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COMPREHENSIVE STUDY ON SECURITY ANALYSIS OF SELECTED STOCKS LISTED AT BSE-A COMPARATIVE STUDY

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Abstract:

This research aimed to conduct a thorough security analysis of specific stocks listed in BSE. This analysis is made for the year 2022. The study had two main objectives firstly to assess the suitability of applying the CAPM model in the Indian stock market context, and secondly to conduct comprehensive performance evaluation of stocks belongs to distinct industries like Textile, Automobile, Pharmaceutical, and IT. The primary intention of this research was to offer valuable insights to potential investors, aiding them in making well-informed choices when selecting stocks from various companies.

For this research secondary data is applied .To enhance clarity in research chi square test is applied to the returns. Visual aids such as column charts were utilised to compare general stock returns and CAPM returns, which served as a clear and visual means to analyse the data.

Key words: Security analysis, CAPM, BSE Stocks.

INTRODUCTION:

Security Analysis:

Securities analysis refers to study of tradable financial instruments. It is focused deciding the accurate value of specific instruments, including bonds and stocks. Security analysis is the process of determining the overall worth of a firm by examining value of securities like shares and other instruments. This knowledge is critical for investors since it assists them in making judgements.Security analysis is the process of determining the merits and potential risks of a certain investment. It is main step in the investing decision-making process that comprises examining many factors that might impacton investment performance.

The two major goals of security analysis in finance are to determine a security's acceptability as an investment and its likely return on investment. This research frequently includes an examination of the financial statements and market, industry, & other relevant happenings thatmight have an impact to the investments performance.

Types of security analysis

1. Fundamental analysis:
   This kind of analysis involves evaluating securities with the primary objective of determining their intrinsic worth.
2. Technical analysis:
   This is a price forecasting technique that uses just past prices, industry trends and trading volumes to anticipate the assets future performance.

3. Quantitative analysis:
   This analysis has been used to spot trends that could lead to successful investment trades, but thatis notonly advantage it has. Although everyone's objective as an investor is to make money, quantitative analysis can also be utilized to lower risk.

Literature Review

1. Muthu Kumaran T, Natarajan S, Kumar S (2022):
   This study aims to assess and analyseimpact of systematic risk onreturns of preferred securities from specific industries in India's stock market duringpost-reform era. This research used the secondary data and information is collected from six manufacturing sectors in India. Findings of thestudyshowed that certain industries, which includes personal care industry, cement industry, and paint industry, show promise for investment opportunities. The underlying theory of this article suggests that assuming higher levels of risk can potentially lead to higher returns, but this principle is applicable only within the chosen sectors.
2. kanagatharani Baskaran, Mehta Vani Joghee, Yazini devi, Gayatri Suryanarayan, (2021):
   This study emphasizes the importance of banking system in driving economic growth and its crucial role as a cornerstone of a country's economy. The author highlights the presence of volatility and varying returns within the bank sector in equity markets, with some banks showing lower returns and others experiencing investment volatility. Portfolio analysis is emphasized as a valuable tool for investors to identify opportunities that offer minimum risk and maximum returns, enabling them to conduct thorough risk assessments and work towards minimizing risks while maximizing returns. The primary objective is to evaluate the risk and return characteristics of selected banking securities.
3. Ms J Meena Maheshwari, Dr Sujatha (2021):
   The primary objective to conduct this study is to analyse level of risk and return associated with three specific sectors: the steel sector and the pharmaceutical sector. Additionally, the paper seeks to determineoverall returns generated by all stocks included in study, and identify the best stock that offers maximum returns with minimal risk. Notably, the selected sectors have shown significant growth over the years. Given the increasingly challenging nature ofstock market, shareholders are seeking comprehensive knowledge to identify securities that offer the highest returns while minimizing risk.
4. Ganesh Bhat, Sonia Lobo (2021):
   This study focuses on evaluating the risk and return associated with specific financial securities listed in the S&P BSE Finance Index. The author utilizes a range of statistical tools, including standard deviation, kurtosis, mean, beta, skewness, and correlation coefficient, to calculate the relationship between the returns of S&P BSE finance index andreturns from the selected financial securities. Following the analysis, it is determined that there exists a meaningful correlation between the returns of S&P index and the sample returns. Multiple companies were considered for the analysis, with Nippon exhibiting the lowest correlation and Cholamandalam demonstrating the highest correlation.

5. Dr. V Vanaja, P J Nishok (2020):
   This study examines the risk and return of five chosen Indian automobile stocks over a five-year period (2015-2016 to 2019-2020). As the automobile sector is fundamental to the Indian economy and garners increasing interest from investors, the research aims to boost their knowledge of equity investments. The analysis emphasizes the risk/return trade-off, underscoring the need for proportionality between projected returns and associated risks/costs in decision-making processes across various domains. By evaluating these selected equities, the study encourages informed investment decisions in the Indian automotive industry.

