Available online at http://www.ijims.com ISSN: 2348 – 0343

Optimal Portfolio Construction With Nifty Stocks

Thangjam Ravichandra

Department of Professional Studies , Christ University, Bangalore, India

Abstract

This paper endeavors to build an ideal portfolio by utilizing Sharpe's Single index model. For this reason, NSE NIFTY and all the 50 stocks where are a part of it have been utilized as business record for planning portfolio. The everyday information for all the stocks and list for the period of April 2008 to December 2013 has been gathered. The proposed model will define a special cut off point (Cut off rate of return) and chooses stocks having overabundance of their normal return over risk free rate of return surpassing this cut-off point. Rate of venture in each of chosen stocks is then settled on the support of separate weights allocated to each one stock relying upon individual beta value, stock development change unsystematic risk, return on stock and hazard free return versus the cut off rate of return. According to our findings, our optimal portfolio comprises of four stocks chose out of 50 shot recorded scripts, giving the reappearance of 0.116 %.

Keywords: Portfolio development, single index model, optimal portfolio, risk and return trade off, NIFTY, offer market speculation.

I. Introduction

Portfolio is a blending of securities, for example, stocks, and securities and currency business sector instruments. The methodology of combining together the wide possessions classes in order to acquire ideal come back with least hazard is called portfolio development. Enhancement of venture serves to spread risk over numerous stakes. A diversification of securities gives the confirmation of getting the expected profit for the portfolio. In a diversified portfolio, a few securities may not execute not surprisingly, yet others may surpass the desire and making the genuine return of the portfolio sensibly near the foreseen one. Keeping a portfolio of single security may prompt a more stupendous probability of the genuine return to some degree unique in relation to that of the expected return. Subsequently, it is a regular practice to differentiate securities in the portfolio.

The determination of portfolio relies on upon the different goals of the investors, to be specific :

- 1. Objectives and stake blend,
- 2. Growth of pay and holding blend
- 3. Capital appreciation and holding blend
- 4. Safety of principal and holding blend
- 5. Risk and return investigation
- 6. Diversification.

The establishment of advanced portfolio hypothesis was laid by Markowitz in 1951. Markowitz hypothesis encourage investors to put resources into different securities instead of put all investments tied up on one place in light of the fact that effective broadening of the portfolio includes consolidating securities with short of what positive association so as to lessen chance in the portfolio without relinquishing any of the portfolio return.

Single Index Model

Sharpe likewise created a composite measure of portfolio execution like that of Treynor with just contrast that he took standard deviation of the portfolio return as the measures of risk rather than beta. This measure likewise contrasts the genuine normal portfolio return and the normal rate of profit for risk free security for a given level of risk. The single file model expect that co-development between stocks is because of development in the list.

The fundamental comparison underlying the single record model is:

$$\mathbf{R}_{i} = \alpha + \beta_{i} \mathbf{R}_{m} + \mathbf{e}_{i}$$

Where,

 e_i = error term

II. Review of literature

Forthright J. Fabozzi and Jack Clark Francis $(1980)^1$ they establish that the time beta is moving haphazardly while OLS beat is a point gauge which is invariant throughout the test period. B. Blog et al., $(1983)^2$ they recommend that a basic and computationally extremely proficient heuristic strategy that a dependably gives an ideal portfolio. N. Gregory Markiw and Mathew d. Shapiro $(1986)^3$ they are inspected a cross- segment of 464 stock and find that normal return is all the more nearly identified with the beta measured concerning a securities exchange list than to the beta measured with deference of utilization development Sunil Poshakwale $(1996)^4$ Rachel Campbell et al., $(2001)^5$ their effects highlighted the impact of both nonordinary qualities of the normal return disseminated and the length of venture time skyline on the ideal portfolio determination. Bhaduri et al. $(2009)^6$ their outcomes recommend that no theoretical air pockets were available in the Indian stock exchange for the example period acknowledged for this study S.R. Nanda et al., $(2010)^7$. They chose stocks from the bunches to manufacture a portfolio, minimizing portfolio risk and contrast the returns and that of the benchmark file, i.e. Sensex.

III. Objective of the study

- To look at the aggregate return and aggregate risk of the Nifty stocks.
- To assess business risk (beta) of the Nifty stocks.
- To develop an ideal portfolio by utilizing Sharpe's single record model.

