

# Stock\_Upside\_Risk\_Chart

September 29, 2021

## 1 Stock Upside 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
symbol = 'AMD' #input

[3]: stocks = yf.download(symbol, start=start, end=end)['Adj Close']

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

[4]: stocks_returns = stocks.pct_change().dropna()

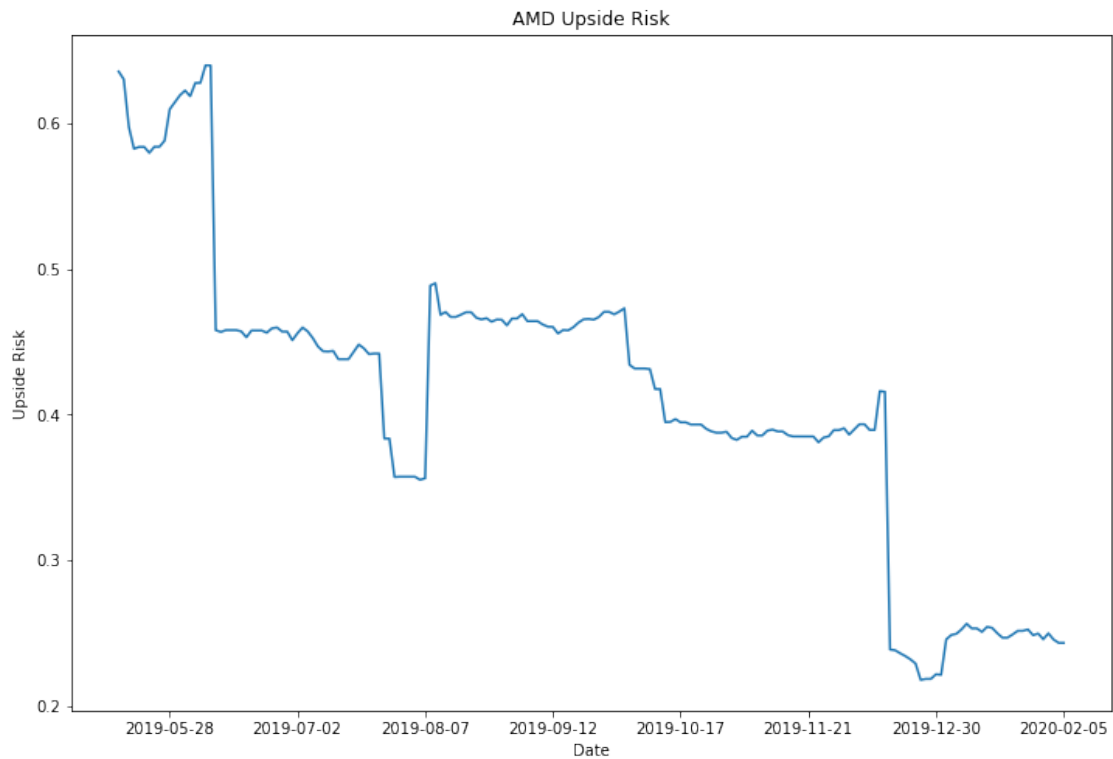
[5]: def upside_risk(stock_returns):
    ur = stock_returns[stock_returns > stock_returns.mean()].std(skipna = True)
    ↪ * np.sqrt(252)
    return ur

[6]: # Compute the running Upside Risk
running = [upside_risk(stocks_returns[i-90:i]) for i in range(90,
    ↪ len(stocks_returns))]

# Plot running Upside Risk up to 100 days before the end of the data set
_, ax1 = plt.subplots(figsize=(12,8))
ax1.plot(range(90, len(stocks_returns)-100), running[:-100])
ticks = ax1.get_xticks()
```

```
ax1.set_xticklabels([stocks.index[int(i)].date() for i in ticks[:-1]]) # Label_
↪ x-axis with dates
plt.title(symbol + ' Upside Risk')
plt.xlabel('Date')
plt.ylabel('Upside Risk')
```

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



