CHAPTER- 4

TRENDS IN CAPITAL STRUCTURE OF FDI COMPANIES IN INDIA

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CHAPTER - 4

TRENDS IN CAPITAL STRUCTURE OF FDI COMPANIES IN INDIA

This chapter examines the Trends in Capital Structure of FDI Companies in India. All the Debt ratios mentioned in Chapter - 3, Section 3.5.1 are used to analyze the trends and direction of change in the Capital Structure practices of sample 140 companies over the period of the study (1990-91 to 2007-2008). To analyze the trends, mean, median, standard deviation and coefficient of variation of all the Debt ratios are calculated. Various Graphs and Bar diagrams have been used for graphic representation of trends in financing mix adopted by FDI Companies in India. The trends of the sample FDI Companies as well as Industry-wise trends have been examined. To understand time trends in Debt ratios, 'Method of Least Squares' is applied using 'Linear Trend Model' and 'Quadratic Trend Model'. Time trend analysis is conducted for the overall sample of 140 FDI Companies as well as for five major industries - Chemicals, Food, Machinery, Service and Transport industry. The chapter is divided into two major sections: In Section I, the methodology adopted is stated and the overall trends of Capital Structure of all the sample companies taken together are studied and in Section II, industry wise trends in Capital Structure are examined.

SECTION I

4.1 Methodology Adopted

The various Debt ratios employed to analyze the trends in the Capital Structure of FDI Companies in India are categorized as Short Term, Long Term and Total Debt Ratios. The Debt ratios selected for conducting trend analysis are:

Table 4.1 Debt ratios Selected for Trend Analysis

Short Term Debt ratios	Long Term Debt ratios	Total Debt Ratios
STBB + CPLTD/TA	LTBB / TA	TD / TA
STD / TA	LTD/TA	TL/TA
STD1 / TA	LTD / NW	TD / NW
TC & E / TA	LTD / (NW + LTD)	TD / (TD + NW)
STD / NW	LTD / STD1	TL/NW
STD1 / NW		

- Out of all the Debt ratios in Table 4.1, the Long Term Debt measure LTD / STD1 is employed to analyze the proportion of Long Term to Short Term Borrowings of a company. It is not actually a debt measure, but is a very good indicator of the profile of debt financing of the companies. This ratio is not considered in analyzing the time trends in Capital Structure.

- ***As a first step***, aggregate mean Debt ratios of all the 140 companies for the sample period (1990-91 to 2007-2008) are calculated (Table 4.2). Along with Mean Debt ratios, their Median, Standard Deviation (SD) and Coefficient of Variation (COV) are also calculated. Mean is sensitive to extreme values in a data set, while Median which is the middle value in an ordered array of data is relatively unaffected by extreme values, hence Median is also calculated. According to Levine *et.al* (2003, page 112)[1], "The standard deviation helps one to know how a set of data clusters or distributes around its mean." According to Gupta S.P (2005)[2], "the standard deviation measures the absolute dispersion, the greater the standard deviation, the greater will be the magnitude of the deviations of the values from their mean". Coefficient of variation (COV) is a relative measure of variation and is expressed as percentage. It measures the scatter in the data relative to mean. It is calculated as:

$$COV = \frac{SD}{\overline{X}} \times 100$$

Where SD is standard deviation and $\overline{X}$ is arithmetic mean of the sample.

- ***In the second step*** - Year wise average ratios of each debt measure (Table 4.2.1) for the sample of 140 companies for the period from 1990-91 to 2007-2008 are calculated to analyze the effect of time on Debt ratios. The year wise Debt ratios reveal change, if any, in the financing mix strategy adopted by the firms over the sample period. Trends reflected in composition of Owner's Funds are studied. This is done by comparing percentage share of Share Capital and reserves to Owner's Funds for each year in the study period. The composition of total sources of funds of 140 FDI Companies in India (Table 4.2.3) is examined. Financing Pattern of 140 FDI Companies in India - composition of Total Non–Equity liabilities (Table 4.2.4) is also examined. Retention Ratios of FDI Companies in India (Table 4.2.5) are calculated. Retention ratio is calculated as a proportion of: Average Retained Profits of overall sample of 140 FDI Companies divided by Average Profit after Tax of 140 FDI

Companies. Along with tabular presentation, Bar diagrams are also used to denote the aggregate mean Debt ratios and financing mix adopted by FDI Companies in India.

