

# A Study on Measures the Return and Volatility of Selected Securities in India

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## ABSTRACT

The study aims to understand the Return and Risk associated with FMCG stock during the period of FY 2020- 2021. Here 3 FMCG stocks are chosen from NSE stock exchange and collected the data. To analyze the risk and return, standard deviation tools applied. The research finds that the Dabur India Ltd and Colgate Palmolive was generated the good returns with smaller amount deviations. So, this stock was safest players in the market. At a same time Hindustan Unilever was not generated the less amount of returns with high deviations. So this stock was not safest player in the market.

**KEYWORDS:** Risk & return analysis, technical analysis, stock markets, standard deviation

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## 1. INTRODUCTION

Generally investors feels that investment in stock markets is high risky but if we done proper analysis or expert suggestion makes profitable returns to the investors. Many people won't know the how to make investments in stock markets, once if we understand then it will be very simple process to make investments and getting the returns. Now a day's people are getting lots of information about the stock market through news paper and electronic media. So it makes increase of investment in stock markets. Investment in normal market conditions will be safe because analysis of stock performance will be more predictable. So investors can make safer investments but at present market is very volatile due to Covid 19 pandemic crisis which makes entire global countries are lock down due drastic spread of disease and makes them lakhs people sick. During this crisis period, even stock analysis will not generate the proper reliable data to make profitable investments. In older days stock market is physical place where investors directly visit the stock exchange and trade through the authorized brokers but due to

technological up gradation, the transaction in stock exchange is done through online mode.

A stock market is a primarily a virtual exchange of securities (that is shares and debentures, which companies use as a means of raising finance) and derivatives (i.e. virtual instruments such as contracts that relate to assets and securities and can be traded). It is virtual in the sense that the market is an intangible concept, rather than a physical place, and as a result of advancing technologies striders can now get involved with little more than a laptop or mobile phone. The market brings together a range of traders of all shapes and sizes – from small, one-man bands trading for their own personal gains through to hedge funds managing billion in assets, and everything in between.

## 2. Literature Review

William and Vimala (2015) examined the volatility of equity share price of five select private banks listed in the National Stock Exchange. Considering that banks play an important role in the economy of India, an

attempt was made to analyze the market volatility of the selected banks by using mean, standard deviation and beta values using the opening and closing prices. It was concluded that the volatility of the closing prices was similar for all the five banks selected for the study.

Anbukarasi and Nithya (2014) made an attempt to bring out the Standard deviation between select stock indices and the NIFTY. It was found that there was a significant Standard deviation of all the selected indices except Banks. It was also concluded that the Bank indices have a strong impact on NIFTY Movements.

Rajamohan.S and Muthukamu.M (2014), conducted a comparative study between bank Index and other sectoral indices Using Pearsonian Average return and Standard deviation. It was found that Bank index positively influenced almost all the other sectoral indices. Investors, before investing in any sector, hence need to check the patterns in the banking sector as it could influence the behavior of other sector stocks.

Bhowmik.D (2013) evaluated the framework of stock market volatility at the country level. According to the study volatility would be spurred by political turmoil or instability and high volatility reduces growth rate of the economy. Volatility also influences the volume of international trade and increases current account deficits.

Shanmugasundram and Benedict (2013) conducted a study on the volatility of the sectoral indices with reference to NSE. In this study the risk relationship in different time intervals of the CNX NIFTY index and five sectoral indices including Bank index, FMCG index, Infrastructure index and IT index was examined. The results of the study did not support any significant difference across the risk of sectoral indices and NIFTY.

SwarnaLakshmi (2013) used the ARCH model to measure the volatility in NIFTY and other 11 select

sectoral indices in India for the period 2008 to 2013. A conclusion was made on the 11 sectors volatility in comparison with the NIFTY and it was found that among the 11 sectors, the realty sector was the most volatile than any other sector. The paper also has discussions on the reasons for the same.

