

COMPARING TRENDS IN LARGE CAP, MID CAP AND SMALL CAP INDICES DURING AND AFTER COVID-19 RECESSION



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ABSTRACT

The broad objective of this study is to examine the pattern of fall in price and its recovery according to capitalization size in the Indian stock market during and after coronavirus recession and compare these patterns with each other so that we can evaluate the behavior of all cap indices and COVID-19 recession impact on them.

For this purpose, Daily Historical data of large-cap, mid-cap and small-cap indices from 1 January 2020 to 31 June 2021 is used for data analysis. Statistical tools such as Average (Mean) returns, Standard deviation, Variance and Coefficient of variation in returns are used to study the pattern of movement in returns of large-cap, mid-cap and small-cap indices. And Covariance and F- test is used to study relationship between Indices. In end, Bar charts are used to summarize and compare resultant patterns in returns.

The result of the analysis carried out shows that the large-cap offers fewer returns than mid-cap and small-cap indices on average, and Large Cap returns varied most during the Corona recession, so this index was riskiest index during the Corona recession. This study can be useful to Investors and Academicians as they can use it while making investment decisions and for further academic study on the related topic.

Keywords	Market Capitalization, Large-cap, Mid-cap, Small-cap, Indices
JEL Classification	G12
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INTRODUCTION

COVID-19 pandemic shaken the world. Almost all countries got affected by COVID-19. Due to this, there was recession in economies and stock markets all over the world. Every stock market got affected. Investors were drawing their money from stock market out of fear of losing it as the conditions and situation ahead was totally unpredictable. No one was sure what is going to happen. Stock market is a common place where shares of different companies with different factors such as their size, capitalization are traded. Each Index indicate the overall situation of stock covered in it.

COVID-19 situation affects stock market in some way, but the pattern of affect was different across securities. These patterns need to be studied to evaluate the effect of COVID-19 recession across stock market. Small cap stocks are perceived as most vulnerable stock to fluctuations and changes of market conditions. With COVID-19 recession, many investors who have their investment in small & mid cap funds got panic and started to withdraw their investment as they thought that some of these companies may be unable survive. Even after COVID-19 recession, investors thought that it's best to invest in large cap funds to avoid any risk and get high returns as almost all stocks were underpriced at that time.

As general rule it is thought that investors can gain more and lose more from investments in small & mid cap funds. COVID-19 recession stumble whole stock market, so it's a high time that we check whether this notion is true or not by studying patterns of stock price during and after COVID-19 recession and compare these trends to see if there is some significant difference between these trends or not.

LITERATURE REVIEW

(Biswas & Dutta, 2019) compared market risk across India's balanced, large cap and small & midcap funds and finds that some balanced funds are riskier than pure equity-based funds, and not all large funds are less risky than all small and midcap funds. They concluded that the common notion across stock market can be wrong many times, and if asset management company have one scheme successful then that doesn't ensure that other schemes of same company will be successful as well.

(Mehta & Nerlekar, 2020) studies the factors that impacts the stock market volatility during outbreak of COVID-19 and finds that indices rates were impacted by news articles during COVID-19 and suggest that volatility in stock market was not only because of COVID-19 outbreak, but due to various effect of inter- national factors as well. They concluded that COVID-19 did not affect stock market's volatility significantly rather other macroeconomic factors also play significant role in volatility.

(Khanra & Dhir, 2017) finds that small cap companies of NSE Small 100 index are less inclined to get affected by the market volatility index as compared to the large cap and midcap companies which were included in other respective market indices.

(Yadav, 2017) finds that to reduce risk in investment, investors need to invest in multiple securities and diversify their investment. This study concludes that stock market is most



suitable option for common man to invest as they can diversify their investment across many available securities & options and can therefore mitigate risk associated with investment.

(Kumar & Kumara, 2020) studies market capitalization in Indian stock market before and after COVID-19. They correlate the shares and growth in stock market performance using data about stock market before and after COVID-19 and compare them to draw results. They find significant and strong effect of variables on the changes in the market performance and capitalization as well.

(Daliwala, 2020) studies risk- adjusted performance of some equity large cap mutual fund schemes through Sharpe model and finds that majority of large cap fund schemes were giving positive returns with moderate risk. The returns were consistent and conclude that investors who want consistent returns without much expectation of abnormal returns should invest in large cap funds.

