GRAPHICAL ANALYSIS OF HARD-TO-BORROW STOCKS

BY

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THESIS

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ABSTRACT

We study the graphical analysis for hard to borrow stocks i.e., stock with some constraints such as short selling. The main purpose of this graphical analysis was to introduce some algorithm for calculating the implied dividend yield curve for hard to borrow stocks using the dynamical programming. Implied dividend curve can be used to analyze the options which are hard to borrow. We used the python as our tool for dealing with the financial data taken from the yahoo finance, since it helps in minimizing the memory usage for the data storage. Our main interest was to work with hard to borrowsness for at the money options, but due to unavailability for these events we worked with in the money options since they are more crucial for the puts options. Put options have an early exercise for the American options, so considering the put options for in the money options are more interesting to analyze.
To my late Grand Mother, late Father and my beloved Mother
ACKNOWLEDGMENTS

First of all, I would like to express my sincere and deepest gratitude to my thesis advisor, Professor Richard B. Sowers, for his supervision, support, and encouragement, which gave me self-assurance to broaden my research interests.

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Chapter 1

Introduction

1.1 Motivation

The motivation for this analysis comes from Marco Avellaneda and Mike Lipkin’s (2009) presentation of dynamical modeling of hard to borrow stocks. Understanding the mechanism of hard to borrow stocks help to anticipate the future movement in the stock market and prepare the option trader to advance with better move. The theoretical approach discussing the restrictions on short selling’s were discussed by Diamond and Verrecchia (1987), while stock market equilibrium for short selling was studied by Nielsen (1989). Also the mispricing due to these short selling's were discussed by Lamont and Thaler (2003) and Lamont (2004). The previous work, which was done related to short selling’s, is in accordance with the model presented by Avellaneda and Lipkin (2009).

Short selling consists of borrowing shares of some stock that you do not own, selling them, and then expectedly purchase the shares at a lower price. So at end the short seller returned the borrowed shares to the original owner of the shares. In this process the short seller is expected to cash the difference between selling the borrowed shared at higher price and buying the same shares at lower price for return. It is important to note that for short selling you must borrow the stocks for the transaction to take place. There are restrictions on short selling in terms of availability of stocks and time. It is important to notice that when a clearing firm is left with specific amount of shares in their hand, then it restrict the short selling by applying some rules for future short selling which results in hard to borrowness.

Generally, hard-to-borrow stocks are subject to restrictions of short selling. If the market moves unexpectedly and the buyer of the option is forced to filled the position that he made short, then due to these buy-ins the market price increase artificially. Once the
short position is complete the market comes back to its original position resulting in an unexpected explosion in the trading market.

Our goal here is to give the graphical analysis for hard to borrow stocks using the dynamical data, which is collected several times within working market hours in order to count for the market movement during the day instead using only the end-of-day prices. We are trying to study At the Money (ATM) options, but considering ATM options as rare events we are interested in working with In the Money (ITM) options.

1.2 Several cases for HTBS

First of all, we will discuss some examples representing hard to borrow stocks that we wish to consider for graphical analysis. The Historical data is taken from Yahoo finance for the following companies:

- CALL (Magic Jack Vocal Tec Limited)
- LDK (LDK Solar Corporation Limited)
- STSI (Star Scientific Incorporation)
- SPY (SPDR S&P 500)

In Figure 1, we plot the Stock prices and volumes for the above-mentioned companies within a period of 01/01/2012 to 11/05/2012. In all of the above companies, we noticed that the stock prices moves downward, followed by sharp spikes up and then downward movements. Also during these abrupt changes in the prices there is an increase in the volume.

We will use the dynamical data for graphical analysis to explain the hard to borrow stocks contrary to using the end of the day data. The main advantage of this way is to depict the prices change behavior during the working hours of the stock exchange.
Figure 1.1:

(i) LDK from 01-01-2012 to 11-05-2012

(ii) STSI from 01-01-2012 to 11-05-2012
From figure 1.1 (i) we can see that the stock price is decreasing since the start of the year except for first few weeks. While for other companies (figure 1.1(ii)-(iv)) the stock price is increased during last 11 months. The price fluctuations also suggest that it’s very rare that the strike price will be equal to the strike price. So although we are looking for at-the-money option but since most of the time that is not the case, so we will be using in the money option for our graphical analysis. It is to be noted that SPY, in general, is not hard to borrow but we are just considering it to compare the result with the other companies.
1.3 Thesis Outline

In chapter 2, we will give a very brief description of the model presented by Avellaneda and Lipkin (2009) for hard to borrow stocks. We will also describe the HTBS model for calculating the implied dividend. We will use the modified definition for put-call parity for calculating the implied dividend. We will also discuss the graphical analysis considering in the money options.

