'An Empirical Study On Investment Decision In Volatile Market With Special Reference To Investment In It Sector"

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Abstract

Sensex has experienced significant volatility over the past decade, with several large swings in both directions driven by a variety of economic, political, and global factors. The European debt crisis (2011-2012), General Elections (2014), Demonetization (2016), COVID-19 pandemic (2020) witnessed wide range of volatility in the stock market.

In this article, an attempt has been made to showcase the volatility of IT sector comprising four Top IT companies for 12 months (February 2022 to February 2023). Volatility in the Sensex can be measured by the standard deviation of the daily returns of the index. Monthly changes in prices and monthly fluctuations in returns, average return, standard deviation and beta is calculated to show how IT companies' stocks are volatile in relation to IT sector as a whole.

In this research paper discussion has been made on how investment decision can be taken based on risk return statistics.

IT sector is a major contributor to India's GDP in recent years, with the country becoming a leading destination for IT services and outsourcing. It is expected to continue to grow due to the increasing demand for digital services and solutions in India and globally.

Introduction

The IT sector has outperformed other sectors in the stock market, with many IT companies achieving high growth rates and strong returns for investors. For example, the S&P 500 Information Technology Index increased by 244% from 2011 to September 2021.

The role played by IT sector in to different industries like Banking, Insurance, Finance, Pharma etc.. has witnessed the importance and utility of IT sector. Though IT sector is major contributor to GDP and provided many IT solutions to different sectors, creating wide range of employment opportunities it is also prone to fluctuations.

The IT sector has benefited from COVID-19 pandemic, as many businesses and consumers increased their use of digital products and services (Fintech, EdTech, Pharmatech). IT sector has also played a critical role in supporting the global response to the pandemic, with technology solutions being used to track and monitor the spread of the virus, develop vaccines, and deliver healthcare services remotely.

Objectives of the study:

1. To evaluate the performance of four IT companies with NIFTY IT Index.

2. To analyse the fluctuation in the monthly NIFTY IT Index.

3. To understand the magnitude of volatility in monthly share price movement of these five IT companies.

4. To depict the volatility in monthly returns of these IT companies

5. To compare the five stocks with respect their returns and risk and rank them

Research Methodology:

The study is empirical in nature. For the purpose of study, the secondary data was considered from the financial websites. The sample of five IT Companies were selected for the study. The variables used in the study were share prices, monthly returns of the stock and monthly fluctuations in NIFTY Index.