(Ajmera et al., 2021) studied COVID-19 effect across different schemes by using regression analysis and finds that COVID-19 affected large cap funds more than small cap and mid cap fund schemes. So, they concluded that the investors in large cap schemes could have short position in small cap and mid cap schemes to hedge against probable losses.

(Ziemba, 2020) studies the United States capital market during the COVID-19 period and finds that overall market first rises and then falls. Then there was recovery in market. But throughout this there were excessive volatility in market and both greed & fear.

(Selemla et al., 2021) analyzed volatility in market during extreme market events by using mid cap indices through econometric models. And finds that during COVID-19 lockdown, due to unfavorable grades, share price returns fell those results sales in panic by investors who had less risk tolerance.

(Cua, 2021) investigates impacts of COVID-19 on United States, Philippines and China stock markets and found that economies around world are severely affected by COVID-19 and there is steep decline of market during COVID-19 outbreak. The reason for this is exponential rate of virus spread and restrictions by government such as lockdown and other measures which results in reduction in domestic consumption.

(Ghosal, 2021) studies value investing during COVID-19 and analyzed performance of value stocks in bear market caused by COVID-19 and finds that value strategy performed poorly in bear market as was the case in market during COVID-19 and concludes that value investors should learn from the bear market situation that both value investing and growth investing can potentially generate high returns with low volatility.

(Ali & Talukdar, 2017) studies relationship between returns and volatility & leverage effect across small cap mid cap and large cap index by using GARCH- M model. They find that both recent news as well as past news impact volatility of all three indices and bad news exhibit more negative impact than positive impact by good news. The relationship is insignificant between returns and volatility for all indices.

(Chaudhary et al., 2020) analyze COVID-19 impact on the performance of Indian stock market by using GLS regression and finds lower average returns during COVID-19 crisis as compared



to pre- crisis period. Returns of all indices were more volatile during crisis and relation between indices also increased during crisis period. They conclude that Indian stock market was more volatile during COVID-19 as compared to global stock markets.

(Sinha et al., 2019) studies advantage that large firms have over small firms due to advanced research and development and finds that research and development expenditure has statistically significant effect on firms' total income.

RESEARCH OBJECTIVES

This study aims at the following objectives:

1. Study trend and pattern of returns from large cap index during and after COVID-19 recession
2. Study trend and pattern of returns from mid-cap index during and after COVID-19 recession
3. Study trend and pattern of returns from small cap index during and after COVID-19 recession
4. Compare trend of returns in large cap, mid cap & small cap indices during and after COVID-19 recession

RESEARCH METHODOLOGY

Data Collection Method and Sources

Mainly secondary data is used for the study using stratified sampling method. Daily Historical data of large cap, mid-cap and small cap index from 1 January 2020 to 30 June 2021 is collected from BSE official website for analysis.

Research Methods and Techniques

- Mean
- Standard deviation
- Variance
- Coefficient of Variation
- Covariance
- F-test
- Bar chart



DATA ANALYSIS AND INTERPRETATION

Table 1: Showing Mean, Standard deviation, Variance and Coefficient of Variation of Returns

	Large cap	Mid cap	Small cap
Mean	0.084998584	0.121863419	0.17413861
Standard Deviation	1.721387938	1.572737016	1.52859909
Variance	2.963176433	2.473501721	2.336615178
Coefficient of Variation	20.25196017	12.9057352	8.778059558

Interpretation: As we can see from table 1, Large cap index which is regarded as safest index with average returns generated lowest returns with highest variance, whereas small cap index which is regarded as riskiest index generated highest returns with lowest variance over the period of 1 January 2020 to 30 June 2021.

Relative measure of Standard deviation i.e., Coefficient of Variation for large cap is highest which indicates that returns from large cap is highest inconsistent from both mid-caps, whereas lowest Coefficient of Variation in Small cap indicates most consistent returns over the period of 1 January 2020 to 30 June 2021.

