Volume 2, Issue 5 May 2016 ISSN NO: 2454 - 2326

North Asian International Research Journal Consortium

North Asian International Research Journal

Of

Multidisciplinary

IRJIF IMPACT FACTOR: 3.52

NAIRJC JOURNAL PUBLICATION

North Asian International Research Journal Consortium

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ISSN NO: 2454 - 2326

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"ANALYZING OPPORTUNITIES AVAILABLE TO INVESTOR FOR INVESTMENT IN AUTOMOBILE INDUSTRY"

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ABSTRACT:

Automobile Industry is a symbol of technical marvel by humankind. Automobile industry is considered to be one of the fastest growing sectors in any developing and even in a developed country.

This paper mainly concentrates on risk and return involved in these automobile companies. This paper also makes comparative study between TOP 10 automobile companies and to find the better one on different criteria. To make this paper a better one various techniques are used. This paper is done through secondary information by analyzing prices of different companies. The information collected through websites of selected companies. This paper helps for investors, customers, other companies to compare alternative investment and also helps for selected companies to compare their performance.

To conclude, this paper is useful for people while selecting the firm for investment, the investor has to consider both the return potential and the risk involved.

Key words: ***(Automobile industry, Investment, performance comparison, portfolio analysis, Risk and Return).***

INTRODUCTION:

Every individual has the intention of getting more money and now a day's people get more return by investing their fund in different avenues. People can invest fund on shares, banks, property, government securities etc. The return from these avenues is dependent on the risk involved in different sources of investment. Investment in stock market is a riskier investment where they can get profit or incur losses.

Investors get income either in the form of dividend or as capital appreciation. Before investing the fund, investor requires to analyze the perspective industry, market and company. Proper valuation of fund is required to be made in order to ascertain the income. Investor can diversify their investment to various avenues. Diversification of investments helps to spread risk over many assets and gives the assurance of obtaining the anticipated return on portfolio. After portfolio construction, an investor requires to evaluate the performance of each security.

Indian Automobile Industry:

The automotive Industry in India is now working in terms of the dynamics of an open market. Many joint ventures have been set up in India with foreign collaboration. India has the potential to develop into a significant market for automobile manufacturers. Indian automotive industry holds significant scope for expansion, both in the domestic market, where the vehicle penetration level is on the lower side as compared to world average, and in the international market, where India could position itself as a manufacturing hub.

Objective of the study:

- To study the basic financial concept
- To assist the investors in making investment decisions by using different criteria
- To select a most appropriate investment plan
- To analyze the performance of selected companies of Indian automobile industry.

Scope of the study:

- This paper can be useful to students, researcher, investor and others in order to make further study
- This help to minimize the risk and maximize the profit to an investor and suggesting proper avenues based on different type of investor.

Limitation of the study:

- Indian share market has its own wide coverage and it cannot be justified only by covering automobile industry
- Automobile industry can't be justified by considering quarter end price of last 5 years of only 10 companies
- This study is conducted by using financial concepts only. Any standardized statistical tools are not used.

METHODOLOGY

Sources of Data:

This paper includes both primary and secondary data. Various financial concepts are applied to available information of 10 companies with the help of Ms-Excel by considering respective market price for last five years based each quarter end market price.

Secondary data utilized for conceptual frame work. Information is collected from various sources like published books, research works, articles and websites.

Tools for analysis:

Different financial tools have been used to guide the investor in selection of securities. They are:

- Expected return
- Standard deviation
- Beta
- Efficient frontier
- Optimal portfolio
- Capital asset pricing model
- Sharpe's model
- Treynor's model
- Jenson's model

All the calculation required for the study is done with the help of MS-Excel. Final conclusion and interpretation has been drawn from the results of the study.

Finding of the study

This paper helps to an investor to analyze the securities by applying various tools & also select right kind of investment in order to get proper return for his investment in share market. Paper includes various kind tools to analyze the securities.

Table No.1 Market Information.

Particular	**Market**
Average Return	2.03
Standard deviation	39.36
Variance of market	6.27

The above information about the market is taken from the BSE Sensex on the basis Five year quarter end prices. With the help of market information these study is made.

Table 2: Evaluation criteria for selection of securities.

