	-0.4%	1.40%	-0.93%	0.93%	-1.33%
9	Feb-19-2016	1320.19	1.98%	248.00	0.0%	1.40%	0.58%	1.69%	-1.69%
10	Feb-23-2016	1325.79	0.42%	248.00	0.0%	1.40%	-0.98%	0.91%	-0.91%
11	Feb-24-2016	1331.93	0.46%	248.00	0.0%	1.41%	-0.94%	0.93%	-0.93%
12	Feb-25-2016	1333.42	0.11%	249.00	0.4%	1.41%	-1.30%	0.75%	-0.35%
13	Feb-26-2016	1343.07	0.72%	250.00	0.4%	1.41%	-0.69%	1.06%	-0.66%
14	Feb-29-2016	1332.37	-0.80%	249.00	-0.4%	1.41%	-2.21%	0.29%	-0.69%
15	Mar-01-2016	1346.95	1.09%	250.00	0.4%	1.41%	-0.31%	1.25%	-0.85%
16	Mar-02-2016	1365.31	1.36%	249.00	-0.4%	1.40%	-0.04%	1.38%	-1.78%
17	Mar-03-2016	1379.33	1.03%	249.00	0.0%	1.40%	-0.38%	1.21%	-1.21%
18	Mar-04-2016	1379.53	0.01%	250.00	0.4%	1.40%	-1.39%	0.70%	-0.30%
19	Mar-07-2016	1395.75	1.18%	250.00	0.0%	1.40%	-0.23%	1.29%	-1.29%
20	Mar-08-2016	1374.62	-1.51%	250.00	0.0%	1.40%	-2.91%	-0.07%	0.07%
21	Mar-09-2016	1390.66	1.17%	249.00	-0.4%	1.40%	-0.23%	1.28%	-1.68%
22	Mar-10-2016	1379.06	-0.83%	249.00	0.0%	1.40%	-2.23%	0.27%	-0.27%
23	Mar-11-2016	1393.41	1.04%	249.00	0.0%	1.39%	-0.35%	1.21%	-1.21%
24	Mar-14-2016	1394.27	0.06%	249.00	0.0%	1.39%	-1.33%	0.72%	-0.72%
25	Mar-15-2016	1382.93	-0.81%	250.00	0.4%	1.39%	-2.20%	0.28%	0.13%
26	Mar-16-2016	1377.80	-0.37%	250.00	0.0%	1.39%	-1.76%	0.50%	-0.50%
27	Mar-17-2016	1380.20	0.17%	249.00	-0.4%	1.38%	-1.20%	0.77%	-1.17%
28	Mar-18-2016	1382.96	0.20%	249.00	0.0%	1.36%	-1.16%	0.78%	-0.78%
29	Mar-21-2016	1393.63	0.77%	250.00	0.4%	1.36%	-0.59%	1.06%	-0.66%
30	Mar-22-2016	1397.20	0.26%	251.00	0.4%	1.36%	-1.10%	0.80%	-0.40%
31	Mar-23-2016	1412.16	1.07%	251.00	0.0%	1.35%	-0.28%	1.21%	-1.21%
32	Mar-24-2016	1405.41	-0.48%	250.00	-0.4%	1.36%	-1.83%	0.43%	-0.83%
33	Mar-25-2016	1394.78	-0.76%	251.00	0.4%	1.36%	-2.11%	0.29%	0.11%
34	Mar-28-2016	1389.01	-0.41%	251.00	0.0%	1.37%	-1.78%	0.47%	-0.47%
35	Mar-29-2016	1392.85	0.28%	252.00	0.4%	1.38%	-1.10%	0.82%	-0.42%
36	Mar-30-2016	1410.29	1.25%	252.00	0.0%	1.38%	-0.13%	1.32%	-1.32%
37	Mar-31-2016	1407.70	-0.18%	251.00	-0.4%	1.38%	-1.56%	0.59%	-0.99%
38	Apr-01-2016	1400.72	-0.50%	251.00	0.0%	1.37%	-1.87%	0.43%	-0.43%
39	Apr-04-2016	1400.27	-0.03%	250.00	-0.4%	1.37%	-1.40%	0.66%	-1.06%
40	Apr-05-2016	1373.59	-1.91%	249.00	-0.4%	1.36%	-3.27%	-0.29%	-0.11%
41	Apr-07-2016	1356.69	-1.23%	250.00	0.4%	1.36%	-2.59%	0.05%	0.35%
42	Apr-08-2016	1369.64	0.95%	250.00	0.0%	1.36%	-0.40%	1.15%	-1.15%
43	Apr-11-2016	1369.84	0.01%	250.00	0.0%	1.36%	-1.34%	0.68%	-0.68%
44	Apr-12-2016	1385.42	1.14%	249.00	-0.4%	1.35%	-0.22%	1.24%	-1.64%
45	Apr-18-2016	1398.77	0.96%	249.00	0.0%	1.35%	-0.39%	1.16%	-1.16%
46	Apr-19-2016	1416.00	1.23%	249.00	0.0%	1.35%	-0.12%	1.29%	-1.29%
47	Apr-20-2016	1414.96	-0.07%	249.00	0.0%	1.35%	-1.42%	0.63%	-0.63%
48	Apr-21-2016	1423.90	0.63%	248.00	-0.4%	1.35%	-0.72%	0.99%	-1.39%
49	Apr-22-2016	1410.81	-0.92%	248.00	0.0%	1.35%	-2.27%	0.20%	-0.20%
50	Apr-25-2016	1408.71	-0.15%	250.00	0.8%	1.35%	-1.50%	0.59%	0.21%
51	Apr-26-2016	1418.78	0.71%	248.00	-0.8%	1.36%	-0.64%	1.03%	-1.83%
52	Apr-27-2016	1411.84	-0.49%	249.00	0.4%	1.36%	-1.85%	0.42%	-0.02%
53	Apr-28-2016	1399.91	-0.84%	249.00	0.0%	1.36%	-2.20%	0.24%	-0.24%
54	Apr-29-2016	1404.61	0.34%	250.00	0.4%	1.36%	-1.03%	0.84%	-0.44%
55	May-03-2016	1397.87	-0.48%	249.00	-0.4%	1.36%	-1.84%	0.43%	-0.83%
56	May-04-2016	1390.70	-0.51%	247.00	-0.8%	1.36%	-1.88%	0.42%	-1.22%
57	May-09-2016	1394.14	0.25%	245.00	-0.8%	1.36%	-1.11%	0.80%	-1.61%

