

Evaluation of Financial Health of an Enterprise: A Case Study of a Multi-national Company

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Abstract

BOC Bangladesh Limited, formerly known as Bangladesh Oxygen Limited, is one of the most important companies in Bangladesh. Its principal activity is to manufacture and supply of industrial and medical gases, welding equipment and products, certain medical products, anesthesia and ancillary equipment and consumables, etc for the economic development of Bangladesh. The company continues to be the principal supplier of industrial & medical gases in the country. The overall performance of the company, though below expectation, was satisfactory. There was an increase in the demand for MS Electrodes & Carbon Dioxide that was managed quite well. The cost of production was adversely hit in case of ASU due to low volume. In the case of MS Electrodes there was a substantial increase in raw material cost. Some savings were made through efficiency measures driven under a group-sponsored program. Overall loss in margins due to the above factors and general cost escalation could not be reduced through price revisions. To analyze the performance, year –wise growth, EPS, DPS, and financial performance analysis are used so as to come up with the suggestions. The study is mainly based on secondary sources from 1996 to 2007. The data have been analyzed to evaluate its operating and financial activities.

Key Words: Turnover, Earning per share (EPS), Dividend per share (DPS), and Simple Exponential Smoothing Linear Method (SESLM).

Introduction

BOC Bangladesh Limited is both an old and a relatively new company. It is old because it has been present in what are now Bangladesh, in one form or another, since the days of British India. It is new, because it was registered under its own identity only in 1973. The company began, after the independence of Bangladesh, with a modest turnover of a little over Tk. 6 million. The turnover in 2000 was increased to about Tk. 754.6 million. BOC Bangladesh Limited started as Bangladesh Oxygen Plants and 3 Dissolved Acetylene Plants, one of each in Dhaka, Chittagong and Khulna. In addition, it had an operating contract to run the Oxygen Plants, Chittagong Steel Mills (CSM). For the manufacture of Welding Electrodes the Company had only one very small extruder at Chittagong. From inception, the company has remained the sole supplier of Medical Oxygen in the country. In the mid-70s Nitrous Oxide Plant, the only one of its kind in Bangladesh, was imported and installed in Dhaka to provide the nation with this vital anaesthetic gas. In the later decades a Carbon Dioxide Plant was bought and installed in Dhaka and this was the first in the country to produce dry ice. In the early 80s the first liquid gas plant was imported

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from New Zealand and again installed in Dhaka, where the demand for Oxygen was concentrated. Shortly after that came the first boom in ship-cutting and demand for Oxygen “went through the roof”. The company invested immediately in additional compressing capacity for the surplus Oxygen at CSM while simultaneously pursuing the Government to permit it to invest in new production capacity. Eventually the company was permitted to import 400 cubic meters per hour air separation plant from Australia, capable of producing Liquid Oxygen. This was installed in Chittagong, essentially to feed the ship cutting market on the beach. In the early 90s booster was added to this to increase output, pending investment in further capacity in mid 90’s. BOC made additional investment in ASU i.e. 30TPD plant in Dhaka. Bangladesh Oxygen Limited changed its name to BOC Bangladesh Limited in March 1997 in line with a world-wide program of the BOC Group. In March 1998 a second line of production was added to the integrated Electrode Factory at Rupganj, doubling the capacity. In November 1998 a new site with a 20TPD liquid plant was acquired in Shitalpur, Chittagong. The BOC Group, of which BOC Bangladesh Limited is a member, has its headquarters at Windlesham in the UK. It employs over 40,000 people and contributes to the economies of nearly 60 countries world-wide, with a turnover in excess of US\$ 6 billion.

As a pioneer multinational company in the gases and welding business, BOC Bangladesh Limited is totally committed to health, safety and the environment for its employees, customers, and stakeholders. It has been present in our country for over 50 years with continuous expansion in operations and business. From inception, the company had remained the sole supplier of medical oxygen in the country. With a modest appearance at the beginning, BOC has a strong in built culture with work values reinforced and developed over the years which are reflected in the performance of its employees. It has an excellent welding training center at Tejgaon factory premises equipped with modern facilities and audio-visual equipment. This center meets the needs of the skilled labours for the local as well as global job market (job welders).

