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Does Investment in Defensive Stocks Act as a Buffer during Market Downturns?

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Abstract:

The study examines the performance of defensive stocks during market downturns in the Indian stock market. The research focuses on the period from January 2000 to December 2023. In this study selected stocks from the Fast-Moving Consumer Goods (FMCG) sector (HUL, ITC, Britannia Industries) and Pharma sector (Sun Pharmaceuticals Industries, Dr Reddy Laboratories and Cipla) have been taken into consideration.

Five key metrics are covered to assess the stock's performance: Stock return, Correlation, Beta Compound Annual Growth Rate (CAGR), and Dividend yield. For stock return a comparison is made between stock market return and selected stock return, also the average return of each stock is calculated and compared with the average market return during market downturns. Correlation has been used to understand if there is a relationship between stock returns and nifty returns. Beta has been used to understand the sensitivity of the stock in relation to the market and Compound Annual Growth Rate has been used to analyze the long-term stability of each stock. The average dividend yield is calculated to understand the extra return that an investor can get on his investments on top of capital gain.

The study findings revealed that incorporating stocks from the Fast-Moving Consumer Goods (FMCG) and Pharmaceutical (Pharma) sectors protects investors against market downturns, Additionally, the research highlights the long-term stability of returns associated with defensive stocks, making them a valuable component for investors seeking portfolio diversification and a buffer against market fluctuations.

Keywords: Defensive Stocks, Market Downturns, Stock Market Return, Beta, CAGR, FMCG, Pharma.

Introduction:

Investors invest in stock market with various expectations like seeking regular income through dividend payouts, accumulating wealth for their later years and to hedge against raising inflation. When the stock market crashes, the most immediate effect is on the value of investment portfolios. A drop in stock prices causes the value of the portfolio to fall. Volatility rises following a market crash, causing stock values to move quickly and unpredictably which causes investors to lose money.

Investors constantly seek ways to reduce risk and safeguard their investments in volatile market conditions due to which the need of the study arises to investigate defensive sector stock performance during market downturns as defensive stocks represent companies which operates
in important sectors with the products and services that are regarded as essentials. Through an analysis of previous stock market crashes and instances of notable market downturns, the study can determine if the investors can protect their investments by investing in defensive stocks.

This research paper seeks to provide a comprehensive analysis of the role of defensive stocks in mitigating risks and preserving capital during market downturns by analysing the performance of defensive stocks by employing multiple key matrices. Through empirical analysis, this study aims to evaluate the performance of defensive stocks relative to the broader market indices during different phases of the economic cycle. By shedding light on the dynamics of defensive investing and its implications for portfolio management, this study aims to offer valuable insights for investors navigating volatile financial markets.

- By understanding the performance of defensive stocks, investors can make better decisions on their investments which leads to enhanced returns and better risk management.
- It can help investors to identify potential investment opportunities and broaden the investment horizon.
- Defensive stocks can reduce overall portfolio volatility during downturns, helping protect wealth and mitigate significant losses for investors.
- The reduced volatility of defensive stocks can offer investors greater peace of mind during market declines.

Objectives of the study:

- To analyze the performance of defensive stocks during market downturns.
- To identify if the defensive stocks can mitigate losses in times of economic downfall
- To identify if there is a relationship between the nifty 50 returns and defensive stocks returns.
- To identify if the stocks are less or more volatile than the market.
- To identify whether the selected stocks offer stable returns for the long term despite market downturns.

Research Methodology:

In this study quantitative data is collected from secondary sources for the period of 2000 - 2023 and it have been analyzed using Excel. The data analysis was done in two different parts, in the first part of the data analysis the stock return and market return were calculated for each crash based on the price movement during the crash by taking the formula of the total return (Ending Price - Beginning Price)/Beginning Price* 100. Then the average return of all the crash was calculated for each stock and market based on which comparison was done between market and stock returns.

In the second part of the data analysis, Correlation, Beta, CAGR and Average Dividend Yield were calculated based on the data from the year 2000 to 2023. Correlation analysis was performed to examine relationships between stocks and nifty. Additionally, the Beta of the stocks was computed to analyze the magnitude of the volatility of stocks as compared to the movement in the market.

