



Research Article

A FUNDAMENTAL ANALYSIS OF INDIAN BATTERY INDUSTRY

ARUNSANKAR N*

Marian International Institute of Management Kuttikkanam-685531 Idukki Dist Kerala

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ABSTRACT

The research aims to study the fundamental analysis on the battery Industry in India. The fundamental Analysis of a business involves analyzing its financial health, competitive advantages its competitors and its market. Ever since Indian economy opened its doors to MNCs, the Indian battery sector has been witnessing bizarre changes in terms of new products and services and stiff competition as well. In the light of these recent developments, a careful analysis of profitability of Indian battery sector is inevitable. The present study attempts to analysis the profitability of the three major battery companies in India: of Exide, Amara raja and HBL. The study conducted among the top listed battery manufacturing companies such as Exide Industries, Amara raja Batteries and HBL Power Systems with the different variable to reveals their profitability position as wells as operational efficiency of battery industry in India. .the study brings out the comparative efficiency of Exide, amara raja and HBL.

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INTRODUCTION

Indian battery market The domestic storage battery market (organised sector) is estimated at about Rs. 65 billion at current lead prices, comprising industrial batteries (Rs. 32 billion) and automotive batteries (Rs. 33 billion) businesses. Moreover, the unorganized sector is estimated at Rs. 20-25 billion. The automotive battery business accounts for about 55% of sales value, while the industrial battery business accounts for the remaining 45%.The automotive battery business can be further divided into the OEM and aftermarket sectors. Demand for automotive batteries largely depends on the growth of automobile OEMs and the aftermarket. During the year under review, the automotive batteries market grew about 30% in OEM and about 10% in there placement market. The OEM and replacement markets are expected to experience about 18% growth in the segment OEM and 11% in the aftermarket segment in 2010-11.The growth in the industrial batteries business is driven by infrastructure and technology-related industries such as telecommunications, UPS and power. VRLA technology caters to 75% of the industrial storage battery market. The ongoing slowdown in telecom impacted the off take and price of VRLA batteries, after healthy growth in the recent three four years. The market for UPS batteries is expected to grow about 10% in 2010-11, aided by a reviving momentum in the services sector and e-initiatives of the Government(s) of India. A few Indian majors have already established facilities outside looking at the potential and acceptability in those markets.

*Corresponding author: **Arun Sankar N**

Marian International Institute of Management, Kuttikkanam, Idukki Dist, Kerala, India-685531,

Coupled with recessionary trends in the domestic market, it is but natural that this trend would continue and would contribute further to sales of Indian batteries manufacturers in the coming years, At present, exports from India are mainly to US and SAARC nations. The US alone contributes to over 60 percent of the total exports in volume terms, 35 per cent exports go to the SAARC countries with the balance going to South East Asia and Africa. —Indian manufacturers are now eyeing the European market which is today a large battery marketer in the world. The market size for batteries is expected to reach \$86.6 billion by 2018. The industry is boosted by growing demand of battery in consumer electronic products and automotive vehicles. Trends are favorable for growth which should allow for participation by all players.

Global Scenario of the Battery Industry

Global battery industry witnessed good growth during the past decade and holds immense growth potential for the future. There is a significant difference in growth potential among the application industries and regions, and should yield better returns for suppliers who are positioned well in them. The industry also requires significant level of capital investments and sophisticated technological capabilities to manufacture lithium-ion batteries. Demand of lead-acid batteries for SLI (starting, lighting, and ignition

