

# Markov Chain Stock State Prediction

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## Abstract

We hope to approximate the probabilities of the states of a particular stock: increasing, decreasing, stagnant. In order to examine this topic and create a model that will be able to predict the state of a stock will we need to use a combination of mathematics tools and concepts.

## Introduction

The stock market is unpredictable – deciding whether to invest in a particular stock is a strenuous decision for many. For many working Americans the majority of their life savings are invested in a 401k-type plan. These type plans are portfolios developed by large financial institutions that, on a large scale, invest in a variety of markets. The New York Stock Exchange has approximately \$21.3 trillion<sup>?</sup> worth of capital at any given time. A collapse in the New York Stock exchange would send the United States, and a large part of the world, into a fiscal catastrophe. There is legislation instituted by the United States government to prevent such collapses like the Dodd Frank Act, however, as seen in 2008, legislation has

many flaws. In 1713, mathematician Jakob Bernoulli, discovered or invented, what we now know of as the law of large numbers. In his theorem he concluded, if observation of all events be continued for the entire infinity, it will be noticed that everything in the world is governed by precise ratios and a constant law of change”.<sup>?</sup> This idea, however, only applied to independent events; some time after, the mathematician Andrey Markov was able to prove that probabilities of dependent events also converge to particular values. Markov proved that as long as every state in the model is reachable, when you run the model in a sequence, it reaches equilibrium

## Background

### The Markov Property

The Markov Property is defined as a condition on a sequence of random variables  $X_1, X_2, \dots$  thought to represent the state of a system over time ( $n$  representing time).

A sequence  $X_1, X_2, X_3, \dots$  is to be a Markov Chain if

$$P(X_{n+1} = j | X_n = i = \alpha_1, \dots, X_{k_m} = \alpha_m)$$

*(where the indicies  $k_1, \dots$ , are all strictly less than  $n$ )*

is a number entirely determined by  $n, i$ , and  $j$ . This number is called the transition probability from  $i$  to  $j$  at time  $n$ . If the number is also independent of  $n$ , then we say the Markov chain is homogenous and the transition probability is denoted  $p(i, j)$ . Let us think of the states as being labeled from 1 through  $N$ . Then, the transition probability requires  $N \times N$  Numbers  $p(i, j)$ .

Given any  $i$ , we have

$$\sum_j p(i, j) = 1$$

The total probability formula says that

$$\begin{aligned} P(X_{n+1} = j) &= \sum_k P(X_{n+1} = j | X_n = k) P(X_n = k) \\ &= \sum_k p(k, j) P(X_n = k) \end{aligned}$$

This has a linear algebra interpretation: if we introduce a transition probability matrix with entries  $p = (p(i, j))_{ij}$ , then to go from the distribution of  $X_n$  to the distribution of  $X_{n+1}$ , all we need to do is multiply the "vector" of probabilities by the adjoint matrix  $p$ . This observation leads to what is known as the Chapman-Kolmogorov equation, which allows us to compute probabilities of the state several time steps into the future.

## The Chapman-Kolmogorov

The Chapman-Kolmogorov equations provide a method for computing these  $n$ -step transition probabilities:

$$\begin{aligned} p_{ij}^{(n)} &= \sum_{k=0}^M p_{ik}^{(m)} p_{kj}^{(n-m)}, \quad \text{for all } i = 0, 1, \dots, M, \\ &\quad j = 0, 1, \dots, M, \\ &\quad \text{and any } m = 1, 2, \dots, n-1, \\ &\quad n = m+1, m+2, \dots \end{aligned}$$

These equations point out that in going from state  $i$  to state  $j$  in  $n$  steps, the process will be in some state  $k$  after exactly  $m$  (less than  $n$ ) states. Thus,  $p_{ik}^{(m)} p_{kj}^{(n-m)}$  is just the conditional probability that, given a starting point of state  $i$ , the process goes to state  $k$  after  $m$  steps and then to state  $j$  in  $n-m$  steps. Therefore, summing these conditional probabilities over all possible  $k$  must yield  $p_{ij}^{(n)}$ .

## Recurrent States and Transient States

A state is said to be a transient state if, upon entering this state, the process may never return to this state again. Therefore, state  $i$  is transient if and only if there exists a state  $j$  ( $j \neq i$ ) that is accessible from state  $i$  but not vice versa, that is, state  $i$  is not accessible from state  $j$ .

A state is said to be a recurrent state if, upon entering this state, the process definitely will return to this state again. Therefore, a state is recurrent if and only if it is not transient.

A state is said to be an absorbing state if, upon entering this state, the process never will leave this state again. Therefore, state  $i$  is an absorbing state if and only if  $p_{ii} = 1$ .<sup>?</sup>

## Convergence Theorem

Consider an irreducible, aperiodic chain, and let  $\pi(y)$  denote its stationary distribution. Then for any  $y \in S$ , we have

$$\lim_{n \rightarrow \infty} p^n(x, y) = \pi(y) \quad \forall x \in S$$

## Finance Terms

**Closing Price:** The closing price is the final price at which a security is traded on a given trading day. The closing price represents the most up-to-date valuation of a security until trading commences again on the next trading day. Most financial instruments are traded after hours (although with markedly smaller volume and liquidity levels), so the closing price of a security may not match its after-hours price.<sup>?</sup>

**Simple Moving Average:** A simple moving average is customizable in that it can be calculated for a different number of time periods, simply by adding the closing price of the security for a number of time periods and then dividing this total by the number of time

periods, which gives the average price of the security over the time period. A simple moving average smoothes out volatility, and makes it easier to view the price trend of a security. If the simple moving average points up, this means that the security's price is increasing. If it is pointing down it means that the security's price is decreasing. The longer the timeframe for the moving average, the smoother the simple moving average. A shorter-term moving average is more volatile, but its reading is closer to the source data.<sup>?</sup>

## **Investing Decision**

Two specific stocks to be studied have been chosen: Apple and Microsoft. They have been picked for their long-standing, well-built reputation and large "brand following" base. With these, they are more guarded against the somewhat random ebbs and flows of consumer confidence. They are regarded as large companies such that they can't go out of business in the near future, granting some security to the investors and thus granting stability back to the stock price. Apple and Microsoft are both technology companies, developing and selling software products and devices. Both being part of a thriving, modern industry lends to the relatively stable trends of the stock prices.

## **Introduction to Stock Pricing**

Stocks represent ownership in a company, so stock prices are the cost to own part of a company. If a company only had 10 stocks and you bought one for \$10, you bought 10% of the company for \$10. Stocks can be bought and sold for just about every major firm and most small firms as well, though companies like Apple and Microsoft have billions of outstanding shares so anything less than hundreds of thousands of stocks has little influence on the company. While it may seem simple to be able to price part-ownership in a company, it is actually extremely difficult to know exactly how much one tiny portion, usually less than 1 millionth of the company, is actually worth at any given time. A company's worth

can shift dramatically week to week and even day to day. One explicit way to measure it is based on the dividends the business pays. A dividend is a cash return on the stock paid quarterly, usually returning around 1-3% of the stock price annually. As the dividend payout date approaches, the stock price will rise to meet the dividend. For example, say a stock was worth \$40.00, and paid a dividend of \$0.20 every quarter. As the payout date draws closer, all else constant, the stock price will rise closer to \$40.20 every day. In the very last days before the stock pays out, the stock price will be \$40.20. Immediately after the dividend is paid out, the stock price returns to \$40.00. Dividends create small fluctuations in the stock price quarterly, but it is easily expected as companies will post when the next dividend will payout months in advance. The other part of pricing a company's stock is less predictable.

First, suppose that a company has stock priced at \$100, but say consumers and investors expect this company to do poorly in the next quarter. Investors may be trying to sell their shares and get out of this company, but since it has a bad standing, other investors do not want to purchase this stock unless its priced at, say, \$75. Since no one will buy the stock for \$100 and investors want to get out, the price will drop to \$75. It is a simple supply and demand relationship that drives the rest of the stock price, though what influences how people demand is the complicated part. Investors simply believing that a company will do poorly (or well) will cause them to want to sell their shares and get out (or buy shares and get in) thus driving down (or up) the share price to equilibrate the supply-demand relationship. Many factors influence consumer confidence in a firm such as their public relations, product and industry relevance, revenue-generating abilities, and growth abilities to name a few. Large, established companies, like our chosen Apple and Microsoft, don't face such significant changes in stock price often. Since they are of such large size and are well-known, branded businesses, they are considered a safer investment compared to smaller ones like startups. There are certain measures of a stock that can help investors view how risky the investment is. The moving average of a stock helps show how well the company

is doing now in relation to how well it has done in the past - the average. These measures, along with the firm's dividend information, will be used to help construct the Markov chains for the two stocks and to influence how much of each stock will be bought according to the investor's standpoint.

## Modeling decision

In order to use the Markov Chain to model that state of a stock we gathered data for both Microsoft and Apple stock from April 18, 2014 to January 3, 2017. The data that we gathered was the closing price and the simple moving average at an interval of 3 for each day. Since we know that the moving average indicates a forecasted price, we wanted to examine the difference in closing price and the forecasted price. That is, on any given day, is the stock outperforming the forecasted price? We then used this data to create a transition probability matrix, which consisted of transitional probabilities for 4 given states of positive and negative differences. MATLAB was used to create a function that takes two parameters, an excel document of data (difference in closing price and moving average) and range for the excel document. This function determines the transition probability matrix and stationary distribution using the Markov Property and the Convergence Theorem. The function also produces a histogram of the distribution of the transitions.

## Code

```
function pi = standdist(filename,sheetrange)

format long

%ex.:

%filename = '456_diff_closing.xlsx';
```

```

%sheetrange = 'A1:A696';

dif1 = xlsread(filename,1,sheetrange);

h = histogram(dif1)
range = max(dif1) - min(dif1);
up1 = -1;
up2 = 0;
up3 = 1;
up4 = max(dif1);

I1 = prctile(dif1,25);
I2 = prctile(dif1,50);
I3 = prctile(dif1,75);
I4 = prctile(dif1,100);

n1 = 0;
n2 = 0;
n3 = 0;
n4 = 0;

inter = [up1,up2,up3,up4]

curentstate = zeros([length(dif1) 1]);

for c = 1:length(dif1)
    if dif1(c)<inter(1);

```



```

        curentstate(c) = 1;
        n1 = n1 + 1;
elseif dif1(c)<inter(2);
        curentstate(c) = 2;
        n2 = n2 + 1;
elseif dif1(c)<inter(3);
        curentstate(c) = 3;
        n3 = n3 + 1;
else
        curentstate(c) = 4;
        n4 = n4 + 1;
end
end

currstate = zeros((length(curentstate)-1),1);
for a=1:(length(currstate))
        currstate(a) = curentstate(a);
end

nextstate = zeros((length(curentstate)-1),1);
for d=1:(length(nextstate))
        nextstate(d) = curentstate(d+1);
end

strCurrstate = int2str(currstate);
strNextstate = int2str(nextstate);

```

```
trans = strcat(strCurrstate,strNextstate);
```

```
transint = str2num(trans);
```

```
h2 = histogram(transint);
```

```
count11 = sum(transint(:)==11);
```

```
count12 = sum(transint(:)==12);
```

```
count13 = sum(transint(:)==13);
```

```
count14 = sum(transint(:)==14);
```

```
sum1 = count11+count12+count13+count14;
```

```
p11 = count11/sum1;
```

```
p12 = count12/sum1;
```

```
p13 = count13/sum1;
```

```
p14 = count14/sum1;
```

```
count21 = sum(transint(:)==21);
```

```
count22 = sum(transint(:)==22);
```

```
count23 = sum(transint(:)==23);
```

```
count24 = sum(transint(:)==24);
```

```
sum2 = count21+count22+count23+count24;
```

```
p21 = count21/sum2;
```

```
p22 = count22/sum2;
```

```
p23 = count23/sum2;
```

```
p24 = count24/sum2;
```

```
count31 = sum(transint(:)==31);
```

```

count32 = sum(transint(:)==32);
count33 = sum(transint(:)==33);
count34 = sum(transint(:)==34);
sum3 = count31+count32+count33+count34;
p31 = count31/sum3;
p32 = count32/sum3;
p33 = count33/sum3;
p34 = count34/sum3;

count41 = sum(transint(:)==41);
count42 = sum(transint(:)==42);
count43 = sum(transint(:)==43);
count44 = sum(transint(:)==44);
sum4 = count41+count42+count43+count44;
p41 = count41/sum4;
p42 = count42/sum4;
p43 = count43/sum4;
p44 = count44/sum4;

TP = [p11,p12,p13,p14;p21,p22,p23,p24;p31,p32,p33,p34;p41,p42,p43,p44];

TPT = TP';

TPTdup = TPT;

TPTdup(4,:) = ones(1,4);

```

```

b = [0;0;0;1]; % left hand side coefficients

ii = [1 0 0 0 ;0 1 0 0;0 0 1 0;0 0 0 0];

TPTdupminPi = TPTdup-ii; % right hand side coefficients after subtracting pi1, pi2, pi3

%pinames = [pi1;pi2;pi3;pi4];
p = linsolve(TPTdupminPi,b) % stationary distribution

end

```

## Results

### Data

Figure 1: Intervals(inter), transition probability matrix(TPT), and stationary distribution (p) for Apple Stock, TKR(AAPL)

```

inter =
    -1.000000000000000    0    1.000000000000000    4.450000000000003

TP =
    0.370370370370370    0.361111111111111    0.212962962962963    0.055555555555556
    0.167464114832536    0.425837320574163    0.325358851674641    0.081339712918660
    0.073076923076923    0.246153846153846    0.484615384615385    0.196153846153846
    0.118644067796610    0.135593220338983    0.372881355932203    0.372881355932203

p =
    0.155169531155238
    0.298894202534316
    0.375858924736958
    0.170077341573487

```

Figure 2: Histogram of the frequency of transitions for each Apple state, where X axis is defined as state 11,12,13,14 and so on for each state, and Y axis is frequency of visiting the particular state.

