

An Analytical Study of Companies Financial Performance and Investment Opportunities with Special Reference to Cement Industries with the Help of Tobin's Q Ratio as a Special Tool

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Abstract: *This research paper helps us to find out Financial Performance of Cement Industries with selective Financial Parameters. This research Paper talks about Profitability ratio over a period of five years. It studies Liquidity position of Cement Sector with select parameters & only for selective companies & also profitability also. Another important ratio is taken in to consideration as Tobin's Q which will help us to take decision of Investment.*

Keywords: Tobin's Q ratio, Cement Sector, Financial Performance, Market Capitalization, Gross Profit, Net Profit, Operating Profit

1. Introduction to cement industry

India is the second largest producer of cement in the world. No wonder, India's cement industry is a vital part of its economy, providing employment to more than a million people, directly or indirectly. Ever since it was deregulated in 1982, the Indian cement industry has attracted huge investments, both from Indian as well as foreign investors.

India has a lot of potential for development in the infrastructure and construction sector and the cement sector is expected to largely benefit from it. Some of the recent major government initiatives such as development of 98 smart cities are expected to provide a major boost to the sector.

India's cement demand is expected to reach 550-600 million tonnes per annum (MTPA) by 2025. The housing sector is the biggest demand driver of cement, accounting for about 67 per cent of the total consumption in India. The other major consumers of cement include infrastructure at 13 per cent, commercial construction at 11 per cent and industrial construction at nine per cent.

To meet the rise in demand, cement companies are expected to add 56 million tonnes (MT) capacity over the next three years. The cement capacity in India may register a growth of eight per cent by next year end to 395 MT from the current level of 366 MT. It may increase further to 421 MT by the end of 2017. The country's per capita consumption stands at around 190 kg. The Indian cement industry is dominated by a few companies. The top 20 cement companies account for almost 70 per cent of the total cement production of the country. A total of 188 large cement plants together account for 97 per cent of the total installed capacity in the country, with 365 small plants account for the rest. Of these large cement plants, 77 are located in the states of Andhra Pradesh, Rajasthan and Tamil Nadu.

2. Review of Literature

Arora and Sarkar (2002) it is observed that the boom in the real estate and construction industry in India has caused for a sudden and sharp increase in the price of cement to the extent of price increment as high as 17 per cent in a single month. They attempt to use the theories of collusive behaviour to explain this sudden increase. Parameters studied include the firm concentration index, region-wise production and consumption, capacity utilization, cost to sales ratio, etc. Their analysis clearly demonstrates that the sudden surge in the price of the cement is neither due to the demand-supply mismatch nor a sudden increment in the cost of producing cement. CAR report (2004) reasons out that the demand for cement is directly linked with the economic growth of the country. With the National GDP expected to grow at seven to eight per cent and the long run demand elasticity of cement with respect to GDP being estimated to be 1.4, the quantity of cement demanded in the country is expected to grow by more than 10 per cent. The report states that the "Working Group on Cement Industry", constituted by the Planning Commission for the formulation of Tenth Five Year Plan too has projected a growth rate of 10 per cent for the cement industry during the plan period. In terms of end use, housing sector is the largest consumer of cement in the country, accounting for about 60 per cent of the total consumption.

Jayant Sathaye (2005) the study revealed that, the India cement industry has grown rapidly over the past few decades and there have been significant investments in new cement kilns and associated production equipment. This has led to situation where India's cement industry in made up of both some of the world's most energy-inefficient plants as well as some of the world's best practice facilities. The challenge for the Indian cement industry is to modernize or phase out the older, inefficient plants while acquiring the best possible cement production technology as production inevitably expands in the coming decades.

In 2013, Prof. Acharekar studied the various factor affecting the working capital requirement in cement industry. To assess the relative significance of various sources of working capital. To analyse relative asset liquidity and finance liquidity in cement industry.

In 2013, Dr. P. Krishna Kumar, investigate the progress of Indian cement industry since 1991, in terms of its growth in installed capacity, production, exports and value additions. In detail the research methodology used for the study that has focused on the past, present and future performance of cement industry at the Macro Level.

3. Objective

- 1) To study the Tobin's Q ratio as a company performance indicator.
- 2) To study the effect of R & D on companies performance through the Tobin's Q Ratio.
- 3) To study the impact of Intangible assets on the Company's performance.
- 4) To study the importance of performance & investment opportunities in Selected Listed Indian Companies.
- 5) To analyze the different opportunities & their relative benefit in Selected Listed Indian Companies by using selected financial parameters.