Objectives of the Study

1. To analyze the managerial performance of BOC Bangladesh Limited during 1996-2007.
2. To measure the yearwise growth of BOC Bangladesh Limited during 1996-2007.
3. To measure the yearwise EPS, DPS of BOC Bangladesh Limited during 1996-2007.
4. To measure the interrelationship of the relevant issues of BOC Bangladesh Ltd during 1996-2007
5. To forecast financial performance from 2008 – 2019.

Methodology of the Study

It is a case study of BOC and it is mainly based on secondary data. The data from the year 1996 to 2007 have been analyzed to evaluate the activity levels of BOC. Mainly to measure the financial health some parameters or items are selected i.e. Profit After Tax, Turnover or Sales, Tax, Dividends, EPS, DPS, Shareholders Equity, General Reserve, Share Capital, Net Fixed Assets and Depreciation items. To measure the financial health of BOC Bangladesh Ltd. different volumes, ratios, & tools like current assets to sales, profit before tax to sales, profit after tax to sales, profit after to total assets, equity to total assets, equity to sales etc with growth over previous year are applied for the study during 1996-2007. As the forecasting method Simple

Exponential Smoothing Linear Method (SESLM) during 2007 to 2019 is applied. This tool is used to know the future position of BOC Bangladesh Ltd. Moreover among the various statistical tools i.e. average, standard deviation and co-efficient of variation, annual growth rate, maximum level, & minimum level etc. are applied in this study. Multiple correlations and multiple regressions have been analyzed to find out the affecting factors of BOC's activities during the study period.

Analysis & Interpretation of data

Table No. 1 : The table in the next page shows that the detailed information on turnover or sales, profit before tax,, deferred tax, dividends, capital employed, current assets, general reserves, shareholders equity, net fixed assets, depreciation, earning per share, dividends per share, net assets per share, shareholders equity, total assets, current liabilities, working funds etc are presented with growth over the previous year (GOPY) i.e. for the period of 1996-2007 from the secondary sources of data for the study. The average GOPY(growth over the previous year) of sales of BOC was 10.19 percent while the average GOPY profit after tax was 9.2 percent including 9.2 percent of average GOPY of dividend of BOC during 1996-2007. As we know, EPS is a measure of net income earned on each share of common stock. It is computed dividing the net income by the number of share outstanding (NOSO) during the year. A measure of net income earned on a per share basis provides a useful perspective for determining profitability. From that table we come upon a decision that average position of EPS and DPS of BOC as Tk. 0.07 and Tk 0.09 respectively were not satisfactory during the study period. But we see that there were continuous increments of DPS and EPS from 2005 to 2007. If company can control all sorts of its expenses and ensure productivity, it will increase EPS in near future. Moreover, the value of co-efficient of variance (CV) of earning per share (EPS) is 0.53 which indicates that the variability of EPS of the company is 53%. During the study period, the co-efficient of variance of profit after tax (PAT) is 0.40 that also indicates the average variability of PAT is 40%. Here the CV of PAT and EPS are consistent indicating the successful survivability of the company.

Table No. 2 : The table below shows the selected management ratios i.e. current assets to sales, profit before tax to sales, profit after tax to sales, profit after tax to total assets, equity to total assets, equity to sales etc with growth over previous year during 1996-2007. The average position of current assets (CA) to sales was 35.50 percent while its GOPY (growth over the previous year) was found negative i.e. -0.64 percent during the study period. The average position of net profit to sales was 15.07 percent and PAT to total asset position was 15.52 percent while its GOPY (growth over the previous year) was also negative i.e. -03.24 percent. This implies poor performance (as GOPY was negative) on profitability of the company.