Indian Scenario of the Indian Battery Industry

Liberalization of the Indian economy in the early 90's brought about a phenomenal change in the Indian automobile industry. Through joint ventures or completely owned forays, a number of leading international auto giants have entered India and

established their production bases. Their demand for world-class batteries for their vehicles urged Indian battery manufacturers to tie up with international players or buy technology, so as to upgrade their offerings to meet the high standards expected. The automotive segment contributes in excess of 55 percent of the total turnover of the Indian lead acid battery market. Automotive batteries are SLI (start, light, and ignition) batteries, though they are expected to fuel a greater number of functions including in-vehicle entertainment systems, power steering, power locking, power window systems, etc. Demand for auto batteries can be divided into the OE (original equipment) market and the aftermarket segments. Growth in the former is driven by automobile production in a concerned time frame. This is a difficult segment to service as each automobile manufacturer has different specifications for which the battery has to undertake mass customization. Additionally, margins for battery manufacturers are usually thin in this segment due to the bargaining power of the auto majors. However, inherent advantages such as a steady source of production and revenue, and strong brand recall during battery replacement make this an attractive segment for battery manufacturers.

Prevailing Issues in the Indian Battery Industry

Some of the issues affecting the Indian lead acid battery market which includes:

Environmental Concerns

Lead, a major component of the lead acid battery, has to be handled very carefully, especially during smelting, disposal, and recycling. Based on environmental norms set in the late 90's, today only authorized plants are able to recycle lead. This has had an adverse effect on the unorganized market.

Threat of Imports and Dumping

With the progressive dismantling of the import norms in 1999 and inclusion of batteries into the open general license, there is increased threat of cheap substitutes to the locally available batteries from players in Thailand, Bangladesh, China, Taiwan, Japan, Korea, etc. These cater mainly to the replacement market where price sensitivity is critical. Based on a petition by Exide Industries Limited and Amara Raja Batteries, the government initiated investigation into certain battery imports from Chinese Taipei (Taiwan), Singapore, and Hong Kong on the grounds of dumping.

Challenges in the Indian Battery Industry

The challenges faced by the industry in disposal and recycling of both lead acid and Ni-MH batteries as they possess certain environmental issues. Hence, environmental policies are there to govern manufacturing as well as recycling of such batteries. But the challenge in India is more complex than inventing brilliant new technologies. India faces issues in fuel infrastructure, price sensitivity. We need to look at these holistically when we design solutions for tomorrow's world. International studies have shown that road transport accounts for 16% of global manmade CO2 emissions. As an automotive company, our responsibility is to manufacture vehicles that provide society with sustainable mobility.

Steps Undertaken by the Government

The Government is already discussing policies for fleet modernization and vehicle inspection and certification with

SIAM (Society of Indian Automobile Manufacturers). We need to pick up the pace of construction and think creatively about how to address urban-rural connectivity and urban congestion issues. The Government is also enabling the spread of CNG and LPG infrastructure and offering custom duty benefits for CNG vehicle parts. Many parts manufacturers make CNG/LPG fuel kits so that consumers can choose between diesels or petrol fuels and sustainable fuels. As a result, there are more than 100,000 CNG commercial vehicles in Delhi and Mumbai. In fact, Delhi has the largest number of CNG commercial vehicles running anywhere in the world. Private companies need to do their part too. Take alternative energy vehicles as an example. Indian companies are investing in technology for hydrogen power-trains and biodiesel, hybrid, and BEV (Battery-operated Electric Vehicle) models. The technology is available now large-scale adoption depends on affordability, fuel availability, and infrastructure.

Objectives of the Study

- To review the origin, growth and role of battery Industry in India
- To analysis the profitability position of the selected companies
- To analysis the liquidity & solvency position of the selected companies
- To summaries the findings and offer suggestion to improve the overall performance of the selected companies.

Hypothesis of Study

- H1: The operating profit ratio of Exide Batteries, Amara raja batteries, HBL power systems do not differ significantly
- H2: The net profit ratios of Exide Industries, Amara Raja batteries, HBL Power Systems do not differ significantly.
- H3: The earnings per share ratio of Exide Industries, Amara Raja batteries, HBL Power Systems do not differ significantly.
- H4: The price earnings ratios of Exide Industries, Amara Raja batteries, HBL Power Systems do not differ significantly.
- H5: The dividends per share of Exide Industries, Amara Raja batteries, HBL Power Systems do not differ significantly.
- H6: The dividend payout ratios of Exide Industries, Amara Raja batteries, HBL Power Systems do not differ significantly.

