

Does CAPM hold good for Indian stocks? A case study of CNX nifty constituents

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Abstract

This paper attempts to test whether CAPM model can be applied on Indian stocks to predetermine the valuation parameter. Identifying a stock to be an undervalued stock requires the stock to deliver a higher return than what the investor must have expected while investing. This study dates back to one year, assuming investors with one year time horizon pick up stocks of NIFTY constituents that are expected to give a return as per CAPM model – one of the widely used, at the same time, criticized model for computing minimum expected return of investors in a given stock. The under or over valuation of stocks are determined by comparing CAPM returns with the actual return. The same is then compare with the actual market valuation of the given stocks, based on the market determined trailing P/E ratio. The analysis was carried out separately for cyclical and non-cyclical companies and it was found that CAPM corresponds with market in the case of only non-cyclical companies.

Introduction

The capital asset pricing model (CAPM) of William Sharpe (1964) and John Lintner (1965) marks the birth of asset pricing theory (resulting in a Nobel Prize for Sharpe in 1990). Before their breakthrough, there were no asset pricing models built from first principles about the nature of tastes and investment opportunities and with clear testable predictions about risk and return. Four decades later, the CAPM is still widely used in applications, such as estimating the cost of equity capital for firms and evaluating the performance of managed portfolios.

The essential question is how the risk in investment would affect the expected return. The Capital Asset Pricing Model (CAPM) is a way to demonstrate the relationship between the risk of a specific asset or stock portfolio and the expected return to the investors in a reasonable equilibrium market. CAPM is widely recognized and employed in application range from business capital budgeting to setting public utility rates. Because of the insights it gives into capital markets and it is sufficient for many important industries and applications.

Efficient Market Hypothesis (EMH) formulated by Eugene Fama in 1970, suggests that at any given time, prices fully reflect all available information on a particular stock and/or market. According to the EMH, no investor has an advantage in predicting a return on a stock price because no one has access to information not already available to everyone else.

The intrinsic value is the actual value of a company or an asset based on an underlying perception of its true value including all aspects of the business, in terms of both tangible and intangible factors. This value may or may not be the same as the current market value. Value investors use a variety of analytical techniques in order to

estimate the intrinsic value of securities in hopes of finding investments where the true value of the investment exceeds its current market value. The price an asset would fetch in the marketplace. Market value is also commonly used to refer to the market capitalization of a publicly-traded company, and is obtained by multiplying the number of its outstanding shares by the current share price.

Literature review

Mullins (Mullins, 1982) way back in 1982 had critically evaluated the issues with CAPM highlighting certain demerits of the model. Beta as a measure of risk that relies on the past data was seen to be one of the issues with CAPM. A simple model of CAPM, where beta is expected to summarize the total of systematic risk of the stock, may not be sufficient, assuming betas to be stable over time and other practical issues in applying CAPM we discussed by Mullins. Choudhary & Choudhary (Choudhary & Choudhary, 2010) have tested the CAPM's applicability to Indian capital market with a sample of 278 firms' monthly returns and concluded that the model did not work, as higher returns did not correspond with the higher risk. They also found that the residual risk has no effect on the expected returns of portfolios. Vaidyanathan (Vaidyanathan, 1995) opined the problem with Indian context for applying CAPM was more to do with the data availability, in comparison to US, where database is available since 1920s. This only has added to the market inefficiency and CAPM is continue to be inefficient till capital market related databanks are developed in India.

Objectives

The objectives of this can be enumerated as below:

1. To determine the minimum expected return as per CAPM by NIFTY companies.
2. To determine the actual return generated by NIFTY companies.
3. To determine whether the NIFTY constituent company's price are over value or under value as per the CAPM Model.
4. To compare P/E valuation with CAPM valuation to conclude on the validity of CAPM to Indian market.
5. To test for whether there is any difference in applicability of CAPM between companies of cyclical and non-cyclical in economy.

Methodology

Keeping in mind the above objectives, the study follows the below research methodology.

- We have studied 50 companies that constitute the NIFTY index
- To calculate the expected return as per the CAPM, Risk Free Return (8.061%) is taken from RBI database (10 years G Sec bond rate).
- For the Effective Return, historical data of the companies (monthly closing price from 1 April 2010 to 31 Mar 2015) is collected from the yahoo finance.
- Beta is calculated using SLOPE Function on excel.
- Market Return is the Effective Return of the NIFTY50 companies.
- Calculate the CAPM using formula

$$E(R_i) = R_f + \beta * (R_m - R_f)$$

Where,

$E(R_i)$ = Expected Return of Investors

R_f = risk free return

R_m = market return (Effective Return or Actual return of NIFTY50)

β = beta of the stock

➤ Then calculate the Actual/Effective Return of the NIFTY 50 companies (1 April 2015 to 31 Mar 2016).

