Stock_Martin_Ratio_Chart

September 29, 2021

1 Stock Martin Ratio Chart

[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()
```

[2]:
```
start = '2019-01-01' #input
end = '2020-07-01' #input
symbol = 'AMD' #input
```

[3]:
```
stock = yf.download(symbol, start=start, end=end)
```

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

[4]:
```
returns = stock.pct_change().dropna()
```

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

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

[8]:
```
def martin_ratio(returns, rf):
    max14 = stock['Adj Close'].rolling(window=14,min_periods=1).max()
    drawdown_percent = 100*((stock['Adj Close']-max14)/max14)
    avg_sq = round(drawdown_percent * drawdown_percent, 2)
    Ulcer = np.sqrt(avg_sq.rolling(window=14).mean())
    Ulcer_index = Ulcer.dropna()
    annual_return = returns.mean() * 252
    martin_ratio = (annual_return - rf) / Ulcer_index.sum()
    return martin_ratio
```

[9]:
```
# Compute the running Martin Ratio
running = [martin_ratio(stock[i-90:i], rf[i-90:i]) for i in range(90,␣
↪len(returns))]

# Plot running Martin 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([stock['Adj Close'].index[int(i)].date() for i in ticks[:
↪-1]]) # Label x-axis with dates
plt.title(symbol + ' Martin Ratio')
plt.xlabel('Date')
plt.ylabel('Martin Ratio')
```

[9]: Text(0, 0.5, 'Martin Ratio')