Table – 2
Consolidated Information of Management Ratios of BOC with Growth over Previous Year (GOPY)
during 1996- 2007

Year	Current Assets to Sales	Growth over previous year	PBT to Sales	GOPY (%)	PBT to Total Assets	GOPY (%)	PAT to Sales	GOPY (%)	PAT Total Asset	GOPY (%)	Sales to Total Assets	GOPY (%)	Equity to Total Assets	GOPY (%)	Equity to Sales	GOPY (%)
	1		2		3		4		5		6		7		8	
1996	41.05		26.22		45.47		16.6		28.78		173.42		9207.71		95.45	
1997	34.86	-15.09	26.35	0.49	41.18	-9.43	17.29	4.18	27.02	-6.11	156.29	-9.88	12509.4	35.83	109.5	14.67
1998	48.08	39.66	22.08	-16.2	18.95	-53.97	1342	-22.4	11.52	-57.4	85.86	-45.1	8908.21	-28.79	90.64	-17.19
1999	37.61	-22.71	12.27	-44.4	11.35	-40.14	8.73	-34.97	8.07	-29.9	92.5	7.73	7855.60	-11.82	91.32	0.75
2000	39.03	3.74	10.5	-14.4	1037	-8.59	9.76	11.81	9.64	1944	98.8	6.82	5124	-34.77	85.21	-6.69
2001	43.01	10.19	17.1	62.89	12.59	21.34	15.96	63.55	11.74	21.83	73.6	-25.5	9787.75	91.02	90.31	5.99
2002	31.76	-26.17	15.96	-6.65	14.82	17.75	14.3	-10.38	13.28	13.05	92.84	26.14	10292.7	5.16	71.6	-20.72
2003	31.99	0.74	20.95	31.26	16.66	12.43	19.43	35.84	15.45	16.35	79.52	-14.4	16270.3	58.08	71.82	0.31
2004	29.23	-8.64	18.88	-9.91	16.82	0.97	17.25	-11.18	15.38	-0.45	89.13	12.08	14176.9	-12.87	74.53	3.77
2005	25.8	-11.72	20.87	10.54	20.03	19.04	18.77	8.79	18.02	17.15	95.98	7.69	21011.9	48.21	76.87	3.15
2006	31.11	20.58	20.1	-3.67	19.11	-4.57	15.1	-19.58	14.35	-20.3	95.08	-0.93	13663.3	-34.97	81.19	5.62
2007	31.83	2.33	18.32	-8.85	16.69	-12.66	14.3	-5.28	13.03	-9.24	91.11	-4.18	10774.2	-21.14	94.58	16.49
AVG	35.5	-0.64	19.13	0.09	20.34	-5.26	15.07	1.85	15.52	-3.24	102.01	-3.59	11631.9	8.34	86.08	0.56
SD	6.54	19.38	4.81	27.79	11.20	24.19	3.27	28.09	6.38	24.89	30.41	19.64	4228.71	43.02	11.4	11.6
CV	18.43	-3006	25.16	2949	55.06	-460.2	21.72	1515.05	41.08	-769	29.81	-548	36.35	503.7	13.24	2078
Max. Lev.	48.68	39.66	26.35	62.89	45.47	21.34	19.43	63.55	28.78	21.83	173.42	26.14	21011.9	91.02	109.5	16.49
Min. Lev.	25.8	-26.17	10.5	-44.4	10.37	-53.97	8.73	-34.97	8.07	-57.4	73.6	-45.1	5124.00	-34.97	71.60	-20.72

Table No. 3 : The table in the next page shows the selected activity ratios i.e. Working Capital Turnover (WCTO) ratio, Creditors Turnover Ratio, Fixed Assets Turnover ratio, Assets Turnover ratio, Debtors Turnover ratio, Inventory turnover ratio, & Current Assets Turnover ratio, etc with growth over previous year i.e. for the study period 1996-07. The average position of WCTO was 68.19 percent while its GOPY was found 68.65 percent during the study period. The average position of assets turnover was 3.56 percent and, while inventory turnover was 7.36 percent. This implies favorable performance in the field of various functional areas of the company during the study period.

Table – 3
Management Ratios of BOC with Growth over previous year (GOPY) during 1996- 2007