- ***In the third step*** - time trend analysis is carried out. To examine whether Debt ratios of FDI Companies in India exhibit a significant linear trend, the linear trend model (The Simple Linear Regression equation) is used. Various Debt ratios are regressed on time to examine the rate of change in ratio per year. However, in some Debt ratios, on observing the Durbin Watson - "D' statistic, the problem of first order autocorrelation is detected. This can be due to specification bias in the model, that is, the ratio actually follows the non-linear trend, rather than the linear trend. To take care of this, Quadratic model is also fitted. The detailed methodology followed is stated in Chapter-3, Section 3.4.1. Results of both the models – Linear Trend Model and Quadratic Trend Model are interpreted jointly.

- ***In the fourth step***, Industry-wise trends in Capital Structure are examined. The sample of 140 companies is classified into 11 industry groups (Table 3.2, Chapter-3). The number of sample companies in each industry group varies from maximum thirty-eight companies in Machinery industry to a minimum of one company in Mining industry. Mining industry which had a share of only one sample FDI Company is dropped from trend analysis. The same procedure as mentioned in the first, second and third step as mentioned above is followed to examine industry-wise trends in Capital Structure. For conducting time trends, five major industry groups are selected- Chemical Industry, Food Industry, Machinery Industry, Services industry and Transport Industry. The composition of total sources of funds, the composition of total Non–Equity Liabilities and Retention Ratios of various industries are not examined in studying industry-wise trends.

4.2 Overall Trends in Capital Structure of FDI Companies

The aggregate Debt ratios of 140 FDI Companies in Table 4.2 reveal that the sample companies have been relying on very low debt levels in their Capital Structure. The LTD/NW ratio, which is the most accepted measure of leverage, indicates that Long Term Debt funds contributed only 67% towards financing Capital Structure. Short Term Debt funds as indicated by STD1/NW were 1.32 times the Net worth, out of

which Short Term Bank Borrowings and Commercial Paper were 0.34 times the Net worth which meant that almost 26% Short Term Debt funds were contributed by Short Term Bank Borrowings and commercial paper as indicated by STD/NW ratio. The TL/NW ratio indicated that Total Liabilities were 'two' times the Net-Worth out of which a major proportion – almost 66% of Total Liabilities were made up of Short Term Debt funds which meant that rest 34% were contributed by Long Term Debt funds.

Table 4.2

Aggregate Debt Ratios of 140 FDI Companies (1991-2008)

Sr. No	Debt ratio	Mean	Median	SD	COV
1	STBB + CPLTD / TA	0.11	0.08	0.09	87.64
2	STD / TA	0.09	0.07	0.07	82.52
3	STD1 / TA	0.39	0.38	0.15	37.19
4	TC & E / TA	0.24	0.22	0.11	47.42
5	STD / NW	0.34	0.21	0.45	132.65
6	STD1 / NW	1.32	0.95	1.20	90.33
7	LTBB / TA	0.03	0.02	0.04	146.76
8	LTD / TA	0.16	0.13	0.13	77.81
9	LTD / NW	0.67	0.40	0.80	118.55
10	LTD / (NW + LTD)	0.31	0.23	0.52	165.26
11	LTD / STD1	0.55	0.35	0.92	166.18
12	TD / TA	0.25	0.22	0.16	62.48
13	TL / TA	0.56	0.54	0.17	29.82
14	TD / NW	1.01	0.66	1.04	103.18
15	TD / (TD + NW)	0.38	0.32	0.36	96.59
16	TL / NW	2.00	1.52	1.69	84.63

The contribution of Debt Funds to capital employed as indicated by LTD/(NW+LTD) ratio was only 31%, the rest contribution being made by equity funds. This ratio also showed maximum variability in relation to mean as indicated by COV of 165.26%. Out of the Total Assets being financed, TL/TA ratio indicated that 56% contribution is being made by external funds as opposed to internal funds. Out of 56% financing of Total Assets, STD1/TA ratio indicated that 39% were being financed by short term funds comprising mainly Short Term Bank Borrowings, Current Liabilities and Provisions. Out of 39% of assets being financed by short term funds, a major 24% was being financed by Trade Credit and an equivalent, revealing that Trade Credit was an important

mode of financing adopted by sample FDI Companies. Long Term Debt funds contributed only 16% towards financing of assets as shown by the ratio LTD/TA. Lowest variability in relation to mean was seen in case of TL/TA ratio, which meant that it was one of the most representative measure of Capital Structure for the sample of 140 companies.

