

An Empirical Testing of the Beta Stability over Market Phases

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Abstract

The Bombay Stock Exchange and National Stock Exchange play crucial role in preparing the volatility and seasonality of the returns on the shares of various companies. The high instability leads to uncertainty in the gain and low volatility leads to certainty of gain, the present study analyse the volatility and seasonality of market returns and stock returns of some selected and important companies in India listed at Bombay Stock Exchange and National Stock Exchange. This is to know the variation in the return of sugar companies relating to the pre- budget and post budget share prices. The deliberate hazard can be estimated by β , the beta factor. The beta is the level of responsiveness of the security's profits with the market return. It is found from the analysis that there have been ups and downs in the stability of beta returns on the stocks. The present study concludes that the volatility and seasonality of market returns and stock returns of the sample companies are not same in all the days and all months of the year. In this situation the volatility and seasonality of market returns and stock returns of the companies occupy an important place. This is due to changes in the socio- economic and political factors within the country and outside the country. So if the said suggestions are fulfilled, the stability in the market return and stock return could be normalized and it will bring more funds to the companies and more gains to the investors and ultimately India will flourish in the economic development.

Key Words: BSE, Beta, Volatility, Bullish/Bearish.

Objectives

To study the types of market stages i.e. Bearish or Bullish.

To test the steadiness of beta in various stages of the market.

Methodology

The present study focuses on selection of listed companies of the BSE & NSE. The sample of the study is ten listed Sugar companies in India. Data is collected quarterly-wise for the period of ten years starting from January 2008 to December 2017. This study is mainly based on secondary data. And Non Probability sampling method is used for the study. The present study reveals the fluctuations in the market return and stock return of companies listed at BSE and NSE. Therefore, the study on beta stability of the BSE stocks offers valid results.

**Table 1: The following data shows the stability of Beta for various companies from
Jan 2008 – Dec 2017**

Year	Firm	Banari	Dwarkesh	Rana	Uttam	Sakthi	Rajshree	Dhara	Andhra
	Time	Sugars	Sugars	Sugars	Sugars	Sugars	Sugars	Sugars	Sugars
2008	QTR-1	1.5872	1.5419	2.3856	2.955	1.7166	2.5049	3.4392	2.9235
	QTR-2	1.1186	1.4596	1.5331	1.656	1.8375	0.6949	0.8581	1.4053
	QTR-3	1.1259	2.8135	2.0511	2.262	3.7766	2.1556	2.2197	2.6059
	QTR-4	1.3872	2.7605	1.5934	3.019	2.7382	1.8373	2.1504	1.5247
2009	QTR-1	0.9472	-0.4509	0.6411	1.139	2.2279	2.2114	0.8157	0.6063
	QTR-2	0.1258	1.4963	1.2839	0.958	0.9530	1.4026	0.5548	0.8008
	QTR-3	-2.5994	-1.4083	-3.4526	-4.513	-4.5100	-4.1038	-0.9310	-4.3757
	QTR-4	0.0722	0.8930	0.5757	1.175	-0.5803	-0.1011	-0.4075	1.6927
2010	QTR-1	-1.1455	-1.0428	-0.2459	-0.508	0.1099	-0.6287	-1.5917	-0.1533
	QTR-2	-0.5615	7.6983	2.6909	-0.517	1.6492	1.5107	0.1928	0.6952
	QTR-3	0.6141	3.5986	0.8579	1.963	3.1730	3.6203	2.8745	0.5825
	QTR-4	0.6292	0.5589	2.2349	1.600	2.7508	0.5422	0.7453	1.4906
2011	QTR-1	0.1074	1.4214	0.8684	1.181	0.8624	0.7370	1.3021	0.6792
	QTR-2	-0.3300	1.0506	-0.4176	4.778	2.0398	-0.0858	1.0311	0.6792
	QTR-3	-1.5839	4.3308	2.0910	3.603	1.5209	2.7282	1.1352	0.5967
	QTR-4	0.2598	1.4594	1.5955	0.882	1.4719	1.6582	2.5411	2.1843
2012	QTR-1	3.1708	2.6494	5.6709	2.598	3.5428	1.3222	4.3992	2.1259
	QTR-2	-0.1719	1.2087	1.5337	1.202	1.9576	0.4886	0.9860	0.8905
	QTR-3	-2.6816	-0.3497	0.2685	-1.103	1.9049	-2.5637	-0.4402	-0.8085
	QTR-4	1.6066	-0.4642	1.6322	-0.349	-0.5036	1.4172	0.3882	-0.1842