The statistical tools used for the study are standard deviation, variance, mean and Beta. The ranking of the companies are done based on the statistical results.
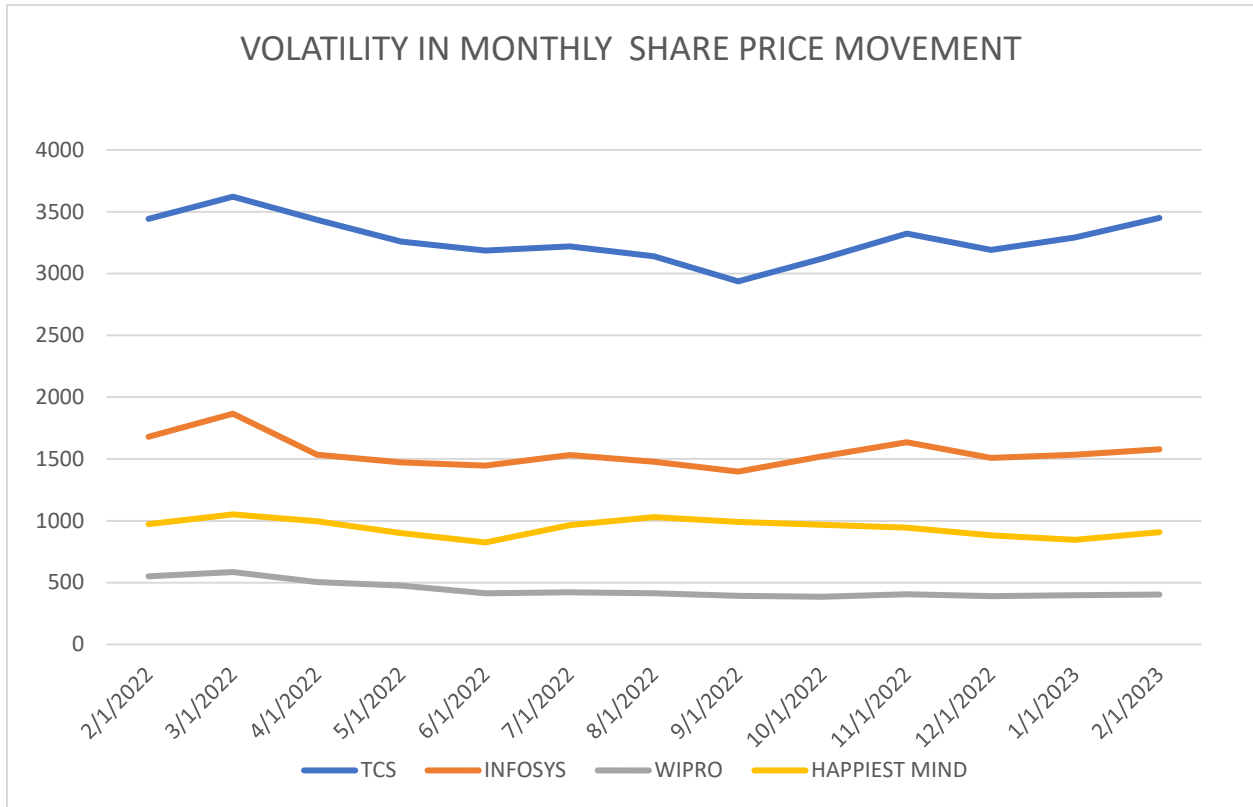
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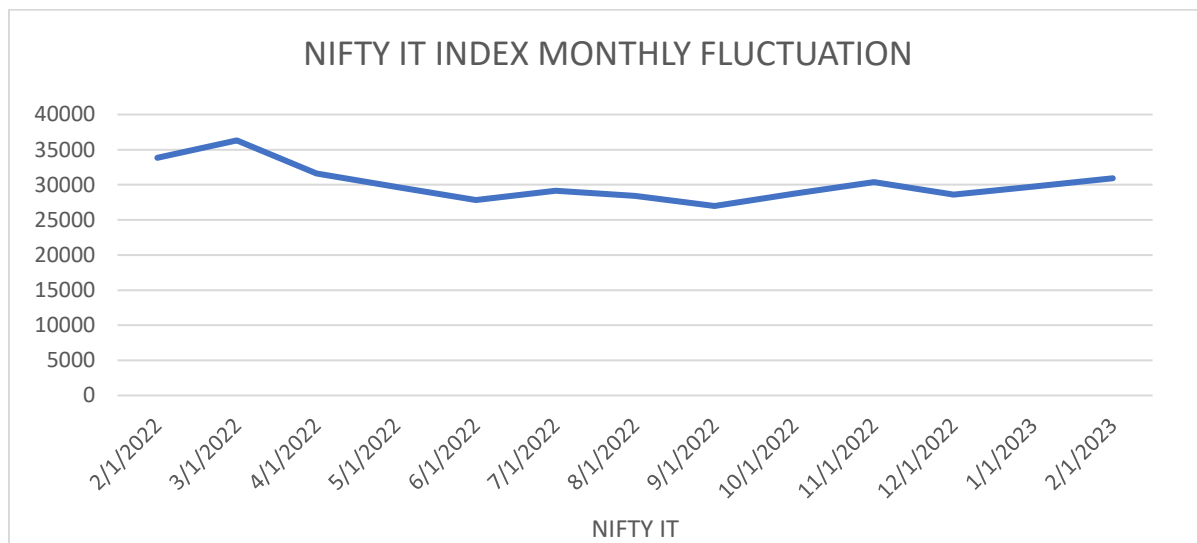
Source: Researcher

Chart 1: NIFTY IT Index Monthly fluctuation

The above chart shows monthly fluctuation in NIFTY IT Index from February 2022 to February 2023. The month of January 2022 shows the upward movement followed by drop in the index for the consecutive days. There was a sharp jump in the slope in the next year i.e., 2023.

Source: Researcher

Chart 2: Volatility in monthly share price movement of TCS, Infosys, Wipro and Happiest Mind

