

**AN EXPLORATORY AND DESCRIPTIVE STUDY OF PERFORMANCE OF
SELECTED REAL ESTATE COMPANIES IN INDIA**

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ABSTRACT

The study aimed to investigate the performance appraisal of equity stocks of selected five companies from Real Estate Sector. This is achieved by utilizing an in-depth study of various financial tools like Alpha, Beta, Standard Deviation, Sharpe's Index, Treynor's Ratio and CET (Coefficient of Elasticity of Trading). For this purpose, returns have been calculated of these individual stocks and Sensex (BSE). The time period taken for the study is last five years and the secondary data has been taken on monthly basis from web site of Bombay Stock Exchange. The study observed that results are in favour of Ansal API and Unitech Ltd. in terms of best liquid stock. Further, Unitech Ltd. and Parsvnath Developers Ltd. has performing well in terms of risk and return. The results of the study are expected to be helpful for the investors and researchers who seek the best investment opportunities in real estate sector. All the stocks have given the negative returns over the period of study. So, it is suggested to the investors not to invest in any one sector, rather they should have to diversify their investment portfolio by investing in different sectors.

Key words: Alpha, Beta, Standard Deviation, Sharpe's Index, Treynor's Ratio and CET (Coefficient of Elasticity of Trading).

INTRODUCTION

The Indian real estate sector plays a significant role in the country's economy. The real estate sector is second only to agriculture in terms of employment generation and contributes heavily towards the gross domestic product (GDP). Almost five per cent of the country's GDP is contributed to by the housing sector. In the next five years, this contribution to the GDP is expected to rise to 6 per cent. According to Jones Lang LaSalle, faster economic growth in Brazil, Russia, India and China (BRIC) could result in the property markets of those nations recovering at a faster rate than the UK and US real estate markets. It has also been suggested that India's property sector could begin to improve from late 2009 and may attract up to US\$ 12.11 billion in real estate investment over a five-year period.

Almost 80 per cent of real estate developed in India is residential space, the rest comprises of offices, shopping malls, hotels and hospitals. According to the Tenth Five Year Plan, there is a shortage of 22.4 million dwelling units. Thus, over the next 10 to 15 years, 80 to 90 million

housing dwelling units will have to be constructed with a majority of them catering to middle- and lower-income groups.

Moreover, India leads the pack of top real estate investment markets in Asia for 2010, according to a study by PricewaterhouseCoopers (PwC) and Urban Land Institute, a global non-profit education and research institute.

The present study considered the stocks of above mentioned critical sector i.e. real estate sector. For the sake of convenience, only five selected stocks listed in BSE Sensex have been taken for investigation. The selected companies are DLF Limited, Omaxe Ltd., Unitech Limited, Parsvnath Developers Limited and Ansal API (Ansal Properties and Infrastructure Limited).

REVIEW OF LITERATURE:-

There have been strong evidences found in various articles documenting the various results of securities measuring risk and return on the basis of a number of financial analytical tools. From time to time academicians and practitioners have attempted to crystallize the facts regarding this fact. Some of them have been listed as below:

S. P. Uma Rao, Lafayette Dan Ward, Lafayette Suzanne Ward, University of Louisiana, Lafayette in their study *“Empirical Analysis of International Mutual Fund Performance”* examined the annual risk-adjusted returns using Sharpe’s Index for ten portfolios of international mutual funds for the period September 2000 through September 2006. The international funds were analyzed by combining the funds into individual portfolios based on sector, geographics and company size. The benchmarks for comparison were the U.S. mutual fund performance reported by MorningStar. The risk-adjusted returns were then determined and compared to each other and to the U.S. market. During this period, nine out of ten of the international mutual fund portfolios outperformed the U.S. market.

Craig W. French (2003) in his study *“The Treynor Capital Asset Pricing Model”* explored the early work done by notable financial economist Jack L. Treynor, (other than the Lintner, Mossin and Sharpe) who also deserve credit for the original Capital Asset Pricing Model because of his revolutionary manuscripts. The paper explored the various issues which proved that credit should also be given to Jack Treynor.

Arnold L. Redman, N.S. Gullett and Herman Manakyan in their study *‘The Performance of Global and International Mutual Funds’* examined the risk-adjusted returns using Sharpe’s Index, Treynor’s Index, and Jensen’s Alpha for five portfolios of international mutual funds and for three time periods: 1985 through 1994, 1985-1989, and

1990-1994. The benchmarks for comparison were the U. S. market proxied by the Vanguard Index 500 mutual fund and a portfolio of funds that invest solely in U. S. stocks. The results of the study showed that for 1985 through 1994 the portfolios of international mutual funds outperformed the U. S. market and the portfolio of U. S. mutual funds under Sharpe's and Treynor's indices. During 1985-1989, the international fund portfolio outperformed both the U. S. market and the domestic fund portfolio, while the portfolio of Pacific Rim funds outperformed both benchmark portfolios. Returns declined below the stock market and domestic mutual funds during 1990-1994.

