EQUITY RESEARCH OF LARGE CAP COMPANIES OF INFRASTRUCTURE SECTOR LISTED ON NSE

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ABSTRACT:
The main aim of this paper is to carry out Fundamental analysis in infrastructure sector of large-cap companies and also to find out the opportunities of investment in this sector where returns can be maximized. Indian Economy being one of the fastest developing economies in the world, companies in India are growing at faster rate as compared to their growth rate a decade back. In India people are realizing that equity has potential to give highest return as compared to other investment avenues however people are not aware how to perform equity valuation, they just invest in shares based on tips given by brokers, friends or family members. Equity valuation begins with analysis of the sector in which you want to make investment. If the sector looks positive then analysis of various companies in the sector can be done. Fundamental analysis of company can be performed to check its performance and financial strength. This starts from the fundamental analysis where EIC (economy, industry, company) analysis of infrastructure sector is done. Economy of India and infrastructure are analyzed on the basis of various factors and indicators. Companies were analyzed based on the various qualitative and quantitative factors. After analyzing these, stock price is estimated using relative valuation method. The market price and P/E ratios have been taken to calculate the EPS. After the target price was calculated with the help of sector P/E and EPS and finally the difference was taken between the target price and market price to arrive at the best performing company. All the above specified process is done by maintaining an Index for two months i.e January and February 2019. Finally the conclusion is derived.

Keywords: Fundamental analysis, Stock price, Equity, P/E ratio, Index.

INTRODUCTION

Equity Research:

It refers to analyzing a company's fundamentals, analyzing its financial statements & scenario building for equity recommendations. It analyses the market trends & their effects on companies and stocks.

Index:

An index is an indicator or measure of something, and in finance, it typically refers to a statistical measure of change in a securities market. In the case of financial markets, stock and bond market indices consist of a hypothetical portfolio of securities representing a particular market or a segment of it.

Fundamental analysis:

It is a method used to determine a company's value by looking at its income statement, balance sheet, and cash flow statement. In financial terms, the analyst tries to measure a company's

intrinsic value by discounting the value of future projected cash flows to a net present value. A stock price that trades below a company's intrinsic value is considered a good investment opportunity & vice-versa.

Infrastructure Sector:

"The term infrastructure was first used in the English language in the late 1880s. In 1987, a panel of the U.S. National Research Council adopted the term "public works infrastructure" to refer to functional modes including highways, airports, water supply and resources, telecommunications, as well as the combined systems that these elements comprise."

Infrastructure can be put into several different types including:

• Soft infrastructure: These types of infrastructure make up institutions that help maintain the economy. These usually

require human capital and help deliver certain services to the population. Examples include the healthcare system, financial institutions, governmental systems, law enforcement and education systems.

• Hard Infrastructure: These make up the physical systems that make it necessary to run a modern, industrialized nation. Examples include roads, highways, bridges, as well as the capital/assets needed to make them operational (transit buses, vehicles, oil rigs/refineries).

• Critical Infrastructure: These are assets defined by a government as being essential to the functioning of a society and economy, such as facilities for shelter and heating, telecommunication, public health, agriculture, etc. In the United States, there are agencies responsible for these

critical infrastructures, such as Homeland Security (for the government and emergency services), the Department of Energy and the Department of Transportation.

Key Players of the Industry
1. Larsen & Toubro Ltd.
2. Adani Ports & Special Economic zone Ltd.
3. Siemens Ltd.
4. ABB India Ltd.
5. Bharat Heavy Electricals Ltd.
6. Thermax Ltd.
7. NBCC (India) Ltd.
8. GMR Infrastructure Ltd.
9. Engineers India Ltd.
10. IRB Infrastructure Developers Ltd.

Literature Review
A number of studies both empirically and theoretically have been made realizing a strong relationship between a country's infrastructure and economic development.

- Bernard &Vanduffel (2014) infer ideal portfolio with state subordinate limitations by thinking about the reliance between the portfolio and the benchmark. The paper likewise infers more tightly limits on the Sharpe Ratio (SR) which is valuable for misrepresentation location.

- Cumming et. al. (2013) propose a modified appraisal value-based private equity (PE) benchmark. It shows that this method has statistically lower levels of risk than when listed PE indices are used as proxy. The listed PE indices are considered insufficient for portfolio optimization as they do not include the entire PE universe and their expected valuations often do not match the actually PE valuation, especially during crisis. Richard

- Richard C. Grimm (2012) explains

that fundamental analysis is to determine its application as an Austrian approach to common stock selection. The Fundamental analysis supports the conclusion that fundamental security analysis can be practiced in a manner consistent with traditional Austrian views and is suitable as a common stock selection method by those who wish to select the stocks.