In chapter 3, we will give the graphical analysis with the observations made by this analysis. We are interested in at the money options but these are rare events in real stock exchange, so we will discuss most of the time in the money option for our results. In chapter 4 we will conclude with the observations made in chapter 3. It is to be noted that all the results or observations made here depends on the date available on the yahoo finance. All the numerical codes for this dissertation are presented in the Appendix.
Chapter 2
Mathematical Model for hard to borrow stocks

2.1 Basic Model for Hard-to-Borrow Stocks

Avellaneda and Lipkin (2009) presented a fundamental model for hard to borrow stocks. First of all, we know that short interest rate and buy-in are linearly related. Let $S_t$ represents the stock price while $\lambda_t$ represent the buy-in rate at a particular instant $t$. Then the following model gives the relation b/w buy-ins and stock price:

$$\frac{dS_t}{S_t} = \sigma dW_t + \gamma \lambda_t dt - \gamma dN_{\lambda_t}(t)$$

$$dX_t = \kappa dZ_t + \alpha (X - X_t) dt + \beta \frac{dS_t}{S_t}, \quad X_t = \ln\left(\frac{S_t}{S_0}\right)$$

Here $dN_{\lambda_t}(t)$ represents the change in standard Poisson process during the observation interval $(t, t + dt)$ and with the intensity $\lambda$. Also $\gamma$ and $\sigma$ are measures of price elasticity and the volatility subject to the buy-ins. The second equation in the model represents the logarithm of buy-in rate movement with $Z_t$ representing the Brownian motion, $\alpha$, $\beta$ and $\kappa$ are date of change of mean-reversion, change in price with buy-in rate and volatility of the rate respectively. We use the implied dividend to study the hard to borrowness of the dynamic stocks that were described by Avellaneda and Lipkin (2009) and also discussed in another paper by Sowers and Lipkin (2012). The process $\lambda$ is anticipated to consider the cost of establishing a short delta position. Hard to borrow stocks are certainly changing more abruptly as compare to other stocks. Investors can benefit from decreases in the stock price by either shorting or purchasing a put, which in more precise words is equivalent to establishing a negative delta position in some way.

2.2 Implied Dividend and Hard-to-Borrowness:

In study of options theory, there are different ways to read hard-to-borrowness; we will prefer to use recognizable prices of calls and puts. One of the appropriate method is to use put-call parity relations for the calls and put options. Let $P$ and $C$ represent the call
and put options price for European options with a common strike price $K$ and time to expiry $T$. Now we consider the simple interest rate by which 1 dollar invested in an asset at time $t = 0$ moves to $1 + RT$ dollars at time $T$ and also the stock purchased becomes $1 + D_0 T$ shares at time $T$ (a naive dividend of $D_0$ shares per unit time). Now the relation between the put price $P$ and call price $C$ is given by:

$$C - P = \frac{S}{1 + D_0 T} - \frac{K}{1 + RT} \quad (2)$$

Also when $t = 0$

$$(S - K)^+ - (K - S)^+ = S - K \quad (3)$$

Now we know that a geometric series $\frac{1}{1-x}$ is convergent for $x < 1$. So we assume that $D_0 T \ll 1$ and $RT \ll 1$. Subtracting (3) from (2) yields

$$\{C - (S - K)^+\} - \{P - (K - S)^+\} = \left\{\frac{1}{1 + D_0 T} - 1\right\}S - \left\{\frac{1}{1 + RT} - 1\right\}K$$

$$\approx -SD_0 T + KRT \quad (4)$$

Since we have the following relations

$$C - \max(S - K, 0) = C - (S - K)^+$$

and

$$P - \max(K - S, 0) = P - (K - S)^+$$

representing the "premium over parity" for the options. Now solving for $D_0$ we obtain:

$$D_0 \approx D(C, P, S, K, R, T) \quad (5)$$

where

$$D_0 \approx D(c, p, s, k, r, t) = \frac{\{p - (k - s)^+\} - \{c - (s - k)^+\} + krt}{st} \quad - - - (a)$$

for all $c, p, s, k, r, t$ are belonging to $\mathbb{R}$ such that neither $s$ not $t$ is zero. Here $D$ represents implied dividend and it satisfies the put-call parity.

