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AN INQUIRY INTO THE FINANCIALS OF SHIPPING CORPORATION OF INDIA- A THREE DECADE ANALYSIS

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Abstract

Shipping industry is the backbone of international trade and the delivery agent of standard of living to the people all over the world. The shipping cycles are the precursors for the world business cycles and hence the need for studying the financial position of the shipping companies arises on this account. The sound financial position is the reflection of the sound management policies practiced by the shipping companies. The reform period has offered a plethora of opportunities and new paths to be travelled in the shipping finance. Herein the financial position and capital structure of Shipping Corporation of India has been analyzed with the help of various statistical tools and it may be helpful for the shipping industry to maintain the financial management intact.

Key Words: Shipping finance, reform periods, capital structure.

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Introduction

Shipping is the important mode of transportation catering to the specific needs of the consumers across the world. 90 per cent of word trade is carried out with the help of the international ships. Whenever the trade flourishes the economy will also flourish leading to the prosperity in the business cycles. Sea trade has its linkage with the political and economic stability. The reduction in the cost is the direct result of the shipping industry.

Indian forwarding, lighthouses and training of marine personnel are the cost-effective, energy efficient and environment friendly mode of transport which is alternative to the other modes, road and railways.

Adam Smith (1776) categorically stated, "Shipping is one of the major catalysts of economic development. ... Shipping is a cheap source of transport which can open up wider markets of specialization, offering shipment of even the most everyday products at prices far below those that can be achieved by any other means".

Objectives

1.To find the asset to book value of Shipping Corporation of India during the pre and post-reforms period.
2.To estimate the ratios to analyze the financial performance of Shipping Corporation of India
3.To study the capital structure of Shipping Corporation of India
4. To find out the cost of fleet in the cost of fixed asset and its determinant

Hypotheses

1.There is no significant relationship between the asset to book value in the pre and post-reforms
2.There is no significant difference in the cost of fleet to cost of fixed asset during the pre and post reform periods

Study Period

The study period consists of three decade analysis of the Shipping Corporation of India from 1980-81 to 2009-10.

Sources of Data

The data has been collected from the various balance sheets, income statements and annual reports of Shipping Corporation of India. The secondary data has been used.

Tools of Analysis

Durbin Watson's auto-correlation, t test, F test and multiple regressions have been used in this research.

Review of literature

Shipping is beset with heavy cost and low marginal rate of return. This makes the shipping finance still difficult for finance providers. Very few banks have developed specialized skills in providing this kind of financial assistance. Shipping finance could be done for new ship building, domestic and second-hand financing and operating lease.

The carriage of such exceptionally valuable cargo would of course, slightly enhance the risk of loss of the ship through piracy" [1]**(Ralph Davis, 2008**). **Youroukos (2007)[2]** calculated the annual operating costs of the ships. The fixed annual operating cost consists of crew costs, lubes, maintenance & repairs, insurance and administration. Ship and non-ship related costs influence the shipping cost. The unit cost is low for the big ships. But at the same time externality influences the logistics supply chain is neglected [3].

'Shipping is a global service industry that by general acknowledgement provides the lifeline of international trade. Suffice it to say that, due to the morphology of our planet, 90 % of international trade takes place by sea… This has expanded markets for raw materials and is referred to as the two basic ingredients of globalization"[4]. Shipping statistics and Market Review [5] states that high cost structure is the order of bulk ships. This needs to be reduced to a larger extent.

A ship owner considers the three variables such as revenue, cost of running the ship and the method of financing the shipping business. "Cargo transported by the linear shipping industry represents about one-third of the value of total global trade, equating to more than US $ 4.6 trillion worth of goods. Workers at ports world-wide loaded and unloaded cargo for more than 10,000 linear vessel ships per week, with the average ship making 2.1 port calls per week". (**Manilla Bulletin Corporation, 2009)**