IV. Data for the study

The study points at developing the ideal portfolio. For this reason, every day information gathered the shares and file esteem for the time of first April 2008 to December 2013. This study takes all the 50 shares which are a part of NSE NIFTY as business sector list. The study has utilized auxiliary information on the grounds that it relates to recorded dissection of reported budgetary information. Day by day shutting cost of the shares and day by day shutting file worth of the benchmark business sector list (NSE NIFTY) gave been utilized for the study. They were gathered from CMIE (community for overseeing Indian economy) ability bundle. The gathered information was combined according to study requirements.

V. Methodology

To study the above targets, the offer cost of NIFTY stocks has been taken with the end goal of examining risk and return attributes. For the reason analyzing risk aspects of NIFTY stocks the Standard Deviation (aggregate risk) is computed, and for breaking down return attributes of stocks the day by day mean return is figured. In this purpose the scientist bunched the NIFTY file. It's as of now comprising 20 areas, now the specialist has orchestrated into 7 homogeneity businesses for this research study.

Return

$$R_{it} = \frac{P_{it}}{P_{it-1}} - 1$$

Where \mathbf{R}_{it} , \mathbf{P}_{t} , \mathbf{P}_{it-1} are the return share price at time t and t-1 for security i

Standard Deviation

$$\sigma \sqrt{\frac{\Sigma X \tilde{i}^2}{n} - (\bar{X})^2}$$

The second stage, in the setting of testing of Sharpe's model for choice of suitable securities in portfolio is utilized, the average returns of unique returns or portfolio are acclimated to that of risk free return (here 6.11 percent is acknowledged as risk free rate dependent upon the portfolio on 91-day Legislature of India treasury bills). Subsequently to gauges the coefficients with risk free balanced normal profit for individual / portfolio and on business sector risk, the accompanying model is utilized. The determination of any stock is straightforwardly identified with its abundance return – beta ratio.

$$(R_i - R_f)$$

βi

Where

Ri

= the expected return on stock i

International Journal of Interdisciplinary and Multidisciplinary Studies (IJIMS), 2014, Vol 1, No. 4, 75-81.

- R_{f} = the return on a riskless asset
- β_i = the expected change in the rate of return on stock i associated with one unit change in the market return

The abundance return is the contrast between the normal profit for the stock and the riskless rate of premium, for example, the rate offered on the administration security or Treasury bill. The abundance come back to beta proportion measures the extra profit for a security (overabundance of the riskless possessions return) for every unit of orderly risk or non-diversifiable risk. This proportion gives a relationship between potential risk and prize.

Positioning of the stocks are carried out on the support of their overabundance come back to beta. Portfolio supervisors might want to incorporate stocks with higher proportions. The choice of the stocks relies on upon an exceptional cut –off rate such that all stocks with higher degrees of Ri - Rf/ β i are incorporated and the stocks with easier proportions are forgotten. The cut- off point is indicated by C*.

$$C_{i} \frac{\sigma_{m}^{2} \Sigma_{i=1}^{N} \frac{(R_{i} - R_{f})\beta_{i}}{\sigma_{ei}^{2}}}{1 + \sigma_{m}^{2} \Sigma_{i=1}^{N} \frac{\beta_{i}^{2}}{\sigma_{ei}^{2}}}$$

The most astounding Ci worth is taken as the cut – off point C*. The stocks positioned above C* have high abundance come back to beta than the cut – off Ci and all the stock underneath C* has low overabundance comes back to beta. On the off chance that the amount of stock is extensive there is no compelling reason to ascertain the Ci qualities for all the stocks after the positioning has been carried out. It might be ascertained until the C* quality is discovered and in the wake of figuring for one or two stocks underneath it the calculations could be ended.

$$Ci \frac{\beta_{ip}(Ri-Rf)}{\beta_i}$$

The Ci might be expressed with numerically proportional Where

 β_{ip} = The expected changes in the rate of return on stock i associated with 1 percent

 R_p = the expected return on the optimal portfolio

 β_{ip} and R_p cannot be determined until the optimal portfolio is found. To find the optimal portfolio, the formula in above should be used. Securities are added to the portfolio as long as

$$\frac{Ri - Rf}{\beta i} > Ci$$

Now,

 $R_i - R_f \geq \beta_{ip} (R_p - R_f)$

The right hand side is the expected excess return on a specific stock dependent upon the normal execution of the ideal portfolio. The term on the left hand side the normal overabundance return on the singular stock. Hence, if the portfolio administrator accepts that a specific stock will perform superior to the normal profit base for its relationship to ideal portfolio.