From Table 4.2.1 and Figures 4.1.1, 4.1.2, 4.1.3 and 4.1.4, it can be observed that there has been a definite shift in preferences of financing mix adopted by sample companies. There has been a marked decline in preference of debt funds – all forms of debt, whether it is short term or Long Term Debt or Total Debt, all have shown a significant decline throughout the study period. From the Figure 4.1.4, it can be observed that these companies have shifted from debt as a source of funds to more and more equity funds. The contribution of equity funds in financing mix increased from 31% in the year 1991 to 51% in the year 2008. A major portion of debt funds seems to be financed out of Short Term Debt funds (Figure 4.1.4). It is observed that although there was a considerable decline in all the Debt ratios throughout the study period, the years 2003 and 2004 have shown a sudden spikes, especially in all the Debt ratios which are scaled down to Net worth. The spike is most noticeable in case of STD1/NW ratio. This might be due to temporary decline in profits, due to which, companies used more of short term creditors' funds to finance the business and thus the resultant increase in ratio. The Retention ratios (Table 4.2.5) also confirm this belief as they seem to decline in the years 2002 to 2004 and then start rising again.

In the initial stages of liberalization, all the Debt ratios were high and then gradually showed a marked decline throughout the study period. A marked increase can be seen in the share of Reserves & Surplus in equity funds in the recent years (Table 4.2.2). This is a result of high Retention ratios. High Retention ratios result in greater share of internal sources of funds in FDI Companies in India. Table 4.2.3 reveals that, internal funds in the form of Reserves & Surplus, is a major source of finance, followed by Current Liabilities and Provisions. Table 4.2.4 indicates the contribution of major sources of Total Liabilities (non-equity) and it can be observed that Current Liabilities appear to be a major source of finance among all debt sources. There is a marked preference for Short Term Bank Borrowings and especially for Trade Credit and Equivalents throughout the study period.