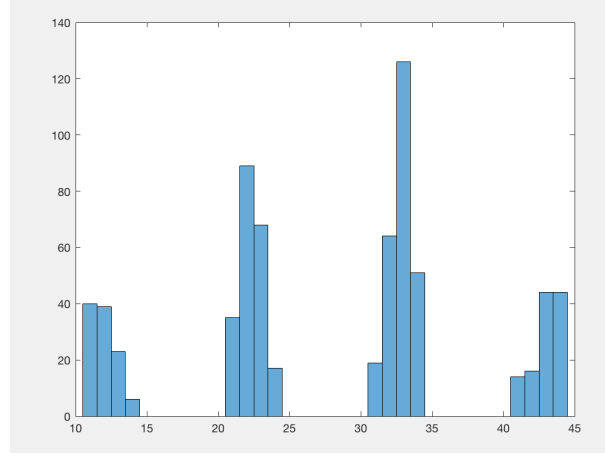


Figure 3: Intervals(inter), transition probability matrix (TPT), and stationary distribution (p) for Microsoft Stock, TKR(MSFT)

```

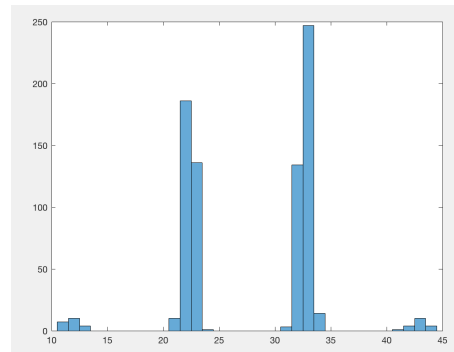
inter =
-1.0000000000000000      0      1.0000000000000000      3.5032999999999996

TP =
0.3333333333333333  0.476190476190476  0.190476190476190  0
0.030030030030030  0.558558558558559  0.408408408408408  0.003003003003003
0.007537688442211  0.336683417005427  0.620603015075377  0.035175879396985
0.052631578947368  0.210526315789474  0.526315789473684  0.210526315789474

p =
0.027289089645004
0.433593769129065
0.514541850307528
0.024575290918403

```

Figure 4: Histogram of the frequency of transitions for each Microsoft state, where X axis is defined as state 11,12,13,14 and so on for each state, and Y axis is frequency of visiting the particular state.



## Interpretation

From the MATLAB code we were able to determine, the transition probability matrix and stationary distribution for any given day. The intervals that we chose for each state were determined by the difference of closing price and moving average. Interval 1 was the difference is less than -1, Interval 2 was the difference is greater than or equal to -1 or less than 0, Interval 3 was the difference is greater than or equal to 0 or less than 1, and Interval 4 was greater than or equal to 1. From these intervals, we were able to determine the transition matrix, that is for any given interval (state), what is the probability that the next day it will be in a particular interval (state). By counting which interval the difference was in for each day and the next day, we were able to find the frequency for each interval changing intervals or staying in the same interval. This then gave a probability matrix that was based off these frequencies. Once this matrix was determined, the convergence theorem was used to determine the stationary distribution.

## Conclusion

Upon further examination of the stationary distribution for Apple stock, we found that the total probability of the difference between the closing price and moving average being positive, that is the probability the stock will close at a price greater than forecasted, is approximately 55%. This means that the majority of the time Apple stock out performs its forecasted price, thus surpassing expectations and providing a positive return on investment. Therefore, we recommend that this stock should be purchased. From the beginning of 2017, when we ended using data, until 2018, the empirical evidence shows that Apple stock increased \$55, which is a 48% increase on the year. This shows that our model works accurately in guiding a decision about whether to purchase Apple stock. We predicted that the stock would outperform forecasted price, thus increasing in value, and the empirical evidence for the year of 2017 shows this to be true.

While examining the stationary distribution for Microsoft stock, we found that the total probability of the difference between the closing price and moving average, that is the probability the stock will close at a price greater than forecasted, is approximately 54%. This tells us that the majority of the time Microsoft stock out performs its forecasted price, thus surpassing expectations and providing a positive return on investment. Therefore, we recommend that this stock should be purchased. From the beginning of 2017, when we ended using data, until 2018, the empirical evidence shows that Microsoft stock increased \$25, which is a 40% increase on the year. Again, this shows that our model works accurately in guiding a decision about whether to purchase Microsoft stock. We predicted that the stock would outperform forecasted price, thus increasing in value, and the empirical evidence for the year of 2017 shows this to be true.

## **Acknowledgement**

We thank our honorable Professor Nestor Guillen for his critical role in the inspiration of the research paper. With his guidance we were able to pursue and in depth study of Markov Chain's and modeling the fluctuation of two different stocks. We would also like thank Professor Guillen's comedic abilities during lecture, which guided our research during the most difficult times. Additionally, we would like to give a special thank you to Svilen Kolev, for his MATLAB proficiency and generously donating his time to help programming.

## **Index**

Microsoft Excel Data

Microsoft	Close Price	Moving Avera	Volume	Volatility	Close Price minus moving a
1/3/2017	62.58	62.54	20.694M	17.304	0.04
12/30/2016	62.14	62.6767	25.58M	17.279	-0.5367
12/29/2016	62.9	63.0567	10.251M	17.133	-0.1567
12/28/2016	62.99	63.17	14.653M	17.135	-0.18
12/27/2016	63.28	63.3567	11.763M	17.108	-0.0767
12/23/2016	63.24	63.4433	12.404M	17.108	-0.2033
12/22/2016	63.55	63.5433	22.177M	17.078	0.0067
12/21/2016	63.54	63.5667	17.096M	17.078	-0.0267
12/20/2016	63.54	63.1533	26.028M	17.219	0.3867
12/19/2016	63.62	62.8333	34.338M	17.218	0.7867
12/16/2016	62.3	62.52	42.453M	16.913	-0.22
12/15/2016	62.58	62.7467	27.67M	16.903	-0.1667
12/14/2016	62.68	62.61	30.353M	16.911	0.07
12/13/2016	62.98	62.3733	35.719M	16.885	0.6067
12/12/2016	62.17	61.7167	20.198M	16.757	0.4533
12/9/2016	61.97	61.45	27.349M	16.824	0.52
12/8/2016	61.01	60.7767	21.221M	16.669	0.2333
12/7/2016	61.37	60.5133	30.809M	16.661	0.8567
12/6/2016	59.95	59.8067	19.907M	16.201	0.1433
12/5/2016	60.22	59.5567	23.553M	16.182	0.6633
12/2/2016	59.25	59.57	25.516M	16.013	-0.32
12/1/2016	59.2	60.1833	34.542M	16.013	-0.9833
11/30/2016	60.26	60.6533	34.655M	15.806	-0.3933
11/29/2016	61.09	60.7433	22.367M	15.611	0.3467
11/28/2016	60.61	60.5133	20.733M	15.567	0.0967
11/25/2016	60.53	60.6833	8.41M	15.723	-0.1533
11/23/2016	60.4	60.7933	21.849M	15.729	-0.3933
11/22/2016	61.12	60.7767	23.207M	17.827	0.3433
11/21/2016	60.86	60.6167	19.653M	18.079	0.2433
11/18/2016	60.35	60.2133	27.686M	18.048	0.1367
11/17/2016	60.64	59.72	32.133M	18.02	0.92
11/16/2016	59.65	58.88	27.332M	17.838	0.77
11/15/2016	58.87	58.67	35.904M	17.735	0.2
11/14/2016	58.12	58.6133	41.328M	17.715	-0.4933
11/11/2016	59.02	59.2967	38.768M	17.499	-0.2767
11/10/2016	58.7	59.78	57.822M	17.709	-1.08
11/9/2016	60.17	60.3533	49.632M	17.121	-0.1833
11/8/2016	60.47	59.8667	22.935M	17.086	0.6033
11/7/2016	60.42	59.4467	31.665M	17.087	0.9733
11/4/2016	58.71	59.1167	28.697M	16.448	-0.4067



11/3/2016	59.21	59.48 21.6M	16.459	-0.27
11/2/2016	59.43	59.7167 22.147M	16.789	-0.2867
11/1/2016	59.8	59.8633 24.533M	17.024	-0.0633
10/31/2016	59.92	59.9633 26.435M	17.809	-0.0433
10/28/2016	59.87	60.2 33.575M	19.263	-0.33
10/27/2016	60.1	60.5733 28.48M	19.439	-0.4733
10/26/2016	60.63	60.8733 29.912M	19.378	-0.2433
10/25/2016	60.99	60.55 35.137M	19.635	0.44
10/24/2016	61	59.3033 54.067M	19.639	1.6967
10/21/2016	59.66	58.1467 80.032M	19.371	1.5133
10/20/2016	57.25	57.48 49.456M	18.264	-0.23
10/19/2016	57.53	57.47 22.878M	18.246	0.06
10/18/2016	57.66	57.4333 19.15M	18.283	0.2267
10/17/2016	57.22	57.1867 23.83M	18.865	0.0333
10/14/2016	57.42	57.15 27.402M	18.859	0.27
10/13/2016	56.92	57.0733 25.314M	18.88	-0.1533
10/12/2016	57.11	57.4467 22.177M	18.869	-0.3367
10/11/2016	57.19	57.6767 26.497M	18.866	-0.4867
10/10/2016	58.04	57.86 18.197M	18.69	0.18
10/7/2016	57.8	57.7267 20.089M	18.846	0.0733
10/6/2016	57.74	57.54 16.213M	18.897	0.2
10/5/2016	57.64	57.4333 16.726M	18.908	0.2067
10/4/2016	57.24	57.42 20.086M	18.991	-0.18
10/3/2016	57.42	57.4733 19.19M	19.018	-0.0533
9/30/2016	57.6	57.6767 29.911M	19.027	-0.0767
9/29/2016	57.4	57.7933 25.464M	19.087	-0.3933
9/28/2016	58.03	57.6267 20.536M	19.625	0.4033
9/27/2016	57.95	57.4267 28.065M	19.758	0.5233
9/26/2016	56.9	57.3833 21.689M	19.56	-0.4833
9/23/2016	57.43	57.67 19.955M	19.567	-0.24
9/22/2016	57.82	57.4633 19.822M	19.531	0.3567
9/21/2016	57.76	57.1667 33.707M	20.081	0.5933
9/20/2016	56.81	56.9967 17.384M	20.039	-0.1867
9/19/2016	56.93	57.1233 20.937M	20.098	-0.1933
9/16/2016	57.25	56.9 44.607M	20.108	0.35
9/15/2016	57.19	56.66 27.063M	20.108	0.53
9/14/2016	56.26	56.6133 24.274M	20.166	-0.3533
9/13/2016	56.53	56.5967 30.13M	20.182	-0.0667
9/12/2016	57.05	56.8967 29.303M	20.142	0.1533
9/9/2016	56.21	57.1 35.114M	20.01	-0.89
9/8/2016	57.43	57.5667 20.146M	19.617	-0.1367

9/7/2016	57.66	57.6467	17.493M	19.839	0.0133
9/6/2016	57.61	57.6233	16.278M	19.968	-0.0133
9/2/2016	57.67	57.5733	18.9M	19.966	0.0967
9/1/2016	57.59	57.6467	26.075M	20.325	-0.0567
8/31/2016	57.46	57.8167	20.86M	20.413	-0.3567
8/30/2016	57.89	58.0067	16.93M	20.504	-0.1167
8/29/2016	58.1	58.1	16.417M	20.506	0
8/26/2016	58.03	58.05	20.971M	24.247	-0.02
8/25/2016	58.17	58.0033	18.553M	24.247	0.1667
8/24/2016	57.95	57.8367	18.152M	24.372	0.1133
8/23/2016	57.89	57.7267	18.732M	24.373	0.1633
8/22/2016	57.67	57.63	15.222M	24.486	0.04
8/19/2016	57.62	57.5933	17.271M	24.499	0.0267
8/18/2016	57.6	57.5333	14.214M	24.5	0.0667
8/17/2016	57.56	57.7067	18.856M	24.589	-0.1467
8/16/2016	57.44	57.8333	20.523M	24.607	-0.3933
8/15/2016	58.12	58.12	19.284M	24.518	0
8/12/2016	57.94	58.0867	21.655M	24.516	-0.1467
8/11/2016	58.3	58.1733	18.162M	24.585	0.1267
8/10/2016	58.02	58.0933	15.757M	24.629	-0.0733
8/9/2016	58.2	58.0733	16.921M	24.783	0.1267
8/8/2016	58.06	57.8033	19.474M	24.786	0.2567
8/5/2016	57.96	57.44	29.335M	24.804	0.52
8/4/2016	57.39	56.98	26.588M	24.756	0.41
8/3/2016	56.97	56.71	22.076M	24.747	0.26
8/2/2016	56.58	56.6133	35.122M	24.988	-0.0333
8/1/2016	56.58	56.49	26.003M	25.087	0.09
7/29/2016	56.68	56.36	30.559M	25.093	0.32
7/28/2016	56.21	56.3867	37.55M	25.06	-0.1767
7/27/2016	56.19	56.56	32.327M	25.067	-0.37
7/26/2016	56.76	56.6867	28.079M	25.023	0.0733
7/25/2016	56.73	56.3667	25.611M	25.312	0.3633
7/22/2016	56.57	56.0933	32.157M	25.325	0.4767
7/21/2016	55.8	54.9333	32.777M	25.331	0.8667
7/20/2016	55.91	54.32	89.893M	25.359	1.59
7/19/2016	53.09	53.5833	53.337M	23.767	-0.4933
7/18/2016	53.96	53.8	31.434M	23.828	0.16
7/15/2016	53.7	53.65	32.024M	23.961	0.05
7/14/2016	53.74	53.4867	24.546M	24.269	0.2533
7/13/2016	53.51	53.1033	25.357M	24.342	0.4067
7/12/2016	53.21	52.7	27.318M	24.563	0.51

7/11/2016	52.59	52.09	22.269M	24.506	0.5
7/8/2016	52.3	51.6867	28.391M	24.565	0.6133
7/7/2016	51.38	51.31	19.585M	24.402	0.07
7/6/2016	51.38	51.2367	28.167M	25.05	0.1433
7/5/2016	51.17	51.1667	24.806M	25.081	0.0033
7/1/2016	51.16	50.9567	21.4M	25.219	0.2033
6/30/2016	51.17	50.3833	28.528M	25.341	0.7867
6/29/2016	50.54	49.47	31.304M	25.257	1.07
6/28/2016	49.44	49.2333	38.141M	25.418	0.2067
6/27/2016	48.43	50.0567	50.577M	25.312	-1.6267
6/24/2016	49.83	50.91	133.503M	24.88	-1.08
6/23/2016	51.91	51.3633	29.029M	23.893	0.5467
6/22/2016	50.99	50.75	28.817M	24.103	0.24
6/21/2016	51.19	50.4633	34.098M	24.175	0.7267
6/20/2016	50.07	50.1967	35.608M	24.036	-0.1267
6/17/2016	50.13	50.07	45.711M	24.036	0.06
6/16/2016	50.39	49.97	31.189M	24.063	0.42
6/15/2016	49.69	49.8867	33.758M	23.95	-0.1967
6/14/2016	49.83	50.4833	42.577M	24.084	-0.6533
6/13/2016	50.14	51.08	83.218M	24.836	-0.94
6/10/2016	51.48	51.7133	25.833M	24.432	-0.2333
6/9/2016	51.62	51.92	20.306M	24.578	-0.3
6/8/2016	52.04	52.09	21.149M	25.127	-0.05
6/7/2016	52.1	52.0067	20.867M	25.15	0.0933
6/6/2016	52.13	52.1333	18.243M	26.989	-0.0033
6/3/2016	51.79	52.3733	23.368M	27.108	-0.5833
6/2/2016	52.48	52.7767	22.841M	27.197	-0.2967
6/1/2016	52.85	52.7233	25.325M	27.197	0.1267
5/31/2016	53	52.4033	37.653M	27.244	0.5967
5/27/2016	52.32	52.11	17.721M	27.814	0.21
5/26/2016	51.89	51.8667	24.335M	27.802	0.0233
5/25/2016	52.12	51.2467	24.205M	27.8	0.8733
5/24/2016	51.59	50.7467	34.758M	27.788	0.8433
5/23/2016	50.03	50.3233	26.119M	28.146	-0.2933
5/20/2016	50.62	50.5833	23.906M	28.503	0.0367
5/19/2016	50.32	50.5467	23.842M	28.72	-0.2267
5/18/2016	50.81	51.05	24.908M	28.723	-0.24
5/17/2016	50.51	51.14	27.804M	28.703	-0.63
5/16/2016	51.83	51.4733	20.032M	28.371	0.3567
5/13/2016	51.08	51.2133	22.592M	28.889	-0.1333
5/12/2016	51.51	51.1933	24.103M	29.018	0.3167