H₀: Variance₁ = Variance₂

Table 2: Showing results of Covariance and F-test

	Large cap & Mid cap	Large cap & Small cap	Mid cap & Small cap
Covariance	2.453568334	2.266690846	2.296933483
df	372	372	372
F value	1.197968211	1.268149099	1.058583264
P(F<=f) one-tail	0.040968779	0.011106373	0.291632661
F Critical one-tail	1.186231615	1.186231615	1.186231615
Result (H₀/ H₁)	Reject H ₀	Reject H ₀	Accept H ₀
Reason	F Critical value < F value	F Critical value < F value	F Critical value > F value

Data Source: Author Compilation



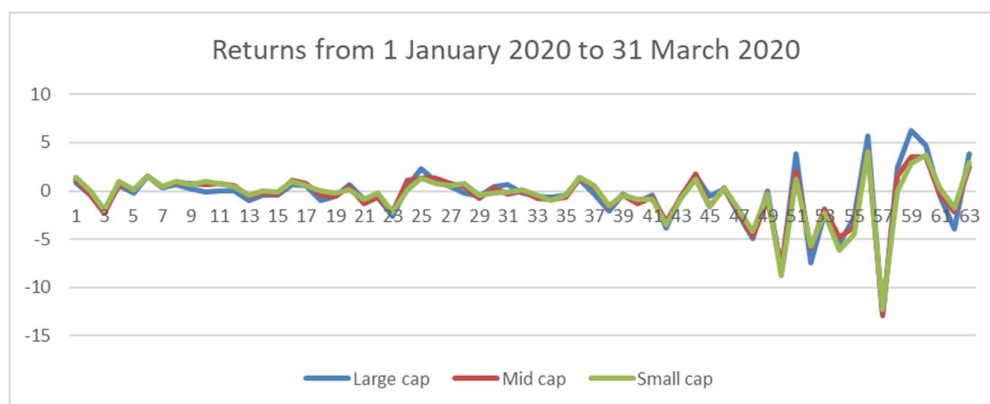
Interpretation: As we can see from Table 2, Highest positive Covariance among Large cap and Mid cap indicates strong relationship between these two indices, whereas lowest Covariance among Large cap and small cap indicates weakest relationship between these two indices.

Rejected null hypothesis in F- test for both large cap & mid cap and large cap and small cap indicates that there is significant difference between their respective Variance, whereas accepted null hypothesis in F- test for mid cap and small cap indicates that their Variance are not significantly different.

Bar Chart Presentation

Following Bar charts are presenting large cap, mid cap and small cap indices returns from 1 January 2020 to 30 June 2021. All bar charts indicate daily returns for 1 quarter i.e., for 3 months.

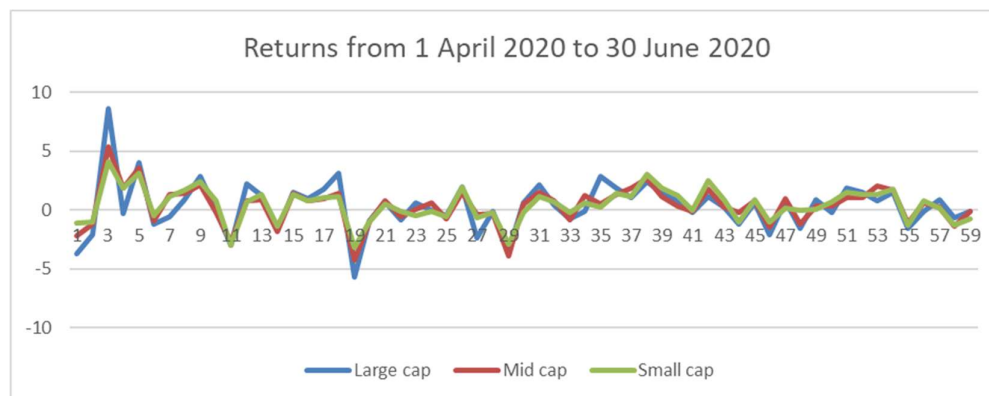
Figure 1: Returns from 1 January 2020 to 31 March 2020



Data Source: Author Compilation

Interpretation: As we can see in figure 1, returns from returns from all cap indices were not fluctuating till COVID-19 wave hit stock market. After that returns started fluctuating for all indices, but large cap index returns were fluctuating most. And most of fluctuation were on negative side more than positive side.