Source: S&amp;P CapitalIQ

	Dates	SET Index	% Return SET	Big C Closed price	% Return Big (3M T-Bill	Risk premium	CAPM Return	Abnormal Return	
58	May-10-2016	1390.13	-0.29%	238.00	-2.9%	1.36%	-1.65%	0.53%	-3.39%
59	May-11-2016	1382.41	-0.56%	236.00	-0.8%	1.36%	-1.92%	0.39%	-1.23%
60	May-12-2016	1399.31	1.22%	235.00	-0.4%	1.36%	-0.14%	1.29%	-1.71%
61	May-13-2016	1394.69	-0.33%	230.00	-2.1%	1.36%	-1.69%	0.51%	-2.63%
62	May-16-2016	1397.63	0.21%	224.00	-2.6%	1.36%	-1.15%	0.78%	-3.39%
63	May-17-2016	1406.57	0.64%	222.00	-0.9%	1.38%	-0.74%	1.00%	-1.90%
64	May-18-2016	1400.50	-0.43%	224.00	0.9%	1.39%	-1.82%	0.47%	0.43%
65	May-19-2016	1385.86	-1.05%	222.00	-0.9%	1.40%	-2.44%	0.16%	-1.06%
66	May-23-2016	1381.69	-0.30%	211.00	-5.0%	1.41%	-1.71%	0.54%	-5.50%
67	May-24-2016	1384.26	0.19%	210.00	-0.5%	1.42%	-1.24%	0.80%	-1.27%
68	May-25-2016	1397.63	0.97%	211.00	0.5%	1.43%	-0.47%	1.20%	-0.72%
69	May-26-2016	1401.64	0.29%	210.00	-0.5%	1.44%	-1.15%	0.86%	-1.33%
70	May-27-2016	1412.67	0.79%	211.00	0.5%	1.44%	-0.65%	1.11%	-0.63%
71	May-30-2016	1424.12	0.81%	211.00	0.0%	1.44%	-0.62%	1.12%	-1.12%
72	May-31-2016	1424.28	0.01%	208.00	-1.4%	1.45%	-1.44%	0.72%	-2.14%

Source: S&P CapitalIQ





## 16.4.3 Abnormal return CPALL

	CPALL Returns	% Set index	% 3M T-Bill	% Risk premium	CAPM Return CPALL	Abnormal return CPALL
-245	-0.39%	-0.51%	3.02%	-3.53%	-0.51%	0.12%
-244	3.53%	1.60%	3.02%	-1.42%	1.60%	1.93%
-243	-1.14%	-0.27%	3.02%	-3.29%	-0.27%	-0.87%
-242	0.00%	-0.01%	3.03%	-3.03%	0.00%	0.00%
-241	0.38%	-0.59%	3.03%	-3.62%	-0.59%	0.97%
-240	-0.38%	0.19%	3.03%	-2.84%	0.20%	-0.58%
-239	3.83%	1.00%	3.03%	-2.03%	1.00%	2.83%
-238	-0.37%	-1.07%	3.03%	-4.10%	-1.07%	0.70%
-237	-0.74%	-1.31%	3.03%	-4.34%	-1.30%	0.56%
-236	-1.87%	-1.42%	3.05%	-4.47%	-1.41%	-0.45%
-235	-0.76%	-0.95%	3.04%	-4.00%	-0.95%	0.19%
-234	1.53%	1.30%	3.05%	-1.75%	1.30%	0.23%
-233	-1.51%	-0.79%	3.05%	-3.83%	-0.78%	-0.73%
-232	0.77%	0.67%	3.05%	-2.37%	0.68%	0.09%
-231	2.66%	1.48%	3.05%	-1.57%	1.48%	1.18%
-230	2.96%	0.78%	3.05%	-2.27%	0.78%	2.18%
-229	0.36%	-0.44%	3.05%	-3.49%	-0.43%	0.79%
-228	1.79%	0.88%	3.06%	-2.17%	0.89%	0.91%
-227	4.23%	0.13%	3.06%	-2.93%	0.13%	4.10%
-226	-1.69%	0.66%	3.06%	-2.40%	0.66%	-2.35%
-225	2.41%	0.21%	3.06%	-2.85%	0.21%	2.19%
-224	2.68%	1.38%	3.06%	-1.68%	1.38%	1.30%
-223	0.00%	0.86%	3.06%	-2.20%	0.86%	-0.86%
-222	2.61%	0.08%	3.06%	-2.98%	0.08%	2.53%
-221	-5.10%	-1.02%	3.06%	-4.08%	-1.01%	-4.08%
-220	3.36%	0.30%	3.05%	-2.76%	0.30%	3.06%
-219	-6.49%	-1.93%	3.05%	-4.99%	-1.93%	-4.57%
-218	-0.69%	-1.38%	3.05%	-4.43%	-1.37%	0.67%
-217	3.50%	0.03%	3.05%	-3.02%	0.03%	3.46%
-216	-3.38%	-2.14%	3.04%	-5.18%	-2.13%	-1.25%
-215	1.40%	1.63%	3.03%	-1.40%	1.64%	-0.24%
-214	0.69%	-1.12%	3.04%	-4.16%	-1.12%	1.81%
-213	-1.37%	0.20%	3.04%	-2.84%	0.20%	-1.57%
-212	-2.08%	-1.63%	3.03%	-4.66%	-1.62%	-0.46%
-211	0.00%	-1.67%	3.03%	-4.70%	-1.66%	1.66%
-210	-1.42%	-0.32%	3.03%	-3.35%	-0.32%	-1.10%
-209	-2.88%	-1.84%	3.03%	-4.87%	-1.83%	-1.04%
-208	2.96%	1.36%	3.03%	-1.67%	1.36%	1.60%
-207	1.44%	0.63%	3.04%	-2.41%	0.63%	0.81%
-206	1.42%	0.63%	3.04%	-2.41%	0.63%	0.79%
-205	0.70%	1.20%	3.03%	-1.83%	1.21%	-0.51%
-204	-1.39%	-1.30%	3.04%	-4.34%	-1.30%	-0.09%
-203	-3.52%	0.25%	3.04%	-2.79%	0.26%	-3.78%
-202	-2.19%	-2.30%	3.03%	-5.34%	-2.30%	0.11%
-201	-2.24%	-1.44%	3.03%	-4.47%	-1.43%	-0.81%
-200	3.05%	1.71%	3.03%	-1.32%	1.71%	1.34%
-199	0.00%	0.05%	3.03%	-2.98%	0.06%	-0.06%
-198	0.74%	0.77%	3.03%	-2.26%	0.77%	-0.03%
-197	1.47%	2.75%	3.03%	-0.28%	2.75%	-1.28%
-196	0.00%	0.42%	3.03%	-2.61%	0.42%	-0.42%
-195	1.45%	-0.41%	3.03%	-3.43%	-0.40%	1.85%
-194	0.71%	-0.45%	3.03%	-3.48%	-0.44%	1.16%
-193	2.13%	1.10%	3.03%	-1.93%	1.11%	1.02%
-192	-1.39%	-0.20%	3.03%	-3.23%	-0.19%	-1.19%
-191	-0.70%	0.83%	3.03%	-2.20%	0.84%	-1.54%
-190	0.71%	0.01%	3.03%	-3.02%	0.02%	0.69%
-189	-1.41%	-1.21%	3.03%	-4.24%	-1.20%	-0.21%
-188	-0.71%	-0.53%	3.03%	-3.56%	-0.52%	-0.19%
-187	1.44%	-0.48%	3.03%	-3.50%	-0.47%	1.91%
-186	0.00%	0.32%	3.03%	-2.71%	0.32%	-0.32%
-185	1.42%	1.29%	3.03%	-1.73%	1.30%	0.12%
-184	2.80%	0.46%	3.03%	-2.57%	0.46%	2.34%
-183	-3.40%	0.07%	3.03%	-2.96%	0.07%	-3.47%
-182	0.70%	1.42%	3.03%	-1.61%	1.42%	-0.72%
-181	2.10%	0.78%	3.03%	-2.24%	0.79%	1.31%
-180	-1.37%	-0.33%	3.03%	-3.36%	-0.32%	-1.05%