If we define $p_{pop} = \{p - (k - s)^+\}$ and $c_{pop} = \{c - (s - k)^+\}$ then equation (a) can be rewritten as

$$D_0 \approx D(c, p, s, k, r, t) = \frac{p_{pop} - c_{pop} + krt}{st} \quad - - - (b)$$

The implied dividend can be assumed as the cost of renting the stock in order to short it on some later stage. If there is some information suggesting that the stock will soon
decreases, many market participants/stock brokers are willing to borrow the stock in order to short it after some time. At that stage the amount charged by Broker for borrowing the stocks (implied dividend) increase until equilibrium is reached. Since puts are considered another way to have negative delta exposure, this same rate should affect the price of puts.

In this process the implied dividend can be described as:

\[
\lambda_t = D(C_t, P_t, S_t, K, R, T) \tag{6}
\]

where \( C_t, P_t, \) and \( S_t \) are the observable prices of the at-the-money calls and puts and the underlying. This makes the pair \((S, \lambda)\) observable in the market. Also \( S \) can be traded, so considering the suitable risk-neutral measure, \( S \) should be a martingale after appropriate discounting. In fact, there is a unique risk-neutral measure, which corresponds to (5).

Let \( P^A \) and \( P^B \) represents ask and bid price of the puts. We will use the average \((P^M)\) of these two in order to get a better approximation i.e.,

\[
P^M = \frac{(P^A + P^B)}{2}
\]

The premium over parity is then \( P^M - (K - S)^+ \). Now since the premium over parity for puts must be positive i.e., the price of the put cannot be less than its exercise value. So while solving (5), we thus take the premium over parity for the puts to be

\[
\max (P^M - (K - S)^+, 0)
\]

Now as in-the-money puts will makes the calls worthless so we have a similar result as for puts

\[
\max (C^M - (S - K)^+, 0)
\]

Using this we can rewrite (b) as:

\[
D_0 \approx D(c, p, s, k, r, t) = \frac{p^+_{pop} - c^+_{pop} + krt}{st} \tag{c}
\]

Since our data is taken during the trading times as contrary to the end of the day so we are expecting to count the effects of the day-time fluctuations of the stock market. Sometimes the ask and bid prices are not giving the better judgment due to fact that their average is not giving the right idea about the option price of the underlying asset.

For example for STSI, Nov 2012 ask and bid prices for calls are 0.05 and 0 while the end of the day price is 0.05. So using the average value of ask and bid will give a bias implied
dividend yield. It is to be noted that the companies with much bigger stock price will give more abrupt result as a result of missing values of ask or bid. For this reason, sometimes the plots that are used for drawing some predictions about the future contracts may not work in proper way as one expect.
Chapter 3
Graphical Analysis of hard to borrow stocks

3.1: Hard to borrowness for at the money option

The original model described in chapter 2 is true for at the money option. Although we are interested in calculating implied dividend for at the money options but from figure 1.1 we can observe that in most of the cases it is very hard to find at the money option for most of the stocks for the reason that we are dealing with dynamical data. We are able to find some of the cases where the option is at the money. This case will exhibit most explosive response to price changes in the stocks. In the figure 3.1 and figure 3.2 we can see that if we are calculating the dividend yield for first month than we are getting better result than second month. Since within a month our time is constant so only the numerator is changing which results in the behavior shown in figure 3.1.