➤ Then we compare it, if the Actual Return (1 April 2015 to 31 Mar 2016) of the company is greater than its CAPM (1 April 2010 to 31 Mar 2015) then it is UNDER VALUE and if its Actual Return is lesser than its CAPM then it is said to be OVER VALUE.

➤ Then we calculate the TRAILING PE Ratio of the companies using the current market price and the EPS.

$$P/E \text{ Ratio} = \frac{\text{Current Market Price}}{\text{Earning Per Share}}$$

➤ Compare it with the market PE Ratio (average PE Ratio of NIFTY 50 companies), if the company trailing PE Ratio is greater than the average PE Ratio of the NIFTY 50 companies then it is OVER VALUE, and if its PE Ratio is lesser than the PE Ratio of the average PE Ratio of the NIFTY 50 companies then it is said to be UNDER VALUE.

➤ Compare the CAPM (over value or under value) with the PE Ratio (over value or under value), i.e. Does CAPM follow the PE Ratio or not.

Results & Interpretations

Below are the NIFTY50 companies and their beta and CAPM value (1st April 2010 to 31st Mar 2015).

Sl. no.	Scripts	Risk return free	Market return	Beta	Expected return
1	ACC CEMENT	8.06%	11.80%	1.03	11.91%
2	ADANI PORTS	8.06%	11.80%	0.86	11.28%
3	AMBUJA CEMENT	8.06%	11.80%	0.88	11.35%
4	AXIS BANK	8.06%	11.80%	1.93	15.28%
5	BANK OF BARODA	8.06%	11.80%	2.93	19.02%
6	BHEL	8.06%	11.80%	1.4	13.30%
7	BHARAT PETROLIUM CORP.	8.06%	11.80%	1.09	12.14%
8	BHARTI AIRTEL	8.06%	11.80%	0.77	10.94%
9	BOSCH	8.06%	11.80%	0.61	10.34%
10	CAIRN INDIA LTD	8.06%	11.80%	0.3	9.18%
11	CIPLA	8.06%	11.80%	0.44	9.71%
12	COAL INDIA	8.06%	11.80%	0.007	8.09%
13	DR. REDDY LABS	8.06%	11.80%	0.25	8.98%
14	GAIL	8.06%	11.80%	0.69	10.63%
15	GRASIM INDUSTRIES	8.06%	11.80%	0.97	11.69%

16	HCL TECHNOLOGIES	8.06%	11.80%	0.37	9.44%
17	HDFC BANK	8.06%	11.80%	1.10	12.17%
18	HINDALCO INDUSTRIES	8.06%	11.80%	1.26	12.77%
19	HINDUSTAN UNILEVER	8.06%	11.80%	0.48	9.85%
20	HDFC LTD	8.06%	11.80%	0.87	11.33%
21	ITC	8.06%	11.80%	0.53	10.03%
22	ICICI BANK	8.06%	11.80%	0.42	9.64%
23	IDEA CELLULAR	8.06%	11.80%	0.47	9.81%
24	INDUSIND BANK	8.06%	11.80%	1.55	13.87%
25	INFOSYS TECHNOLOGIES	8.06%	11.80%	0.25	8.98%
26	KOTAK MAHINDRA BANK	8.06%	11.80%	1.05	11.98%
27	LARSEN & TOUBRO	8.06%	11.80%	1.66	14.27%
28	LUPIN LTD	8.06%	11.80%	0.27	9.08%
29	M & M LTD	8.06%	11.80%	0.85	11.24%
30	MARUTI SUZUKI INDIA	8.06%	11.80%	1.54	13.83%
31	NTPC	8.06%	11.80%	0.99	11.76%
32	ONGC	8.06%	11.80%	0.97	11.71%
33	POWER GRID CORP.	8.06%	11.80%	0.65	10.50%
34	PUNJAB NATIONAL BANK	8.06%	11.80%	0.33	9.28%
35	RELIANCE INDUSTRIES	8.06%	11.80%	1.01	11.84%
36	STATE BANK OF INDIA	8.06%	11.80%	2.84	18.69%
37	SUN PHARMA	8.06%	11.80%	0.54	10.08%
38	TATA CONSULTANCY	8.06%	11.80%	0.12	8.49%
39	TATA MOTOR	8.06%	11.80%	1.52	13.73%
40	TATA POWER	8.06%	11.80%	1.36	13.15%
41	TATA STEEL	8.06%	11.80%	1.64	14.19%
42	TECH MAHINDRA	8.06%	11.80%	0.79	11.03%
43	ULTRA TECH CEMENT	8.06%	11.80%	0.87	11.31%
44	VEDANTA LTD	8.06%	11.80%	1.11	12.21%