5/11/2016	51.05	50.7133	24.039M	28.984	0.3367
5/10/2016	51.02	50.4933	22.891M	29.05	0.5267
5/9/2016	50.07	50.1333	17.952M	28.943	-0.0633
5/6/2016	50.39	50.0667	24.787M	28.935	0.3233
5/5/2016	49.94	49.8633	25.391M	28.954	0.0767
5/4/2016	49.87	50.0867	24.258M	28.97	-0.2167
5/3/2016	49.78	50.0867	26.46M	28.967	-0.3067
5/2/2016	50.61	50.1267	33.115M	28.893	0.4833
4/29/2016	49.87	50.2367	48.412M	28.822	-0.3667
4/28/2016	49.9	50.76	43.135M	28.92	-0.86
4/27/2016	50.94	51.4967	43.369M	29.112	-0.5567
4/26/2016	51.44	51.7767	33.533M	29.095	-0.3367
4/25/2016	52.11	53.2233	33.227M	29.176	-1.1133
4/22/2016	51.78	54.3833	126.834M	29.153	-2.6033
4/21/2016	55.78	55.92	38.909M	26.436	-0.14
4/20/2016	55.59	56.1467	36.196M	26.707	-0.5567
4/19/2016	56.39	56.1667	29.597M	26.606	0.2233
4/18/2016	56.46	55.8233	23.786M	26.727	0.6367
4/15/2016	55.65	55.4533	28.794M	26.612	0.1967
4/14/2016	55.36	55.12	20.877M	26.598	0.24
4/13/2016	55.35	54.77	20.818M	27.126	0.58
4/12/2016	54.65	54.46	24.944M	27.226	0.19
4/11/2016	54.31	54.3967	21.414M	27.204	-0.0867
4/8/2016	54.42	54.6667	22.167M	27.34	-0.2467
4/7/2016	54.46	54.7133	19.225M	27.371	-0.2533
4/6/2016	55.12	55.0367	21.189M	27.3	0.0833
4/5/2016	54.56	55.1867	19.272M	27.306	-0.6267
4/4/2016	55.43	55.41	18.929M	27.168	0.02
4/1/2016	55.57	55.2833	24.399M	27.164	0.2867
3/31/2016	55.23	54.9967	26.36M	27.155	0.2333
3/30/2016	55.05	54.4333	23.008M	27.151	0.6167
3/29/2016	54.71	54.1533	23.924M	27.274	0.5567
3/28/2016	53.54	53.9067	17.025M	27.148	-0.3667
3/24/2016	54.21	54.0833	19.95M	27.223	0.1267
3/23/2016	53.97	53.9667	20.129M	27.26	0.0033
3/22/2016	54.07	53.8067	23.124M	27.279	0.2633
3/21/2016	53.86	54.0033	23.926M	27.275	-0.1433
3/18/2016	53.49	54.1667	67.626M	27.327	-0.6767
3/17/2016	54.66	54.2	28.224M	27.18	0.46
3/16/2016	54.35	53.7033	31.692M	27.215	0.6467
3/15/2016	53.59	53.2767	21.105M	27.106	0.3133

3/14/2016	53.17	52.7633	24.084M	27.083	0.4067
3/11/2016	53.07	52.6533	32.276M	27.24	0.4167
3/10/2016	52.05	52.18	38.388M	27.104	-0.13
3/9/2016	52.84	51.84	28.252M	27.081	1
3/8/2016	51.65	51.57	33.835M	26.858	0.08
3/7/2016	51.03	51.8033	38.429M	26.79	-0.7733
3/4/2016	52.03	52.4433	33.034M	26.647	-0.4133
3/3/2016	52.35	52.6267	24.428M	27.002	-0.2767
3/2/2016	52.95	52.1367	29.29M	31.535	0.8133
3/1/2016	52.58	51.5867	33.025M	31.643	0.9933
2/29/2016	50.88	51.4267	31.654M	31.244	-0.5467
2/26/2016	51.3	51.5867	35.976M	31.208	-0.2867
2/25/2016	52.1	51.5467	26.939M	31.082	0.5533
2/23/2016	51.18	51.8833	28.895M	31.055	-0.7033
2/22/2016	52.65	52.22	25.008M	30.655	0.43
2/19/2016	51.82	52.1433	33.559M	30.556	-0.3233
2/18/2016	52.19	51.9	27.176M	30.529	0.29
2/17/2016	52.42	51.3367	40.789M	30.548	1.0833
2/16/2016	51.09	50.4267	37.291M	30.332	0.6633
2/12/2016	50.5	49.9667	34.243M	30.276	0.5333
2/11/2016	49.69	49.56	48.879M	30.162	0.13
2/10/2016	49.71	49.4667	38.237M	30.401	0.2433
2/9/2016	49.28	49.6167	46.74M	30.571	-0.3367
2/8/2016	49.41	50.5233	59.29M	30.586	-1.1133
2/5/2016	50.16	51.44	62.009M	30.599	-1.28
2/4/2016	52	52.3867	46.987M	29.9	-0.3867
2/3/2016	52.16	53.29	57.56M	30.028	-1.13
2/2/2016	53	54.2667	56.314M	29.869	-1.2667
2/1/2016	54.71	53.9517	44.209M	29.291	0.7583
1/29/2016	55.09	52.7883	83.612M	29.251	2.3017
1/28/2016	52.055	51.815	62.514M	27.739	0.24
1/27/2016	51.22	51.7267	36.775M	27.713	-0.5067
1/26/2016	52.17	52.0833	28.901M	27.696	0.0867
1/25/2016	51.79	51.52	34.708M	27.684	0.27
1/22/2016	52.29	51.1867	37.556M	27.63	1.1033
1/21/2016	50.48	50.61	40.191M	27.24	-0.13
1/20/2016	50.79	50.78	63.273M	27.284	0.01
1/19/2016	50.56	51.5533	43.565M	27.283	-0.9933
1/15/2016	50.99	51.9133	71.821M	27.231	-0.9233
1/14/2016	53.11	52.51	52.382M	26.466	0.6
1/13/2016	51.64	52.24	66.884M	26.511	-0.6

1/12/2016	52.78	52.47 36.096M	26.481	0.31
1/11/2016	52.3	52.2667 36.944M	26.454	0.0333
1/9/2016	52.33	52.85 48.754M	27.082	-0.52
1/8/2016	52.17	53.7567 56.565M	28.033	-1.5867
1/7/2016	54.05	54.6333 39.519M	27.35	-0.5833
1/6/2016	55.05	55.11 34.08M	27.118	-0.06
1/5/2016	54.8	55.53 53.778M	27.449	-0.73
1/3/2016	55.48	56.1133 27.334M	28.676	-0.6333
1/2/2016	56.31	56.27 21.705M	29.059	0.04
1/1/2016	56.55	56.0567 27.731M	29.684	0.4933
12/31/2015	55.95	55.8133 22.458M	31.455	0.1367
12/29/2015	55.67	55.6133 9.57M	31.693	0.0567
12/28/2015	55.82	55.3333 27.28M	31.802	0.4867
12/27/2015	55.35	54.77 28.322M	31.785	0.58
12/26/2015	54.83	54.8867 37.246M	31.77	-0.0567
12/24/2015	54.13	55.32 84.684M	31.719	-1.19
12/23/2015	55.7	55.6767 41.281M	31.288	0.0233
12/22/2015	56.13	55.49 37.503M	31.255	0.64
12/21/2015	55.2	54.8 39.843M	31.371	0.4
12/20/2015	55.14	54.8233 47.006M	31.425	0.3167
12/18/2015	54.06	54.77 39.549M	31.273	-0.71
12/17/2015	55.27	55.3467 31.776M	31.235	-0.0767
12/16/2015	54.98	55.5267 36.373M	31.229	-0.5467
12/15/2015	55.79	55.8367 32.878M	31.19	-0.0467
12/14/2015	55.81	55.3067 30.71M	31.187	0.5033
12/12/2015	55.91	55.1067 43.964M	31.196	0.8033
12/11/2015	54.2	54.8767 38.628M	30.846	-0.6767
12/10/2015	55.21	54.9267 47.275M	30.814	0.2833
12/9/2015	55.22	54.5 39.953M	30.814	0.72
12/8/2015	54.35	53.99 56.241M	30.83	0.36
12/6/2015	53.93	53.9567 9.009M	30.828	-0.0267
12/5/2015	53.69	54.0433 21.005M	30.879	-0.3533
12/4/2015	54.25	54.21 24.6M	31.537	0.04
12/3/2015	54.19	54.1067 28.236M	31.554	0.0833
12/1/2015	54.19	53.9933 37.148M	31.563	0.1967
11/30/2015	53.94	53.5867 28.149M	31.562	0.3533
11/29/2015	53.85	53.5283 29.71M	31.709	0.3217
11/28/2015	52.97	53.1917 31.551M	31.609	-0.2217
11/27/2015	53.765	53.3083 32.165M	31.479	0.4567
11/25/2015	52.84	53.27 36.848M	31.531	-0.43
11/24/2015	53.32	53.4933 35.361M	31.474	-0.1733

11/23/2015	53.65	53.7733	36.516M	31.451	-0.1233
11/22/2015	53.51	54.1967	55.284M	31.456	-0.6867
11/21/2015	54.16	54.4867	32.513M	31.369	-0.3267
11/19/2015	54.92	54.5667	32.851M	31.248	0.3533
11/18/2015	54.38	54.31	31.468M	31.226	0.07
11/17/2015	54.4	53.93	37.088M	31.231	0.47
11/16/2015	54.15	53.3433	36.597M	31.254	0.8067
11/15/2015	53.24	53.08	30.285M	31.375	0.16
11/13/2015	52.64	53.3267	46.62M	31.381	-0.6867
11/12/2015	53.36	53.6767	30.202M	31.272	-0.3167
11/11/2015	53.98	53.9733	47.001M	31.217	0.0067
11/10/2015	53.69	53.6033	51M	31.246	0.0867
11/9/2015	54.25	51.7167	64.633M	31.177	2.5333
11/7/2015	52.87	49.3667	135.227M	31.006	3.5033
11/6/2015	48.03	47.6667	56.637M	26.481	0.3633
11/5/2015	47.2	47.53	25.265M	26.322	-0.33
11/4/2015	47.77	47.6333	30.802M	26.266	0.1367
11/3/2015	47.62	47.38	29.388M	26.333	0.24
11/1/2015	47.51	47.0667	26.45M	26.393	0.4433
10/31/2015	47.01	46.86	27.189M	26.34	0.15
10/30/2015	46.68	46.8567	24.698M	26.552	-0.1767
10/29/2015	46.89	47	19.988M	26.542	-0.11
10/28/2015	47	47.1867	19.769M	26.585	-0.1867
10/26/2015	47.11	47.12	28.601M	26.595	-0.01
10/25/2015	47.45	47	33.773M	26.628	0.45
10/24/2015	46.8	46.7267	27.711M	26.524	0.0733
10/23/2015	46.75	46.3167	27.511M	26.547	0.4333
10/22/2015	46.63	45.6033	34.369M	26.579	1.0267
10/20/2015	45.57	44.8133	41.839M	26.361	0.7567
10/19/2015	44.61	44.1033	28.658M	26.095	0.5067
10/18/2015	44.26	43.6633	34.959M	26.335	0.5967
10/17/2015	43.44	43.5567	32.764M	26.142	-0.1167
10/16/2015	43.29	43.7133	27.614M	26.189	-0.4233
10/14/2015	43.94	43.9067	29.385M	26.082	0.0333
10/13/2015	43.91	43.8933	27.906M	26.081	0.0167
10/12/2015	43.87	43.96	17.145M	26.116	-0.09
10/11/2015	43.9	43.83	28.086M	26.129	0.07
10/10/2015	44.11	43.9467	26.177M	26.155	0.1633
10/8/2015	43.48	44.01	63.144M	26.339	-0.53
10/7/2015	44.25	44.1767	32.768M	26.208	0.0733
10/6/2015	44.3	43.7733	23.372M	26.208	0.5267

10/5/2015	43.98	43.5	28.882M	26.2	0.48
10/4/2015	43.04	43.27	23.656M	26.216	-0.23
10/2/2015	43.48	43.28	27.133M	26.221	0.2
10/1/2015	43.29	43.4167	31.367M	26.621	-0.1267
9/30/2015	43.07	43.19	33.469M	26.681	-0.12
9/29/2015	43.89	43.3333	32.47M	26.539	0.5567
9/27/2015	42.61	43.1567	37.139M	26.002	-0.5467
9/26/2015	43.5	42.8933	28.285M	25.82	0.6067
9/25/2015	43.36	42.9	37.672M	25.809	0.46
9/24/2015	41.82	43.09	49.689M	25.34	-1.27
9/23/2015	43.52	43.7833	34.442M	24.473	-0.2633
9/21/2015	43.93	43.5133	28.247M	29.854	0.4167
9/20/2015	43.9	42.36	50.943M	29.886	1.54
9/19/2015	42.71	41.62	63.408M	29.546	1.09
9/18/2015	40.47	41.74	70.617M	28.058	-1.27
9/17/2015	41.68	43.47	88.754M	28.112	-1.79
9/15/2015	43.07	45.1133	70.053M	27.629	-2.0433
9/14/2015	45.66	46.5133	36.238M	25.708	-0.8533
9/13/2015	46.61	47.0667	31.486M	25.54	-0.4567
9/12/2015	47.27	47.1967	23.574M	25.412	0.0733
9/11/2015	47.32	47.0167	21.1M	25.409	0.3033
9/9/2015	47	46.8233	21.473M	25.403	0.1767
9/8/2015	46.73	46.6267	22.627M	25.392	0.1033
9/7/2015	46.74	46.8267	30.199M	25.4	-0.0867
9/6/2015	46.41	46.8267	29.237M	25.382	-0.4167
9/5/2015	47.33	46.8967	23.08M	25.615	0.4333
9/3/2015	46.74	46.98	19.163M	25.634	-0.24
9/2/2015	46.62	47.2467	27.368M	25.633	-0.6267
9/1/2015	47.58	47.31	26.96M	25.401	0.27
8/31/2015	47.54	47.0167	33.404M	25.402	0.5233
8/30/2015	46.81	46.7967	24.126M	25.321	0.0133
8/28/2015	46.7	46.6233	31.201M	25.353	0.0767
8/27/2015	46.88	46.17	39.778M	26.055	0.71
8/26/2015	46.29	45.66	40.946M	25.977	0.63
8/25/2015	45.34	45.5433	34.329M	25.75	-0.2033
8/24/2015	45.35	45.8	39.701M	25.85	-0.45
8/22/2015	45.94	45.8633	32.333M	25.762	0.0767
8/21/2015	46.11	46.31	33.934M	25.937	-0.2
8/20/2015	45.54	46.58	59.152M	25.866	-1.04
8/19/2015	47.28	46.94	42.782M	24.999	0.34
8/18/2015	46.92	46.7333	30.632M	25.007	0.1867



