

Vol 5 Issue 6 Dec 2015

ISSN No :2231-5063

---

# International Multidisciplinary Research Journal

## *Golden Research Thoughts*

Chief Editor  
Dr.Tukaram Narayan Shinde

---

Publisher  
Mrs.Laxmi Ashok Yakkaldevi

Associate Editor  
Dr.Rajani Dalvi

Honorary  
Mr.Ashok Yakkaldevi

## Welcome to GRT

**RNI MAHMUL/2011/38595**

**ISSN No.2231-5063**

Golden Research Thoughts Journal is a multidisciplinary research journal, published monthly in English, Hindi & Marathi Language. All research papers submitted to the journal will be double - blind peer reviewed referred by members of the editorial board. Readers will include investigator in universities, research institutes government and industry with research interest in the general subjects.

### **International Advisory Board**

Flávio de São Pedro Filho Federal University of Rondonia, Brazil	Mohammad Hailat Dept. of Mathematical Sciences, University of South Carolina Aiken	Hasan Baktir English Language and Literature Department, Kayseri
Kamani Perera Regional Center For Strategic Studies, Sri Lanka	Abdullah Sabbagh Engineering Studies, Sydney	Ghayoor Abbas Chotana Dept of Chemistry, Lahore University of Management Sciences[PK]
Janaki Sinnasamy Librarian, University of Malaya	Ecaterina Patrascu Spiru Haret University, Bucharest	Anna Maria Constantinovici AL. I. Cuza University, Romania
Romona Mihaila Spiru Haret University, Romania	Loredana Bosca Spiru Haret University, Romania	Ilie Pintea, Spiru Haret University, Romania
Delia Serbescu Spiru Haret University, Bucharest, Romania	Fabricio Moraes de Almeida Federal University of Rondonia, Brazil	Xiaohua Yang PhD, USA
Anurag Misra DBS College, Kanpur	George - Calin SERITAN Faculty of Philosophy and Socio-Political Sciences AL. I. Cuza University, Iasi	.....More
Titus PopPhD, Partium Christian University, Oradea,Romania		

### **Editorial Board**

Pratap Vyamktrao Naikwade ASP College Devrukh,Ratnagiri,MS India	Iresh Swami Ex - VC. Solapur University, Solapur	Rajendra Shendge Director, B.C.U.D. Solapur University, Solapur
R. R. Patil Head Geology Department Solapur University,Solapur	N.S. Dhaygude Ex. Prin. Dayanand College, Solapur	R. R. Yaliker Director Managment Institute, Solapur
Rama Bhosale Prin. and Jt. Director Higher Education, Panvel	Narendra Kadu Jt. Director Higher Education, Pune	Umesh Rajderkar Head Humanities & Social Science YCMOU,Nashik
Salve R. N. Department of Sociology, Shivaji University,Kolhapur	K. M. Bhandarkar Praful Patel College of Education, Gondia	S. R. Pandya Head Education Dept. Mumbai University, Mumbai
Govind P. Shinde Bharati Vidyapeeth School of Distance Education Center, Navi Mumbai	Sonal Singh Vikram University, Ujjain	Alka Darshan Shrivastava Shaskiya Snatkottar Mahavidyalaya, Dhar
Chakane Sanjay Dnyaneshwar Arts, Science & Commerce College, Indapur, Pune	G. P. Patankar S. D. M. Degree College, Honavar, Karnataka	Rahul Shriram Sudke Devi Ahilya Vishwavidyalaya, Indore
Awadhesh Kumar Shirotriya Secretary,Play India Play,Meerut(U.P.)	Maj. S. Bakhtiar Choudhary Director,Hyderabad AP India.	S.KANNAN Annamalai University,TN
	S.Parvathi Devi Ph.D.-University of Allahabad	Satish Kumar Kalhotra Maulana Azad National Urdu University
	Sonal Singh, Vikram University, Ujjain	

**Address:-Ashok Yakkaldevi 258/34, Raviwar Peth, Solapur - 413 005 Maharashtra, India**  
**Cell : 9595 359 435, Ph No: 02172372010 Email: ayisrj@yahoo.in Website: www.aygrt.isrj.net**



## DETERMINANTS OF PROFITABILITY OF THE SELECT ALUMINIUM COMPANIES IN INDIA

J. Udhaya Kumar<sup>1</sup> and M. Thygarajan<sup>2</sup>

<sup>1</sup>Assistant Professor in Commerce , Dr. SNS Rajalakshmi College of Arts & Science Saravanampatti Road, Coimbatore, Tamil Nadu.

<sup>2</sup>Associate Professor in Commerce , Dr. SNS Rajalakshmi College of Arts & Science , Saravanampatti Road, Coimbatore, Tamil Nadu.