Source: S&amp;P CapitalIQ

	CPALL Returns	% Set index	% 3M T-Bill	% Risk premium	CAPM Return CPALL	Abnormal return CPALL
-179	-1.39%	0.64%	3.03%	-2.39%	0.64%	-2.03%
-178	-0.70%	-0.14%	3.03%	-3.17%	-0.14%	-0.57%
-177	1.42%	-1.09%	3.03%	-4.12%	-1.09%	2.51%
-176	0.70%	1.47%	3.03%	-1.56%	1.47%	-0.77%
-175	0.69%	0.35%	3.02%	-2.67%	0.36%	0.34%
-174	-2.07%	-1.29%	3.02%	-4.31%	-1.28%	-0.79%
-173	0.70%	1.44%	3.02%	-1.59%	1.44%	-0.74%
-172	0.00%	0.33%	3.03%	-2.70%	0.33%	-0.33%
-171	1.40%	0.82%	3.02%	-2.20%	0.82%	0.58%
-170	-0.69%	-0.33%	3.02%	-3.35%	-0.33%	-0.36%
-169	-1.39%	-0.59%	3.02%	-3.61%	-0.58%	-0.81%
-168	2.11%	-0.36%	3.02%	-3.38%	-0.36%	2.47%
-167	-1.38%	-1.94%	3.02%	-4.96%	-1.93%	0.55%
-166	-1.40%	0.21%	3.02%	-2.80%	0.22%	-1.62%
-165	-2.84%	0.08%	3.02%	-2.93%	0.09%	-2.92%
-164	-0.73%	-1.32%	3.02%	-4.34%	-1.31%	0.58%
-163	-2.21%	0.43%	3.02%	-2.58%	0.44%	-2.64%
-162	0.00%	1.30%	3.02%	-1.72%	1.30%	-1.30%
-161	2.26%	0.50%	3.01%	-2.51%	0.50%	1.75%
-160	2.21%	0.15%	3.01%	-2.86%	0.16%	2.05%
-159	1.44%	-0.30%	3.01%	-3.31%	-0.29%	1.73%
-158	-0.71%	0.88%	3.01%	-2.14%	0.88%	-1.59%
-157	-3.57%	0.01%	2.99%	-2.97%	0.02%	-3.59%
-156	-2.96%	0.49%	2.98%	-2.49%	0.50%	-3.46%
-155	0.76%	0.29%	2.98%	-2.69%	0.30%	0.47%
-154	0.00%	0.14%	2.98%	-2.85%	0.14%	-0.14%
-153	2.27%	0.61%	2.98%	-2.37%	0.61%	1.66%
-152	0.00%	0.00%	2.98%	-2.98%	0.01%	-0.01%
-151	0.74%	-0.20%	2.98%	-3.18%	-0.19%	0.93%
-150	-0.74%	-0.04%	2.98%	-3.02%	-0.04%	-0.70%
-149	1.48%	0.42%	2.99%	-2.57%	0.42%	1.06%
-148	-1.46%	0.27%	2.99%	-2.72%	0.27%	-1.73%
-147	0.00%	0.15%	2.99%	-2.84%	0.15%	-0.15%
-146	2.22%	0.28%	2.99%	-2.71%	0.29%	1.93%
-145	-1.45%	-0.04%	2.99%	-3.03%	-0.03%	-1.42%
-144	0.00%	-0.28%	2.99%	-3.27%	-0.27%	0.27%
-143	0.00%	-0.05%	3.00%	-3.05%	-0.04%	0.04%
-142	-0.74%	-1.05%	3.01%	-4.06%	-1.05%	0.31%
-141	0.00%	-0.46%	3.00%	-3.46%	-0.45%	0.45%
-140	2.22%	1.06%	3.00%	-1.94%	1.07%	1.15%
-139	-0.72%	0.65%	3.00%	-2.35%	0.66%	-1.38%
-138	0.00%	0.07%	3.00%	-2.93%	0.07%	-0.07%
-137	-0.73%	-0.20%	3.00%	-3.20%	-0.20%	-0.53%
-136	0.74%	0.82%	3.00%	-2.18%	0.82%	-0.08%
-135	1.46%	0.18%	3.00%	-2.82%	0.18%	1.28%
-134	1.44%	0.39%	3.00%	-2.61%	0.39%	1.05%
-133	0.00%	-0.21%	3.01%	-3.22%	-0.20%	0.20%
-132	0.00%	0.93%	3.01%	-2.07%	0.94%	-0.94%
-131	-1.42%	-0.18%	3.01%	-3.19%	-0.18%	-1.24%
-130	0.72%	1.47%	3.01%	-1.54%	1.47%	-0.75%
-129	-2.86%	0.19%	3.01%	-2.82%	0.19%	-3.05%
-128	0.00%	-0.44%	3.01%	-3.45%	-0.44%	0.44%
-127	0.00%	0.99%	3.01%	-2.02%	0.99%	-0.99%
-126	0.00%	-0.22%	3.01%	-3.23%	-0.21%	0.21%
-125	0.00%	0.28%	3.01%	-2.73%	0.28%	-0.28%
-124	-0.74%	-0.15%	3.01%	-3.17%	-0.15%	-0.59%
-123	0.74%	0.24%	3.02%	-2.77%	0.25%	0.49%
-122	0.00%	-1.00%	3.02%	-4.02%	-1.00%	1.00%
-121	1.47%	0.91%	3.02%	-2.11%	0.91%	0.56%
-120	2.90%	0.99%	3.02%	-2.03%	0.99%	1.91%

