Stock_Tail_Ratio_Chart

September 29, 2021

1 Stock Tail Ratio Chart

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

import warnings
warnings.filterwarnings("ignore")

from pandas_datareader import data as pdr
import yfinance as yf
yf.pdr_override()
```

[2]:
```
start = '2016-01-01' #input
end = '2020-07-01' #input
symbol = 'AMD'
```

[3]:
```
df = yf.download("AMD", start, end)
```

```
[**********************100%**********************]  1 of 1 completed
```

[4]:
```
returns = df['Adj Close'].pct_change()[1:].dropna()
```

[5]:
```
# risk free
rf = yf.download('BIL', start=start, end=end)['Adj Close'].pct_change()[1:]
```

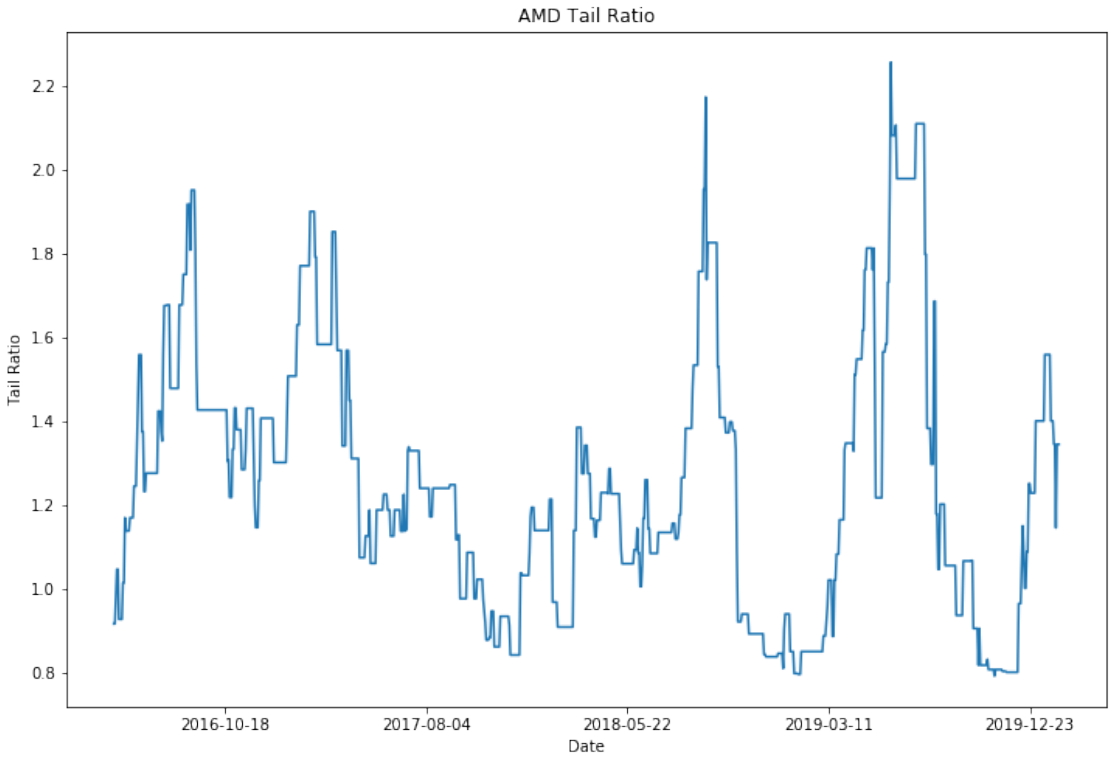
```
[**********************100%**********************]  1 of 1 completed
```

[6]:
```
def tail_ratio(stock_returns):
    tailRatio = np.percentile(stock_returns, 95) / abs(np.
 ↪percentile(stock_returns, 5))
    return tailRatio
```

[7]:
```
# Compute the running Tail ratio
running = [tail_ratio(returns[i-90:i]) for i in range(90, len(returns))]
```

```
# Plot running Tail ratio up to 100 days before the end of the data set
_, ax1 = plt.subplots(figsize=(12,8))
ax1.plot(range(90, len(returns)-100), running[:-100])
ticks = ax1.get_xticks()
ax1.set_xticklabels([df['Adj Close'].index[int(i)].date() for i in ticks[:-1]])␣
 ↪# Label x-axis with dates
plt.title(symbol + ' Tail Ratio')
plt.xlabel('Date')
plt.ylabel('Tail Ratio')
```

[7]: Text(0, 0.5, 'Tail Ratio')



[8]:
```
tail_ratio(returns)
```

[8]: 1.2047832234037397