Development of the Ideal Portfolio:

After deciding the securities to be chosen, the investors ought to figure out what amount ought to be put resources into every security. The rate of trusts to be put resources into every security could be evaluated as below

$$Xi = \frac{Z_i}{\sum_{i=1}^{N} Z_i} \qquad \qquad Z_i = \frac{\beta_i}{\sigma_{ei}^2} \left(\frac{Ri - Rf}{\beta_i} - C^*\right)$$

The first expression indicates the weights on each security and they sum up to one. The second shows the relative investment in each security. The residual variance or the unsystematic risk has a role in determining the amount to be invested in each security.

VI. Analysis

For building an ideal portfolio, a specimen of size 50 from chosen structure the securities recorded on NSE and included NIFTY. NSE NIFTY is taken as the business sector record. Every day shutting value and returns are recognized for the selected securities in the each one example structure first April 2008 to 31st December 2013. They were gathered from CMIE (Centre for Monitoring Indian economy) ability package. The normal risk free return is recognized as 6.11% p.a (91-day Legislature of India treasury bills).

From the tables 1 to 8 it might be seen that a couple of stocks gave negative returns. The consequence of enlightening facts exhibits the unpredictability conduct every variable. From this detail it is clear that mean returns of banks and fund segment has given higher day by day average return. Followed by cement and steel segment and Automobiles and refineries area in NIFTY stock. The standard deviation (aggregate risk) is higher for Development & designing, metal and others emulated by Concrete and steel and lesser for pharmaceuticals.

From the above analysis (single index model) the accompanying securities are identifying for further investigation to the speculators on the groundwork of return, Standard Deviation (unpredictable) and beta value. The accompanying securities are chosen on the premise of their execution in the part astute arrangement; these securities are thought seriously about for development of portfolio

- 1) Tata Motors Ltd. 2) Axis Bank Ltd.
- 4) Steel Authority of India Ltd 7) Tata Power Co. Ltd.
- 5) Bharti Airtel Ltd. 8) Hindalco Industries Ltd.
- 3) Infrastructure Development Finance Co. Ltd.
- 6) Ranbaxy Laboratories Ltd.

Table 9 and 10 plainly illustrates the outcomes observational dissection. To attain the goals of the study, Single Record Business model are utilized. Sharpe's model is advantageous as contrasted with the model given by Harry Markowitz. It helps in the formation of portfolio with less number of estimations as contrasted with whatever viable model. In this cooperation of singular offer with the general market or business sector portfolio is given an imperativeness. Just those securities are attractive in the portfolio, which have positive abundance return over risk free return. All the securities which have excess come back to beta degree more than the cut of point are incorporated in the portfolio. Such portfolio is the productive portfolio and the securities included in the portfolio are the effective securities.

VII. **Recommendations**

- Don't have more exchange a day
- Don't purchase and offer the securities on bits of gossip.
- Don't utilize all the trusts in single part, the misfortune perhaps tremendous.
- Deal with the patterns before attempting to select the securities through and through.
- Don't buy securities on the grounds that it is low valued.
- Profit can't be gained consistently from the businesses.
- Don't purchase an excess of stocks.

VIII. Conclusion

Risk and return assumes a significant part in settling on any financing choices. This works points at breaking down the chance that are accessible for speculators according to as returns are concerned and the speculation of risk thereof while putting resources into value of firms having a place with Nifty 50 stock in the national stock exchange. From the experimental examination, it is presumed that profits for either distinct securities or on portfolio embodies securities of diverse organizations recorded in Nifty 50 stock under different parts are asymmetrical and heterogeneous. Out of 50 organizations taken for the study 6 organizations demonstrating negative return and the other 44 organizations are indicating positive returns. The organizations indicated positive returns additionally unveiled high risk and return have been exceptionally unstable with a large portion of the securities. Out of 50 organizations 24 organizations, the business beta is over 1, which indicates the speculations in these stocks are beating than the business.

However, essentialness of the beta is not steady with all security return, prompting the conclusion that each security depends to some degree on the general execution of the business. From this experimental examination, to some degree one can ready to gauge singular security's return through the business sector development and can make utilization of it.

In the second stage portfolio development utilizing of Sharpe's model for determination of fitting securities in the wake of modifying portfolio come back with danger free return. It is found that Indian security showcase in data connection Sharpe's single file business model will holds great. Further it serves to inspire the profit for securities of distinctive portfolio is autonomous of the methodical danger overall in the business. Hence this` paper a symbolization as a solution for the regular investor to develop ideal portfolio of their venture.