After analyzing the relationship and the volatility of stocks with the market the Compounded Annual growth rate value of each stock is compared with the market to know whether selected defensive stocks offer better returns than the market. The CAGR calculation was done by using the formula

(Ending Value/ Beginning Value) ^ (1 / Number of Years) – 1

The average dividend yield was calculated by taking the average dividend yield from 2014 to 2023 and for each year the dividend yield was calculated by taking the total amount of dividend during that year and divided by the share price at the end of the year.

Data Analysis:

Crash 1: 11/02/2000 to 21/09/2001

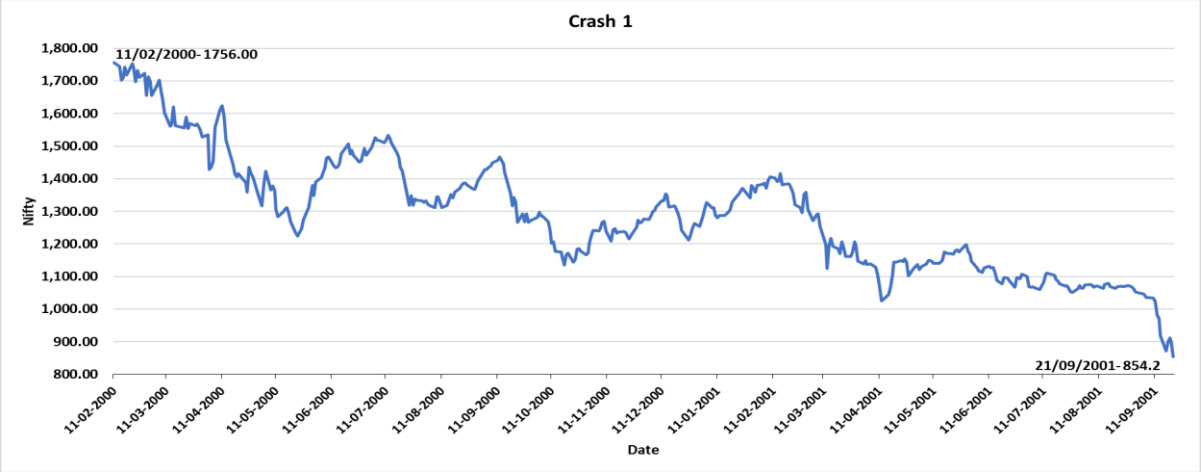

Fig: 1

From figure 1, it has been observed that nifty 50 fell from 1756 points on 11/02/2000 to 854.2 points on 21/09/2001, resulting in a fall of approximately 51.36%. The fall was due to the dot-com bubble burst in 2000 due to which Investors realized many dot-com companies were not sustainable, resulting in a massive sell-off of tech stocks on global markets. In 2001 Ketan Parekh artificially inflated the prices of specific stocks (known as the K-10 stocks) Kanojia, S., & Malhotra, D. (2021). The specific stocks were small-cap companies and were not so familiar to investors which led to the share price increase of these stocks at an alarming rate due to huge investments. Following the Union Budget presentation in March 2001, the market crashed, prompting a government investigation. This led the RBI to reject Ketan Parekh's pay orders, triggering market panic and causing him to liquidate K10 stocks.

Table 1: Returns during the 2000 - 2001 crash.

Particulars	Nifty	HUL	ITC	Britannia	Sun Pharma	Dr Reddy's Laboratories	Cipla
Returns	-51.36%	-18.30%	-37.00%	-29.54%	-18.02%	24.60%	-3.59%

Table 1 shows that during the 2000- 2001 crash, all the stocks outperformed the market where Dr Reddy Laboratories was the best performer being the greatest defensive stock during this downturn where it increased by 24.60% followed by Cipla which only fell by -3.59%. The other stocks also outperformed the market and fell relatively less as compared to the market fall of -51.36%.

