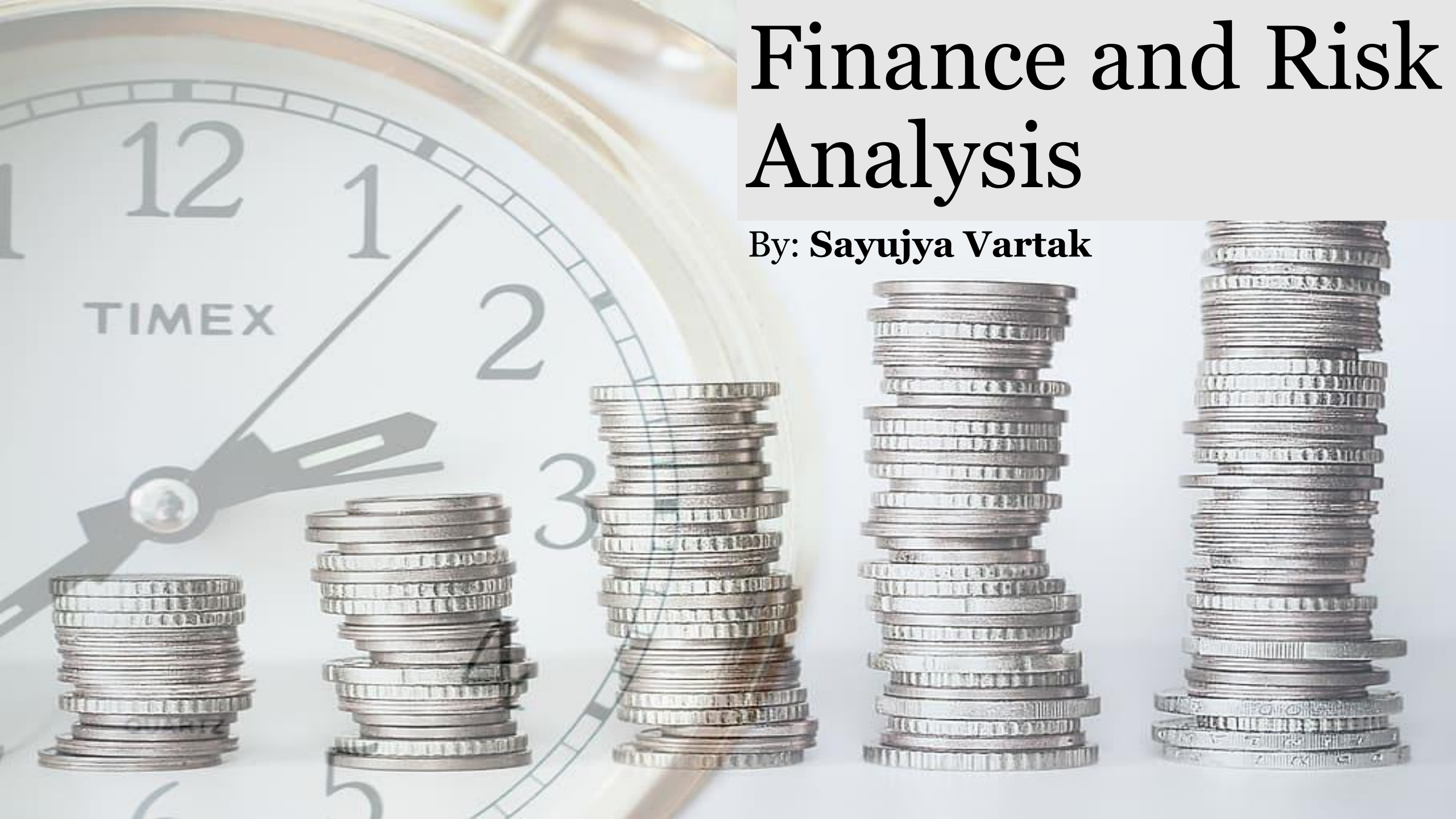# Finance and Risk Analysis

By: **Sayujya Vartak**

Agenda

To analyse a portfolio of stocks and provide **consultation on investment** management based on client's requirement to two different investors, based on their requirements and financial objectives.