- Rajiv Kumar Bhatt (2011) has analysed the impact of recent global financial crisis on Indian Economy. The paper is divided into three sections. In this paper each and every concept has been explained in a in-depth manner in the form of section for economy,industry and company analysis.

- Bettman et al (2009) stated that Fundamental analysis and technical analysis were used independently by most stock market analyst. However, there are very few literature which integrates both measures into a single powerful model.

- Ghang, Yang, and Chang in 2009, tested different risk measures in substitution of the mean-variance, one of them is the variance with skewness, developed based on the theory that portfolio return may not be a symmetrical distribution, this means that the distribution of return of individual assets tend to exhibit a higher probability of extreme values.

- Jenni L., Bettman, Stephen. J. Sault, Emma. JSchultz (2008), proposes an equity valuation model integrating Fundamental and Technical analysis, they tend to recognize their potential as complements rather than as substitutes. Testing confirms the complementary nature of Fundamental and Technical analysis by showing that in spite

of each performing in isolation models integrating both have superior explanatory power.

- Sanjay Seghal and Meenkashi gupta (2005) examines the survey which aims at providing insights about the way technical traders operate in the financial market and the trading strategies that they adopt. The survey covered institutional and individual technical traders with a long and active trading record for the Indian market. In this study also it is observed that the sample respondents tend to use Technical analysis along with Fundamental analysis for security selection.

- Schyns and Crama in 2003 describe the application of SA for solution of the classic Markowitz model with more realistic constraints, the quantity constraint, cardinality constraint, turnover constraints, and trading constraints. The advantage of using SA over other heuristic methods is the ability to avoid getting trapped in optimal local points, its flexibility and ability to approach global optimality. The important conclusions of this paper are the introduction of trading constraints that are difficult to handle, and there is a trade-off between the quality of the solutions and the time of the simulations to find them.

- Nobert. M. Fliess, Ronald Macdonald (2002) assigns a special importance to the open, high, low and closed prices in forecasting the mean and volatility of exchange rates using Technical analysis. In this paper the authors propose to investigate the time series properties and the informational content of these different prices, using range and Co integration methods. In sum, in this article it is argued that a Technical

analysis of high low and close prices is useful way of learning about latent granger causality in high frequency exchange rate.

- Thomas Oberlechner (2001) presents the findings of a questionnaire and an interview survey on the perceived importance of Technical and Fundamental analysis among foreign exchange traders and financial journalists in Frankfurt, London, Vienna and Zurich. Foreign Exchange traders confirm that, out of both the forecasting approaches, technical analysis is more prominent than the other.

- DoronNissim and Stephen H. Penman (2001), this research work envisages on Financial Statement analysis and identifies that this analysis has traditionally been seen as part of the Fundamental analysis required for equity valuation. This paper outlines a financial statement analysis for use in equity valuation.

- Parameswaran (2000) performed variance ratio tests corrected for bid-ask spread and non-synchronous trading on the weekly returns derived from CRSP daily returns file for a period of 23 years. His results show that eight out of ten size sorted portfolios do not follow a random walk. He observed that non-trading is not a source of serial correlation in the large sized firms.

- Ming, Nor & Guru (2000) showed that variance ratio and multiple variance ratio tests reject random walk for Kuala- Lampur stock exchange. They further show that trading rules like variable length moving average (VMA) and fixed length moving average (FMA) have predictive ability of earning profits over and above the transaction costs.

- Darrat&Zhong (2000) examined random walk hypothesis for the two newly created stock exchanges in China. They followed two different approaches-the variance ratio test and comparison of NAÏVE model (based on assumption of random walk) with other models like ARIMA and GARCH. They rejected the random walk in newly created Chinese stoke exchanges using both the methodologies. They further suggested artificial neural network (ANN) based models as strong tools for predicting prices in the stock exchanges of developing countries.

- Levy (1966) in his research, reports the results of tests of the profitability of some 68 variations of various trading rules of which very few that were based only on past information yielded returns higher than that given by a buy and hold policy.

- Graham and Dodd (1934), which focuses the analysis on the value investing using PE, book value, and EPS ratios. The relationship of stock price and fundamental factors is also strengthened on the dividend discount model by Gordon and Shaphiro (1956), which values the stock price through the dividend paid by the company.

