The Impact of Cash Dividends on Stock Prices in the U.S.

By

Xingzhi Kang

B.Acc., Shanghai University
Shanghai, P. R. China, 2007
B.Bus, University of Technology, Sydney
Sydney, the Commonwealth of Australia, 2007

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Approved: Dr. J. Colin Dodds
Faculty Advisor

Approved: Dr. Francis Boabang
MFin Director

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ABSTRACT

The Impact of Cash Dividends on Stock Prices in the U.S.

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The objective of this study is to research the impact of cash dividend announcement on the stock price of the U.S. To achieve this goal, we collect the daily prices of 31 randomly chosen stocks in the U.S., and employ the Market Model to test whether the null hypotheses, AAR=0 and ACAR=0, hold. The results suggest that the average abnormal return and the average cumulative abnormal return, which are surrounding the event date, are not significantly equal to zero. This means that we cannot reject the possibility that one can gain abnormal return from the cash dividend announcement. This implies that the market is likely to be not efficient with the semi-strong from.

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CONTENT

Chapter 1: Introduction

1.1 Background

The effect of claiming dividends on the stock price continues to be argued by different sides. Based on the MM models (Modigliani and Miller, 1958), people should feel no difference between whether or not firms pay dividends, because one-dollar of dividends equals to one-dollar of capital gains. However, in the real world of taxation, capital gains tax (CGT) is commonly lower than the dividend income tax, which implies that rational people should prefer firms to retain capital rather than pay dividends, with the expectation that this will lead to an increase in the stock price. But without a tax effect, people will be attracted by the dividends, as is evidenced when firms reduce or stop paying dividends. For example, in a famous and well cited case, the investors became angry when Consolidated Edison Company (CEC) decided to stop paying dividends during 1973 and 1974 when the energy crisis occurred. So whether or not the MM Model is correct is still a question.

1.2 Purpose of the study

The objective of this paper is find out the impact of cash dividends payouts on

stock prices. This relies on examining the volatility and movement of stock prices before and after the announcement date. The firms, which claimed to pay dividends to their investors between 2012/2/1 to 2012/2/10 in NASDAQ, were chosen.

Based on the event study methodology, if the cumulative abnormal return (CAR) is positive, paying dividends has a good influence on stock price. If CAR is negative, it has a bad influence. Then, a hypothesis-testing process will be used to examine whether or not there is an influence.

1.3 Research hypothesis

In this paper, there are several hypotheses:

1. Dividend policy by firms affects investors' psychology.
2. Investors' psychology affects their confidence of the firms.
3. Investors' confidence to the firms affects the stock price of the firms.

As an event study is used in the paper, the null hypothesis is established here:

H_0：AAR=0, ACAR=0.

where AAR is average abnormal return, and ACAR is cumulative abnormal return.

1.4 Organization of the research paper

This paper is divided into five chapters. The first chapter, the Introduction, includes the background, objective and hypotheses of the whole study. Chapter 2 will discuss some important theories, such as the MM Model, the dividend puzzle, and also the introduction of event study process, the methodology employed in the study. Chapter 3 includes the study procedure, the data used and their source. Chapter 4 contains the discussion about the results of the analysis in the previous chapter. Chapter 5 provides the conclusion, and the limitations of the study.

Chapter 2: Literature Review

2.1 MM Model

2.1.1 Without Taxes

The Modigliani and Miller proposed MM Model (1958) what became known as the seminal paper on the cost of capital and it made the following assumptions:

1. Efficient markets exist and all investors are perfectly rational. There is no asymmetric information, as information is complete and available and free of cost to all. No investor is larger enough to affect the whole market and make a price for any securities.

2. There is no corporate income tax in the market. All bonds are riskless. Any person or organization can borrow infinite money at the risk free rate.

3. Any kinds of securities can be divided infinitely. All investors are rational and pursue the maximum profit.

4. A firm has a certain investment policy, which means that when a firm needs new financing, it will keep its formal proportion of equity and debt.

Thus, in the model with there assumptions, the value of a firm is unaffected by how the firm is financed. This implies that how a firm raises its capital by issuing

stock or debt would not change its value in the market. As a result, dividend policy is irrelevant and, moreover, need not to react to any change of dividends.

But the MM model has several limitations which flow from its basic assumptions. First, the model assumes that the capital market is perfect, which does not exist in the real world. The main difference between the perfect market and the real market is that in the real one, taxes exist, so do transaction costs and floatation costs. Another difference is information is not always free and fully accessible to all investors.

2.1.2 With taxes

The MM model (1963) with taxes is far more realistic than that without. In this situation, the model realizes the original assumptions with the addition of corporate income tax.

1. Efficient markets exist and all investors are perfectly rational. No asymmetric information, information is complete and available and free of cost to all. No investor is large enough to affect the whole market and make a price for any securities.

2. There exists corporate income tax in the market. All bonds are riskless. Any person or organization can borrow infinite funds at the risk free rate.

3. Any kinds of securities can be divided infinitely. All investors are rational and pursue to maximize profits.

4. A firm has a certain investment policy, which means that when a firm needs new financing, it will keep its formal proportion of equity and debt.

Under these assumptions, the MM model implies that firms will take advantage of leverage, because firms with levered capital structure can deduct the interest expense, which helps reduce tax (tax shield effect), where dividends are not deductible. They are paid after interest and tax.

2.2 Dividend Puzzle

The dividend puzzle implies that investors tend to reward the companies that pay dividends with higher valuations than those that not. It became a puzzle because according to many theories, for example, the MM Model discussed earlier, the investors should feel no difference whether or not the companies pay dividends. The investors already own the company, so they should be indifferent to either having reinvested in the firm, or obtaining dividend immediately. Actually, based on the MM Model with tax, paying dividends makes the value of the firm lower because to do so, investors have to pay both corporation income tax and personal income tax, while with the absence of personal income tax, reinvesting profit would have benefit

to the value of a firm.

The CEC example cited earlier makes complete sense. When the company claimed not to pay dividends, the middle and small investors became disenchanted. The phenomenon could not be explained by traditional finance theory, because with the simple assumption of MM, dividends and capital gains are the same to the investor, they can sell stock to make "self-made dividends". In the real world, as personal income tax is higher than the CGT, firms can be more valuable if they keep the money and reinvest in operations, which makes the situation of shareholders better. However, the critical assumption here is that the firm will select projects, with positive NPV's.

Shefrin and Statman (1984) established a new framework, based on the Expectations Theory, to explain the phenomenon. They thought that investors are segmenting investments into different accounts. Some accounts are used for retirement, some are used for normal investment, some are used for education, some are used for gambling, etc. In most investors' minds, dividends are quite different from capital gains. They regard dividends as a kind of stable cash flow often to fund a particular expenditure, while capital gains are a high return item. They can bear high risk on the high return item, but cannot in their mind bear the same risk on the cash flow.

2.3 Event Study

An event study is a statistical technique, which is often used to research the impact of a happening on the stock price, and whether or not there are abnormal returns. In this way, people can learn whether there is a relationship and if there is, what kind of relationship it is, between the stock price and the event. Thus, the fact that future similar happenings would bring on the stock price can be predicted.

Event studies are widely used in the financial literature. Initially, this technique was used to research the impact of the stock splits. This was done by Fama, et al (1969). They performed an event study to learn how the market would react. In this way, they could observe the speed of information flows to the investors and from show the effect on the stock price. Event studies have become a very important part of corporate finance. They are utilized to access the announcement effect of a range of “events” on stock prices across fully developed and emerging markets.

Chapter 3: Empirical Models and Study Procedure

3.1 Empirical models

According to the efficient market hypothesis, if the investor cannot consistently gain significant higher returns than the average often expected be an index, even he or she uses specific trading strategies, the market is considered to be efficient. To prove this, the return rate of adopting a trading strategy, and the return rate of not doing so, should be determined. Three kinds of empirical models are often used to test EMH: the Market Model, the Capital Asset Pricing Model and the Arbitrage Pricing Theory.