Crash 2: 14/01/2004 to 17/05/2004

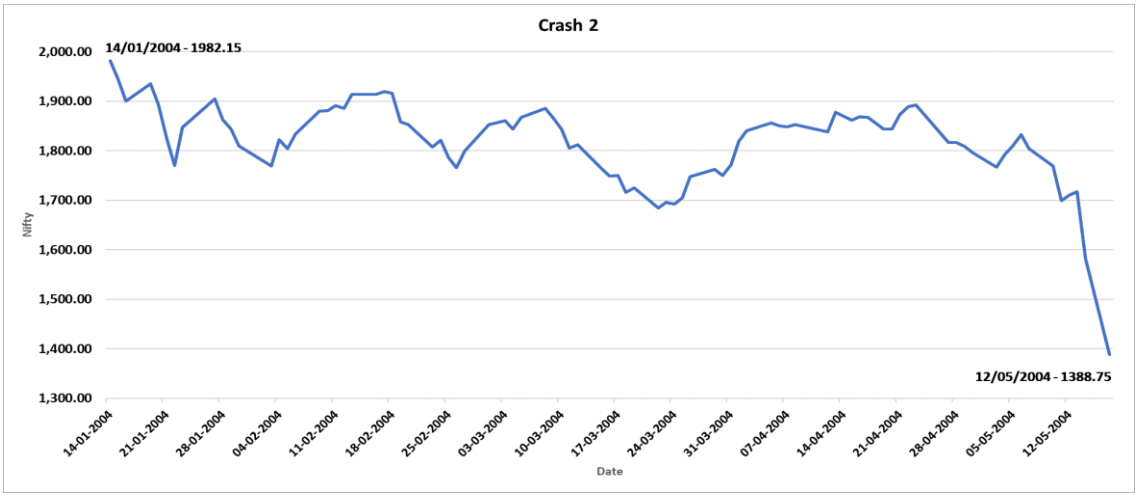

Fig: 2

From figure 2, it has been observed that nifty fell from 1982.15 points on 14/01/2004 to 1388.75 points on 17/05/2004 reporting a fall of approximately -29.94%, the reason behind the downfall was an unanticipated change in government. The surprise defeat of the incumbent BJP-led NDA coalition in the 2004 general elections created fears of policy changes and potential instability in the Indian economy. On May 17 2004, the government commented on the divestment of the Public Sector Units due to which investor confidence was shaken, resulting in the huge fall of the market.

Table 2: Returns during 2004 crash

Particulars	Nifty	HUL	ITC	Britannia	Sun Pharma	Dr Reddy's Laboratories	Cipla
Returns	-29.94%	-42.00%	-26.98%	-13.90%	6.97%	-42.82%	-20.04%

Table 2 reveals that during the 2004 crash, most of the stocks outperformed the market, except HUL and Dr Reddy's Laboratories. Sun Pharma proved remarkably resilient, rising by 6.97% despite the market's 29.94% decline. Britannia Industries also showed relative strength, falling by only 13.90%. ITC and Cipla, while experiencing declines, still fell less compared to the overall market.

Crash 3: 10/05/2006 to 14/06/2006

Fig: 3

Figure 3 shows that nifty fell from 3574.25 points on 10/05/2006 to 2632.80 points on 14/06/2006 reporting a fall of approximately -29.87%. The fall occurred due to a rise in the interest rate in the US due to inflationary expectations and a global fall in metal and other commodity prices. Another prime reason for the fall was that FII started taking selling positions and the net investments of the Foreign Institutional Investors started falling in the Indian market. From May 2004 till April 2006, the Sensex rose from around 4500 points to 12,000 points. The abnormal price appreciation was a bubble that kept growing and the correction came in the year 2006.

Table 3: Returns during 2006 crash

Particulars	Nifty	HUL	ITC	Britannia	Sun Pharma	Dr Reddy's Laboratories	Cipla
Returns	-29.87%	-33.41%	-28.16%	-31.40%	-23.67%	-29.02%	-29.81%

Table 3 depicts that during 2006 market crash, the market fell by 29.87%, however, all the stocks almost fell equally or more except Sun Pharma and ITC which fell comparatively less than the market.