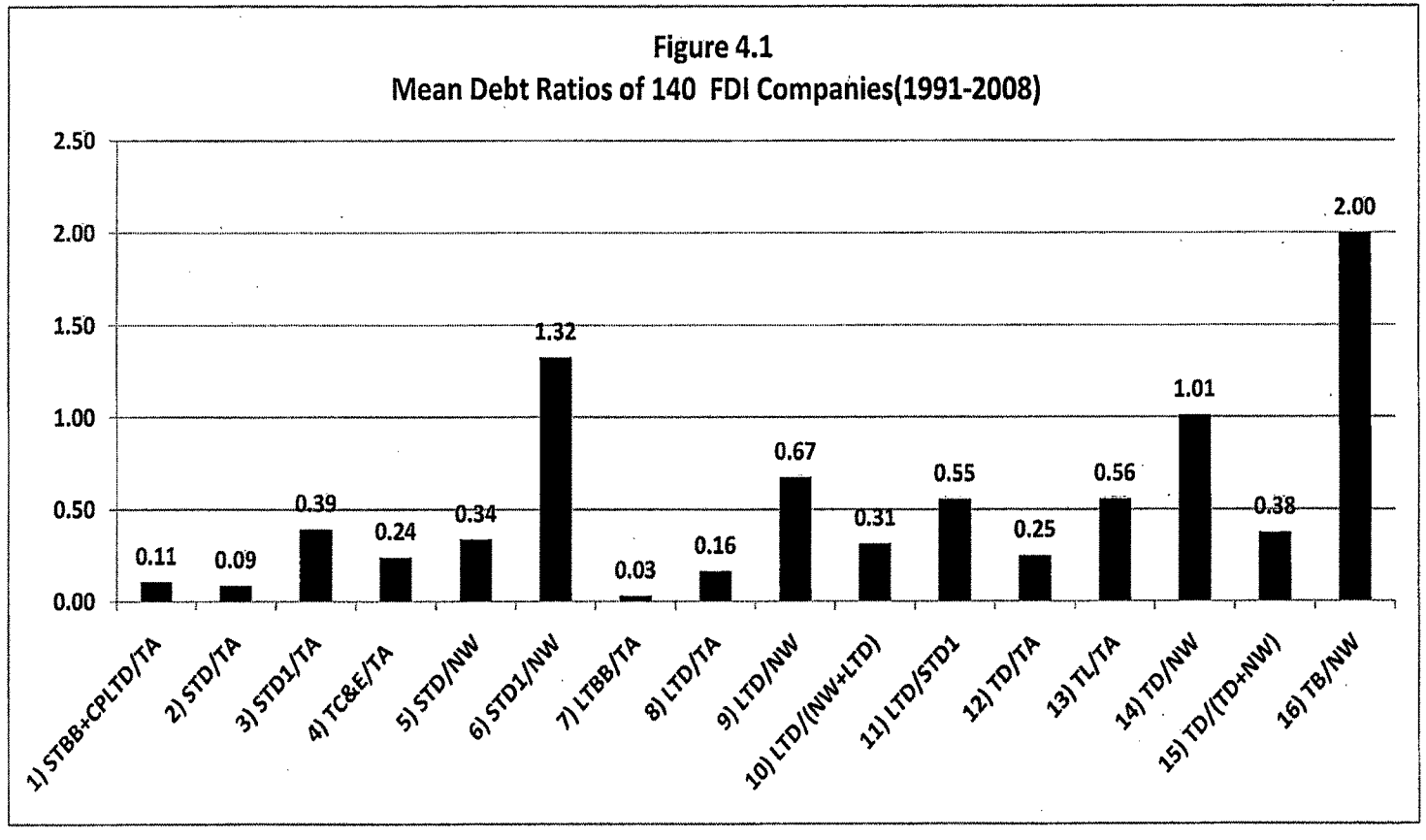


Figure 4.1
Mean Debt Ratios of 140 FDI Companies(1991-2008)
2.50
2.00
1.50
1.00
0.50
0.00
0.11
0.09
0.39
0.24
0.34
1.32
0.03
0.16
0.67
0.31
0.55
0.25
0.56
1.01
0.38
2.00
1) STBB+CPLTD/TA
2) STD/TA
3) STD1/TA
4) TC&E/TA
5) STD/NW
6) STD1/NW
7) LTBB/TA
8) LTD/TA
9) LTD/NW
10) LTD/(NW+LTD)
11) LTD/STD1
12) TD/TA
13) TL/TA
14) TD/NW
15) TD/(TD+NW)
16) TB/NW