Operating Profit Margin (Opm)

Operating Profit Margin indicates how effective a company is at controlling the costs and expenses associated with their normal business operations.

$$\text{Operating Profit Margin} = \frac{\text{Operating Profit}}{\text{Net Sales}} \times 100$$

The Operating Profit Margin position of the sample companies is depicted in Table: 1 and discussed below.

Table 1 Operating Profit Ratio of selected companies

Year	Exide Industries	Amararaja Batteries	HBL Power Systems
2010-2011	12.88	15.24	13.08
2011-2012	13.66	15.02	13.81
2012-2013	17.38	14.62	7.64
2013-2014	21.21	19.74	19.10

2014-2015	14.63	13.41	16.38
Mean	15.9520	15.6060	14.0020
S.D	3.39573	2.41671	4.27219

Sources: workings has been performed in MS-EXCEL from the data available in annual reports of companies concerned

Interpretation

As it could be observed in table 6.1.1, among all sample companies, Exide Industries sustained the highest operating profit margin in every year except 2008-2009 & 2009-2010 during the study period. On an aggregate basis, Exide Industries was highly successful in controlling the expenses by registering an average OPR of (15.95%), followed by Amara Raja batteries which could make average OPR of (15.60%). Then HBL Power Systems the average OPR is (14%).

The operating profit margin position of sample companies is compared and tested using the following hypothesis. The details are shown in Table 6.1.2. Ho: The operating profit ratio of Exide Industries, Amara Raja batteries, HBL Power Systems does not differ significantly.

Table 2 One-Way ANOVA for Operating Profit Margin

Table 6.1.2: one-way ANOVA for operating profit ratio of Exide Industries, Amara Raja Batteries, and HBL Power Systems.

Source of Variation	SS	Df	MS	F	P-value	F crit
Between Groups	10.825	2	5.413	0.456	0.644	3.89
Within Groups	142.492	12	11.874			
Total	153.317	14				

Note: One-way ANOVA has been performed in MS EXCEL

Inference

Since $F_{cal} < F_{crit}$ (at 5% significance level), the null hypothesis is accepted and hence it is concluded that operating profit ratio does not differ significantly in case of Exide Industries, Amara Raja batteries and HBL Power Systems.

Net Profit Margin (Npm)

Net Profit Margin indicates how much a company is able to earn after all direct and indirect expenses to every rupee of revenue.

$$\text{Net Profit Margin} = \frac{\text{Net Profit}}{\text{Net Sales}} \times 100$$

Table 3 Net profit margin (in %) of the sample companies

Net Profit Ratio of selected companies			
Year	Exide Industries	Amararaja Batteries	HBL Power Systems
2010-2011	8.48	12.81	1.36
2011-2012	8.89	12.99	1.17
2012-2013	12.86	12.21	1.66
2013-2014	12.70	16.78	8.76
2014-2015	7.55	12.76	7.13
Mean	10.0960	13.5100	4.0160
S.D	2.49843	1.85107	3.63687

Sources: workings has been performed in MS-EXCEL from the data available in annual reports of companies concerned

Interpretation

The data in Table 6.2.1 reveal that it was Amara Raja batteries performed well when compared to Exide Industries in terms of Net Profit Ratio. However, the highest NPR of Amara Raja batteries was (16.78%) in 2011-2012, that of Exide Industries were (12.86%), HBL Power System was (8.76%) is in 2010-

2011&2011-2012. On an aggregate basis, mean NPR of Exide Industries was (13.51%).

Exide Industries was (10.09 %) and HBL Power System is (4.01%) which is very low when compared to both. Thus, Amara Raja batteries to be the efficient company in controlling indirect expenses when compared to Exide Industries.

The net profit margin position of sample companies is compared and tested using the following hypothesis. The details are shown in Table 6.2.2.

H1: The operating profit ratio of Exide Industries, Amara Raja batteries, HBL Power Systems does not differ significantly.

