

Comparative Beta Analysis of MRF Ltd and APOLLO Tyres

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Abstract: An investor interested in staying invested in stock market would always keep an eye on the beta of the stock. Beta is the critical factor which influences the decisions of the investor. Beta calculates the risk of a particular equity. The paper makes an attempt to measure the risk in two stocks in the tyre industry in India. It also takes into consideration R Square for its analysis.

Keywords: Beta, R Square, Volatility, Portfolio, Coefficients

1. Introduction

In finance beta acts as an important tool for the selection of stocks. The risk appetite of an investor can be gauged by this tool. Generally speaking the market portfolio of all investable assets should have a beta of 1. A beta below 1 indicates less volatility with market ups and downs. The beta more than 1 indicates more returns for the stock and also high risk.

2. Literature Survey

Beta Estimation The other main criticism of Fama and French (1992) put forth by Kothari, Shanken and Sloan (1995) is related to the estimation of beta. Levhari and Levy (1977) show that beta coefficients estimated with monthly returns are not the same as betas estimated with annual returns. Since they are different, the results of empirical studies will depend upon which beta estimation convention is used. Kothari, Shanken and Sloan argue that annual betas are more appropriate than monthly betas, since the investment horizon for a typical investor is probably closer to a year than a month. They show that the relation between beta and return is stronger when betas are estimated using annual returns.

3. Problem Definition

In tyre industry MRF Ltd is considered as the market leader in terms of returns to the investor. MRF has been consistent and good in its returns over the years. APOLLO Tyres on the other hand has given good returns over the years to its

investors. The paper makes an attempt to study the factors responsible for this difference. The study compares both the firms on the basis of beta and R square and finds the reasons for the difference.

4. Objectives of the study

- 1) To study the closing price movements of the companies for the period of seven years.
- 2) To compare the change in prices and the differences over the period.
- 3) To analyse the risk and return relationship between stocks.
- 4) To establish the benchmark for stock price movements.

5. Research Methodology

For the purpose of research, the closing share prices of MRF and Apollo Tyres are taken into consideration for a period of seven years starting from 2007 to 2014. The prices are then compared with the S&P BSE 500 index and the percentage changes are found out. The results of this analysis were then substituted in the following formula:

Beta= COVAR (Today's Price- Price of Yesterday/Price of Yesterday, today's index-Index of yesterday/Index of yesterday)/VAR(today's index-Index of yesterday/Index of yesterday)

R-Squared= RSQ (change in the values of index in percentages, the change in closing price of shares in percentages).

Date	S&P BSE 500 Index	closing price of apollo tyres	S&P BSE 500 Index%	closing price of apollo tyres%	Closing BSE-500 Index	Closing price of MRF	BSE-500(%)	MRF(%)
01-12-2014	10927.82	232.65	-0.25866727	1.972387	10927.82	37882.9	-0.2586673	13.05966
03-11-2014	10956.16	228.15	3.40985135	4.344843	10956.16	33507	3.40985135	6.984808
01-10-2014	10594.89	218.65	4.14449252	7.682837	10594.89	31319.4	4.14449252	-4.01478
01-09-2014	10173.26	203.05	0.76445512	22.91162	10173.26	32629.4	0.76445512	35.87205
01-08-2014	10096.08	165.2	2.69104136	-5.38373	10096.08	24014.8	2.69104136	2.964405
01-07-2014	9831.51	174.6	0.4102605	-12.2613	9831.51	23323.4	0.4102605	-1.31797
02-06-2014	9791.34	199	6.35812909	12.68403	9791.34	23634.9	6.35812909	4.00213
01-05-2014	9206.01	176.6	10.355364	11.17406	9206.01	22725.4	10.355364	10.83452
01-04-2014	8342.15	158.85	0.56526257	-0.28249	8342.15	20503.9	0.56526257	-5.68149
03-03-2014	8295.26	159.3	7.59440968	20.86495	8295.26	21739	7.59440968	13.96294