45	WIPRO LTD	8.06%	11.80%	0.39	9.52%
46	YES BANK	8.06%	11.80%	1.96	15.39%
47	ZEE ENTERTAINMENT ENTERPRISES	8.06%	11.80%	0.76	10.89%
48	ASIAN PAINTS	8.06%	11.80%	0.75	10.87%
49	ABB LTD	8.06%	11.80%	1.47	13.56%
50	APOLLO HOSPITALS ENTERPRISE LTD	8.06%	11.80%	0.15	8.64%

➤ Below are the Actual return of the NIFTY 50 companies (1st April 2015 to 31st Mar 2016)

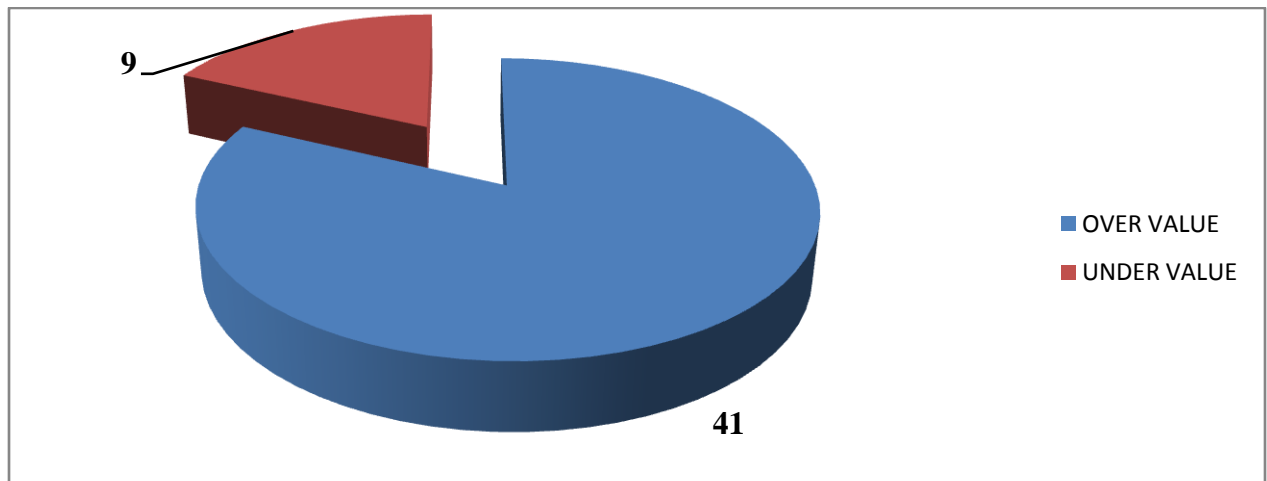
S No.	NAMES	EFFECTIVE RETURN (1 APR 15 TO 31 MAR 16)
1	ACC CEMENT	-9.00%
2	ADANI PORTS	-13.93%
3	AMBUJA CEMENT	-4.28%
4	AXIS BANK	-20.75%
5	BANK OF BARODA	0.14%
6	BHEL	-72.43%
7	BHARAT PETROLIUM CORP.	20.56%
8	BHARTI AIRTEL	-6.70%
9	BOSCH	-13.59%
10	CAIRN INDIA LTD	-18.88%
11	CIPLA	-32.78%
12	COAL INDIA	156.76%
13	DR. REDDY LABS	-7.34%
14	GAIL	164.63%
15	GRASIM INDUSTRIES	9.39%
16	HCL TECHNOLOGIES	-13.97%
17	HDFC BANK	7.25%
18	HINDALCO INDUSTRIS	-27.39%
19	HINDUSTAN UNILEVER	2.65%
20	HDFC LTD	-14.10%
21	ITC	3.92%
22	ICICI BANK	-23.38%