- **Mr Patrick Jyengar**
- **Mr Peter Jyengar**

Pointers in Presentation

- Sector-wise **Technical Analysis** & **Trend Analysis**
- **Volatility & Risk** Assessment Based on **Daily/Annualized Returns**
- Stock assessment using **Derived Metrics**
- **Assigning Portfolios**

Investors

Mr. Patrick Jyengar

Wants to maintain a decent standard of living post his retirement.

Has always been a conservative investor during his life

Available capital of $1 million; Wants to invest $500K in a magazine (Naturo) for minority stake and remaining $500K in equities

Expects doubling his capital with less risk in 5 years' time to buy a minority portion of Naturo
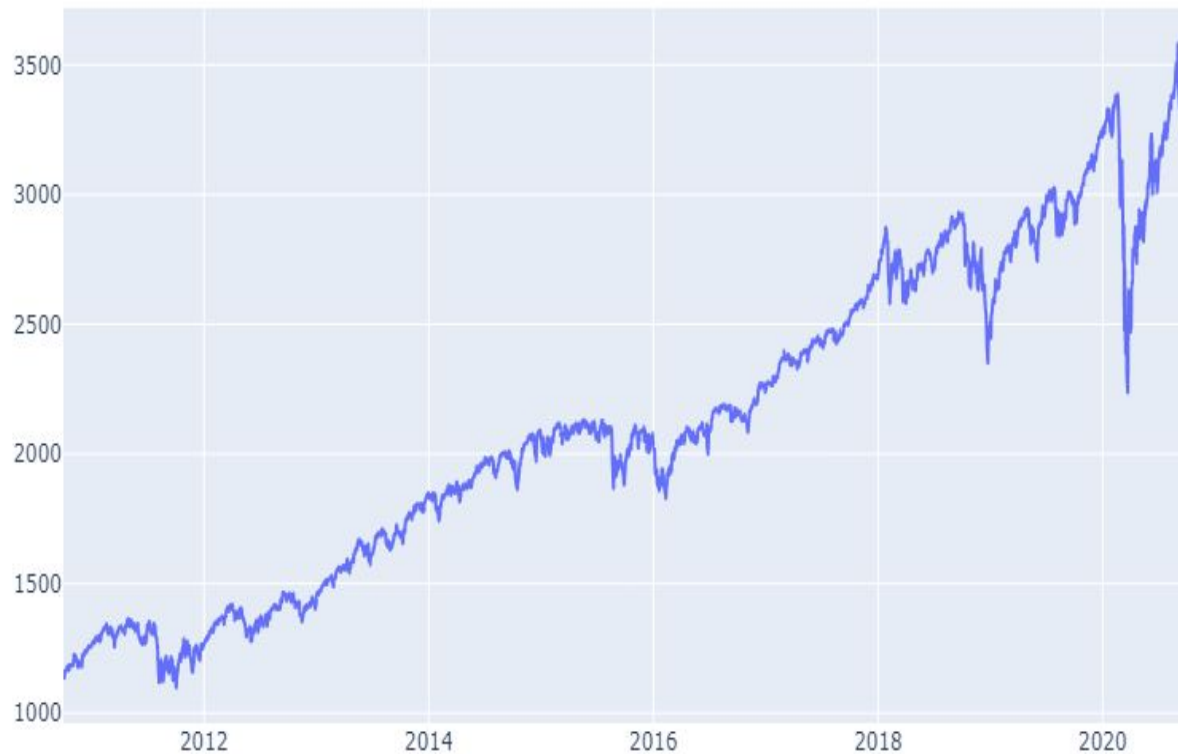
Mr. Peter Jyengar

Consistent with his attitude towards risk, he prefers high-return investments

Believes that he can still bounce back in case of any occasional losses

Wants to invest $1 million from company's cash and cash equivalents in the most high-margin stocks

Expects high returns within 5 years for inorganic expansion of JWW

Market Index (S&P 500)

Closing Price

Normalized Closing Price
(Last 5 Years)

S&P500 Gave about **75%**
returns in Last **Five Years**

Sector-wise Analysis

We have Stocks of **4 Sectors**

Aviation

Stock	Company_Name
AAL	American Airlines Group Inc
ALGT	Allegiant Travel Company
ALK	Alaska Air Group Inc
DAL	Delta Air Lines Inc
HA	Hawaiian Holdings Inc
LUV	Southwest Airlines Co

Technology

Stock	Company_Name
AAPL	Apple Inc
AMZN	Amazon
FB	Facebook
GOOG	Alphabet
IBM	IBM
MSFT	Microsoft