IX. Reference

- Forthright J.Fabozzi and Jack Clark Francis .Estimation for Markowitz Efficient Portfolios" Journal of the American 1. Statistical Association, 1980, 75, (371):544-554.
- 2. B. Blog, G. van der Hoek, A. H. G. Rinnooy Kan, G. T. Timmer. The Optimal Selection of Small Portfolios" Management Science, 1983, 29(7): 792-798.

- 3. N. Gregory Markiw and Mathew d. Shapiro (1986), "Risk and Return: Consumption Beta versus Market Beta", the Review of Economics and Statistics, 1986, 68 (3): 452-459.
- 4. Sunil Poshakwale (1996), "evidence on weak form from efficiency and pay of the weak effect in the Indian stock market", Finance India , 1996, Vol. X (3): 605-616.
- 5. Rachel Campbell, Ronald Husiman and kees Kodedijk.Optiaml portfolio selection in Value-at-Risk framework" www.elsevier.com/locate/econbase Journal of Banking & Finance, 2001,25,1789-1804.
- 6. Bhaduri, Saumitra N. and Ravi, Mahima. Bubble in the Indian stock market: myth or reality", Macroeconomics and Finance in Emerging Market Economies, 2009, 2, 79 92.
- 7. S.R. Nanda, B. Mahanty, and M.K. Tiwari. Clustering Indian stock market data for portfolio management, 2010. journal homepage: www.elsevier.com/locate/eswa Expert Systems with Applications 37, 8793–879.

 Table 1: Stock Behavior of Automobile and Refineries sector Companies under NIFTY 50 during 2008-13

Name of Company	Mean	Standard	Return	Constant	Beta(β)	\mathbf{R}^2
	(Return)	Deviation	to Risk	(α)		
		(Risk)	Ratio			
Bajaj Auto Ltd.	0.1908	3.3260	0.0574*	0.161	0.658** (11.59)	0.160
Hero Motocorp Ltd.	0.0722	2.2965	0.0314*	0.041	0.519** (17.34)	0.195
Mahindra & Mahindra Ltd.	0.0656	3.2926	0.0199	0.004	1.005** # (26.15)	0.356
Maruti Suzuki India Ltd.	0.0572	2.4826	0.0230	0.009	0.786** (27.72)	0.383
Tata Motors Ltd.	0.0716	3.2068	0.0223	0.452	1.103** # (31.94)	0.452
Bharat Petroleum Corpn. Ltd	0.0655	2.7871	0.0235	0.030	0.578** (15.61)	0.164
Reliance Industries Ltd.	0.0710	3.0323	0.0234	0.002	1.160** # (39.63)	0.559
Cairn India Ltd.	0.1347	2.9928	0.0450*	0.080	0.942** # (25.83)	0.390
Oil & Natural Gas Corpn. Ltd	-0.0316	3.3937	-0.0093	-0.087	0.912** # (21.71)	0.276
G A I L (India) Ltd.	0.0706	2.7703	0.0255	0.020	0.824** (25.13)	0.338
Average	0.0768	2.9581	0.0259	0.071	0.849	0.327

Table 2: Stock Behavior of Banks and Finance sector Companies under NIFTY 50 during 2008-13

Name of Company	Mean	Standard	Standard Return		Beta(β)	\mathbf{R}^2
	(Return)	Deviation	Deviation to Risk			
		(Risk)	Ratio			
Axis Bank Ltd.	0.1624	3.2603		0.091	1.166** (34.38)	0.489
H D F C Bank Ltd.	0.1210	2.5194	0.0498*	0.064	0.929** (36.568)	0.519
ICICIBank Ltd.	0.1049	3.3318	0.0480*	0.022	1.355** # (46.101)	0.632
Kotak Mahindra Bank Ltd.	0.1146	3.7896	0.0315	0.039	1.234** # (29.051)	0.405
Punjab National Bank	0.1130	2.6817	0.0302	0.055	0.949** (33.711)	0.479
State Bank Of India	0.1208	2.7426	0.0421*	0.056	1.059** (40.538)	0.570
Infra. Dev. Fin. Co. Ltd	0.1339	3.6813	0.0440*	0.052	1.347** # (36.003)	0.511
Reliance Capital Ltd.	0.0905	4.0437	0.0364*	-0.007	1.596** #(42.703)	0.596
Housing Dev. Fin. Corp.	0.0538	3.7064	0.0224	-0.011	1.068** (23.984)	0.317
Ltd.			0.0145			
Average	0.1128	3.3063	0.0341	0.040	1.189	0.502

