

# Coppock\_Curve

September 29, 2021

## 1 Coppock Curve

[https://stockcharts.com/school/doku.php?id=chart\\_school:technical\\_indicators:coppock\\_curve](https://stockcharts.com/school/doku.php?id=chart_school:technical_indicators:coppock_curve)

```
[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 = '2017-01-01'
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	\
Date						
2017-01-03	115.800003	116.330002	114.760002	116.150002	111.709831	
2017-01-04	115.849998	116.510002	115.750000	116.019997	111.584778	
2017-01-05	115.919998	116.860001	115.809998	116.610001	112.152229	
2017-01-06	116.779999	118.160004	116.470001	117.910004	113.402542	
2017-01-09	117.949997	119.430000	117.940002	118.989998	114.441246	

	Volume
Date	

```

2017-01-03  28781900
2017-01-04  21118100
2017-01-05  22193600
2017-01-06  31751900
2017-01-09  33561900

```

```

[3]: n = [11,14]
     for nd in n:
         df['ROC_'+str(nd)] = ((df['Adj Close'] - df['Adj Close'].shift(nd))/df['Adj
         ↪Close'].shift(nd)) * 100

```

```

[4]: df['COPP'] = (df['ROC_14']+df['ROC_11']).
     ↪ewm(ignore_na=False,span=10,min_periods=10,adjust=True).mean()

```

```

[5]: fig = plt.figure(figsize=(14,10))
     ax1 = plt.subplot(4, 1, 1)
     ax1.plot(df['Adj Close'])
     ax1.set_title('Stock ' + symbol + ' Closing Price')
     ax1.set_ylabel('Price')

     ax2 = plt.subplot(4, 1, 2)
     ax2.plot(df['COPP'], label='Coppock Curve', color='black')
     ax2.axhline(y=0, color='red')
     ax2.grid()
     ax2.set_ylabel('Coppock Curve')
     ax2.legend(loc='best')

     ax3 = plt.subplot(4, 1, 3)
     ax3.plot(df['ROC_11'], label='ROC 11', color='black')
     ax3.axhline(y=0, color='red')
     ax3.grid()
     ax3.set_ylabel('11 Month Rate-of-Change')
     ax3.legend(loc='best')

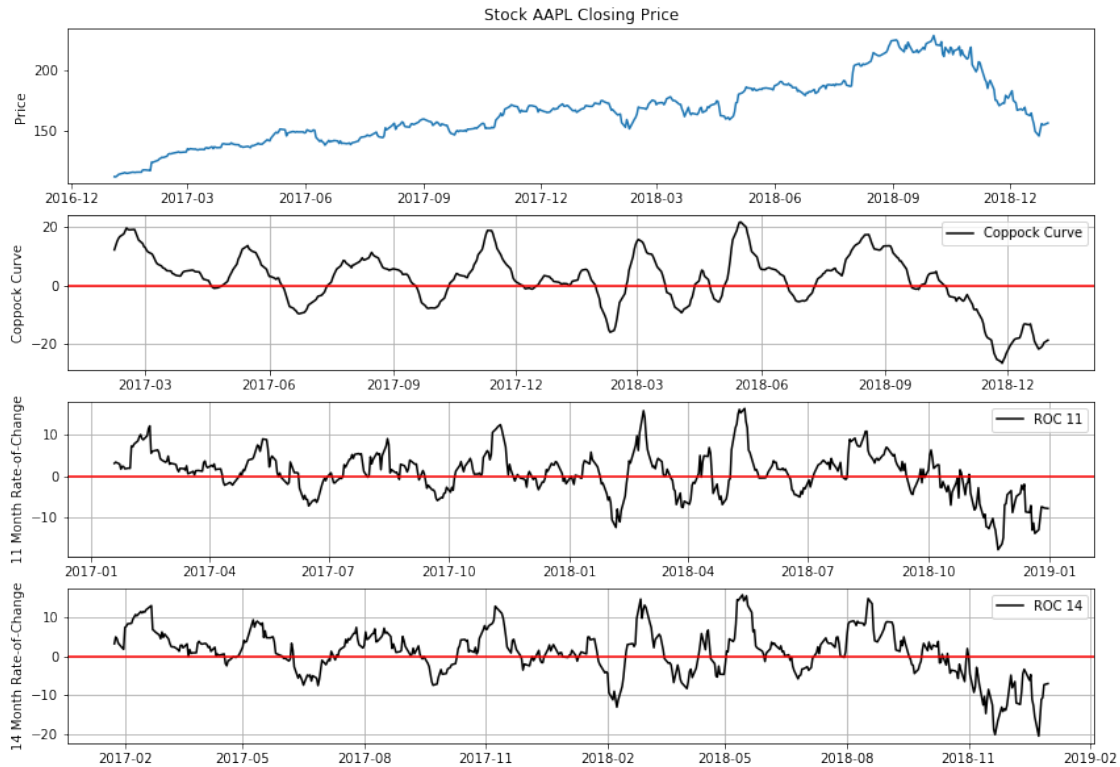
     ax4 = plt.subplot(4, 1, 4)
     ax4.plot(df['ROC_14'], label='ROC 14', color='black')
     ax4.axhline(y=0, color='red')
     ax4.grid()
     ax4.set_ylabel('14 Month Rate-of-Change')
     ax4.legend(loc='best')

```

```

[5]: <matplotlib.legend.Legend at 0x2537b6e1978>

```



## 1.1 Candlestick with Coppock Curve

```
[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	736332.0	115.800003	116.330002	114.760002	116.150002	111.709831	
1	736333.0	115.849998	116.510002	115.750000	116.019997	111.584778	
2	736334.0	115.919998	116.860001	115.809998	116.610001	112.152229	
3	736335.0	116.779999	118.160004	116.470001	117.910004	113.402542	
4	736338.0	117.949997	119.430000	117.940002	118.989998	114.441246	

	Volume	ROC_11	ROC_14	COPP	VolumePositive
0	28781900	NaN	NaN	NaN	False
1	21118100	NaN	NaN	NaN	False

2	22193600	NaN	NaN	NaN	False
3	31751900	NaN	NaN	NaN	False
4	33561900	NaN	NaN	NaN	False

```
[7]: from mpl_finance import candlestick_ohlc

fig = plt.figure(figsize=(14,10))
ax1 = plt.subplot(4, 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(4, 1, 2)
ax2.plot(df['COPP'], label='Coppock Curve', color='black')
ax2.axhline(y=0, color='red')
ax2.grid()
ax2.set_ylabel('Coppock Curve')
ax2.legend(loc='best')

ax3 = plt.subplot(4, 1, 3)
ax3.plot(df['ROC_11'], label='ROC 11', color='black')
ax3.axhline(y=0, color='red')
ax3.grid()
ax3.set_ylabel('11 Month Rate-of-Change')
ax3.legend(loc='best')

ax4 = plt.subplot(4, 1, 4)
ax4.plot(df['ROC_14'], label='ROC 14', color='black')
ax4.axhline(y=0, color='red')
ax4.grid()
ax4.set_ylabel('14 Month Rate-of-Change')
ax4.legend(loc='best')
```

```
[7]: <matplotlib.legend.Legend at 0x2537d5f6f28>
```