4. Hypothesis

- 1) Tobin's Q Ratio in case of Blue Chip Companies is greater than one.
- 2) There is relationship between Tobin's Q Ratio and R& D investments.

- 3) There is relationship between Tobin's Q Ratio and Investments in intangible assets.
- 4) The R & D expenses & Tobin's Q are positively correlated.
- 5) The investments in intangible assets & Tobin's Q are positively correlated.

Following Companies from Cement Manufacturing sector are identified for data analysis:

- 1) ACC LTD.
- 2) Ambuja Cements LTD.
- 3) Gujrat Bitumen LTD.
- 4) Indian Hume Pipe CO. LTD.
- 5) JK Cement LTD.
- 6) JK Lakshmi Cement LTD.
- 7) Mangalam Cement LTD.
- 8) Ramco Industries LTD.
- 9) Ultratech Cement LTD.

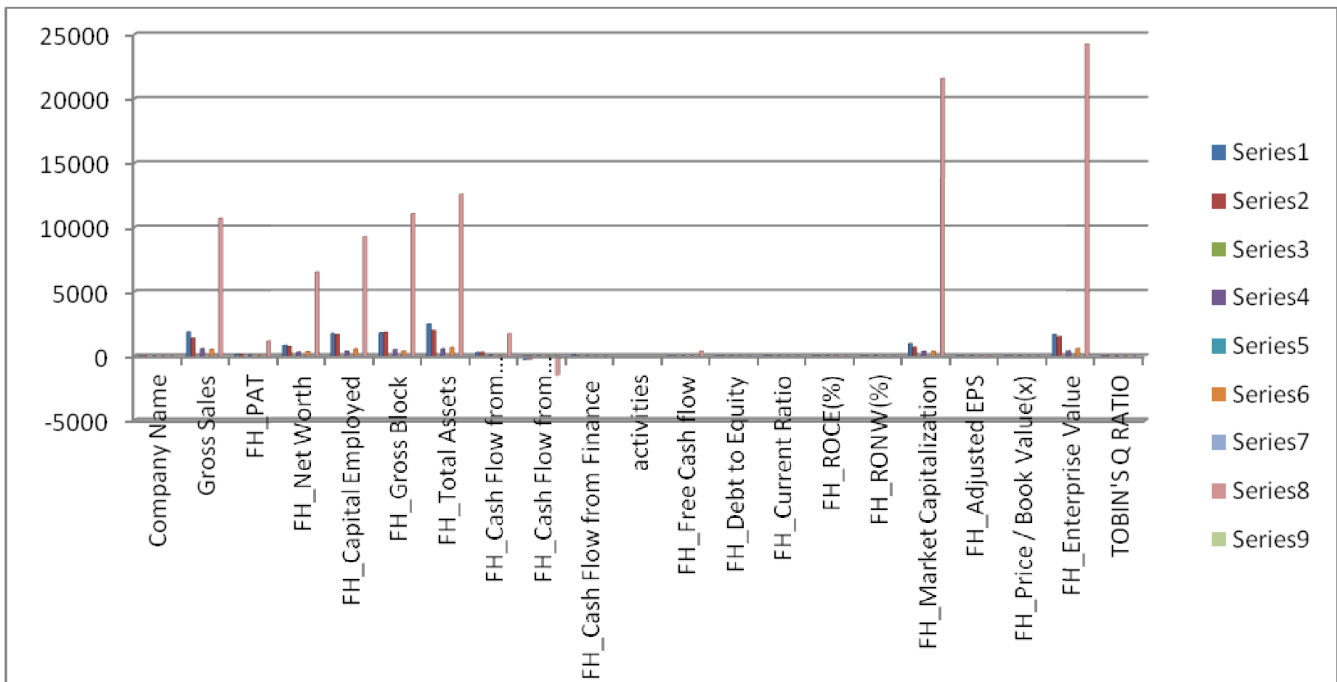
Financial Parameters analyzed as follows:- All nine companies were studied for selected Financial parameters those are

- 1) Debt to Equity
- 2) Current Ratio
- 3) ROCE (%)
- 4) RONW (%)
- 5) Market Capitalization
- 6) Adjusted EPS
- 7) Price / Book Value(x)
- 8) Enterprise Value
- 9) TOBIN'S Q RATIO