Above table shows monthly fluctuations in share prices of top IT companies TCS, Infosys, Wipro and Happiest mind from February 2022 to February 2023.
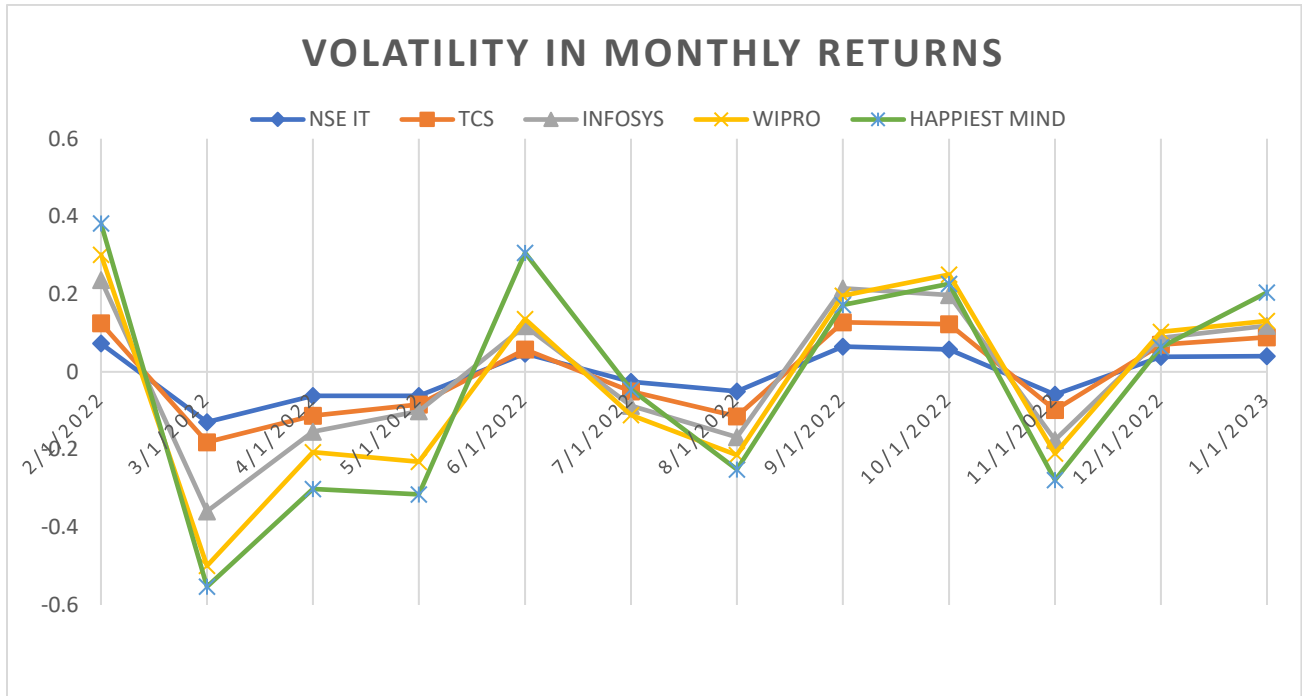
Source: Researcher

Chart 3: Volatility in monthly returns

The above table shows volatility in monthly returns of TCS, Infosys, Wipro and Happiest mind along with NSE IT index as whole.

Findings:

Researcher has drawn data from financial website for analysis. Monthly fluctuation in prices of NSE IT sector along with TCS, Infosys, Wipro and Happiest Mind is considered to calculate mean return, standard deviation, variance and beta. NSE IT is representative of 10 IT companies.

Standard deviation helps to understand the risk associated with particular stock or portfolio, higher standard deviation indicates that the price is more volatile and there is greater risk of large fluctuation and lower standard deviation indicates price is more stable and there is lower risk of large price fluctuation.

Beta represents how sensitive stock return is to the changes in market returns as a whole. Beta is calculated by

comparing the stock's historical returns with the returns of a market index.

Stock whose beta is greater than one is considered more volatile than the market, while a stock with a beta less than one is considered less volatile and stable than the market.

Particulars	NIFTY IT	TCS	Infosys	Wipro	Happiest Mind
Mean Return	-0.536%	0.131%	-0.187%	-2.365%	-0.287%
Standard Deviation	6.38%	4.69%	7.87%	6.10%	7.79%
Variance	0.00406563	0.0022	0.006193051	0.003720645	0.00606691
Beta	1.06	0.67195	1.17749547	0.847706963	0.703418448
Ranking of most volatile stock based on Standard deviation (Higher S.D Stock is more Volatile)	3	5	1	4	2
Ranking of most volatile stock based on Beta (Higher Beta ratio is highest risky stock)	2	5	1	3	4

Source: Researcher

Table 1: Statistical calculation and rankings

The above table shows mean return for one year with the standard deviation, variance along with beta.

During volatile market investor can take investment decision based on risk return statistics with respect to the standard deviation and beta.

Defensive investor would like to invest in stocks with lower standard deviation and beta, as there will be less fluctuation and security prices will be more or less stable. (TCS)

Aggressive investor would definitely would like to invest in stocks with higher standard deviation and beta, as there is direct relation between risk and return (Infosys and Happiest Mind)

In uptrend (bullish market, Huge highs and high lows) investors would like to invest in securities with beta greater than 1 and vice a vera.

In downtrend (bearish market, Lower lows and lower highs) investors would like to invest in securities with beta less than 1 and vice a versa.

Conclusion:

Volatility is stock market is due to various economic, industry and company related factors and it basically represents trader's mind set and demand and supply for securities.

Standard deviation is a measure of total risk or variation from mean return for security and it consists of both systematic and unsystematic risk, whereas beta is a measure of market risk on which companies do not have any control. Beta (β) = Covariance (r, m) / Variance (m)

From the study we can conclude more or less IT stock moves along with NIFTY IT index, TCS and Wipro are less volatile than Infosys and Happiest Mind in relation to the NIFTY IT INDEX as whole. Based on mean return we can conclude that TCS has given positive return over the last 12 months compared to other companies. NIFTY IT Index as whole has given Negative return.

References:

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