Finance

Stock	Company_Name
BCS	Barclays
CS	Credit Suisse
DB	Deutsche Bank
GS	Goldman Sachs
MS	Morgan Stanley
WFC	Wells Fargo

Pharmaceutical/Healthcare

Stock	Company_Name
JNJ	Johnson & Johnson
MRK	Merck and CO inc.
PFE	Pfizer inc
UNH	UnitedHealthGroup Inc
BHC	Bausch Health Companies inc
RHHBY	Roche Holding AG

Aviation Sector

Normalized Closing Prices

- It has not been performing very well and **after travel restrictions due to Pandemic**, It has taken the worst hit.

- **DAL** had shown a **very weak up trend pre-covid** while others had shown either **down or sideways trend.**

All stocks in aviation sector have shown **downtrend indicating no stock has performed better than S&P500**

HA was the most volatile stock while LUV was the least

Finance Sector

Normalized Closing Prices

- **MS** has given a return **close to that of S&P 500.**

- Though **GS** has been overall profitable but has been **declining since 2018.**

All stocks in Finance sector have shown **downtrend indicating** no stock has performed better than S&P 500.

In Finance Sector **DB** was the **most volatile** stock while **GS** was the least.
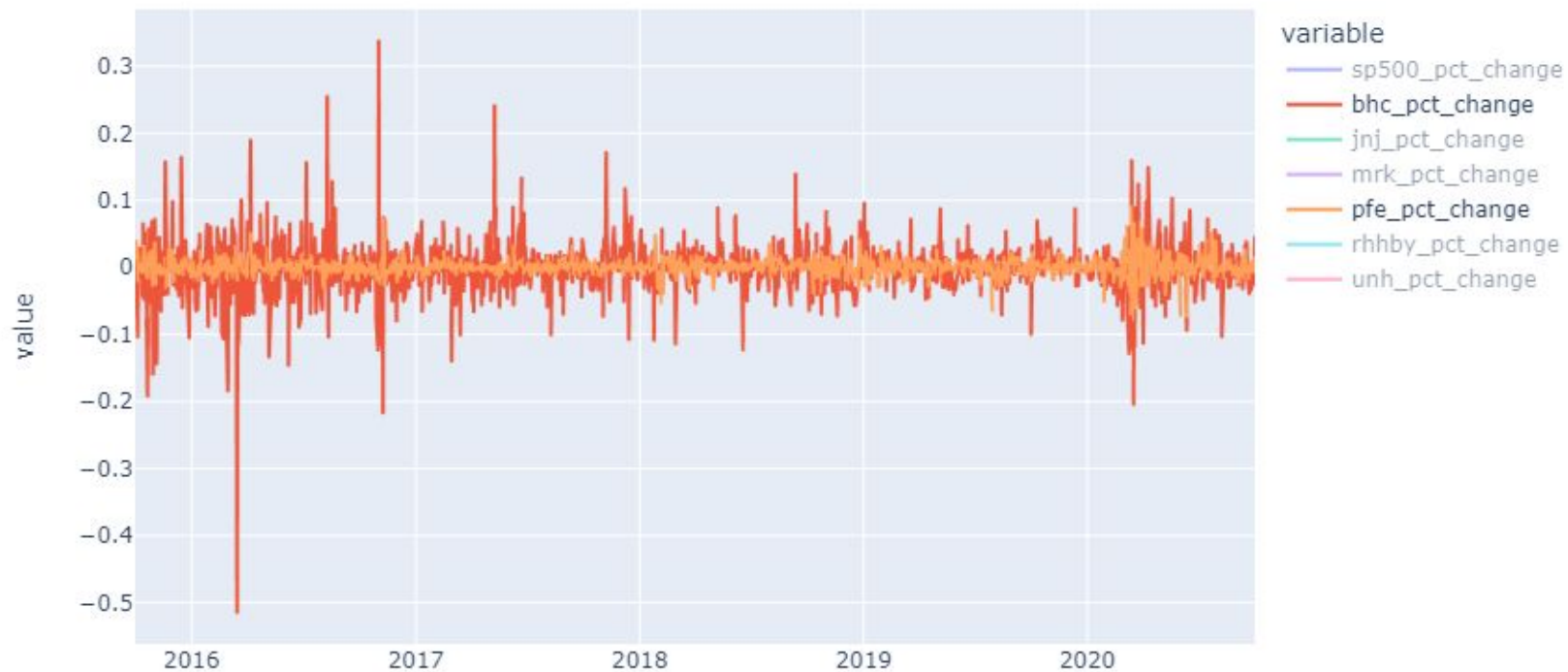
Pharma/Healthcare Sector