### 3. Research Methodology

The researcher selected 3 FMCG i.e., Dabur India ltd, Hindustan Unilever ltd, Colgate Palmolive India Ltd. The stocks data is collected from NSE stock exchange web portal. The following will be tools used to calculate the Risk and returns of the stock during the period of FY 2020 - 2021. These tools help us to understand the risk associated with the schemes and measures used in evaluating the performances of stocks.

#### Return

$$\text{Closing Price} - \text{Opening Price}$$

$$\text{Return} = \frac{\text{Closing Price} - \text{Opening Price}}{\text{Opening price}} \times 100$$

#### Arithmetic Mean

Average return that can be expected from investment. The arithmetic average return is appropriate as a measure of the central tendency of a number of returns calculated for a particular time i.e. for 15 months.

$$X = \frac{\sum X}{N}$$

Where X = return of stock values

N = Number of observation

Average Return = Total Return / No of Observations

#### Standard deviation

$$S.D = \sqrt{\frac{\sum (X - \bar{X})^2}{N}}$$

Where X= Return

N= Number of observations

X= Average return on investment

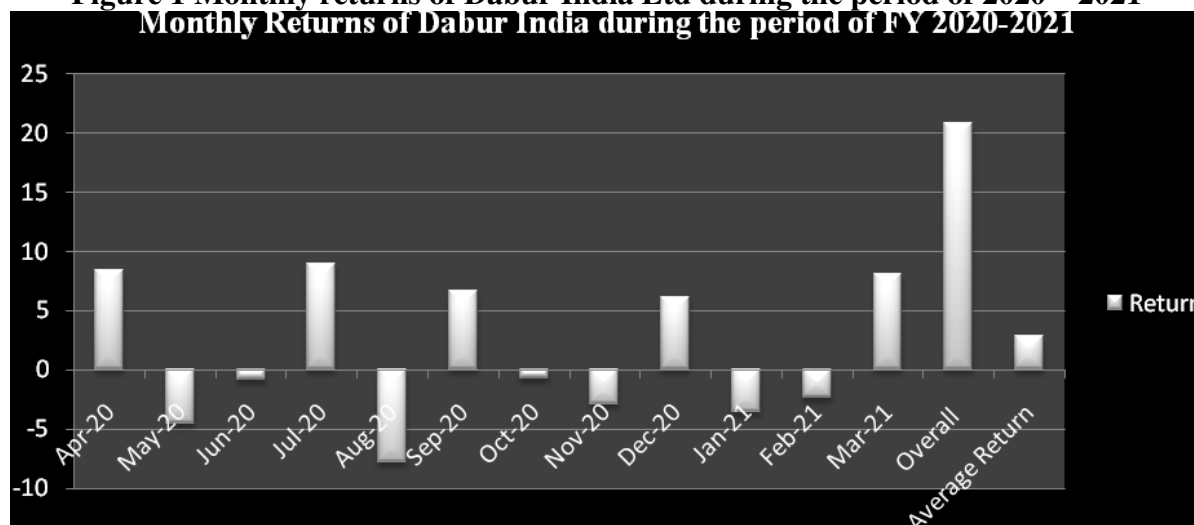
The standard deviation is a measure of the variables around its mean or it is the square root of the sum of the squared deviations from the mean divided by the number of observations.

### 4. Data Analysis and Interpretation

**Table 1 The Returns of Dabur India Ltd during the FY 2020 – 2021**

| Monthly Returns (X) | Average returns (XI) | X-XI   | (x-x)2 |
|---------------------|----------------------|--------|--------|
| 8.43                | 2.81                 | 5.62   | 31.54  |
| -4.51               | 2.81                 | -7.32  | 53.56  |
| -0.85               | 2.81                 | -3.66  | 13.40  |
| 8.92                | 2.81                 | 6.11   | 37.30  |
| -7.77               | 2.81                 | -10.58 | 111.87 |
| 6.69                | 2.81                 | 3.88   | 15.09  |
| -0.78               | 2.81                 | -3.59  | 12.86  |
| -2.91               | 2.81                 | -5.72  | 32.75  |
| 6.16                | 2.81                 | 3.35   | 11.24  |

|                    |      |       |       |
|--------------------|------|-------|-------|
| -3.56              | 2.81 | -6.37 | 40.55 |
| -2.33              | 2.81 | -5.14 | 26.42 |
| 8.13               | 2.81 | 5.32  | 28.35 |
| Variance           |      |       | 34.58 |
| Standard Deviation |      |       | 5.88  |

