



Return and Risk Analysis of Selected Sectoral Stocks and its Impact on Portfolio Selection

Dr.S.POORNIMA

Head of the Department, Department of Business Administration, PSGR Krishnammal College for Women, Coimbatore.

Mrs. SARANYA.P.B

Research Scholar, PSGR Krishnammal College for Women, Coimbatore.

ABSTRACT

Stock Market, the hub of making equity investment is considered to be highly a volatile market which widely impacts a country economic growth. Stock markets are considered to be best alternate for investment in developed countries. This paper aims at identifying return risk associated with selected stocks pertaining to five sectors. For the purpose of this study three stocks under each sector has been randomly selected and their daily average and yearly returns were considered. Little stock indicated a negative return, few depict positive returns.

KEYWORDS

Sector-wise Stocks, Portfolio, Risk and Return Analysis

INTRODUCTION

The Indian capital Market has witnessed a tremendous growth. There was an explosion of investor interest during the nineties and an Equity Glut emerged in statutory legislations has helped the capital market. Foreign Exchange regulation act is one such legislation in this direction. An important recent development has been the Entry of Foreign Institutional investors are participants to the primary and secondary markets for the securities. In the past several years, investments in developing countries have increased remarkably. Among the developing countries India has received considerable capital inflows in recent years. The liberalization policy of the government of India has now started fielding results and the country is poised for a big leap in the industrial and economic growth. The Economy of the country is mainly based on the development of the corporate sectors. A capital market is a market for securities (debt or equity), where business enterprises (companies) and governments can raise long-term funds. It is defined as a market in which money is provided for periods longer than a year, as the raising of short-term funds takes place on other markets (e.g., the money market). The capital market includes the stock market (equity securities) and the bond market (debt).

Stock Market, the hub of making equity investment is considered to be highly a volatile market which widely impacts a country economic growth. Stock markets are considered to be best alternate for investment in developed countries. The volatility in the stock market is determined by various micro and macro economic factors such as inflation, interest rates, etc., Apart from these factors certain other factors such as company's performance, profits, future plans, etc., create an impact on the stock returns. These changing factors not only impact the returns but also create volatility in the stock prices. The primary objective of this study is to find out risk & return characteristics of different sectoral stocks and to find out those stocks which can be better alternates for investment.

REVIEW OF LITERATURE

Harry Markowitz introduced new dimension of security return when he considered portfolio of securities instead of finding out single security return and risk in 1952 published in Journal of Finance. Markowitz considered overall risk and return of the securities in a portfolio. He asserted that overall risk on the securities could be minimized by diversification. James Tobin (1958) advanced Markowitz's work by adding risk free asset in the portfolio. Sharp (1964) introduced the concept

of CAPM, which notified that security return depends on the market performance. Sharp introduced the concept of beta in determining stock return. Lintner (1965), Mossin (1966) and Treynor (1961) performed similar works on CAPM independently based on the works of Markowitz. Though the single period CAPM gave fundamental asset pricing model, which is still being widely exercised, it suffered from many loopholes emerged from some of its unrealistic assumption. In some cases CAPM has failed to properly explain the variability of stock return. Carlos & Davila (2001) tested stock return of the Latin American region and found that stocks are generally volatile and non-normally distributed. They also found that returns on the stock are being increasingly correlated across the region. They asserted that there is strong presence of international markets' influence on the security return and usual multi factor model, which only combines industry variable failed to explain stock return properly. Apart from macro economic and industry specific factors some researchers explained stock return by the firm specific factors. Basu (1977) showed that stocks with high earnings/price ratios (or low P/E ratios) earned significantly higher returns than stocks with low earnings/price ratios. Banz (1981) showed that the stocks of firms with low market capitalization have higher average returns than large capitalization stocks. Rosenberg, Reid and Lanstein (1985) showed that stocks with high ratios of book value to market value had significantly higher returns than stocks with low book value to market value. Scott and Horvath (1980) that positive preference for skewness and negative preference for kurtosis has been postulated in explaining financial behavior of the investors. Skewness preference is one potential explanation for investors holding imperfectly diversified portfolios. Dittmar (2002) showed that higher expected returns compensate investors bearing systematic variance and kurtosis risks, while investors forego return to benefit from increasing systematic skewness. Harvey, Liechty, Liechty and Muller (2004) found that international asset holdings can be quite different under third-moment preferences compared to the standard mean-variance case. Taleb (2004) found that investors commonly engage in negatively skewed stocks. A negatively skewed stock was characterized as a trade that has a large chance of making gains but a very small chance of losing big money. Levy (2006), suggested that investors would consider the standard deviation while selecting the portfolio for the maximization of returns.