Normalized Closing Price

- **Except BHC** every other stock has given a **positive return in 5 years**

- In last 5 years **UNH** gave more then **100% returns** while **S&P 500** gave only about **75%.**

- **MRK and JNJ** have given **similar returns** as that of **S&P500.**

- **BHC Due to a Lawsuit** had to pay a **$1.2 Billion dollar** fine which **crashed** its stock and haven't been able to recover since

UNH has shown a **uptrend** indicating it has **performed better** than the market index **S&P 500**

every other stock other than UNH has shown a downtrend

In Pharma_Healthcare Sector **BHC was the most volatile stock** while PFE and RHHBY was the least

Technology Sector

Normalized Closing Price

Except IBM every other stock in technology sector has given more then **100% returns**

AMZN and GOOG stocks have **outperformed every other stock** in each sector

Except IBM every stock in Technology sector has shown **uptrend** indicating it has **performed better than S&P 500**

In Technology Sector **FB** was the **most volatile stock** while IBM was the least

Assessing Stocks on Derived Metrics

The Top 12 Stocks having **highest Annualized Return Rate** and **Expected Returns**:

- **Technology Sector:**
  - **AMZN (40.89%)**
  - MSFT (35.08%)
  - AAPL (33.16%)
  - FB (26.66%)
  - GOOG (21.09%)

- **Finance Sector:**
  - **MS (14.54%)**
  - GS (7.89%)

- **Pharma_Healthcare Sector:**
  - **UNH (23.08%)**
  - MRK (12.86%)
  - JNJ (11.30%)
  - RHHBY (7.53%)
  - PFE (5.52%)

Stock	Avg Daily Returns	Annualized Return Rate	Cummulative Return Rate	Exp Returns
amzn	0.162 %	40.90 %	504.7 %	15.95 %
msft	0.139 %	35.08 %	371.5 %	20.31 %
aapl	0.132 %	33.16 %	322.7 %	16.46 %
fb	0.106 %	26.67 %	188.0 %	10.45 %
unh	0.094 %	23.80 %	167.4 %	11.65 %
goog	0.084 %	21.10 %	140.4 %	12.10 %
ms	0.058 %	14.54 %	53.5 %	6.94 %
mrk	0.051 %	12.86 %	68.0 %	7.15 %
jnj	0.045 %	11.31 %	59.8 %	7.37 %
gs	0.031 %	7.90 %	14.2 %	4.17 %
rhhby	0.030 %	7.53 %	28.9 %	4.18 %
pfe	0.022 %	5.52 %	15.3 %	3.35 %

Volatility & Sharpe Ratio

Previous Top 12 Stocks(Ranked) with respect to Volatility (least to most):

- **Technology Sector:**
  - **GOOG (26.22%)   5**
  - MSFT (27.83%)   6
  - AAPL (29.72%)   8
  - AMZN (30.11%)   9
  - FB (32.66%)   11