3.1.1 Market Model

The market model is widely used to test the semi-strong form of the efficient market hypothesis (EMH). In this model, the relationship can be represented as follows:

$$R_{it} = \alpha_i + \beta_i R_{mt} + e_{it} \qquad 3.1$$

where, R_{it} is the return on security i in period t

R_{mt} is the return on the market in period t

α_i is the intercept of the regression line for security i

β_i is the slope of the regression line and measure of systematic risk for security i

e_{it} is the error term and unsystematic risk for security i in period t

While investors need to know whether they can earn more-than-normal returns after the public positive information to be announced, they should first know what the stock price would be if nothing happened. This is treated as expected returns. We can calculate the expected returns by utilizing Equation 3.1. Then we can observe the actual returns, which happened under an existing event. By comparing the expect returns and the actual returns, we determine the residual returns, and this is what we can use to calculate the average abnormal returns (AAR) and the average cumulative abnormal return (ACAR), and further test the market response to an event. In this case it is a dividend announment.

Based on the market model, there is a linear relationship between the returns on stocks and the return on the market as a whole, which means that the two returns should follow the formula above with no significant residual returns. In this situation, the market is semi-strong efficient according the EMH theory. However if significant residual returns are observed, then the market is not efficient because

people can earn abnormal returns by adopting particular investment strategies when an event happens or some new information is announced.

In the Market Model, every stock has a unique combination of α and β, and during the study period, the combination of each stock is constant. And there are some assumptions in respect to the error term-- zero mean, constant variance, and no correlation between error terms.

3.1.2 Capital Asset Pricing Model (CAPM)

The Capital Asset Pricing Model (CAPM) established a relationship between the return of a stock and its risk level. People have different levels of risk tolerance. For absolute risk averse investors, the best investment is investing at the risk-free rate, and they enjoy a fixed growth rate. However, those who are risk tolerant are more likely to borrow at the risk free rate and invest in stocks with higher expected return, but relatively higher risk. It is reasonable that if a portfolio has a higher expected return, it should be at a higher risk level as well. We should know that for one unit extra expected return, how much more risk should the portfolio has. The CAPM can help to answer this question.

CAPM gives the following formula:

$$R_{it} = R_{ft} + (R_{mt} - R_{ft})\beta_i \qquad 3.2$$

where, R_{it} is the return on security i in period t

R_{ft} is the risk free rate in period t

R_{mt} is the return on the market portfolio in period t

β_i is the systematic risk of security i

The model can be used to determine the relationship between expected return and the risk of a portfolio. The systematic risk of security, β_i, shows how the risk of the portfolio correlates with the market. The value of β_i is obtained by the observations of the history of the stock. R_{ft} is the risk free rate. The value cannot be determined directly. Usually people use a recruiting, which has an extremely low risk, for example, the T-bill rate, as the risk free rate. However, this is an imperfect choice as T-bills have a variance.

3.1.3 Arbitrage Pricing Theory (APT)

The Arbitrage Pricing Theory (APT) states that there are many factors that would affect expected returns, and it gives a formula to explain the principle. However, the APT model has some difficulties in its use for the test of market efficiency. The main problem is identifying the factors. So the model will not be used here.

3.2 Research Procedure

In this study, the market model will be used to test the semi-strong form efficient market hypothesis. 31 American stocks are randomly chosen as the sample. (Appendix A)

May 1, 2012 is chosen to be event date (t=0) in this study. The 31 stocks that are chosen have announced cash dividends on that day.

To study the impact of cash dividend announcement on stocks, 85 trading days, from March 1, 2012 (t=-42) to June 29, 2012 (t=42) were chosen as the event study period range. The 35 days, from March 1, 2012 (t=-42) to April 12, 2012(t=-13) were defined as the estimation period and the 50 days from April 13, 2012 (t=-12) to June 29, 2012 (t=42) is defined as the test period.

3.2.1 Average Abnormal Returns (AAR)

The returns of each single stock during the estimation period are regressed against the return on the whole market, which is the S&P 500. By the regression, every stock has a pair of intercept and parameter (α_i and β_i) that will reveal its relationship with the S&P 500. In the event period, the intercept and the parameter

are constant. So the combination α_i and β_i of each stock can be used to calculate the expected returns in the test period. Thus, abnormal returns can be determined by the following formula:

$$AR_{it} = R_{it} - (\alpha_i + \beta_i R_{mt}) \qquad 3.3$$

This is the rearrangement of the Equation 3.1. The difference is that is AR_{it} replaces e_{it} as we define abnormal returns as the difference between the actual returns and the expected returns. To calculate average abnormal return (AAR), we can simply divide the sum of AR by the number of securities. The AAR measures the importance of the cash dividend announcement to the investors. According to the semi-strong form EMH, AARs should be insignificantly different from zero, except t=0. Otherwise, the result will imply that the market is not efficient.

As mentioned in Chapter 1, we set the null hypothesis H_0: AAR=0, and H_1: AAR≠0 in order to examine the statistical significance of the AARs.

By the t-test, we reject H_0 if $t > t_{\alpha/2,n-1}$ or $t < -t_{\alpha/2,n-1}$.

3.2.2 Average Cumulative Abnormal Return (ACAR)

Besides AAR, we should also determine the average cumulative abnormal return (ACAR) in order to study the cumulative impact of the cash dividend announcement during the whole study period. ACAR is calculated from the cumulative abnormal return (CAR). CARs are determined from the following

formula:

$$CAR_{it} = CAR_{it-1} + AR_{it} \quad 3.4$$

And then take the average of CAR by:

$$ACAR_t = 1/N \sum_{i=1}^{n} CAR_{it} \quad 3.5$$

Similarly with the AAR, if ACAR is significantly different from zero, then the market is proved to be not efficient, as abnormal returns exist. In such a situation, the market is not fast enough in adjusting the stock prices, and thus investors are able to earn abnormal returns by adopting strategies of response to the public information announcement.

To test the statistical significance of the ACARs, similarly, we set the null hypothesis H_0: ACAR=0, and H_1: ACAR≠0, and we reject H_0 if $t > t_{\alpha/2,n-1}$ or $t < -t_{\alpha/2,n-1}$.

3.3 Source of Data

In this study, the sample is randomly selected from the securities listed and traded on the New York Stock Exchange (NYSE) and NASDAQ, that announced cash dividends on May 1, 2012. The data set contains the index of S&P 500 and the daily closing prices of the 30 securities from March 1, 2012 to June 29, 2012, that add up

to 85 trading day closing prices of each security. All the closing prices are adjusted for dividends and stock splits.

Chapter 4: Results

4.1 Regression analysis

In the Market Model, the parameters α and β are assumed to be constant, which suggests that the stock prices are unlikely to have any radical movements. In the Appendix B, the daily stock prices show relatively stable movements, and thus the assumption holds in this case.

We mainly focus on the β value and the R square value. The β value implies the relationship between the stock and the market. And furthermore, it also tells the risk of the stock relative to that of the market: when the β value is greater than 1, the stock is risker than the whole market, and vice versa. R square value shows the strength of the relationship between the return of the stocks and that of the market. The bigger the R square value is, the closer the relationship is.

In Appendix C, the parameters of each stock are listed. The β (market_return) values of them are in a range from -0.0028889 to 2.009952 and the average of them is 0.772051738. 30 out of 31 of them are positive and most of them are near to 1. This shows that the stock prices are positively related to the market return (S&P

500) and the relationship is close. And also, the risk level of the stock and that of the market are similar.

Another important value is R-square value. In this case, 31 R-square values of the stocks are in a range from 0 to 0.6021, with an average of 0.39310625. This implies that the market cannot totally, but to a certain extent, reflect the situation of the stocks, including both the return and the risk.

4.2 Average Abnormal Return Results

The average abnormal return (AAR) is the extra return realized on the stock in the test period. The extra return here is the actual return minus the "normal" return, which is calculated by the α and β from the regression. If the AAR is not significantly different from zero, we can conclude that the market is efficient in the semi-strong form, as the dividend is claimed to the public.