8/16/2015	46.62	46.3467	29.467M	25.344	0.2733
8/15/2015	46.66	46.0133	26.272M	25.345	0.6467
8/14/2015	45.76	45.64	26.63M	25.384	0.12
8/13/2015	45.62	45.2567	22.88M	25.448	0.3633
8/12/2015	45.54	44.89	28.178M	25.641	0.65
8/10/2015	44.61	44.4567	25.466M	25.407	0.1533
8/9/2015	44.52	44.3533	32.425M	25.423	0.1667
8/8/2015	44.24	44.31	39.786M	25.515	-0.07
8/7/2015	44.3	44.3633	36.436M	25.514	-0.0633
8/6/2015	44.39	44.4117	23.034M	25.524	-0.0217
8/4/2015	44.4	44.3317	21.752M	25.525	0.0683
8/3/2015	44.445	44.3217	28.344M	25.528	0.1233
8/2/2015	44.15	44.5933	35.945M	25.503	-0.4433
8/1/2015	44.37	45.0933	34.082M	25.514	-0.7233
7/30/2015	45.26	45.515	49.835M	25.314	-0.255
7/29/2015	45.65	45.7317	20.616M	25.267	-0.0817
7/28/2015	45.635	45.925	34.891M	25.268	-0.29
7/27/2015	45.91	46.08	25.896M	25.273	-0.17
7/26/2015	46.23	46.35	20.318M	25.414	-0.12
7/24/2015	46.1	46.2633	63.837M	25.556	-0.1633
7/23/2015	46.72	46.1733	32.658M	25.458	0.5467
7/22/2015	45.97	45.7583	28.704M	25.337	0.2117
7/21/2015	45.83	45.7583	27.07M	25.336	0.0717
7/20/2015	45.475	45.9617	33.255M	25.31	-0.4867
7/18/2015	45.97	46.34	23.931M	25.337	-0.37
7/17/2015	46.44	46.2333	27.348M	25.274	0.2067
7/16/2015	46.61	45.9967	28.417M	25.284	0.6133
7/15/2015	45.65	45.84	24.406M	25.301	-0.19
7/14/2015	45.73	46.0767	22.122M	26.225	-0.3467
7/12/2015	46.14	46.45	25.438M	26.363	-0.31
7/11/2015	46.36	46.71	27.746M	27.067	-0.35
7/10/2015	46.85	47	28.002M	31.784	-0.15
7/9/2015	46.92	47.0033	21.498M	31.789	-0.0833
7/8/2015	47.23	47.18	28.837M	31.769	0.05
7/6/2015	46.86	47.3067	36.52M	32.052	-0.4467
7/5/2015	47.45	47.2167	19.284M	32.027	0.2333
7/4/2015	47.61	47.0333	27.336M	32.025	0.5767
7/3/2015	46.59	46.97	29.582M	31.936	-0.38
7/1/2015	46.9	47.3	25.721M	31.967	-0.4
6/30/2015	47.42	47.5267	22.411M	31.945	-0.1067
6/29/2015	47.58	47.7233	25.048M	31.953	-0.1433

6/28/2015	47.58	47.9617	28.575M	32.028	-0.3817
6/27/2015	48.01	48.3417	24.137M	32.023	-0.3317
6/25/2015	48.295	48.2133	28.643M	32.383	0.0817
6/24/2015	48.72	47.8983	32.981M	32.409	0.8217
6/23/2015	47.625	47.4483	34.185M	32.289	0.1767
6/22/2015	47.35	47.49	29.928M	32.317	-0.14
6/21/2015	47.37	47.2733	24.609M	32.336	0.0967
6/19/2015	47.75	46.91	35.365M	32.375	0.84
6/18/2015	46.7	46.86	32.972M	32.187	-0.16
6/17/2015	46.28	47.3733	52.433M	32.182	-1.0933
6/16/2015	47.6	48.165	50.369M	31.836	-0.565
6/15/2015	48.24	48.5117	34.039M	31.773	-0.2717
6/13/2015	48.655	48.785	38.937M	31.782	-0.13
6/12/2015	48.64	48.9517	64.725M	31.802	-0.3117
6/11/2015	49.06	48.7483	47.805M	31.768	0.3117
6/10/2015	49.155	48.3517	60.731M	32.416	0.8033
6/9/2015	48.03	46.4133	59.248M	32.253	1.6167
6/7/2015	47.87	44.7317	130.934M	32.755	3.1383
6/6/2015	43.34	42.9867	46.31M	27.929	0.3533
6/5/2015	42.985	42.8417	25.064M	27.892	0.1433
6/4/2015	42.635	42.385	26.014M	27.871	0.25
6/3/2015	42.905	42.2267	46.058M	27.953	0.6783
6/1/2015	41.615	42.01	42.388M	27.411	-0.395
5/31/2015	42.16	42.0217	22.51M	27.439	0.1383
5/30/2015	42.255	41.8883	27.344M	27.466	0.3667
5/29/2015	41.65	41.71	24.244M	27.488	-0.06
5/28/2015	41.76	41.6533	30.277M	27.509	0.1067
5/26/2015	41.72	41.54	28.022M	27.506	0.18
5/25/2015	41.48	41.4767	25.724M	27.659	0.0033
5/24/2015	41.42	41.4983	24.753M	27.659	-0.0783
5/23/2015	41.53	41.1217	28.809M	27.688	0.4083
5/22/2015	41.545	40.8517	39.224M	27.687	0.6933
5/20/2015	40.29	40.555	37.487M	27.143	-0.265
5/19/2015	40.72	40.7783	36.865M	27.193	-0.0583
5/18/2015	40.655	40.8617	34.887M	27.263	-0.2067
5/17/2015	40.96	41.0467	35.05M	27.288	-0.0867
5/15/2015	40.97	41.2133	34.401M	27.373	-0.2433
5/14/2015	41.21	41.8567	37.496M	27.365	-0.6467
5/13/2015	41.46	42.405	43.47M	27.358	-0.945
5/12/2015	42.9	42.8783	25.513M	26.974	0.0217
5/11/2015	42.855	42.6733	26.246M	26.971	0.1817

5/9/2015	42.88	42.555 71.905M	26.971	0.325
5/8/2015	42.285	42.16 33.879M	26.858	0.125
5/7/2015	42.5	41.9183 44.195M	26.852	0.5817
5/6/2015	41.695	41.545 31.673M	26.814	0.15
5/5/2015	41.56	41.32 35.273M	26.834	0.24
5/3/2015	41.38	41.46 58.008M	26.825	-0.08
5/2/2015	41.02	41.6767 59.993M	26.845	-0.6567
5/1/2015	41.98	42.2867 32.215M	26.816	-0.3067
4/30/2015	42.03	42.4133 39.16M	26.885	-0.3833
4/29/2015	42.85	42.7733 32.108M	26.709	0.0767
4/27/2015	42.36	42.8417 36.249M	26.724	-0.4817
4/26/2015	43.11	43.1483 23.194M	26.578	-0.0383
4/25/2015	43.055	43.405 25.749M	26.921	-0.35
4/24/2015	43.28	43.67 31.749M	27.027	-0.39
4/23/2015	43.88	43.9283 31.924M	26.992	-0.0483
4/21/2015	43.85	43.965 33.808M	27.171	-0.115
4/20/2015	44.055	44.045 28.957M	27.216	0.01
4/19/2015	43.99	44.0767 29.76M	27.44	-0.0867
4/18/2015	44.09	44.0317 25.272M	27.507	0.0583
4/17/2015	44.15	43.835 32.519M	27.582	0.315
4/15/2015	43.855	43.6283 29.721M	27.56	0.2267
4/14/2015	43.5	43.5367 27.603M	27.564	-0.0367
4/13/2015	43.53	43.66 27.112M	28.415	-0.13
4/12/2015	43.58	43.5133 33.696M	28.609	0.0667
4/10/2015	43.87	43.1133 40.265M	28.984	0.7567
4/9/2015	43.09	42.69 33.269M	28.878	0.4
4/8/2015	42.38	42.4467 38.263M	28.722	-0.0667
4/7/2015	42.6	42.4567 29.671M	28.746	0.1433
4/6/2015	42.36	42.4067 31.381M	28.727	-0.0467
4/4/2015	42.41	42.2333 34.617M	28.768	0.1767
4/3/2015	42.45	41.9633 36.548M	28.769	0.4867
4/2/2015	41.84	41.5733 41.615M	28.646	0.2667
4/1/2015	41.6	41.0933 52.082M	28.664	0.5067
3/31/2015	41.28	41.23 50.353M	28.849	0.05
3/29/2015	40.4	41.2 78.005M	28.658	-0.8
3/28/2015	42.01	41.9533 63.585M	27.963	0.0567
3/27/2015	41.19	43.62 84.507M	27.762	-2.43
3/26/2015	42.66	45.6167 169.164M	27.348	-2.9567
3/25/2015	47.01	47.1067 42.526M	21.734	-0.0967
3/23/2015	47.18	46.7433 26.212M	21.743	0.4367
3/22/2015	47.13	46.48 35.898M	21.825	0.65

3/21/2015	45.92	46.1833	39.081M	21.429	-0.2633
3/20/2015	46.39	46.0367	36.162M	21.387	0.3533
3/18/2015	46.24	45.8917	35.695M	21.388	0.3483
3/17/2015	45.48	45.93	32.751M	21.195	-0.45
3/16/2015	45.955	46.3033	29.72M	21.152	-0.3483
3/15/2015	46.355	46.715	35.271M	21.202	-0.36
3/14/2015	46.6	47.1267	23.652M	21.318	-0.5267
3/12/2015	47.19	47.0033	23.944M	21.227	0.1867
3/11/2015	47.59	46.49	29.645M	21.179	1.1
3/10/2015	46.23	46.0683	29.114M	20.646	0.1617
3/9/2015	45.65	46.245	36.448M	20.638	-0.595
3/8/2015	46.325	46.5117	39.674M	20.477	-0.1867
3/6/2015	46.76	46.7433	27.914M	20.417	0.0167
3/5/2015	46.45	46.9733	21.552M	20.4	-0.5233
3/4/2015	47.02	47.45	16.385M	20.285	-0.43
3/3/2015	47.45	47.8233	14.44M	20.221	-0.3733
3/1/2015	47.88	48.1567	13.198M	20.174	-0.2767
2/28/2015	48.14	48.19	11.443M	20.208	-0.05
2/27/2015	48.45	48.03	23.657M	20.183	0.42
2/26/2015	47.98	47.72	26.566M	20.153	0.26
2/24/2015	47.66	46.9733	64.551M	20.214	0.6867
2/23/2015	47.52	46.14	40.106M	20.22	1.38
2/22/2015	45.74	45.8567	34.971M	19.278	-0.1167
2/21/2015	45.16	46.26	47.801M	19.2	-1.1
2/20/2015	46.67	46.93	29.248M	18.312	-0.26
2/18/2015	46.95	47.0067	34.248M	18.276	-0.0567
2/17/2015	47.17	47.22	29.062M	18.337	-0.05
2/16/2015	46.9	47.395	30.432M	18.384	-0.495
2/15/2015	47.59	47.9017	24.331M	18.235	-0.3117
2/14/2015	47.695	48.3183	26.663M	18.319	-0.6233
2/12/2015	48.42	48.4467	27.313M	18.157	-0.0267
2/11/2015	48.84	48.46	30.345M	18.175	0.38
2/10/2015	48.08	48.3867	23.535M	18.057	-0.3067
2/9/2015	48.46	48.2967	25.773M	17.999	0.1633
2/8/2015	48.62	48.06	31.192M	18.122	0.56
2/6/2015	47.81	47.6767	21.534M	17.917	0.1333
2/5/2015	47.75	47.6033	27.165M	18.021	0.1467
2/4/2015	47.47	47.68	28.008M	17.999	-0.21
2/3/2015	47.59	48.09	35.434M	17.991	-0.5
2/1/2015	47.98	48.3	42.885M	17.931	-0.32
1/31/2015	48.7	48.5533	21.511M	17.731	0.1467

1/30/2015	48.22	48.8067	26.177M	17.734	-0.5867
1/29/2015	48.74	49.26	23.996M	18.692	-0.52
1/28/2015	49.46	49.55	30.319M	18.505	-0.09
1/26/2015	49.58	49.3233	29.082M	18.491	0.2567
1/25/2015	49.61	49.0867	26.21M	18.535	0.5233
1/24/2015	48.78	48.8467	22.722M	18.356	-0.0667
1/23/2015	48.87	48.8133	23.445M	18.361	0.0567
1/22/2015	48.89	48.7567	36.37M	18.394	0.1333
1/20/2015	48.68	48.4133	28.001M	18.395	0.2667
1/19/2015	48.7	48.0433	33.038M	18.405	0.6567
1/18/2015	47.86	47.6233	22.45M	18.204	0.2367
1/17/2015	47.57	47.32	21.531M	18.192	0.25
1/16/2015	47.44	46.8133	23.13M	18.361	0.6267
1/14/2015	46.95	46.54	35.85M	18.397	0.41
1/13/2015	46.05	46.3867	30.074M	18.19	-0.3367
1/12/2015	46.62	46.34	30.284M	18.069	0.28
1/11/2015	46.49	46.1767	29.05M	18.107	0.3133
1/10/2015	45.91	45.6867	30.371M	18.033	0.2233
1/8/2015	46.13	45.1767	61.081M	18.011	0.9533
1/7/2015	45.02	44.76	45.452M	17.575	0.26
1/6/2015	44.38	44.4467	33.58M	17.423	-0.0667
1/5/2015	44.88	44.1967	36.434M	17.311	0.6833
1/4/2015	44.08	43.4833	34.531M	17.086	0.5967
1/2/2015	43.63	43.1967	40.683M	17.205	0.4333
1/1/2015	42.74	43.23	49.041M	16.91	-0.49
12/31/2014	43.22	43.5333	60.221M	16.828	-0.3133
12/30/2014	43.73	43.8033	38.121M	16.712	-0.0733
12/29/2014	43.65	44.51	37.1M	16.739	-0.86
12/27/2014	44.03	45.5533	51.978M	16.693	-1.5233
12/26/2014	45.85	46.0533	34.427M	15.499	-0.2033
12/25/2014	46.78	46.1333	33.031M	15.047	0.6467
12/24/2014	45.53	45.9033	25.725M	14.582	-0.3733
12/23/2014	46.09	45.98	20.604M	14.421	0.11
12/21/2014	46.09	45.9167	32.453M	14.6	0.1733
12/20/2014	45.76	46.0067	25.12M	14.613	-0.2467
12/19/2014	45.9	46.2333	38.088M	14.629	-0.3333
12/18/2014	46.36	46.4033	33.033M	14.494	-0.0433
12/17/2014	46.44	46.2967	26.091M	14.483	0.1433
12/15/2014	46.41	46.51	27.079M	14.545	-0.1
12/14/2014	46.04	46.56	33.077M	14.735	-0.52
12/13/2014	47.08	46.9	26.583M	14.152	0.18