2013	QTR-1	-0.4571	-0.3025	-1.4582	0.146	-0.9242	-1.1703	0.8421	0.4608
	QTR-2	1.2793	2.5120	1.2736	5.688	0.4276	-0.3657	1.8049	0.3062
	QTR-3	1.2806	4.5764	1.5097	5.187	-1.7191	-2.1727	1.8049	2.1089
	QRT-4	-0.1690	1.0332	1.2295	0.304	1.0098	-1.0452	-1.8744	0.8769
2014	QTR-1	1.0498	5.2401	3.0108	2.677	2.8741	4.1744	0.8244	1.9237
	QTR-2	0.0394	1.7893	2.6586	2.808	2.7200	0.7989	1.0982	0.4054
	QTR-3	2.2663	4.0658	-1.7586	1.656	3.3535	-1.7327	2.4271	1.3387
	QRT-4	0.8436	1.8435	0.5023	1.922	2.8199	1.7365	2.2714	0.0258
2015	QTR-1	2.9788	3.1961	2.1832	1.627	1.3110	0.6006	1.0420	1.1082
	QTR-2	-1.3172	-5.2274	3.3508	-3.789	-0.1514	-1.5319	0.9125	-3.1978
	QTR-3	2.2257	5.5971	5.1815	2.209	2.0499	0.7523	-3.2468	1.0816
	QRT-4	7.9322	40.9179	1.9962	17.954	9.7969	8.8211	4.6941	8.6805
2016	QTR-1	1.9909	6.3359	-22.8360	3.457	4.3179	4.4211	4.2507	2.4576
	QTR-2	-7.5156	-4.1160	-1.9783	-20.630	-14.4670	-12.6208	6.4517	5.9326
	QTR-3	-1.6371	0.7568	5.9497	-1.746	1.2550	-3.1627	-12.3400	1.0057
	QRT-4	2.2369	-0.3745	-3.4102	3.204	-0.2594	4.1927	-3.2632	5.0778
2017	QTR-1	7.5644	-3.5958	-1.0799	14.284	2.4267	-3.0441	3.0027	-0.8359
	QTR-2	-1.3776	-2.2835	2.6947	-5.927	-2.4179	0.4154	-3.0051	-2.8037
	QTR-3	2.3889	11.2200	-0.8493	4.704	2.3454	-0.4106	-2.0171	-0.8891
	QRT-4	0.1445	8.0280	-1.9783	4.574	1.7670	4.4457	-0.8177	9.0660

Table 2: The following data shows the stability of Beta for various companies from

Jan 2008 - Dec 2017

Year	Firm	EDL	Monetispa	KCP	Bajaj	Dhampur	Renuka	EID	Dalmia
	Time	Sugars	Sugars	Sugars	Sugars	Sugars	Sugars	Sugars	Sugars
2008	QTR-1	2.54	0.943	0.974	5.228	1.288	4.350	-0.36	-407.04
	QTR-2	4.86	0.653	1.146	1.365	2.301	2.706	1.37	145.21
	QTR-3	-1.66	0.534	2.630	2.338	2.665	1.643	1.90	321.21
	QRT-4	2.52	3.052	1.387	4.522	2.610	3.082	0.97	-14.72
2009	QTR-1	-1.81	0.942	0.853	2.245	0.516	1.011	0.45	4.72
	QTR-2	-0.40	3.084	1.258	1.270	1.802	0.450	1.56	-36.10
	QTR-3	-0.65	-1.060	-3.940	-0.129	-2.967	-1.349	-1.18	-482.65
	QRT-4	-0.71	0.223	1.007	0.097	0.052	1.572	0.72	45.26
2010	QTR-1	-1.82	0.948	-0.304	-0.181	-1.776	-3.738	-0.01	626.17
	QTR-2	-0.05	2.382	1.249	3.134	1.637	2.453	2.56	-136.59
	QTR-3	0.06	-0.597	0.817	1.580	3.374	3.877	0.94	-1317.41
	QRT-4	1.47	0.458	0.725	3.201	2.962	2.028	-5.10	-24.02
2011	QTR-1	-0.30	-0.477	0.803	1.821	-0.222	0.749	1.45	-20.23
	QTR-2	2.08	0.732	0.815	2.454	2.868	3.167	5.12	-98.58
	QTR-3	1.74	0.200	2.330	-0.181	1.411	3.067	0.87	16.97
	QRT-4	-0.81	0.406	1.792	1.388	0.484	2.327	0.48	21.79
2012	QTR-1	-0.44	3.050	3.013	4.315	1.527	5.633	0.77	8.82
	QTR-2	0.51	0.811	0.487	2.195	2.052	2.625	-0.05	4.82
	QTR-3	1.89	2.786	-1.227	0.648	-2.685	2.513	-1.00	49.85
	QRT-4	-5.48	-1.274	2.049	-0.499	-1.311	1.546	0.10	-9.87
2013	QTR-1	-6.57	-0.159	0.085	0.242	-1.138	1.358	1.23	5.69
	QTR-2	-0.51	1.096	-0.093	4.389	4.223	5.812	1.49	3.46
	QTR-3	-2.79	0.800	1.854	1.196	1.595	4.193	2.13	24.25
	QRT-4	-4.49	0.051	-0.803	0.558	-2.508	2.533	1.27	5.92

