A STUDY OF VOLATILITY OS INDIAN STOCK MARKET WITH CONTECT TO BSE

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ABSTRACT: -

Volatility refers to the degree of fluctuation or variation in something. It is a measure of how much something's value or price changes over time. This research is going to analyze the volatility of stock market by considering SENSEX 30 companies by taking returns of all 30 companies.

INTRODUCTION:-

Indian stock market volatility refers to the degree of price fluctuations experienced by securities traded on the various stock exchanges in India. Volatility is a critical aspect of financial markets and is often considered a double-edged sword. On one hand, it presents opportunities for traders and investors to capitalize on price swings, potentially leading to significant gains. On the other hand, it can expose participants to higher levels of risk and uncertainty.

The Indian stock market, like any other, is influenced by a wide range of factors that contribute to its volatility. Some of these factors include:

1. Economic Indicators: Key economic indicators such as GDP growth, inflation rates, interest rates, and employment figures play a significant role in shaping investor sentiment and impacting market volatility.

2. Global Events: As a part of the interconnected global financial system, the Indian stock market is susceptible to fluctuations caused by international events, geopolitical tensions, and changes in global economic conditions.

3. Corporate Performance: The financial performance of companies listed on Indian stock exchanges has a direct impact on their stock prices and can trigger volatility in the broader market.

4. Government Policies: Economic policies and reforms implemented by the Indian government can influence market sentiment and contribute to market swings.

It's important to note that while volatility brings potential opportunities, it also introduces risks. Investors and traders need to be well-informed, have a clear understanding of their risk tolerance, and employ appropriate risk management strategies to navigate the dynamic nature of the Indian stock market. Additionally, regulators and market participants continually work towards ensuring transparency and stability in the market to mitigate extreme fluctuations and maintain investor confidence.

LITERATURE REVIEW: -

1. BEDANTA BORA ANINDITA ADHIKAR (2019): -

This study uses GARCH models, which account for volatility clustering and the leverage effect, to examine the volatility of returns in Stock Market of India. The investigated data are the Nifty index's daily closing prices from 2005 to 2019 (5)

2. RAJASHEKAR, D. SUDARSANA MURTHY, T. NARAYANA REDDY (2018):-

The stock market may also serve as a centre for investors to buy and sell shares, bonds, and other financial instruments. In other words, the stock market might also serve as a barrier-free platform for trading different assets and derivatives. Various businesses are listed to their commercial ventures on the open market through public problems. Future investors are currently making investments in businesses through the stock market in order to profit (3).

3. KAVITA (2017): -

The benchmark index for the Indian equities market is the BSE Sensex. The current study aims to determine whether past Sensex returns possess any forecasting power for current Sensex performance. The study used daily BSE closing price data from April 2000 to March 2015 (1).

4. SAMEER YADAV (2017): -

Developed markets have consistently offered long-term greater returns with little volatility. In comparison to developed countries, the Indian market has begun to become more informationally efficient. The research will make it easier for the reader to comprehend the historical, present, and prospective features of the Indian Stock Market (2).

5. M. PUSHPALATHA, J. SRINIVASAN, G. SHANMUGAPRIYA (2017):-

The goal of the current study is to ascertain the share price volatility and movements of the chosen 10 Financial Service firms which are included in the list of the top fifty publicly traded corporations. The period of time for the study was chosen to be from January 2009 to December 2017 (4).

Research Gap: -From the previous literature reviews they are restricted to descriptive research but in my study, I have considered 30 companies samples & company shares which are top listed in BSE SENSEX to find the volatility of stock market with analytical research .

PROBLEM STATEMENT:-

To find the 100% volatility of stock market of India regarding 30 companies of SENSEX.

Methodology:-

The study undertakes analytical in nature using secondary data of stock price movement of 30 BSE companies of SENSEX analysis has been carried out.

OBJECTIVES:-

- ➢ To study the volatility of stock market through share price behavior.
- ➢ To study the changes in share price of sample companies.
- ➢ Evaluate returns and volatility relationship of BSE with selected companies.

Hypothesis: -

H_0 = There is no impact of top 30 companies volatility on Indian stock market.

H_1 = There will be impact of top 30 companies volatility on Indian stock market.

LIMITATIONS:-

- ➢ Study is limited to SENSEX companies.
- ➢ Study has been made for one particular year (2022).