12/12/2014	46.56	47.0467	33.431M	14.077	-0.4867
12/11/2014	47.06	47.0867	38.686M	13.928	-0.0267
12/9/2014	47.52	46.9067	202.527M	14.125	0.6133
12/8/2014	46.68	46.6533	35.557M	13.892	0.0267
12/7/2014	46.52	46.5067	38.312M	13.985	0.0133
12/6/2014	46.76	46.565	27.911M	14.02	0.195
12/5/2014	46.24	46.645	37.668M	13.947	-0.405
12/3/2014	46.695	46.845	38.247M	13.818	-0.15
12/2/2014	47	46.8667	29.217M	13.798	0.1333
12/1/2014	46.84	46.69	27.304M	13.935	0.15
11/30/2014	46.76	46.38	40.302M	14.011	0.38
11/29/2014	46.47	45.88	45.737M	14.085	0.59
11/28/2014					0
11/27/2014	45.91	45.3767	36.939M	14.107	0.5333
11/26/2014	45.26	45.1033	26.478M	13.949	0.1567
11/25/2014	44.96	45.16	33.689M	14.023	-0.2
11/24/2014	45.09	45.1333	22.977M	14.531	-0.0433
11/23/2014					0
11/22/2014	45.43	45.06	21.609M	14.45	0.37
11/21/2014	44.88	44.9183	17.658M	14.34	-0.0383
11/20/2014	44.87	45.015	21.288M	14.419	-0.145
11/19/2014	45.005	45.1083	14.878M	14.4	-0.1033
11/18/2014	45.17	45.18	16.91M	14.384	-0.01
11/17/2014					0
11/16/2014	45.15	45.1067	18.295M	14.507	0.0433
11/15/2014	45.22	45.1667	22.286M	14.722	0.0533
11/14/2014	44.95	45.13	24.77M	14.87	-0.18
11/13/2014	45.33	45.0767	28.139M	14.775	0.2533
11/12/2014	45.11	44.7233	26.895M	14.794	0.3867
11/10/2014	44.79	44.38	41.611M	15.588	0.41
11/9/2014	44.27	43.9567	19.313M	15.696	0.3133
11/8/2014	44.08	43.6	22.889M	15.688	0.48
11/7/2014	43.52	43.3067	21.434M	15.565	0.2133
11/6/2014	43.2	43.21	20.352M	16.303	-0.01
11/4/2014	43.2	43.0567	28.943M	16.373	0.1433
11/3/2014	43.23	43.0167	30.315M	16.376	0.2133
11/2/2014	42.74	43.0633	24.634M	16.358	-0.3233
11/1/2014	43.08	43.1033	26.268M	16.533	-0.0233
10/31/2014	43.37	43.13	34.277M	16.936	0.24
10/29/2014	42.86	43.1995	31.171M	16.955	-0.3395
10/28/2014	43.16	43.5412	31.541M	17.086	-0.3812

10/27/2014	43.5785	43.8112	31.926M	17.011	-0.2327
10/26/2014	43.885	44.1183	27.764M	17.005	-0.2333
10/25/2014	43.97	44.29	29.688M	17.021	-0.32
10/23/2014	44.5	44.59	26.738M	17.428	-0.09
10/22/2014	44.4	44.7	30.725M	17.488	-0.3
10/21/2014	44.87	44.845	52.364M	18.497	0.025
10/20/2014	44.83	44.785	43.096M	18.539	0.045
10/19/2014	44.835	44.685	37.604M	18.574	0.15
10/17/2014	44.69	44.4333	43.407M	18.683	0.2567
10/16/2014	44.53	43.6867	82.18M	18.699	0.8433
10/15/2014	44.08	42.89	63.322M	18.653	1.19
10/14/2014	42.45	42.2267	28.759M	17.596	0.2233
10/13/2014	42.14	41.9717	21.883M	17.615	0.1683
10/11/2014	42.09	41.815	24.087M	17.615	0.275
10/10/2014	41.685	41.7117	21.857M	17.618	-0.0267
10/9/2014	41.67	41.8133	18.446M	17.819	-0.1433
10/8/2014	41.78	41.8567	31.218M	17.993	-0.0767
10/7/2014	41.99	41.8967	21.954M	18.057	0.0933
10/5/2014	41.8	41.8567	15.969M	18.116	-0.0567
10/4/2014	41.9	41.8233	20.209M	18.114	0.0767
10/3/2014	41.87	41.94	26.923M	18.135	-0.07
10/2/2014	41.7	41.89	30.805M	18.191	-0.19
9/30/2014	42.25	42	74.642M	18.045	0.25
9/29/2014	41.72	41.8317	23.604M	17.96	-0.1117
9/28/2014	42.03	41.9217	20.052M	17.899	0.1083
9/27/2014	41.745	41.805	26.518M	17.909	-0.06
9/26/2014	41.99	41.7267	18.744M	17.869	0.2633
9/24/2014	41.68	41.6133	47.765M	17.843	0.0667
9/23/2014	41.51	41.6133	19.838M	17.873	-0.1033
9/22/2014	41.65	41.61	27.097M	17.919	0.04
9/21/2014	41.68	41.47	22.519M	17.937	0.21
9/20/2014	41.5	41.1033	24.205M	17.996	0.3967
9/18/2014	41.23	40.89	26.311M	18.034	0.34
9/17/2014	40.58	40.85	29.823M	18.074	-0.27
9/16/2014	40.86	41.08	18.04M	18.039	-0.22
9/15/2014	41.11	41.2867	15.118M	19.128	-0.1767
9/14/2014	41.27	41.32	15.019M	19.592	-0.05
9/12/2014	41.48	41.0033	24.061M	19.573	0.4767
9/11/2014	41.21	40.6067	31.865M	19.619	0.6033
9/10/2014	40.32	40.4667	23.21M	19.321	-0.1467
9/9/2014	40.29	40.6733	18.071M	19.702	-0.3833

9/8/2014	40.79	40.69	18.504M	19.846	0.1
9/6/2014	40.94	40.43	34.576M	19.83	0.51
9/5/2014	40.34	40.18	19.894M	19.743	0.16
9/4/2014	40.01	40.1067	25.712M	19.742	-0.0967
9/3/2014	40.19	40.1367	26.161M	19.885	0.0533
9/1/2014	40.12	40.19	18.021M	19.89	-0.07
8/31/2014	40.1	40.0433	20.202M	20.381	0.0567
8/30/2014	40.35	39.9267	22.399M	20.662	0.4233
8/29/2014	39.68	39.7533	21.322M	21.181	-0.0733
8/28/2014	39.75	39.7267	24.537M	21.294	0.0233
8/26/2014	39.83	39.89	29.868M	21.328	-0.06
8/25/2014	39.6	40.0867	37.793M	21.564	-0.4867
8/24/2014	40.24	40.21	18.819M	21.393	0.03
8/23/2014	40.42	39.9767	27.005M	21.718	0.4433
8/22/2014	39.97	39.7167	22.787M	21.686	0.2533
8/20/2014	39.54	39.535	29.648M	21.654	0.005
8/19/2014	39.64	39.375	32.123M	21.652	0.265
8/18/2014	39.425	39.305	41.749M	21.636	0.12
8/17/2014	39.06	39.3933	27.112M	21.598	-0.3333
8/16/2014	39.43	39.7067	22.461M	21.586	-0.2767
8/14/2014	39.69	40.03	43.418M	21.642	-0.34
8/13/2014	40	40.3033	28.791M	21.614	-0.3033
8/12/2014	40.4	40.5933	35.464M	21.664	-0.1933
8/11/2014	40.51	40.43	29.637M	21.725	0.08
8/10/2014	40.87	40.2133	50.61M	21.656	0.6567
8/8/2014	39.91	39.82	56.884M	21.386	0.09
8/7/2014	39.86	39.8467	42.382M	21.4	0.0133
8/6/2014	39.69	39.8733	24.603M	21.55	-0.1833
8/5/2014	39.99	39.98	27.057M	21.588	0.01
8/4/2014	39.94	40.1167	22.222M	21.718	-0.1767
8/2/2014	40.01	40.0533	36.689M	21.887	-0.0433
8/1/2014	40.4	39.7767	30.616M	21.865	0.6233
7/31/2014	39.75	39.3797	33.979M	21.752	0.3703
7/30/2014	39.18	39.2497	32.007M	22.03	-0.0697
7/28/2014	39.209	39.6797	34.333M	22.203	-0.4707
7/27/2014	39.36	39.8833	45.961M	22.202	-0.5233
7/26/2014	40.47	40.03	27.399M	21.706	0.44
7/25/2014	39.82	39.83	35.92M	21.663	-0.01
7/24/2014	39.8	40.2267	37.56M	21.687	-0.4267
7/22/2014	39.87	40.7433	51.41M	21.732	-0.8733
7/21/2014	41.01	41.26	30.14M	21.153	-0.25



7/20/2014	41.35	41.2533	28.667M	21.1	0.0967
7/19/2014	41.42	40.9033	32.61M	21.133	0.5167
7/18/2014	40.99	40.2167	46.886M	21.118	0.7733
7/16/2014	40.3	39.8167	43.473M	21.069	0.4833
7/15/2014	39.36	39.83	35.369M	20.921	-0.47
7/14/2014	39.79	40.21	41.983M	20.849	-0.42
7/13/2014	40.34	40.3333	43.193M	20.715	0.0067
7/12/2014	40.5	40.33	46.098M	20.991	0.17
7/10/2014	40.16	39.92	80.732M	20.985	0.24
7/9/2014	40.33	39.7167	59.27M	20.991	0.6133
7/8/2014	39.27	38.9567	35.597M	20.543	0.3133
7/7/2014	39.55	38.4333	64.064M	20.745	1.1167
7/6/2014	38.05	37.88	20.48M	20.885	0.17
7/4/2014	37.7	37.9533	27.196M	21.08	-0.2533
7/3/2014	37.89	38.06	32.17M	21.142	-0.17
7/2/2014	38.27	38.0367	30.496M	21.066	0.2333
7/1/2014	38.02	37.9133	25.218M	21.058	0.1067
6/30/2014	37.82	37.9567	19.008M	21.043	-0.1367
6/28/2014	37.9	38.0533	26.597M	21.041	-0.1533
6/27/2014	38.15	38.2233	23.605M	21.022	-0.0733
6/26/2014	38.11	38.1	20.52M	23.182	0.01
6/25/2014	38.41	38.1667	26.868M	23.132	0.2433
6/24/2014	37.78	37.9833	29.727M	23.387	-0.2033
6/22/2014	38.31	37.88	41.217M	23.349	0.43
6/21/2014	37.86	37.6233	33.919M	23.274	0.2367
6/20/2014	37.47	37.5667	41.043M	23.217	-0.0967
6/19/2014	37.54	37.7367	30.868M	23.245	-0.1967
6/18/2014	37.69	37.8067	32.143M	23.237	-0.1167
6/16/2014	37.98	37.7467	38.031M	23.189	0.2333
6/15/2014	37.75	37.56	27.541M	23.216	0.19
6/14/2014	37.51	37.5167	29.794M	23.259	-0.0067
6/13/2014	37.42	37.55	32.84M	23.495	-0.13
6/11/2014	37.62	37.5667	42.987M	23.467	0.0533
6/10/2014	37.61	37.4183	37.648M	23.531	0.1917
6/9/2014	37.47	37.1483	27.056M	23.741	0.3217
6/8/2014	37.175	36.845	32.165M	23.713	0.33
6/7/2014	36.8	36.5133	26.782M	23.665	0.2867
6/5/2014	36.56	36.1867	33.348M	23.698	0.3733
6/4/2014	36.18	36.1167	35.381M	23.681	0.0633
6/3/2014	35.82	36.2167	55.841M	23.63	-0.3967
6/2/2014	36.35	36.89	55.527M	23.601	-0.54