Year	Working Capital Turnover Ratio	GOPY (%)	Creditors Turnover Ratio	GOPY (%)	Fixed Assets Turnover	GOPY (%)	Assets Turnover Ratio	GOPY (%)	Debtors Turnover Ratio	GOPY (%)	Invent Turnover Ratio	GOPY (%)	Current Assets Turnover Ratio	GOPY (%)
	1		2		3		4		3		6		7	
1996	5.26		0.08		12.04		0.22		10.12		0.95	21.45	4.87	
1997	11.41	116.9	0.05	-36.54	6.87	-42.96	12.04	5317.5	17.51	73.04	5.4	27.46	5.74	17.77
1998	28.11	146.3	0.13	143.3	2.95	-57.04	6.87	-42.96	21.83	24.64	7.04	30.21	4.11	-28.4
1999	60.10	113.9	0.06	-51.77	2.84	-3.82	2.95	-57.04	18.46	-15.43	3.43	1.26	5.32	29.38
2000	61.57	2.44	0.07	5.66	3.22	13.36	2.84	-3.82	23.61	27.94	7.56	120.6	5.12	-3.61
2001	25.44	-58.67	0.05	-28.97	2.15	-33.04	3.22	13.36	37.78	59.99	8.71	15.17	4.65	-9.25
2002	49.44	94.32	0.06	26.82	2.63	22.25	2.15	-33.04	24.86	-34.19	6.1	-29.99	6.3	35.44
2003	222.83	350.7	0.03	-41.32	2.13	-18.99	2.63	22.25	40.99	64.88	9.17	50.35	6.25	-0.73
2004	55.39	-75.14	0.05	35.69	2.41	13	2.13	-18.99	41.01	0.03	8.67	-5.44	6.84	9.46
2005	95.27	71.98	0.04	-6.13	2.55	5.85	2.41	13	46.28	12.85	9.57	10.34	7.75	13.27
2006	134.7	41.39	0.11	141.6	2.7	5.85	2.55	5.00	36.85	-20.37	10.91	13.99	6.43	-17.1
2007	68.73	-48.97	0.13	18.27	2.57	-4.96	2.7	5.85	25.17	-31.71	10.76	-1.33	6.28	-2.27
AVG	68.19	68.65	0.07	18.77	3.75	-9.14	3.56	474.72	28.71	14.7	7.36	16.79	5.81	4.0
SD	60.54	121.0	0.03	67.56	2.9	25.66	3.06	1606.40	11.43	38.92	2.98	42.54	1.03	19.3
CV	88.78	176.3	45.44	359.9	77.15	-280.8	85.94	338.38	39.8	264.8	40.56	253.3	17.78	482.6
Max Lev.	222.83	350.7	0.13	143.3	12.04	17.75	12.04	5317.5	46.28	73.04	10.91	120.6	7.75	35.44
Min. Lev.	5.26	-75.14	0.03	-51.77	2.13	-57.04	0.22	-57.04	10.12	-34.19	0.95	-51.26	4.11	-28.4

Table No. 4: The table in the next page shows the forecasting activities of BOC Bangladesh Ltd. during 1996- 2019 regarding the relevant factors like turnover/sales, capital employed, DPS, EPS, shareholders equity, total assets and profit after tax, etc. during 1996-2007 on the basis of actual data and forecasted values of various parameters during the period of 2008 to 2019 or 12 years selected for the period of forecasting analysis. This table indicates the estimated future value for the selected matter to measure the financial position of BOC during the period under study. It was calculated by the modern statistical tool Simple Exponential Smoothing learner Model ... Alpha = .100. The overall forecasted value was calculated on the basis of actual value of the each event during the period having the effectiveness of mean per error, mean square error; mean absolute percent error, etc.

Table No. 5: The table below shows the strength of the linear relationship between variables. Debtors turnover ratio is highly positively correlated (0.78) with inventory turn over ratio. Hence, debtor's turnover ratio and inventory turn over ratio increase simultaneously. From this table, it is also found that working capital turnover ratio has positive correlation with debtors' turnover (0.66) and inventory turnover (0.67) ratio. It also indicates the multiple correlation of operating profit (PBT) with other selected variables during the period. The operating profit bears a positive correlation with assets turnover (0.37) and creditors' turnover (0.12) and both the correlation co-efficient were significant. Operating profit has positive correlation with working capital turnover (0.23), inventory turnover (0.17) and debtors' turnover ratio (0.11) during the period.