To determine whether the AAR is significantly different from zero, a 5% level and 1549 degrees of freedom (1550 AAR data of 31 stocks in total) and two-tailed t-test is employed, since the AAR can be either positive or negative. Under this condition, when t value is between -2.056 and 2.056, the null hypothesis that AAR is

not significantly different from zero will not be rejected.

By the data in Appendix D, the t value is 3.8155, which is greater than 2.056. thus, we should reject the null hypothesis, and conclude that the AAR is statistically different from zero, which implies that the market is not sure to be not efficient in the semi-strong form.

4.3 Average Cumulative Abnormal Return Results

The average cumulative abnormal return (ACAR) is employed to determine the cumulative effect of the event on the stock price. The test is similar to that of AAR: we determine the CAR of each stock in the end of the observation day, then employ a 5% level, 30 degrees of freedom and two-tailed t-test to find out whether the ACAR is statistically significantly different from zero. If it is not, then the market is efficient in the semi-strong form.

First we test each single stock (Appendix E), 24 of 30 are in the confidential interval. But when the test is employed in the whole data, we get the t value of 2.76, which is out of the confidential interval. This implies that the ACAR is statistically different from zero, and we cannot conclude that the market is efficient in the

semi-strong form.

Chapter 5: Conclusions

5.1 Conclusions

The objective of this study is to research the impact of cash dividend announcement on the stock price of the U.S. To achieve this goal, we collect the daily prices of 31 randomly chosen stocks in the U.S., and employ the Market Model to test whether the null hypotheses, AAR=0 and ACAR=0, hold. The results suggest that the average abnormal return and the average cumulative abnormal return, which are surrounding the event date, are not significantly equal to zero. This means that we cannot reject the possibility that one can gain abnormal return from the cash dividend announcement. This implies that the market is likely to be not efficient with the semi-strong from. The results of the study could be concluded to as follows:

1. Evidence does not support the null hypothesis, AAR=0. So the null hypothesis is rejected, the average abnormal returns are different from zero at 5% confidential level.
2. Evidence does not support the null hypothesis, ACAR=0, either. So the null hypothesis is rejected, the average cumulative abnormal returns are different from zero at 5% confidential level.
3. The two points above imply that we cannot confirm that the market is

efficient with the semi-strong form.

5.2 Limitations and recommendations

There are several limitations in this study, which can cause some bias on the results. Firstly the regression only takes the market index (S&P 500) into account, though there are many other factors that can affect the stock price. As a result, the use of the market index only can lead to a biased result.

Another problem is the use of the market index. In this study the S&P 500 is used, though to be strict, S&P 500 cannot represent the whole market, it is only a part (75%), which is likely not have the same movement as the whole. And furthermore, if the index is also affected by the event, then the regression will have an autocorrelation problem.

To solve the limitations above, further studies can take more factors into consideration and build a new model. With more factors, the new regression can be more effective. Further studies can also consider a better way to reflect the movement of the whole market, which is more correct and independent.

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APPENDIX A

STOCKS

AFSI	AmTrust Financial Services, Inc.
ATK	Alliant Techsystems Inc.
AXP	American Express Company
BP	BP plc
BR	Broadridge Financial Solutions, Inc.
BTU	Peabody Energy Corp.
CGJ	CARLISLE GOLDFIELDS LIMITED
CNBC	Center Bancorp Inc.
COG	Cabot Oil & Gas Corporation
DOX	Amdocs Limited
EMR	Emerson Electric Co.
EOC	Empresa Nacional de Electricidad S.A.
FICO	Fair Isaac Corporation
GABC	German American Bancorp Inc.
GCI	Gannett Co., Inc.
GKNLY	GKN plc
HBC	HSBC Holdings plc
HBNK	Hampden Bancorp, Inc.
IFF	International Flavors & Fragrances Inc.
KEYN	Keynote Systems, Inc.
MSI	Motorola Solutions, Inc.
NTRI	Nutrisystem, Inc.
PLT	Plantronics, Inc.
RGC	Regal Entertainment Group
SID	Companhia Siderurgica Nacional
SLRC	Solar Capital Ltd.
TLM	Talisman Energy Inc.
TRLG	True Religion Apparel Inc.
TWX	Time Warner Inc.
UNM	Unum Group
WMCO	Williams Controls Inc.

APPENDIX B

DAILY PRICES

Date	AFSI	ATK	AXP	BP	BR
1-Mar-12	24.13	59	52.83	45.58	23.62
2-Mar-12	23.42	58.55	52.26	45.25	23.36
5-Mar-12	23.57	57.7	52.24	45.69	23.33
6-Mar-12	23.05	56.08	51.03	44.04	23.08
7-Mar-12	23.13	56	51.55	44.34	23.12
8-Mar-12	23.11	56.92	52.22	44.88	23.29
9-Mar-12	23.48	57.43	52.47	44.48	23.65
12-Mar-12	23.62	56.89	52.04	44.51	23.66
13-Mar-12	23.83	53.35	53.5	45.09	24.01
14-Mar-12	23.45	53	55.38	44.49	23.86
15-Mar-12	23.55	53.11	55.94	44.48	24.03
16-Mar-12	23.4	53.44	55.77	44.62	23.87
19-Mar-12	23.69	52.65	56.48	44.7	23.82
20-Mar-12	23.7	51.75	56.13	44.03	23.7
21-Mar-12	23.48	51.13	56.27	43.82	23.69
22-Mar-12	23.59	51.25	56.5	43.16	23.64
23-Mar-12	23.82	50.85	56.46	43.43	23.88
26-Mar-12	24.13	50.76	57.85	44.04	24.09
27-Mar-12	24.47	50.17	57.42	42.78	23.92
28-Mar-12	24.64	49.7	58.25	42.59	23.53
29-Mar-12	24.39	49.71	57.09	42.25	23.44
30-Mar-12	24.18	49.49	57.06	42.87	23.37
2-Apr-12	24.18	51.3	57.21	43.2	23.64
3-Apr-12	24.32	50.64	57.79	42.4	23.5
4-Apr-12	24.07	49.78	56.78	41.28	23.1
5-Apr-12	23.94	48.7	57.5	41.32	23.02
9-Apr-12	23.68	47.73	56.57	41.21	22.66
10-Apr-12	23.35	48	55.6	40.3	22.54
11-Apr-12	23.68	49.56	56.36	40.06	22.92
12-Apr-12	23.86	51.24	57.44	40.93	22.88
13-Apr-12	23.68	49.91	56.69	40.16	22.58

16-Apr-12	23.63	49.69	57.23	40.5	22.49
17-Apr-12	23.77	50.87	57.58	41.22	22.49
18-Apr-12	23.62	50.3	57.44	41.16	22.32
19-Apr-12	23.84	50.32	56.98	40.49	22.26
20-Apr-12	24	50.98	56.86	40	22.38
23-Apr-12	23.62	50.92	56.73	39.97	22.24
24-Apr-12	23.77	50.75	57.03	39.93	22.2
25-Apr-12	24.19	51.53	58.3	40.19	22.44
26-Apr-12	24.27	51.84	58.97	41.24	22.65
27-Apr-12	24.65	52.75	59.55	41.47	22.79
30-Apr-12	24.5	52.63	59.59	41.36	22.68
1-May-12	25.17	52.43	60.34	40.68	22.79
2-May-12	25.64	52.47	60.42	40.36	22.51
3-May-12	25.31	53.51	60.23	40.03	22.14
4-May-12	24.84	52.58	59.48	39.02	21.82
7-May-12	24.78	52.95	59.48	39.38	21.65
8-May-12	25.09	52.81	59.27	38.51	21.36
9-May-12	24.66	51.88	58.85	37.85	20.87
10-May-12	25.25	51.82	58.81	38.35	20.81
11-May-12	25.74	51.68	59.02	38.23	20.63
14-May-12	25.55	52.53	57.82	37.47	20.57
15-May-12	25.75	51.64	57.34	36.81	20.74
16-May-12	25.95	51.44	56.8	36.81	20.5
17-May-12	25.83	51.63	55.08	36.16	20.14
18-May-12	25.73	51.09	54.83	35.77	19.79
21-May-12	26.06	51.2	55.75	36.36	20
22-May-12	25.94	50.66	55.77	36.49	20.17
23-May-12	26.13	49.36	55.39	36.56	20.13
24-May-12	26.5	49.26	55.76	36.86	20.13
25-May-12	26.01	49.18	55.23	36.98	20.08
29-May-12	25.95	49.51	55.98	36.74	20.2
30-May-12	25.9	49.18	54.89	35.69	19.86
31-May-12	25.86	48.33	55.25	35.15	19.77
1-Jun-12	25.67	47.22	52.88	35.44	19.81
4-Jun-12	26.56	46.67	52.96	35.27	19.85
5-Jun-12	26.67	46.67	53.42	35.49	19.95
6-Jun-12	27.21	47.88	54.81	36.82	20.26
7-Jun-12	27.17	47.93	54.67	37.1	20.49
8-Jun-12	26.9	47.5	55.28	36.73	20.52