Sl.No	**Company Nalme**	**Mean**	**S.D.**	**Beta**
1	TATA Motors Ltd	4.42	20.25	1.98
2	Mahindra & Mahindra Ltd	11.67	34.22	1.98
3	Maruti Suzuki India	8.34	16.78	0.00004
4	Hero Moto Corp Ltd	3.37	10.5	0.30
5	Bajaj Auto Ltd	3.51	10.68	0.19
6	Ashok Layland	9.12	38.43	0.91
7	Sunderam Clayton Ltd	19.52	38.21	1.52
8	TVS Motor Co. Ltd	12.23	31.15	1.93
9	Eicher Motor Ltd	7.73	39.49	1.95
10	Force Motors Ltd	13.34	42.93	3.04

INTERPRETATION:

Evaluation on the basis of Average Return (Ri):

Return is the financial benefit that investor will get for their investment. Every investor wants to get higher return on their investment. So they choose suitable investment avenues.

The average rate of return can be calculated as follows.

Return= (((closing price – opening price)/opening price)*100)

Average Return = (∑ Return / N)

Where N = number of observations.

In the above table 2 given average expected return (mean) of selected companies. From the above observation, on the basis of average rate of return investor can choose sunderam Clayton LTD (19.52) and Force motor Ltd(13.34) because compare to other companies, return from these two companies are higher.

Evaluation on the basis of Standard Deviation (S D):

Every investor tries to get maximum return from minimum risk. The risk factor also consider while taking the investment decision. Proper measurement of risk helps to an investor to minimize the risk and increase the return from the investment. Standard deviation of the companies represent the total risks that the companies having. Higher standard deviation represent higher risk and lower standard deviation represent lower risk. It is suggestible for a investor to choose a company which has a lower standard deviation.

The standard deviation will be calculated as follows.

Standard Deviation (S D) = $\sqrt{\sum}$ (Return – Average Return) ^{2}/N

In the above table 2, Standard deviation represents variation in the expected return. From the above observation, securities which are having less variation i.e. Hero Moto Corp Ltd(10.5) and Bajaj Auto Ltd(10.68) companies' securities are suggestible for an investment.

Evaluation on the basis of beta:

Beta is the slope of characteristic of regression line beta describes the relationship between the stock return and index return. Beta shows how the price of a security response to market forces. Beta is calculated by relating the returns on a security with the return for the market. Here market return means return of BSE index. A beta of less than one means that the security will be less volatile than the market and vice-versa. The beta of securities can be calculated as follows.

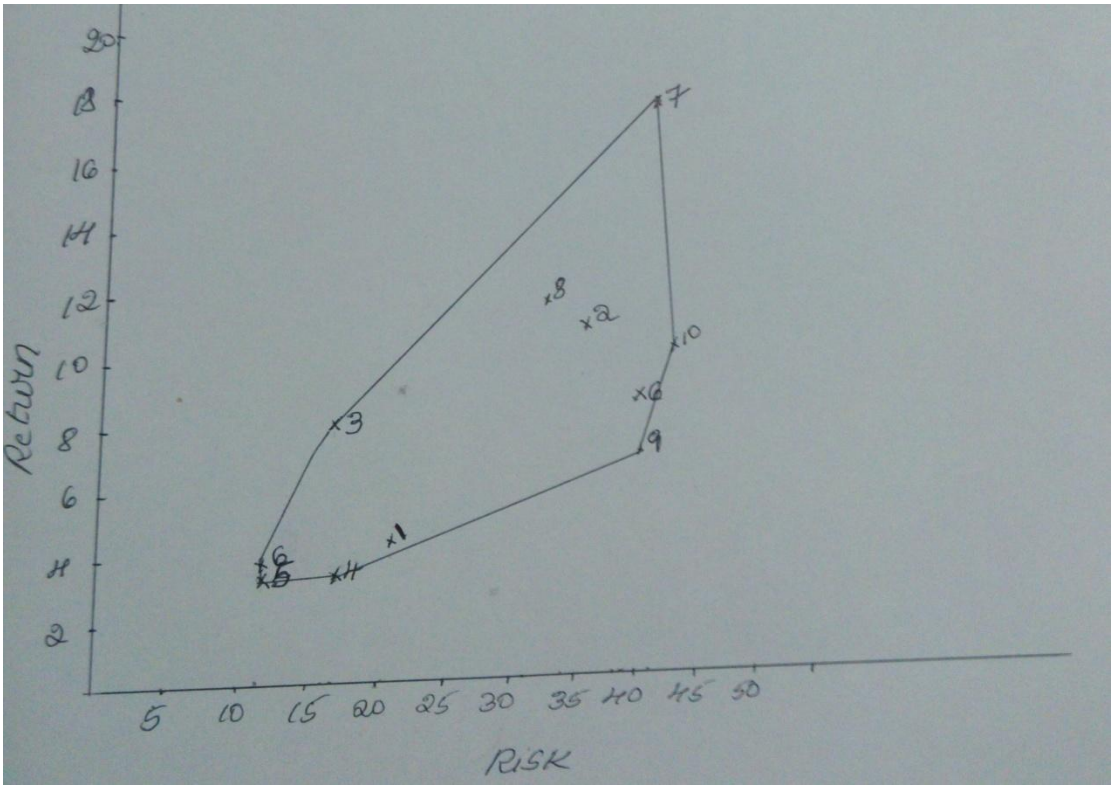
Beta (β) = $\{\sum(R_m$ – Mean return of Market) (R_i – Mean return of Security)$\}$/ $\{\sum(R_m$– Mean return of the Market)$^2\}$