METHODOLOGY

For the purpose of this study the closing stock prices of select-

ed stocks were taken for the period ranging from 1-1-2014 to 31-12-2014. For the study three companies from five sectors has been randomly choosen.

SAMPLE

CNX AUTO	CNX BANK	CNX INFRA	CNX IT	CNX PHARMA
BAJAJ-AUTO	AXISBAN	AMBUJACE	HCLTECH	CIPLA
HEROMOT	HDFCBAN	LT	TCS	DRREDDY
TATAMOT	ICICIBAN	TATAPOW	WIPRO	SUNPHAR

TOOLS USED FOR ANALYSIS

Average Return: The average amount of money earned by an investment each year over a given time period. An annualized total return provides only a snapshot of an investment’s performance and does not give investors any indication of its volatility. Annualized total return merely provides a geometric average, rather than an arithmetic average.

$$\bar{k} = \frac{\sum_{i=1}^n k_i}{n}$$

Standard deviation: A statistic used as a measure of the dispersion or variation in a distribution or set of data, equal to the square root of the arithmetic mean of the squares of the deviations from the arithmetic mean.

$$SD = \sqrt{\frac{\sum (x - \bar{x})^2}{N - 1}}$$

Correlation:

Correlation is a statistical measure that indicates the extent to which two or more variables fluctuate together. A positive correlation indicates the extent to which those variables increase or decrease in parallel; a negative correlation indicates the extent to which one variable increases as the other decreases.

$$r = \frac{1}{n-1} \sum \left(\frac{x - \bar{x}}{s_x} \right) \left(\frac{y - \bar{y}}{s_y} \right)$$

Beta: The beta (β) of an investment is a measure of the risk arising from exposure to general market movements as opposed to idiosyncratic factors. The market portfolio of all investable assets has a beta of exactly 1. A beta below 1 can indicate either an investment with lower volatility than the market, or a volatile investment whose price movements are not highly correlated with the market. An example of the first is a treasury bill: the price does not go up or down a lot, so it has a low beta. An example of the second is gold. The price of gold does go up and down a lot, but not in the same direction or at the same time as the market.

$$\beta = \frac{Cov(r_a, r_b)}{Var(r_b)}$$

The Sharpe ratio: The Sharpe ratio is the average return earned in excess of the risk-free rate per unit of volatility or total risk. Subtracting the risk-free rate from the mean return, the performance associated with risk-taking activities can be isolated

$$\text{Sharpe Ratio} = \frac{r_p - r_f}{\sigma_p}$$

Sharpe has identified the optimal portfolio through his single index model, according to Sharpe; the beta ratio is the most important in portfolio selection. The optimal portfolio is said to relate directly to the beta value. It is the excess return to the beta ratio. The optimal portfolio is selected by finding out the cu-off rate [c]. The stock where the excess return to the beta ratio is greater than cutoff rate should only be selected for inclusion in the optimal portfolio. Sharp proposed that desirability of any stock is directly referred to its excess returns to betas coefficient.

Where

$$\text{SHARPE'S INDEX} = R_p - R_f / \text{BETA}$$

Ri = Expected return on stock

Rf = Return on risk free asset

β = Expected change in the rate of return on stock 1 associated with 1% change in the market runt

The risk free rate of return considered is 8%.

RESULTS AND DISCUSSIONS

The results and discussion based on the tools used are as follows.

TABLE 1: AVERAGE RETURN, STANDARD DEVIATION, CORRELATION, BETA OF STOCKS

SECTOR	STOCK	AVERAGE	STDEV	CORR	BETA
AUTO-MOBILE	BAJAJ-AUTO	0.001	0.014	0.368	0.622
	HERO-MOT	0.002	0.016	0.432	0.868
	TATA-MOT	0.001	0.019	0.606	1.420
BANK	AXISBAN	0.003	0.018	0.657	1.437
	HDFCBAN	0.001	0.030	0.013	0.048
	ICICIBAN	-0.001	0.054	0.220	1.486
INFRA	AMBUJACE	0.001	0.019	0.639	1.502
	LT	0.002	0.018	0.668	1.486
	TATAPOW	0.000	0.022	0.574	1.597
IT	HCLTECH	0.001	0.018	0.065	0.150
	TCS	0.001	0.017	0.213	0.440
	WIPRO	0.000	0.015	0.223	0.428
PHARMA	CIPLA	0.002	0.016	0.272	0.550
	DRREDDY	0.001	0.015	0.099	0.188
	SUNPHAR	0.002	0.017	0.135	0.279
INDEX	CNX NIFTY	0.001	0.008		

From the table values it’s inferred that Hero motors, LT and Axis Bank have better returns when compared to the bench mark index returns, whereas all the other stocks have lower returns than the index. ICICI bank shows negative returns. The standard deviation or the unsystematic risk is very high with ICICI bank when compared to all the other stocks. All the stocks are positively correlated with the bench mark index. This indicates that when there is a positive change in the in-

dex that will also have a similar effect on the stock prices. The beat coefficient is very high for IT stocks which means that the stock prices highly fluctuate.