11-Jun-12	26.44	47.08	54.53	36.92	20.28
12-Jun-12	26.19	46.9	55.9	37.62	20.41
13-Jun-12	25.92	46.37	54.53	37.44	20.29
14-Jun-12	26.36	46.39	54.48	37.98	20.2
15-Jun-12	26.48	45.08	55.7	38.77	20.34
18-Jun-12	26.69	46.5	55.27	38.1	20.4
19-Jun-12	27.27	48.06	56.35	38.8	20.67
20-Jun-12	27.14	47.67	56.85	38.56	20.64
21-Jun-12	26.88	46.77	55.74	36.56	20.39
22-Jun-12	26.05	47.68	56.2	36.99	20.61
25-Jun-12	25.68	47	55.47	36.31	20.08
26-Jun-12	25.87	46.3	55.53	36.45	20.2
27-Jun-12	26.25	47.8	56.29	36.87	20.61
28-Jun-12	26.4	47.77	56.1	37.15	20.55
29-Jun-12	26.82	50.14	57.61	39.09	20.95

Date	BTU	CGJ	CNBC	COG	DOX
1-Mar-12	34.69	24.4	9.48	35.9	30.56
2-Mar-12	32.44	23.85	9.34	34.4	30.39
5-Mar-12	31.04	23.59	9.47	34.29	30.3
6-Mar-12	30.32	22.64	9.43	33.78	29.82
7-Mar-12	30.75	22.64	9.6	34.43	30.06
8-Mar-12	30.43	23.01	9.66	34.99	30.33
9-Mar-12	30.77	23.24	9.8	34.85	30.49
12-Mar-12	30	23.36	9.88	33.68	30.42
13-Mar-12	30.29	24.03	10.27	33.86	30.65
14-Mar-12	29.68	22.53	10.06	33.32	30.3
15-Mar-12	31.28	22.75	10.15	32.98	30.73
16-Mar-12	32.8	22.86	10.04	33.36	30.86
19-Mar-12	32.98	23.18	10.12	33.95	30.96
20-Mar-12	31.21	23.11	10.08	33.1	30.87
21-Mar-12	31.03	22.67	9.94	33.5	30.9
22-Mar-12	30.13	22.3	9.86	31.46	30.81
23-Mar-12	29.78	22.37	9.93	32.46	30.82
26-Mar-12	29.99	22.5	10.09	32.59	31.08
27-Mar-12	29.44	22.25	10.07	31.99	31.23
28-Mar-12	28.44	21.5	10.03	31.73	31.08
29-Mar-12	29.22	21.35	9.87	30.2	31.41
30-Mar-12	28.57	21.28	9.86	31.11	31.34

2-Apr-12	29.01	21.34	9.96	31.98	31.59
3-Apr-12	28.35	20.7	9.89	31.45	31.49
4-Apr-12	28.04	20.42	9.83	31.2	31.28
5-Apr-12	27.88	20.23	9.83	31.88	31.26
9-Apr-12	27.33	19.94	9.83	31.32	30.84
10-Apr-12	27.02	19.61	9.58	30.57	30.6
11-Apr-12	26.93	19.51	9.86	29.76	30.93
12-Apr-12	28.94	20.82	9.85	30.62	31.33
13-Apr-12	27.99	20.29	9.76	30.54	31.3
16-Apr-12	27.56	20.33	9.89	29.49	31.29
17-Apr-12	28.3	21.16	10.02	30.51	31.53
18-Apr-12	28.07	20.84	9.92	30.46	31.35
19-Apr-12	30.04	20.98	9.82	30.92	31.51
20-Apr-12	29.39	21.94	10.04	30.09	31.58
23-Apr-12	29.25	21.29	9.8	29.91	31.21
24-Apr-12	29.54	21.2	9.92	29.55	31.23
25-Apr-12	30.01	21.69	9.96	30.72	31.63
26-Apr-12	30.17	21.69	10.58	32.94	31.97
27-Apr-12	29.79	22.07	10.43	33.73	31.91
30-Apr-12	30.69	21.89	10.42	35.08	31.75
1-May-12	31.16	22.55	10.59	35.86	31.93
2-May-12	30.13	23.18	10.57	34.69	30.98
3-May-12	29.8	22.78	10.33	34.52	30.83
4-May-12	28.74	22.28	10.09	34.31	30.52
7-May-12	29.08	22.3	10.13	33.79	30.07
8-May-12	28.65	21.59	10.3	34.06	30.09
9-May-12	28.89	21.48	10.21	35.91	30.03
10-May-12	28.57	21.28	10.46	36.1	29.89
11-May-12	28.17	21.35	10.2	35.47	29.86
14-May-12	27.7	20.87	10.06	35.18	29.76
15-May-12	25.82	19.69	10.06	33.96	29.77
16-May-12	24.97	19.19	10.08	34.66	29.58
17-May-12	24.69	18.9	9.88	33.65	29.45
18-May-12	23.51	18.78	9.94	34.23	29.12
21-May-12	24.36	19.26	9.98	35.53	29.36
22-May-12	23.4	18.92	9.89	35.79	29.35
23-May-12	24.24	19.06	9.94	36.29	29.28
24-May-12	23.6	19.1	10.02	35.03	28.95
25-May-12	23.62	18.99	9.97	34.73	28.94

29-May-12	24.95	19.65	9.92	34.61	29.11
30-May-12	23.68	19.03	9.92	32.78	28.66
31-May-12	23.11	18.99	10.17	32.5	28.53
1-Jun-12	22.69	18.5	9.95	31.11	28.23
4-Jun-12	23.54	18.32	9.97	31.09	28.15
5-Jun-12	23.41	18.87	10.13	31.96	28.53
6-Jun-12	23.82	19.45	10.32	33.33	28.93
7-Jun-12	24.05	19.21	10.19	32.76	28.99
8-Jun-12	24.01	19.05	10.38	32.95	28.74
11-Jun-12	22.87	18.82	10.08	31.99	28.49
12-Jun-12	23.07	19.31	10.31	33.55	28.56
13-Jun-12	22.76	19.55	10.23	32.22	28.63
14-Jun-12	22.93	19.78	10.45	35	28.63
15-Jun-12	23.57	20.47	10.71	36.15	29
18-Jun-12	23.04	20.68	10.51	36.77	29.2
19-Jun-12	23.91	21.25	10.55	36.24	29.41
20-Jun-12	24.16	21	10.44	36.35	29.42
21-Jun-12	22.58	20.67	10.35	34.8	29.32
22-Jun-12	22.34	21.1	10.94	36.35	29.42
25-Jun-12	21.23	20.32	10.92	36.84	29.09
26-Jun-12	20.89	20.56	10.84	37.8	28.83
27-Jun-12	22.03	21.31	11.06	41.19	29.01
28-Jun-12	23.02	21.58	10.87	40.27	28.91
29-Jun-12	24.26	21.84	11.09	39.35	29.49

