

ADL

September 29, 2021

1 Accumulation Distribution Line (ADL)

https://stockcharts.com/school/doku.php?id=chart_school:technical_indicators:accumulation_distribution_line

```
[1]: import numpy as np
import pandas as pd
import matplotlib.pyplot as plt

import warnings
warnings.filterwarnings("ignore")

# fix_yahoo_finance is used to fetch data
import fix_yahoo_finance as yf
yf.pdr_override()
```

```
[2]: # input
symbol = 'AAPL'
start = '2018-06-01'
end = '2019-01-01'

# Read data
df = yf.download(symbol, start, end)

# View Columns
df.head()
```

[*****100%*****] 1 of 1 downloaded

```
[2]:
```

	Open	High	Low	Close	Adj Close	\
Date						
2018-06-01	187.990005	190.259995	187.750000	190.240005	188.109222	
2018-06-04	191.639999	193.419998	191.350006	191.830002	189.681396	
2018-06-05	193.070007	193.940002	192.360001	193.309998	191.144821	
2018-06-06	193.630005	194.080002	191.919998	193.979996	191.807312	
2018-06-07	194.139999	194.199997	192.339996	193.460007	191.293152	

	Volume
Date	

```

2018-06-01  23442500
2018-06-04  26266200
2018-06-05  21566000
2018-06-06  20933600
2018-06-07  21347200

```

```

[3]: df['MF Multiplier'] = (2*df['Adj Close'] - df['Low'] - df['High'])/
      ↪(df['High']-df['Low'])
df['MF Volume'] = df['MF Multiplier']*df['Volume']
df['ADL'] = df['MF Volume'].cumsum()
df = df.drop(['MF Multiplier','MF Volume'],axis=1)

```

```

[4]: df['VolumePositive'] = df['Open'] < df['Adj Close']

```

```

[5]: fig = plt.figure(figsize=(14,10))
ax1 = plt.subplot(3, 1, 1)
ax1.plot(df['Adj Close'])
ax1.set_title('Stock ' + symbol + ' Closing Price')
ax1.set_ylabel('Price')
ax1.legend(loc='best')

ax2 = plt.subplot(3, 1, 2)
ax2.plot(df['ADL'], label='Accumulation Distribution Line')
ax2.grid()
ax2.legend(loc='best')
ax2.set_ylabel('Accumulation Distribution Line')

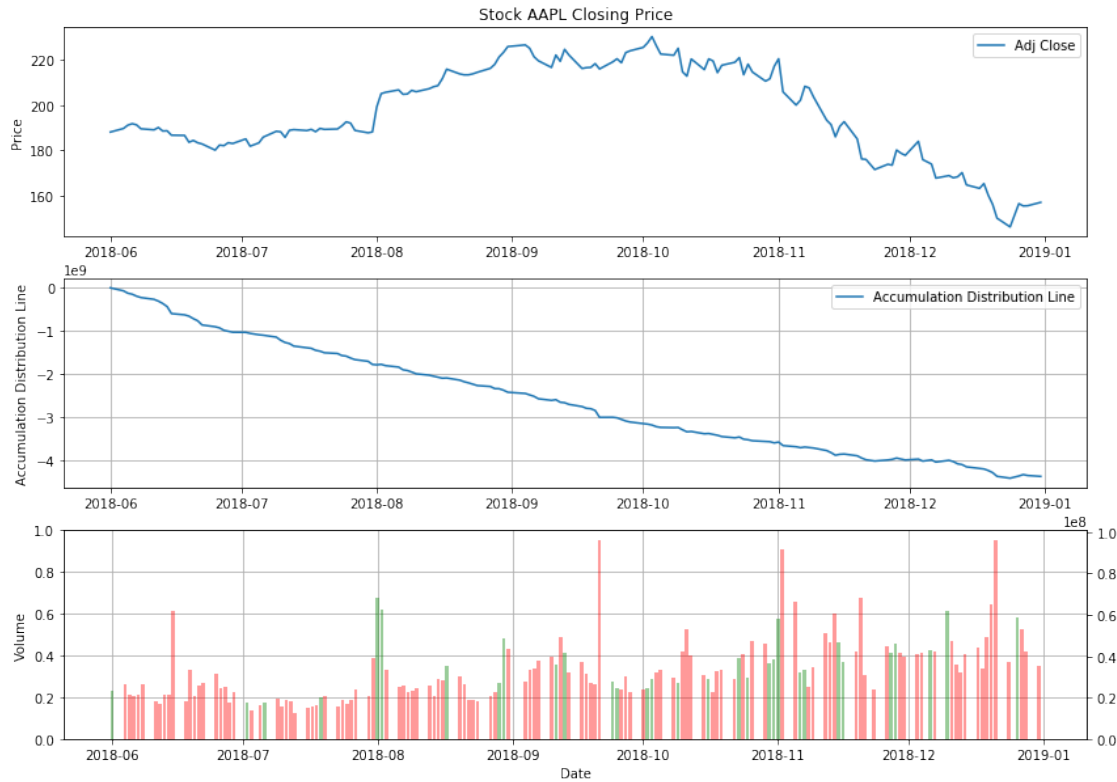
ax3 = plt.subplot(3, 1, 3)
ax3v = ax3.twinx()
colors = df.VolumePositive.map({True: 'g', False: 'r'})
ax3v.bar(df.index, df['Volume'], color=colors, alpha=0.4)
ax3.set_ylabel('Volume')
ax3.grid()
ax3.set_xlabel('Date')