Company Name	ACC Ltd.	Ambuja Cements Ltd.	Gujrat Bitumen Ltd.	Indian Hume Pipe Co. Ltd.
Gross Sales	7980.07	7280.77	0.02	483.25
FH PAT	1019.54	1178.22	0.03	23.84
FH Net Worth	4739.72	5806.93	1.58	170.71
FH Capital Employed	5434.04	6239.21	1.58	310.98
FH Gross Block	6708.68	6856.28	0.00	93.98
FH Total Assets	8422.03	8389.32	1.66	530.64
FH Cash Flow from Operations	1400.90	1412.28	-0.66	-2.61
FH Cash Flow from Investing activities	-666.96	-530.64	0.01	-4.09
FH Cash Flow from Finance activities	-552.66	-565.75	0.66	6.58
FH Free Cash flow	588.38	728.23	-0.67	-19.20
FH Debt to Equity	0.30	0.16	0.00	0.79
FH Current Ratio	1.28	1.74	14.27	2.06
FH ROCE (%)	28.14	29.75	4.10	19.30
FH RONW (%)	25.55	24.89	3.07	18.09
FH Market Capitalization	15896.33	18825.89	0.00	211.06
FH Adjusted EPS	54.52	7.78	0.27	9.84
FH Price / Book Value(x)	3.65	3.40	0.00	1.22
FH Enterprise Value	15941.62	18128.33	1.63	327.82
TOBIN'S Q RATIO	2.32	2.55	0.05	1.08

Company Name	JK Cement LTD.	JK Lakshmi Cement Ltd.	Mangalam Cement Ltd.	Ramco Industries Ltd.	Ultratech Cement Ltd.
Gross Sales	1863.67	1390.83	573.11	500.07	10690.96
FH PAT	129.36	118.91	73.98	35.29	1161.99
FH Net Worth	832.64	714.37	272.04	304.63	6515.69
FH Capital Employed	1751.37	1644.57	366.49	553.68	9298.59
FH Gross Block	1808.09	1835.32	496.28	396.40	11076.19
FH Total Assets	2491.00	1964.09	549.62	646.62	12551.76

FH_Cash Flow from Operations	249.43	253.05	74.97	41.82	1727.17
FH_Cash Flow from Investing activities	-294.59	-262.24	-76.56	-39.02	-1512.11
FH_Cash Flow from Finance activities	74.90	10.96	4.88	-2.13	-196.08
FH_Free Cash flow	-92.02	-34.01	9.84	-13.54	355.03
FH_Debt to Equity	2.05	2.37	0.97	0.83	0.75
FH_Current Ratio	32.10	2.31	1.87	2.19	1.68
FH_ROCE(%)	16.80	12.63	41.73	13.34	22.67
FH_RONW(%)	17.83	20.76	35.06	13.19	23.59
FH_Market Capitalization	956.95	665.11	331.02	358.09	21554.17
FH_Adjusted EPS	18.53	9.98	29.35	4.07	58.86
FH_Price / Book Value(x)	1.13	1.25	2.63	1.27	3.58
FH_Enterprise Value	1661.33	1475.27	390.07	594.77	24228.82
TOBIN'S Q RATIO	1.05	0.97	1.11	1.08	2.20



The central tendency is measured by Mean & Median.

Descriptive Statistics	Gross Sales	PAT	Net Worth	Total Assets	Free Cash flow
Mean	3418.08	415.69	2150.92	3949.64	169.11
Median	1390.83	118.91	714.37	1964.09	-0.67
Standard Deviation	4062.91	531.61	2701.87	4603.34	307.29
Kurtosis	-0.81	-1.61	-1.28	-0.45	-0.37
Skewness	0.99	0.86	0.92	1.03	1.15
Range	10690.95	1178.19	6514.11	12550.10	820.25
Count	9	9	9	9	9
Confidence Level (95.0%)	3123.03	408.63	2076.84	3538.44	236.20

Descriptive Statistics	Market Capitalization	Adjusted EPS	Price / Book Value(x)	Enterprise Value	TOBIN'S Q RATIO
Mean	6533.18	21.47	2.01	6972.18	1.38
Median	665.11	9.98	1.27	1475.27	1.08
Standard Deviation	9281.62	21.70	1.32	9603.74	0.81
Kurtosis	-1.33	-0.33	-1.51	-0.79	-0.61
Skewness	0.94	1.08	0.06	1.04	0.15
Range	21554.17	58.59	3.65	24227.20	2.50
Count	9	9	9	9	9
Confidence Level (95.0%)	7134.49	16.68	1.02	7382.09	0.62