6/1/2014	36.48	37.06	64.102M	23.616	-0.58
5/30/2014	37.84	37.12	93.191M	22.689	0.72
5/29/2014	36.86	36.5967	35.112M	22.358	0.2633
5/28/2014	36.66	36.32	52.79M	22.352	0.34
5/27/2014	36.27	36.3683	36.226M	22.755	-0.0983
5/26/2014	36.03	36.2967	44.486M	22.782	-0.2667
5/24/2014	36.805	36.2633	77.052M	22.532	0.5417
5/23/2014	36.055	36.0517	44.515M	22.288	0.0033
5/22/2014	35.93	36.16	21.965M	22.326	-0.23
5/21/2014	36.17	36.48	31.579M	22.344	-0.31
5/19/2014	36.38	36.6767	46.299M	22.317	-0.2967
5/18/2014	36.89	36.4767	38.036M	22.221	0.4133
5/17/2014	36.76	35.84	44.91M	22.521	0.92
5/16/2014	35.78	35.6	41.627M	22.232	0.18
5/15/2014	34.98	35.5167	45.924M	21.942	-0.5367
5/13/2014	36.04	35.7767	40.559M	21.272	0.2633
5/12/2014	35.53	35.9	36.52M	21.528	-0.37
5/11/2014	35.76	36.1	59.98M	22.993	-0.34
5/10/2014	36.41	36.4833	35.925M	22.782	-0.0733
5/9/2014	36.13	36.7333	43.615M	22.897	-0.6033
5/7/2014	36.91	37.16	31.135M	22.615	-0.25
5/6/2014	37.16	37.2867	30.644M	23.064	-0.1267
5/5/2014	37.41	37.33	17.506M	23.241	0.08
5/4/2014	37.29	37.34	16.29M	26.099	-0.05
5/2/2014	37.29	37.27	14.564M	26.387	0.02
5/1/2014	37.44	37.0467	17.615M	26.37	0.3933
4/30/2014	37.08	36.8333	14.243M	26.352	0.2467
4/29/2014	36.62	36.5567	25.129M	26.407	0.0633
4/27/2014	36.8	36.5433	62.65M	26.384	0.2567
4/26/2014	36.25	36.45	34.157M	26.481	-0.2
4/25/2014	36.58	36.6617	63.192M	26.423	-0.0817
4/24/2014	36.52	36.6983	45.688M	26.668	-0.1783
4/23/2014	36.885	36.9317	31.735M	26.607	-0.0467
4/21/2014	36.69	37.1733	40.074M	26.626	-0.4833
4/20/2014	37.22	37.6467	36.013M	26.806	-0.4267
4/19/2014	37.61	39.853M		26.822	
4/18/2014	38.11	37.829M		26.713	

verage

## Apple Excel Data

Date	Close price	moving avg	volume	difference of closing price and moving av
1/3/2017	116.15	116.2333	28.782M	-0.0833
12/30/2016	115.82	116.4367	30.586M	-0.6167
12/29/2016	116.73	116.9167	15.04M	-0.1867
12/28/2016	116.76	116.8467	20.906M	-0.0867
12/27/2016	117.26	116.69	18.297M	0.57
12/23/2016	116.52	116.6233	14.249M	-0.1033
12/22/2016	116.29	116.7667	26.086M	-0.4767
12/21/2016	117.06	116.8833	23.783M	0.1767
12/20/2016	116.95	116.52	21.425M	0.43
12/19/2016	116.64	116.1433	27.779M	0.4967
12/16/2016	115.97	115.66	44.351M	0.31
12/15/2016	115.82	115.4	46.525M	0.42
12/14/2016	115.19	114.56	34.032M	0.63
12/13/2016	115.19	114.1467	43.734M	1.0433
12/12/2016	113.3	113.1233	26.374M	0.1767
12/9/2016	113.95	112.3667	34.403M	1.5833
12/8/2016	112.12	111.0333	27.068M	1.0867
12/7/2016	111.03	110.03	29.999M	1
12/6/2016	109.95	109.6533	26.195M	0.2967
12/5/2016	109.11	109.5	34.325M	-0.39
12/2/2016	109.9	109.97	26.528M	-0.07
12/1/2016	109.49	110.49	37.087M	-1
11/30/2016	110.52	111.1833	36.162M	-0.6633
11/29/2016	111.46	111.6067	28.529M	-0.1467
11/28/2016	111.57	111.53	27.194M	0.04
11/25/2016	111.79	111.6067	11.476M	0.1833
11/23/2016	111.23	111.5867	27.426M	-0.3567
11/22/2016	111.8	111.1967	25.966M	0.6033
11/21/2016	111.73	110.58	29.265M	1.15
11/18/2016	110.06	110	28.429M	0.06
11/17/2016	109.95	109.0167	27.632M	0.9333
11/16/2016	109.99	107.6033	58.841M	2.3867
11/15/2016	107.11	107.0833	32.265M	0.0267
11/14/2016	105.71	107.31	51.176M	-1.6
11/11/2016	108.43	109.0333	34.144M	-0.6033
11/10/2016	107.79	109.91	57.135M	-2.12
11/9/2016	110.88	110.7833	59.176M	0.0967
11/8/2016	111.06	110.1033	24.254M	0.9567
11/7/2016	110.41	109.6933	32.56M	0.7167
11/4/2016	108.84	110.0867	30.837M	-1.2467

11/3/2016	109.83	110.97	26.933M	-1.14
11/2/2016	111.59	112.2067	28.332M	-0.6167
11/1/2016	111.49	112.9167	43.826M	-1.4267
10/31/2016	113.54	113.9133	26.419M	-0.3733
10/28/2016	113.72	114.5967	37.862M	-0.8767
10/27/2016	114.48	116.1067	34.562M	-1.6267
10/26/2016	115.59	117.1633	66.134M	-1.5733
10/25/2016	118.25	117.5	48.129M	0.75
10/24/2016	117.65	117.1033	23.539M	0.5467
10/21/2016	116.6	116.9267	23.193M	-0.3267
10/20/2016	117.06	117.2167	24.126M	-0.1567
10/19/2016	117.12	117.38	20.035M	-0.26
10/18/2016	117.47	117.55	24.553M	-0.08
10/17/2016	117.55	117.3867	23.625M	0.1633
10/14/2016	117.63	117.3167	35.652M	0.3133
10/13/2016	116.98	116.8733	35.192M	0.1067
10/12/2016	117.34	116.5633	37.587M	0.7767
10/11/2016	116.3	115.47	64.041M	0.83
10/10/2016	116.05	114.6667	36.236M	1.3833
10/7/2016	114.06	113.6667	24.358M	0.3933
10/6/2016	113.89	113.3133	28.779M	0.5767
10/5/2016	113.05	112.8567	21.453M	0.1933
10/4/2016	113	112.8567	29.737M	0.1433
10/3/2016	112.52	112.5833	21.702M	-0.0633
9/30/2016	113.05	113.06	36.379M	-0.01
9/29/2016	112.18	113.0733	35.887M	-0.8933
9/28/2016	113.95	113.3067	29.641M	0.6433
9/27/2016	113.09	112.8933	24.607M	0.1967
9/26/2016	112.88	113.4033	29.869M	-0.5233
9/23/2016	112.71	113.6267	52.481M	-0.9167
9/22/2016	114.62	113.9133	31.074M	0.7067
9/21/2016	113.55	113.5667	36.003M	-0.0167
9/20/2016	113.57	114.0233	34.514M	-0.4533
9/19/2016	113.58	114.69	47.023M	-1.11
9/16/2016	114.92	114.0867	79.887M	0.8333
9/15/2016	115.57	111.7633	90.613M	3.8067
9/14/2016	111.77	108.3867	112.34M	3.3833
9/13/2016	107.95	105.5067	62.176M	2.4433
9/12/2016	105.44	104.6967	45.293M	0.7433
9/9/2016	103.13	105.67	46.557M	-2.54
9/8/2016	105.52	107.1933	53.002M	-1.6733

9/7/2016	108.36	107.93	42.364M	0.43
9/6/2016	107.7	107.3867	26.88M	0.3133
9/2/2016	107.73	106.8533	26.802M	0.8767
9/1/2016	106.73	106.2767	26.702M	0.4533
8/31/2016	106.1	106.3067	29.662M	-0.2067
8/30/2016	106	106.5867	24.864M	-0.5867
8/29/2016	106.82	107.11	24.97M	-0.29
8/26/2016	106.94	107.5133	27.766M	-0.5733
8/25/2016	107.57	108.15	25.086M	-0.58
8/24/2016	108.03	108.4633	23.675M	-0.4333
8/23/2016	108.85	108.9067	21.258M	-0.0567
8/22/2016	108.51	108.9833	25.82M	-0.4733
8/19/2016	109.36	109.22	25.368M	0.14
8/18/2016	109.08	109.2267	21.985M	-0.1467
8/17/2016	109.22	109.36	25.356M	-0.14
8/16/2016	109.38	109.0133	33.794M	0.3667
8/15/2016	109.48	108.53	25.868M	0.95
8/12/2016	108.18	108.0367	18.66M	0.1433
8/11/2016	107.93	108.2467	27.485M	-0.3167
8/10/2016	108	108.3933	24.009M	-0.3933
8/9/2016	108.81	108.22	26.315M	0.59
8/8/2016	108.37	107.24	28.037M	1.13
8/5/2016	107.48	106.38	40.553M	1.1
8/4/2016	105.87	105.38	27.409M	0.49
8/3/2016	105.79	105.44	30.203M	0.35
8/2/2016	104.48	104.9133	33.817M	-0.4333
8/1/2016	106.05	104.8667	38.168M	1.1833
7/29/2016	104.21	103.8333	27.734M	0.3767
7/28/2016	104.34	101.32	39.87M	3.02
7/27/2016	102.95	98.9867	92.345M	3.9633
7/26/2016	96.67	97.5567	56.24M	-0.8867
7/25/2016	97.34	98.4767	40.383M	-1.1367
7/22/2016	98.66	99.35	28.314M	-0.69
7/21/2016	99.43	99.7533	32.702M	-0.3233
7/20/2016	99.96	99.8867	26.276M	0.0733
7/19/2016	99.87	99.4933	23.78M	0.3767
7/18/2016	99.83	99.1333	36.494M	0.6967
7/15/2016	98.78	98.1467	30.137M	0.6333
7/14/2016	98.79	97.6933	38.919M	1.0967
7/13/2016	96.87	97.09	25.892M	-0.22
7/12/2016	97.42	97.0267	24.167M	0.3933

7/11/2016	96.98	96.5333	23.795M	0.4467
7/8/2016	96.68	96.05	28.912M	0.63
7/7/2016	95.94	95.4867	25.131M	0.4533
7/6/2016	95.53	95.47	30.949M	0.06
7/5/2016	94.99	95.4933	27.705M	-0.5033
7/1/2016	95.89	95.2967	26.027M	0.5933
6/30/2016	95.6	94.53	35.836M	1.07
6/29/2016	94.4	93.3433	36.531M	1.0567
6/28/2016	93.59	93.01	40.445M	0.58
6/27/2016	92.04	93.8467	46.622M	-1.8067
6/24/2016	93.4	95.0167	75.311M	-1.6167
6/23/2016	96.1	95.8533	32.24M	0.2467
6/22/2016	95.55	95.52	29.219M	0.03
6/21/2016	95.91	95.4467	35.546M	0.4633
6/20/2016	95.1	95.9933	34.412M	-0.8933
6/17/2016	95.33	96.6733	61.008M	-1.3433
6/16/2016	97.55	97.3833	31.327M	0.1667
6/15/2016	97.14	97.3133	29.445M	-0.1733
6/14/2016	97.46	97.8767	31.932M	-0.4167
6/13/2016	97.34	98.6067	38.02M	-1.2667
6/10/2016	98.83	99.14	31.713M	-0.31
6/9/2016	99.65	99.2067	26.601M	0.4433
6/8/2016	98.94	98.8667	20.848M	0.0733
6/7/2016	99.03	98.5267	22.409M	0.5033
6/6/2016	98.63	98.09	23.293M	0.54
6/3/2016	97.92	98.0333	28.505M	-0.1133
6/2/2016	97.72	98.68	40.192M	-0.96
6/1/2016	98.46	99.5567	29.173M	-1.0967
5/31/2016	99.86	100.2067	42.307M	-0.3467
5/27/2016	100.35	100.1267	36.341M	0.2233
5/26/2016	100.41	99.31	56.331M	1.1
5/25/2016	99.62	97.9833	38.642M	1.6367
5/24/2016	97.9	96.5167	35.14M	1.3833
5/23/2016	96.43	95.2833	38.019M	1.1467
5/20/2016	95.22	94.66	32.026M	0.56
5/19/2016	94.2	94.0833	30.442M	0.1167
5/18/2016	94.56	93.9767	42.062M	0.5833
5/17/2016	93.49	92.63	46.917M	0.86
5/16/2016	93.88	91.58	61.26M	2.3
5/13/2016	90.52	91.1233	44.393M	-0.6033
5/12/2016	90.34	92.09	76.315M	-1.75



5/11/2016	92.51	92.9067	28.719M	-0.3967
5/10/2016	93.42	92.9767	33.687M	0.4433
5/9/2016	92.79	92.9167	32.936M	-0.1267
5/6/2016	92.72	93.3833	43.7M	-0.6633
5/5/2016	93.24	94.2033	35.891M	-0.9633
5/4/2016	94.19	94.3367	41.025M	-0.1467
5/3/2016	95.18	94.1867	56.831M	0.9933
5/2/2016	93.64	94.07	48.16M	-0.43
4/29/2016	93.74	95.4633	68.531M	-1.7233
4/28/2016	94.83	99	82.243M	-4.17
4/27/2016	97.82	102.4167	114.602M	-4.5967
4/26/2016	104.35	105.0367	56.016M	-0.6867
4/25/2016	105.08	105.5767	28.032M	-0.4967
4/22/2016	105.68	106.26	33.683M	-0.58
4/21/2016	105.97	106.67	31.553M	-0.7
4/20/2016	107.13	107.1733	30.611M	-0.0433
4/19/2016	106.91	108.08	32.385M	-1.17
4/18/2016	107.48	109.81	60.821M	-2.33
4/15/2016	109.85	111.33	46.939M	-1.48
4/14/2016	112.1	111.5267	25.474M	0.5733
4/13/2016	112.04	110.5	33.257M	1.54
4/12/2016	110.44	109.3733	27.232M	1.0667
4/11/2016	109.02	108.74	29.408M	0.28
4/8/2016	108.66	109.3867	23.582M	-0.7267
4/7/2016	108.54	109.77	31.802M	-1.23
4/6/2016	110.96	110.63	26.404M	0.33
4/5/2016	109.81	110.3067	26.579M	-0.4967
4/4/2016	111.12	110.0333	37.356M	1.0867
4/1/2016	109.99	109.5133	25.874M	0.4767
3/31/2016	108.99	108.7433	25.888M	0.2467
3/30/2016	109.56	107.4767	45.601M	2.0833
3/29/2016	107.68	106.18	31.19M	1.5
3/28/2016	105.19	105.6633	19.411M	-0.4733
3/24/2016	105.67	106.1733	26.133M	-0.5033
3/23/2016	106.13	106.2533	25.703M	-0.1233
3/22/2016	106.72	106.1833	32.444M	0.5367
3/21/2016	105.91	105.8767	35.503M	0.0333
3/18/2016	105.92	105.8967	44.205M	0.0233
3/17/2016	105.8	105.45	34.421M	0.35
3/16/2016	105.97	104.3567	38.303M	1.6133
3/15/2016	104.58	103.12	40.068M	1.46

3/14/2016	102.52	101.9833	25.076M	0.5367
3/11/2016	102.26	101.5167	27.408M	0.7433
3/10/2016	101.17	101.1067	33.514M	0.0633
3/9/2016	101.12	101.34	27.202M	-0.22
3/8/2016	101.03	101.97	31.562M	-0.94
3/7/2016	101.87	102.1267	35.916M	-0.2567
3/4/2016	103.01	101.7533	46.055M	1.2567
3/3/2016	101.5	100.9267	36.956M	0.5733
3/2/2016	100.75	99.3233	33.17M	1.4267
3/1/2016	100.53	98.0433	50.407M	2.4867
2/29/2016	96.69	96.7867	35.216M	-0.0967
2/26/2016	96.91	96.59	28.991M	0.32
2/25/2016	96.76	95.85	27.583M	0.91
2/23/2016	96.1	95.89	36.256M	0.21
2/22/2016	94.69	95.87	31.943M	-1.18
2/19/2016	96.88	96.3933	34.281M	0.4867
2/18/2016	96.04	96.8067	35.374M	-0.7667
2/17/2016	96.26	97.0067	39.021M	-0.7467
2/16/2016	98.12	96.25	44.863M	1.87
2/12/2016	96.64	94.7767	49.058M	1.8633
2/11/2016	93.99	93.9867	40.351M	0.0033
2/10/2016	93.7	94.32	50.075M	-0.62
2/9/2016	94.27	94.7567	42.344M	-0.4867
2/8/2016	94.99	94.6733	44.331M	0.3167
2/5/2016	95.01	95.21	54.021M	-0.2
2/4/2016	94.02	95.6567	46.418M	-1.6367
2/3/2016	96.6	95.81	46.472M	0.79
2/2/2016	96.35	95.7533	45.964M	0.5967
2/1/2016	94.48	96.0833	37.357M	-1.6033
1/29/2016	96.43	95.9533	40.944M	0.4767
1/28/2016	97.34	94.95	64.417M	2.39
1/27/2016	94.09	95.8333	55.679M	-1.7433
1/26/2016	93.42	97.6167	133.37M	-4.1967
1/25/2016	99.99	100.2833	75.077M	-0.2933
1/22/2016	99.44	99.0533	51.795M	0.3867
1/21/2016	101.42	98.17	65.8M	3.25
1/20/2016	96.3	96.5833	52.161M	-0.2833
1/19/2016	96.79	96.86	72.334M	-0.07
1/15/2016	96.66	97.77	53.088M	-1.11
1/14/2016	97.13	98.0133	79.834M	-0.8833
1/13/2016	99.52	98.9567	63.17M	0.5633