Table 6.2.2 One-way ANOVA for net profit ratio of Exide Industries, Amara Raja batteries, HBL Power Systems.

Source of Variation	SS	Df	MS	F	P-value	F crit
Between Groups	231.263	2	115.632	15.151	0.001	3.89
Within Groups	91.583	12	7.632			
Total	322.845	14				

Note: one-way ANOVA has been performed in MS EXCEL

Multiple Comparisons

Ratio: Dunnett T₃

Inference

Since $F_{cal} > F_{crit}$ (at 5% significance level), the null hypothesis is rejected and hence it is concluded that net profit ratio differ significantly in case of Exide Industries, Amara Raja batteries, HBL Power Systems.

Earning Per Share (Eps)

Earning per share is the measure of company's ability to generate after tax profits per share held by the investors.

$$\text{Earning per share} = \frac{\text{Profit after tax} - \text{Preference dividend}}{\text{No. of Equity Share}}$$

Table 5 Earning Per Share (in %) of the sample companies

Earnings Per Share of the selected companies			
Year	Exide Industries	Amararaja Batteries	HBL Power Systems
2008-2009	6.15	16.78	5.15
2009-2010	5.43	25.18	4.32
2010-2011	7.84	17.34	6.15
2011-2012	6.32	19.56	5.6
2012-2013	3.55	13.41	3.8
Mean	6.4350	16.4820	6.4050
S.D	1.01300	7.95599	3.53529

Sources: workings has been performed in MS-EXCEL from the data available in annual reports of companies concerned

The Earnings per Share Position of the selected companies is summarized in Table 6.4.1 and discussed below.

Interpretation

As shown in the Table 6.4.1, the EPS of Exide and Amara Raja batteries showed a fluctuating trend from year to year during the study period. The average EPS of Amara Raja batteries is high than that of Exide, HBL Power Systems during the entire study period. On average Amara Raja batteries, Exide and HBL Power Systems generated EPS of Rs (16.48%), (6.43%), (6.40%). Thus, the analysis reveals that Amara Raja batteries were the efficient industry in terms of generating earnings per share.

The earnings per share position of selected companies is compared and tested using the following hypothesis. The details are shown in Table 6.4.2.

H3: The earnings per share of Exide Industries, Amara Raja batteries, HBL Power Systems do not differ significantly.

Table 6.4.2 One-way ANOVA for earnings per share of Exide Industries, Amara Raja batteries, HBL Power Systems.

Source of Variation	SS	Df	MS	F	P-value	F crit
Between Groups	337.683	2	168.841	6.356	0.013	3.89
Within Groups	318.761	12	26.563			
Total	656.444	14				

Note: one-way anova has been performed in ms excel

Multiple Comparisons

Ratio: scheffe

(i)Company	(j)Company	Significance
Exide Industries	Amara raja Batteries	0.003
	HBL Power Systems	0.548
Amara raja Batteries	Exide Industries	0.003
	HBL Power Systems	0.001
HBL Power Systems	Exide Industries	0.543
	Amara raja Batteries	0.001

Inference

Since $F_{cal} > F_{crit}$ (at 5% significance level), the null hypothesis is rejected and hence it is concluded that earnings per share does differ significantly in case of Exide Industries, Amara Raja batteries, HBL Power Systems.

Dividend per Share (Dps)

This ratio tells us about the dividend paying of a particular company.

Dividend per Share

Equity dividend *100
Number of equity shareholders

Dividend per share of the selected companies			
Year	Exide Industries	Amararaja Batteries	HBL Power Systems
2008-2009	1.60	2.52	-
2009-2010	1.50	3.78	-
2010-2011	1.50	4.60	-
2011-2012	1.00	2.90	-
2012-2013	0.60	0.80	-
Mean	1.2400	3.0200	0000
S.D	4.2778	1.63471	0000

Sources: workings has been performed in MS-EXCEL from the data available in annual reports of companies concerned

The net profit margin position of selected companies is depicted in Table 6.6.1 and discussed below.