Crash 4: 08/01/2008 to 27/10/2008

Fig: 4

Figure 4 shows that nifty fell from 6287.85 points on 08/01/2008 to 2524.20 points on 27/10/2008 reporting a fall of approximately 59.86%, the fall was the direct consequence of the global financial crisis which began with the collapse of the US housing market. Risky subprime mortgages fueled an unsustainable bubble, and when it burst, the fallout crippled financial institutions worldwide. This triggered a global recession marked by dwindling investor confidence and a flight to safety, causing widespread panic-selling of stocks in emerging markets like India. Foreign Institutional Investors (FIIs) also rapidly pulled their investments out of India, creating massive selling pressure. The collapse of Lehman Brothers further escalated the crisis. In the later part of Jan. 2008, the nifty fell very sharply after scaling to a peak of 6279 points on January 7 2008 which led to one of the massive corrosions in investor wealth.

Table 4: Returns during 2008 crash

Particulars	Nifty	HUL	ITC	Britannia	Sun Pharma	Dr Reddy's Laboratories	Cipla
Returns	-59.86%	-10.55%	-35.52%	-27.64%	6.16%	-39.59%	-31.00%

The performance of defensive stocks during the global financial crises is shown in table 4

Being defensive these stocks outperformed the market where Sun pharma was the best performer as it rose around 6.16%, followed by HUL which only fell -10.55% as compared to the market fall of -59.86%. From the table, it has also been observed that the other stocks also outperformed the market and fell relatively less as compared to the market.

Crash 5: 03/03/2015 to 25/02/2016

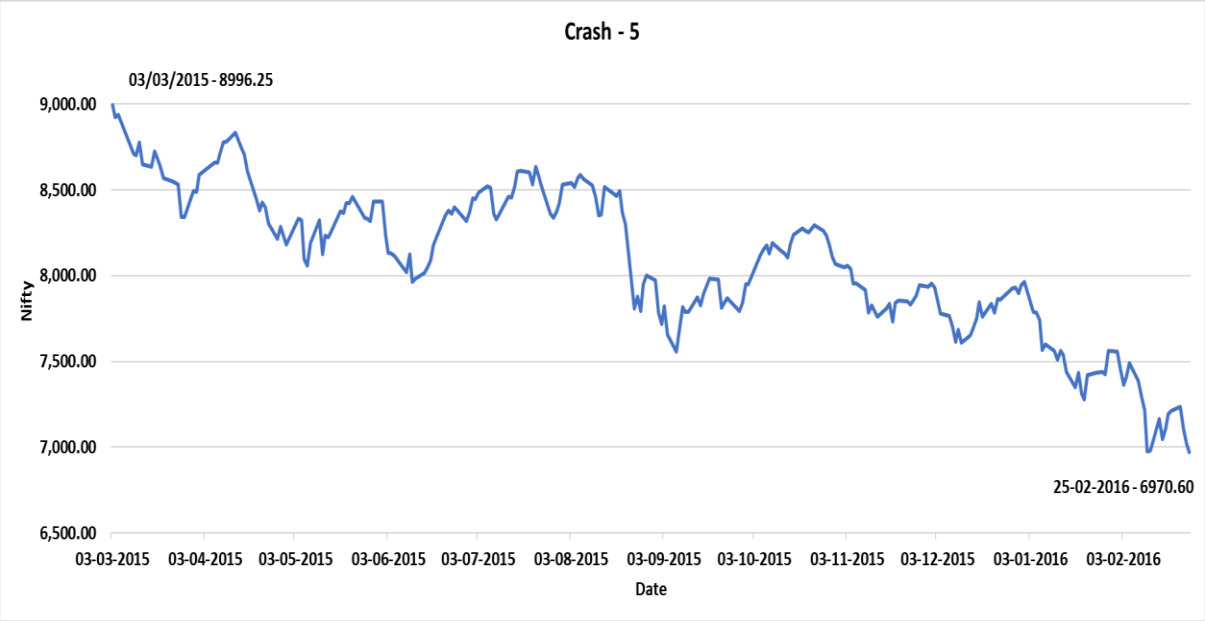

Fig: 5

From the figure it has been observed that nifty fell from 8996.25 points on 03/03/2015 to 6970.60 points on 25/02/2016 reporting a fall of approximately 22.52%, the fall was due to a major downturn in the Chinese economy, the Chinese currency started depreciating and shook investors' confidence in the market due to which there was rapid selling of stocks in Chinese and Indian stock market. There was also a worldwide slump in commodity prices, particularly oil, which created a climate of uncertainty and risk aversion among investors. Additionally, the anticipation of interest rate hikes by the US Federal Reserve further intensified the situation. US investments became more attractive, leading to capital flight from emerging markets like India.