Also from figure 3.3 we can see that calculating the implied dividend yield for the whole available data is more volatile than working within a month. From the implied dividend formula we can see that changing the expiration date is now playing its role in calculating the implied dividend yield. It is to be noted that while working within a month our time to expiry is constant and strike price is changing while dealing with the whole available data for a company strike price is constant and the time to expiry is changing. Here we are using interest rate of .3% per year. We take $S_t$ to be the stock obtained during the working period of the stock exchange and $T$ to be the number of trading days to expiry.
Fig 3.1: Implied Dividend Yield curve for STSI: November 2012, with S=3.0\$ (ATM), S=3.04\$ (ITM) and T=11 days

Fig 3.2: Implied Dividend Yield curve for STSI: December 2012, with S=3.0\$ (ATM), S=3.04\$ (ITM) and T=35 days
The tabular representation for figure 3.3 is given in Table 3.1, where we can see the effect of the price change for the at-the-money option. The last column gives an idea how much unpredictable implied dividend yield can be for this case. It also represents the volatility of the stocks for this company. We can see that as time increases the percentage change in the implied dividend yield decreases verifying that for long positions we have less effect on the option pricing than on short.

**Table 3.1: Comparison of implied dividend yield for ITM and ATM for STSI**

<table>
<thead>
<tr>
<th>Time to Expiry</th>
<th>Imp Div (ATM)</th>
<th>Imp Div (ITM)</th>
<th>% Change in Imp.Div</th>
</tr>
</thead>
<tbody>
<tr>
<td>11</td>
<td>38.48181818</td>
<td>444.913</td>
<td>1056.164</td>
</tr>
<tr>
<td>35</td>
<td>36.3</td>
<td>199.243</td>
<td>448.880</td>
</tr>
<tr>
<td>53</td>
<td>24.073458</td>
<td>123.856</td>
<td>414.490</td>
</tr>
<tr>
<td>72</td>
<td>41.13333</td>
<td>120.033</td>
<td>191.814</td>
</tr>
<tr>
<td>136</td>
<td>10.182352</td>
<td>54.543</td>
<td>435.665</td>
</tr>
<tr>
<td>304</td>
<td>5.826315789</td>
<td>8.204</td>
<td>40.806</td>
</tr>
</tbody>
</table>

Another reason for this behavior is that we are working with variable value of theta. Theta is used to measure that how much an option’s price can decay with passage of time. For at-the-money options the value of theta is highest while for in the money
options it decrease as well go deep into the money. From this analysis we can conclude that for ATM the dividend yield analysis is most explosive for the stocks data analysis. While for November the Implied dividend is greater than December because the time decay has more effect on the shorts as compare to longs. Remember that first two figures are taking constant time while third is for constant strike price.

3.2: Hard to borrowness for in the money option

Since at the money is considered to be a rare event so generally we are working with in the money options. In this case we are looking for slightly bigger strike price than the stock price. Another observation is that while working with the data if we are using the average value of the ask and bid for pricing the calls and puts option then sometimes we are not able to give better future prediction. The reason is that some of the values are missing so taking average of such values, we are not counting the effect of the both sides of an option i.e., lowest and highest values. For example on November 05, if we use the average value of ask and bid instead of using the last price of the calls and puts then, using

\[ C_{average} = \frac{C_{ask} + C_{bid}}{2} \]

and

\[ P_{average} = \frac{P_{ask} + P_{bid}}{2} \]

we can observe from table 3.2 that the implied dividend yield for earliest expiry is positive indicating that its hard to borrow and some broker may be interested in the exercise of the put option. Also for second month it is very small suggesting that for next expiry we may have to wait some more time to think about future options.

While if we analyze the same data using last price we have table 3.3 with same values of S, K and R. Here we can observe that the implied dividend for first month is negative suggesting that this option is not hard to borrow. While the next expiration have a good dividend yield value suggesting that it’s good to think about the second expiration for this stock.
Table 3.2: Implied dividend for CALL using mid-value of calls and puts, with S=20.4$, K=22.50$, R=0.3%

<table>
<thead>
<tr>
<th>C</th>
<th>P</th>
<th>Cpop</th>
<th>Ppop</th>
<th>T</th>
<th>Imp. Div. (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.25</td>
<td>2.5</td>
<td>0.25</td>
<td>0.4</td>
<td>8</td>
<td>23.493</td>
</tr>
<tr>
<td>1.2</td>
<td>3.35</td>
<td>1.2</td>
<td>1.25</td>
<td>32</td>
<td>2.261</td>
</tr>
<tr>
<td>2.7</td>
<td>5.51</td>
<td>2.7</td>
<td>3.05</td>
<td>89</td>
<td>5.189</td>
</tr>
<tr>
<td>3.65</td>
<td>6.25</td>
<td>3.65</td>
<td>4.15</td>
<td>157</td>
<td>4.265</td>
</tr>
</tbody>
</table>