Analytical part

Table 1Total Income, PAT & Percentage of PAT to Income of Shipping

Corporation of India

Year	Total Income	PAT	per cent of PAT to Total Income
Pre-Reforms			
1980-81	508.375	18.363	3.6121
1981-82	540.140	4.738	0.8771
1982-83	578.955	- 24.437	- 4.2208
1983-84	520.555	- 51.639	- 9.9190
1984-85	608.6207	22.6877	3.72772
1985-86	830.0134	74.966	0.903190
1986-87	730.90	6.44	0.8811
1987 – 88	852.18	35.87	4.2092
1988 – 89	690.81	54.53	7.8936
1989 – 90	1060.04	101.10	9.5373
1990 – 91	1151.14	54.46	4.7309
Average			2.0211
Post – Reforms			
1991 – 92	1381.08	108.86	7.8822
1992 – 93	1499.20	143.18	9.5504
1993 – 94	1580.42	167.58	10.6035
1994 – 95	1806.87	201.39	11.1457
1995 – 96	2248.35	323.40	14.3838
1996 – 97	2441.98	233.27	9.5524
1997 – 98	2521.49	246.24	9.7656
1998 – 99	2582.27	201.33	7.7966
1999 – 2000	2607.98	161.61	6.1967
2000 – 01	3132.23	382.56	12.2136
2001 – 02	2906.21	241.56	8.3118
2002 – 03	2443.42	274.78	11.2457
2003 – 04	3179.82	626.99	19.7177
2004 – 05	3634.61	1419.91	39.0663
2005 – 06	3677.54	1042.20	28.3395
2006 – 07	4027.55	1014.58	25.1909
2007 – 08	4003.92	813.90	20.3275
2008 – 09	4550.67	940.67	20.6710
2009 – 10	3836.52	376.91	9.8242
Average			14.8307

Source**:** Profit and Loss Accounts of Shipping Corporation of India

Estimated by the researcher

Where,
Total Income = Operating Earnings + Profit on sale of Ships (Net) + Interest income + Other Income

$$\text{Percentage} = \frac{\text{PAT}}{\text{Total Income}} \times 100$$

The table 1 indicates the total Income, Profit after Tax and percentage of PAT to Income.

The firm incurred losses Rs. -24.437 crores and Rs. -51.639 crores for the two years, 1982-83 and 1983-84 respectively. It was due to the unabsorbed depreciation, carried forward development rebate and investment allowance of Shipping Corporation of India. There had been less percent of PAT to total income during the pre-reform period and found to be 2.0211. This increased to 14.83 in the post-reform period. There was a 7.33 times increase in percentage of PAT to total income. The year 2004-05 registered a 39.07 per cent of PAT to total Income. The Indian and world economic conditions were rosy during 2004-05.

Hence, it is concluded that the reform has benefited SCI in earning revenue.

Auto-Correlation for Gross Income and PAT

Year	Asset to book value of equity (Rs)
Pre-Reforms Period	
1980-81	6.72
1981-82	8.03
1982-83	6.95
1983-84	9.01
1984-85	9.73
1985-86	9.56
1986-87	13.00
1987-88	9.74
1988-89	7.58
1989-90	3.21
1990-91	3.01
Average	7.87

The Durbin-Watson's auto-correlation is used to find the serial correlation between the items in question. Here the serial correlation is to be found out between the Gross Income and PAT.

The d statistic of Durbin-Watson is

$$d = \frac{\sum_{t=1}^{n}(e_t - e_{t-1})^2}{\sum_{t=2}^{n}(e_t)^2}$$

The estimated regression equation for the pre-reforms period was

$$Y = \alpha + \hat{\beta} + u$$

$$Y = -113.272 + 0.19x + u$$

Where

$\alpha = -113.272$, $\hat{\beta} = 0.19$, Y = Profit After Tax, u = disturbance term, x = Gross Income

The d statistic for the pre-reforms period was found to be 1.6374.

The estimated regression equation for the post-reform periods was

$$Y = \alpha + \hat{\beta}x + u$$

$$Y = -1027.1197 + 0.374x + u$$

Where, $\alpha = -1027.1179$, $\hat{\beta} = 0.374x$

This contributes to the total tax.

The d statistic for auto-correlation for the post-reform period was calculated to be 0.170713. There had been a 9.59 times decline in the d statistic value in the post-reform period.

The changes may be attributed to the economic reforms. Since the calculated value, d statistic is lower than Durbin-Watson's table value (d<2), it is concluded that serial auto correlation is present in the data.

The Durbin-Watson's auto correlation for the pre-reform period was 0.10407. This came down to 0.062501 in the post-reform period. Both data of pre and post – reform periods showed serial auto-correlation. Since both the calculated d values are less than the table value of Durbin-Watson (d<2), it shows the existence of serial auto-correlation in the data for the study period.