Table 5: Returns during 2015-2016 crash

Particulars	Nifty	HUL	ITC	Britannia	Sun Pharma	Dr Reddy's Laboratories	Cipla
Returns	-22.52%	-9.35%	-16.21%	23.85%	-7.18%	-12.13%	-29.09%

Table 5 shows that during the crash, Britannia Industries performed very well and provided a positive return of 23.85% despite a market fall of -22.52%, other stocks fell relatively less as compared to the market and outperformed the market.

Crash 6: 14/01/2020 to 23/03/2020

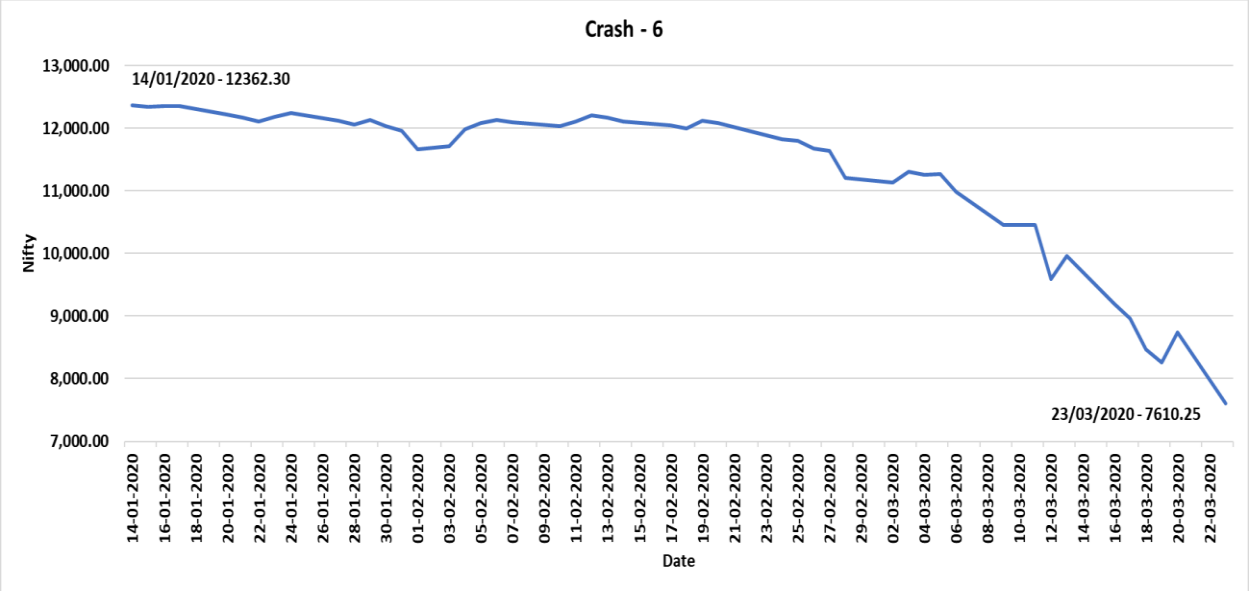

Fig: 6

Figure 6 shows that nifty fell from 12362.30 points on 14/01/2020 to 7160.10 points on 23/03/2020 accounting for a fall of approximately 38.44%, the fall was due to the rapid spread of Covid19 and its unprecedented impact on public health and global economies. Anticipations of lockdown, disruptions in the supply chain and a looming global recession led to investor fear and risk aversion due to which investors worldwide sold off their stocks and started investing in safer assets such as bonds and gold. Huge selling of stocks created a cascading effect across global markets including India which led to a further fall in markets. The price war between major oil producers (Saudi Arabia and Russia) flooded the market with oil, causing prices to plummet. This added to the global economic anxieties and negatively impacted oil-related sectors.