Descriptive Statistics	Free Cash flow	Debt to Equity	Current Ratio	ROCE (%)	RONW (%)
Mean	169.11	0.91	6.61	20.94	20.22
Median	-0.67	0.79	2.06	19.30	20.76
Standard Deviation	307.29	0.81	10.40	11.15	8.92
Kurtosis	-0.37	0.00	5.24	0.35	1.32
Skewness	1.15	0.95	2.32	0.48	-0.42
Range	820.25	2.37	30.82	37.63	31.99
Count	9	9	9	9	9
Confidence Level (95.0%)	236.20	0.62	8.00	8.57	6.85

TOBIN'S Q TO PAT	
Regression Statistics	
Multiple R	0.921031
R Square	0.848299
Adjusted R Square	0.826627
Standard Error	0.336682
Observations	9

There is positive correlation between Tobin's q ratio and PAT.

TOBIN'S Q TO FREE CASH FLOW	
Regression Statistics	
Multiple R	0.881658
R Square	0.77732
Adjusted R Square	0.745509
Standard Error	0.407911
Observations	9

TOBIN'S Q TO ROCE	
Regression Statistics	
Multiple R	0.592632
R Square	0.351213
Adjusted R Square	0.258529
Standard Error	0.696268
Observations	9

There is positive correlation between Tobin's q ratio and Free Cash Flow.

There is negative relationship between Tobin's q and ROCE.

TOBIN'S Q TO DEBT-EQUITY RATIO	
Regression Statistics	
Multiple R	0.24853
R Square	0.061767
Adjusted R Square	-0.07227
Standard Error	0.837299
Observations	9

TOBIN'S Q TO RONW	
Regression Statistics	
Multiple R	0.61259
R Square	0.375267
Adjusted R Square	0.286019
Standard Error	0.683239
Observations	9

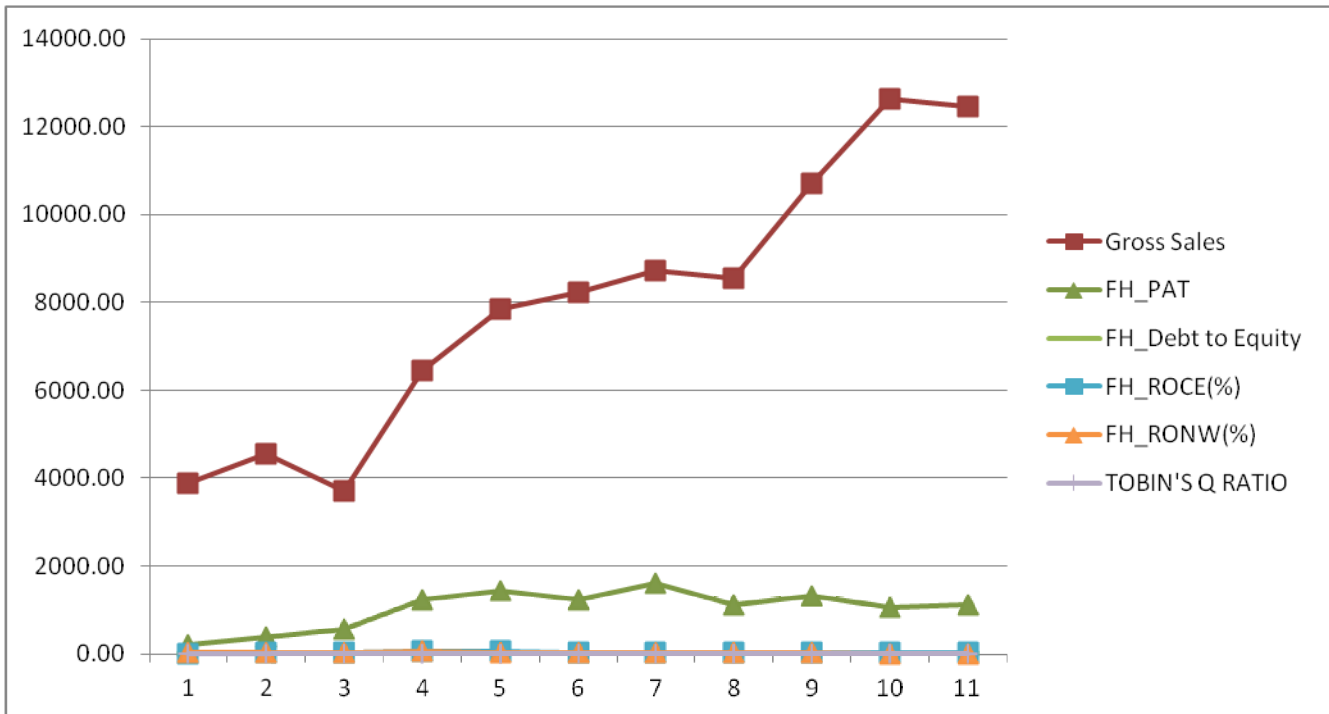
There is negative relationship between Tobin's q ratio and Debt Equity Ratio.