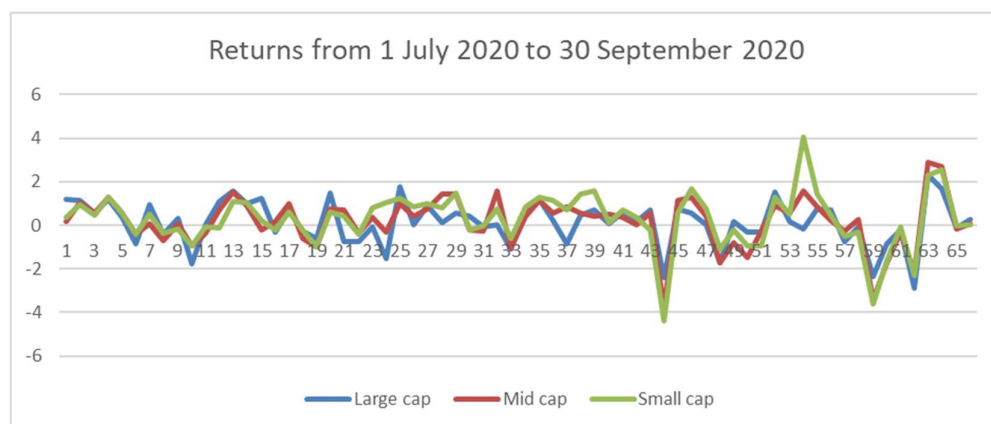
Figure 2: Returns from 1 April 2020 to 30 June 2020



Data Source: Author Compilation

Interpretation: As we can see from Figure 2, returns of all indices were fluctuating although the fluctuations were reduced as compared to fluctuations in March month, but still the fluctuations were more as compared to pre COVID-19 market fluctuations. Fluctuation was more on positive side than negative side in this quarter.

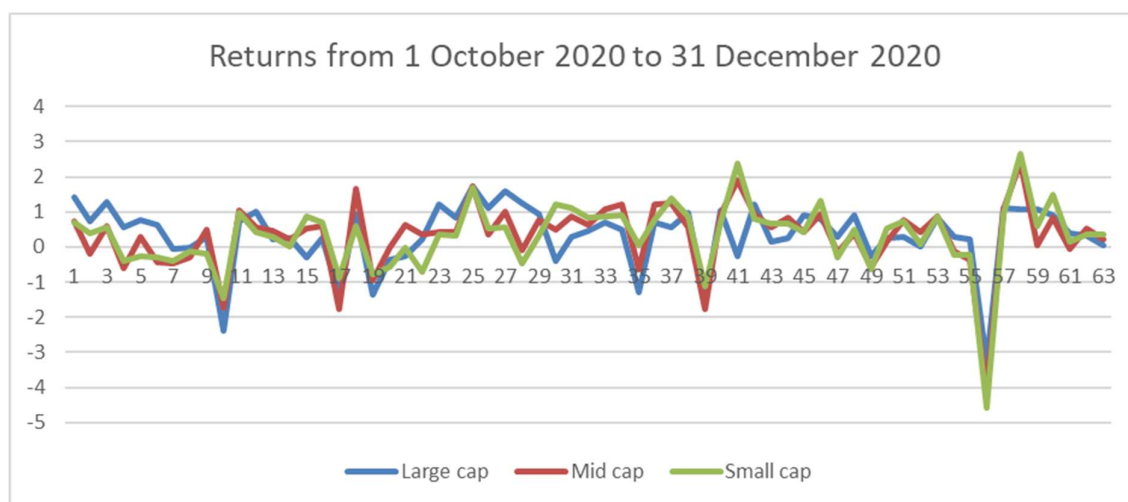
Figure 3: Returns from 1 July 2020 to 30 September 2020



Data Source: Author Compilation

Interpretation: As we can see from Figure 3, returns from all indices got relatively stable in month of July and August but from September, fluctuations got intensified again, and this time small cap index is more fluctuated than mid cap and small cap index. Small cap index return fall most by 4.36% and touches lowest point.