Source: S&amp;P CapitalIQ

	CPALL Returns	% Set index	% 3M T-Bill	% Risk premium	CAPM Return CPALL	Abnormal return CPALL
-119	1.41%	0.07%	3.02%	-2.95%	0.08%	1.33%
-118	0.69%	0.46%	3.04%	-2.58%	0.46%	0.23%
-117	3.45%	0.14%	3.03%	-2.89%	0.15%	3.30%
-116	2.67%	-0.07%	3.03%	-3.10%	-0.07%	2.73%
-115	-1.30%	0.36%	3.03%	-2.67%	0.37%	-1.66%
-114	0.66%	-0.51%	3.04%	-3.54%	-0.50%	1.16%
-113	-0.65%	-0.94%	3.04%	-3.98%	-0.93%	0.28%
-112	-1.32%	-0.24%	3.04%	-3.28%	-0.24%	-1.08%
-111	3.33%	0.43%	3.03%	-2.60%	0.43%	2.90%
-110	1.29%	0.16%	3.04%	-2.88%	0.16%	1.13%
-109	0.64%	-0.49%	3.04%	-3.53%	-0.49%	1.13%
-108	0.63%	-0.24%	3.05%	-3.29%	-0.23%	0.87%
-107	-0.63%	1.07%	2.83%	-1.76%	1.07%	-1.70%
-106	0.00%	0.76%	2.82%	-2.06%	0.77%	-0.77%
-105	-1.90%	-0.27%	2.82%	-3.08%	-0.26%	-1.64%
-104	1.94%	0.21%	2.79%	-2.58%	0.21%	1.72%
-103	1.27%	-1.18%	2.79%	-3.97%	-1.17%	2.44%
-102	0.63%	0.18%	2.79%	-2.61%	0.19%	0.44%
-101	-0.62%	-1.20%	2.79%	-3.99%	-1.19%	0.57%
-100	-1.88%	-0.17%	2.79%	-2.96%	-0.17%	-1.70%
-99	1.27%	1.16%	2.77%	-1.61%	1.16%	0.11%
-98	0.00%	0.34%	2.77%	-2.43%	0.35%	-0.35%
-97	0.63%	-0.07%	2.77%	-2.84%	-0.06%	0.69%
-96	1.88%	0.66%	2.77%	-2.10%	0.67%	1.21%
-95	0.00%	0.01%	2.76%	-2.75%	0.01%	-0.01%
-94	-1.23%	-0.45%	2.75%	-3.20%	-0.44%	-0.78%
-93	-1.24%	-0.08%	2.74%	-2.82%	-0.08%	-1.16%
-92	0.00%	-0.46%	2.74%	-3.20%	-0.46%	0.46%
-91	1.26%	-0.22%	2.74%	-2.96%	-0.22%	1.48%
-90	1.24%	0.28%	2.74%	-2.46%	0.29%	0.95%
-89	-1.23%	-0.42%	2.74%	-3.16%	-0.41%	-0.81%
-88	0.62%	-0.76%	2.74%	-3.50%	-0.75%	1.37%
-87	-0.62%	-0.41%	2.74%	-3.15%	-0.41%	-0.21%
-86	0.62%	0.48%	2.74%	-2.26%	0.48%	0.14%
-85	0.62%	0.27%	2.74%	-2.47%	0.28%	0.34%
-84	0.00%	-0.56%	2.74%	-3.31%	-0.56%	0.56%
-83	-1.84%	0.00%	2.74%	-2.75%	0.00%	-1.84%
-82	-2.50%	0.24%	2.74%	-2.50%	0.25%	-2.75%
-81	2.56%	0.17%	2.74%	-2.57%	0.17%	2.39%
-80	1.88%	0.71%	2.75%	-2.03%	0.72%	1.16%
-79	-0.61%	0.48%	2.74%	-2.27%	0.48%	-1.10%
-78	0.62%	0.22%	2.75%	-2.52%	0.23%	0.39%
-77	-3.07%	0.74%	2.75%	-2.01%	0.74%	-3.81%
-76	0.00%	1.10%	2.75%	-1.65%	1.11%	-1.11%
-75	1.90%	0.67%	2.76%	-2.09%	0.67%	1.22%
-74	0.00%	-0.21%	2.75%	-2.97%	-0.21%	0.21%
-73	0.62%	0.74%	2.76%	-2.02%	0.74%	-0.12%
-72	1.23%	-0.37%	2.76%	-3.12%	-0.36%	1.60%
-71	2.44%	0.48%	2.76%	-2.28%	0.48%	1.96%
-70	1.19%	0.99%	2.76%	-1.77%	0.99%	0.20%
-69	-1.18%	-0.06%	2.76%	-2.82%	-0.05%	-1.12%
-68	4.17%	0.35%	2.76%	-2.42%	0.35%	3.82%
-67	3.43%	0.04%	2.76%	-2.72%	0.05%	3.38%
-66	2.21%	0.28%	2.77%	-2.49%	0.29%	1.92%
-65	1.62%	1.13%	2.77%	-1.63%	1.14%	0.48%
-64	-1.06%	-0.07%	2.77%	-2.84%	-0.07%	-1.00%
-63	-2.69%	-0.29%	2.77%	-3.06%	-0.29%	-2.40%
-62	-1.10%	0.18%	2.77%	-2.59%	0.18%	-1.29%
-61	-1.12%	0.18%	2.77%	-2.58%	0.19%	-1.30%
-60	3.95%	0.28%	2.77%	-2.48%	0.29%	3.67%
-59	0.54%	1.08%	2.76%	-1.68%	1.08%	-0.54%
-58	-0.54%	-0.38%	2.76%	-3.14%	-0.37%	-0.17%
-57	-0.54%	1.11%	2.76%	-1.65%	1.12%	-1.66%
-56	-2.73%	0.07%	2.76%	-2.69%	0.07%	-2.80%
-55	0.56%	0.59%	2.76%	-2.17%	0.59%	-0.03%
-54	1.12%	-0.09%	2.76%	-2.85%	-0.09%	1.21%
-53	1.66%	0.14%	2.75%	-2.60%	0.15%	1.51%
-52	-0.54%	0.43%	2.74%	-2.31%	0.44%	-0.98%
-51	-1.64%	-1.23%	2.74%	-3.97%	-1.22%	-0.42%
-50	0.00%	0.43%	2.74%	-2.31%	0.44%	-0.44%

Source: S&amp;P CapitalIQ

	CPALL Returns	% Set index	% 3M T-Bill	% Risk premium	CAPM Return CPALL	Abnormal return CPALL
-49	0.56%	0.92%	2.74%	-1.82%	0.92%	-0.37%
-48	0.00%	-0.16%	2.73%	-2.88%	-0.15%	0.15%
-47	-1.10%	-0.47%	2.73%	-3.20%	-0.47%	-0.64%
-46	2.23%	0.34%	2.73%	-2.39%	0.34%	1.89%
-45	1.09%	0.95%	2.73%	-1.78%	0.95%	0.14%
-44	2.70%	0.42%	2.72%	-2.30%	0.42%	2.28%
-43	0.53%	-0.44%	2.71%	-3.16%	-0.44%	0.97%
-42	0.52%	0.36%	2.71%	-2.36%	0.36%	0.16%
-41	0.00%	0.69%	2.71%	-2.03%	0.69%	-0.69%
-40	2.08%	0.85%	2.72%	-1.87%	0.85%	1.23%
-39	-1.53%	0.73%	2.72%	-1.99%	0.73%	-2.26%
-38	-0.52%	0.46%	2.72%	-2.26%	0.46%	-0.98%
-37	-1.56%	0.81%	2.72%	-1.91%	0.82%	-2.38%
-36	-1.06%	-1.11%	2.72%	-3.83%	-1.11%	0.05%
-35	1.60%	1.70%	2.72%	-1.02%	1.70%	-0.09%
-34	2.11%	0.48%	2.72%	-2.25%	0.48%	1.63%
-33	-1.55%	-0.04%	2.71%	-2.75%	-0.04%	-1.51%
-32	-1.57%	-0.36%	2.71%	-3.07%	-0.35%	-1.22%
-31	0.00%	-0.04%	2.70%	-2.74%	-0.03%	0.03%
-30	0.00%	-0.17%	2.70%	-2.87%	-0.16%	0.16%
-29	0.53%	-0.55%	2.69%	-3.24%	-0.54%	1.07%
-28	1.06%	-0.01%	2.71%	-2.72%	-0.01%	1.06%
-27	1.05%	1.69%	2.71%	-1.02%	1.69%	-0.64%
-26	0.00%	0.83%	2.71%	-1.87%	0.84%	-0.84%
-25	0.52%	-0.34%	2.71%	-3.05%	-0.34%	0.86%
-24	1.55%	0.12%	2.70%	-2.59%	0.12%	1.43%
-23	0.51%	0.58%	2.71%	-2.13%	0.58%	-0.07%
-22	5.05%	0.95%	2.71%	-1.76%	0.95%	4.10%
-21	-4.33%	-1.16%	2.71%	-3.87%	-1.15%	-3.18%
-20	-4.02%	0.75%	2.71%	-1.96%	0.75%	-4.77%
-19	-2.09%	-0.64%	2.72%	-3.36%	-0.63%	-1.46%
-18	0.00%	-0.80%	2.72%	-3.53%	-0.80%	0.80%
-17	1.07%	1.55%	2.72%	-1.17%	1.55%	-0.48%
-16	1.06%	-0.13%	2.73%	-2.85%	-0.12%	1.18%
-15	-1.57%	0.07%	2.73%	-2.65%	0.08%	-1.65%
-14	1.60%	0.56%	2.72%	-2.16%	0.56%	1.04%
-13	-0.52%	0.65%	2.72%	-2.07%	0.65%	-1.17%
-12	0.00%	0.10%	2.72%	-2.61%	0.11%	-0.11%
-11	-0.53%	0.38%	2.72%	-2.34%	0.38%	-0.91%
-10	-1.59%	0.68%	2.72%	-2.03%	0.69%	-2.28%
-9	-2.15%	-0.06%	2.72%	-2.78%	-0.06%	-2.09%
-8	2.75%	0.13%	2.72%	-2.59%	0.13%	2.62%
-7	-1.60%	0.51%	2.72%	-2.21%	0.52%	-2.12%
-6	-0.54%	0.71%	2.72%	-2.00%	0.72%	-1.26%
-5	-0.55%	-0.41%	2.72%	-3.12%	-0.40%	-0.15%
-4	-1.65%	-1.47%	2.72%	-4.19%	-1.46%	-0.18%
-3	2.23%	-1.57%	2.72%	-4.28%	-1.56%	3.80%
-2	0.55%	-0.92%	2.71%	-3.63%	-0.91%	1.46%
-1	-2.17%	-3.30%	2.71%	-6.01%	-3.30%	1.12%
0	0.00%	3.04%	2.71%	0.33%	3.04%	-3.04%
1	0.00%	1.32%	2.70%	-1.38%	1.32%	-1.32%
2	0.00%	1.09%	2.70%	-1.61%	1.09%	-1.09%
3	1.67%	-1.04%	2.70%	-3.74%	-1.04%	2.71%
4	1.09%	1.07%	2.70%	-1.64%	1.07%	0.02%
5	-0.54%	-0.74%	2.70%	-3.44%	-0.73%	0.19%
6	1.63%	0.06%	2.71%	-2.64%	0.07%	1.56%
7	-1.07%	-1.94%	2.71%	-4.65%	-1.93%	0.86%
8	0.00%	0.52%	2.71%	-2.19%	0.53%	-0.53%
9	-2.70%	-2.55%	2.71%	-5.26%	-2.54%	-0.16%
10	0.00%	-1.26%	2.72%	-3.98%	-1.26%	1.26%
11	1.67%	1.33%	2.72%	-1.40%	1.33%	0.34%
12	0.55%	1.78%	2.73%	-0.94%	1.78%	-1.24%
13	0.00%	0.69%	2.73%	-2.04%	0.70%	-0.70%
14	-1.09%	-0.38%	2.73%	-3.11%	-0.37%	-0.71%
15	0.00%	0.54%	2.73%	-2.19%	0.54%	-0.54%
16	1.65%	1.03%	2.73%	-1.71%	1.03%	0.62%
17	-5.95%	0.88%	2.73%	-1.85%	0.89%	-6.83%
18	0.00%	-0.63%	2.73%	-3.35%	-0.62%	0.62%
19	-10.34%	0.29%	2.73%	-2.44%	0.29%	-10.64%
20	5.13%	1.31%	2.73%	-1.42%	1.31%	3.81%