23	IDEA CELLULAR	-55.19%
24	INDUSIND BANK	15.12%
25	INFOSYS TECHNOLOGIES	20.94%
26	KOTAK MAHINDRA BANK	5.21%
27	LARSEN & TOUBRO	-33.34%
28	LUPIN LTD	-28.93%
29	M & M LTD	4.99%
30	MARUTI SUZUKI INDIA	70.17%
31	NTPC	-6.92%
32	ONGC	-33.12%
33	POWER GRID CORP.	-0.92%
34	PUNJAB NATIONAL BANK	-46.58%
35	RELIANCE INDUSTRIES	33.44%
36	STATE BANK OF INDIA	-26.69%
37	SUN PHARMA	-18.91%
38	TATA CONSULTANCY	2.39%
39	TATA MOTOR	-23.80%
40	TATA POWER	-13.66%
41	TATA STEEL	13.99%
42	TECH MAHINDRA	-23.75%
43	ULTRA TECH CEMENT	16.17%
44	VEDANTA LTD	-64.79%
45	WIPRO LTD	-6.60%
46	YES BANK	13.13%
47	ZEE ENTERTAINMENT ENTERPRISES	17.26%
48	ASIAN PAINTS	9.96%
49	ABB LTD	9.94%
50	APOLLO HOSPITALS ENTERPRISE LTD	0.02%

➤ Below is the table of Comparison between CAPM and Actual Return which tell us whether the stocks are OVER VALUED or UNDER VALUED.

Sl. no.	Names	CAPM	Actual/effective return (1 April 2015 to 31 March 2016)	Over value /under value
1	ACC CEMENT	11.91%	-9.00%	OVER VALUE
2	ADANI PORTS	11.28%	-13.93%	OVER VALUE
3	AMBUJA CEMENT	11.35%	-4.28%	OVER VALUE
4	AXIS BANK	15.28%	-20.75%	OVER VALUE
5	BANK OF BARODA	19.02%	0.14%	OVER VALUE
6	BHEL	13.30%	-72.43%	OVER VALUE
7	BHARAT PETROLIUM CORP.	12.14%	20.56%	UNDER VALUE
8	BHARTI AIRTEL	10.94%	-6.70%	OVER VALUE
9	BOSCH	10.34%	-13.59%	OVER VALUE
10	CAIRN INDIA LTD	9.18%	-18.88%	OVER VALUE
11	CIPLA	9.71%	-32.78%	OVER VALUE
12	COAL INDIA	8.09%	156.76%	UNDER VALUE
13	DR. REDDY LABS	8.98%	-7.34%	OVER VALUE
14	GAIL	10.63%	164.63%	UNDER VALUE
15	GRASIM INDUSTRIES	11.69%	9.39%	OVER VALUE
16	HCL TECHNOLOGIES	9.44%	-13.97%	OVER VALUE
17	HDFC BANK	12.17%	7.25%	OVER VALUE
18	HINDALCO INDUSTRIS	12.77%	-27.39%	OVER VALUE
19	HINDUSTAN UNILEVER	9.85%	2.65%	OVER VALUE
20	HDFC LTD	11.33%	-14.10%	OVER VALUE
21	ITC	10.03%	3.92%	OVER VALUE
22	ICICI BANK	9.64%	-23.38%	OVER VALUE
23	IDEA CELLULAR	9.81%	-55.19%	OVER VALUE
24	INDUSIND BANK	13.87%	15.12%	UNDER VALUE
25	INFOSYS TECHNOLOGIES	8.98%	20.94%	UNDER VALUE
26	KOTAK MAHINDRA BANK	11.98%	5.21%	OVER VALUE
27	LARSEN & TOUBRO	14.27%	-33.34%	OVER VALUE
28	LUPIN LTD	9.08%	-28.93%	OVER VALUE
29	M & M LTD	11.24%	4.99%	OVER VALUE
30	MARUTI SUZUKI INDIA	13.83%	70.17%	UNDER VALUE

31	NTPC	11.76%	-6.92%	OVER VALUE
32	ONGC	11.71%	-33.12%	OVER VALUE
33	POWER GRID CORP.	10.50%	-0.92%	OVER VALUE
34	PUNJAB NATIONAL BANK	9.28%	-46.58%	OVER VALUE
35	RELIANCE INDUSTRIES	11.84%	33.44%	UNDER VALUE
36	STATE BANK OF INDIA	18.69%	-26.69%	OVER VALUE
37	SUN PHARMA	10.08%	-18.91%	OVER VALUE
38	TATA CONSULTANCY	8.49%	2.39%	OVER VALUE
39	TATA MOTOR	13.73%	-23.80%	OVER VALUE
40	TATA POWER	13.15%	-13.66%	OVER VALUE
41	TATA STEEL	14.19%	13.99%	OVER VALUE
42	TECH MAHINDRA	11.03%	-23.75%	OVER VALUE
43	ULTRA TECH CEMENT	11.31%	16.17%	UNDER VALUE
44	VEDANTA LTD	12.21%	-64.79%	OVER VALUE
45	WIPRO LTD	9.52%	-6.60%	OVER VALUE
46	YES BANK	15.39%	13.13%	OVER VALUE
47	ZEE ENTERTAINMENT ENTERPRISES	10.89%	17.26%	UNDER VALUE
48	ASIAN PAINTS	10.87%	9.96%	OVER VALUE
49	ABB LTD	13.56%	9.94%	OVER VALUE
50	APOLLO HOSPITALS ENTERPRISE LTD	8.64%	0.02%	OVER VALUE