There is negative relationship between Tobin's q and RONW.

Company Name	ACC Ltd.	ACC Ltd.	ACC Ltd.	ACC Ltd.	ACC Ltd.	ACC Ltd.	ACC Ltd.
FH Year	2004	2005	2005	2006	2007	2008	2009
Gross Sales	3889.65	4539.35	3717.18	6453.07	7848.32	8234.02	8724.24
FH PAT	200.24	378.39	544.18	1231.84	1438.59	1212.79	1606.73
FH Net Worth	1317.73	1584.20	2129.13	3141.46	4152.38	4927.51	6015.92
FH Capital Employed	2761.53	3094.34	3306.51	4057.96	4459.12	5409.76	6583.14
FH Gross Block	3789.75	4094.14	4628.64	4816.25	5464.07	5835.67	6826.27
FH Total Assets	3922.85	4377.01	4843.35	5906.63	7011.76	8511.27	10046.30
FH Free Cash flow	126.12	-172.92	420.20	956.57	1101.06	88.79	623.52
FH Debt to Equity	1.09	0.95	0.55	0.29	0.07	0.10	0.09
FH Current Ratio	1.28	1.25	1.35	1.56	1.33	1.16	1.09
FH ROCE(%)	13.86	18.46	23.44	46.02	47.51	36.00	40.01
FH RONW(%)	17.10	26.08	29.31	46.74	39.45	26.71	29.36
FH Market Capitalization	4510.63	6435.47	9857.06	20330.18	19222.69	8969.23	16361.54
FH Adjusted EPS	11.30	21.19	29.49	65.78	76.67	64.62	85.58
FH Enterprise Value	5888.38	7887.22	10930.44	20625.99	18785.62	8467.02	16182.08
TOBIN'S Q RATIO	1.81	2.11	2.60	3.91	3.15	1.47	2.03

The different financial parameters studied for ACC Ltd shows the different trends.

Company Name	ACC Ltd.	ACC Ltd.	ACC Ltd.	ACC Ltd.	ACC LTD.
FH Year	2010	2011	2012	2013	AVERAGE
Gross Sales	8563.71	10700.02	12639.44	12471.74	7980.07
FH PAT	1120.01	1325.26	1061.19	1095.76	1019.54
FH Net Worth	6469.29	7192.07	7382.60	7824.64	4739.72
FH Capital Employed	6993.31	7703.00	7545.86	7859.87	5434.04
FH Gross Block	8076.95	9645.37	10218.78	10399.55	6708.68
FH Total Assets	12014.05	11989.29	11926.23	12093.59	8422.03
FH Free Cash flow	783.08	1410.53	606.13	529.07	588.38
FH Debt to Equity	0.08	0.07	0.02	0.00	0.30
FH Current Ratio	1.07	1.36	1.39	1.21	1.28
FH ROCE(%)	23.02	22.28	21.52	17.40	28.14
FH RONW(%)	17.94	19.40	14.56	14.41	25.55
FH Market Capitalization	20194.39	21334.97	26836.99	20806.46	15896.33
FH Adjusted EPS	59.65	70.59	56.52	58.36	54.52
FH Enterprise Value	19738.18	20193.14	26321.67	20338.11	15941.62
TOBIN'S Q RATIO	2.14	2.18	2.63	2.07	2.32



From all the data analysis which is carried out for nine different companies has helped researcher to modify the hypothesis of study. The Tobin's q ratio is emerging as one of the important parameter which is studied for relationship with PAT, Free Cash Flow, Debt Equity Ratio, and Return on Capital Employed & Return on Net Worth.

5. Conclusion

After using statistical techniques we have developed modified hypothesis from the study which will further require analysis for testing of these modified hypothesis.

6. Modified Hypothesis

- 1) Alone Tobin's Q Ratio can not give the true value of Investment.
- 2) Alone Financial Performance (Based on Select Parameters) can not give true value of the Investment.
- 3) Combining the values of the Tobin's Q Ratio and Financial Performance have positive relationship as an Investment Indicator.

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