Research gap: As per my literature review previously authors analyse the performance of some selected stocks, as performance of stocks changes year to year. I have undertaken to evaluate performance of selected stocks in previous year 2022. I have taken stocks from four industries namely Automobile industries, textile industries, IT industries and pharmaceutical industries for analysis purpose.

Objectives:

1. To find out whether CAPM model is applicable to ourIndian stock market (BSE).
2. To analyse the performance of selected industries stocks.
3. To determine the stock return by using CAPM model.
4. To guide the investors in selecting the stocks of the companies by using risk and return analysis.

Scope of the study: The objective of study is to conduct a risk and return analysis of selected companies. Its purpose is to provide guidance to investors, assisting them in making informed investment decisions by identifying companies that offer favourable returns while minimizing risk.

Hypothesis:

H_1:There is applicability of CAPM model to Indian stock market.

H_o: There is no applicability of CAPM model to Indian stock market.

Limitations of the study:

1. The study is conducted by considering the stocks listed in BSE.
2. The duration of study was for one year.
3. The study is conducted for a limited sampled size of 10 companies listed in BSE.
4. The study made an analysis of stocks in 2022 only.

Research methodology:

The research challenge can be approached methodically using research methodology. Research methodology can be viewed as a science that it studies how scientific research is conducted. In it, we examine the many approaches typically used by a researcher to analyse his research challenge, and the reasoning behind them. To conduct this research, I adopted the analytical research for this project. The study is conducted purely based on secondary data. I have selected the 10 different companies' stocks from 4 industries which includes automobile, pharmaceutical, textile and IT industries.

Sample size:

The project considered 10 different companies' stocks for analysis purpose and this sample is drawn from the BSE website.

Note: For analysis part I have used the following formulas

BETA: $N(\sum xy) -(\sum x) (\sum y) / N(\sum x\ 2) -(\sum x)^2$

X Return: $P-P_o/P_o*100$

Y Return: $P-P_o/P_o*100$

Market Return: Sum of X return/ No of Returns.

Stock return: $P-P_0/P_0*100$

In the below tables Y is stock return and X is Sensex return.

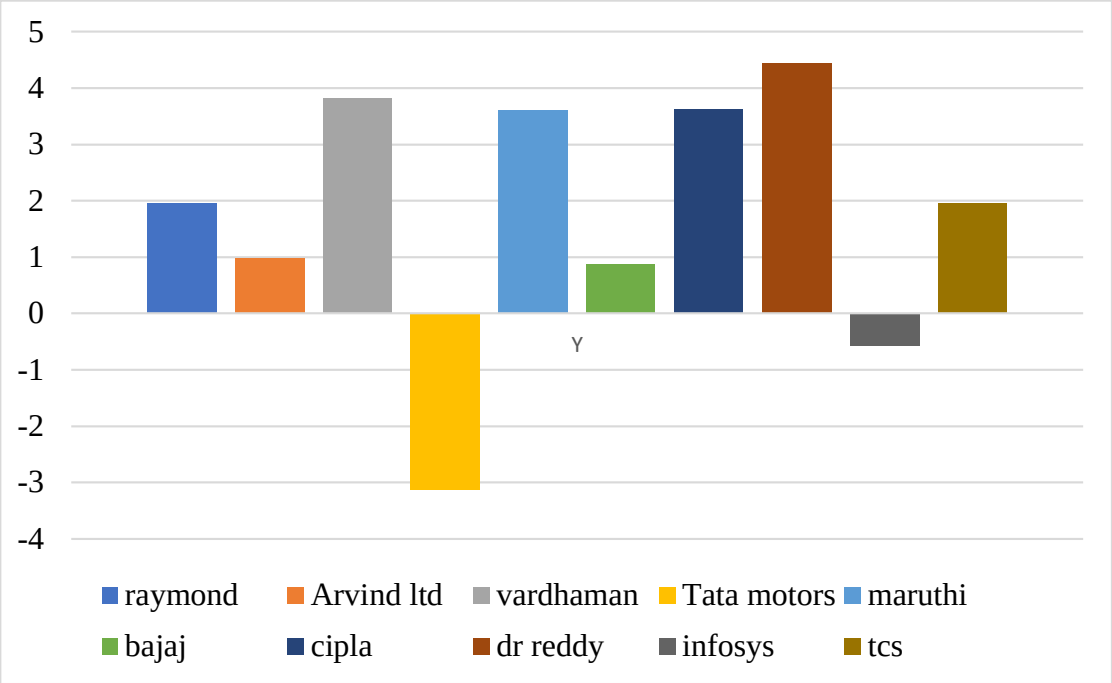
1. Calculation of CAPM return of Raymond company