1/12/2016	97.39	98.6267	62.44M	-1.2367
1/11/2016	99.96	98.4833	49.154M	1.4767
1/9/2016	98.53	97.3133	49.739M	1.2167
1/8/2016	96.96	98.0367	70.798M	-1.0767
1/7/2016	96.45	99.9533	81.094M	-3.5033
1/6/2016	100.7	102.92	68.457M	-2.22
1/5/2016	102.71	104.44	55.791M	-1.73
1/3/2016	105.35	105.9767	67.649M	-0.6267
1/2/2016	105.26	107.1067	40.912M	-1.8467
1/1/2016	107.32	107.6267	25.214M	-0.3067
12/31/2015	108.74	107.8633	30.931M	0.8767
12/29/2015	106.82	107.82	26.704M	-1
12/28/2015	108.03	107.9567	13.597M	0.0733
12/27/2015	108.61	107.7233	32.657M	0.8867
12/26/2015	107.23	106.8633	32.789M	0.3667
12/24/2015	107.33	107.4467	47.591M	-0.1167
12/23/2015	106.03	108.7833	96.453M	-2.7533
12/22/2015	108.98	110.27	44.773M	-1.29
12/21/2015	111.34	111.4367	56.238M	-0.0967
12/20/2015	110.49	112.05	53.323M	-1.56
12/18/2015	112.48	113.9433	65.004M	-1.4633
12/17/2015	113.18	114.99	46.886M	-1.81
12/16/2015	116.17	116.6733	29.213M	-0.5033
12/15/2015	115.62	117.3767	46.361M	-1.7567
12/14/2015	118.23	118.5133	34.309M	-0.2833
12/12/2015	118.28	117.5033	32.084M	0.7767
12/11/2015	119.03	116.8367	57.777M	2.1933
12/10/2015	115.2	116.2733	41.57M	-1.0733
12/9/2015	116.28	117.3067	33.387M	-1.0267
12/8/2015	117.34	117.8167	34.852M	-0.4767
12/6/2015	118.3	118.0467	39.18M	0.2533
12/5/2015	117.81	118.24	13.046M	-0.43
12/4/2015	118.03	118.22	21.388M	-0.19
12/3/2015	118.88	118.6433	42.803M	0.2367
12/1/2015	117.75	118.61	32.483M	-0.86
11/30/2015	119.3	118.4567	34.287M	0.8433
11/29/2015	118.78	116.5867	43.296M	2.1933
11/28/2015	117.29	115.0517	46.675M	2.2383
11/27/2015	113.69	113.4017	27.617M	0.2883
11/25/2015	114.175	114.0783	38.107M	0.0967
11/24/2015	112.34	114.7233	45.812M	-2.3833

11/23/2015	115.72	116.2	32.526M	-0.48
11/22/2015	116.11	117.8167	45.218M	-1.7067
11/21/2015	116.77	119.4667	59.128M	-2.6967
11/19/2015	120.57	120.85	33.871M	-0.28
11/18/2015	121.06	121.3267	33.042M	-0.2667
11/17/2015	120.92	121.83	39.553M	-0.91
11/16/2015	122	121.9167	44.886M	0.0833
11/15/2015	122.57	121.0833	45.519M	1.4867
11/13/2015	121.18	120.4033	32.203M	0.7767
11/12/2015	119.5	119.7667	49.365M	-0.2667
11/11/2015	120.53	118.1167	51.227M	2.4133
11/10/2015	119.27	116.3667	85.551M	2.9033
11/9/2015	114.55	116.3033	69.884M	-1.7533
11/7/2015	115.28	116.62	66.334M	-1.34
11/6/2015	119.08	116.1133	59.367M	2.9667
11/5/2015	115.5	114.3433	41.654M	1.1567
11/4/2015	113.76	113.0867	42.327M	0.6733
11/3/2015	113.77	112.18	48.968M	1.59
11/1/2015	111.73	111.5433	29.759M	0.1867
10/31/2015	111.04	111.0367	39.233M	0.0033
10/30/2015	111.86	111.2867	37.673M	0.5733
10/29/2015	110.21	111.2	44.462M	-0.99
10/28/2015	111.79	111.8367	33.049M	-0.0467
10/26/2015	111.6	111.0733	30.467M	0.5267
10/25/2015	112.12	110.8	52.766M	1.32
10/24/2015	109.5	110.53	61.98M	-1.03
10/23/2015	110.78	110.9567	46.766M	-0.1767
10/22/2015	111.31	110.8233	48.857M	0.4867
10/20/2015	110.78	110.2467	52.065M	0.5333
10/19/2015	110.38	110.0867	58.02M	0.2933
10/18/2015	109.58	109.6467	63.929M	-0.0667
10/17/2015	110.3	110.6	66.473M	-0.3
10/16/2015	109.06	112.07	73.365M	-3.01
10/14/2015	112.44	114.05	52.109M	-1.61
10/13/2015	114.71	114.6767	56.152M	0.0333
10/12/2015	115	114.24	50.219M	0.76
10/11/2015	114.32	114.31	35.757M	0.01
10/10/2015	113.4	114.02	50.346M	-0.62
10/8/2015	115.21	114.1933	50.222M	1.0167
10/7/2015	113.45	114.5933	74.285M	-1.1433
10/6/2015	113.92	115.5367	64.113M	-1.6167

10/5/2015	116.41	116 37.173M	0.41
10/4/2015	116.28	115.2667 43.341M	1.0133
10/2/2015	115.31	114.03 58.363M	1.28
10/1/2015	114.21	112.31 49.915M	1.9
9/30/2015	112.57	111.6767 62.893M	0.8933
9/29/2015	110.15	110.5767 85.011M	-0.4267
9/27/2015	112.31	110.65 54.844M	1.66
9/26/2015	109.27	110.66 49.996M	-1.39
9/25/2015	110.37	110.1433 53.234M	0.2267
9/24/2015	112.34	110.94 61.889M	1.4
9/23/2015	107.72	111.2567 76.846M	-3.5367
9/21/2015	112.76	112.99 56.229M	-0.23
9/20/2015	113.29	111.9667 53.164M	1.3233
9/19/2015	112.92	108.7833 84.616M	4.1367
9/18/2015	109.69	105.5167 96.775M	4.1733
9/17/2015	103.74	104.2067 103.602M	-0.4667
9/15/2015	103.12	107.1767 162.206M	-4.0567
9/14/2015	105.76	111.14 128.275M	-5.38
9/13/2015	112.65	114.72 68.502M	-2.07
9/12/2015	115.01	116.2233 48.287M	-1.2133
9/11/2015	116.5	116.54 34.561M	-0.04
9/9/2015	117.16	116.09 40.885M	1.07
9/8/2015	115.96	115.45 42.93M	0.51
9/7/2015	115.15	114.6267 48.536M	0.5233
9/6/2015	115.24	116.15 101.686M	-0.91
9/5/2015	113.49	116.2433 97.083M	-2.7533
9/3/2015	119.72	116.79 54.952M	2.93
9/2/2015	115.52	115.35 38.67M	0.17
9/1/2015	115.13	115.0567 52.903M	0.0733
8/31/2015	115.4	116.16 99.313M	-0.76
8/30/2015	114.64	118.1267 124.139M	-3.4867
8/28/2015	118.44	120.7033 69.976M	-2.2633
8/27/2015	121.3	122.22 42.885M	-0.92
8/26/2015	122.37	122.9133 33.628M	-0.5433
8/25/2015	122.99	123.0467 37.012M	-0.0567
8/24/2015	123.38	123.55 33.618M	-0.17
8/22/2015	122.77	124.1433 44.456M	-1.3733
8/21/2015	124.5	124.96 42.162M	-0.46
8/20/2015	125.16	127.0433 50.999M	-1.8833
8/19/2015	125.22	129.3467 115.451M	-4.1267
8/18/2015	130.75	130.8133 76.756M	-0.0633

8/16/2015	132.07	130.0667	58.9M	2.0033
8/15/2015	129.62	128.3167	46.165M	1.3033
8/14/2015	128.51	126.98	36.222M	1.53
8/13/2015	126.82	126.03	33.649M	0.79
8/12/2015	125.61	124.85	31.768M	0.76
8/10/2015	125.66	123.0033	41.441M	2.6567
8/9/2015	123.28	121.9733	61.354M	1.3067
8/8/2015	120.07	122.7767	78.595M	-2.7067
8/7/2015	122.57	124.7533	60.762M	-2.1833
8/6/2015	125.69	126.0433	46.947M	-0.3533
8/4/2015	126	126.3467	28.06M	-0.3467
8/3/2015	126.44	126.155	27.211M	0.285
8/2/2015	126.6	125.5183	30.239M	1.0817
8/1/2015	125.425	125.5683	44.371M	-0.1433
7/30/2015	124.53	126.26	49.161M	-1.73
7/29/2015	126.75	127.4533	44.067M	-0.7033
7/28/2015	127.5	127.5467	31.938M	-0.0467
7/27/2015	128.11	127.5833	55.281M	0.5267
7/26/2015	127.03	127.08	30.269M	-0.05
7/24/2015	127.61	127.3633	34.039M	0.2467
7/23/2015	126.6	127.26	54.717M	-0.66
7/22/2015	127.88	127.5933	35.407M	0.2867
7/21/2015	127.3	127.2733	32.918M	0.0267
7/20/2015	127.6	127.23	31.494M	0.37
7/18/2015	126.92	127.56	43.989M	-0.64
7/17/2015	127.17	128.2133	36.886M	-1.0433
7/16/2015	128.59	128.2967	35.391M	0.2933
7/15/2015	128.88	128.0333	39.087M	0.8467
7/14/2015	127.42	127.9567	56.075M	-0.5367
7/12/2015	127.8	128.6033	52.675M	-0.8033
7/11/2015	128.65	129.3767	35.627M	-0.7267
7/10/2015	129.36	129.8133	38.45M	-0.4533
7/9/2015	130.12	130.205	30.984M	-0.085
7/8/2015	129.96	130.2583	33.668M	-0.2983
7/6/2015	130.535	130.865	32.113M	-0.33
7/5/2015	130.28	131.3683	50.884M	-1.0883
7/4/2015	131.78	131.1483	30.733M	0.6317
7/3/2015	132.045	131.4017	45.833M	0.6433
7/1/2015	129.62	131.1833	70.698M	-1.5633
6/30/2015	132.54	131.33	45.596M	1.21
6/29/2015	131.39	130.5067	39.73M	0.8833

6/28/2015	130.06	130.1067	36.455M	-0.0467
6/27/2015	130.07	129.6767	44.633M	0.3933
6/25/2015	130.19	129.3033	50.883M	0.8867
6/24/2015	128.77	127.91	38.208M	0.86
6/23/2015	128.95	126.9417	45.203M	2.0083
6/22/2015	126.01	126.065	34.694M	-0.055
6/21/2015	125.865	126.6017	48.16M	-0.7367
6/19/2015	126.32	126.4	42.036M	-0.08
6/18/2015	127.62	125.9633	55.55M	1.6567
6/17/2015	125.26	125.3567	43.941M	-0.0967
6/16/2015	125.01	126.5033	72.141M	-1.4933
6/15/2015	125.8	127.8167	49.271M	-2.0167
6/13/2015	128.7	127.6	50.988M	1.1
6/12/2015	128.95	127.58	58.513M	1.37
6/11/2015	125.15	128.1167	83.195M	-2.9667
6/10/2015	128.64	130.6167	63.386M	-1.9767
6/9/2015	130.56	131.1633	118.924M	-0.6033
6/7/2015	132.65	130.8667	96.954M	1.7833
6/6/2015	130.28	129.5233	44.526M	0.7567
6/5/2015	129.67	128.4	45.771M	1.27
6/4/2015	128.62	127.71	37.655M	0.91
6/3/2015	126.91	126.42	32.435M	0.49
6/1/2015	127.6	126.1733	47.054M	1.4267
5/31/2015	124.75	125.9	51.957M	-1.15
5/30/2015	126.17	126.4167	28.369M	-0.2467
5/29/2015	126.78	126.6433	28.97M	0.1367
5/28/2015	126.3	126.75	25.525M	-0.45
5/26/2015	126.85	126.8367	36.365M	0.0133
5/25/2015	127.1	126.42	40.188M	0.68
5/24/2015	126.56	126.0567	32.484M	0.5033
5/23/2015	125.6	126.32	37.329M	-0.72
5/22/2015	126.01	126.2267	35.012M	-0.2167
5/20/2015	127.35	125.64	37.194M	1.71
5/19/2015	125.32	124.6667	32.22M	0.6533
5/18/2015	124.25	125.0167	40.621M	-0.7667
5/17/2015	124.43	124.6833	42.091M	-0.2533
5/15/2015	126.37	124.62	47.1M	1.75
5/14/2015	123.25	123.6233	39.546M	-0.3733
5/13/2015	124.24	124.77	47.573M	-0.53
5/12/2015	123.38	125.76	51.655M	-2.38
5/11/2015	126.69	126.6	32.842M	0.09