TABLE 2: YEARLY RETURNS OF STOCKS

SECTOR	STOCK	YEARLY RETURN	RETURNS (%)
AUTOMOBILE	BAJAJ-AUTO	0.3	26.9
	HEROMOT	0.5	48.9
	TATAMOT	0.3	32.2
BANK	AXISBAN	0.9	94.4
	HDFCBAN	0.3	28.6
	ICICIBAN	-0.7	-67.8
INFRA	AMBUJACE	0.2	24.6
	LT	0.4	39.9
	TATAPOW	-0.1	-9.1
IT	HCLTECH	0.3	26.3
	TCS	0.2	18.8
	WIPRO	0.0	0.5
PHARMA	CIPLA	0.6	55.9
	DRREDDY	0.3	27.9
	SUNPHAR	0.4	44.4
INDEX	CNX NIFTY	0.3	31.4

From the table values it's inferred that ICICI bank and TATA Power shows a negative return during the year 2014, while all the other stocks show a positive return. Axis bank shows 200% higher returns than that of the index returns during 2014. The IT stocks show lower returns when compared to the index returns. The automobile and the pharmaceutical stocks show better returns when compared to all the other sectors during 2014.

TABLE 3: SHARPE'S RATIO

SECTOR	STOCK	SHARPE RATIO
AUTOMOBILE	BAJAJ-AUTO	30.8
	HEROMOT	47.5
	TATAMOT	17.2
BANK	AXISBAN	324.2
	HDFCBAN	432.7
	ICICIBAN	-50.8
INFRA	AMBUJACE	11.3
	LT	21.7
	TATAPOW	-10.5
IT	HCLTECH	123.8
	TCS	25.2
	WIPRO	-16.9
PHARMA	CIPLA	87.6
	DRREDDY	107.8
	SUNPHAR	131.5

The Sharpe's Ratio table indicates the stocks which show very high performance. It's inferred from the table that the Bank sector stocks outperform. These bank stocks can be included in the portfolio so that the returns are maximised. ICICI bank and Wipro stocks show negative ratio which indicates that if these stocks are included in the portfolio the portfolio would result in lower returns.

TABLE 4: OPTIMUM PORTFOLIO

STOCK	SHARPE RATIO
HDFCBAN	432.7
AXISBAN	324.2
SUNPHAR	131.5
HCLTECH	123.8
DRREDDY	107.8
CIPLA	87.6
HEROMOT	47.5

The above table represents the stocks that can be a part of the optimum portfolio.

CONCLUSION

The objective of my study was to analyse the relationship of growth rate and unsystematic risk of seven stocks selected from CNX 100 index for a period of two financial years from 2012-13 to 2013-14. The results of the study reveal that there is no consistent performance of the seven stocks selected. No stock reported more than ten percent of return in all the quarters. The results of the study reveals that all the stocks considered were traded with heavy risk factors. Finally, there is no positive persistence exist among the stocks and no significant relationship subsist among return and unsystematic risk..

REFERENCES

1. Chandra Setiawan (2013). Syariah and Conventional Stocks Performance of Public Companies Listed on Indonesia Stock Exchange. Journal of Accounting, Finance and Economics, 3(1), 51 – 64. | 2. Chikashi Tsuji (2014). An Investigation of the Relationship between Risk and Return: The Case of the Latin American Stock Markets. Accounting and Finance Research, 3(1). | 3. Debjiban Mukherjee (2007). Comparative Analysis of Indian Stock Market with International Markets. Great Lakes Herald, 1(1). | 4. Donald. B Keim (1983). Size Related Anomalies and Stock Return Seasonality. Journal of Financial Economics, 12, 13-32. | 5. Fischer Black and John C. Cox (1976). Valuing Corporate Securities: Some Effects Of Bond Indenture Provisions, The Journal of Finance, 31(2), 351-367. | 6. Bae, S. C., Duvall & G. S. (1996). An empirical analysis of market and industry factors in stock returns of U.S. Aerospace industry. Journal of Financial and Strategic Decision, Vo.-9, No. 2, 1996. | 7. Sector. World Bank Economic Review, 14, 597-605. | 8. Black, F., Jensen, M., and Scholes, M. (1972). The Capital Asset Pricing Model: Some Empirical Tests, in M. |