Months	Y	X	Y return	X return	X^2	XY
03-Jan	615.15	59183.22				
01-Feb	765.8	58862.57	24.49	-0.5418	0.29355	-13.269
02-Mar	762.3	55468.9	-0.457	-5.7654	33.2398	2.63479
01-Apr	848	59276.69	11.2423	6.8647	47.1241	77.175
02-May	842.3	56975.99	-0.6722	-3.8813	15.0645	2.60901
01-Jun	1062.3	55381.17	26.119	-2.7991	7.83496	-73.11
01-Jul	880.9	52907.93	-17.076	-4.4659	19.9443	76.2606
01-Aug	979.05	58115.5	11.142	9.8427	96.8787	109.667
01-Sep	960.6	58766.59	-1.8845	1.1203	1.25507	-2.1112
03-Oct	1062.75	56788.81	10.634	-3.3655	11.3266	-35.789
01-Nov	1204.8	61121.35	13.3663	7.6292	58.2047	101.974
01-Dec	1366.8	63284.19	13.4462	3.5386	12.5217	47.5807
			90.3499	8.1765	303.688	293.623

Beta: 0.760943709
Market return: 0.743318182
Risk free: 5.85
CAPM: 1.964102598
Stock return: 1.221897098

11: Table showing Overall analysis of 10 companies CAPM return:

X	Y (CAPM Return)
RAYMOND	1.9641
ARVIND LTD	0.9871
VARDAMAN LTD	3.8232
TATAMOTORS LTD	-3.1257
MARUTI LTD	3.6055
BAJAJ LTD	0.871
CIPLA LTD	3.6231
DR REDDY'S LTD	4.442
INFOSYS LTD	-0.5598
TCS LTD	1.9607

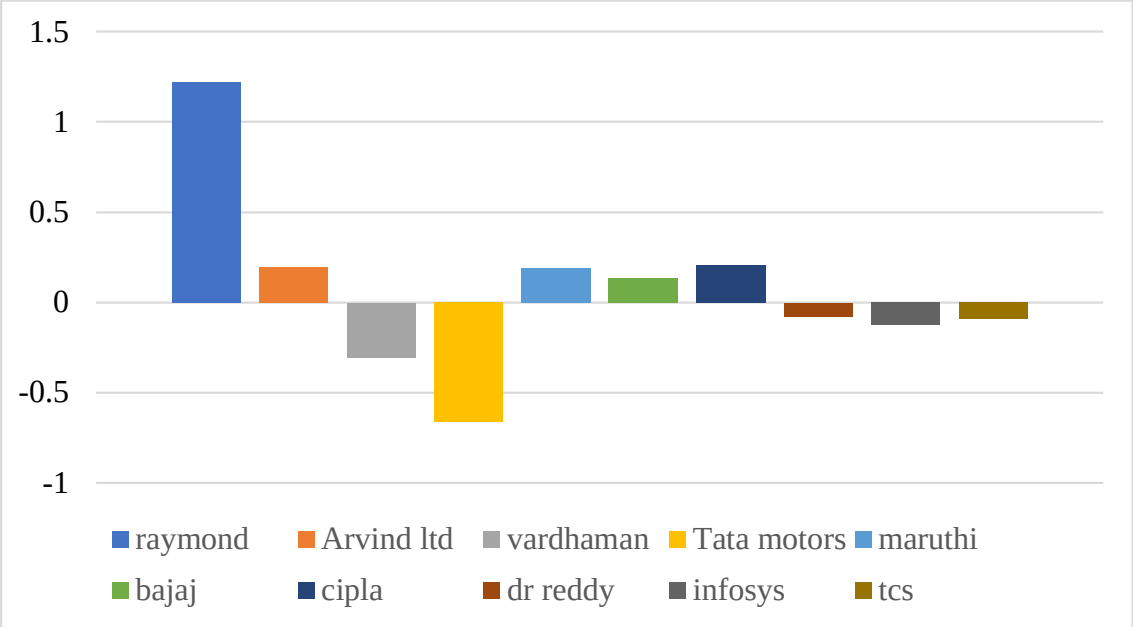


Interpretation:

From the above table and graph, we can observe that Dr. Reddy's Laboratory and Vardaman Textile Ltd. are showinghighest return compared to other companies, while Infosys and Tata Motors are showing lower returns (negative returns) when compared to other companies.