```
[7]: stock_ur = upside_risk(stocks_returns)
stock_ur
```

```
[7]: 0.4713703918934197
```

```
[8]: running = [upside_risk(stocks_returns[i-90:i]) for i in range(90,
↪ len(stocks_returns))]
running
```

```
[8]: [0.6355152817553196,
0.6301360461848959,
0.5973837677807354,
0.5824071230560979,
0.5837195712237361,
```

0.5837195712237361,  
0.5796409510000826,  
0.5838312575902533,  
0.5838312575902533,  
0.5880429546351748,  
0.6096095740570389,  
0.6144744647036944,  
0.6192096877992382,  
0.6224442391333762,  
0.6185295574541951,  
0.6276290508179047,  
0.6277097151489002,  
0.6397349192123726,  
0.6396527223557019,  
0.45783841280217463,  
0.45662543352647805,  
0.4578659042320837,  
0.4578659042320837,  
0.4578659042320837,  
0.45702453591216824,  
0.4529473785725103,  
0.4575956883710694,  
0.4575956883710694,  
0.4575956883710694,  
0.4561010970999125,  
0.45909553216724563,  
0.4596802510871366,  
0.4568748853487679,  
0.4568748853487679,  
0.45094255914920345,  
0.45571930645546704,  
0.459677181060695,  
0.4570037059800351,  
0.4524304978035392,  
0.44667810360553306,  
0.44337062570193764,  
0.4431912523219552,  
0.44358739348382287,  
0.4379120657851883,  
0.4379120657851883,  
0.4379120657851883,  
0.4429817259913845,  
0.4479770566194132,  
0.445358671509146,  
0.44136561312444156,  
0.44175734893623747,  
0.44175734893623747,

0.3833967888644668,  
0.3833967888644668,  
0.3569713138419647,  
0.35717576405574264,  
0.35717576405574264,  
0.35717576405574264,  
0.35717576405574264,  
0.35504052870807484,  
0.3561250129203196,  
0.4884580034551311,  
0.4900766003728955,  
0.46838095337249375,  
0.47032030368104966,  
0.46691532967689114,  
0.46691532967689114,  
0.46847007927086254,  
0.47016558118320234,  
0.47016558118320234,  
0.4664096060145916,  
0.4652055806134585,  
0.4660661745578441,  
0.4636528351452417,  
0.46512955345335566,  
0.4650125890212836,  
0.46115832115169575,  
0.4658604397741393,  
0.4658604397741393,  
0.46884356868252813,  
0.4640182517515252,  
0.4640182517515252,  
0.4640182517515252,  
0.46174545574929476,  
0.46026278370040036,  
0.4600749908855216,  
0.4555694649682571,  
0.4579236478436754,  
0.45771781781562654,  
0.4598226814330967,  
0.4630017110758638,  
0.4652919148101954,  
0.4655442198532585,  
0.4650657130281347,  
0.46687047046601726,  
0.47041633188980053,  
0.47044212931085033,  
0.4687154073628877,  
0.47058375279654485,

0.47290362073459746,  
0.43401632910798227,  
0.4315077114394112,  
0.4315077114394112,  
0.4315077114394112,  
0.43108032584971717,  
0.4173935163536105,  
0.4173726185168215,  
0.3946830599559398,  
0.39483829054007724,  
0.39676269590686847,  
0.39453218876911095,  
0.39453218876911095,  
0.39305443832831516,  
0.39305443832831516,  
0.39305443832831516,  
0.3901107772542241,  
0.38835458796866185,  
0.3874330223974239,  
0.3874330223974239,  
0.3880771411896985,  
0.38377743684932625,  
0.38246212381620187,  
0.3846675774403666,  
0.3846675774403666,  
0.3888027267479437,  
0.38551213900459147,  
0.38551213900459147,  
0.38883791474912016,  
0.3895374442082945,  
0.3882918198101424,  
0.3882582611481181,  
0.3857597838584609,  
0.3848354179942426,  
0.38480071080853767,  
0.38480071080853767,  
0.38480071080853767,  
0.38480071080853767,  
0.38080797982320375,  