Source: S&amp;P CapitalIQ

## 16.4.4 Abnormal return Makro

	Makro Returns	% Set index	% 3M T-Bill	% Risk premium	CAPM MAKRO	Abnormal return MAKRO
-259	3.67%	-0.62%	3.01%	-3.63%	-1.2%	4.83%
-258	2.25%	-0.41%	3.01%	-3.43%	3.0%	-0.76%
-257	2.52%	1.31%	3.02%	-1.70%	3.0%	-0.50%
-256	-1.84%	-0.82%	3.02%	-3.84%	3.0%	-4.86%
-255	3.44%	-0.74%	3.02%	-3.75%	3.0%	0.42%
-254	-0.91%	0.29%	3.02%	-2.73%	3.0%	-3.93%
-253	0.61%	0.94%	3.02%	-2.08%	3.0%	-2.41%
-252	0.61%	0.60%	3.02%	-2.42%	3.0%	-2.41%
-251	0.00%	1.56%	3.02%	-1.46%	3.0%	-3.02%
-250	0.60%	-0.01%	3.02%	-3.02%	3.0%	-2.42%
-249	0.00%	0.60%	3.02%	-2.42%	3.0%	-3.02%
-248	1.80%	0.93%	3.02%	-2.09%	3.0%	-1.22%
-247	0.00%	-1.38%	3.02%	-4.40%	3.0%	-3.02%
-246	5.00%	0.29%	3.02%	-2.73%	3.0%	1.98%
-245	3.08%	-0.51%	3.02%	-3.53%	3.0%	0.06%
-244	-1.09%	1.60%	3.02%	-1.42%	3.0%	-4.11%
-243	-2.47%	-0.27%	3.02%	-3.29%	3.0%	-5.49%
-242	1.97%	-0.01%	3.03%	-3.03%	3.0%	-1.05%
-241	-1.10%	-0.59%	3.03%	-3.62%	3.0%	-4.13%
-240	-0.84%	0.19%	3.03%	-2.84%	3.0%	-3.87%
-239	0.00%	1.00%	3.03%	-2.03%	3.0%	-3.03%
-238	0.56%	-1.07%	3.03%	-4.10%	3.0%	-2.47%
-237	-1.96%	-1.31%	3.03%	-4.34%	3.0%	-4.99%
-236	-2.00%	-1.42%	3.05%	-4.47%	3.0%	-5.05%
-235	0.29%	-0.95%	3.04%	-4.00%	3.0%	-2.75%
-234	4.65%	1.30%	3.05%	-1.75%	3.0%	1.61%
-233	-4.44%	-0.79%	3.05%	-3.83%	3.0%	-7.49%
-232	1.74%	0.67%	3.05%	-2.37%	3.0%	-1.30%
-231	-1.14%	1.48%	3.05%	-1.57%	3.0%	-4.19%
-230	0.29%	0.78%	3.05%	-2.27%	3.0%	-2.76%
-229	-0.58%	-0.44%	3.05%	-3.49%	3.0%	-3.63%
-228	0.87%	0.88%	3.06%	-2.17%	3.1%	-2.19%
-227	4.89%	0.13%	3.06%	-2.93%	3.1%	1.83%
-226	3.84%	0.66%	3.06%	-2.40%	3.1%	0.78%
-225	-1.06%	0.21%	3.06%	-2.85%	3.1%	-4.11%
-224	2.13%	1.38%	3.06%	-1.68%	3.1%	-0.93%
-223	5.48%	0.86%	3.06%	-2.20%	3.1%	2.42%
-222	-1.24%	0.08%	3.06%	-2.98%	3.1%	-4.30%
-221	-0.75%	-1.02%	3.06%	-4.08%	3.1%	-3.81%
-220	-2.78%	0.30%	3.05%	-2.76%	3.1%	-5.83%
-219	0.00%	-1.93%	3.05%	-4.99%	3.1%	-3.05%
-218	2.34%	-1.38%	3.05%	-4.43%	3.1%	-0.71%
-217	1.52%	0.03%	3.05%	-3.02%	3.1%	-1.53%
-216	-6.00%	-2.14%	3.04%	-5.18%	3.0%	-9.04%
-215	3.19%	1.63%	3.03%	-1.40%	3.0%	0.16%
-214	-5.41%	-1.12%	3.04%	-4.16%	3.0%	-8.45%
-213	-1.91%	0.20%	3.04%	-2.84%	3.0%	-4.94%
-212	-3.33%	-1.63%	3.03%	-4.66%	3.0%	-6.37%
-211	-5.17%	-1.67%	3.03%	-4.70%	3.0%	-8.20%
-210	3.03%	-0.32%	3.03%	-3.35%	3.0%	0.00%
-209	-1.47%	-1.84%	3.03%	-4.87%	3.0%	-4.50%
-208	2.69%	1.36%	3.03%	-1.67%	3.0%	-0.34%
-207	0.58%	0.63%	3.04%	-2.41%	3.0%	-2.46%
-206	2.89%	0.63%	3.04%	-2.41%	3.0%	-0.15%
-205	0.28%	1.20%	3.03%	-1.83%	3.0%	-2.75%
-204	-3.64%	-1.30%	3.04%	-4.34%	3.0%	-6.68%
-203	-2.91%	0.25%	3.04%	-2.79%	3.0%	-5.94%
-202	-1.20%	-2.30%	3.03%	-5.34%	3.0%	-4.23%
-201	-0.30%	-1.44%	3.03%	-4.47%	3.0%	-3.33%
-200	4.26%	1.71%	3.03%	-1.32%	3.0%	1.23%
-199	1.46%	0.05%	3.03%	-2.98%	3.0%	-1.57%
-198	6.32%	0.77%	3.03%	-2.26%	3.0%	3.29%
-197	3.78%	2.75%	3.03%	-0.28%	3.0%	0.75%
-196	-1.04%	0.42%	3.03%	-2.61%	3.0%	-4.07%
-195	-2.37%	-0.41%	3.03%	-3.43%	3.0%	-5.40%