Table 3.3: Implied dividend for CALL using last-price of calls and puts, with S=20.4$, K=22.50$, R=0.3%

<table>
<thead>
<tr>
<th>C</th>
<th>P</th>
<th>Cpop</th>
<th>Ppop</th>
<th>T</th>
<th>Imp. Div. (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.5</td>
<td>2.2</td>
<td>3.5</td>
<td>1.0</td>
<td>8</td>
<td>-38.272</td>
</tr>
<tr>
<td>1.0</td>
<td>3.5</td>
<td>1.0</td>
<td>1.4</td>
<td>32</td>
<td>15.772</td>
</tr>
<tr>
<td>2.6</td>
<td>5.2</td>
<td>2.6</td>
<td>3.1</td>
<td>89</td>
<td>7.270</td>
</tr>
<tr>
<td>3.6</td>
<td>6.2</td>
<td>3.6</td>
<td>4.1</td>
<td>157</td>
<td>4.265</td>
</tr>
</tbody>
</table>

Comparing the above two tables we can see that the decision of which one should be used is very crucial since it can take you to maximum profit or maximum loss. We represent the relation of these two on the same graph in figure 3.4. So if two different brokers are using these two different methods then their observations will be totally different. On the other hand although taking average of ask and bid is a plus in terms of considering the peaks of the stock value for a particular stock but at the same time it may lead to some wrong predictions about the future.

Since we know that theta used to calculate the price depreciation of a stock with passage of time so if we want to observe this for some stocks then we can observe the stock for some period of time and see the behavior whether its price for future may increase or decrease. Considering the option pricing for CALL, if we record the data for several dates then we can draw historical price evaluation. In figure 3.5 we are using the last price while for figure 3.6 we will be using the mid value for calculating price evaluation with passage of time. We can observe that the range for implied dividend yield is wider for mid price method than for last price method. We also observe the abrupt behavior for November 5 for figure 3.6. Since this range also depends upon the company current stock
price, so sometime it may lead to false predictions and results in unexpected losses which were not counted during the modeling of the company options.

**Fig 3.4:** Implied curve behavior for CALL using Last price and average price with $S=20.4\$, $K=22.50\$ and $R=0.3\%$.  

**Fig 3.5:** Implied dividend curve for CALL using Last price with $S=20.4\$, $K=22.50\$ and $R=0.3\%$.  

From this analysis we deduce that if some of the values are missing then either we should first find the missing values by some interpolation technique or should also consider other factors in order to minimize the risk. The data interpolation technique is only valid if the price for calls or puts is changing linearly. Otherwise we can use the statistical analysis for these prices to draw the best-fit line, which will represent the price changes in some equation form such as quadratic or cubic interpolation lines.
Chapter 4

Conclusion

In this graphical analysis, we discussed some cases for calculating in the money (ITM) and at the money (ATM) options for pricing hard to borrow stocks and calculating implied dividend curve. This graphical analysis is carried out using data from yahoo finance. Using this data we can give the analysis for ITM, ATM and OTM options for available stock companies. There are some limitations on using yahoo finance; like if the values are missing then our analysis may not work in the right way. We expect that if we have access to full data then we can predict the missing values and can give some data interpolation for all missing values. Also there are some restraints to the way we are calculating call and puts price using premium over parity relation. Since we are working with ITM options, so we are looking for slightly bigger strike price than stock price. So in some cases this may affect the calls and puts price calculations using premium over parity. For example if the stock price for a company A is 20.02$ and the slightly bigger strike price is 25$, then K-S is much bigger. In such cases we should use Near the Money options where we are looking for the smallest difference between stock and strike price. This may sometimes give better result but not always. When we are calculating the implied dividend then there are other factors which can not be ignored while investing for short selling’s as well. One of the factors is already discussed in chapter 3, namely theta that is the measurement of price decay for an option with passage of time. We also need to think about the hedging ratio, which is the ratio between change in price and its derivative.

