

# Chaikin\_Oscillator

September 29, 2021

## 1 Chaikin Oscillator

[https://stockcharts.com/school/doku.php?id=chart\\_school:technical\\_indicators:chaikin\\_oscillator](https://stockcharts.com/school/doku.php?id=chart_school:technical_indicators:chaikin_oscillator)

```
[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 = 'AMD'
start = '2016-01-01'
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	Volume
Date						
2016-01-04	2.77	2.82	2.63	2.77	2.77	32516800
2016-01-05	2.77	2.80	2.64	2.75	2.75	12972300
2016-01-06	2.66	2.71	2.47	2.51	2.51	23759400
2016-01-07	2.43	2.48	2.26	2.28	2.28	22203500
2016-01-08	2.36	2.42	2.10	2.14	2.14	31822400

```
[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['ADL_3_EMA'] = df['ADL'].
      ↪ewm(ignore_na=False,span=3,min_periods=2,adjust=True).mean()
df['ADL_10_EMA'] = df['ADL'].
      ↪ewm(ignore_na=False,span=10,min_periods=9,adjust=True).mean()
df['Chaikin_Oscillator'] = df['ADL_3_EMA'] - df['ADL_10_EMA']
df = df.drop(['ADL','ADL_3_EMA','ADL_10_EMA'],axis=1)
```

```
[5]: df.head(20)
```

```
[5]:
```

	Open	High	Low	Close	Adj Close	Volume	Chaikin_Oscillator
Date							
2016-01-04	2.77	2.82	2.63	2.77	2.77	32516800	NaN
2016-01-05	2.77	2.80	2.64	2.75	2.75	12972300	NaN
2016-01-06	2.66	2.71	2.47	2.51	2.51	23759400	NaN
2016-01-07	2.43	2.48	2.26	2.28	2.28	22203500	NaN
2016-01-08	2.36	2.42	2.10	2.14	2.14	31822400	NaN
2016-01-11	2.16	2.36	2.12	2.34	2.34	19623600	NaN
2016-01-12	2.40	2.46	2.28	2.39	2.39	17986100	NaN
2016-01-13	2.40	2.45	2.21	2.25	2.25	12749700	NaN
2016-01-14	2.29	2.35	2.21	2.21	2.21	15666600	-1.058306e+07
2016-01-15	2.10	2.13	1.99	2.03	2.03	21199300	-1.375160e+07
2016-01-19	2.08	2.11	1.90	1.95	1.95	18978900	-1.662890e+07
2016-01-20	1.81	1.95	1.75	1.80	1.80	29243600	-2.058159e+07
2016-01-21	1.82	2.18	1.81	2.09	2.09	26387900	-1.610417e+07
2016-01-22	2.11	2.17	1.98	2.02	2.02	16245500	-1.565080e+07
2016-01-25	2.01	2.15	2.01	2.12	2.12	13080900	-1.169038e+07
2016-01-26	2.14	2.15	2.03	2.07	2.07	11092900	-1.013741e+07
2016-01-27	2.08	2.18	2.07	2.13	2.13	10833200	-8.256568e+06
2016-01-28	2.16	2.17	2.07	2.08	2.08	7118400	-8.509615e+06
2016-01-29	2.09	2.20	2.07	2.20	2.20	11998100	-4.059779e+06
2016-02-01	2.17	2.19	2.11	2.14	2.14	8816100	-2.564649e+06

```
[6]: fig = plt.figure(figsize=(14,10))
ax1 = plt.subplot(2, 1, 1)
ax1.plot(df['Adj Close'])
ax1.set_title('Stock ' + symbol + ' Closing Price')
ax1.set_ylabel('Price')
ax1.legend(loc='best')