0.38407097609816826,  
0.3849275092069479,  
0.3891966378747785,  
0.3891966378747785,  
0.39046700250343896,  
0.38611830837443256,  
0.3897243857972316,  
0.39321007454815193,

0.39321007454815193,  
0.3893031449444261,  
0.3893031449444261,  
0.4159826888953828,  
0.4154911936262594,  
0.2384862057699009,  
0.23796152940113036,  
0.23587460894749054,  
0.2339760764002785,  
0.23170660858024253,  
0.22884044075338814,  
0.21762268691209852,  
0.21829829229789416,  
0.21829829229789416,  
0.22151054447835145,  
0.22109105640334836,  
0.24540923740853535,  
0.2484949960209898,  
0.24929959858085524,  
0.25230333803485844,  
0.25619311476071516,  
0.25299193459566677,  
0.25299193459566677,  
0.2505912996126676,  
0.25406846266511,  
0.25331453976996066,  
0.24968166422226862,  
0.2466197800705742,  
0.2466197800705742,  
0.24882118452189259,  
0.2513089040712219,  
0.2513089040712219,  
0.2522593860658294,  
0.24832452803875626,  
0.24946424568674447,  
0.24551817608114967,  
0.24961677422517609,  
0.24539550314296735,  
0.24304855313158194,  
0.2430128538746826,  
0.24239656448647776,  
0.24277609082022342,  
0.24872465086466697,  
0.24566831033995876,  
0.2469570681902533,  
0.24684328079272055,  
0.24370789906195844,

0.23999695658030465,  
0.23564990785933368,  
0.23707238293041857,  
0.23787153007911968,  
0.2415044019404146,  
0.24290458138951876,  
0.24290458138951876,  
0.2451406763385771,  
0.24210531558266166,  
0.24522901340197814,  
0.24522901340197814,  
0.26367682424430017,  
0.26715457633519785,  
0.2691154806547878,  
0.2729613917207632,  
0.275777645628056,  
0.27585964546132036,  
0.28039068363884606,  
0.362113654099292,  
0.3651376453817907,  
0.38259402592753394,  
0.38300964074228605,  
0.38162310982610936,  
0.38162310982610936,  
0.3808492570719189,  
0.4215818753965799,  
0.425632178600408,  
0.4322477836923617,  
0.43269412592768425,  
0.4327561026465923,  
0.43786502298779856,  
0.43841711845530273,  
0.434024272310136,  
0.43435844356019926,  
0.47420479742911914,  
0.47420479742911914,  
0.47156159619281346,  
0.47156159619281346,  
0.4686129131159626,  
0.4741537537873173,  
0.47792380583030375,  
0.47281244670394595,  
0.47281244670394595,  
0.4725634121276934,  
0.47474157957407026,  
0.4721704143910118,  
0.4664941074765189,

0.4666782254461901,  
0.47119374537536324,  
0.47279108871704956,  
0.47279108871704956,  
0.47502644490257373,  
0.4801646568896046,  
0.48190434611791994,  
0.4864850928029837,  
0.4874581508988345,  
0.4864850928029837,  
0.4818888259133379,  
0.47788048800452915,  
0.47738966768379915,  
0.47738966768379915,  
0.47134647480163017,  
0.47134647480163017,  
0.4709640290704353,  
0.47234329605007785,  
0.46925228888018095,  
0.4712338079153863,  
0.46994712169399283,  
0.47155679440146514,  
0.4761114322435373,  
0.4816141273432995,  
0.47418173523436935,  
0.47631690235074153,  
0.4760308593831959,  
0.4760308593831959,  
0.47389375621653,  
0.4798733398038977,  
0.478005831393627,  
0.4818108979874207,  
0.4784713720839971,  
0.48247190715072386,  
0.4858549012566069,  
0.4819814350561714,  
0.4819814350561714,  
0.4822169350249391,  
0.4909557703077311,  
0.497005499579842,  
0.494111075204638,  
0.4978601519455308,  
0.5022869818498605,  
0.5079426885139845,  
0.5163298938836424,  
0.5138353065956627]