➤ 82% of the company's price are OVER VALUED and only 18% company's price are UNDER VALUED.

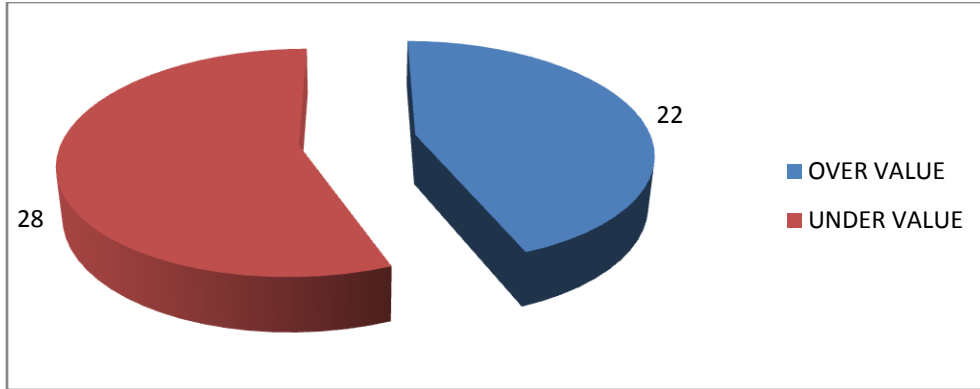
➤ Below are the list of the companies and their TRAILING PE Ratios and the market PE Ratio and the comparison between them whether they are OVER VALUED or UNDER VALUED.

➤ Average PE Ratio of NIFTY 50 is 25.58.

S No.	NAMES	EPS	CMP	PE RATIO	MARKET PE RATIO	CVER VALUE/UNDER VALUE
1	ACC CEMENT	31.51	1429.37	45.36	25.58	OVER VALUE
2	ADANI PORTS	11.18	310.70	27.79	25.58	OVER VALUE
3	AMBUJA CEMENT	5.20	224.55	43.18	25.58	OVER VALUE
4	AXIS BANK	31.18	525.28	16.85	25.58	UNDER VALUE
5	BANK OF BARODA	15.83	169.68	10.72	25.58	UNDER VALUE
6	BHEL	5.93	231.87	39.10	25.58	OVER VALUE
7	BHARAT PETROLIUM CORP.	80.72	816.01	10.11	25.58	UNDER VALUE
8	BHARTI AIRTEL	12.97	372.36	28.71	25.58	OVER VALUE
9	BOSCH	426.00	22359.91	52.49	25.58	OVER VALUE
10	CAIRN INDIA LTD	17.45	169.39	9.71	25.58	UNDER VALUE
11	CIPLA	14.71	664.43	45.17	25.58	OVER VALUE
12	COAL INDIA	21.19	418.24	19.74	25.58	UNDER VALUE
13	DR. REDDY LABS	137.18	3611.09	26.32	25.58	OVER VALUE
14	GAIL	23.96	357.80	14.93	25.58	UNDER VALUE
15	GRASIM INDUSTRIES	57.69	3638.33	63.07	25.58	OVER VALUE
16	HCL TECHNOLOGIES	52.09	914.49	17.56	25.58	UNDER VALUE
17	HDFC BANK	42.15	1056.77	25.07	25.58	UNDER VALUE
18	HINDALCO INDUSTRIS	4.48	106.85	23.85	25.58	UNDER VALUE
19	HINDUSTAN UNILEVER	20.17	856.49	42.46	25.58	OVER VALUE
20	HDFC LTD	38.13	1248.35	32.74	25.58	OVER VALUE
21	ITC	12.05	333.63	27.69	25.58	OVER VALUE
22	ICICI BANK	21.17	300.30	14.18	25.58	UNDER VALUE
23	IDEA CELLULAR	90.28	159.68	1.77	25.58	UNDER VALUE
24	INDUSIND BANK	33.99	894.65	26.32	25.58	OVER VALUE
25	INFOSYS TECHNOLOGIES	102.33	1033.45	10.10	25.58	UNDER VALUE