Table 3: Stock Behavior of Cement and Steel sector Companies under NIFTY 50 during 2008-13

Name of Company	Mean	Standard	Return to	Constant	Beta(β)	R ²
	(Retur	Deviation	Risk	(α)		
	n)	(Risk)	Ratio			
A C C Ltd.	0.0565	2.5361	0.0223	0.009	0.785** (26.757)	0.366
Ambuja Cements Ltd.	0.0605	2.6154	0.0231	0.014	0.760** (24.302)	0.323
Grasim Industries Ltd.	0.0430	2.5258	0.0170	-0.006	0.808** (28.174)	0.391
Steel Authority Of India Ltd	0.1177	3.5151	0.0335*	0.035	1.353** # (40.198)	0.566
Tata Steel Ltd.	0.0732	3.5206	0.0208	-0.008	1.342** # (39.294)	0.555
Jindal Steel & Power Ltd.	0.1449	4.9932	0.0290*	0.060	1.396** # (22.976)	0.299
Sesa Goa Ltd.	0.1023	4.4610	0.0229	0.040	1.021** (17.611)	0.200
Average	0.0854	3.4524	0.0247	0.021	1.066	0.386

١

Table 4: Stock Behavior of IT and Telecommunication sector Companies under NIFTY 50 during 2008-13

Name of Company	Mean (Return)	Standard Deviation	Return to Risk Patio	Constant (a)	Beta(β)	R ²
HCL Technologies Ltd	0.0385	(KISK)	0.0112*	0.021	0.084 * # (23.67)	0.312
In C. L. Feelinologies Ltd.	0.0385	2 6402	0.0112*	-0.021	$0.964^{++}\pi(23.07)$ 0.724**(22.24)	0.312
mosys Ltd.	0.0429	2.0405	0.0102*	-0.001	$0.724^{++}(22.54)$	0.287
Tata Consul. Services Ltd.	0.0237	3.2496	0.0073	-0.028	0.853** (21.05)	0.264
Wipro Ltd.	0.0306	2.8528	0.0107*	-0.024	0.898** (27.49)	0.379
Bharti Airtel Ltd.	0.0788	2.6861	0.0293*	0.024	0.899** (30.47)	0.429
Reliance Comm. Ltd.	-0.0222	3.6229	-0.0061	-0.104	1.345** # (37.14)	0.527
Average	0.0321	3.0829	0.0104	-0.026	0.951	0.366

Table 5: Stock Behavior of Pharmaceuticals sector Companies under NIFTY 50 during 2008-13

Name of Company	Mean (Return	Standard Deviation	Return to Risk	Constant (a)	Beta (β)	R ²
		(Risk)	Ratio			
Cipla Ltd.	-0.0116	2.7602	0042	-0.046	0.565** # (15.35)	0.400
Dr. Reddy'S Lab. Ltd.	0.0496	2.6089	0.0190*	0.022	0.458** (12.86)	0.343
Ranbaxy Laboratories	0.0431	2.8978	0.0149*	-0.001	0.731** # (19.97)	0.244
Sun Pharm. Inds. Ltd.	0.0365	3.2128	0.0114*	0.007	0.480** (10.74)	0.292
Average	0.0294	2.8699	0.0102	-0.005	0.559	0.320

Table 6: Stock Behavior of Power and Electrical Equipments sector Companies under NIFTY 50 during 2008-13

Name of Company	Mean	Standard	Return	Constant	Beta	\mathbf{R}^2
	(Return)	Deviation	to Risk	(α)	(β)	
		(Risk)	Ratio			
N T P C Ltd.	0.0551	2.3019	0.0239*	0.006	0.814** (33.63)	0.477
Power Grid Co. Of India	0.0365	2.6437	0.0138*	0.006	0.858** (26.81)	0.455
Reliance Infrastructure	0.0866	3.9301	0.0220*	-0.006	1.518** # (40.52)	0.570
Reliance Power Ltd.	-0.0723	3.4299	-0.0211	-0.119	1.069** # (22.55)	0.397
Tata Power Co. Ltd.	0.1070	2.8524	0.0375*	0.050	0.933** (29.28)	0.409
Bharat Heavy Ele. Ltd.	0.0411	2.9949	0.0137*	-0.020	1.003** (30.48)	0.429
Siemens Ltd.	-0.0240	4.0774	-0.0059	-0.091	1.093** # (21.63)	0.274
Average	0.0328	3.1758	0.0103	-0.025	1.041	0.430