Date	EMR	EOC	FICO	GABC	GCI
1-Mar-12	48.64	51.78	40.69	18.84	14.01
2-Mar-12	48.68	51.65	39.68	17.94	13.78
5-Mar-12	48.04	51	40.17	18.36	14.26
6-Mar-12	47.3	49.87	39.61	18	13.84
7-Mar-12	47.58	50.25	39.96	18.1	13.84
8-Mar-12	48.14	51.14	41.19	18.57	13.81
9-Mar-12	48.45	51.4	41.82	19.01	13.77
12-Mar-12	48.89	51.33	41.9	19.3	13.98
13-Mar-12	50.18	51.83	42.92	20.19	14.34
14-Mar-12	50.13	52.12	42.47	20	14.34
15-Mar-12	50.4	52.82	43.07	20.27	14.68
16-Mar-12	50.76	52.79	42.91	20.21	14.61
19-Mar-12	50.22	53.13	42.77	20.59	14.73

20-Mar-12	49.94	52.86	42.73	20.34	14.84
21-Mar-12	50.35	52.65	42.8	20.14	14.91
22-Mar-12	50.4	52.07	42.9	19.6	14.76
23-Mar-12	49.63	51.97	43.31	19.9	14.91
26-Mar-12	49.77	52.59	43.96	20.23	15.12
27-Mar-12	49.8	52.5	43.52	19.99	14.92
28-Mar-12	50.16	51.62	42.86	19.62	14.52
29-Mar-12	50.27	51.24	43.28	19.44	14.54
30-Mar-12	50.57	52.39	43.82	18.91	14.72
2-Apr-12	50.92	53.71	44.26	19.47	14.79
3-Apr-12	50.19	53.78	42.97	19.05	14.64
4-Apr-12	49.78	53.36	42.37	18.72	14.39
5-Apr-12	49.39	53.72	42.23	18.57	14.23
9-Apr-12	48.79	53.28	41.83	18.16	14.18
10-Apr-12	48.11	52.94	40.9	17.8	13.74
11-Apr-12	48.2	53.19	42.23	18.21	14.06
12-Apr-12	49.45	53.27	42.36	18.46	14.47
13-Apr-12	48.55	52.45	41.94	17.96	14.45
16-Apr-12	48.66	51.81	42.08	18.3	13.34
17-Apr-12	49.51	53.01	42.77	18.63	13.47
18-Apr-12	48.99	52.75	42.31	18.11	13.26
19-Apr-12	48.54	53.07	41.53	17.81	13.2
20-Apr-12	48.72	52.78	42.34	18.13	13.21
23-Apr-12	48.41	53.05	41.66	17.75	13.01
24-Apr-12	49.34	53.39	41.59	18.14	13.01
25-Apr-12	49.67	53.19	42.97	18.48	13.23
26-Apr-12	50.28	52.67	43.23	18.4	13.16
27-Apr-12	51.05	52.68	44.24	18.92	13.48
30-Apr-12	50.92	53.01	42.82	18.53	13.27
1-May-12	47.67	53.73	42.79	18.62	13.36
2-May-12	47.98	53.05	43.12	18.62	13.47
3-May-12	47.84	52.61	42.18	18.7	13.24
4-May-12	47.23	52.41	41.43	18.27	12.82
7-May-12	47.2	52.57	41.49	18.07	12.98
8-May-12	47.65	51.97	41.75	18.59	13.01
9-May-12	47.06	51.23	41.35	18.56	13.08
10-May-12	47.39	51.62	41.46	18.6	12.79
11-May-12	47.08	51.8	41.41	18.36	12.84
14-May-12	46.7	50.73	40.98	18.25	12.86

15-May-12	46.44	49.27	40.88	18.38	12.84
16-May-12	46.09	48.95	40.68	18.23	12.82
17-May-12	45.14	48.14	39.92	17.95	12.56
18-May-12	44.88	47.46	39.87	18.07	12.45
21-May-12	45.7	47.65	41.11	18.7	12.36
22-May-12	46.1	47.61	41.03	18.55	12.36
23-May-12	46.77	47.39	41.28	18.36	12.31
24-May-12	46.61	47.57	41.18	18.12	12.58
25-May-12	46.2	47.7	40.98	17.96	12.47
29-May-12	46.86	48.37	40.74	18.07	12.64
30-May-12	46.02	47.08	40.15	17.98	12.41
31-May-12	45.7	47.18	40.6	17.96	12.54
1-Jun-12	44.59	47.15	38.48	17.59	11.84
4-Jun-12	44.04	46.81	38.46	17.87	11.89
5-Jun-12	43.79	47.18	38.96	18.07	12.05
6-Jun-12	44.89	47.87	39.96	18.53	12.54
7-Jun-12	45.35	48.12	40.12	18.52	12.4
8-Jun-12	45.62	48.04	40.64	18.86	12.42
11-Jun-12	45.62	47.66	40.76	18.09	12.3
12-Jun-12	45.98	47.56	41.31	18.32	12.48
13-Jun-12	45.45	47.59	41.23	18.03	12.29
14-Jun-12	45.43	47.59	40.94	18.55	12.54
15-Jun-12	45.61	47.66	41	19.15	12.66
18-Jun-12	45.59	48.09	41.3	18.7	12.59
19-Jun-12	45.9	49.17	42.34	19.6	12.79
20-Jun-12	44.97	49.8	42.38	19.31	12.74
21-Jun-12	44.52	48.87	41.01	18.44	13.15
22-Jun-12	44.67	49.32	41.62	19.42	13.18
25-Jun-12	43.49	48.97	40.19	19.13	12.88
26-Jun-12	43.08	48.66	40.55	19.42	13.7
27-Jun-12	43.59	49.41	41.4	19.94	14.07
28-Jun-12	43.28	49.31	41.14	19.6	14.31
29-Jun-12	45.52	50.83	42.22	20.1	14.38

Date	GKNLY	HBC	HBNK	IFF	KEYN
1-Mar-12	3.51	43.29	12.11	55.27	19.7
2-Mar-12	3.3	43.06	12.15	55.66	19.66
5-Mar-12	3.34	42.48	12.15	55.28	19.34
6-Mar-12	3.1	41.25	12.23	54.25	18.52

7-Mar-12	3.12	41.55	12.25	54.58	18.7
8-Mar-12	3.26	42.08	12.45	54.98	19.26
9-Mar-12	3.18	41.78	12.25	54.99	19.71
12-Mar-12	3.18	41.66	12.16	54.83	19.68
13-Mar-12	3.18	43.35	12.5	55.22	19.68
14-Mar-12	3.18	43.75	12.11	55.35	19.5
15-Mar-12	3.18	43.87	12.15	55.99	19.38
16-Mar-12	3.29	44.53	12.71	56.01	19.43
19-Mar-12	3.24	44.5	12.53	56.21	19.3
20-Mar-12	3.24	43.6	12.2	56.03	19.23
21-Mar-12	3.17	43.56	12.31	56.18	19.2
22-Mar-12	3.15	43.27	12.15	55.72	18.7
23-Mar-12	3.15	43.1	12.05	56.18	18.66
26-Mar-12	3.15	43.59	12.05	56.96	18.92
27-Mar-12	3.23	43.61	12.05	57.67	19.46
28-Mar-12	3.23	43.27	12.18	57.52	19.31
29-Mar-12	3.08	42.67	12.15	57.19	19.27
30-Mar-12	3.08	43.09	11.86	57.65	19.42
2-Apr-12	3.08	43.38	12.2	58.65	19.18
3-Apr-12	3.24	43.49	12.05	58.31	18.83
4-Apr-12	3.09	43.05	12	57.71	18.23
5-Apr-12	3.04	42.56	12.02	57.64	17.99
9-Apr-12	3.01	42.24	11.85	57.05	17.68
10-Apr-12	2.92	41.18	12.1	55.87	17.28
11-Apr-12	2.94	41.68	12.18	56.58	17.64
12-Apr-12	3.1	42.47	12.1	57.58	17.85
13-Apr-12	3.06	41.7	12.1	57.07	17.74
16-Apr-12	3.06	41.83	12.1	57.38	17.9
17-Apr-12	3.06	42.76	12.12	57.97	18.12
18-Apr-12	3.2	42.95	12.1	58.18	17.71
19-Apr-12	3.17	43.14	12.1	58.27	17.51
20-Apr-12	3.17	43.38	12.25	58.48	17.22
23-Apr-12	3.17	42.84	12.15	58.04	17.21
24-Apr-12	3.17	43.43	12.28	58.17	17.75
25-Apr-12	3.13	43.53	12.28	58.59	17.85
26-Apr-12	3.13	43.74	12.28	59.16	17.85
27-Apr-12	3.21	44.24	12.28	59.56	17.96
30-Apr-12	3.16	43.85	12.25	59.24	18.08
1-May-12	3.29	44.61	12.23	59.41	17.45