26	KOTAK MAHINDRA BANK	39.49	678.07	17.17	25.58	UNDER VALUE
27	LARSEN & TOUBRO	51.33	1575.90	30.70	25.58	OVER VALUE
28	LUPIN LTD	53.54	1833.29	34.24	25.58	OVER VALUE
29	M & M LTD	53.12	1258.34	23.69	25.58	UNDER VALUE
30	MARUTI SUZUKI INDIA	122.85	4094.55	33.33	25.58	OVER VALUE
31	NTPC	12.48	135.42	10.85	25.58	UNDER VALUE
32	ONGC	20.73	275.98	13.31	25.58	UNDER VALUE
33	POWER GRID CORP.	9.52	138.64	14.56	25.58	UNDER VALUE
34	PUNJAB NATIONAL BANK	16.91	145.85	8.63	25.58	UNDER VALUE
35	RELIANCE INDUSTRIES	80.11	902.69	11.27	25.58	UNDER VALUE
36	STATE BANK OF INDIA	17.55	261.54	14.90	25.58	UNDER VALUE
37	SUN PHARMA	18.90	883.50	46.75	25.58	OVER VALUE
38	TATA CONSULTANCY	101.35	2500.66	24.67	25.58	UNDER VALUE
39	TATA MOTOR	-14.72	444.87	-30.22	25.58	UNDER VALUE
40	TATA POWER	3.30	72.39	21.94	25.58	UNDER VALUE
41	TATA STEEL	-42.24	284.47	-6.73	25.58	UNDER VALUE
42	TECH MAHINDRA	23.35	571.92	24.49	25.58	UNDER VALUE
43	ULTRA TECH CEMENT	76.48	2908.63	38.03	25.58	OVER VALUE
44	VEDANTA LTD	-14.20	141.89	-9.99	25.58	UNDER VALUE
45	WIPRO LTD	35.28	572.97	16.24	25.58	UNDER VALUE
46	YES BANK	49.34	794.25	16.10	25.58	UNDER VALUE
47	ZEE ENTERTAINMENT ENTERPRISES	7.15	374.01	52.31	25.58	OVER VALUE
48	ASIAN PAINTS	14.88	822.03	55.24	25.58	OVER VALUE
49	ABB LTD	14.15	1256.47	88.80	25.58	OVER VALUE
50	APOLLO HOSPITALS ENTERPRISE LTD	24.43	1315.73	53.86	25.58	OVER VALUE

➤ 44% companies prices are OVER VALUED according to the PE Ratio and 56 % are UNDER VALUED.

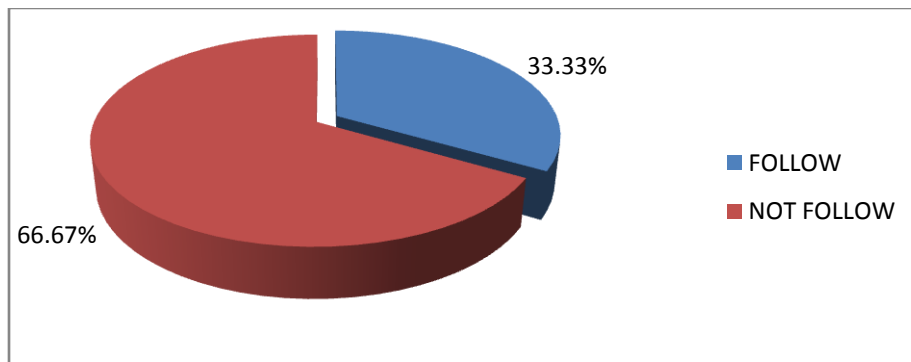


- We also tested that whether there is any difference in applicability of CAPM in CYCLICAL OR NON CYCLICAL Company.
- There are 33 CYCLICAL companies in our sample and 17 are NON CYCLICAL companies.
- First we tested for the CYCLICAL companies.
- Below are the list of the cyclical companies and its result.