Interpretation

Dividend per share reveals that Amara raja batteries has highest dividend compared to Exide Industries in all the financial year during the period of study. Average dividend per share was (1.24%) and (3.03%) for both Exide and the Amara Raja batteries.

The dividend per share position of selected companies is compared and tested using the following hypothesis. The details are shown in Table 6.6.2.

H5: The dividend per share of Exide Industries, Amara Raja Batteries, and HBL Power Systems does not differ significantly.

Multiple Comparisons

Table 6.6.2 One-way ANOVA for dividend per share of Exide Industries, Amara Raja Batteries, and HBL Power Systems

Source of Variation	SS	Df	MS	F	P-value	F crit
Between Groups	20.301	2	10.151	12.762	0.001	4.84
Within Groups	8.749	11	.795			
Total	29.050	13				

Note: one-way ANOVA has been performed in MS EXCEL

Ratio: Dunnet T₃

Inference

Since $F_{cal} > F_{crit}$ (at 5% significance level), the null hypothesis is rejected and hence it is concluded that dividend per share does differ significantly in case of Exide Industries, Amara Raja Batteries, HBL Power Systems.

Dividend Payout Ratio (Dpr)

the amount of dividend given as compared to what the earning of share is. It shows us the ratio of dividend as per the ratio of earning of share.

Dividend Payout Ratio

Dividend per share
Earning per share

(i)Company	(j)company	significance
Exide Industries	Amara raja Batteries	0.331
	HBL Power Systems	0.007
Amara raja Batteries	Exide Industries	0.331
	HBL Power Systems	0.080
HBL Power Systems	Exide Industries	0.007
	Amara raja Batteries	0.080

The Dividends Payout Ratio position of the selected companies is summarized in Table 6.7.1 and discussed below.

Interpretation

The data in the Table 6.7.1 reveal that of both companies the payout ratio of Exide Industries was highest (31.39%) in the year of 2009-2010, Amara Raja batteries was (30.93%) in the year 2010-2011 and HBL Power Systems was (23.79%). An insight in to the data reveals that there was a fluctuating in the distribution of payout ratio of sample companies during the study period. The average dividend payout of Exide was (23.94%), Amara Raja batteries are (18.64%) and Hbl Power Systems are (15.74%), these averages showing that Exide was efficient in generating highest ratio of earnings as the dividends than Amara raja batteries and HBL Power Systems.

Dividend Payout ratio of the selected companies			
Year	Exide Industries	Amararaja Batteries	HBL Power Systems
2008-2009	29.79	17.56	18.81
2009-2010	31.39	17.44	23.79
2010-2011	21.07	30.93	17.88
2011-2012	17.73	17.34	8.88
2012-2013	19.72	9.93	9.38
Mean	23.9400	18.6400	15.7480
S.D	6.21157	7.60271	6.44818

Sources: workings has been performed in MS-EXCEL from the data available in annual reports of companies concerned

The dividend payout ratio position of selected companies is compared and tested using the following hypothesis. The details are shown in Table 6.7.2.

H6: The dividend payout ratio of Exide Industries, Amara Raja batteries, HBL Power Systems does not differ significantly.

Table 6.7.2 One-way ANOVA for dividend payout ratio of Exide Industries, Amara Raja batteries, HBL Power Systems

Source of Variation	SS	Df	MS	F	P-value	F crit
Between Groups	172.604	2	86.302	1.877	0.195	3.89
Within Groups	551.855	12	45.988			
Total	724.459	14				

Note: one-way ANOVA has been performed in MS EXCEL

Inference

Since $F_{cal} < F_{crit}$ (at 5% significance level), the null hypothesis is accepted and hence it is concluded that operating profit ratio does not differ significantly in case of Exide Industries, Amara Raja batteries, HBL Power Systems.

Price Earning Ratio

This price earning ratio shows the relationship between market price per share and earning per share. Here we analyze what a shareholder is getting how much is justified by the current prevailing price of share in the market.