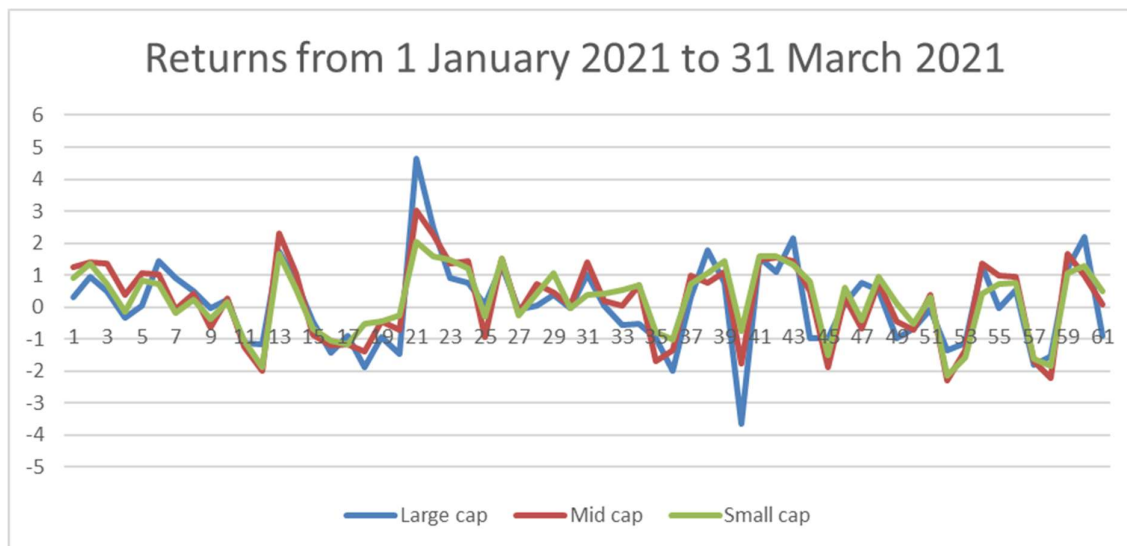
Figure 4: Returns from 1 October 2020 to 31 December 2020



Data Source: Author Compilation

Interpretation: As we can see from Figure 4, fluctuations in market were intensified again and this time also, small cap index fluctuated most. Small cap index returns touch lowest point by falling up to 4.57%. Although after they touches highest point as well by going upward by 2.65%.

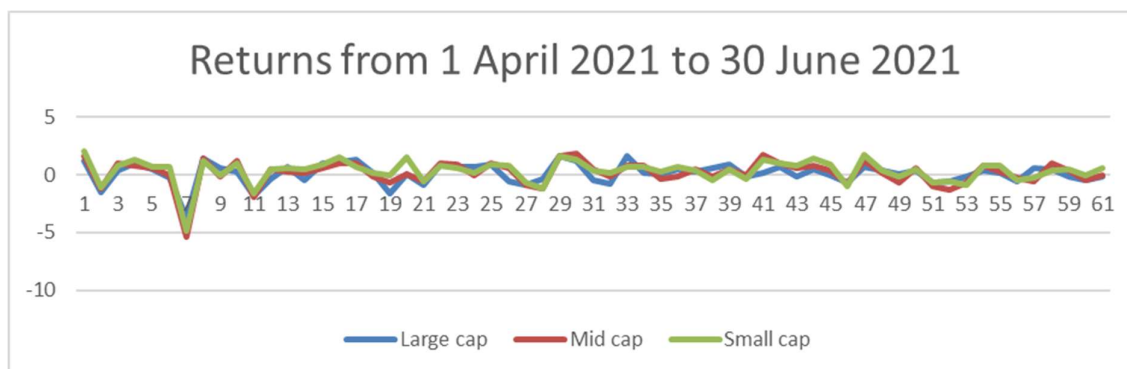
Figure 5: Returns from 1 January 2021 to 31 March 2021



Data Source: Author Compilation

Interpretation: As we can see from Figure 5, fluctuations in returns from all indices intensified again. In this quarter, large cap index fluctuated most as compared to small cap index and mid cap index, whereas returns from small cap index was most stable.

Figure 6: Returns from 1 April 2021 to 30 June 2021



Data Source: Author Compilation

Interpretation: As we can see from Figure 6, returns from all indices got stable and consistent. In this quarter, returns are as consistent as they were pre COVID-19 recession period. None from large cap, mid cap and small cap index returns got fluctuated more in this time quarter.

FINDINGS AND DISCUSSION

As we can see from above interpretations, large cap index returns were fluctuating most in all indices that were taken into consideration. Large cap index is believed to most stable index but here during COVID-19 time period, large cap index got fluctuated most as compared to both mid cap and small cap indices. Whereas small cap index which is often regarded as most volatile and risky index, was most consistent in generating returns during COVID-19 recession in stock market.

CONCLUSION

From this study, we can conclude that the common perception that large cap index provides returns more consistently and are less risky should be revisited. As during COVID-19 recession, large cap index generated most volatile returns and was most risky. Whereas small index which is regarded as most risky was generating most consistent returns in all three indices. So COVID-19 recession crisis didn't affect small and mid-cap returns as much as it did to large cap index returns.

After applying F-test, we can see that returns of mid cap and small cap was not significantly differently varied, but there was significant difference in return variance from large cap index & mid cap index and large cap index & small cap index.

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