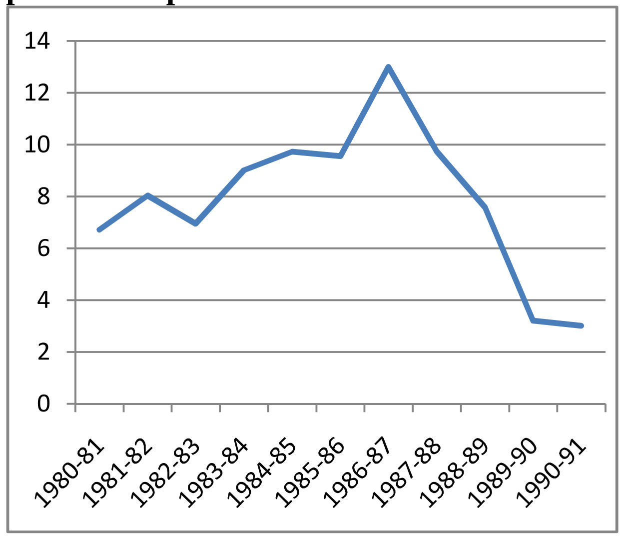
Asset to book value of equity Asset to book value is an important indicator of the financial position of any company. Higher value means good to the firm and vice-versa.

Table 2 Asset to Book Value of Equity during the pre-reform period

Source: Estimated by the researcher

$$\text{Asset to Book Value of Equity} = \frac{\text{Total Assets}}{\text{Shareholders' Funds}}$$

Fig 1. Asset to book value of equity during pre-reform period



The table 4.4 portrays the asset to book value of equity during the pre and post-reform periods. The Asset to Book value of Equity can be calculated as the average book value was 7.87 in the pre-reform period. But, this dwindled to 1.96 in the post-reform period. The decrease had been more pronounced after the year 2000. The assets under the disposal of SCI declined due to fresh issues of shares during the post-reform period.

Table 3 Asset to Book Value of Equity during Post-Reform Period

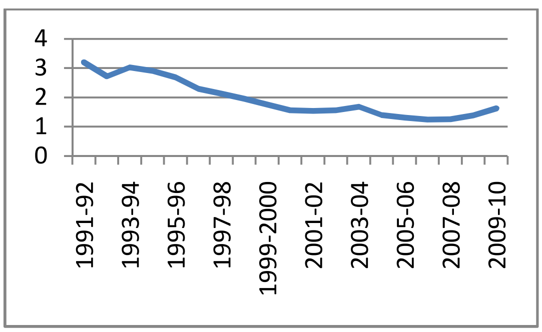
Year	Asset to book value of equity (Rs)
1991-92	3.20
1992-93	2.72
1993-94	3.02
1994-95	2.90
1995-96	2.68
1996-97	2.29
1997-98	2.13
1998-99	1.95

1999-2000	1.75
2000-01	1.56
2001-02	1.54
2002-03	1.56
2003-04	1.68
2004-05	1.39
2005-06	1.31
2006-07	1.24
2007-08	1.25
2008-09	1.38
2009-10	1.62
Average	1.96

Source: Estimated by the researcher

The average asset to book value of equity is 1.96 in the post-reform period. This has come down from 7.87 in the pre-reform period to 1.96 in the post-reform period. This is due to the issue of shares to the public.

Fig 2.Asset to book value of equity during pre-reform period



There has been a gradual decline in the asset to book value except a few years in the post-reform period. The average asset to book value of equity has 7.87 in the pre-reform to 1.96 in the post-reform period.

Table 4 t Test for Asset to Book Value

Particulars	Pre-reforms	Post-reforms
Mean	7.866	1.956
Variance	8.50	0.423
Observations	11	19
df	11	
t statistic	6.626871	
t critical one tail	1.795885	
t critical two tail	2.200985	

Source: estimated by the researcher

The table 4 provides the results of the t test to know whether there is any significant difference between the pre and post-reforms. The t value is 6.626871. This is higher than the table values at t critical one and two tails at 1.795 and 2.20 respectively. Hence, it is inferred that there exists significant difference between the assets to book-value during the pre and post-reforms. The actual asset to book value has come down in the post-reform period.