**Figure 1 Monthly returns of Dabur India Ltd during the period of 2020 – 2021****Table 2 Variance and standard deviation of Dabur India ltd during FY 2020 - 2021**

| Montly Returns (X) | Average returns (XI) | (X-XI) | (x-x)2 |
|--------------------|----------------------|--------|--------|
| 8.43               | 2.81                 | 5.62   | 31.54  |
| -4.51              | 2.81                 | -7.32  | 53.56  |
| -0.85              | 2.81                 | -3.66  | 13.40  |
| 8.92               | 2.81                 | 6.11   | 37.30  |
| -7.77              | 2.81                 | -10.58 | 111.87 |
| 6.69               | 2.81                 | 3.88   | 15.09  |
| -0.78              | 2.81                 | -3.59  | 12.86  |
| -2.91              | 2.81                 | -5.72  | 32.75  |
| 6.16               | 2.81                 | 3.35   | 11.24  |
| -3.56              | 2.81                 | -6.37  | 40.55  |
| -2.33              | 2.81                 | -5.14  | 26.42  |
| 8.13               | 2.81                 | 5.32   | 28.35  |
| Variance           |                      |        | 34.58  |
| Standard Deviation |                      |        | 5.88   |

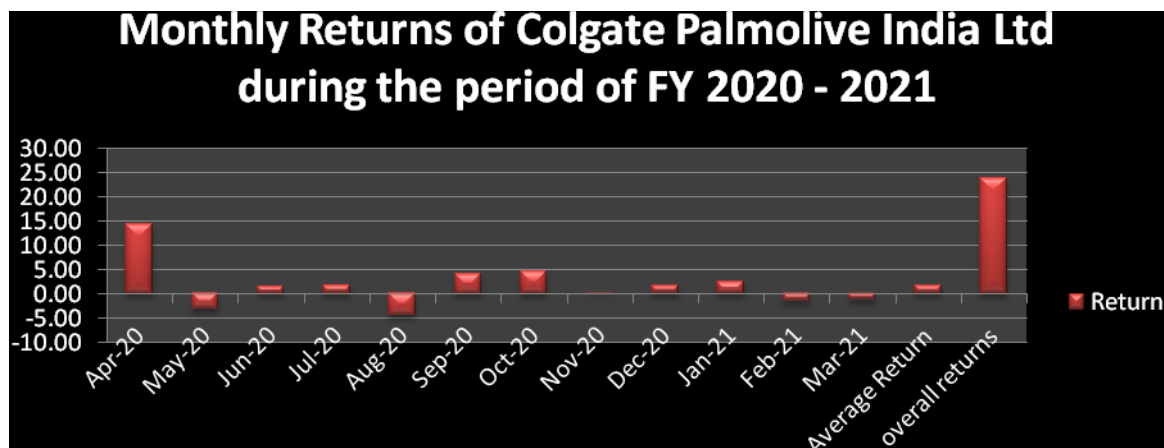
The Table 2 clearly presents the return and risk associated with Dabur India ltd during the period of FY 2020-2021. Among FMCG stocks, it is one of the best stock to pick because the average returns was 2.81 percent and total returns was 20.84 which means the decent performance. The standard deviation of the Dabur India ltd was 5.88, which indicates decent volatility. The volatility of the stock was not too much ups and downs which means, risk associated with stock not heavily affected the investors. So this stock is one of the safest options to invest.

