

VPT

September 29, 2021

1 Volume Price Trend (VPT)

https://en.wikipedia.org/wiki/Volume%E2%80%93price_trend

```
[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 = '2018-08-01'
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						
2018-08-01	199.130005	201.759995	197.309998	201.500000	198.478760	
2018-08-02	200.580002	208.380005	200.350006	207.389999	204.280457	
2018-08-03	207.029999	208.740005	205.479996	207.990005	204.871445	
2018-08-06	208.000000	209.250000	207.070007	209.070007	205.935257	
2018-08-07	209.320007	209.500000	206.759995	207.110001	204.004639	

	Volume
Date	

```

2018-08-01    67935700
2018-08-02    62404000
2018-08-03    33447400
2018-08-06    25425400
2018-08-07    25587400

```

```

[3]: vpt = df['Volume'] * ((df['Adj Close'] - df['Adj Close'].shift(1)) / df['Adj
      ↪Close'].shift(1))
      vpt = vpt.shift(1) + vpt
      vpt = vpt.replace([np.inf, -np.inf], np.nan).fillna(0)
      df['VPT'] = pd.Series(vpt)

```

```

[4]: df.head()

```

```

[4]:          Open          High          Low          Close  Adj Close  \
Date
2018-08-01  199.130005  201.759995  197.309998  201.500000  198.478760
2018-08-02  200.580002  208.380005  200.350006  207.389999  204.280457
2018-08-03  207.029999  208.740005  205.479996  207.990005  204.871445
2018-08-06  208.000000  209.250000  207.070007  209.070007  205.935257
2018-08-07  209.320007  209.500000  206.759995  207.110001  204.004639

```

```

          Volume          VPT
Date
2018-08-01  67935700  0.000000e+00
2018-08-02  62404000  0.000000e+00
2018-08-03  33447400  1.920884e+06
2018-08-06  25425400  2.287876e+05
2018-08-07  25587400 -1.078553e+05

```

```

[5]: 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')

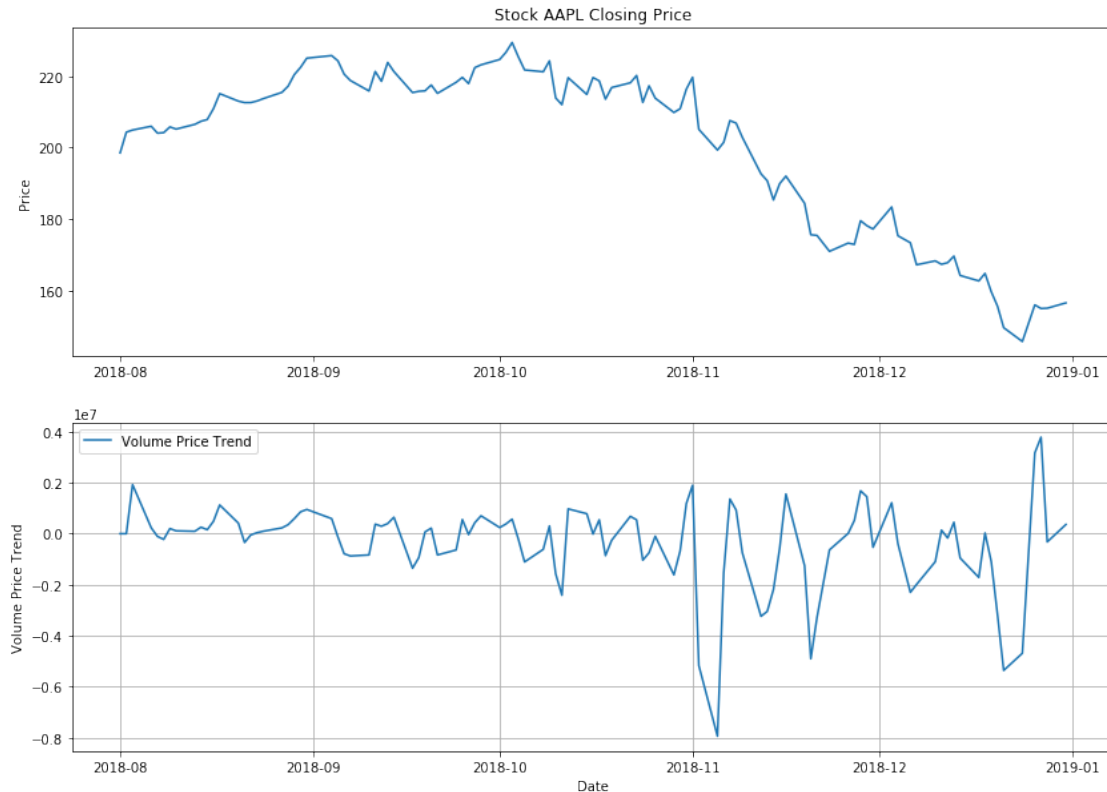
      ax2 = plt.subplot(2, 1, 2)
      ax2.plot(df['VPT'], label='Volume Price Trend')
      ax2.grid()
      ax2.legend(loc='best')
      ax2.set_ylabel('Volume Price Trend')
      ax2.set_xlabel('Date')

```

```

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

```



1.1 Candlestick with Volume Price Trend

```
[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	736907.0	199.130005	201.759995	197.309998	201.500000	198.478760	
1	736908.0	200.580002	208.380005	200.350006	207.389999	204.280457	
2	736909.0	207.029999	208.740005	205.479996	207.990005	204.871445	
3	736912.0	208.000000	209.250000	207.070007	209.070007	205.935257	
4	736913.0	209.320007	209.500000	206.759995	207.110001	204.004639	

	Volume	VPT	VolumePositive
0	67935700	0.000000e+00	False

1	62404000	0.000000e+00	True
2	33447400	1.920884e+06	False
3	25425400	2.287876e+05	False
4	25587400	-1.078553e+05	False

```
[7]: 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*df.Volume.max())
ax1.set_title('Stock ' + symbol + ' Closing Price')
ax1.set_ylabel('Price')

ax2 = plt.subplot(2, 1, 2)
ax2.plot(df['VPT'], label='Volume Price Trend')
ax2.grid()
ax2.legend(loc='best')
ax2.set_ylabel('Volume Price Trend')
ax2.set_xlabel('Date')
```

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

