



BSE 100 Market Capitalization follows Sentiment of Investors or Technical Methods- An analytical study

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Abstract

The first and largest securities market in India, the Bombay Stock Exchange (BSE) was established in 1875 as the Native Share and Stock Brokers' Association.¹ BSE-100 was launched in January 03, 1989 and was previously known as the BSE National Index. The base year for this index is 1983-84 with base index value fixed at 100 points. BSE-100 was launched on full market capitalization method and shifted to Free-Float methodology effective from April 5, 2004. The Index has 100 companies with varying weightages. BSE calculates a dollar-linked value of SENSEX called Dollex series of BSE indices.² BSE 100 is a broad based Index. It is well used for a lot of constructive work for Analysts as well as Researchers. This study is to find, whether BSE 100 moves in line with technical methods (valuation or market levels) or not. Here the researcher has taken two independent variables such as adjusted close & P/E against Market Capitalization. The principal aim is to find out relation among these variables and derive a clear way out from this long awaited solution. Multiple Factor Analysis is used to study the movements & possible correlations.

Key Words:- P/E, Sentiment, Confidence, Correlation, Adjusted Close

Review of Literature:-

³ Is investor sentiment driven by IPO pricing mechanism? Evidence from India by Jyoti Gupta & Taufique Samdani

⁴ Sentiment Traders & IPO Initial Returns by Arif Khurshed, Alok Pande & Ajai K Singh

⁵ Impact of Investor Sentiment on Stock Return: Evidence from India by Saumya Ranjan Dash & Jitendra Mahakud

¹ <http://www.investopedia.com/terms/b/bombaystockexchange.asp>

² http://www.wikininvest.com/index/BSE_100_Index_%28BSE100%29

³ <http://www.fma.org/Reno/Papers/IPOSentimentConference6.3.pdf>

⁴ http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1786834

⁵ <http://web.a.ebscohost.com/abstract?direct=true&profile=ehost&scope=site&authtype=crawler&jrnl=09725814&AN=91732317&h=X1BtQgoHVydEgXcl5eVo8%2f%2bnTkxksgxZobFOYmxwnpKDZhpsNvutKK9dz0jpctW4%2bdW52YOLKg9Y%2f73Vs3w%2fRA%3d%3d&crl=c>

Hypothesis:-

Null Hypothesis- Ho- BSE 100 is driven by Technical Indicators such as P/E & Adjusted Close either partially or completely

Alternative Hypothesis-Ha- BSE 100 is not driven by Technical Indicators such as P/E & Adjusted Close either partially or completely

Research Methodology:-

This study is a Secondary body of work. The boundary is well defined as BSE 100. The study has been done in two phases. Time Period under consideration is from 15th September 2010 to 28th March 2014. 599 data points are taken as observations across 5 years.

The work is the Multiple Regression Analysis between Trail P/E, Adjusted close of BSE 100 against the Market capitalization of BSE 100. The Multiple Regression Statistics are compared to come to a conclusion.

Study:-

SUMMARY OUTPUT

<i>Regression Statistics</i>			
Multiple R	0.28685		
R Square	0.082283		
Adjusted R ²	0.079209		
Standard Error	548.5807	T-Critical	1.963932159
Observations	600		

ANOVA

	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>
Regression	2	16108560	8054280	26.76367	7.38873E-12
Residual	597	1.8E+08	300940.8		
Total	599	1.96E+08			

	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>	<i>Lower 95%</i>	<i>Upper 95%</i>
Intercept	24.05868	197.2737	0.121956	0.902975	-363.376196	411.493555
X Var 1(AC)	0.044425	0.015059	2.950153	0.003301	0.014850962	0.07399974
X Var2(P/E)	44.6586	12.66761	3.525417	0.000455	19.78011015	69.5370961

Analysis & Findings (Hypothesis Testing):-

Individual Investors, Corporations & Institutional Players (both DII & FII) should be investing according to P/E levels and following technical analysis either completely or partially. But time & again it has been observed that Investor behaviour depends on other factors apart from the Technical factors in the Stock Markets. These affect the Market Capitalization of the Indices. Post the Multiple Regression & Factor Analysis certain important facts came out as an outcome of the study.