- **Finance Sector:**
  - **GS (31.58%)   10**
  - MS (34.61%)   12
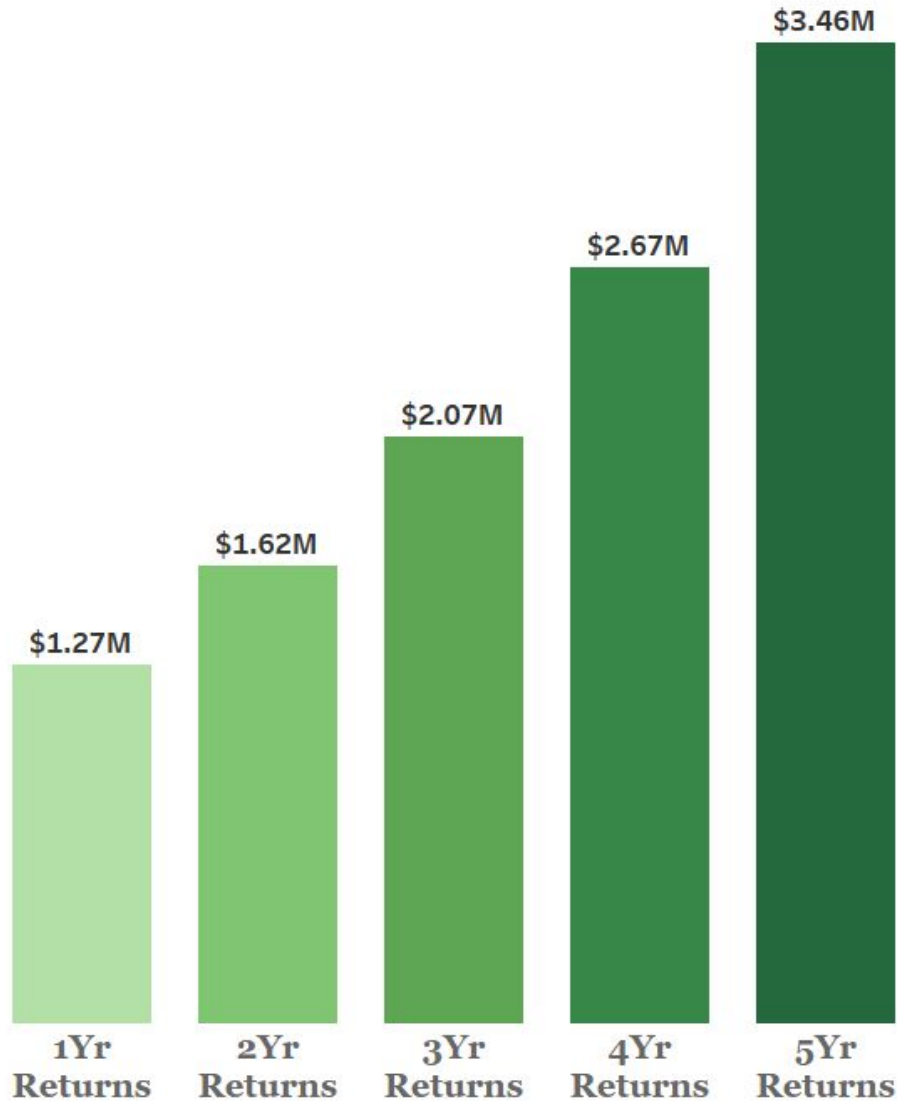
- **Pharma_Healthcare Sector:**
  - **JNJ (19.77%)   1**
  - RHHBY (21.45%)   2
  - PFE (21.95%)   3
  - MRK (22.32%)   4
  - UNH (28.26%)   7

Stock	Daily Volatility	Annualized Volatility	Sharpe Ratio
jnj	1.25 %	19.77 %	0.53
rhhby	1.35 %	21.45 %	0.32
pfe	1.38 %	21.95 %	0.22
mrk	1.41 %	22.32 %	0.54
goog	1.65 %	26.22 %	0.78
msft	1.75 %	27.83 %	1.23
unh	1.78 %	28.26 %	0.82
aapl	1.87 %	29.72 %	1.09
amzn	1.90 %	30.11 %	1.33
gs	1.99 %	31.58 %	0.23
fb	2.03 %	32.30 %	0.80
ms	2.18 %	34.61 %	0.40

Peter Jyengar

Stock	Avg Daily Returns	Annualized Return Rate	Avg Annual Returns	5Yr Returns
aapl	0.132 %	33.16 %	$365.6K	$598.1K
amzn	0.162 %	40.90 %	$448.2K	$793.3K
fb	0.106 %	26.67 %	$306.8K	$465.8K
mrk	0.051 %	12.86 %	$208.4K	$261.6K
ms	0.058 %	14.54 %	$218.7K	$281.7K
msft	0.139 %	35.08 %	$384.8K	$642.6K
unh	0.094 %	23.80 %	$283.6K	$415.5K

Portfolio

$1.27M — 1Yr Returns
$1.62M — 2Yr Returns
$2.07M — 3Yr Returns
$2.67M — 4Yr Returns
$3.46M — 5Yr Returns

With a equally weighted **investment of $1 Million** total **return gained** were **$3.46 M** which gives us a **profit of 245.85 %** i.e. **$2.46 M**