The investor who is interested to avoid risk to maximum extent, security with less beta i.e Maruthi Suzuki (0.00004) is suggestible for investment.

EFFICIENT FRONTIER:

Efficient frontier is the technical aspect of optimal portfolio selection to determine the risk-return opportunities available to an investor. According to Markowitch portfolio, a set of efficient portfolios can be created by

combining different securities. An efficient portfolio is the only feasible set up portfolio in the long run and one can choose the portfolio for his accepted level of risk and return. It is constructed through the process of Trial and Error Method.



In the above graph, OX axis denotes the standard deviation and OY Axis denotes the Return. Point from 1 to 10 indicate the Relative 10 companies mentioned above.

There are 3 types of investors. Risk avoider tries to reduce the risk and want to get moderate return so they can invest in securities of Hero Moto Corp.,and Bajaj Auto Ltd.Risk neutral want to face moderate risk and get return. Risk Neutral can choose securities of Maruti Suzuki India which give moderate return with given level of risk. Risk takers are ready to take risk so they can invest in securities of Sunderam Clayton Ltd where Risk as well as return is higher.

PERFORMANCE EVALUATION OF SECURITIES

Portfolios are evaluated by portfolio managers, who can help identify a portfolio's strength and weakness and based on its performance, develop a better management strategy. For the purpose of evaluation different models are available. They are as follows.

Table 3: Performance evaluation model

SL.NO	Company	Sharpe's	Rank	Treynor's	Rank	Jensons	Rank
1	TATA Motors Ltd	0.15	10	1.51	9	1.81	9
2	Mahindra & Mahindra Ltd	0.34	4	5.17	6	9.05	4
3	Maruti Suzuki India	0.50	2	0	10	6.91	6
4	Hero Moto Corp Ltd	0.32	6	11.07	3	1.76	10
5	Bajaj Auto Ltd	0.33	5	18.25	1	1.96	8
6	Ashok LeyLand	0.24	8	9.98	4	7.14	5
7	Sunderam Clayton Ltd	0.51	1	12.85	2	17.20	1
8	TVS Motor Co. Ltd	0.39	3	6.34	5	9.65	3
9	Eicher Motor Ltd	0.20	9	3.96	8	5.14	7
10	Force Motor Ltd	0.31	7	4.39	7	10.10	2

Sharpe's performance index:

Under this model, evaluation of performance is based on additional return to total risk ratio comparison. If the ratio value is high for any portfolio, it has to be ranked first when there are many portfolios or securities. Under this performance is measured as follows

$$Sp=[(R_p – R_f)/\sigma]$$

According to this model, ratio value is high in securities of Sunderam Clayton Ltd and Maruti Suzuki India i.e.0.51 and 0.50. So it has to be ranked first.

Treynor's performance index:

Treynor model considers both systematic risks as well as unsystematic risk for evaluation purpose. Here risk premium to beta ratio is used for evaluation and ranked from highest to lowest. Following formula is used under this index to evaluate the portfolios.

$$Tp=[(R_i – R_f)/\beta]$$

By applying treynor's model, securities of Bajaj Auto Ltd (18.25) are ranked fist.