5/9/2015	127.21	126.8683	37.71M	0.3417
5/8/2015	125.9	127.2883	68.695M	-1.3883
5/7/2015	127.495	127.6683	45.809M	-0.1733
5/6/2015	128.47	126.82	65.271M	1.65
5/5/2015	127.04	125.1933	51.023M	1.8467
5/3/2015	124.95	124.33	35.874M	0.62
5/2/2015	123.59	123.4267	51.827M	0.1633
5/1/2015	124.45	123.7333	48.363M	0.7167
4/30/2015	122.24	124.63	68.939M	-2.39
4/29/2015	124.51	126.0833	68.857M	-1.5733
4/27/2015	127.14	126.7167	88.528M	0.4233
4/26/2015	126.6	127.1833	72.842M	-0.5833
4/25/2015	126.41	128.1033	56.517M	-1.6933
4/24/2015	128.54	128.9967	31.666M	-0.4567
4/23/2015	129.36	128.97	37.816M	0.39
4/21/2015	129.09	129.3217	48.097M	-0.2317
4/20/2015	128.46	129.2217	62.015M	-0.7617
4/19/2015	130.415	130.4583	91.288M	-0.0433
4/18/2015	128.79	131.32	74.712M	-2.53
4/17/2015	132.17	131.555	69.228M	0.615
4/15/2015	133	130.315	70.974M	2.685
4/14/2015	129.495	128.8867	48.948M	0.6083
4/13/2015	128.45	128.3317	37.362M	0.1183
4/12/2015	128.715	127.875	44.892M	0.84
4/10/2015	127.83	127.1233	63.152M	0.7067
4/9/2015	127.08	126.14	54.272M	0.94
4/8/2015	126.46	124.4533	74.474M	2.0067
4/7/2015	124.88	122.2067	73.562M	2.6733
4/6/2015	122.02	120.2233	62.009M	1.7967
4/4/2015	119.72	119.53	38.89M	0.19
4/3/2015	118.93	119.4767	43.707M	-0.5467
4/2/2015	119.94	119.3833	42.246M	0.5567
4/1/2015	119.56	118.9467	70.15M	0.6133
3/31/2015	118.65	118.1467	51.916M	0.5033
3/29/2015	118.63	118.23	62.739M	0.4
3/28/2015	117.16	117.1233	83.745M	0.0367
3/27/2015	118.9	114.45	84.436M	4.45
3/26/2015	115.31	112.5167	146.477M	2.7933
3/25/2015	109.14	111.74	95.569M	-2.6
3/23/2015	113.1	112.8267	55.615M	0.2733
3/22/2015	112.98	111.6433	46.465M	1.3367



3/21/2015	112.4	110.2233	53.796M	2.1767
3/20/2015	109.55	108.0867	48.576M	1.4633
3/18/2015	108.72	107.1767	49.9M	1.5433
3/17/2015	105.99	107.5367	78.513M	-1.5467
3/16/2015	106.82	108.9467	60.014M	-2.1267
3/15/2015	109.8	109.7567	48.957M	0.0433
3/14/2015	110.22	110.4933	67.092M	-0.2733
3/12/2015	109.25	111.05	49.651M	-1.8
3/11/2015	112.01	110.55	53.7M	1.46
3/10/2015	111.89	108.6333	59.365M	3.2567
3/9/2015	107.75	106.7533	40.106M	0.9967
3/8/2015	106.26	107.28	65.797M	-1.02
3/6/2015	106.25	108.6533	64.285M	-2.4033
3/5/2015	109.33	110.7433	53.205M	-1.4133
3/4/2015	110.38	112.27	41.403M	-1.89
3/3/2015	112.52	113.4733	29.881M	-0.9533
3/1/2015	113.91	113.3033	27.599M	0.6067
2/28/2015	113.99	112.8467	33.721M	1.1433
2/27/2015	112.01	112.4967	14.48M	-0.4867
2/26/2015	112.54	112.42	26.028M	0.12
2/24/2015	112.94	112.4567	45.168M	0.4833
2/23/2015	111.78	111.28	88.43M	0.5
2/22/2015	112.65	109.6017	59.006M	3.0483
2/21/2015	109.41	108.1267	53.412M	1.2833
2/20/2015	106.745	108.2333	60.791M	-1.4883
2/18/2015	108.225	109.8583	67.218M	-1.6333
2/17/2015	109.73	111.1	56.028M	-1.37
2/16/2015	111.62	112.5633	41.472M	-0.9433
2/15/2015	111.95	112.8233	44.565M	-0.8733
2/14/2015	114.12	113.84	60.208M	0.28
2/12/2015	112.4	114.2967	57.665M	-1.8967
2/11/2015	115	115.4733	38.319M	-0.4733
2/10/2015	115.49	115.35	42.156M	0.14
2/9/2015	115.93	115.21	43.063M	0.72
2/8/2015	114.63	116.21	59.349M	-1.58
2/6/2015	115.07	117.6667	83.814M	-2.5967
2/5/2015	118.93	118.51	24.814M	0.42
2/4/2015	119	118.4083	40.832M	0.5917
2/3/2015	117.6	117.565	68.84M	0.035
2/1/2015	118.625	117.135	47.451M	1.49
1/31/2015	116.47	115.8167	57.179M	0.6533

1/30/2015	116.31	115.4833	43.396M	0.8267
1/29/2015	114.67	114.71	41.869M	-0.04
1/28/2015	115.47	114.5467	44.224M	0.9233
1/26/2015	113.99	113.6633	46.747M	0.3267
1/25/2015	114.18	112.75	44.064M	1.43
1/24/2015	112.82	111.2567	59.523M	1.5633
1/23/2015	111.25	109.9267	46.942M	1.3233
1/22/2015	109.7	109.18	27.442M	0.52
1/20/2015	108.83	108.8467	27.196M	-0.0167
1/19/2015	109.01	108.8567	33.692M	0.1533
1/18/2015	108.7	108.72	34.968M	-0.02
1/17/2015	108.86	108.9533	37.436M	-0.0933
1/16/2015	108.6	108.6667	41.574M	-0.0667
1/14/2015	109.4	108.1267	52.283M	1.2733
1/13/2015	108	107.44	44.639M	0.56
1/12/2015	106.98	107.02	40.655M	-0.04
1/11/2015	107.34	106.3967	52.688M	0.9433
1/10/2015	106.74	105.69	48.061M	1.05
1/8/2015	105.11	105.0533	34.188M	0.0567
1/7/2015	105.22	104.3467	47.054M	0.8733
1/6/2015	104.83	103.43	71.075M	1.4
1/5/2015	102.99	101.74	68.263M	1.25
1/4/2015	102.47	99.9667	94.624M	2.5033
1/2/2015	99.76	97.8967	77.517M	1.8633
1/1/2015	97.67	97.1567	68.18M	0.5133
12/31/2014	96.26	97.5167	72.155M	-1.2567
12/30/2014	97.54	98.7	100.934M	-1.16
12/29/2014	98.75	99.7633	63.689M	-1.0133
12/27/2014	99.81	100.52	53.583M	-0.71
12/26/2014	100.73	100.85	66.332M	-0.12
12/25/2014	101.02	100.19	77.377M	0.83
12/24/2014	100.8	99.7233	57.405M	1.0767
12/23/2014	98.75	99.33	42.094M	-0.58
12/21/2014	99.62	99.7133	37.051M	-0.0933
12/20/2014	99.62	99.5667	43.47M	0.0533
12/19/2014	99.9	99.9433	47.758M	-0.0433
12/18/2014	99.18	100.0133	51.491M	-0.8333
12/17/2014	100.75	100.5367	55.264M	0.2133
12/15/2014	100.11	99.5767	49.766M	0.5333
12/14/2014	100.75	100.1233	62.371M	0.6267
12/13/2014	97.87	100.7533	100.092M	-2.8833

12/12/2014	101.75	101.8167	60.172M	-0.0667
12/11/2014	102.64	101.5533	63.402M	1.0867
12/9/2014	101.06	101.27	52.788M	-0.21
12/8/2014	100.96	101.4433	70.902M	-0.4833
12/7/2014	101.79	101.41	37.299M	0.38
12/6/2014	101.58	101.3567	60.926M	0.2233
12/5/2014	100.86	101.3833	66.908M	-0.5233
12/3/2014	101.63	101.5733	61.317M	0.0567
12/2/2014	101.66	101.3633	64.097M	0.2967
12/1/2014	101.43	100.14	62.4M	1.29
11/30/2014	101	99.1167	100.87M	1.8833
11/29/2014	97.99	98.44	189.846M	-0.45
11/28/2014	98.36	98.4833	46.357M	-0.1233
11/27/2014	98.97	98.6767	58.457M	0.2933
11/26/2014	98.12	100.12	85.718M	-2
11/25/2014	98.94	101.58	125.421M	-2.64
11/24/2014	103.3	102.6833	53.564M	0.6167
11/23/2014	102.5	102.2933	44.595M	0.2067
11/22/2014	102.25	101.7563	68.46M	0.4937
11/21/2014	102.13	101.5197	52.369M	0.6103
11/20/2014	100.889	101.2497	33.152M	-0.3607
11/19/2014	101.54	101.1467	40.27M	0.3933
11/18/2014	101.32	100.8233	44.184M	0.4967
11/17/2014	100.58	100.56	33.478M	0.02
11/16/2014	100.57	100.0867	52.699M	0.4833
11/15/2014	100.53	99.2233	69.399M	1.3067
11/14/2014	99.16	98.2133	47.572M	0.9467
11/13/2014	97.98	97.5733	48.951M	0.4067
11/12/2014	97.5	96.9033	28.116M	0.5967
11/10/2014	97.24	96.4	31.916M	0.84
11/9/2014	95.97	95.5667	33.795M	0.4033
11/8/2014	95.99	95.07	36.585M	0.92
11/7/2014	94.74	94.7267	41.865M	0.0133
11/6/2014	94.48	94.8533	46.711M	-0.3733
11/4/2014	94.96	95.2233	38.558M	-0.2633
11/3/2014	95.12	95.6133	55.933M	-0.4933
11/2/2014	95.59	95.7733	39.958M	-0.1833
11/1/2014	96.13	96.6267	48.511M	-0.4967
10/31/2014	95.6	97.3767	56.843M	-1.7767
10/29/2014	98.15	98.5167	33.01M	-0.3667
10/28/2014	98.38	98.357	43.143M	0.023

10/27/2014	99.02	97.907	55.318M	1.113
10/26/2014	97.671	97.297	43.469M	0.374
10/25/2014	97.03	96.3133	45.729M	0.7167
10/23/2014	97.19	95.283	92.918M	1.907
10/22/2014	94.72	94.363	55.197M	0.357
10/21/2014	93.939	93.8196	39.079M	0.1194
10/20/2014	94.43	94.1	49.988M	0.33
10/19/2014	93.0899	94.3966	57.298M	-1.3067
10/17/2014	94.78	95.5167	53.502M	-0.7367
10/16/2014	95.32	95.6633	45.696M	-0.3433
10/15/2014	96.45	95.5683	42.81M	0.8817
10/14/2014	95.22	95.215	34.018M	0.005
10/13/2014	95.035	95.2583	39.686M	-0.2233
10/11/2014	95.39	95.5693	36.436M	-0.1793
10/10/2014	95.35	95.116	65.222M	0.234
10/9/2014	95.968	94.4927	56.468M	1.4753
10/8/2014	94.03	93.6767	22.892M	0.3533
10/7/2014	93.48	93.31	28.465M	0.17
10/5/2014	93.52	92.81	38.223M	0.71
10/4/2014	92.93	91.9367	49.589M	0.9933
10/3/2014	91.98	91.08	64.029M	0.9
10/2/2014	90.9	90.5133	32.629M	0.3867
9/30/2014	90.36	90.49	36.869M	-0.13
9/29/2014	90.28	90.6733	39.036M	-0.3933
9/28/2014	90.83	91.2	43.694M	-0.37
9/27/2014	90.91	91.65	100.898M	-0.74
9/26/2014	91.86	92.04	35.528M	-0.18
9/24/2014	92.18	92.1533	33.514M	0.0267
9/23/2014	92.08	91.8533	29.726M	0.2267
9/22/2014	92.2	91.9233	35.561M	0.2767
9/21/2014	91.28	92.4767	54.525M	-1.1967
9/20/2014	92.29	93.4667	54.749M	-1.1767
9/18/2014	93.86	93.9367	45.681M	-0.0767
9/17/2014	94.25	93.3914	62.777M	0.8586
9/16/2014	93.7	92.8009	75.415M	0.8991
9/15/2014	92.2243	92.2733	87.621M	-0.049
9/14/2014	92.4786	91.891	75.951M	0.5876
9/12/2014	92.1171	91.0005	83.871M	1.1166
9/11/2014	91.0771	90.4376	73.232M	0.6395
9/10/2014	89.8071	90.3348	92.338M	-0.5277
9/9/2014	90.4286	90.1138	141.005M	0.3148

9/8/2014	90.7686	89.7629	94.119M	1.0057
9/6/2014	89.1443	88.751	78.922M	0.3933
9/5/2014	89.3757	87.9538	87.217M	1.4219
9/4/2014	87.7329	87.0338	58.052M	0.6991
9/3/2014	86.7529	86.5852	50.219M	0.1677
9/1/2014	86.6157	86.4576	49.25M	0.1581
8/31/2014	86.3871	86.0386	58.709M	0.3485
8/30/2014	86.37	85.2819	79.439M	1.0881
8/29/2014	85.3586	84.7714	69.092M	0.5872
8/28/2014	84.1171	84.5929	57.712M	-0.4758
8/26/2014	84.8386	84.7838	41.601M	0.0548
8/25/2014	84.8229	84.3873	39.935M	0.4356
8/24/2014	84.69	84.1125	53.325M	0.5775
8/23/2014	83.6489	84.0887	72.899M	-0.4398
8/22/2014	83.9986	84.511	57.574M	-0.5124
8/20/2014	84.6186	85.1286	70.716M	-0.51
8/19/2014	84.9157	85.1405	93.641M	-0.2248
8/18/2014	85.8514	85.001	71.767M	0.8504
8/17/2014	84.6543	84.4833	47.879M	0.171
8/16/2014	84.4971	84.4714	61.052M	0.0257
8/14/2014	84.2986	84.5957	114.221M	-0.2971
8/13/2014	84.6186	83.7314	84.345M	0.8872
8/12/2014	84.87	82.5619	167.372M	2.3081
8/11/2014	81.7057	79.26	97.569M	2.4457
8/10/2014	81.11	77.3438	189.978M	3.7662
8/8/2014	74.9643	75.6009	98.735M	-0.6366
8/7/2014	75.957	75.61	50.664M	0.347
8/6/2014	75.8814	75.0057	45.669M	0.8757
8/5/2014	74.9914	74.3767	71.107M	0.6147
8/4/2014	74.1443	74.2214	53.733M	-0.0771
8/2/2014	73.9943	74.25	66.623M	-0.2557
8/1/2014	74.5257	74.5129	51.445M	0.0128
7/31/2014	74.23	74.9243	67.975M	-0.6943
7/30/2014	74.7829	75.1067	59.913M	-0.3238
7/28/2014	75.76	75.1062	51.543M	0.6538
7/27/2014	74.7771	75.1776	60.972M	-0.4005
7/26/2014	74.7814	75.9086	72.463M	-1.1272
7/25/2014	75.9743	76.8171	68.812M	-0.8428
7/24/2014	76.97	77.2852	40.648M	-0.3152
7/22/2014	77.5071	77.1876	45.105M	0.3195
7/21/2014	77.3786	76.9167	50.19M	0.4619

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