Table 6: Returns during 2020 crash

Particulars	Nifty	HUL	ITC	Britannia	Sun Pharma	Dr Reddy's Laboratories	Cipla
Returns	-38.44%	-6.92%	-36.57%	-31.15%	-27.24%	-6.09%	-22.51%

Table 6 shows that the nifty index crashed by 38.44 % during the COVID crises, however, all the selected stocks outperformed the market and fell relatively less as compared to the market, Dr. Reddy Laboratories and HUL performed much better than other stocks during the crisis.

Table 7: Average Returns

Particulars	Nifty	HUL	ITC	Britannia	Sun Pharma	Dr Reddy's Laboratories	Cipla
Average Return	-38.66%	-20.09%	-28.69%	-16.05%	-8.99%	-25.93%	-24.99%

The above table shows that the average fall in Nifty considering all the major crashes was approximately -38.66%, whereas all the stocks taken for the study outperformed the market and fell relatively less as compared to the market. Sun Pharma is the best performer among all the stocks taken as it only fell by approximately 9%, as compared to the market fall of -38.66%. Other stocks also performed well during the market downturns and have outperformed the market by protecting investor capital as they fell relatively less compared to the market.

After assessing the performance of the stock based on returns, Pearson's correlation coefficient analysis is performed to check the multicollinearity between the stocks and the nifty

Correlation Analysis:

Table 8: Correlation Coefficient of Daily Stock Market Returns

Returns	*Nifty*	*HUL*	*ITC*	*Britannia*	*Sun pharma*	*Dr Reddy Laboratories*	*Cipla*
Nifty	1						
HUL	0.0711	1.0000					
ITC	0.5165	0.0296	1.0000				
Britannia	0.1732	0.0223	0.0855	1.0000			
Sun pharma	0.1984	-0.0064	0.1269	0.0535	1.0000		
Dr Reddy Laboratories	0.3217	0.0141	0.1915	0.1249	0.2131	1.0000	
Cipla	0.3466	0.0069	0.2078	0.1203	0.2465	0.3464	1.0000

The above table shows that the daily stock market returns of nifty are positively correlated with those of all the defensive stocks. ITC, Dr Reddy laboratories and Cipla have a moderate degree of correlation with the market which indicates a somewhat weaker, but still noticeable, linear relationship between nifty 50 and these stocks. HUL, Britannia and Sun Pharma have a low correlation with the market which indicates a weak or negligible linear relationship between them. As correlation only says the relationship and does not show the magnitude of change, the beta is calculated to assess the magnitude of change or volatility of stocks in relation to the market.

Table 9: Beta Coefficient of Daily Stock Market Returns

Particulars	Nifty	HUL	ITC	Britannia	Sun Pharma	Dr Reddy's Laboratories	Cipla
Beta	1.00	0.61	0.70	0.21	0.46	0.47	0.48

The above table shows that all the stocks have a beta of less than one which depicts that these stocks are less volatile than the market. Britannia Industries has a lowest beta of 0.21 which depicts that for every 1% change in nifty 50, Britannia Industries is likely to fluctuate by 0.21%. The other stocks' beta ranges from 0.46 to 0.70 depicting that even during large market swings, these stocks are expected to experience relatively smaller fluctuations.

Once the investors are aware of the returns and the volatility of the stock in relation to the market and able to protect themselves by holding these defensive stocks and introducing them into their portfolio, investors also expect to earn a decent return by holding these stocks for the long term. Simply investing in defensive stocks that protect against market downturns may not be feasible unless and until investors can make decent money holding these stocks for the long term. To address this concern the calculation of the Compound Annual Growth Rate (CAGR) and Dividend yield is performed.

Table 10: CAGR and Dividend yield

Particulars	Nifty	HUL	ITC	Britannia	Sun Pharma	Dr Reddy's Laboratories	Cipla
CAGR	17.34%	16.03%	23.01%	29.75%	32.69%	18.36%	15.39%
Dividend Yield		1.52%	3.15%	1.42%	0.60%	0.65%	0.47%

From above table, it can be observed that the compound annual growth rate of nifty is 17.34% and the compound annual growth rate of all the selected stocks is ranging from 16.03% to 32.69% from 2000 to 2023. where HUL has the lowest CAGR and Sun pharma has the highest CAGR. The CAGR for all the stocks depicts that investors get a good return by holding these stocks for the long term based on the historical performance of the stock. From the table, it has also been observed that the average dividend yield for each of the stocks ranges from 0.47% to 3.15%. which depicts the additional income that an investor can earn on top of capital gain which will increase investors' return.