We are also trying to develop a webpage where we can predict the stocks, which are hard to borrow by using the data from yahoo finance. This will be very helpful for observing the behavior of the stocks during the working hours since we can record different readings during a day and can read the behavior of the stock to predict next move. It still
depends upon the data which is available at yahoo finance, so in some cases the data may represent bias results if some of the values are not available for specific period of time and they becomes available after some time.
The future work for this project is on developing an algorithm, which can predict the missing values by some interpolation technique so that we can account all the possibilities before giving an analysis for some hard to borrow stocks. Also we are interested in looking for the stock price behavior with passage of time so that we can predict the price evaluation for future contracts using stock price along with considering all other option pricing factors such as time decay, delta, theta effects on the price etc.
Function calculating the number of working days for each expiry date

holidays = []
def count_holidays_inRange(fromdate, todate):
c = 0
for h in holidays:
    if (h >= fromdate) and (h <= todate):
c += 1
return c
fr = open('holidays.txt').read().split('
')
for dt in fr:
tmp = dt.split(' ')[0]
tmp = tmp.split('-')
holidays.append(date(int(tmp[0]), int(tmp[1]), int(tmp[2])))
today = date.today()
def finalDays(end_date):
    fromdate = date.today() # start date
todate = end_date  # end date
daygenerator = (fromdate + timedelta(x + 1) for x in xrange((todate - fromdate).days))
return (sum(1 for day in daygenerator if day.weekday() < 5) - count_holidays_inRange(fromdate, todate))
Appendix - B

Parsing of the data from yahoo finance

class MyHTMLParser(HTMLParser):
    def handle_data(self, data):
        if data.find(' ') == -1:
            dataStore.append(data)

parser = MyHTMLParser()
whole_months = {'January':1, 'February':2, 'March':3, 'April':4, 'May':5, 'June':6, 'July':7, 'August':8,
'September':9, 'October':10, 'November':11, 'December':12}
expiry_dates = []
fileNo = 0
for entry in months:
    full_url = '%s%s%s%s' %('http://finance.yahoo.com/q/os?s=', sys.argv[1], '&m=', entry)
    response = urllib2.urlopen(full_url)
    the_page = response.read()
    fileNo += 1
    tmp = the_page.split('Options Expiring')[1].split('<')[0].split(',')
    m = '%s %s %s' %(tmp[2], whole_months[tmp[1].split()[0]], tmp[1].split()[1])
    if int(whole_months[tmp[1].split()[0]]) < 10:
        m = '%s 0%s %s' %(tmp[2], whole_months[tmp[1].split()[0]], tmp[1].split()[1])
    expiry_dates.append(m.split())
    tmp = the_page.split('><a href="/q?s=")
    count = 0
    for line in tmp:
        if line.find(initials[entry]) <> -1:
            line = line.split('Highlighted')[0]
            parser.feed(line)
        if line.find('<td class="yfnc_h"') <> -1:
            dataStore.append('Yellow')
        else:
            dataStore.append('Non_Yellow')
        if line.find(patt) <> -1:
            S = float(line.split(patt)[1].split('<')[0])
Appendix -C

Data storage for arbitrary stock company

j = 0
while i < len(dataStore):
    if line.find(">") <> -1:
        line = line.split('>')[1]
    if line.find(sys.argv[1]) <> -1 and line[len(sys.argv[1]):].find('C') <> -1:
        call = []
        call.append(line)
        line = dataStore[i]
        i += 1
    while not (line.find(sys.argv[1]) <> -1 and line[len(sys.argv[1]):].find('C') <> -1):
        call.append(line)
        line = dataStore[i]
        i += 1
    if i == len(dataStore):
        call.append(line)
        break
if previous == "":
    previous = call[0][:(len(sys.argv[1])+4)]
call_index = 0
while call_index < len(call):
    if call[call_index] == 'N/A':
        call[call_index] = '0'
    call_index += 1
ch = 0
while ch < len(call):
    if call[ch].find( ',' ) <> -1:
        call[ch] = call[ch].replace( ',', '' )
    ch += 1
print call
C1.append(float(call[1]))
K1.append(float(call[7]))
P1.append(float(call[10]))
Yel.append(call[8])
T=results.get(reverse_initials[call[0][:(len(sys.argv[1])+4)])}
T1.append(T*252)
else:
    line = dataStore[i]
    i += 1
References


Richard Sowers., Xiao Li., and Mike Lipkin (2012), Dynamics of Bankrupt Stocks


Option Trading Pedia, www.optiontradingpedia.com