After studying the major identifying factors i.e. PBT to sales, WCTR, ATR, DTR, ITR, and CTR; we further proceed for regression analysis considering PBT as dependent variable. The regression analysis has been done using the software SPSS and the results of the regression analysis have been shown by the following table:

Table - 5

Year	PBT To Sales	Working Capital Turnover Ratio (WCTR)	Assets Turnover Ratio (ATR)	Debtors Turnover Ratio (DTR)	Inventory Turnover Ratio (ITR)	Creditors Turnover Ratio (CTR)
	<i>y</i>	<i>x1</i>	<i>x2</i>	<i>x3</i>	<i>x4</i>	<i>x5</i>
1996	26.22	5.26	0.25	10.12	0.94	0.08
1997	26.35	11.41	12.04	17.51	5.4	0.05
1998	22.08	28.11	6.87	21.83	7.04	0.13
1999	12.27	60.1	2.95	18.46	3.43	0.06
2000	10.5	61.57	2.84	23.61	7.56	0.07
2001	17.1	25.44	3.22	37.78	8.71	0.05
2002	15.96	49.44	2.15	24.86	6.1	0.06
2003	20.95	124.52	2.63	40.99	9.17	0.03
2004	18.88	55.39	2.13	41.01	8.67	0.05
2005	20.87	95.27	2.41	46.28	9.57	0.04
2006	20.1	134.7	2.55	36.85	10.91	0.11
2007	18.32	68.73	2.7	25.17	10.76	0.13

Multiple Correlations

	<i>Column 1</i>	<i>Column 2</i>	<i>Column 3</i>	<i>Column 4</i>	<i>Column 5</i>	<i>Column 6</i>
Column 1	1					
Column 2	-0.23	1				
Column 3	0.37	-0.35	1			
Column 4	-0.11	0.66	-0.26	1		
Column 5	-0.17	0.67	-0.05	0.78	1	
Column 6	0.12	-0.05	0.04	-0.39	0.1	1

Multiple Regressions: Summary Output

<i>Regression Statistics:</i>			<i>ANOVA</i>				
<i>Multiple R</i>	0.61		<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance</i>
<i>R Square</i>	0.38	<i>Regression</i>	5	95.62	19.12	0.72	0.63
<i>Adjusted R S</i>	-0.15	<i>Residual</i>	6	159.19	26.53		
<i>Standard Error</i>	5.15	<i>Total</i>	11	254.81			
<i>Observations</i>	12						

Regression analysis reveals that PBT has a significant relation with independent variables i.e. WCTR, ATR, DTR, ITR, and CTR in our used model. The regression analysis tool performs linear regression analysis by using the “Least Square Method” to fit a line through a set of observations. We can analyze how a single dependent variable is affected by the values of one or more independent variables. Model summary indicates that $R = 0.61$ i.e. more than 50 percentage. So it is a favorable sign for the same and this indicates that the higher degree of linear association between dependent and independent variables as a whole. The R square value (0.38) states the goodness of fit of regression model. Estimated regression model shows that about 38% of the total variation of the independent variable is explained by the selected explanatory variables and the result is significant. The calculated value of F (0.72) is greater than that of tabulated value i.e. $0.72 > 0.202554$ at 5% level of significance for df (5) and df (6) degrees of freedom. We have identified some of square, mean square through ANOVA test to find out the relationship between the dependent and independent variables. Since significance of F value is greater than ($0.63 > 0.2279$) the table value i.e. a good relation exists between the dependent and independent variables.

Findings of the Study

Business and Financial Performances: The company’s average turnover growth of 10.19% over the previous year is commendable, specially when contrasted with the economy’s overall growth rate and somewhat subdued business environment that prevailed in the period. The growth in profit before tax was even more impressive flowing from improved turnover, strongly aided by cost containment and efficient fund management. The post tax profit growth was modest due to higher taxation charge in the year. This was because of the fact that benefit of tax holiday is gradually warming up as some units come out of the tax holiday period. Additionally, from this year the company is providing deferred tax with a view to rationalizing tax charges for the year in line with the accounting precise for the period. The company had regained a sound liquidity position sooner than anticipated. Its loans were repaid earlier than their maturity dates. Overall cash position was reversed from one of negative to one of surplus. In fact, the net improvement in cash position of the company was to the extent of Tk. 125.18 millions.

Industrial Products Division (IPD): The division’s performance in the year was helped by a short lived surge in demand for industrial oxygen from the ship breaking sector, a sector

characterized by its uncertainty of demand. This helped to overcome the slow or static demand for certain other core products, which are traditionally closely linked with Government's development expenditure.