Discussion and Findings:

The study can contribute to the existing body of knowledge on defensive sectors' performance during market downturns. By analyzing specific defensive stocks and metrics, it strengthens the understanding of how defensive stocks act as hedge against market downturn.

The analysis validates the generally accepted notion that defensive sectors like pharmaceuticals and FMCG provide safety during market downturns. Through the study of indicators such as Stock Return, Correlation, Beta, CAGR, and dividend yield, the research offers more justification for this theory. The research can add to the theory of risk-return trade-off by examining how defensive stocks offer lower volatility while potentially providing some level of return during downturns.

This report highlights the benefits of defensive stock allocation, particularly pharma and FMCG stocks, for portfolio management. By including these fewer volatile assets, investment managers can create plans balancing risk and return, reduce overall portfolio volatility during downturns, and improve risk-adjusted returns. The study's findings are valuable for investment firms to design asset allocation models and investment products like ETFs targeting defensive sectors. Financial advisors can leverage this information to communicate the advantages of defensive stocks to clients, recommending their inclusion in portfolios for risk-averse individuals or those nearing retirement.

The findings of the study revealed that FMCG sector stocks like HUL, Britannia Industries, and ITC and pharma sector stocks like Sun Pharma, Dr Reddy Laboratories and Cipla gave an average positive return even during the time of market downturns. ITC, Dr Reddy laboratories and Cipla have a moderate degree of correlation with the market and HUL, Britannia and Sun Pharma have a low degree of correlation with the market. All the stocks are less volatile than the market which depicts the defensive nature of these stocks. The CAGR and Dividend yield of the stocks depicted that investors will not only protect their capital during market downturns to some extent, but they will also be able to get decent returns on their investments for holding the stocks for the long term.

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Conclusion:

This study investigated the performance of defensive stocks during market downturns in the Indian stock market. The research focused on the period from January 2000 to December 2023, analyzing major downturns when the Nifty 50 index fell by more than 20%. Selected FMCG (Hindustan Unilever, ITC, Britannia Industries) and Pharma (Sun Pharma, Dr Reddy's Laboratories, Cipla) stocks were examined.

The analysis employed five key metrics: stock return, Correlation, beta, CAGR (Compound Annual Growth Rate), and dividend yield. Stock returns were compared to market returns, and average returns for each stock were calculated against the average market return during downturns. Beta assessed stock sensitivity relative to the market, while CAGR analyzed long-term stability. Average dividend yield provided insights into additional investor returns.

The findings revealed that incorporating FMCG and Pharma stocks offered protection against market downturns. Due to their essential nature, these sectors experienced lower declines compared to the broader market during economic recessions. The study also highlighted the long-term stability of returns associated with defensive stocks, making them valuable for portfolio diversification and buffer against market fluctuations.

This research contributes to the existing knowledge on defensive sectors by analyzing specific sectors and metrics during downturns. It strengthens the understanding of how these sectors act as hedge against market volatility. Additionally, the study informs the risk-return trade-off by demonstrating how defensive stocks offer lower volatility while potentially providing some return during downturns.

The findings have practical implications for portfolio managers, investment firms, financial advisors, and investors. Portfolio managers can utilize the evidence to incorporate defensive stocks, particularly from FMCG and Pharma sectors, for mitigating risk. Investment firms can leverage the conclusions to develop asset allocation models with defensive sector allocations. Financial advisors can use the study to inform investment recommendations and client communication regarding the benefits of defensive stocks for portfolio diversification and achieving financial goals.

The study acknowledges limitations. The data time frame might not capture the full range of downturns, and the focus on two sectors and a limited number of companies might not represent the entire defensive sector behavior. Future research could explore a broader timeframe, additional defensive sectors, and a wider range

of companies within each sector. Additionally, investigating defensive sector performance across different markets would provide valuable insights.

The current study can be used for future research by taking more stocks into consideration and more sectors into consideration, different risk return matrices can be involved for a more nuanced comparison of defensive stocks with broader markets during downturns.

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