Jensen's performance index:

According to this model performance of securities is to be compared with the CAPM return. It's because any professional fund manager would be expected to earn at least average portfolio return of CAPM. Following formula is used for the calculation.

$$Jp=[Rp-\{Rf+(Rm-Rf)\beta\}]$$

By applying Jenson model, securities of Sunderam Clayton Ltd (17.2) are ranked fist.

CAPITAL ASSET PRICING MODEL:

Capital asset pricing model represent the minimum required rate of return for given security or portfolio under present condition. With the help of this model investor can take decision of either to sell or purchase security by comparing with equilibrium return.

Table 4.Capital asset Pricing Model

Sl. No	Company Name	Expected Return	RRR	Undervalued/ overvalued	Buy or sell Decision
1	TATA Motors Ltd	4.42	2.618	undervalued	Buy
2	Mahindra & Mahindra Ltd	11.67	2.618	undervalued	Buy
3	Maruti Suzuki India	8.34	1.43	undervalued	Buy
4	Hero Moto Corp Ltd	3.37	1.61	undervalued	Buy
5	Bajaj Auto Ltd	3.51	1.544	undervalued	Buy
6	Ashok LeyLand	9.12	1.976	undervalued	Buy
7	Sunderam Clayton Ltd	19.54	2.342	undervalued	Buy
8	TVS Motor Co. Ltd	12.23	2.588	undervalued	Buy
9	Eicher Motor Ltd	7.73	2.6	undervalued	Buy
10	Force Motor Ltd	13.34	3.254	undervalued	Buy

Required rate of return is necessary in order to take buy or sell decision. It has to be calculated as follows

RRR=Rf+(Rm-Rf)Bi

By comparing RRR with Expected return, it is better to buy the shares of all the companies listed above.

OPTIMAL PORTFOLIO CONSTRUCTION:

Sharp has provided a model for the selection of appropriate securities in a portfolio. The selection of any stock is directly related to its excess return to beta ratio. Excess return is the difference between expected return and risk less rate of interest. Excess rerun to beta ratio measures additional return on a security per unit of systematic risk.

Ranking of the stocks are done on the basis of their excess return to beta ratio as portfolio manager would like to include stock with higher ratio. Excess return to beta ratio can be calculated as follows.

Excess return to beta= $[(Ri-Rf)/\beta]$

Table 5: calculation showing Excess Return to Beta Ratio

Sl.No	Company name	Ri	Bi	Rf	Excess return to beta	Rank
1	TATA Motors Ltd	4.42	1.98	1.43	1.51	9
2	**Mahindra & Mahindra Ltd**	11.67	1.98	1.43	5.17	6
3	**Maruti Suzuki India**	8.34	0	1.43	0	10
4	**Hero Moto Corp Ltd**	3.37	0.3	1.43	6.47	4
5	**Bajaj Auto Ltd**	3.51	0.19	1.43	10.95	2
6	**Ashok LeyLand**	9.12	0.91	1.43	8.45	3
7	**Sunderam Clayton Ltd**	19.54	1.52	1.43	11.91	1
8	**TVS Motor Co. Ltd**	12.23	1.93	1.43	5.60	5
9	**Eicher Motor Ltd**	7.73	1.95	1.43	3.23	8
10	**Force Motor Ltd**	13.34	3.04	1.43	3.92	7

Securities are ranked on the basis of excess return to beta ratio. Afterwards securities of various companies are listed based on ranking order and cut off point is required to calculate. This helps to an investor to decide which the securities are should be involved in the portfolio. The cut off rate is calculated as follows.

$$Ci= \frac{\{\sigma_m^2 [\sum(R_i - R_f)\beta / \text{ unsystematic Risk})]\}}{\{ 1 + \sigma_m^2 [\sum \beta_i^2 / \text{ unsystematic Risk}] \}}$$