```

```

[5]: Text(0.5,0,'Date')

```



1.1 Candlestick with ADL

```
[6]: from matplotlib import dates as mdates
import datetime as dt

dfc = df.copy()
dfc['VolumePositive'] = dfc['Open'] < dfc['Adj Close']
#dfc = dfc.dropna()
dfc = dfc.reset_index()
dfc['Date'] = mdates.date2num(dfc['Date'].astype(dt.date))
dfc.head()
```

```
[6]:
```

	Date	Open	High	Low	Close	Adj Close	\
0	736846.0	187.990005	190.259995	187.750000	190.240005	188.109222	
1	736849.0	191.639999	193.419998	191.350006	191.830002	189.681396	
2	736850.0	193.070007	193.940002	192.360001	193.309998	191.144821	
3	736851.0	193.630005	194.080002	191.919998	193.979996	191.807312	
4	736852.0	194.139999	194.199997	192.339996	193.460007	191.293152	

	Volume	ADL	VolumePositive
0	23442500	-1.673248e+07	True
1	26266200	-8.534478e+07	False

2	21566000	-1.400836e+08	False
3	20933600	-1.632014e+08	False
4	21347200	-2.085778e+08	False

```
[7]: from mpl_finance import candlestick_ohlc

fig = plt.figure(figsize=(14,10))
ax1 = plt.subplot(3, 1, 1)
candlestick_ohlc(ax1,dfc.values, width=0.5, colorup='g', colordown='r', alpha=1.
↪0)
ax1.xaxis_date()
ax1.xaxis.set_major_formatter(mdates.DateFormatter('%d-%m-%Y'))
ax1.grid(True, which='both')
ax1.minorticks_on()
ax1v = ax1.twinx()
colors = dfc.VolumePositive.map({True: 'g', False: 'r'})
ax1v.bar(dfc.Date, dfc['Volume'], color=colors, alpha=0.4)
ax1v.axes.yaxis.set_ticklabels([])
ax1v.set_ylim(0, 3*df.Volume.max())
ax1.set_title('Stock ' + symbol + ' Closing Price')
ax1.set_ylabel('Price')

ax2 = plt.subplot(3, 1, 2)
ax2.plot(df['ADL'], label='Accumulation Distribution Line')
ax2.grid()
ax2.legend(loc='best')
ax2.set_ylabel('Accumulation Distribution Line')

ax3 = plt.subplot(3, 1, 3)
ax3v = ax3.twinx()
colors = df.VolumePositive.map({True: 'g', False: 'r'})
ax3v.bar(df.index, df['Volume'], color=colors, alpha=0.4)
ax3.set_ylabel('Volume')
ax3.grid()
ax3.set_xlabel('Date')
```

```
[7]: Text(0.5,0,'Date')
```