Volume 4 Issue 1, January 2015

www.ijsr.net

03-02-2014	7709.75	131.8	2.81010052	16.53404	7709.75	19075.5	2.81010052	-1.74257
01-01-2014	7499.02	113.1	-4.2067667	5.552963	7499.02	19413.8	-4.2067667	0.214741
02-12-2013	7828.34	107.15	3.02873966	33.18832	7828.34	19372.2	3.02873966	11.87198
01-11-2013	7598.21	80.45	-0.76286926	18.04842	7598.21	17316.4	-0.7628693	9.854723
01-10-2013	7656.62	68.15	9.06928245	2.404207	7656.62	15763	9.06928245	18.11472
02-09-2013	7019.96	66.55	5.18432834	5.718824	7019.96	13345.5	5.18432834	3.543387
01-08-2013	6673.96	62.95	-4.46063021	-6.11484	6673.96	12888.8	-4.4606302	-2.50898
01-07-2013	6985.56	67.05	-2.49160392	18.67257	6985.56	13220.5	-2.4916039	2.260949
03-06-2013	7164.06	56.5	-3.73332581	-36.5169	7164.06	12928.2	-3.7333258	-13.2638
01-05-2013	7441.89	89	0.76693409	-7.91516	7441.89	14905.2	0.76693409	11.40243
01-04-2013	7385.25	96.65	4.2384149	15.88729	7385.25	13379.6	4.2384149	11.56547
01-03-2013	7084.96	83.4	-1.09901461	0.542495	7084.96	11992.6	-1.0990146	4.361523
01-02-2013	7163.69	82.95	-6.54926987	-3.88181	7163.69	11491.4	-6.5492699	-12.6196
01-01-2013	7665.74	86.3	1.11019222	-2.92463	7665.74	13151	1.11019222	2.687635
03-12-2012	7581.57	88.9	1.46029749	5.26939	7581.57	12806.8	1.46029749	17.32351
01-11-2012	7472.45	84.45	4.96827401	-1.51603	7472.45	10915.8	4.96827401	7.339666
01-10-2012	7118.77	85.75	-1.21751028	-7.24716	7118.77	10169.4	-1.2175103	-1.01329
03-09-2012	7206.51	92.45	8.91939236	-1.70122	7206.51	10273.5	8.91939236	2.043147
01-08-2012	6616.37	94.05	0.16152717	21.04247	6616.37	10067.8	0.16152717	5.063892
02-07-2012	6605.7	77.7	-1.14882671	-1.64557	6605.7	9582.55	-1.1488267	-4.49159
01-06-2012	6682.47	79	6.4080802	-8.67052	6682.47	10033.2	6.4080802	-8.19906
01-05-2012	6280.04	86.5	-6.2472102	-4.26121	6280.04	10929.3	-6.2472102	-4.62673
02-04-2012	6698.51	90.35	-0.9041915	13.86263	6698.51	11459.5	-0.9041915	15.32385
01-03-2012	6759.63	79.35	-1.42403402	-6.92082	6759.63	9936.8	-1.424034	1.037133
01-02-2012	6857.28	85.25	4.70232742	17.99308	6857.28	9834.8	4.70232742	24.36363
02-01-2012	6549.31	72.25	13.3357445	22.66553	6549.31	7908.1	13.3357445	13.11263
01-12-2011	5778.68	58.9	-5.53081576	-10.7576	5778.68	6991.35	-5.5308158	0.346624
01-11-2011	6117	66	-9.55545107	14.78261	6117	6967.2	-9.5554511	2.105957
03-10-2011	6763.26	57.5	5.91159079	3.9783	6763.26	6823.5	5.91159079	3.536963
02-09-2011	6385.76	55.3	-1.56399814	-7.13686	6385.76	6590.4	-1.5639981	-0.29652
01-08-2011	6487.22	59.55	-8.77602017	-18.5919	6487.22	6610	-8.7760202	-8.31351
01-07-2011	7111.31	73.15	-2.11979651	-6.51757	7111.31	7209.35	-2.1197965	7.224552
01-06-2011	7265.32	78.25	2.03613872	13.65287	7265.32	6723.6	2.03613872	-1.06606
02-05-2011	7120.34	68.85	-4.13079597	-0.72098	7120.34	6796.05	-4.130796	-4.50426
01-04-2011	7427.14	69.35	-0.13607162	-0.28756	7427.14	7116.6	-0.1360716	13.41105
01-03-2011	7437.26	69.55	8.56679902	33.23755	7437.26	6275.05	8.56679902	10.91364
01-02-2011	6850.4	52.2	-3.89841042	1.55642	6850.4	5657.6	-3.8984104	-6.6703
03-01-2011	7128.29	51.4	-10.4605417	-22.9385	7128.29	6061.95	-10.460542	-15.895
01-12-2010	7961.06	66.7	3.09516255	0.831444	7961.06	7207.6	3.09516255	-8.24305
01-11-2010	7722.05	66.15	-3.91731617	-7.54717	7722.05	7855.1	-3.9173162	-15.5506
01-10-2010	8036.88	71.55	0.65665137	-11.7212	8036.88	9301.55	0.65665137	6.281565
01-09-2010	7984.45	81.05	9.52996952	13.35664	7984.45	8751.8	9.52996952	15.1333
02-08-2010	7289.74	71.5	1.17303844	11.89358	7289.74	7601.45	1.17303844	3.943635
01-07-2010	7205.22	63.9	1.59358168	-1.46492	7205.22	7313.05	1.59358168	-5.40432
01-06-2010	7092.2	64.85	4.56816717	-9.04628	7092.2	7730.85	4.56816717	5.575206
03-05-2010	6782.37	71.3	-3.69617816	2.516175	6782.37	7322.6	-3.6961782	3.265384
01-04-2010	7042.68	69.55	1.77945098	-1.97322	7042.68	7091.05	1.77945098	4.054441
02-03-2010	6919.55	70.95	6.15444328	21.90722	6919.55	6814.75	6.15444328	20.38174
01-02-2010	6518.38	58.2	0.13026314	10.0189	6518.38	5660.95	0.13026314	-2.4176
01-01-2010	6509.9	52.9	-4.85732033	8.401639	6509.9	5801.2	-4.8573203	-3.85814
01-12-2009	6842.25	48.8	3.90692151	1.878914	6842.25	6034	3.90692151	1.182192
02-11-2009	6584.98	47.9	7.20480331	-0.10428	6584.98	5963.5	7.20480331	12.9408
01-10-2009	6142.43	47.95	-6.26179848	6.674082	6142.43	5280.2	-6.2617985	-7.99442
01-09-2009	6552.75	44.95	8.40649769	5.640423	6552.75	5739	8.40649769	33.42788
03-08-2009	6044.61	42.55	1.75460156	5.714286	6044.61	4301.2	1.75460156	-7.01113
01-07-2009	5940.38	40.25	7.94037857	30.68182	5940.38	4625.5	7.94037857	36.78032
01-06-2009	5503.39	30.8	-0.30542095	-1.59744	5503.39	3381.7	-0.305421	6.914322
01-05-2009	5520.25	31.3	33.3258462	45.5814	5520.25	3163	33.3258462	41.60996
01-04-2009	4140.42	21.5	17.5077266	18.26183	4140.42	2233.6	17.5077266	26.02121
02-03-2009	3523.53	18.18	9.01640105	21.60535	3523.53	1772.4	9.01640105	7.512663
02-02-2009	3232.11	14.95	-5.68029275	-14.8148	3232.11	1648.55	-5.6802928	-2.74041
01-01-2009	3426.76	17.55	-4.72885997	-11.5869	3426.76	1695	-4.72886	-15.3537
01-12-2008	3596.85	19.85	9.14097585	-5.2506	3596.85	2002.45	9.14097585	18.16304
03-11-2008	3295.6	20.95	-7.68808455	-12.3431	3295.6	1694.65	-7.6880845	-17.0509
01-10-2008	3570.07	23.9	-27.1055764	-35.9249	3570.07	2043	-27.105576	-34.2347
01-09-2008	4897.59	37.3	-13.0323839	-5.20966	4897.59	3106.5	-13.032384	-12.7302
18-08-2008	5631.51	39.35	5.41240201	27.34628	5631.51	3559.65	5.41240201	4.786506