Source: S&amp;P CapitalIQ

	Makro Returns	% Set index	% 3M T-Bill	% Risk premium	CAPM MAKRO	Abnormal return MAKRO
-194	-0.27%	-0.45%	3.03%	-3.48%	3.0%	-3.30%
-193	-4.05%	1.10%	3.03%	-1.93%	3.0%	-7.08%
-192	0.85%	-0.20%	3.03%	-3.23%	3.0%	-2.18%
-191	-1.40%	0.83%	3.03%	-2.20%	3.0%	-4.42%
-190	0.57%	0.01%	3.03%	-3.02%	3.0%	-2.46%
-189	0.85%	-1.21%	3.03%	-4.24%	3.0%	-2.19%
-188	0.00%	-0.53%	3.03%	-3.56%	3.0%	-3.03%
-187	-1.40%	-0.48%	3.03%	-3.50%	3.0%	-4.43%
-186	0.00%	0.32%	3.03%	-2.71%	3.0%	-3.03%
-185	3.12%	1.29%	3.03%	-1.73%	3.0%	0.09%
-184	-1.37%	0.46%	3.03%	-2.57%	3.0%	-4.40%
-183	-0.84%	0.07%	3.03%	-2.96%	3.0%	-3.86%
-182	3.09%	1.42%	3.03%	-1.61%	3.0%	0.06%
-181	-0.82%	0.78%	3.03%	-2.24%	3.0%	-3.84%
-180	-1.65%	-0.33%	3.03%	-3.36%	3.0%	-4.68%
-179	-0.84%	0.64%	3.03%	-2.39%	3.0%	-3.87%
-178	-0.28%	-0.14%	3.03%	-3.17%	3.0%	-3.31%
-177	0.00%	-1.09%	3.03%	-4.12%	3.0%	-3.03%
-176	0.00%	1.47%	3.03%	-1.56%	3.0%	-3.03%
-175	-0.28%	0.35%	3.02%	-2.67%	3.0%	-3.31%
-174	-1.13%	-1.29%	3.02%	-4.31%	3.0%	-4.16%
-173	-0.29%	1.44%	3.02%	-1.59%	3.0%	-3.31%
-172	0.00%	0.33%	3.03%	-2.70%	3.0%	-3.03%
-171	1.15%	0.82%	3.02%	-2.20%	3.0%	-1.87%
-170	-0.57%	-0.33%	3.02%	-3.35%	3.0%	-3.59%
-169	-0.57%	-0.59%	3.02%	-3.61%	3.0%	-3.59%
-168	-0.86%	-0.36%	3.02%	-3.38%	3.0%	-3.88%
-167	-1.74%	-1.94%	3.02%	-4.96%	3.0%	-4.76%
-166	-0.59%	0.21%	3.02%	-2.80%	3.0%	-3.61%
-165	-0.89%	0.08%	3.02%	-2.93%	3.0%	-3.91%
-164	-4.79%	-1.32%	3.02%	-4.34%	3.0%	-7.81%
-163	1.26%	0.43%	3.02%	-2.58%	3.0%	-1.76%
-162	1.55%	1.30%	3.02%	-1.72%	3.0%	-1.46%
-161	0.92%	0.50%	3.01%	-2.51%	3.0%	-2.10%
-160	-0.61%	0.15%	3.01%	-2.86%	3.0%	-3.62%
-159	-0.30%	-0.30%	3.01%	-3.31%	3.0%	-3.32%
-158	0.92%	0.88%	3.01%	-2.14%	3.0%	-2.10%
-157	0.30%	0.01%	2.99%	-2.97%	3.0%	-2.68%
-156	-1.81%	0.49%	2.98%	-2.49%	3.0%	-4.80%
-155	-0.92%	0.29%	2.98%	-2.69%	3.0%	-3.91%
-154	2.48%	0.14%	2.98%	-2.85%	3.0%	-0.50%
-153	1.52%	0.61%	2.98%	-2.37%	3.0%	-1.47%
-152	-0.30%	0.00%	2.98%	-2.98%	3.0%	-3.28%
-151	-0.60%	-0.20%	2.98%	-3.18%	3.0%	-3.58%
-150	0.90%	-0.04%	2.98%	-3.02%	3.0%	-2.08%
-149	2.99%	0.42%	2.99%	-2.57%	3.0%	0.00%
-148	-1.16%	0.27%	2.99%	-2.72%	3.0%	-4.14%
-147	1.17%	0.15%	2.99%	-2.84%	3.0%	-1.81%
-146	5.22%	0.28%	2.99%	-2.71%	3.0%	2.23%
-145	-0.83%	-0.04%	2.99%	-3.03%	3.0%	-3.82%
-144	4.17%	-0.28%	2.99%	-3.27%	3.0%	1.18%
-143	-1.33%	-0.05%	3.00%	-3.05%	3.0%	-4.34%
-142	-0.54%	-1.05%	3.01%	-4.06%	3.0%	-3.55%
-141	-2.99%	-0.46%	3.00%	-3.46%	3.0%	-5.99%
-140	3.64%	1.06%	3.00%	-1.94%	3.0%	0.64%
-139	2.43%	0.65%	3.00%	-2.35%	3.0%	-0.57%
-138	0.00%	0.07%	3.00%	-2.93%	3.0%	-3.00%
-137	0.00%	-0.20%	3.00%	-3.20%	3.0%	-3.00%
-136	1.32%	0.82%	3.00%	-2.18%	3.0%	-1.68%
-135	-1.04%	0.18%	3.00%	-2.82%	3.0%	-4.04%
-134	0.53%	0.39%	3.00%	-2.61%	3.0%	-2.47%
-133	0.00%	-0.21%	3.01%	-3.22%	3.0%	-3.01%
-132	-0.52%	0.93%	3.01%	-2.07%	3.0%	-3.53%
-131	0.53%	-0.18%	3.01%	-3.19%	3.0%	-2.48%
-130	0.00%	1.47%	3.01%	-1.54%	3.0%	-3.01%