Price Earning ratio

Market price per share
Earning per share

Price Earnings Ratio of the selected companies			
Year	Exide industries	Amararaja Batteries	HBL Power Systems
2008-2009	6.95	1.14	2.13
2009-2010	22.33	3.27	8.40
2010-2011	18.04	5.67	3.22
2011-2012	23.72	7.41	2.85
2012-2013	35.63	19.47	2.55
Mean	21.33	7.39	3.83
S.D	10.35	7.15	2.59

Sources: workings has been performed in MS-EXCEL from the data available in annual reports of companies concerned

The price earnings position of selected companies is summarized in Table 6.5.1 and discussed below.

Interpretation

The data in Table 6.5.1 reveals that Exide industries have highest price earnings compared to Amara raja batteries. Except 2010-2011 there was significant improvement in case of Exide Industries and Amaraja batteries. The Exide Industries has highest price earnings (35.63%) in the year 2012-2013 during the study period, Amara raja batteries, Hbl power systems has the highest earnings of (19.47%), (8.40%) in 2012-2013, 2008-2009 The 5 year average price earnings ratio of Exide Industries was significantly higher (21.33% times) than that of Amara raja batteries (7.39% times), HBL Power systems (3.83%) during the study period.

The price earnings ratio position of selected companies is compared and tested using the following hypothesis. The details are shown in Table 6.5.2.

H4: The price earnings ratio of Exide Industries, Amara Raja batteries, HBL Power Systems does not differ significantly.

Table 6.5.2 One-way ANOVA for price earnings ratio of Exide Industries, Amara Raja batteries, HBL Power Systems

Source of Variation	SS	Df	MS	F	P-value	F crit
Between Groups	855.762	2	427.881	7.774	0.007	3.89
Within Groups	660.478	12	55.040			
Total	1516.240	14				

Note: one-way ANOVA has been performed in MS EXCEL

Inference

Since $F_{cal} > F_{crit}$ (at 5% significance level), the null hypothesis is rejected and hence it is concluded that earnings per ratio does differ significantly in case of Exide Industries, Amara Raja batteries, HBL Power Systems.

Findings of the Study

- Operating profit margin indicates how the company controlling its expenses, when comparing all the 3 companies, Exide Industries has the highest ratio on an average of (15.95%).
- Net Profit Margin shows the profitability of a company over a period of time with its total sales. The average net profit margin is high (13.51%) in Amara raja Batteries when compared to Exide and HBL Power systems.
- Return on Equity, it indicates the profit the company earns by its share holders fund. During the study period the Amara raja Batteries utilizes the fund properly with an average of (28.32%).
- EPS, it indicates company profitability. Amara raja batteries have highest ratio .it reflects the capacity of the company to pay more dividend.
- Earnings are high in Exide Industries over the other two companies (21.33%) and Dividend per Ratio of Exide Industries has the highest ratio (23.94%).
- A solid dividend payout ratio shows solid dividend policy by the company where Exide Industries has the highest DPR on an average of (23.94%).
- Inventory Turnover Ratio, shows the efficiency to manage the inventory, where Amara raja batteries has the highest ratio and also in fixed asset ratio.
- Debtors Turnover ratio shows how well the company managing its receivables, where the Exide Industries has the highest ratio on an average of (15.13%).

Recommendations

- HBL Power System must take necessary step to boost up their entire performance because it is too low when compared to the both companies.
- Exide Industries have to take necessary steps to raise sale to increase net profit margin.
- Overall success of the firm depends on earning so Exide Industries must take necessary step to increase earnings per share.

CONCLUSION

The fundamental analysis, which aims at developing an imminent into the economy performance of the business, from the view point of investment decisions. Thus the present study has been conducted to examine the economic sustainability of the three major battery industries in the India: Exide, Amara raja, HBL Power systems. The study revealed that Exide Industries performed better in industry. and Dividend per Share. HBL Power Systems performance was low when compared to both the companies.

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