Statistical Data Analysis

1. R^2 is not so important here as observations are too many. Adjusted R^2 is of cardinal importance, but it has been observed that it is too weak to be considered.
2. ANOVA shows that the test is significant as F value is high & Significance Factor is almost zero. Significance F factor is very low, signifying that this multiple regression is sound in nature.
3. Both the P Values are falling within 95% of Confidence levels. Both variable (X1,X2) coefficients are accepted as both the corresponding P Value falls within 99.% Confidence Zone (95% is set for this test).
4. Apart from the intercept the X1 & X2 variables has a very low P Value, that is good, that means it will fall within the confidence zone. As both the variables have T Stat Value more than T Critical (1.963932159) or T Inverse so, Null Hypothesis will be rejected.

Ha will be accepted and Ho will be rejected.

Also, It has been observed that investors who follow technical partly & who follow technical completely both have weak correlation with the Market Capitalization. Correlation seems to play a major role here in this study, as per the results.

Investors following Technical partly indicate tracking of closing levels of the market, and taking investment decision based on that.

Investors following Technical completely indicates tracking of P/E levels of the market, and taking investment decision based on that.

This signifies that people who follow market sentiments take a major role in determining the Market Capitalization.

Since the direct participation of the retail investors in India's equity markets is only 1.4% of the population⁶, so both DII,⁷ FII & Institutions also do follow sentiments rather than technical analysis to invest their money in stocks (BSE100).

Conclusion & Recommendation:-

BSE 100 is a broad Index, and not a Sectoral Index. So, the effect of sentiment logically should be lesser than a concentrated Index (Sectoral). It could be concluded by the findings of the study that BSE 100, doesn't move with the P/E and the closing level as an indicator (Technical) & the correlation is feeble. It has been observed that, the confidence level of the study is very high. Also, almost all the data points are concentrated but scattered. That clearly indicates partial link with the decision to buy the stocks. If stocks are bought on a net basis (Gross Buy- Gross Sell), then only Market Capitalization will improve. So, Market Capitalization should ideally be having a strong correlation with the P/E and the Adjusted Closing point of the Index, provided the technical are strictly followed by the market participants. But in analysis post regression it has been found that it is sentiment which drives the Market Capitalization and not technical parameters. Further study could be carried out with, some other technical parameters such as Dividend Yield & P/B.

Limitations of the study:-

This study has been done in a span of 5 Years. Total data points are about 599. So, it could be repeated with a longer time horizon. This study has got a total of three variables, out of which two are independent & one is dependant. Independent variables could be more also. This study is geographically based within India and only confined to BSE 100. This could be done for all the other Indices in India as well as it could be done outside the geographical domain of India too. Some hidden parameter could cause this specific behaviour too, so, next level of research could be carried out with Structured Equation Modelling.

References:-

1. <http://www.bseindia.com/indices/IndexArchiveData.aspx?expandable=1>
2. <https://in.finance.yahoo.com/q/ta?s=BSE-100.BO&t=5y&l=on&z=1&q=1&p=v&a=&c=>
3. <http://www.investopedia.com/terms/b/bombaystockexchange.asp>
4. Bloomberg.com

⁶ <http://trak.in/tags/business/2010/11/10/indian-stock-market-statistics-highlights/>

⁷ FII- Foreign Institutional Investors, DII- Domestic Institutional Investors

5. Yahoo. Finance.com
6. Baker, M. and Wurgler, J., 2007, Investor Sentiment in the Stock Market, Journal of Economic Perspectives,
7. Barberis, N., Shleifer, A. and Vishny, R., 1998, A model of Investor Sentiment, Journal of Financial Economics
8. Cornelli, F., and Goldreich, D., 2001, Book building: How informative is the Order book?

Teaching Notes:-

1. Understanding the effect of P/E (BSE100) in BSE 100 Market Capitalization
2. Understanding the effect of Adjusted Closing Level (BSE100) in BSE 100 Market Capitalization
3. Understanding the Importance of Multiple Regression Analysis
4. Understanding the Significance F & P- Value Implications
5. Understanding the link between T Critical or T Inverse with Ho/Ha
6. To notice the importance of Sentiment in a broad based market such as BSE100 in a considerable span of time (i.e. 5 Years)

Key Take Away:-

Being an important emerging economy & a proud participant in the prestigious BRIC category Indian Markets do aim towards being perfect, at least near perfect in near term. The study however depicts a different scenario, which clearly conveys the message that the economy has been far from being near perfect. Decisions on investments are sentiment driven too.