2014	QTR-1	-0.86	5.806	2.435	3.886	4.019	1.324	1.763	32.23
	QTR-2	-1.21	7.282	1.266	3.360	2.236	1.555	1.765	58.36
	QTR-3	-2.67	5.952	1.198	3.997	4.205	1.041	-0.148	-28.08
	QRT-4	-3.57	1.172	-1.911	1.850	-0.163	1.942	-1.832	-2.64
2015	QTR-1	-2.91	1.134	0.330	1.708	0.936	2.103	-0.329	46.24
	QTR-2	7.14	0.832	-0.999	-6.125	-1.661	-1.191	0.355	27.33
	QTR-3	10.81	4.906	0.094	3.912	2.303	1.475	1.836	-7.63
	QRT-4	-1.28	0.195	0.888	15.254	23.269	14.676	7.594	146.07
2016	QTR-1	-18.34	2.420	3.358	2.823	5.217	1.910	2.325	218.79
	QTR-2	0.39	-11.190	-5.245	-2.679	-3.598	0.266	-1.473	-966.88
	QTR-3	0.11	-0.221	1.060	0.244	-1.105	2.147	0.900	771.28
	QRT-4	-1.39	3.541	0.403	3.965	3.915	2.493	3.444	66.93
2017	QTR-1	0.35	17.644	18.647	6.977	0.762	7.707	4.542	299.57
	QTR-2	8.17	-1.586	-4.434	-2.380	-7.548	-1.855	3.557	-214.52
	QTR-3	-11.83	-0.797	1.004	2.167	3.094	8.137	1.307	-63.79
	QRT-4	1.13	2.133	0.962	0.609	5.343	-2.975	1.727	637.73

FINDINGS & SUGGESTIONS

It has been found from the overall period of 2008 to 2017 the stability of beta of the following companies have highly sensitive returns. The companies are Banari sugars, Dwarkesh sugars, Rana sugars, Rajshree sugars, Dhar sugars, Andhra sugars, EDL sugars, Monnetispa sugars, KCP sugars, Dhampur sugars and EID Parry sugars all have high variations in the market returns as well as stock returns and all the companies under the study have same variations. The investors should analyse the beta carefully before investment and then they could make investments for the long term. It has been found from the overall period of 2008 to 2017 the stability of beta of Uttam Sugars and Renuka Sugars are observed that there are less sensitive market returns and least variations. There is an opportunity to make

investment here. It has been found from the overall period of 2008 to 2017 the stability of beta of Sakthi Sugars, Bajaj Hind Sugars, and Dalmia Sugars all have highly positive returns in all the quarters of the company. The investors could make investments here for better profits.

The present study reveals the fluctuations in the market return and stock return of companies listed at BSE and NSE. The high degree of volatility is not good from the point of view of both investors and the companies. At the same time the role of NSE and BSE is vital in the upliftment of an Indian economy. They help to expand trade and commerce.

LITERATURE REVIEW

1. Shojis and Others (2007) look at the hazard return portrayal of normal stocks in Indian securities exchange for the period from March 1996 to March 2006 for an example of 72 organizations from Bombay Stock Exchange. The after effects of Vector Autoregressive Model show that market hazard electively effects affected stock returns in Indian market.
2. Blume (1971) was the first researcher to explore the work on beta stability.
3. Levy (1971) documents that the portfolio betas are stable, while individual security betas are unstable.
4. Altman *et al.* (1974), supported this view that beta is extreme from being stable.
5. Alexander and Benson (1982) find that stocks have varying betas.
6. Black (1972), DeBondt and Thaler (1987) investigate the relationship the stock market and systematic risk.
7. Vipul (1999) concludes that the stability of beta varies based on the size and liquidity of the firm.
8. Campbell and Vuolteenaho (2004) verified the betas into two types, good and bad beta, to capture the discount-rate and cash-flow, respectively.
9. Irala (2007) examined the randomness of beta by using monthly observations of BSE data.
10. Das (2008) evaluated that eighty five percent of betas are stable in the Indian financial market.
11. Sarma and Sarmah (2008) used five stocks that are listed in the BSE to test the stability of beta.

12. Balkrishnan and Rekha (2012), also conclude that the beta is not stable over the study period.
13. Mallikarjunappa and Vasantha (2013) concluded that the beta stability by using stocks that are part of S&P CNX Nifty and confirm that the market capitalisation, firm size, market development and volatility in the market influence the stability of the beta.
14. Dubey (2014) indicates that analysis of beta series helps to know the characteristics of the bull and bearish markets.
15. Harish and Mallikarjunappa (2015), studied the Indian market Microstructure and motivate to analyze the structure of the beta series of the Indian market.
16. Sathyanarayana and Harish (2017) investigates the stability of beta in Indian stock markets for longer time frame and the results show that beta of a portfolio as well as individual stocks vary across the study period. These factors motivate us to investigate the performance of alpha and of beta in Indian stock market.
17. Mallikarjunappa and Vasantha (2013) considered stability of the beta by using stocks which are part of S&P CNX Nifty. They adopted normality test and Augmented Dickey-Fuller (ADF) test. They said that the 15 companies' betas are stable out of 50 companies and therefore, they analysed that betas are not stable in the Indian financial market.

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