### ABSTRACT

India was the second largest consumer of aluminium in Asia during the year 2012, with the electrical sector being the main driver of demand. As the largest producer of aluminium in India, the Indian aluminium industry was well positioned to cater to its growing demand for aluminium. The paper presents some company performance analysis models, which highlight the influencing factors. The models are based on regression analysis, and the obtained results emphasize the strong connection between the profitability of the analyzed company

expresses through Return on assets and the management of available resources

**KEYWORDS** :Aluminium, Determinants of Profitability, Return on assets, trend co-efficient .

### INTRODUCTION

India was the second largest consumer of aluminium in Asia during the year 2012, with the electrical sector being the main driver of demand. As the largest producer of aluminium in India, the Indian aluminium industry was well positioned to cater to its growing demand for aluminium. In addition to the electrical sector, the automotive and construction sectors also contribute a major share for the aluminium market in India. As per forecast, the primary aluminium demand in India is



expected to reach 6 million tonnes in the year 2025, which equates to about 4.1kg of per capita aluminium consumption in 2025. It has been projected that the Aluminium Demand in the country may touch around 5 million ton by 2015 and 10 million ton by 2020 which can generate employment to nearly 7 million people in the country in 2020. Besides employment generation, the Industry can contribute nearly Rs. 33000 crore annually to exchequer. With the expectation of moderation in growth in India's industrial production and real gross domestic product (GDP), demand for aluminium is likely to increase at an annual average growth rate of 6 per cent during 2012-2014.

### OBJECTIVES OF THE STUDY

1. To assess the determinant of profitability of the select aluminium companies in India.
2. To examine the trend of the select aluminium companies in India

### REVIEW OF LITERATURE

Dr. Shishir Pandey and Vikas Kumar Jaiswal(2014) in their paper “Comparative Study of Profitability analysis of Indian Aluminium Industry between Public and Private sector”. The main objective of this research paper is to analyze the profitability position of the selected aluminium companies for five years (2008-2014). The study is based on secondary data. Profitability position is analyzed by using different profitability ratios and regression analysis of selected aluminium companies. Through Regression Analysis has shown favourable result in case of HINDALCO but not the same for NALCO. Hence, it may be said that aluminium industry in India shows satisfactory performance in concerned with profitability.

Dr.P.B.Banudevi, et al.(2014) in their research paper “An Exploratory Study on Efficiency & Solvency Position of Aluminum Industry (With Special Reference to Bharat Aluminum Company Ltd), the aim of this paper is to study the nature and Association between Solvency and Efficiency. They analyze how well an Industry uses its assets and liabilities internally whereas solvency aspect is used to measure long term obligations of the company. It has been proven statistically by correlation analysis. Concluded that the relatively high Inventory observed in firms is important to increasing the solvency, and hence the increased working capital requirements associated with long-term debt have not impaired the ability of firm to remain efficient and solvent.

### RESEARCH METHODOLOGY

#### • Sources of data

The financial data for the study are drawn from the secondary sources. The Prowess corporate databases developed by Centre for Monitoring Indian Economy and Capital Line have been used as principal sources.

#### • Sample Design

The present study has drawn a sample of ten companies, whose securities should be traded in Indian Stock Markets.

#### • Selection of Period for the Study

The period for this study was covered ten years from 2004-05 to 2013-14

#### • Tools used for analysis

Trend Analysis, Multiple Regression Analysis, ANOVA

**TABLE –1**  
**ESTIMATES OF TREND CO-EFFICIENTS FOR TOTAL SALES OF THE SELECT ALUMINIUM COMPANIES IN INDIA**

Companies	P = $\alpha + \beta t + e$				p-value
	$\alpha$	$\beta t$	R <sup>2</sup>	F-value	
Alicon Castalloy Ltd.	87.0753	42.2038*t	73.9%	26.54	0.001**
Century Extrusions Ltd.	58.8173	16.1292*t	88.8%	72.70	0.000**
Gujarat Foils Ltd.	71.8873	37.0043*t	84.3%	49.37	0.000**
Hind Aluminium Industries Ltd.	10128.6	2090.56*t	90.4%	86.05	0.000**
Hindalco Industries Ltd.	4748.21	251.158*t	63.5%	16.65	0.004**
National Aluminium Co. Ltd.	97.844	12.4215*t	67.1%	19.35	0.002**
Pg Foils Ltd.	11.17	5.83073*t	96.3%	234.36	0.000**
Sacheta Metals Ltd.	49.0293	6.56594*t	53.3%	11.27	0.010**
Sudal Industries Ltd.	-0.979333	1.72861*t	95.0%	171.62	0.000**
Synthiko Foils Ltd.	-39.908	41.5502*t	83.2%	45.52	0.000**

\*\* P<0.01 \*P<0.05

The results of estimate of trend co-efficient for sales of the select aluminium companies are presented in the table 1. It has been clear that, the p-value was less than 0.01 and 0.05; hence, the null hypothesis “There is no significant difference between actual value and the trend value of sales among different years of the select companies” have rejected at 1 percent and 5 percent level of significance as there was significant difference between actual value and the trend value of the sales among selected companies for different years.