01-07-2008	5342.36	30.9	2.43491833	-5.06912	5342.36	3397.05	2.43491833	-0.26277
02-06-2008	5215.37	32.55	-19.453372	-22.7758	5215.37	3406	-19.453372	-16.1486
02-05-2008	6474.97	42.15	-5.95582009	-7.76805	6474.97	4061.95	-5.9558201	-10.5878
01-04-2008	6885.03	45.7	11.8195239	10.92233	6885.03	4542.95	11.8195239	14.32832
03-03-2008	6157.27	41.2	-13.1237125	-6.36364	6157.27	3973.6	-13.123713	-13.1871
01-02-2008	7087.4	44	-1.01438122	-1.89521	7087.4	4577.2	-1.0143812	-5.84024
01-01-2008	7160.03	44.85	-16.6704879	-16.6357	7160.03	4861.1	-16.670488	-32.6778
03-12-2007	8592.43	53.8			8592.43	7220.65	9.23534003	2.148172

Source: BSE India

6. Results and Discussion

The beta of MRF Ltd was 1.48 and Apollo tyres were 1.18 respectively. The R Square of MRF Ltd and Apollo Tyres were 0.45 and 0.43 respectively. From the values of beta and R square, it can be analysed that MRF is in a better position as it shows higher values compared to Apollo tyres. The investor would have higher Earnings Per Share by staying invested in this share for a long term.

7. Conclusion

It can be concluded that beta and R square are used as a measure of volatility or a systematic risk of a security in comparison with the market as a whole. It can be used as a major tool by the investor in comparison of various stocks. In some cases it might not be the true indicator of returns as the sensx is driven by other macro factors too. The study limits its scope as only two tools are applied. The time period for the study is also for seven years which when extended for more years might give varied analysis.

8. Future Scope

The study would help the investors to take informed decisions on investment. The future investments could be done based on beta and r-square analysis.

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