Table 5 - Capital Structure of Shipping Corporation of India

Year	Authorized capital	Subscribed and Paid-up capital	Reserves & Surplus	Net Worth	Secured loans	Unsecured loans	Deferred payment	Total loans
1980-81	35	27.949	109.90	137.849	595.27	20.4417	78.490	694.2017
1981-82	35	27.949	113.507	141.456	587.395	10.952	62.178	660.525
1982-83	35	27.949	89.0745	117.0235	610.1929	3.5177	44.547	658.2576

1983-84	100	69.999	37.4226	107.4216	627.663	23.234	27.632	678.529
1984-85	100	70.19	39.688	109.878	696.31	21.464	247.202	964.976
1985-86	100	70.19	47.170	117.36	670.068	_	359.914	1029.982
1986-87	100	70.19	32.63	102.82	730.85	_	509.43	1240.28
1987-88	100	70.19	68.50	138.69	724.44	21.92	470.75	1217.11
1988-89	100	70.19	123.01	193.2	749.15	78.23	450.31	1277.69
1989-90	100	70.19	212.76	282.95	589.56	85.11	380.21	1054.88
1990-91	350	282.30	254.13	536.43	723.52	_	377.10	1100.62
1991-92	350	282.30	346.03	628.33	896.72	_	513.78	1410.5
1992-93	350	282.30	460.97	743.27	957.51	_	348.03	1305.54
1993-94	350	282.30	586.19	868.49	1053.57	_	731.30	1784.87
1994-95	350	282.30	754.67	1036.97	1238.72	_	752.50	1991.22
1995-96	450	282.30	1021.30	1303.6	1287.09	54.14	881.94	2223.17
1996-97	450	282.30	1192.16	1474.46	1157.95	_	783.85	1941.8
1997-98	450	282.30	1376.13	1658.43	1169.51	24.92	707.01	1901.44
1998-99	450	282.30	1529.76	1812.06	1615.22	41.95	130.90	1788.07
1999-2000	450	282.30	1636.00	1918.3	1442.15	30.80	_	1472.95
2000-01	450	282.30	1924.78	2207.08	1256.34	19.74	_	1276.08
2001-02	450	282.30	1852.09	2134.39	1031.60	6.87	_	1038.47
2002-03	450	282.30	2029.59	2311.89	1112.13	6.95	_	1119.08
2003-04	450	282.30	2114.70	2397	1371.27	_	_	1371.27
2004-05	450	282.30	3309.81	3592.11	1402.65	_	_	1402.65
2005-06	450	282.30	4077.82	4360.12	1374.40	_	_	1374.4
2006-07	450	282.30	4817.43	5099.73	1244.71	_	_	1244.71
2007-08	450	282.30	5349.80	5632.1	1454.20	_	_	1454.2
2008-09	450	423.45	5785.00	6208.45	2471.67	_	_	2471.67
2009-10	450	423.45	5913.55	6337	2696.86	_	_	2696.86

Source: Salient Statistics of SCI, Annual reports of various years

Note: Net worth = Subscribed and Paid-Up Capital + Reserves and Surplus

Long – term loans = Secured loans + Unsecured loans + deferred payments

Table 5 vividly portrays the capital structure of Shipping Corporation of India from 1980-81 to 2009-10. The initial authorized capital is Rs.35 crores and this increased to Rs.100 crores in 1983-84. This was further increased to Rs.350 crores in 1990-91 and further increased to Rs.450 crores in 1995-96. From 1999-2000 onwards there has been no deferred payments.

Table 6- Ratio Analysis

Ratios	Pre-reforms	Post-reforms	Standard Rule	Result
Return on Investment	0.6327	0.6468	High profitability	Improvement
Return on Share Funds	0.118	0.172	High Ratio is goo	Slight Improvement
Return on Total Assets	0.59	0.11578	High return	Low return and invest in short term funds
Expense ratio	0.093105	0.037727	Low ratio indicates High efficiency	Efficiency
Net Profit Ratio	2.91per cent	15.16 per cent	12 per cent	Increase in Net Profit ratio
Earnings Per Share	2.618181	15.7736	High ratio shows profitability and efficiency	Efficient
Interest cover ratio	1.24454	18.6736	Increase shows quick coverage of interest	Quick coverage of interest
Owned capital turnover ratio	8.1088	1.26	high ratio is safe and Low ratio means risk	Risk
Short-term current ratio	1.0618	2.0205	2:1	Increase in Liquidity Position
Long-term Fixed assets turnover ratio	1.1918	2.1157	More	Shows increase
Debt-Equity ratio	6.8418	0.94263	1:1	Less than the ideal ratio

Source: Estimated by the researcher

The table 6 portrays the ratio analysis of the Shipping Corporation of India in the pre and post-reform periods. Most of the ratios indicate that in the post-reform period the financial condition of SCI has positively increased. However, owned capital turnover ratio has come down from 8.1088 in the pre-reform period to 6.8418 in the post-reform period. Most of the ratios indicate there have been changes in the post reform period. They are positively influenced the financials of the Shipping Corporation of India.