2-May-12	3.21	44.42	12.23	59.38	15.69
3-May-12	3.21	44.27	12.46	59.01	15.71
4-May-12	3.15	43.57	12.25	57.93	14.74
7-May-12	3.15	43.75	12.63	58.52	15.36
8-May-12	3.05	43.48	12.58	57.72	14.99
9-May-12	3.04	43.16	12.59	57.47	15.48
10-May-12	2.97	43.48	12.59	57.38	15.48
11-May-12	3.05	42.94	12.82	57.04	15.32
14-May-12	2.98	42.47	12.59	56.66	14.87
15-May-12	2.97	42.38	12.59	56.47	14.83
16-May-12	3.02	41.54	12.88	56.17	14.75
17-May-12	2.8	40.3	12.88	54.68	14.73
18-May-12	2.78	39.59	13.27	54.5	14.72
21-May-12	2.88	40.22	12.88	56.27	14.78
22-May-12	2.92	40.27	12.88	56.17	14.68
23-May-12	2.92	39.77	12.88	56.01	14.52
24-May-12	2.84	39.74	12.83	56.41	14.17
25-May-12	2.78	39.46	12.88	56.11	14.2
29-May-12	2.78	39.62	12.88	56.84	14.27
30-May-12	2.78	38.37	13.13	55.65	14.24
31-May-12	2.78	38.74	12.98	55.47	14.26
1-Jun-12	2.71	37.95	12.98	53.47	14.11
4-Jun-12	2.68	38.31	13.18	53.43	14.16
5-Jun-12	2.65	38.65	12.96	53.63	13.9
6-Jun-12	2.69	40.26	12.88	54.92	14.4
7-Jun-12	2.83	40.7	12.88	55.17	14.01
8-Jun-12	2.79	40.54	12.98	55.58	14.1
11-Jun-12	2.82	40.24	12.98	54.98	14.11
12-Jun-12	2.81	41.32	12.98	55.5	14.52
13-Jun-12	2.77	41.32	13.09	54.44	14.52
14-Jun-12	2.7	41.73	13.21	54.88	14.84
15-Jun-12	2.73	42.25	12.88	55.53	15.25
18-Jun-12	2.76	42.11	12.56	55.74	15.1
19-Jun-12	2.83	43.24	12.63	56.68	14.06
20-Jun-12	2.8	43.54	12.62	56.07	13.96
21-Jun-12	2.8	42.47	12.6	54.88	13.42
22-Jun-12	2.78	43.05	12.82	55.06	13.52
25-Jun-12	2.65	42.48	12.51	53.81	13.62
26-Jun-12	2.68	43.02	12.8	53.73	14.05

27-Jun-12	2.69	43.72	12.82	53.72	14.14
28-Jun-12	2.69	42.85	12.5	53.98	14.09
29-Jun-12	2.69	43.28	12.82	54.21	14.66

Date	MSI	NTRI	PLT	RGC	SID
1-Mar-12	49.05	10.5	37.57	13.02	9.75
2-Mar-12	49.88	10.41	36.87	13	9.83
5-Mar-12	49.71	11.04	36.79	13.23	9.64
6-Mar-12	50.51	9.84	35.92	13.23	9.24
7-Mar-12	50.65	9.81	36.18	13.3	9.14
8-Mar-12	50.78	9.83	36.68	13.45	9.38
9-Mar-12	49.78	9.79	37.26	13.57	9.35
12-Mar-12	49.23	10.12	37.09	13.41	9.23
13-Mar-12	49.76	10.5	38.06	13.43	9.68
14-Mar-12	49.77	10.64	37.37	13.15	9.82
15-Mar-12	49.79	10.92	37.89	13.38	9.96
16-Mar-12	49.8	10.8	38.05	13.38	10
19-Mar-12	49.69	10.46	38.28	13.4	9.96
20-Mar-12	49.62	10.4	37.95	13.42	9.86
21-Mar-12	49.52	10.21	37.94	13.46	9.51
22-Mar-12	49.59	10.28	37.77	13.45	9.24
23-Mar-12	49.93	10.21	38.42	13.53	9.31
26-Mar-12	50.14	10.51	39.61	13.35	9.41
27-Mar-12	50.5	10.83	39.36	13.06	9.18
28-Mar-12	49.72	10.92	38.82	12.97	8.87
29-Mar-12	49.91	10.76	39.27	12.98	8.91
30-Mar-12	50.09	10.61	39.8	13.01	8.82
2-Apr-12	50.08	10.71	40.33	12.93	8.97
3-Apr-12	50.05	10.52	40.05	12.75	8.82
4-Apr-12	49.44	10.21	39.53	12.62	8.57
5-Apr-12	49.27	10.66	38.65	12.63	8.62
9-Apr-12	48.33	10.45	38.05	12.53	8.58
10-Apr-12	47.7	10.12	37.03	12.31	8.44
11-Apr-12	47.88	10.18	37.2	12.49	8.45
12-Apr-12	48.32	10.32	37.56	12.7	8.7
13-Apr-12	47.7	10.65	36.85	12.66	8.49
16-Apr-12	47.49	10.58	37.01	12.53	8.38
17-Apr-12	48.81	10.78	37.56	12.43	8.54
18-Apr-12	48.4	10.59	37.07	12.39	8.59

19-Apr-12	48.2	10.4	36.48	12.34	8.41
20-Apr-12	48.3	10.43	36.63	12.34	8.44
23-Apr-12	47.88	10.32	36.07	12.41	8.23
24-Apr-12	47.95	10.48	36.42	12.54	8.24
25-Apr-12	50.57	10.55	37.31	12.74	8.37
26-Apr-12	50.28	10.69	37.44	12.83	8.33
27-Apr-12	50.01	11.01	38.02	12.92	8.39
30-Apr-12	50.29	10.94	37.88	13.02	8.31
1-May-12	50.71	10.71	37.5	13.11	8.35
2-May-12	50.58	10.86	33.05	13.77	8.28
3-May-12	50.06	10.55	32.47	13.83	8.19
4-May-12	49.87	10.24	31.7	13.43	7.93
7-May-12	50.14	10.37	31.55	13.63	7.83
8-May-12	50.18	10.25	31.37	13.74	7.61
9-May-12	48.99	10.33	31.16	13.81	7.57
10-May-12	48.82	10.28	31.05	14.02	7.64
11-May-12	49.11	10.22	31.01	13.92	7.34
14-May-12	48.14	10.39	30.98	13.69	7.04
15-May-12	48.39	10.28	30.91	13.6	6.78
16-May-12	48.05	10.25	30.76	13.55	6.63
17-May-12	47.17	10	30.38	13.37	6.5
18-May-12	46.29	9.91	29.82	13	6.36
21-May-12	47.23	10.01	30.62	13.51	6.72
22-May-12	47.18	9.99	30.29	13.68	6.57
23-May-12	47.54	10.24	30.58	13.75	6.52
24-May-12	47.03	10.36	30.34	13.71	6.39
25-May-12	47.32	10.38	30.36	13.6	6.47
29-May-12	48.12	10.27	30.95	13.54	6.51
30-May-12	47.11	9.96	30.29	13.23	6.4
31-May-12	47.38	9.84	29.84	13.16	6.37
1-Jun-12	46.28	9.85	28.94	12.72	6.12
4-Jun-12	46.16	9.96	28.71	12.81	6.16
5-Jun-12	47.28	9.96	30.68	12.98	6.16
6-Jun-12	48.47	10.19	31.33	13.72	6.18
7-Jun-12	47.53	10.1	30.25	13.29	6.28
8-Jun-12	47.89	10.29	30.5	13.2	6.06
11-Jun-12	46.74	10.22	29.69	12.98	5.92
12-Jun-12	47.33	10.18	30.07	13.04	5.97
13-Jun-12	46.93	10	29.98	12.67	5.95