S No.	NAMES	CYCLICAL/NON CYCLICAL	OVER VALUE/UNDER VALUE (CAPM)	OVER VALUE/UNDER VALUE (PE RATIO)	FOLLOW/NOT FOLLOW
1	ACC CEMENT	CYCLICAL	OVER VALUE	OVER VALUE	FOLLOW
2	ADANI PORTS	CYCLICAL	OVER VALUE	OVER VALUE	FOLLOW
3	AMBUJA CEMENT	CYCLICAL	OVER VALUE	OVER VALUE	FOLLOW
4	AXIS BANK	CYCLICAL	OVER VALUE	UNDER VALUE	NOT FOLLOW
5	BANK OF BARODA	CYCLICAL	OVER VALUE	UNDER VALUE	NOT FOLLOW
6	BOSCH	CYCLICAL	OVER VALUE	OVER VALUE	FOLLOW
7	GRASIM INDUSTRIES	CYCLICAL	OVER VALUE	OVER VALUE	FOLLOW
8	HCL TECHNOLOGIES	CYCLICAL	OVER VALUE	UNDER VALUE	NOT FOLLOW
9	HDFC BANK	CYCLICAL	OVER VALUE	UNDER VALUE	NOT FOLLOW
10	HINDALCO INDUSTRIES	CYCLICAL	OVER VALUE	UNDER VALUE	NOT FOLLOW
11	HDFC LTD	CYCLICAL	OVER VALUE	OVER VALUE	FOLLOW
12	ICICI BANK	CYCLICAL	OVER VALUE	UNDER VALUE	NOT FOLLOW
13	INDUSIND BANK	CYCLICAL	UNDER VALUE	OVER VALUE	NOT FOLLOW
14	INFOSYS TECHNOLOGIES	CYCLICAL	UNDER VALUE	UNDER VALUE	FOLLOW
15	KOTAK MAHINDRA BANK	CYCLICAL	OVER VALUE	UNDER VALUE	NOT FOLLOW
16	LARSEN & TOUBRO	CYCLICAL	OVER VALUE	OVER VALUE	FOLLOW

17	M & M LTD	CYCLICAL	OVER VALUE	UNDER VALUE	NOT FOLLOW
18	MARUTI SUZUKI INDIA	CYCLICAL	UNDER VALUE	OVER VALUE	NOT FOLLOW
19	POWER GRID CORP.	CYCLICAL	OVER VALUE	UNDER VALUE	NOT FOLLOW
20	PUNJAB NATIONAL BANK	CYCLICAL	OVER VALUE	UNDER VALUE	NOT FOLLOW
21	RELIANCE INDUSTRIES	CYCLICAL	UNDER VALUE	UNDER VALUE	FOLLOW
22	STATE BANK OF INDIA	CYCLICAL	OVER VALUE	UNDER VALUE	NOT FOLLOW
23	TATA CONSULTANCY	CYCLICAL	OVER VALUE	UNDER VALUE	NOT FOLLOW
24	TATA MOTOR	CYCLICAL	OVER VALUE	UNDER VALUE	NOT FOLLOW
25	TATA STEEL	CYCLICAL	OVER VALUE	UNDER VALUE	NOT FOLLOW
26	TECH MAHINDRA	CYCLICAL	OVER VALUE	UNDER VALUE	NOT FOLLOW
27	ULTRA TECH CEMENT	CYCLICAL	UNDER VALUE	OVER VALUE	NOT FOLLOW
28	VEDANTA LTD	CYCLICAL	OVER VALUE	UNDER VALUE	NOT FOLLOW
29	WIPRO LTD	CYCLICAL	OVER VALUE	UNDER VALUE	NOT FOLLOW
30	YES BANK	CYCLICAL	OVER VALUE	UNDER VALUE	NOT FOLLOW
31	ZEE ENTERTAINMENT ENTERPRISES	CYCLICAL	UNDER VALUE	OVER VALUE	NOT FOLLOW
32	ASIAN PAINTS	CYCLICAL	OVER VALUE	OVER VALUE	FOLLOW
33	ABB LTD	CYCLICAL	OVER VALUE	OVER VALUE	FOLLOW

- From the above table it is clear that in CYCLICAL companies only 33.33% FOLLOW the CAPM Model and 66.67% do NOT FOLLOW the CAPM Model.
- We can also see this through Pi Chart.