OBJECTIVES OF THE STUDY

The main purpose of this study is to know the fluctuations in the share price of selected large cap companies of infrastructure sector and also to analyze the risk and return on the securities. After selecting the stocks fund is allocated on these stocks so that we are able to calculate NAV on daily basis.

1. To fundamentally analyze the large cap companies in terms of their share price and market capitalization.

2. To determine stock valuation and growth drivers from the available options.

3. To predict the change in the index of selected companies.

Scope of the Study

The scope covers all the information related to the equity fund & infrastructure sector, it also covers the investors risk in the investment in various securities.

- Identification of the investor's objectives, constraints, and preferences.

- Strategies are to be developed and implemented in tune with investment policy formulated.

- To reduce the future risk in advance.

- To acquire maximum profit in the securities.

RESEARCH METHODOLOGY

Method of Data Collection:

The data is collected from secondary data. Various data are collected from internet and various other sources. Secondary research is used to collect information and the news available about the sector by various modes. The research is completely based on the Fundamental analysis of the companies in infrastructure sector. Secondary data was collected from various sources such as Economic times, Money Control, companies' website through internet. The stocks were individually analyzed and then measured whether it would give best returns if the funds were invested in those particular stocks.

Research Design

The sample of the stocks for the purpose of collecting secondary data has been selected on the basis of random sampling. The stocks are chosen in an unbiased manner and each stock is chosen in an independent manner of the stock chosen. The stocks are chosen from Infrastructure sector.

DATA ANALYSIS
Fundamental Analysis for stocks in Infrastructure sector

For conducting fundamental analysis for the stocks in infra Sector, only Large Cap organizations are mulled over i.e. stocks with market capitalization over 5000 crore rupees. Underneath table demonstrates the loads of 10 organizations having market capitalization over 5000 crore rupees and are additionally recorded under the NSE Index.

Test of Stationarity
Ho: Test is non-stationary
H1: Test is stationary

Table 1: ADF Test			
Null Hypothesis: D(ABSOLUTE_CHANGE) has a unit root			
Exogenous: Constant			
Lag Length: 0 (Automatic - based on SIC, maxlag=4)			
		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-6.373450	0.0000
Test critical values:	1% level	-3.808546	
	5% level	-3.020686	
	10% level	-2.650413	

Interpretation:
First assumption is to check the stationarity by using ADF test statistic i.e. Augmented Dickey-Fuller test statistic. The above analysis is tested in E-views software. Test of stationarity refers to a unit root test or tests whether a time series variable is non-stationary and possesses a unit root. The null hypothesis is generally defined as the presence of a unit root and the alternative hypothesis is either stationarity, trend stationarity or explosive root depending on the test used. The value of P has been depicted in the above analysis & if the value is less than 5%, hypothesis is rejected.

Ho: Series is non stationary- rejected. Hence, the test is stationary in nature.

ARIMA
Auto Regressive Integrated Moving Average

Table 2: Auto Regressive Integrated Moving Average				
Dependent Variable: ABSOLUTE_CHANGE				
Method: Least Squares				
Sample (adjusted): 2 44				
Included observations: 42 after adjustments				
Failure to improve SSR after 12 iterations				
MA Backcast: 1				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-2982.574	7866.439	-0.379152	0.7090
AR(1)	0.981244	0.059538	16.48106	0.0000
MA(1)	-0.999585	0.170438	-5.864804	0.0000
R-squared	0.485277	Mean dependent var	-405.1581	
Adjusted R-squared	0.428086	S.D. dependent var	416.1375	
S.E. of regression	314.7040	Akaike info criterion	14.47271	
Sum squared resid	1782695.	Schwarz criterion	14.62192	
Log likelihood	-148.9634	Hannan-Quinn criter.	14.50509	
F-statistic	8.485149	Durbin-Watson stat	1.683772	
Prob(F-statistic)	0.002536			
Inverted AR Roots	.98			
Inverted MA Roots	1.00			

Interpretation: Forecasting model is based on ARIMA model. Here, change= A+B(AR(1))+C(MA(1)), where, AR is auto regression and MA is moving average & AR depends on PAC i.e partial auto correlation and AC= auto correlation. In this model price is calculated on the basis of the price of previous day, where, A, B , C remains constant.

Determination of Sectoral P/E ratio
Sectoral P/E proportion is dictated by finding the normal of P/E proportions of the distinctive expansive top loads of the infrastructure area and disregarding the ones who have P/E proportion more than 100.