Alex Kane, Tae-Hwan Kim and Halbert White (2003) in their study '**Active Portfolio Management: The Power of the Treynor-Black Model**' applied shrinkage estimation to beta coefficients and to discount functions for forecasts of stock abnormal returns. OLS estimates, Least Absolute Deviations (LAD) estimates and shrinkage LAD estimates are compared by contribution to portfolio performance. Despite correlations between forecasts and realizations of abnormal returns as low as 0.04, the shrinkage LAD methodology yields superior performance in outof-sample experiments.

HÜBNER Georges in his study '**The Generalized Treynor Ratio**' presented a generalization of the Treynor ratio in a multi-index setup. The solution proposed in this paper was the simplest measure that keeps Treynor's original interpretation of the ratio of abnormal excess return (Jensen's alpha) to systematic risk exposure (the beta) and preserves the same key geometric and analytical properties as the original single index measure. The Generalized Treynor ratio is defined as the abnormal return of a portfolio per unit of weighted average systematic risk, the weight of each risk loading being the value of the corresponding risk premium. The empirical illustration uses a sample of funds with different styles. It tends to show that this new portfolio performance measure, although in the present paper it yields more detached values than Jensen's alphas, is more robust to a change in asset pricing specification or a change in benchmark.

RESEARCH OBJECTIVES:-

The primary objective of the study is to draw financial inferences about the stocks of selected real estate Companies i.e. DLF Ltd., Parsvnath Developers Ltd., Omaxe Ltd., Ansal API (Ansal Properties & Infrastructure Ltd. and Unitech Ltd. However, the specific research objectives of the study are under mentioned:

- (i) To study the growth & returns of stocks of selected Real Estate Sector companies.
- (ii) To analyse the liquidity position of selected companies of Real Estate sector.

- (iii) To study risk and return relationship associated with equity shares of these companies.
- (iv) To explore volatility conditions of the stocks of selected companies.

RESEARCH METHODOLOGY:

To carry out the study the following methodology is adopted:-

♣ **Data Collection**

The present research is a study of analyzing the five selected stocks of Real Estate Sector Companies by using different financial and statistical tools. The study is exclusively based on secondary data, which has been collected from various websites, journals and annual reports of selected Real Estate Sector Companies.

♣ **Tools And Techniques**

The data has been analysed and interpreted by applying various statistical and financial techniques namely, co-efficient of elasticity of trading, Sharpe's Performance Index, Treynor's Ratio, Standard Deviation, Beta and alpha. Besides these tools, various tables and graphs are also used to make the data presentable and easy to understand.

(i) ***Determination of Coefficient of Elasticity of Trading:***

$$\text{CET for stock} = \frac{\text{Change in Volume of Shares traded (\%)}}{\text{Change in Market price of Stock (\%)}}$$

(ii) ***Measure for Sharpe's Index Performance***

Sharpe's performance index gives a single value to be used for the performance ranking of various funds. The Sharpe's index measures the risk premium of the portfolio relative to the total amount of risk in portfolio. The index assigns the highest values to assets that have best risk-adjusted average rate of return. The Sharpe's index is measured as

$$S = R_p - R_f / \sigma_p$$

Where,

S = Sharpe's Index

r_p = average monthly return of fund. r_f = risk free return *.

* Risk free return (r_f) is taken as 3.40% per annum

(iii) ***Treynor's Performance Measures for Stocks***

Jack Treynor, as measures by stock's beta coefficients put an index of its performance that is based on systematic risk, forward. It is used to rank the interest performance of different assets. It is a risk - adjusted rate of return measure than is calculated by dividing the assets risk premium by their beta coefficient.

$$T_n = r_p - r_f / \beta_p$$

Where

T_n = Treynor's index

r_p = average return on portfolio

r_f = risk free return

β_p = beta coefficient of portfolio.