Source: S&amp;P CapitalIQ

	Makro Returns	% Set index	% 3M T-Bill	% Risk premium	CAPM MAKRO	Abnormal return MAKRO
-129	-1.31%	0.19%	3.01%	-2.82%	3.0%	-4.32%
-128	-0.53%	-0.44%	3.01%	-3.45%	3.0%	-3.54%
-127	-0.53%	0.99%	3.01%	-2.02%	3.0%	-3.54%
-126	-0.80%	-0.22%	3.01%	-3.23%	3.0%	-3.82%
-125	0.27%	0.28%	3.01%	-2.73%	3.0%	-2.74%
-124	-0.27%	-0.15%	3.01%	-3.17%	3.0%	-3.28%
-123	4.59%	0.24%	3.02%	-2.77%	3.0%	1.58%
-122	1.55%	-1.00%	3.02%	-4.02%	3.0%	-1.47%
-121	1.27%	0.91%	3.02%	-2.11%	3.0%	-1.74%
-120	-0.25%	0.99%	3.02%	-2.03%	3.0%	-3.27%
-119	-0.25%	0.07%	3.02%	-2.95%	3.0%	-3.28%
-118	3.54%	0.46%	3.04%	-2.58%	3.0%	0.50%
-117	-0.98%	0.14%	3.03%	-2.89%	3.0%	-4.01%
-116	-1.48%	-0.07%	3.03%	-3.10%	3.0%	-4.51%
-115	0.50%	0.36%	3.03%	-2.67%	3.0%	-2.53%
-114	1.49%	-0.51%	3.04%	-3.54%	3.0%	-1.55%
-113	0.49%	-0.94%	3.04%	-3.98%	3.0%	-2.55%
-112	0.49%	-0.24%	3.04%	-3.28%	3.0%	-2.55%
-111	2.91%	0.43%	3.03%	-2.60%	3.0%	-0.12%
-110	2.83%	0.16%	3.04%	-2.88%	3.0%	-0.21%
-109	0.92%	-0.49%	3.04%	-3.53%	3.0%	-2.12%
-108	1.36%	-0.24%	3.05%	-3.29%	3.0%	-1.68%
-107	0.45%	1.07%	2.83%	-1.76%	2.8%	-2.38%
-106	0.89%	0.76%	2.82%	-2.06%	2.8%	-1.93%
-105	-1.77%	-0.27%	2.82%	-3.08%	2.8%	-4.59%
-104	1.80%	0.21%	2.79%	-2.58%	2.8%	-0.99%
-103	1.33%	-1.18%	2.79%	-3.97%	2.8%	-1.46%
-102	2.18%	0.18%	2.79%	-2.61%	2.8%	-0.61%
-101	-3.42%	-1.20%	2.79%	-3.99%	2.8%	-6.21%
-100	-0.88%	-0.17%	2.79%	-2.96%	2.8%	-3.67%
-99	0.45%	1.16%	2.77%	-1.61%	2.8%	-2.32%
-98	2.22%	0.34%	2.77%	-2.43%	2.8%	-0.55%
-97	0.00%	-0.07%	2.77%	-2.84%	2.8%	-2.77%
-96	1.74%	0.66%	2.77%	-2.10%	2.8%	-1.03%
-95	-1.28%	0.01%	2.76%	-2.75%	2.8%	-4.04%
-94	-6.49%	-0.45%	2.75%	-3.20%	2.7%	-9.24%
-93	-4.17%	-0.08%	2.74%	-2.82%	2.7%	-6.91%
-92	-0.48%	-0.46%	2.74%	-3.20%	2.7%	-3.22%
-91	2.43%	-0.22%	2.74%	-2.96%	2.7%	-0.31%
-90	1.90%	0.28%	2.74%	-2.46%	2.7%	-0.85%
-89	-1.86%	-0.42%	2.74%	-3.16%	2.7%	-4.60%
-88	1.90%	-0.76%	2.74%	-3.50%	2.7%	-0.85%
-87	0.00%	-0.41%	2.74%	-3.15%	2.7%	-2.74%
-86	0.93%	0.48%	2.74%	-2.26%	2.7%	-1.81%
-85	2.30%	0.27%	2.74%	-2.47%	2.7%	-0.44%
-84	0.90%	-0.56%	2.74%	-3.31%	2.7%	-1.84%
-83	-0.45%	0.00%	2.74%	-2.75%	2.7%	-3.19%
-82	-1.35%	0.24%	2.74%	-2.50%	2.7%	-4.09%
-81	-0.45%	0.17%	2.74%	-2.57%	2.7%	-3.20%
-80	0.91%	0.71%	2.75%	-2.03%	2.7%	-1.83%
-79	3.62%	0.48%	2.74%	-2.27%	2.7%	0.88%
-78	-0.87%	0.22%	2.75%	-2.52%	2.7%	-3.62%
-77	1.76%	0.74%	2.75%	-2.01%	2.7%	-0.99%
-76	4.76%	1.10%	2.75%	-1.65%	2.8%	2.01%
-75	-2.89%	0.67%	2.76%	-2.09%	2.8%	-5.65%
-74	-1.28%	-0.21%	2.75%	-2.97%	2.8%	-4.03%
-73	0.00%	0.74%	2.76%	-2.02%	2.8%	-2.76%
-72	-1.72%	-0.37%	2.76%	-3.12%	2.8%	-4.48%
-71	1.32%	0.48%	2.76%	-2.28%	2.8%	-1.45%
-70	1.73%	0.99%	2.76%	-1.77%	2.8%	-1.03%
-69	0.43%	-0.06%	2.76%	-2.82%	2.8%	-2.34%
-68	-2.97%	0.35%	2.76%	-2.42%	2.8%	-5.73%
-67	-2.62%	0.04%	2.76%	-2.72%	2.8%	-5.38%
-66	2.69%	0.28%	2.77%	-2.49%	2.8%	-0.08%
-65	0.00%	1.13%	2.77%	-1.63%	2.8%	-2.77%