**TABLE – 2**  
**PROJECTIONS FOR SALES OF THE SELECT ALUMINIUM COMPANIES IN INDIA**

Year	Alicon Castalloy Ltd.	Century Extrusions Ltd.	Gujarat Foils Ltd.	Hind Aluminium Industries Ltd.	Hindalco Industries Ltd.	National Aluminium Co. Ltd.	Pg Foils Ltd.	Sacheta Metals Ltd.	Sudal Industries Ltd.	Synthiko Foils Ltd.
Mar-15	551.317	236.239	478.935	33124.7	7510.95	234.480	75.308	121.255	18.0353	417.144
Mar-16	593.520	252.368	515.939	35215.3	7762.11	246.901	81.139	127.821	19.7639	458.694
Mar-17	635.724	268.497	552.943	37305.9	8013.27	259.323	86.969	134.387	21.4925	500.244
Mar-18	677.928	284.626	589.948	39396.4	8264.43	271.744	92.800	140.952	23.2212	541.795
Mar-19	720.132	300.756	626.952	41487.0	8515.59	284.166	98.631	147.518	24.9498	583.345
Mar- 20	762.335	316.885	663.956	43577.5	8766.75	296.587	104.462	154.084	26.6784	624.895

Source : Computed ( Rs in Million)

The projections obtained for the select aluminium companies by linear growth models listed in the Table 2 shows that the select companies have been growing marginally. The trend movement of the select companies for the year 2020 revealed that the sales units has been highest in the Hind Aluminium Industries Ltd. followed by Hindalco Industries Ltd. with the trend value of 43577.5 and 8766.75 respectively. It has been the lowest in Sudal Industries Ltd. with the trend value of 26.6784.



**TABLE 3**  
**MULTIPLE REGRESSION ANALYSIS OF THE SELECT VARIABLES WITH THE SELECT ALUMINIUM COMPANIES IN INDIA**

Ratio's	ACL	CEL	GFL	HAIL	HIL	NALCO	PGFL	SML	SIL	SFL
	<b>p-value</b>									
Quick Ratio	.690	.318	.723	.769	.796	.490	.366	.628	.792	.701
Current Ratio	.835	.194	.295	.796	.703	.172	.181	.039*	.259	.270
Interest Coverage Ratio	.000**	.850	.002**	.559	.194	.958	.001**	1.000	.059	.461
Debt Equity Ratio	.818	.005**	.834	.629	.652	.745	.675	.588	.111	.802
Fixed Asset To Net Worth Ratio	.753	.801	.461	.545	.886	.330	.698	.512	.020*	.025*
Inventory Turnover Ratio	.603	.139	.213	.974	.319	.000**	.471	.261	.097	.069
Debtor Turnover Ratio	.762	.182	.277	.658	.283	.525	.698	.324	.895	.539
Total Asset Turnover Ratio	.787	.847	.933	.630	.681	.111	.670	.590	.102	.803
Working Capital Turnover Ratio	.125	.325	.139	.000**	.954	.197	.617	.490	.178	.877
Growth Rate	.610	.920	.054	.332	.107	.113	.632	.152	.137	.256
Firm Size	.229	.712	.456	.111	.000**	.007**	.192	.004**	.026*	.113
<b>R value</b>	.923	.808	.855	.904	.923	.970	.879	.658	.695	.698
<b>R<sup>2</sup> value</b>	.851	.652	.731	.817	.851	.941	.773	.433	.482	.488
<b>Adjusted R<sup>2</sup> value</b>	.833	.609	.697	.794	.832	.933	.744	.362	.418	.423
<b>F-value</b>	45.825	14.999	21.725	.904	45.730	126.793	27.188	6.108	7.457	7.611
<b>Sig.</b>	.000**	.005**	.002**	.000	.000	.000	.001**	.039*	.026*	.025*
<b>S/NS</b>	S	S	S	S	S	S	S	S	S	S