Table 4.2.1																			
		Mean Debt Ratios by Year (140 FDI Companies)																	Mean
	Debt Ratios	Mar-91	Mar-92	Mar-93	Mar-94	Mar-95	Mar-96	Mar-97	Mar-98	Mar-99	Mar-00	Mar-01	Mar-02	Mar-03	Mar-04	Mar-05	Mar-06	Mar-07	Mar-08	1991-2008
1	STBB+CPLTD/TA	0.13	0.13	0.14	0.11	0.12	0.13	0.12	0.11	0.10	0.10	0.10	0.09	0.08	0.07	0.08	0.09	0.10	0.08	0.11
2	STD/TA	0.12	0.11	0.12	0.10	0.10	0.11	0.10	0.09	0.08	0.08	0.08	0.07	0.07	0.06	0.06	0.06	0.07	0.05	0.09
3	STD1/TA	0.43	0.42	0.42	0.39	0.40	0.41	0.40	0.38	0.36	0.37	0.37	0.36	0.37	0.37	0.38	0.41	0.41	0.40	0.39
4	TC&E/TA	0.26	0.26	0.26	0.24	0.24	0.24	0.24	0.23	0.22	0.23	0.23	0.22	0.23	0.23	0.24	0.25	0.24	0.24	0.24
5	STD/NW	0.65	0.46	0.41	0.42	0.37	0.40	0.37	0.30	0.27	0.27	0.25	0.26	0.41	0.56	0.17	0.15	0.16	0.17	0.34
6	STD1/NW	2.72	1.73	1.53	1.48	1.33	1.39	1.25	1.28	1.01	1.04	0.94	1.00	1.37	1.97	1.02	0.94	0.89	0.96	1.32
7	LTBB/TA	0.03	0.03	0.02	0.01	0.02	0.03	0.02	0.03	0.03	0.03	0.02	0.03	0.04	0.04	0.04	0.04	0.04	0.04	0.03
8	LTD/TA	0.26	0.26	0.24	0.21	0.18	0.16	0.15	0.17	0.18	0.16	0.16	0.14	0.14	0.12	0.11	0.11	0.11	0.09	0.16
9	LTD/NW	1.80	1.07	1.02	0.89	0.71	0.69	0.54	0.94	0.53	0.47	0.45	0.49	0.64	0.45	0.45	0.35	0.34	0.31	0.67
10	LTD/(NW+LTD)	0.59	0.45	0.41	0.34	0.30	0.27	0.25	0.27	0.28	0.39	0.22	0.24	0.77	0.21	0.18	0.16	0.15	0.14	0.31
11	LTD/STD1	0.79	0.76	0.64	0.69	0.57	0.53	0.52	0.63	0.69	0.64	0.59	0.52	0.47	0.43	0.42	0.35	0.39	0.32	0.55
12	TD/TA	0.38	0.37	0.35	0.31	0.29	0.28	0.26	0.26	0.26	0.24	0.24	0.22	0.21	0.18	0.17	0.17	0.17	0.15	0.25
13	TL/TA	0.69	0.68	0.66	0.60	0.58	0.57	0.55	0.55	0.54	0.53	0.53	0.50	0.51	0.49	0.49	0.51	0.51	0.50	0.56
14	TD/NW	2.45	1.53	1.43	1.31	1.08	1.09	0.91	1.24	0.80	0.74	0.71	0.75	1.05	1.01	0.62	0.50	0.50	0.48	1.01
15	TD/(TD+NW)	0.54	0.53	0.50	0.43	0.40	0.39	0.36	0.36	0.35	0.33	0.37	0.26	0.41	0.28	0.40	0.18	0.22	0.45	0.38
16	TL/NW	4.51	2.80	2.56	2.37	2.04	2.08	1.79	2.22	1.53	1.51	1.39	1.49	2.01	2.41	1.47	1.29	1.22	1.27	2.00

Table-4.2.2 Composition of Owners Funds (140 FDI Companies in India)																			
Owners Funds	Mar-91	Mar-92	Mar-93	Mar-94	Mar-95	Mar-96	Mar-97	Mar-98	Mar-99	Mar-00	Mar-01	Mar-02	Mar-03	Mar-04	Mar-05	Mar-06	Mar-07	Mar-08	Mean
Share Capital	35%	34%	31%	27%	22%	20%	18%	16%	16%	16%	16%	16%	14%	13%	12%	11%	9%	5%	18%
Reserves& Surplus	65%	66%	69%	73%	78%	80%	82%	84%	84%	84%	84%	84%	86%	87%	88%	89%	91%	95%	82%
Total	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

Table 4.2.3 - Composition of Total Sources of Funds of 140 FDI Companies (1991-2008)																			
Source of Fund	Mar-91	Mar-92	Mar-93	Mar-94	Mar-95	Mar-96	Mar-97	Mar-98	Mar-99	Mar-00	Mar-01	Mar-02	Mar-03	Mar-04	Mar-05	Mar-06	Mar-07	Mar-08	Mean
Share Capital	10%	10%	9%	9%	8%	7%	7%	6%	7%	7%	7%	7%	6%	6%	6%	6%	6%	4%	7%
Reserves& Surplus	19%	19%	21%	24%	26%	29%	30%	31%	31%	35%	34%	34%	36%	36%	39%	39%	41%	46%	32%
Debentures and Bonds	4%	7%	5%	6%	6%	4%	4%	6%	5%	4%	5%	5%	5%	5%	4%	1%	1%	0%	4%
Long Term Bank Borrowings	5%	3%	3%	2%	3%	3%	2%	3%	2%	3%	2%	3%	3%	4%	5%	4%	3%	3%	3%
Other Long Term Borrowings	16%	17%	18%	17%	16%	17%	17%	18%	17%	15%	17%	16%	15%	15%	12%	13%	13%	10%	16%
Short Term bank Borrowings+Com paper	9%	10%	10%	6%	7%	8%	8%	6%	6%	7%	7%	5%	5%	4%	4%	4%	4%	5%	6%
Current Liabilities	33%	30%	30%	33%	31%	29%	28%	26%	27%	23%	22%	23%	23%	22%	22%	24%	24%	23%	26%
Provisions	4%	4%	4%	3%	3%	3%	4%	4%	5%	6%	6%	7%	7%	8%	8%	9%	8%	9%	6%
Total	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