(iv) **Standard Deviation**

It is used to measure the variation in the individual return from the average expected return over a certain period. Standard deviation is used in the concept of risk of a portfolio of investment. Higher the Standard Deviation means a greater fluctuation in expected return.

$$\sigma = \sqrt{\frac{\sum (Y - \bar{Y})^2}{N}}$$

Where, Y = fund return

(v) **Beta**

Beta measures the systematic risk and show how price of security respond to the market foresees. It is calculated by relating the return on security with return for market.

$$\beta = \frac{n \sum XY - (\sum x \sum y)}{n \sum x^2 - (\sum x)^2}$$

Where,

X = Index return

Y = fund return

(vi) **Alpha**

It measures the stock unsystematic return and it is average return independent of market return. It is calculated by comparing the funds actual performance with the risk adjusted expected return. A positive alpha of 1.0 means the stock has outperformed its benchmark by 1%. Correspondingly, a similar negative alpha would indicate an underperformance of 1%.

$$\alpha = Y - \beta \bar{X}$$

Where,

X = Index return

Y = fund return

ANALYSIS AND INTERPRETATION:-

The data collected of selected stocks have been analysed into two parts:

A) Analysis of liquidity of stocks

- (i) *On the basis of Volume*
- (ii) *On the basis of Turnover*
- (iii) *On the basis of coefficient of elasticity of trading*

B) Performance evaluation of risk and return of stocks

- (i) *Beta*
- (ii) *Alpha*
- (iii) *Standard Deviation*
- (iv) *Sharpe's Index*
- (v) *Treynor's Ratio*

A) Analysis of Liquidity of Stocks of Real Estate Sector Companies

Table 1
Volume, Market Price and Turnover of stocks of DLF Ltd.

Date	Company	Volume	Market price of stock	Turnover
May, 2005	DLF Ltd.	8,84,97,405	611.70	52,58,48,95,115
April, 2010		98,66,142	295.00	2,95,34,37,922

Source: www.bseindia.com

Table 2
Volume, Market Price and Turnover of stocks of Parsvnath Developers Ltd.

Dates	Company	Volume	Market price of stock	Turnover
Nov., 2006	Parsvnath Developers Ltd.	1,60,15,041	526.30	8,65,49,87,044
April, 2010		5,90,736	116.45	7,15,66,165

Source: www.bseindia.com

Table 3
Volume, Market Price and Turnover of stocks of Omaxe Ltd.

Dates	Company	Volume	Market price of stock	Turnover
Aug., 2007	Omaxe Ltd.	3,26,45,709	318.80	11,00,90,39,268
April, 2010		19,74,464	95.20	18,74,17,551

Source: www.bseindia.com

Table 4
Volume, Market Price and Turnover
of stocks of Ansal API Ltd.

Dates	Company	Volume	Market price of stock	Turnover
May, 2005	Ansal API	20,88,473	217.20	36,48,65,380
April, 2010		71,33,194	81.55	58,21,12,766

Source: www.bseindia.com

Table 5
Volume, Market Price and Turnover
of stocks of Unitech Ltd.

Dates	Company	Volume	Market price of stock	Turnover
May, 2005	Unitech Ltd.	1,43,731	492.75	6,18,22,031
April, 2010		3,37,20,672	76.90	2,61,52,20,873

Source: www.bseindia.com

Table 1-5 explored the status of Trading Volume, Market Price of shares and Turnover of stocks of five selected Real Estate Companies. Analysis of liquidity of these stocks may be done on the basis of volume of shares traded of particular stock, on the basis of turnover and coefficient of elasticity of trading which depicts the relationship between the change in volume of shares traded of particular stock and change in Market price of stock.

♣ **On the basis of Volume as on April, 2010:**

The stock of Unitech Ltd. is found the most liquid stock among the selected ones, on the basis of volume of shares traded of particular stock as on April, 2010. It is having the trading volume of Rs. 3,37,20,672; which is highest among the selected stocks.

♣ **On the basis of Turnover (Rs lakh) as on April, 2010:**

DLF's stock is found most liquid stock, but marginally higher than that of Unitech Ltd., on the basis of Turnover. Its turnover on the above mentioned month is Rs. 2,95,34,37,922; which is followed by Unitech (Rs. 2,61,52,20,873) and Ansal API (Rs. 58,21,12,766).

♣ **Determination of Coefficient of Elasticity of Trading:**

In the stocks of Ansal API and Unitech, the Coefficient of Elasticity of Trading is less than 1 (CET < 1), which reveals the less Elasticity of stock and its high liquidity. Rather they are in

negative terms. It shows the high liquidity of stocks, which may be further seen by the high turnovers and volumes of both the stocks.

Table : 6

CET OF SELECTED REAL ESTATE COMPANIES

DLF	Parsvnath Developers Ltd.	Omaxe Ltd.	Ansal API	Unitech Ltd.
1.72	1.24	1.34	(-) 3.87	(-) 276.81

Source: Compiled by the Author

In rest of three stocks i.e. DLF Ltd., Parsvnath Developers Ltd. and Omaxe Ltd., CET is greater than 1 (CET > 1). It proves the elasticity of these stocks is high and liquidity of stocks is less.