14-Jun-12	46.88	10.19	30.36	12.79	6.03
15-Jun-12	48.21	10.43	30.82	12.72	6.06
18-Jun-12	48.54	10.47	30.8	12.57	5.86
19-Jun-12	47.96	10.57	30.95	12.94	5.93
20-Jun-12	47.51	10.76	31.35	13.07	5.99
21-Jun-12	47.01	10.5	30.74	12.63	5.7
22-Jun-12	47.4	10.64	31.22	12.81	5.55
25-Jun-12	46.26	10.52	30.61	13.04	5.31
26-Jun-12	46.79	10.56	31.37	13.03	5.33
27-Jun-12	46.88	10.66	31.92	13.09	5.26
28-Jun-12	46.46	11.01	31.14	13.24	5.16
29-Jun-12	47.63	11.1	33.12	13.37	5.58

Date	SLRC	TLM	TRLG	TWX	UNM
1-Mar-12	20.7	13.6	25.92	36.74	22.63
2-Mar-12	20.62	13.33	25.24	36.43	22.68
5-Mar-12	20.33	13.11	25.21	36.25	22.95
6-Mar-12	20.02	12.69	24.55	35.81	22.49
7-Mar-12	20.23	12.96	24.26	35.89	22.68
8-Mar-12	20.25	13.07	24.39	36.15	22.95
9-Mar-12	20.4	13.05	25.2	36.01	23.21
12-Mar-12	20.55	12.89	25.46	35.49	23.15
13-Mar-12	20.76	13.3	26.14	35.82	23.64
14-Mar-12	20.74	12.77	25.26	35.29	23.59
15-Mar-12	20.85	12.99	25	35.15	24.07
16-Mar-12	20.8	13.22	24.71	35.22	23.87
19-Mar-12	20.73	13.53	24.98	35.25	23.64
20-Mar-12	20.57	13.16	24.71	34.99	23.75
21-Mar-12	20.5	13.02	24.93	35.07	23.62
22-Mar-12	20.35	12.52	24.91	35.07	23.29
23-Mar-12	20.46	12.8	25.12	36.37	23.39
26-Mar-12	20.5	12.76	25.5	36.47	23.78
27-Mar-12	20.46	12.64	24.87	36.05	23.88
28-Mar-12	20.37	12.38	25.02	35.59	24.11
29-Mar-12	20.23	12.1	25.43	36.43	23.87
30-Mar-12	20.38	12.29	26.33	37.02	23.91
2-Apr-12	20.56	12.66	25.69	36.87	24.01
3-Apr-12	20.49	12.83	25.97	36.77	23.86
4-Apr-12	20.52	12.3	25.49	36.21	23.63

5-Apr-12	20.24	12.41	25.29	35.95	23.54
9-Apr-12	20.13	12.33	25.2	35.34	22.95
10-Apr-12	19.5	11.81	24.4	34.73	22.53
11-Apr-12	19.78	11.76	24.65	35.03	22.73
12-Apr-12	19.81	12.48	25.23	35.34	23.14
13-Apr-12	19.3	12.17	24.97	35	22.73
16-Apr-12	18.92	12.19	24.76	35.02	22.99
17-Apr-12	19.18	12.67	25.63	35.63	23.27
18-Apr-12	18.95	12.66	25.18	35.52	22.97
19-Apr-12	18.92	12.56	24.78	35.61	23
20-Apr-12	19.01	12.25	25.08	35.9	22.82
23-Apr-12	18.84	12.15	24.59	35.57	22.59
24-Apr-12	19.04	12.07	25.57	35.72	22.9
25-Apr-12	19.16	12.62	25.99	36.47	23.31
26-Apr-12	19.15	12.9	26.58	37.15	23.3
27-Apr-12	19.3	13.02	26.1	37.34	23.45
30-Apr-12	19.17	12.74	26.1	36.75	23.29
1-May-12	19.18	12.39	26.79	37.19	23.28
2-May-12	20.23	12.09	27.73	36.57	22.45
3-May-12	20.13	11.56	26.46	36.27	22.05
4-May-12	19.8	11.31	25.9	35.65	21.61
7-May-12	20.04	11.25	26.09	35.31	21.62
8-May-12	20.08	11.19	25.54	35	21.52
9-May-12	20.23	10.87	25.59	34.96	21.37
10-May-12	20.44	10.99	25.98	35.18	21.35
11-May-12	20.25	10.57	26.71	35	21.26
14-May-12	19.97	10.01	26.34	34.89	20.93
15-May-12	19.98	9.68	27.15	34.6	20.65
16-May-12	19.93	9.59	27.22	34.59	20.15
17-May-12	19.67	9.63	27.06	33.95	19.62
18-May-12	19.3	9.61	27.21	33.61	19.52
21-May-12	19.85	9.81	27.34	33.84	19.83
22-May-12	19.7	9.62	27.66	33.89	19.85
23-May-12	19.97	9.83	28.64	33.76	19.75
24-May-12	20.07	10	28.87	33.92	19.81
25-May-12	20.07	10.35	28.82	34.03	19.75
29-May-12	19.99	10.71	29.11	34.85	19.88
30-May-12	20.04	10.17	28.45	34.09	19.48
31-May-12	20.11	10.38	28.39	34.06	19.57

1-Jun-12	19.84	10.15	27.57	33.36	18.94
4-Jun-12	19.9	10.07	27.98	33.72	18.69
5-Jun-12	20.13	10.22	28.32	33.64	18.79
6-Jun-12	20.31	10.39	28.84	34.45	19.49
7-Jun-12	20.32	10.31	28.26	34.59	19.41
8-Jun-12	20.47	10.42	28.89	34.81	19.42
11-Jun-12	20.33	10.33	28.21	34.15	19.12
12-Jun-12	20.44	10.78	28.85	34.91	19.07
13-Jun-12	20.3	11.12	28.15	34.42	18.8
14-Jun-12	20.34	11	27.78	35.01	18.73
15-Jun-12	20.32	11.32	28.69	35.99	19.14
18-Jun-12	20.33	11.24	28.47	36.71	18.9
19-Jun-12	20.75	11.35	28.47	36.89	19.03
20-Jun-12	20.54	11.22	28.34	36.69	19.43
21-Jun-12	20.41	10.48	28.05	36.83	18.81
22-Jun-12	20.73	10.72	28.28	37.05	18.9
25-Jun-12	20.41	10.27	28.01	36.19	18.17
26-Jun-12	20.49	10.42	27.79	36.71	18.38
27-Jun-12	20.97	10.52	28.01	37.55	18.45
28-Jun-12	21.27	10.91	27.54	37.42	18.54
29-Jun-12	21.14	11.33	28.05	38.05	18.77