Table 4.2.4 Financing Pattern of FDI Companies in India (140 companies)																			
Composition of Total Liabilities(Non-equity)																			
Source of Finance	Mar-91	Mar-92	Mar-93	Mar-94	Mar-95	Mar-96	Mar-97	Mar-98	Mar-99	Mar-00	Mar-01	Mar-02	Mar-03	Mar-04	Mar-05	Mar-06	Mar-07	Mar-08	Mean
Debentures and Bonds	6%	9%	8%	10%	9%	6%	6%	9%	8%	8%	8%	9%	9%	8%	7%	3%	1%	1%	7%
Long Term Bank Borrowings	7%	5%	4%	3%	4%	4%	3%	4%	4%	4%	4%	5%	6%	7%	9%	7%	7%	6%	5%
Other Long Term Borrowings	22%	24%	26%	24%	25%	26%	27%	28%	27%	27%	28%	27%	26%	26%	23%	24%	25%	20%	25%
Short Term bank Borrowings	12%	14%	14%	8%	10%	13%	12%	10%	9%	11%	11%	8%	8%	7%	7%	7%	7%	9%	10%
Commercial Paper	0%	0%	1%	1%	1%	0%	0%	1%	1%	1%	1%	1%	0%	0%	0%	0%	0%	0%	0%
Current Liabilities	47%	42%	43%	48%	47%	46%	45%	41%	44%	39%	38%	38%	39%	38%	40%	43%	45%	45%	43%
Provisions	6%	6%	5%	5%	5%	5%	6%	7%	8%	10%	9%	11%	13%	14%	15%	17%	16%	19%	10%
Total	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

Table 4.2.5 Retention Ratios of FDI Companies in India (140 companies)																		
	Mar-91	Mar-92	Mar-93	Mar-94	Mar-95	Mar-96	Mar-97	Mar-98	Mar-99	Mar-00	Mar-01	Mar-02	Mar-03	Mar-04	Mar-05	Mar-06	Mar-07	Mar-08	Mean
Retention Ratio	63%	63%	60%	62%	69%	66%	65%	62%	54%	48%	43%	38%	46%	43%	54%	51%	60%	59%	54%