DATA ANALYSIS: -

1.Computation of volatility of ASIAN PAINTS: -

Date	Close	Returns	(x-mean)	(x-mean^2)
01-01-2022	3152.3		15.8	249.5
01-02-2022	3174.6	0.71	38.2	1458.9
01-03-2022	3079.9	-2.98	-56.5	3192.7
01-04-2022	3237.2	5.11	100.7	10149.7
01-05-2022	2859.6	-11.66	-276.8	76620.6
01-06-2022	2695.2	-5.75	-441.3	194705.2
01-07-2022	3333.8	23.69	197.3	38925.7
01-08-2022	3391.6	1.74	255.1	65099.5
01-09-2022	3342.4	-1.45	206	42434.3
01-10-2022	3107.7	-7.02	-28.8	826.8
01-11-2022	3175.1	2.17	38.7	1497.4
01-12-2022	3087.9	-2.75	-48.6	2357.5
Total	37637.3		**Total**	437517.8

Step 1: - Finding returns
Formula: - $R = \{(P - P_0) / P_0\} *100$
Where P = present value, P_0 = pervious value, R = Returns

Step -2: - Finding mean
Formula:- mean = sum of terms / numbers of terms
=37637.3/12
Mean = 3136.5

Step 3 :- finding standard deviation :-

$$\sigma = \sqrt{\frac{\sum (x - mean)^2}{n}}$$

x is a set of numbers

mean is the average of the set of numbers

n is the size of the set

σ is the standard deviation

Variance =437517.8 / 12
Variance=36459.8
SD = Root of variance
SD=190.94

**Step 4 finding Volatility :-**
Volatility = (SD/MEAN)* 100
Volatility = (190.94/3136.5)*100
Volatility = 6.087

30 companies under SENSEX and their volatility for the year 2022: -

S.No	Name	Mean	Variance	SD	Volatility
1	Asian paints	3136.5	36459.8	190.945	6.088
2	Axis Bank	773.15	7807.11	88.35	11.42
3	BAJAJ FINSERV	1541.26	30756.8	175.37	11.38
4	BAJAJ AUTO	3716.23	25867	160.83	4.32
5	BHARATI AIRTEL	748.85	3262.79	57.12	7.63
6	HDFC BANK	66.11	13.23	3.63	5.50
7	HUL	2425.25	48591.3	220.43	9.08
8	ICICI	815.47	6265.22	79.15	9.70
9	INDUSIND BANK	1024.95	17693.1	133.02	12.97
10	INFOSYS	18.70	0.27	0.55	2.79
11	ITC	288.86	2002.55	44.74	15.49
12	JSW STEELS	66.12	4441.9	66.6	1006
13	KOTAK BANK	1831.7	5308.	72.85	3.97
14	L&T	1847.1	25347.3	159.21	8.06
15	M&M	1098.12	38822.18	197.03	17.94
16	MARUTI SUZUKI	8542.33	299420	574.19	6.40
17	NESTLE	117.67	31.74	5.63	4.79
18	NTPC	154.3	169.08	13.03	8.42
19	ONGC	148.5	180.32	13.43	9.43
20	POWER GRID	219.62	62.60	7.91	3.60
21	RELIANCE	2562.72	17232.44	131.27	5.12
22	SBI	527.12	2228.5	47.21	8.96
23	SUN PHARMACY	921.58	4842.81	69.59	7.55
24	TATA MOTORS	438.66	1069.85	32.71	7.46
25	TATA STEELS	109.81	136.57	11.69	10.64
26	TCS	3380.6	4611.79	214.75	6.35
27	TECH MAHINDRA	1081.84	1937.57	44.02	4.06
28	TITAN	13.01	5.11	2.26	17.37
29	ULTRATECH CEMENTS	6661.2	251958.2	501.95	7.55
30	WIPRO	5.93	1.14	1.07	18