Valuation of stocks
The P/E proportion of each stock is then contrasted and the Sectoral P/E proportion to decide if the stock is Undervalued or Overvalued. For example, if P/E proportion of a stock is lesser than the Sectoral P/E proportion then that stock is considered as an Undervalued stock. Then again, if the P/E proportion of a stock is more prominent than the Sectoral P/E proportion then that stock is considered as an Overvalued stock.

Table 3: Valuation of stocks			
COMPANY NAME	P/E Ratio	Avg. P	Under/Over valued
Larsen & Toubro Ltd.	29.03	32.36	Under
Adani Ports & Special Economic zone Ltd.	28.55	32.36	Under
Siemens Ltd.	39.61	32.36	Over
ABB India Ltd.	54.08	32.36	Over
Bharat Heavy Electricals Ltd.	23.87	32.36	Under
Thermax Ltd.	49.18	32.36	Over
NBCC (India) Ltd.	31.76	32.36	Under
GMR Infrastructure Ltd.	-	-	-
Engineers India Ltd.	20.92	32.36	Under
IRB Infrastructure Developers Ltd.	14.21	32.36	Under

Selection of Value Picks
Valuation process is completed then, the growth in the "Undervalued" stocks is sought for by looking for changes in Revenue (Top line) and Profit (Bottom line) per year on year basis. If both the values of Revenue and Profit are increasing in the year on year basis, then the company is accepted. If both the values of Revenue and Profit are decreasing in the current year, then the companies are rejected. The accepted companies are selected for "Value Pick" Table 4: Criteria of Valuation of Stock

Value Pick			
Under valued Co.s	Revenue	Profit	Selected or not
Larsen & Toubro Ltd.	Increasing	Increasing	Yes
Adani Ports & Special Economic zone Ltd.	Increasing	Increasing	Yes
Bharat Heavy Electricals Ltd.	Increasing	Increasing	Yes
NBCC (India) Ltd.	Increasing	Increasing	Yes
Engineers India Ltd.	Decreasing	Decreasing	No
IRB Infrastructure Developers Ltd.	Increasing	Increasing	Yes

Selection of Growth Picks
After the determination of Value Picks, the following stage is to break down the Overvalued stocks and infer decide the Growth Picks. For deciding the Growth Picks, P/E Growth esteem (PEG esteem) is ascertained for each Overvalued stock by partitioning P/E proportion of every one of these stocks by the rate change in profit per share Year On Year and the stocks with positive PEG esteems and not exactly or equivalent to 1 are chosen as Growth Picks. The Overvalued stocks with negative PEG esteems or with PEG esteems more noteworthy than 1 are rejected. What's more, we can see that Aditya Birla Capital has been chosen as it satisfies the criteria.

Table 5: Valuation of companies		
Growth Pick		
Over valued Co.s	PEG Ratio	Selected or not
Siemens Ltd.	More than1	No
ABB India Ltd.	More than1	No
Thermax Ltd.	More than1	No
PEG Ratio=PE/EPS growth		

Formula:
- PEG Ratio = $\dfrac{\text{P/E Ratio}}{\text{EPS growth}}$

- EPS growth = $\dfrac{(\text{Current EPS} - \text{Last Year's EPS}) * 100}{\text{Last Year's EPS}}$

Ranking procedure for selected stocks

Different monetary proportions which are critical for INFRASTRUCTURE area have been considered for positioning the chose stocks. These ratios include:

a) Liquidity Ratio
- Current Ratio
- Quick Ratio
b) Return on Assets
c) Debt to Equity

Table 6: Ranking Processes of Selected Stocks				
Co.s	Current Ratio	Quick Ratio	Return on assets	Debt on Equity
Larsen & Toubro Ltd.	1.32	1.37	1.30	0.20
Adani Ports & Special Economic zone Ltd.	5.58	6.41	0.18	1.09
Bharat Heavy Electricals Ltd.	1.92	1.60	0.89	-
NBCC (India) Ltd.	1.29	0.99	3.38	-
IRB Infrastructure Developers Ltd.	0.61	1.47	-	1.89

Final Ranking

Table 7: List of Final Rankings to Selected Stocks				
Rankings on the basis of-	Current ratio	Quick ratio	Return on assets	Debt on Equity
1.	Adani Ports & Special Economic zone Ltd.	Adani Ports & Special Economic zone Ltd.	NBCC (India) Ltd.	Larsen & Toubro Ltd.
2.	Bharat Heavy Electricals Ltd.	Bharat Heavy Electricals Ltd.	Larsen & Toubro Ltd.	Adani Ports & Special Economic zone Ltd.
3.	Larsen & Toubro Ltd.	IRB Infrastructure Developers Ltd.	Bharat Heavy Electricals Ltd.	IRB Infrastructure Developers Ltd.