**Table 3 Monthly Returns of Colgate Palmolive India Ltd during the period of FY 2020 - 2021**

| Month  | Open | Close | Return (percentage) |
|--------|------|-------|---------------------|
| Apr-20 | 1260 | 1469  | 14.22               |
| May-20 | 1435 | 1391  | -3.16               |
| Jun-20 | 1384 | 1406  | 1.56                |
| Jul-20 | 1398 | 1423  | 1.75                |
| Aug-20 | 1423 | 1363  | -4.40               |
| Sep-20 | 1373 | 1433  | 4.18                |
| Oct-20 | 1445 | 1516  | 4.68                |
| Nov-20 | 1516 | 1513  | -0.19               |

|   |      |      |       |
|---|------|------|-------|
| Dec-20  | 1540 | 1565 | 1.59  |
| Jan-21  | 1565 | 1603 | 2.37  |
| Feb-21  | 1604 | 1581 | -1.45 |
| Mar-21  | 1577 | 1559 | -1.15 |
| Average Return                                  |      |      | 1.66  |
| overall returns during period of FY 2020 - 2021 |      |      | 23.73 |

**Figure 2 The Monthly Returns of Colgate Palmolive India Ltd during FY 2020 – 2021**



**Table 4 The variance and standard deviation of Colgate Palmolive India Ltd during FY 2020 – 2021**

| Monthly Returns (X) | Average Returns (XI) | (X-XI)   | (X-XI) <sup>2</sup> |
|---------------------|----------------------|----------|---------------------|
| 14.23               | 1.67                 | 12.56    | 157.687             |
| -3.16               | 1.67                 | -4.83    | 23.359              |
| 1.56                | 1.67                 | -0.11    | 0.011               |
| 1.76                | 1.67                 | 0.09     | 0.007               |
| -4.40               | 1.67                 | -6.07    | 36.869              |
| 4.19                | 1.67                 | 2.52     | 6.335               |
| 4.68                | 1.67                 | 3.01     | 9.080               |
| -0.20               | 1.67                 | -1.87    | 3.490               |
| 1.60                | 1.67                 | -0.07    | 0.005               |
| 2.37                | 1.67                 | 0.70     | 0.490               |
| -1.45               | 1.67                 | -3.12    | 9.764               |
| -1.15               | 1.67                 | -2.82    | 7.978               |
|                     |                      | Variance | 21.256              |
|                     |                      | SD       | 4.610               |

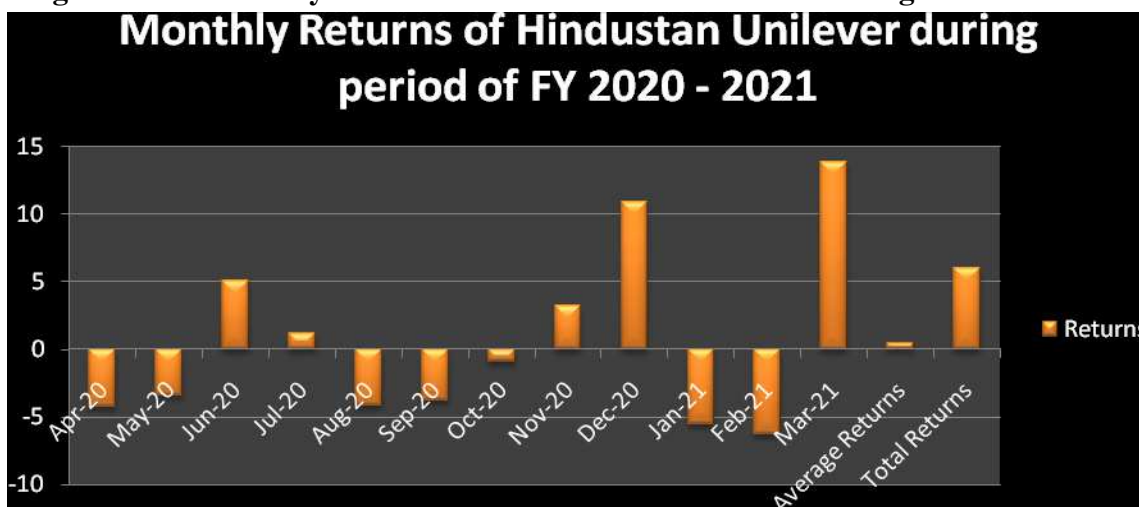
The Table 4 clearly presents the return and risk associated with Colgate Palmolive India Ltd during the period of FY 2020-2021. Among FMCG stocks, it is one of the best stock to pick because the average returns was 1.66 percent and total returns was 23.73 which reflects the decent performance. The standard deviation of the Colgate Palmolive India Ltd was 4.610, which indicates less volatility. The volatility of the stock was not too much ups and downs which means, risk associated with stock not heavily affected the investors. So this stock is one of the safest options to invest.