Graphical representation of above data :-
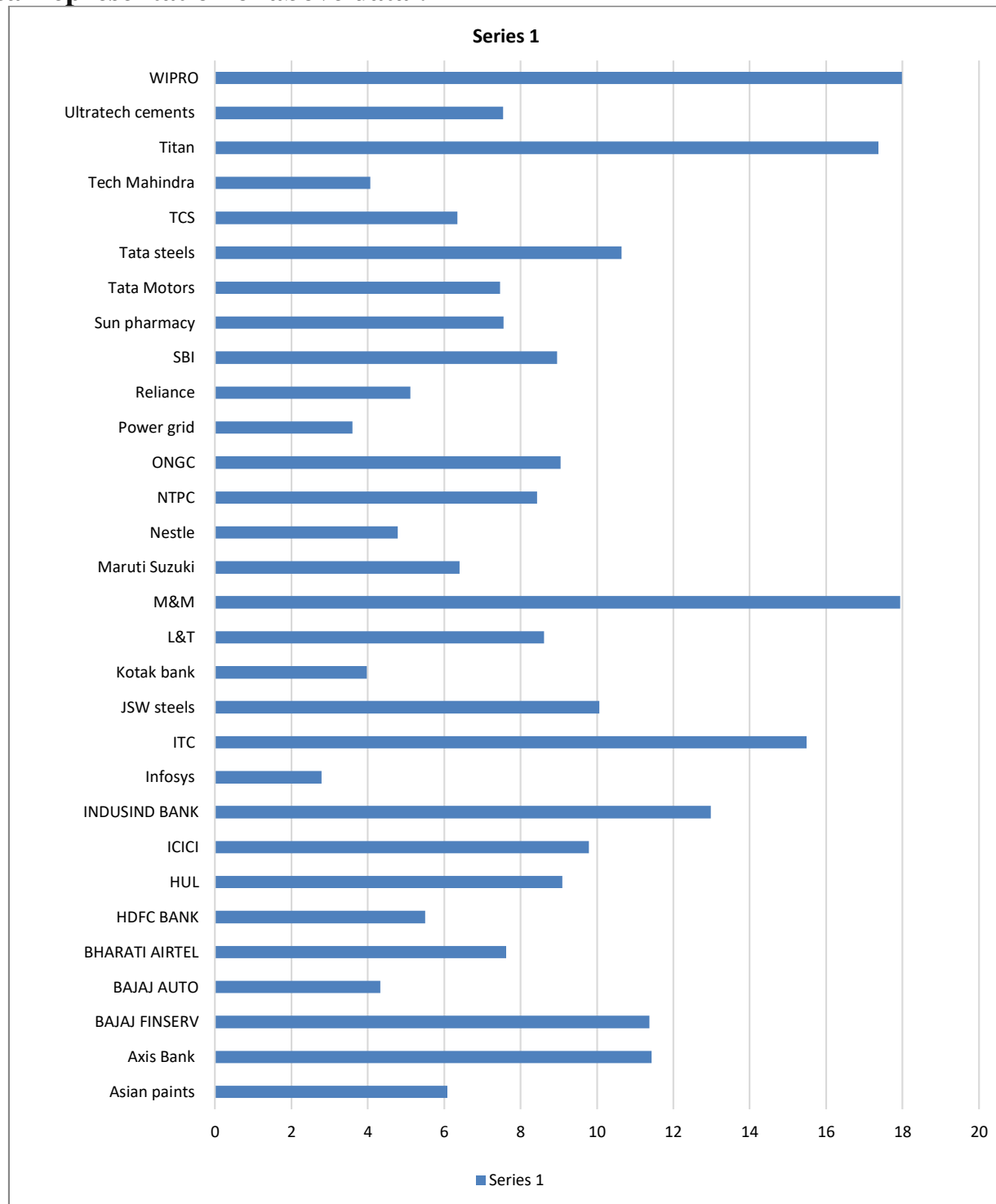
Interpretation: - The company Wipro has the most volatility, with a score of 18, followed by M&M (Mahindra & Mahindra) with a score of 17.9, TITAN with a score of 17.4, ITC (Indian Tobacco Company) with a score of 15.5 and there on...

While Infosys, Power Grid, Kotak Bank, and others have the lowest volatility scores (2.8, 3.6, and 4.0, respectively) and there on.

FINDINGS: -

Based on the provided data, it appears that the company Wipro has the highest volatility among the listed companies, with a score of 18. Following closely behind are M&M (Mahindra & Mahindra) with a score of 17.9, TITAN with a score of 17.4, and ITC (Indian Tobacco Company) with a score of 15.5. These scores suggest that Wipro experiences significant fluctuations in its stock prices or financial performance, making it the most unpredictable and risky investment option among the listed companies.

On the other hand, companies like Infosys, Power Grid, and Kotak Bank have the lowest volatility scores, with values of 2.8, 3.6, and 4.0, respectively. the numbers will indicate that the companies have relatively stable stock prices or financial performance, making them less risky investments compared to Wipro and other high-volatility companies.

SUGESSIONS: -

Based on the volatility scores provided, it is evident that certain companies, such as Wipro, M&M, TITAN, and ITC, exhibit significantly higher volatility compared to others like Infosys, Power Grid, and Kotak Bank, which have lower volatility. These observations can lead to

various suggestions or implications for investors and stakeholders:

1. Risk Tolerance: Investors with a higher risk tolerance and seeking potentially higher returns might be more inclined to invest in companies with higher volatility, such as Wipro and M&M. On the other hand, risk-averse investors may prefer stable and less volatile companies like Infosys, Power Grid, and Kotak Bank.

2. Diversification: The presence of both highly volatile and low-volatility companies offers an opportunity for investors to diversify their investment portfolio. Diversification across different sectors and risk profiles can help reduce overall portfolio risk and potential losses.

3. Investment Strategy: Investors who focus on short-term trading or speculative investments may find opportunities in highly volatile companies like TITAN and ITC, where stock prices can experience significant swings. In contrast, long-term investors might lean towards stable companies for steady growth and consistent returns.

Remember, investing always carries inherent risks, and past volatility may not predict future performance.

CONCLUSION: -

The data obtained shows how the top 30 firms and their volatility of the BSE under SENSEX are having an impact on the Indian stock market. The average volatility across all 30 firms is 8.3, whereas the volatility on the Indian stock market is 6.8.

We can see that Wipro, with a score of 18, has the highest level of volatility, followed by M&M (Mahindra & Mahindra), TITAN, with a score of 17.4, ITC (Indian Tobacco Company), with a score of 15.5, and so on.
The companies with the lowest volatility scores include Infosys, Power Grid, Kotak Bank, and others (2.8, 3.6, 4.0, and so on, correspondingly).

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