Table 8: Overall Ranking
Overall Ranking
1. Bharat Heavy Electricals Ltd.
2. Larsen & Toubro Ltd.& IRB Infrastructure Developers Ltd.
3. Adani Ports & Special Economic zone Ltd.

Calculation of Net Asset value for the portfolio of Infrastructure stocks

Aggregate sum of Rs. 10 crores has been allocated to Infrastructure segment which suggests that AUM (Asset under Management) for infrastructure division is Rs. 10 crores. Weightage and Amounts have been doled out to the stocks dependent on their positions. At that point the quantities of offers are computed by partitioning the sum designated to the stocks by individual piece of the overall industry costs of those stocks as on date 31st July 2018.

Table 9: Data Used in NAV Calculation				
Rank	Co. name	Price	Allocation of Funds	No. of shares
1	Bharat Heavy Electricals Ltd.	108.95	40,00,000	36,714
2	Larsen & Toubro Ltd	178.39	25,00,000	14,014
2	IRB Infrastructure Developers Ltd.	711.24	25,00,000	3,515
3	Adani Ports & Special Economic zone Ltd.	48.28	10,00,000	20,710
	TOTAL		1,00,00,000	

Benchmark= 728.24 (as on 28.02.2019)
NAV= AUM/No. of units
NAV=Net Asset ValueAUM=Asset Under Management
AUM=10 Cr
1 unit= Rs. 10
NAV= 10Cr / 1Cr   = Rs. 10

Net Asset Value (NAV) for the portfolio of infrastructure sector is determined by dividing the Assets under Management (AUM) for the infrastructure sector by the number of units under consideration. We have taken the number of units as 1,00,00,000.

Hence NAV for the portfolio of Infrastructure sector is = 10, 00, 00,000 / 1, 00, 00,000 = 10.

Therefore NAV for the portfolio of infrastructure sector is 10.

The calculation of NAV has been shown on the basis of each day share price of the stocks. NAV changes based upon the market.

Table 10: Comparison between Index and NAV of Selected Stocks					
Rank	Co. name	Price	Allocation of Funds	No. of shares	Value of Fund
1	Bharat Heavy Electricals Ltd.	67.8	40,00,000	36,714	24,89,209.2
2	Larsen & Toubro Ltd	1,396.5	25,00,000	14,014	1,95,70,551
2	IRB Infrastructure Developers Ltd.	150.90	25,00,000	3,515	5,30,413.5
3	Adani Ports & Special Economic zone Ltd.	367.1	10,00,000	20,710	76,02641
	TOTAL		1,00,00,000		3,01,92,814.7

Index value as on 28.02.2019= 728.24
NAV= 13.01

% Change in NAV= 3.01%

Interpretation: From the above analysis we can see that the comparison between change in NAV and the change in infrastructure Index, the index is not beating the benchmark which may or may not result in high returns according to the index. The reason for not beating the index could be some bad news or sector not performing well or any of the other reasons.

LIMITATIONS OF THE STUDY
The limitations are as follows:
• This study has been conducted purely to understand fundamental analysis for investors.
• The study is restricted to large cap companies based on Fundamental analysis.
• The study is limited to the companies having equities.
• Detailed study of the topic was not possible due to limited size of the paper.
• The research period is limited to the period of 2 months.

CONCLUSION
"Fundamental analysis plays a crucial role in order to make wise investment decisions. After having accessed risk capacity and tolerance followed by time horizon and intension of investment, the individual portfolio can fetch the investor systemic returns.

The market research in the infrastructure sector brought upon different analyzing methods of stocks purchased and sold by different companies.

It is always better and important to analyze the funds before investing, and also to do continuous updation of funds invested because it may happen that some of the stocks which were not there in the above mentioned portfolio have started performing well and can give better returns as time goes on whereas some stocks may start falling due to market condition. Sector performance or company's news is an important factor which could make necessary to pull out the investment and invest somewhere else.

It has also been observed that according to the ranks assigned, Bharat Heavy Electricals Ltd. is at first position. The second position is bagged by Larsen & Toubro Ltd.& IRB Infrastructure Developers Ltd. So, it is better to invest in these securities".

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