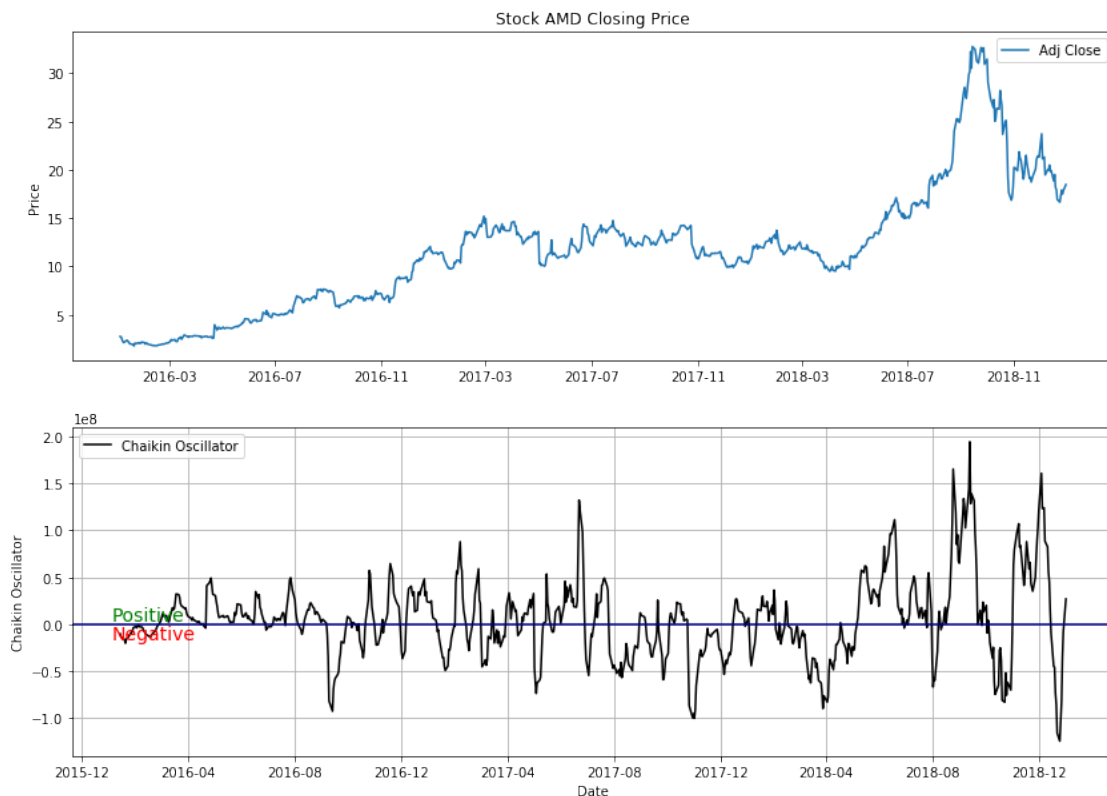
ax2 = plt.subplot(2, 1, 2)
ax2.plot(df['Chaikin_Oscillator'], label='Chaikin Oscillator', color='black')
ax2.axhline(y=0, color='darkblue')
```

```

ax2.text(s='Positive', x=df.index[0], y=1, verticalalignment='bottom',
        ↪fontsize=14, color='green')
ax2.text(s='Negative', x=df.index[0], y=1, verticalalignment='top',
        ↪fontsize=14, color='red')
ax2.grid()
ax2.legend(loc='best')
ax2.set_ylabel('Chaikin Oscillator')
ax2.set_xlabel('Date')

```

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



## 1.1 Candlestick with Chaikin Oscillator

```

[7]: 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()
```

```
[7]:
```

	Date	Open	High	Low	Close	Adj Close	Volume	Chaikin_Oscillator	\
0	735967.0	2.77	2.82	2.63	2.77	2.77	32516800	NaN	
1	735968.0	2.77	2.80	2.64	2.75	2.75	12972300	NaN	
2	735969.0	2.66	2.71	2.47	2.51	2.51	23759400	NaN	
3	735970.0	2.43	2.48	2.26	2.28	2.28	22203500	NaN	
4	735971.0	2.36	2.42	2.10	2.14	2.14	31822400	NaN	

```
VolumePositive
0      False
1      False
2      False
3      False
4      False
```

```
[8]: from mpl_finance import candlestick_ohlc

fig = plt.figure(figsize=(14,10))
ax1 = plt.subplot(2, 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*dfc.Volume.max())
ax1.set_title('Stock ' + symbol + ' Closing Price')
ax1.set_ylabel('Price')

ax2 = plt.subplot(2, 1, 2)
ax2.plot(df['Chaikin_Oscillator'], label='Chaikin Oscillator', color='black')
ax2.axhline(y=0, color='darkblue')
ax2.text(s='Positive', x=dfc.Date[0], y=1, verticalalignment='bottom',
    ↪fontsize=14, color='green')
ax2.text(s='Negative', x=dfc.Date[0], y=1, verticalalignment='top',
    ↪fontsize=14, color='red')
ax2.grid()
ax2.legend(loc='best')
ax2.set_ylabel('Chaikin Oscillator')
ax2.set_xlabel('Date')
```

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