Date	WMCO
1-Mar-12	10.74
2-Mar-12	10.76
5-Mar-12	10.76
6-Mar-12	10.66
7-Mar-12	10.67
8-Mar-12	10.74
9-Mar-12	10.73
12-Mar-12	10.79
13-Mar-12	10.86
14-Mar-12	10.85
15-Mar-12	10.81
16-Mar-12	10.76
19-Mar-12	10.76
20-Mar-12	10.72
21-Mar-12	10.76
22-Mar-12	10.71

23-Mar-12	10.79
26-Mar-12	10.76
27-Mar-12	10.76
28-Mar-12	10.76
29-Mar-12	10.81
30-Mar-12	10.76
2-Apr-12	10.83
3-Apr-12	10.81
4-Apr-12	10.8
5-Apr-12	10.76
9-Apr-12	10.8
10-Apr-12	10.81
11-Apr-12	10.85
12-Apr-12	10.68
13-Apr-12	10.77
16-Apr-12	10.95
17-Apr-12	10.95
18-Apr-12	10.96
19-Apr-12	10.99
20-Apr-12	10.92
23-Apr-12	10.81
24-Apr-12	10.84
25-Apr-12	10.67
26-Apr-12	10.68
27-Apr-12	10.85
30-Apr-12	10.83
1-May-12	10.66
2-May-12	10.72
3-May-12	10.68
4-May-12	10.74
7-May-12	10.75
8-May-12	10.76
9-May-12	10.85
10-May-12	10.8
11-May-12	10.79
14-May-12	10.91
15-May-12	10.88
16-May-12	10.89
17-May-12	10.83

18-May-12	10.88
21-May-12	10.92
22-May-12	10.96
23-May-12	10.93
24-May-12	11.07
25-May-12	10.96
29-May-12	10.89
30-May-12	10.87
31-May-12	10.84
1-Jun-12	10.88
4-Jun-12	10.83
5-Jun-12	10.95
6-Jun-12	10.98
7-Jun-12	10.96
8-Jun-12	10.96
11-Jun-12	10.98
12-Jun-12	10.96
13-Jun-12	10.96
14-Jun-12	10.98
15-Jun-12	11
18-Jun-12	11.07
19-Jun-12	10.88
20-Jun-12	10.93
21-Jun-12	10.93
22-Jun-12	11.47
25-Jun-12	11.01
26-Jun-12	11.04
27-Jun-12	11.42
28-Jun-12	11.76
29-Jun-12	11.97

APPENDIX C

REGRESSION OUTPUT

company	R-squared	market_ret~n	_cons
WMCO	0	-0.0028889	0.0006131
HBNK	0.0217	0.2734158	0.000021
RGC	0.1198	0.4212707	-0.0015199
MSI	0.23	0.5751472	-0.0004978
DOX	0.6203	0.696793	0.0005898
AFSI	0.3162	0.7217217	-0.0007656
ATK	0.1061	0.733188	-0.0047017
BR	0.518	0.757622	-0.0018299
TWX	0.3443	0.8375241	-0.0011487
IFF	0.7048	0.9356454	0.0013006
SLRC	0.5529	0.9363368	-0.0027921
EMR	0.5774	1.009305	-7.19E-07
EOC	0.5804	1.033721	0.0003304
CNBC	0.4663	1.115226	0.0011261
AXP	0.4856	1.145893	0.0022477
UNM	0.6459	1.162907	0.0001973
average	0.39310625	0.772051738	-0.000426901
FICO	0.5399	1.290309	0.0009073
BP	0.6201	1.301527	-0.0032517
KEYN	0.4411	1.30485	-0.003345
GCI	0.2873	1.326987	-0.001758
TRLG	0.3535	1.344537	-0.0010371
HBC	0.7166	1.408956	-0.0005167
GKNLY	0.1787	1.439216	-0.0026987
COG	0.2661	1.477216	-0.0049324
PLT	0.7221	1.492306	-0.0006901
NTRI	0.2015	1.580634	0.0002659
SID	0.5796	1.814613	-0.0040112
GABC	0.5387	1.890904	-0.0014415
BTU	0.3124	1.924831	-0.0063182
CGJ	0.5389	2.009952	-0.0049106
TLM	0.6021	2.29694	-0.0024208

APPENDIX D

AVERAGE ABNORMAL RETURN

3-May-12	0.003333682
4-May-12	0.000483582
7-May-12	0.005674395
8-May-12	0.001634123
9-May-12	0.006329336
10-May-12	-0.001191909
11-May-12	0.003451745
14-May-12	0.003890218
15-May-12	-0.002470364
16-May-12	0.002547095
17-May-12	0.000450314
18-May-12	0.003796586
21-May-12	-0.002032845
22-May-12	-0.001944741
23-May-12	0.001325218
24-May-12	-0.003729614
25-May-12	-0.000415968
29-May-12	-0.003676345
30-May-12	0.000424723
31-May-12	0.002231782
1-Jun-12	0.009999559
4-Jun-12	0.004574095
5-Jun-12	0.000826936
6-Jun-12	-0.001296573
7-Jun-12	0.00175444
8-Jun-12	-0.005621518
11-Jun-12	0.004199677
12-Jun-12	-0.000409268
13-Jun-12	0.000674232
14-Jun-12	-0.000609664
15-Jun-12	0.002753373
18-Jun-12	-0.00102095
19-Jun-12	0.002980973

20-Jun-12	0.000681518
21-Jun-12	0.007525895
22-Jun-12	0.005350132
25-Jun-12	0.001459064
26-Jun-12	0.003632005
27-Jun-12	0.01081965
28-Jun-12	0.0032221
29-Jun-12	-0.005279132

One-sample t test

Variable	Obs	Mean	Std. Err.	Std. Dev.	[95% Conf.	Interval]
abnorm~n	1550	.0015178	.0003978	.0156609	.0007375	.002298

mean = mean(abnormal_return) t = 3.8155
Ho: mean = 0 degrees of freedom = 1549

Ha: mean < 0 Ha: mean != 0 Ha: mean > 0
Pr(T < t) = 0.9999 Pr(|T| > |t|) = 0.0001 Pr(T > t) = 0.0001

APPENDIX E

CUMULATIVE ABNORMAL RETURN AND T-TEST

company	CAR	t-test
AFSI	0.1668647	1.926504
ATK	0.2439161	2.470455
AXP	-0.0868148	-1.833327
BP	0.1455404	1.716393
BR	0.0399358	0.7767348
BTU	0.141832	0.8623344
CGJ	0.3147542	2.591742
CNBC	0.0836513	0.7419091
COG	0.5272006	2.61335
DOX	-0.0880418	-1.804861
EMR	-0.0492497	-0.5318288
EOC	-0.0478636	-0.6986489
FICO	-0.0110315	-0.1514536
GABC	0.219578	1.997819
GCI	0.1934393	1.650737
GKNLY	-0.0058241	-0.0389684
HBC	0.0460091	0.6939851
HBNK	0.0640759	0.623749
IFF	-0.1257326	-2.800954
KEYN	0.018544	0.1034879
MSI	0.0237416	0.2782301
NTRI	0.0708624	0.6430634
PLT	-0.032346	-0.2157999
RGC	0.1685671	1.4176
SID	-0.1792879	-1.50207
SLRC	0.262278	3.074769
TLM	0.0549559	0.3661686
TRLG	0.1962088	1.656212
TWX	0.135166	2.219766
UNM	-0.1973708	-3.045305
WMCO	0.0589943	0.6359065

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

Linear regression                               Number of obs =      31
                                                F(  0,    30) =    0.00
                                                Prob > F      =       .
                                                R-squared     =  0.0000
                                                Root MSE      =  .15298
```

cumulative~n	Coef.	Robust Std. Err.	t	P>|t|	[95% Conf.	Interval]
_cons	.0758888	.0274759	2.76	0.010	.0197755	.1320021

```
. reg abnormal_return, robust

Linear regression                               Number of obs =    1550
                                                F(  0,  1549) =    0.00
                                                Prob > F      =       .
                                                R-squared     =  0.0000
                                                Root MSE      =  .01566
```