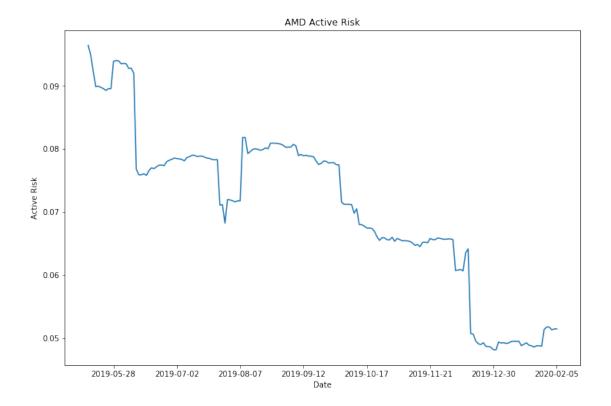
Stock Active Risk Chart

September 29, 2021

1 Stock Active Risk 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
    symbol1 = '^GSPC' #input
    symbol2 = 'AMD' #input
[3]: market = yf.download(symbol1, start=start, end=end)['Adj Close']
    stocks = yf.download(symbol2, start=start, end=end)['Adj Close']
    [******** 100%*********** 1 of 1 completed
    [4]: market_returns = market.pct_change().dropna()
    stocks_returns = stocks.pct_change().dropna()
[5]: def active_risk(stock_returns, market_returns):
        N = 14
        ar = np.sqrt((sum((stock_returns - market_returns)**2)/(N-1)))
        return ar
[6]: # Compute the running Active Risk
    running = [active_risk(stocks_returns[i-90:i], market_returns[i-90:i]) for i in_
     →range(90, len(stocks returns))]
```

[6]: Text(0, 0.5, 'Active Risk')



```
[7]: stock_ar = active_risk(stocks_returns, market_returns) stock_ar
```

[7]: 0.15587056702303861

```
[8]: running = [active_risk(stocks_returns[i-90:i], market_returns[i-90:i]) for i in

→range(90, len(stocks_returns))]

running
```

- [8]: [0.09642247417732748,
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