Stock_Standard_Deviation_Chart

September 29, 2021

1 Stock Standard Deviation Chart

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

     import warnings
     warnings.filterwarnings("ignore")

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

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

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

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

```python
[4]: returns = df['Adj Close'].pct_change()[1:].dropna()
```
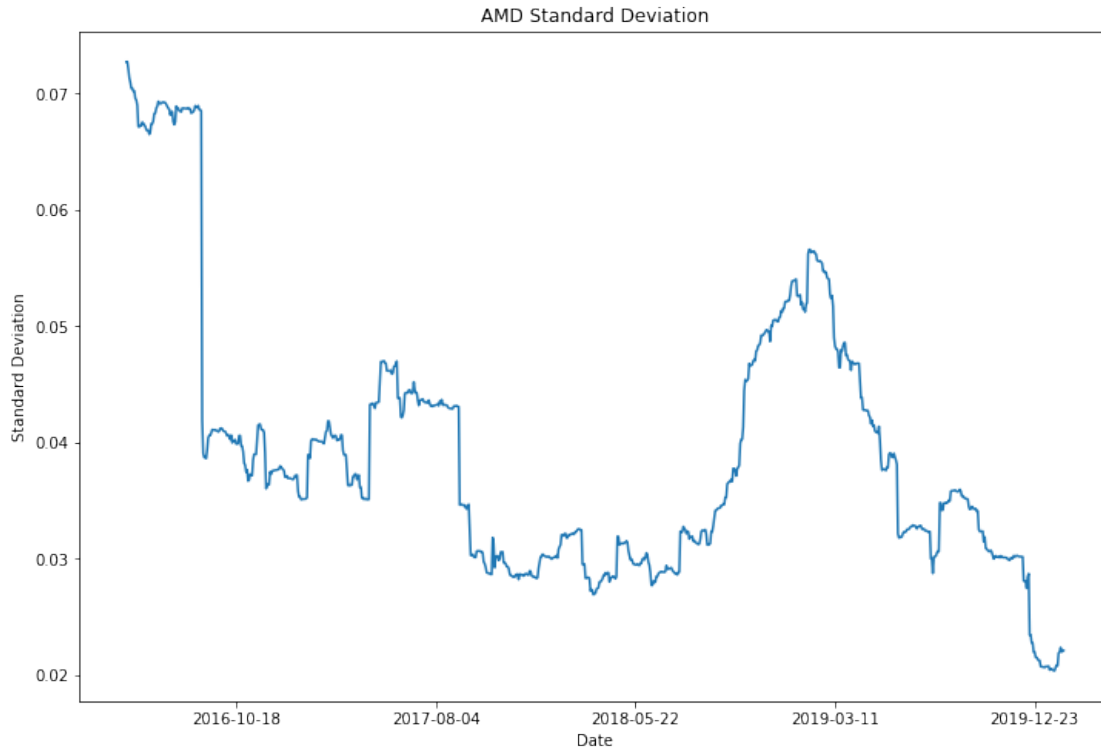
```python
[5]: def std(returns):
         stock_std = returns.std()
         return stock_std
```

```python
[6]: # Compute the running Standard Deviation
     running = [std(returns[i-90:i]) for i in range(90, len(returns))]

     # Plot running Standard Deviation 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.index[int(i)].date() for i in ticks[:-1]]) # Label␣
      ↪x-axis with dates
```

```
plt.title(symbol + ' Standard Deviation')
plt.xlabel('Date')
plt.ylabel('Standard Deviation')
```

[6]: Text(0, 0.5, 'Standard Deviation')

[7]: ```
sd = std(returns)
sd
```

[7]: 0.041731775238352885

[8]: ```
running = [std(returns[i-90:i]) for i in range(90, len(returns))]
running
```

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