**Table 5 The Monthly Returns of Hindustan Unilever Ltd during the period of FY 2020 - 2021**

| Month  | open | close | Returns |
|--------|------|-------|---------|
| Apr-20 | 2293 | 2195  | -4.27   |
| May-20 | 2130 | 2057  | -3.42   |
| Jun-20 | 2075 | 2180  | 5.06    |
| Jul-20 | 2183 | 2209  | 1.19    |
| Aug-20 | 2209 | 2117  | -4.16   |
| Sep-20 | 2150 | 2068  | -3.81   |
| Oct-20 | 2090 | 2071  | -0.90   |
| Nov-20 | 2072 | 2138  | 3.18    |
| Dec-20 | 2159 | 2395  | 10.93   |

|                 |      |      |       |
|-----------------|------|------|-------|
| Jan-21          | 2395 | 2263 | -5.51 |
| Feb-21          | 2276 | 2132 | -6.32 |
| Mar-21          | 2135 | 2431 | 13.86 |
| Average Returns |      |      | 0.48  |
| Total Returns   |      |      | 6.01  |

**Figure 3 The Monthly Returns of Hindustan Unilever Ltd during FY 2020 – 2021**



**Table 6 The variance and standard deviation of Hindustan Unilever Ltd during FY 2020 – 2021**

| Montly Returns (X) | Average Returns (XI) | (X-XI) | (X-XI) <sup>2</sup>       |
|--------------------|----------------------|--------|---------------------------|
| -4.27              | 0.48                 | -4.75  | 22.59935                  |
| -3.43              | 0.48                 | -3.91  | 15.26645                  |
| 5.06               | 0.48                 | 4.58   | 20.97861                  |
| 1.19               | 0.48                 | 0.71   | 0.505552                  |
| -4.16              | 0.48                 | -4.64  | 21.57399                  |
| -3.81              | 0.48                 | -4.29  | 18.43804                  |
| -0.91              | 0.48                 | -1.39  | 1.929574                  |
| 3.19               | 0.48                 | 2.71   | 7.318801                  |
| 10.93              | 0.48                 | 10.45  | 109.2231                  |
| -5.51              | 0.48                 | -5.99  | 35.89786                  |
| -6.33              | 0.48                 | -6.81  | 46.33374                  |
| 13.86              | 0.48                 | 13.38  | 179.136                   |
|                    |                      |        | <b>Variance</b>           |
|                    |                      |        | <b>Standard Deviation</b> |

The Table 6 clearly presents the return and risk associated with Hindustan Unilever Ltd during the period of FY 2020-2021. Among FMCG stocks, it is not at all right choice to pick this stock because the average returns was 0.48 percent and total returns was 6.01 percent which indicates the poor performance for the period of FY 2020 - 2021. The standard deviation of the Hindustan Unilever Ltd was 6.31, which indicates heavy volatility. The volatility of the stock was too much ups and downs which means, risk associated with stock was heavily affected the investors. So this stock is safest options to invest.

**5. Findings**

The research finds that the Dabur India Ltd and Colgate Palmolive was generated the good returns with smaller amount deviations. So, this stock was safest players in the market. At a same time Hindustan Unilever was not generated the less amount of returns with high deviations. So this stock was not safest player in the market.

**6. Conclusion**

Generally, investor perception is easily making the money by investing the stock market. But investor

should understand the one thing; returns is always interlink with risk. So, more returns means more risk and less returns means less risk. Investor always studies the stocks by using the statistical tools like standard deviation know the return and risk levels. It helps to better understand behaviour of the stock which right decision while making the investment.

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