Fleet is an important component of fixed assets. A shipping company has to pay more attention to this particular aspect. A good composition of fleet would help the company to serve the global needs and earn revenues to meet its expenses and for further expansion. Hence the analysis of percentage of fleet to fixed asset of the ship would be of utmost necessity on the part of the shipping financiers.

Table 7 Cost of Fleet to Cost of Fixed Asset (Rs. in Crores)

Year	Fleet Net Block	Total Fixed Asset	Per cent of Fleet to Total Fixed Asset
1980-81	763.41	767.08	99.52
1981-82	758.32	762.66	99.43
1982-83	730.05	734.61	99.38
1983-84	685.95	690.64	99.32
1984-85	986.41	991.59	99.48
1985-86	1011.86	1016.81	99.51
1986-87	1153.35	1159.30	99.49
1987-88	1177.08	1192.55	98.70
1988-89	1166.88	1185.54	98.43
1989-90	1232.40	1250.40	98.56
1990-91	1232.40	1250.40	98.56
Average (pre-reform)	*990.7373*	*1000.144*	*99.13*
1991-92	1579.17	1596.60	98.91
1992-93	1612.05	1628.53	98.99
1993-94	2182.05	2197.80	99.28
1994-95	2629.33	2644.19	99.43
1995-96	2850.81	2865.40	99.49
1996-97	2765.98	2865.40	96.53
1997-98	2726.88	2768.05	98.51
1998-99	2819.39	2875.18	98.06
1999-2000	2773.54	2825.41	98.16
2000-01	2647.72	2695.41	98.23
2001-02	2481.91	2462.62	98.23
2002-03	2333.24	2371.81	98.38
2003-04	2945.87	2981.81	98.79
2004-05	3203.87	3235.82	99.01
2005-06	3230.79	3259.53	99.12
2006-07	2934.69	2961.15	99.11
2007-08	2665.29	2689.90	99.08

2008-09	3804.92	3827.91	99.40
2009-10	4468.54	4506.81	99.15
Average (post-reform)	*2771.371*	*2803.123*	*98.73*

Source: Schedules forming part of various balance sheets of Shipping Corporation of India

The average fleet net block was Rs.990.7373 crores in the pre-reform periods and this has increased to Rs.2771.371 in the post-reform periods. This is positive to the shipping company and at the same time any problem in the fleet may seriously undermine the capacity expansion nd the earning potential of the Shipping Corporation of India.

Table 8 F test for the cost of fleet to cost of fixed asset during the pre and post-reform periods

Particulars	Pre-reforms	Post-reforms
Mean	99.12583	98.72947
Variance	0.187427	0.493394
Observations	12	19
Df	11	18
F	0.379872	
F critical one tail	0.374406	

Source: Estimated by the researcher

Table 8 clearly provides the F test to test whether there is any significant difference in the cost of fleet to cost of fixed asset during the pre and post-reform periods. As the calculated F value is slightly more than the F critical one tail, it is presumed that there is significant difference variations exist between the pre and post reform periods.

Table 8 Relationship between Cost of Fleet and Cost of Fixed Asset of Shipping Corporation Of India

	Pre-reforms		Post-reforms	
	Constant	Cost of Fleet	Constant	Cost of Fleet
b value	14.435	1.024065	21.72597	1.0042
Standard Error	5.956137	20.82402	20.82402	0.007327
t stat	-2.42355	0.007327	1.043313	137.1383
No.of years	11		19	

$R^2 = 0.99$ for both pre and post-reform periods

The regression equation used to calculate this is as $\hat{Y} = \hat{\beta}_o + \hat{\beta}_1 X_1 + u$

Table 8 exemplifies that any Rs.1 crore increase in cost of fleet will add Rs.1.024 to the fixed asset in the pre-reform period. If any Rs.1 crore cost of fleet will add Rs.1.0042 crores to the total fixed asset during the post-reform period. The t test is significant in the post-reform period with 137.1383.

Conclusion

The financials of Shipping Corporation of India is good in the post-reform period. It has to be strengthened by following the proper debt-equity mix and productivity measures. The autonomy given to the corporation is an important factor for its better performance during the post reform period.

Suggestions

The Shipping Corporation of India has to concentrate more on the financial conditions for its future expansion and modernization of its assets.

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