Patrik Jyengar

Stock	Avg Daily Returns%	Annualized Return Rate	Avg Annual Returns	5Yr Returns
aapl	0.132 %	33.16 %	$160.0K	$261.7K
goog	0.084 %	21.10 %	$115.1K	$162.8K
jnj	0.045 %	11.31 %	$87.2K	$106.8K
mrk	0.051 %	12.86 %	$91.2K	$114.5K
ms	0.058 %	14.54 %	$95.7K	$123.2K
msft	0.139 %	35.08 %	$168.4K	$281.1K
rhhby	0.030 %	7.53 %	$78.1K	$89.9K
unh	0.094 %	23.80 %	$124.1K	$181.8K

Portfolio
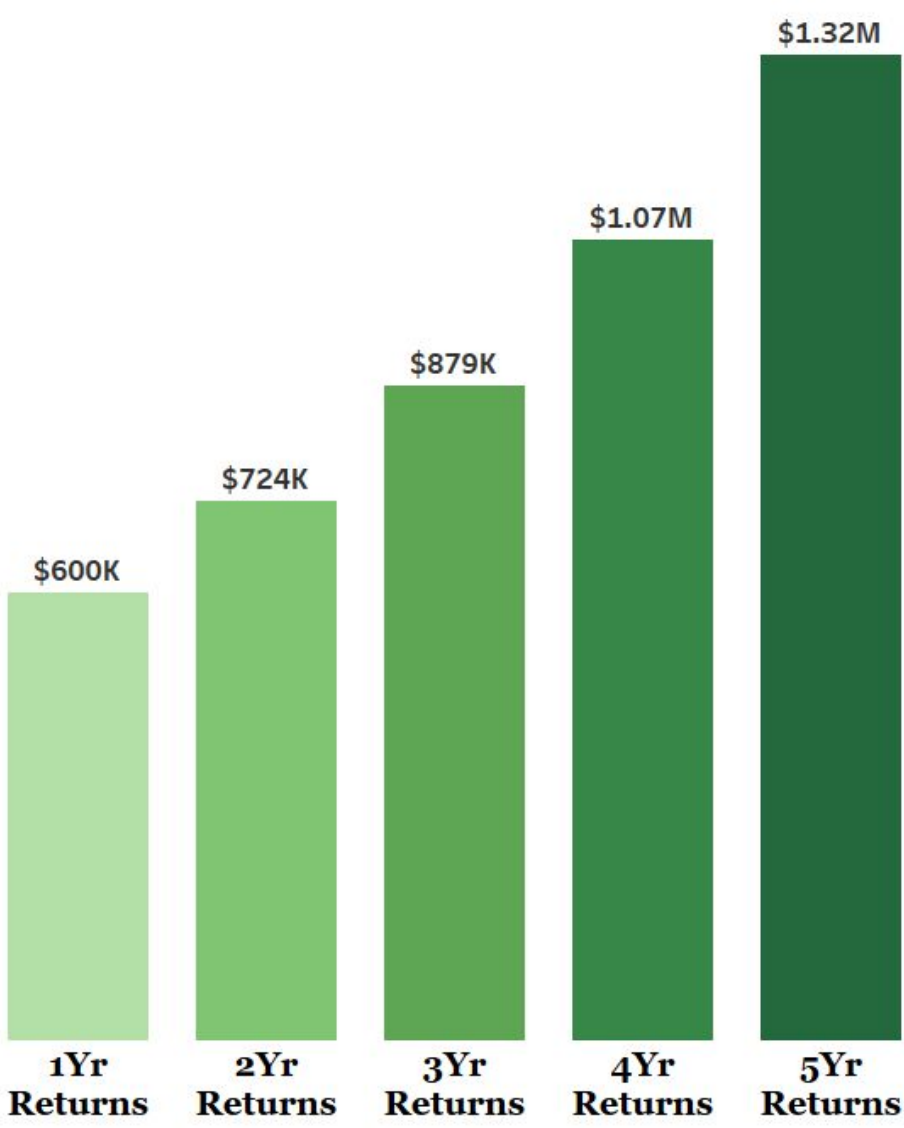
With a equally weighted **investment of $500 k** total **return gained** were **$1.32 M** which gives us a **profit of 164.34 %** i.e **$821 k**

Conclusion

2 Portfolios were created
- A **High Risk High Return** Portfolio for **Mr. Peter Jyengar**
- A **Low Risk Good Return** Portfolio for **Mr. Patrik Jyengar**

Investing In stocks of these portfolios will help both individuals meet their financial requirements.