The percentage of fund to be invested in each security can be estimated as follows:

$$Xi= [Zi/\{N\Sigma_{i=1}Zi\}]$$

Where Z value is calculated as follows

$$Z=[(Bi/\text{unsystematic Risk}) \{(Ri-Rf/Bi\}-C^*)]$$

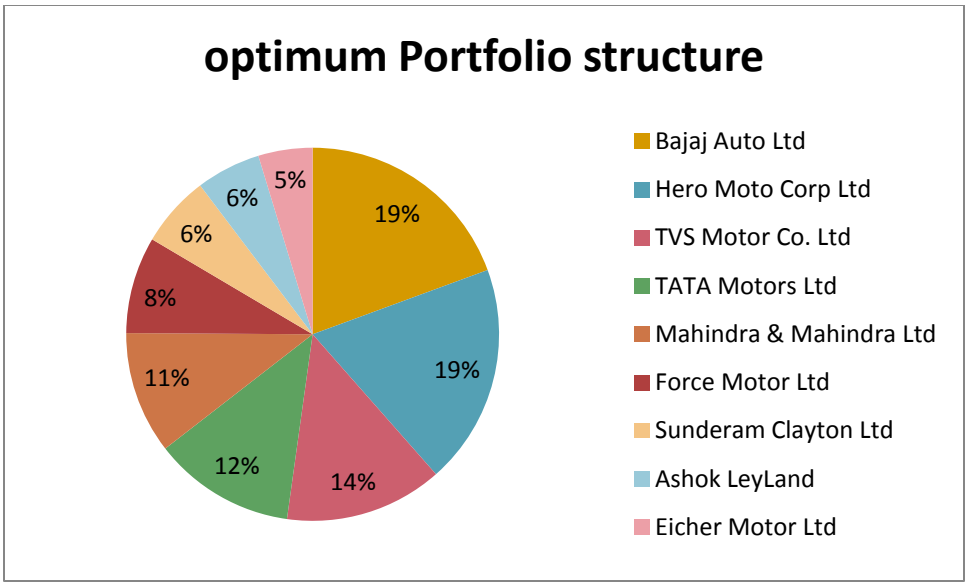
Table 6: Deciding about securities which to be involved in portfolio by using Sharpe's optimal portfolio

Sl .No	Co. name	Ri	Bi	USR	(Ri-Rf)	(Ri-Rf)Bi	Ri-Rf*Bi/ USR	cumilation	Bi^2/ USR	cumilation	Cut Off
7	Sunderam	19.54	1.52	1369.55	18.11	27.53	0.02	0.02	0.002	0.02	0.87
5	Bajaj	3.51	0.19	112.54	2.08	0.40	0.00	0.02	0.000	0.02	0.87
6	Ashok	9.12	0.91	1443.92	7.69	7.00	0.00	0.02	0.001	0.02	0.91
4	Hero	3.37	0.3	106.6	1.94	0.58	0.01	0.03	0.001	0.03	1.34
8	TVS	12.23	1.93	823.78	10.8	20.84	0.03	0.06	0.005	0.06	2.72
2	Mahindra	11.67	1.98	1016.71	10.24	20.28	0.02	0.08	0.004	0.08	3.66
10	Force	13.34	3.04	1478.62	11.91	36.21	0.02	0.1	0.006	0.1	4.68
9	Eicher	7.73	1.95	1409.57	6.3	12.29	0.01	0.11	0.003	0.11	5.20
1	TATA	4.42	1.98	254.89	2.99	5.92	0.02	0.13	0.015	0.13	6.57 C*
3	Maruti	8.34	0	281.54	6.91	0.00	0.00	0.13	0.000	0.13	6.56

The value of the c is increasing till 9th stock. Therefore first 9 stocks can be involved in portfolio. The portion of investment in the portfolio is shown in following table.

Table 7: Proportion of investment in selected securities.

Company name	Proportion of investment(%)
Bajaj Auto Ltd	19.4
Hero Moto Corp Ltd	19.1
TVS Motor Co. Ltd	13.7
TATA Motors Ltd	12.3
Mahindra & Mahindra Ltd	10.6
Force Motor Ltd	8.4
Sunderam Clayton Ltd	6.2
Ashok LeyLand	5.6
Eicher Motor Ltd	4.7



The allocation of investible fund between the securities is shown in pie diagram.

Port Folio Return= 10.02%

CONCLUSION:

Making investment in any security is not an easy task. Most of investor suffers loss by investing in some project without proper knowledge about the market condition. Therefore proper knowledge, skill and talent is require to analyze the market and to gain profit. Every investor has to choose proper investment avenue which is suits to their characteristic and this study helps to investor to properly allocate their fund and gain profit.

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