Source: S&amp;P CapitalIQ

	Makro Returns	% Set index	% 3M T-Bill	% Risk premium	CAPM MAKRO	Abnormal return MAKRO
-64	-0.44%	-0.07%	2.77%	-2.84%	2.8%	-3.20%
-63	-2.19%	-0.29%	2.77%	-3.06%	2.8%	-4.96%
-62	0.45%	0.18%	2.77%	-2.59%	2.8%	-2.32%
-61	0.00%	0.18%	2.77%	-2.58%	2.8%	-2.77%
-60	0.45%	0.28%	2.77%	-2.48%	2.8%	-2.32%
-59	-0.89%	1.08%	2.76%	-1.68%	2.8%	-3.65%
-58	0.00%	-0.38%	2.76%	-3.14%	2.8%	-2.76%
-57	0.00%	1.11%	2.76%	-1.65%	2.8%	-2.76%
-56	2.24%	0.07%	2.76%	-2.69%	2.8%	-0.52%
-55	-1.32%	0.59%	2.76%	-2.17%	2.8%	-4.08%
-54	-0.89%	-0.09%	2.76%	-2.85%	2.8%	-3.64%
-53	0.90%	0.14%	2.75%	-2.60%	2.7%	-1.85%
-52	-0.44%	0.43%	2.74%	-2.31%	2.7%	-3.19%
-51	-0.45%	-1.23%	2.74%	-3.97%	2.7%	-3.19%
-50	1.35%	0.43%	2.74%	-2.31%	2.7%	-1.40%
-49	-1.77%	0.92%	2.74%	-1.82%	2.7%	-4.51%
-48	0.45%	-0.16%	2.73%	-2.88%	2.7%	-2.28%
-47	-0.90%	-0.47%	2.73%	-3.20%	2.7%	-3.62%
-46	-1.36%	0.34%	2.73%	-2.39%	2.7%	-4.08%
-45	0.46%	0.95%	2.73%	-1.78%	2.7%	-2.27%
-44	0.00%	0.42%	2.72%	-2.30%	2.7%	-2.72%
-43	-0.46%	-0.44%	2.71%	-3.16%	2.7%	-3.17%
-42	-0.46%	0.36%	2.71%	-2.36%	2.7%	-3.17%
-41	-0.92%	0.69%	2.71%	-2.03%	2.7%	-3.64%
-40	0.47%	0.85%	2.72%	-1.87%	2.7%	-2.25%
-39	0.93%	0.73%	2.72%	-1.99%	2.7%	-1.79%
-38	0.00%	0.46%	2.72%	-2.26%	2.7%	-2.72%
-37	2.75%	0.81%	2.72%	-1.91%	2.7%	0.03%
-36	-0.45%	-1.11%	2.72%	-3.83%	2.7%	-3.17%
-35	2.24%	1.70%	2.72%	-1.02%	2.7%	-0.48%
-34	-0.44%	0.48%	2.72%	-2.25%	2.7%	-3.16%
-33	0.44%	-0.04%	2.71%	-2.75%	2.7%	-2.27%
-32	-1.75%	-0.36%	2.71%	-3.07%	2.7%	-4.46%
-31	1.34%	-0.04%	2.70%	-2.74%	2.7%	-1.36%
-30	0.44%	-0.17%	2.70%	-2.87%	2.7%	-2.26%
-29	-0.88%	-0.55%	2.69%	-3.24%	2.7%	-3.57%
-28	-0.44%	-0.01%	2.71%	-2.72%	2.7%	-3.15%
-27	1.78%	1.69%	2.71%	-1.02%	2.7%	-0.93%
-26	2.18%	0.83%	2.71%	-1.87%	2.7%	-0.53%
-25	0.00%	-0.34%	2.71%	-3.05%	2.7%	-2.71%
-24	-1.28%	0.12%	2.70%	-2.59%	2.7%	-3.99%
-23	-0.43%	0.58%	2.71%	-2.13%	2.7%	-3.14%
-22	0.00%	0.95%	2.71%	-1.76%	2.7%	-2.71%
-21	0.43%	-1.16%	2.71%	-3.87%	2.7%	-2.28%
-20	3.46%	0.75%	2.71%	-1.96%	2.7%	0.75%
-19	-2.93%	-0.64%	2.72%	-3.36%	2.7%	-5.65%
-18	-2.16%	-0.80%	2.72%	-3.53%	2.7%	-4.88%
-17	6.61%	1.55%	2.72%	-1.17%	2.7%	3.88%
-16	-2.07%	-0.13%	2.73%	-2.85%	2.7%	-4.79%
-15	2.11%	0.07%	2.73%	-2.65%	2.7%	-0.62%
-14	3.72%	0.56%	2.72%	-2.16%	2.7%	1.00%
-13	0.40%	0.65%	2.72%	-2.07%	2.7%	-2.32%
-12	2.38%	0.10%	2.72%	-2.61%	2.7%	-0.34%
-11	8.53%	0.38%	2.72%	-2.34%	2.7%	5.81%
-10	-3.93%	0.68%	2.72%	-2.03%	2.7%	-6.65%
-9	2.23%	-0.06%	2.72%	-2.78%	2.7%	-0.49%
-8	0.00%	0.13%	2.72%	-2.59%	2.7%	-2.72%
-7	-1.45%	0.51%	2.72%	-2.21%	2.7%	-4.17%
-6	-0.37%	0.71%	2.72%	-2.00%	2.7%	-3.09%
-5	-4.44%	-0.41%	2.72%	-3.12%	2.7%	-7.16%
-4	-3.88%	-1.47%	2.72%	-4.19%	2.7%	-6.59%
-3	2.42%	-1.57%	2.72%	-4.28%	2.7%	-0.30%
-2	1.18%	-0.92%	2.71%	-3.63%	2.7%	-1.53%
-1	-2.72%	-3.30%	2.71%	-6.01%	2.7%	-5.43%
0	2.00%	3.04%	2.71%	0.33%	2.7%	-0.71%

Source: S&amp;P CapitalIQ



	Makro Returns	% Set index	% 3M T-Bill	% Risk premium	CAPM MAKRO	Abnormal return MAKRO
1	1.96%	1.32%	2.70%	-1.38%	2.7%	-0.74%
2	0.77%	1.09%	2.70%	-1.61%	2.7%	-1.93%
3	0.38%	-1.04%	2.70%	-3.74%	2.7%	-2.32%
4	1.14%	1.07%	2.70%	-1.64%	2.7%	-1.56%
5	6.39%	-0.74%	2.70%	-3.44%	2.7%	3.69%
6	1.41%	0.06%	2.71%	-2.64%	2.7%	-1.29%
7	0.35%	-1.94%	2.71%	-4.65%	2.7%	-2.36%
8	0.35%	0.52%	2.71%	-2.19%	2.7%	-2.36%
9	-6.57%	-2.55%	2.71%	-5.26%	2.7%	-9.29%
10	-2.96%	-1.26%	2.72%	-3.98%	2.7%	-5.68%
11	5.34%	1.33%	2.72%	-1.40%	2.7%	2.62%
12	1.45%	1.78%	2.73%	-0.94%	2.7%	-1.28%
13	1.07%	0.69%	2.73%	-2.04%	2.7%	-1.66%
14	14.84%	-0.38%	2.73%	-3.11%	2.7%	12.11%
15	1.54%	0.54%	2.73%	-2.19%	2.7%	-1.19%
16	3.33%	1.03%	2.73%	-1.71%	2.7%	0.60%
17	0.00%	0.88%	2.73%	-1.85%	2.7%	-2.73%
18	0.00%	-0.63%	2.73%	-3.35%	2.7%	-2.73%
19	10.56%	0.29%	2.73%	-2.44%	2.7%	7.83%
20	-0.53%	1.31%	2.73%	-1.42%	2.7%	-3.26%
21	0.00%	0.55%	2.73%	-2.18%	2.7%	-2.73%
22	0.53%	-0.13%	2.72%	-2.59%	2.7%	-2.18%
23	0.00%	0.82%	2.69%	-1.88%	2.7%	-2.69%
24	0.00%	-0.54%	2.66%	-3.21%	2.7%	-2.66%
25	0.00%	-0.64%	2.65%	-3.29%	2.7%	-2.65%
26	0.00%	1.41%	2.62%	-1.21%	2.6%	-2.62%
27	-0.27%	0.81%	2.62%	-1.81%	2.6%	-2.89%
28	-0.27%	0.43%	2.61%	-2.18%	2.6%	-2.88%
29	0.27%	0.08%	2.60%	-2.51%	2.6%	-2.33%
30	-0.27%	-0.29%	2.60%	-2.89%	2.6%	-2.87%
31	0.53%	0.36%	2.61%	-2.25%	2.6%	-2.07%
32	0.00%	0.41%	2.60%	-2.19%	2.6%	-2.60%
33	0.00%	-0.75%	2.60%	-3.35%	2.6%	-2.60%
34	0.53%	0.62%	2.60%	-1.97%	2.6%	-2.07%
35	0.00%	0.95%	2.60%	-1.65%	2.6%	-2.60%

Source: S&amp;P CapitalIQ

CHULALONGKORN UNIVERSITY

## VITA

NAME

Saraphan Choowattanapakorn



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