Table 7: Stock Behavior of construction, engineering, metal and others sector Companies under NIFTY 50 during 2008-13

Name of Industry	Mean	Standard	Return	Constant	Beta	\mathbf{R}^2
	(Return)	Deviation	to Risk	(α)	(β)	
		(Risk)	Ratio			
D L F Ltd.	0.0043	4.1479	0.0010	-0.075	1.505** # (33.67)	0.551
Jaiprakash Associates Ltd	0.0345	4.9429	0.0070	-0.068	1.682** # (31.35)	0.443
Sterlite Indus. (India) Ltd.	-0.0079	4.8494	-0.0016	-0.090	1.354** # (22.93)	0.298
Hindalco Industries Ltd.	0.0682	3.4101	0.0200*	-0.007	1.243** # (35.72)	0.508
Larsen & Toubro Ltd.	0.0381	3.4734	0.0110*	-0.030	1.125** (28.79)	0.401
I T C Ltd.	0.0321	2.5958	0.0124*	-0.008	0.654** (19.91)	0.242
Hindustan Unilever Ltd	0.0242	2.0999	0.0115*	-0.010	0.555** (21.25)	0.267
Average	0.0276	3.6456	0.0076	-0.041	1.160	0.387

Table 8 Stock Behavior of all the seven sector of NIFTY 50 during 2008-13

Name of Company	Mean	Standard	Return	Constant	Beta	\mathbf{R}^2
	(Return)	Deviation	to Risk	(α)	(β)	
		(Risk)	Ratio			
Automobile and refineries	0.0768	2.9581	0.0259*	.017	0.856** (70.62)	0.801
Banks and finance	0.1128	3.3063	0.0341*	.040	1.189** # (73.88)	0.815
Cement and steel	0.0854	3.4524	0.0247*	.020	1.066** # (53.98)	0.702
Information tech. & telecomm	0.0321	3.0829	0.0104	010	0.872** (43.08)	0.600
Pharmaceuticals	0.0294	2.8699	0.0102	005	0.559** (25.72)	0.348
Power and electrical equipment	0.0328	3.1758	0.0103	019	1.047** # (59.48)	0.741
Constr. & engg. metal & others	0.0276	3.6456	0.0076	042	1.151** # (66.18)	0.780
Average	0.0567	3.2130	0.0176	0.001	0.963	0.684

Compiled and Calculated from CMIE (Prowess package)

* More than the average return to risk ratio.
 ** Significant at 1% level
 Figures in brackets shows 't' values.
 # More than the average beta of the industry

	Table 9 Result of Optimal Portfolio from Selected Company under NIFTY 50 during 2008-13									
Name of	Excess Return over	Excess return to unsystematic		Beta to unsystematic						
Securities	beta	risk	Cumulative	risk	Cumulative					

Name of Securities	Excess Return over beta	Excess return to unsystematic risk	Cumulative	Beta to unsystematic risk	Cumulative	Cut off rate to index
Tata Motors	0.050	0.019	0.034	0.379	0.130	0.088*
Axis Bank Ltd.	0.125	0.052	0.071	0.417	0.796	0.067
IDFC Ltd	0.087	0.043	0.114	0.493	1.289	0.073
SAI Ltd	0.074	0.039	0.152	0.521	1.810	0.074
Bharti Airtel	0.069	0.021	0.173	0.301	2.111	0.073
Ranbaxy Lab	0.036	0.007	0.180	0.184	2.295	0.070
Tata Power	0.096	0.029	0.209	0.305	2.601	0.073
Hindalco Ltd.	0.041	0.019	0.228	0.453	3.054	0.069

Compiled and Calculated from CMIE (Prowess package)

The riskless rate of interest is 6.11 percent and the market variance is 3.82

Table 10 Result of Weights amount Invested in Portfolio from Selected Company under NIFTY 50 during 2008-13

S. No.	Name of Company	Residual	Weights of	Mean	Portfolio
		Variance	Securiteis (%)	return	return
1	Tata Motors Ltd.	0.013	38	0.0716	0.027
2.	Axis Bank Ltd.	0.013	38	0.1624	0.062
3.	Steel Authority Of India Ltd	0.005	15	0.1177	0.017
4.	Tata Power Co. Ltd.	0.003	9	0.1070	0.09
		Portfolio Retur	rn		0.116

Compiled and Calculated from CMIE (Prowess package)