Medical Products Division (MPD): Medical business's contribution to the company's profit was much better compared to the previous year. In addition to maintaining a steady growth in medical gases, it achieved exceedingly encouraging results in medical products. It was successful in clinching some large tender / project sales. These were mainly externally funded and resulted in some inflow of foreign currency.

In the year that we have left behind the company had no major development undertaking. The thrust was on improving and maintaining production capability of the company's manufacturing units. The company's capacity to ensure uninterrupted supply received in a boost with the acquisition of a back-up power plant in Rupganj. Now all the major production sites are equipped with fallback sources of power. If we look back, there is only one issue that has continued to be disappointing. It disappoints none more than the management itself who played a pivotal role in convincing the Government to permit LPG business in the private sector. As we all know, the company made some investments in a bottling plant. In spite of intensive discussions that are taking place with some multi-national gas companies, no headway could be made for the use of the bottling plant. We may recall that the original objective was to procure LPG from Bangladesh Petroleum Corporation which as a source turned out to be unreliable both in terms of supply and price. It has been assured that this issue would continue to receive a high priority and hope that a satisfactory solution will be reached in the near future. The policies and practices of human resource management and development were reviewed and changes were made in order to align these with those of the BOC group to the extent local conditions permitted. Industrial peace and harmony, which has come to characterize the industrial relationship in the company, had prevailed throughout the year. As part of the exercise for skill development of the employees, appropriate training needs were assessed and addressed on an ongoing basis. There are no higher priority issues on the management agenda than safety matters. Lots of efforts are taken and resources deployed to manage risks. Safety record of the company so far is one of the best among the BOC Group of companies. IMSS (Integrated Management System and Standard devised by the Group) implementation is in progress at Rupganj and Shitalpur sites. An Electrical and Engineering Audit of all the major installations had been carried out in the year under group supervision. Shitalpur site moved up to 3 star and Postagola to 2 stars under NOSA system of rating. Efforts were also made to improve drivers' safety standard. The composition of the Board remained the same as in the previous year. In addition to its outstanding performance and sterling qualities, the company results over the past 5 years would amply testify to the achievements made during the period.

On the basis of backdrop of a dull ship breaking sector and competitive pressures, there was virtually no growth in turnover in the year 2006. The turnover in the last year under discussion was Tk. 1289.43 million compared to Tk. 1287.85 million in the previous year.

Pre-tax profit in the year 2006 at Tk. 259.19 million was 3.6 % below the previous volume i.e. Tk. 268.74 million. The inflationary cost increase & escalation of price of raw materials had

eroded profit as they could not be passed on to the customers. Recognizable assistance came from the surplus arising out of the disposal of the Khulna land. Rationalization of cylinder holdings with non- trading and untraceable customers whose accrued cylinder rent far-exceeded cylinder deposits was useful. A 50% reduction in interest cost had also come as a boon.

During 2006, post tax profit of Tk. 165.88 million was nearly at the same level of the previous year's figure of 171.99 million. Substantial tax provision made for earlier years had been realized upon agreement on the assessments. This realize reduced the tax charged for the year over the previous year even after absorbing a large liability arising out of a new tax called dividend distribution tax. On the whole, there was an improvement in the liquidity position of the company in spite of paying a record dividend in the last year i.e. 2005. Working capital was managed satisfactorily but at the end of the study period trade debtors were undesirably high due to medical debts with the government which could not be recorded before the year-end despite best efforts.

Conclusion

BOC is totally committed to health, safety and the environment for its employees, customers, and stockholders. During the study period, the growth of the company is impressive because of improved turnover as well as efficient fund management. The overall performance of the company, though below expectation, was satisfactory. Under the prevailing business conditions in our country, the excess capacity in hand precludes any immediate need for investment in the existing production lines. During the year no new plant which calls for investment in capacity had been identified. No new initiative had, therefore, been taken during the year for fresh investment to increase production capacity. During the period, utilization of investment in the LPG bottling plant had failed to materialize. A solution was nearly reached during 2007 but at the last moment it was aborted due to management; members reiterated the need for resolving the issue urgently. Within a decade, it is expected that Bangladesh will be rich through the medical gas supply.

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