B) Performance Evaluation of Risk and Return of stocks of selected Real Estate Sector Companies:

Following is the summary of results which have been calculated on the basis of last five years monthly data of stocks of selected Five Real Estate Companies listed in BSE Sensex. Results are calculated from the tables given in annexures numbered from 8 to 17.

Table : 7

Summary of Results

	DLF	Parsvanath	Omaxe	Ansal	Unitech
Beta	-0.68	-0.77	-0.28	2.37	2.05
Alpha	2.21	1.25	-0.07	-2.18	3.4
S.D.	4.21	3.93	4.5	3.94	4.99
Sharpe's Index	0.12	-0.17	-0.22	0.59	1.45
Treynor's Ratio	-0.72	0.86	3.49	0.98	3.53

Source: Compiled by the Author

The above table reveals the positions of Beta, Alpha, Standard deviation, Sharpe's index and Treynor's ratio of five selected stocks of Real Estate Sector.

Table 7 explore that on the basis of Beta, stock of Parsvnath Developers Ltd. stood at number one as it is having the negative beta which is lowest one out of the stocks of selected real estate sector companies (-0.68), followed by DLF Ltd. (-0.68) and Omaxe Ltd. (-0.28). Ansal API is found the riskiest security among the selected securities as it is having the highest Beta

(2.37). It indicates the risk level of this security is higher than that of others securities that are taken for study.

It may be further stated by investigating the values of alpha that Unitech Ltd. outperformed the market index which is having the positive alpha (3.40) and that is the highest amongst the selected five real estate stocks. The performance of Unitech Ltd. is followed by DLF Ltd.'s stock (2.21) and Parsvnath's stock (1.25). The underperformer from this view point is Ansal API's stock which is having the negative alpha (-2.18).

Standard Deviation is a tool to find the variations prevailing in any security. The rule states that more the standard deviation more volatile the security will be. Table 7 explores that Unitech Ltd. is having the highest standard deviation of 4.99, followed by Omaxe Ltd. (4.5) and DLF Ltd. (4.21). Although the stocks of Parsvnath Developers Ltd. and Ansal API are also found volatile in practice, but still they found least volatile among the selected group of five securities. It can be easily recognized by the table that the stock of Unitech Ltd. is more volatile.

The larger the S (Sharpe's performance index), better the fund has performed. Out of the selected stocks, Unitech Ltd. outperformed as it is having the highest S (1.45), followed by Ansal API (0.59) and DLF Ltd. (0.12). Here again, Omaxe Ltd. underperformed by reaching at lowest S (-0.22). So, returns per unit of risk are maximum in the stock of Unitech Ltd.

In case of Treynor's ratio the stock's performance is measured in relation to the market performance. The ideal stock's return rises at faster rate than the general market performance when the market is moving upwards and its rate of return declines slowly than the market return, in decline. That's why the risk premium is compared with the beta over here. Again, Unitech Ltd. proves itself better by achieving the Treynor's ratio of 3.53, followed by stock of Omaxe Ltd. (3.49) and Ansal API (0.98). DLF Ltd. underperformed out of the selected stocks as it is having the minimum Treynor's ratio of (-) 0.72.

CONCLUSION

In terms of liquidity, the stocks of Ansal API and Unitech, reveals the less Elasticity of stock. It shows its high liquidity and this is supported by the high turnovers and volumes of both the stocks. In the remaining three stocks i.e. DLF Ltd., Parsvnath Developers Ltd. and Omaxe Ltd. the elasticity stocks is high and liquidity of stocks is less.

In terms of findings of Performance evaluation of risk and return, all the five selected companies gave the mixed results. Unitech Ltd. Stood at number one on the basis of Alpha, Sharpe's Index, Treynor's Ratio. On the basis of Beta and Standard Deviation, Parsvnath

Developers Ltd. stood at number one as it is having the minimum beta and standard deviation and found to be least risky among the securities of selected five companies.

RECOMMENDATIONS

The results on the parameters of sharpe's index and other financial tools are in the favour of one company and disfavour another, but as a whole, the entire industry faced the negative returns during the period of study. The following recommendations may be made to the investors:

- 1) The investor should adopt a portfolio, comprised of a diversified group of sectors. They should not rely only on the one sector for investment.
- 2) One sector may give the negative returns over a long period, which may prove false the statement that the investment should be made for long term to get stable and definite returns.

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