It has observed from the above table that the multiple regression co-efficient values of the select aluminium companies, and the F value of ANOVA test. The p-value of ACL have significant for the variable when the other variables were kept constant namely,  $X_3$ - Interest Coverage Ratio (p- .000,  $p < 0.01$ ) respectively. The p-value of CEL have significant for the variable when the other variables were kept constant namely,  $X_4$ - Debt Equity Ratio (p- .005,  $p < 0.01$ ) respectively. The Sig (p) values of GFL gave a rough indication of the impact of each predictor variable like  $X_3$  - Interest coverage ratio (p- 0.002,  $p < 0.01$ ), suggested that a predictor variable was having a large impact on the profitability of the company. The p-values of HAIL for this variable when the other variables kept constant namely  $X_9$  - Working Capital Turnover Ratio (p- .000,  $p < 0.01$ ). The p-value of HIL was significant for the variable when the other variables were kept constant namely,  $X_{11}$ - Firm Size (p .000,  $p < 0.01$ ). The Sig (p) values of NALCO gave a rough indication of the impact of each predictor variable like  $X_6$  - Inventory turnover ratio (p- 0.000,  $p < 0.01$ ) &  $X_{11}$ -Firm Size (p- .007,  $p < 0.01$ ) suggested that a predictor variable was having a large impact on the profitability of the company. The p-value of PGFL for these variables when the other variables kept constant namely were  $X_3$ -Interest Coverage Ratio (p- .001,  $p < 0.01$ ). The p-value of SML was significant for the following variables when the other variables were kept constant namely  $X_2$  - Current ratio p- 0.039,  $p < 0.01$  and  $X_{11}$  - Firm size p-0..004,  $p < 0.01$  respectively. The Sig (p) values of SIL gave a rough indication of the impact of each predictor variable like  $X_5$ - Fixed Asset To Net Worth Ratio (p- 0.020,  $p < 0.05$ ) &  $X_{11}$ -Firm Size (p- .026,  $p < 0.05$ ) suggested that a predictor variable was having a large impact on the profitability of the company. The p-value of SFL was significant for the following variables when the other variables were kept constant namely  $X_5$  - Fixed Asset To Net Worth Ratio (t- 2.759, p- 0.025,  $p < 0.05$ ) respectively.

As per the results of ANOVA, the p-value is less than 0.05 ( $p < 0.05$ ). Hence, the model has statistically significant for all the select aluminium companies in India.

## CONCLUSION

The results of the study show a strong dependent relationship between company performance

#### DETERMINANTS OF PROFITABILITY OF THE SELECT ALUMINIUM COMPANIES IN INDIA

---

and how the available resources are managed. For performance indicator Return on assets were identified some influence factors that through their common action can contribute to increasing or lowering of the profitability of the analyzed company. From the analysis of various determinants of profitability, it is clear that the firms having big SIZE are earning good return on total assets. As the SIZE of the firm is the strongest factor in determining the profitability, it is therefore suggested that the management should concentrate on increasing the size because the firms having big size have access to capital market and enjoy benefit of low cost of sales and hence they earn good return on total assets.

#### ABBREVIATION

<b>ACL</b>	ALICON CASTALLOY LTD.
<b>CEL</b>	CENTURY EXTRUSIONS LTD.
<b>GFL</b>	GUJARAT FOILS LTD.
<b>HAIL</b>	HIND ALUMINIUM INDUSTRIES LTD.
<b>HIL</b>	HINDALCO INDUSTRIES LTD
<b>NALCO</b>	NATIONAL ALUMINIUM CO.LTD.
<b>PGFL</b>	PG FOILS LTD.
<b>SML</b>	SACHETA METALS LTD.
<b>SIL</b>	SUDAL INDUSTRIES LTD
<b>SFL</b>	SYNTHIKO FOILS LTD.

#### REFERENCE:

- 1.Dr. Shishir Pandey and Vikas Kumar Jaiswal(2014) "Comparative Study of Profitability analysis of Indian Aluminium Industry between Public and Private sector" GE-International Journal of Management Research, Volume -2, Issue -12 (DECEMBER 2014), pp.143-15.
- 2.Dr.P.B.Banudevi, Ms.V.Sengani & Ms.K.Bagyalakshmi(2014)"An Exploratory Study on Efficiency &Solvency Position of Aluminum Industry (With Special Reference to Bharat Aluminum Company Ltd)", International Journal of Scientific Research, Volume : 3 | Issue : 12 | December 2014 , pp.173-174.

# Publish Research Article International Level Multidisciplinary Research Journal For All Subjects

Dear Sir/Mam,

We invite unpublished Research Paper, Summary of Research Project, Theses, Books and Book Review for publication, you will be pleased to know that our journals are

## Associated and Indexed, India

- \* International Scientific Journal Consortium
- \* OPEN J-GATE

## Associated and Indexed, USA

- EBSCO
- Index Copernicus
- Publication Index
- Academic Journal Database
- Contemporary Research Index
- Academic Paper Database
- Digital Journals Database
- Current Index to Scholarly Journals
- Elite Scientific Journal Archive
- Directory Of Academic Resources
- Scholar Journal Index
- Recent Science Index
- Scientific Resources Database
- Directory Of Research Journal Indexing

Golden Research Thoughts  
258/34 Raviwar Peth Solapur-413005, Maharashtra  
Contact-9595359435  
E-Mail-ayisrj@yahoo.in/ayisrj2011@gmail.com  
Website : www.aygrt.isrj.net