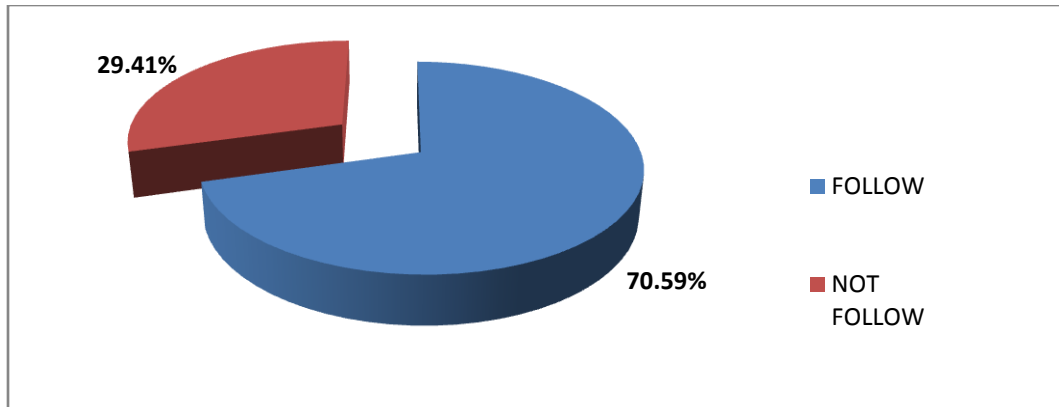


- Now test for the NON CYCLICAL companies whether they FOLLOW the CAPM Model or NOT.

S No.	NAMES	CYCLICAL/NON CYCLICAL	OVER VALUE/UNDER VALUE (CAPM)	OVER VALUE/UNDER VALUE (PE RATIO)	SAME/ DIFFERENT
1	BHEL	NON CYCLICAL	OVER VALUE	OVER VALUE	FOLLOW
2	BHARAT PETROLIUM CORP.	NON CYCLICAL	UNDER VALUE	UNDER VALUE	FOLLOW
3	BHARTI AIRTEL	NON CYCLICAL	OVER VALUE	OVER VALUE	FOLLOW
4	CAIRN INDIA LTD	NON CYCLICAL	OVER VALUE	UNDER VALUE	NOT FOLLOW
5	CIPLA	NON CYCLICAL	OVER VALUE	OVER VALUE	FOLLOW
6	COAL INDIA	NON CYCLICAL	UNDER VALUE	UNDER VALUE	FOLLOW
7	DR. REDDY LABS	NON CYCLICAL	OVER VALUE	OVER VALUE	FOLLOW
8	GAIL	NON CYCLICAL	UNDER VALUE	UNDER VALUE	FOLLOW
9	HINDUSTAN UNILEVER	NON CYCLICAL	OVER VALUE	OVER VALUE	FOLLOW
10	ITC	NON CYCLICAL	OVER VALUE	OVER VALUE	FOLLOW
11	IDEA CELLULAR	NON CYCLICAL	OVER VALUE	UNDER VALUE	NOT FOLLOW
12	LUPIN LTD	NON CYCLICAL	OVER VALUE	OVER VALUE	FOLLOW
13	NTPC	NON CYCLICAL	OVER VALUE	UNDER VALUE	NOT FOLLOW
14	ONGC	NON CYCLICAL	OVER VALUE	UNDER VALUE	NOT FOLLOW
15	SUN PHARMA	NON CYCLICAL	OVER VALUE	OVER VALUE	FOLLOW
16	TATA POWER	NON CYCLICAL	OVER VALUE	UNDER VALUE	NOT FOLLOW
17	APOLLO HOSPITALS ENTERPRISE LTD	NON CYCLICAL	OVER VALUE	OVER VALUE	FOLLOW

➤ From the above 17 NON CYCLICAL companies 12 companies (70.59%) FOLLOW the CAPM Model and 5 companies (29.41%) are NOT FOLLOWING the CAPM Model.

➤ We can see this through Pi Chart.



Conclusion

One of the presumptions of this paper is that the markets' valuation of the selected stocks is the benchmark to which CAPM must comply. This in itself can be an anomaly as any deviations could be devoted either towards CAPM not being an efficient approach in Indian context or to conclude that the markets are inefficient. We found that in the case of cyclical companies, only 1/3rd of the NIFTY constituent stocks result in similar valuation between CAPM and Market P/E, whereas 2/3rd differs in what they convey. Keeping in view the basis canon we adopted, we conclude that CAPM do not work in Indian context in majority of the times. In the case of non-cyclical companies, we found that 70% of the times the results of CAPM and Market P/E match, inferring that CAPM in the Indian context may be workable in case of companies that are non-cyclical in nature.

CAPM working for non-cyclical companies can be said to have its source in the computation of beta. As the beta as a factor measures the sensitivity of the stock price with that of the market portfolio, and analyst would consume past data for the same, a non-cyclical company will result in a stable trend, enabling the beta to be used as a predictive quantity. In case of a cyclical company, due to the fact that economic cycles do not occur frequently and the past data used may not have such an economic cycle in the period of data, the beta differs from the market view of risk involved in a security.

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