12: Table showing Overall analysis of 10 company's Actual return:

X	Y (actual return)
Raymond LTD	1.221897098
ARVIND LTD	0.197474378
VARDAMAN LTD	-0.304786701
TATA MOTORS LTD	-0.66428003
MARUTI LTD	0.191058154
BAJAJ LTD	0.131734479
CIPLA LTD	0.208673689
DR REDDY'S LTD	-0.078794062
INFOSYS LTD	-0.12626835
TCS LTD	-0.089847177



Interpretation:

From the above table and graph, we can observe that Raymond Textile ltd. and Cipla ltd. are showinghighest returns compared to other companies, and Vardaman Textile ltd. and Tata Motors ltd. are showing the lowest returns (negative returns) when compared to other companies.

13. Table showing calculation of Hypothesis Test

Company	Observed frequency	Expected frequency	(O_i-E_i)	$(O_i-E_i)^2$	$(O_i-E_i)^2/E_i$
Raymond	1.221897098	1.9641026	-0.7422055	0.5508690	0.2804685
Arvind	0.197474378	0.987106	-0.7896316	0.6235180	0.6316627
Vardaman	-0.304786701	3.8231922	-4.1279789	17.040209	4.4570633
Tata motors	-0.66428003	-3.12571	2.461429	6.0586374	-1.9383236
Maruti	0.191058154	3.6055079	-3.4144497	11.658467	3.2335158
Bajaj	0.131734479	0.871061046	-0.7393265	0.5466037	0.6275148
Cipla	0.208673689	3.6231588	-3.414485	11.658708	3.217829
Dr's Reddy	-0.078794062	4.4419781	-4.520772	20.437380	4.6009639
Infosys	-0.12626835	-0.5598256	0.433557	0.1879718	-0.3357686
Tcs	-0.089847177	1.960704	-2.0505511	4.2047601	2.1445155
					16.919442

$\sum[(O_i-E_i)/E_i]$ =16.919

Hence the calculated value of x^2 = **16.919**

Degrees of freedom in the given problem is (n-1) = (10-1) = 9

The table value of x^2 for 5 degrees of freedom at 9 per cent level of significance is 16.919. Comparing calculated value and table values of x^2, we find that calculated value is equal to the table value. Hence H_0 is accepted.

Findings:

1. The actual returns of companies often deviate from their CAPM returns, indicating differences between market expectations and actual performance. Actual returns of some companies, implying losses during the specified period.
2. Several companies, including Raymond, Arvind Ltd, Vardaman, Tata Motors, and Dr Reddy, underperformed compared to their CAPM returns.
3. Among the above companies, only Raymond, Arvind Ltd, Maruti, Bajaj, and Cipla have positive actual returns, indicating some level of profitability.
4. Vardaman, Tata Motors, Dr. Reddy, Infosys, and TCS have negative actual returns, signifying underperformance, or losses.
5. Tata motors and Infosys are showing negative actual return and CAPM return which means both companies are underperforming.
6. Among the provided companies, only Raymond, Arvind Ltd, Maruti, Bajaj, and Cipla have positive actual returns, indicating some level of profitability.
7. Vardaman, Tata Motors, Dr. Reddy, Infosys, and TCS have negative actual returns, signifying underperformance, or losses.
8. Vardaman, Dr. Reddy, TCS have positive CAPM return but negative actual return.

Suggestions:

1. Raymond and Arvind Ltd have positive actual returns and moderate betas, indicating relatively good performance. These companies may be worth considering for further investment or holding onto the stocks.
2. Arvind ltd, Maruthi and Cipla companies have similar return but there is a huge difference in its beta (risk) value so if investors are holding stocks of both companies, then he can continue to hold Cipla company shares as it is effective frontier.
3. If the investors are holding shares of companies of automobile industry such as Maruthi, Bajaj, Tata motors etc then holding stocks of Maruti Suzuki is beneficial as its return are high and beta is less compared to other companies and also its better to sell the stocks of Tata motors as its beta is high and returns are negative.
4. If the investor’s portfolio is having the stocks of IT sector companies such as Infosys, TCS etc as returns of both companies are negative then it is better to hold stocks of TCS as its beta is low and returns are high compared to Infosys.
5. Investors should consider diversifying their portfolio by investing in companies with varying levels of risk-return potential.
6. Conduct thorough research and analysis on each company, including their financials, competitive advantages, and growth strategies.

Conclusion:

This study aims to evaluate the performance of 10 companies' stocks listed on the Bombay Stock Exchange (BSE) by comparing their actual returns with the returns predicted using the Capital Asset Pricing Model (CAPM). To conduct this analysis, we calculated the beta & expected returns. The study employed the chi-square test to test a hypothesis, and the results indicate that CAPM is not applicable to our Indian stock market. Additionally, the findings of this research provide valuable insights for investors, assisting them in assessing stock performance. The suggestions derived from this study can aid investors in making informed decisions regarding whether to buy or sell shares, while considering the associated risks.

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