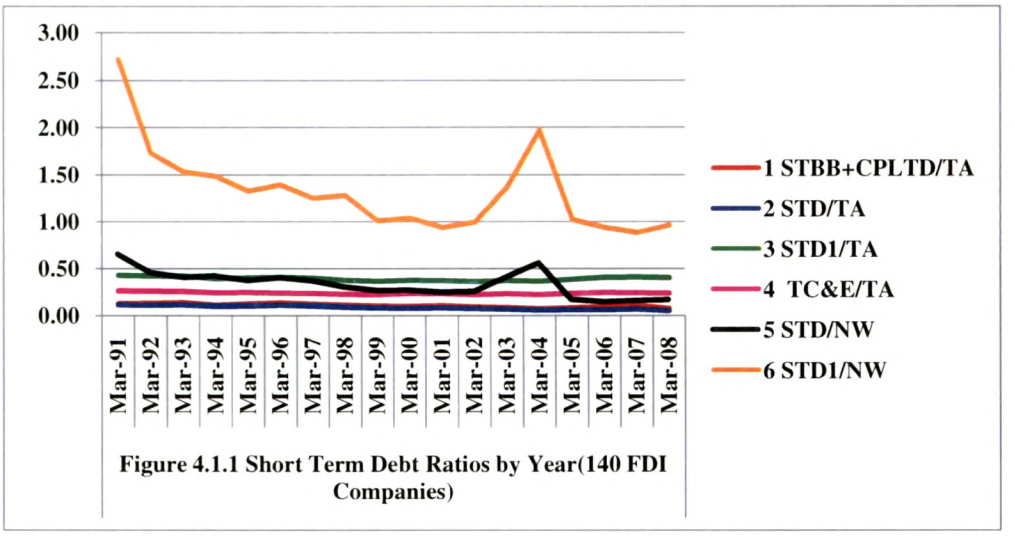


Figure 4.1.1 Short Term Debt Ratios by Year(140 FDI Companies)

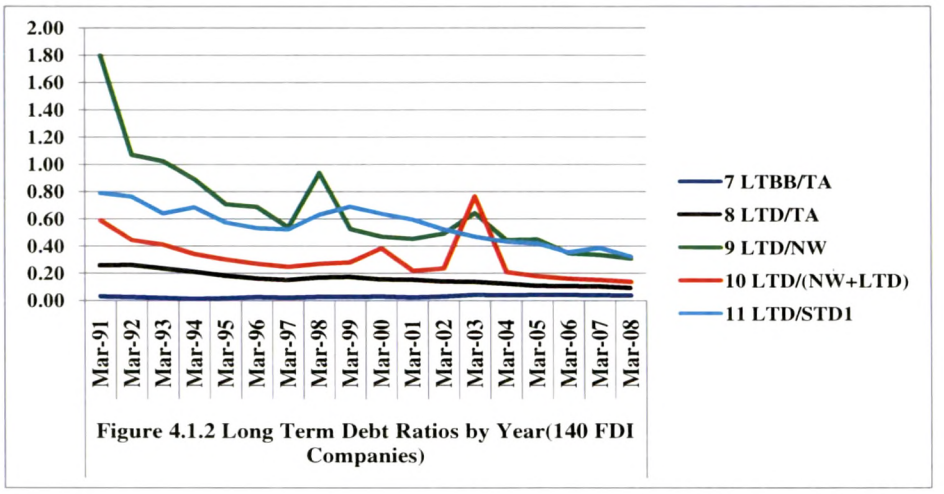


Figure 4.1.2 Long Term Debt Ratios by Year(140 FDI Companies)

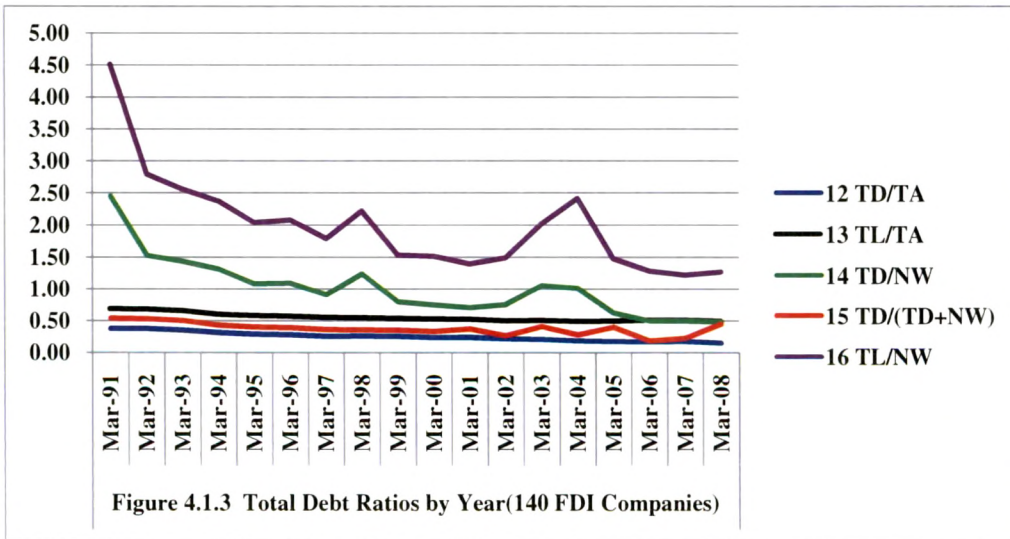
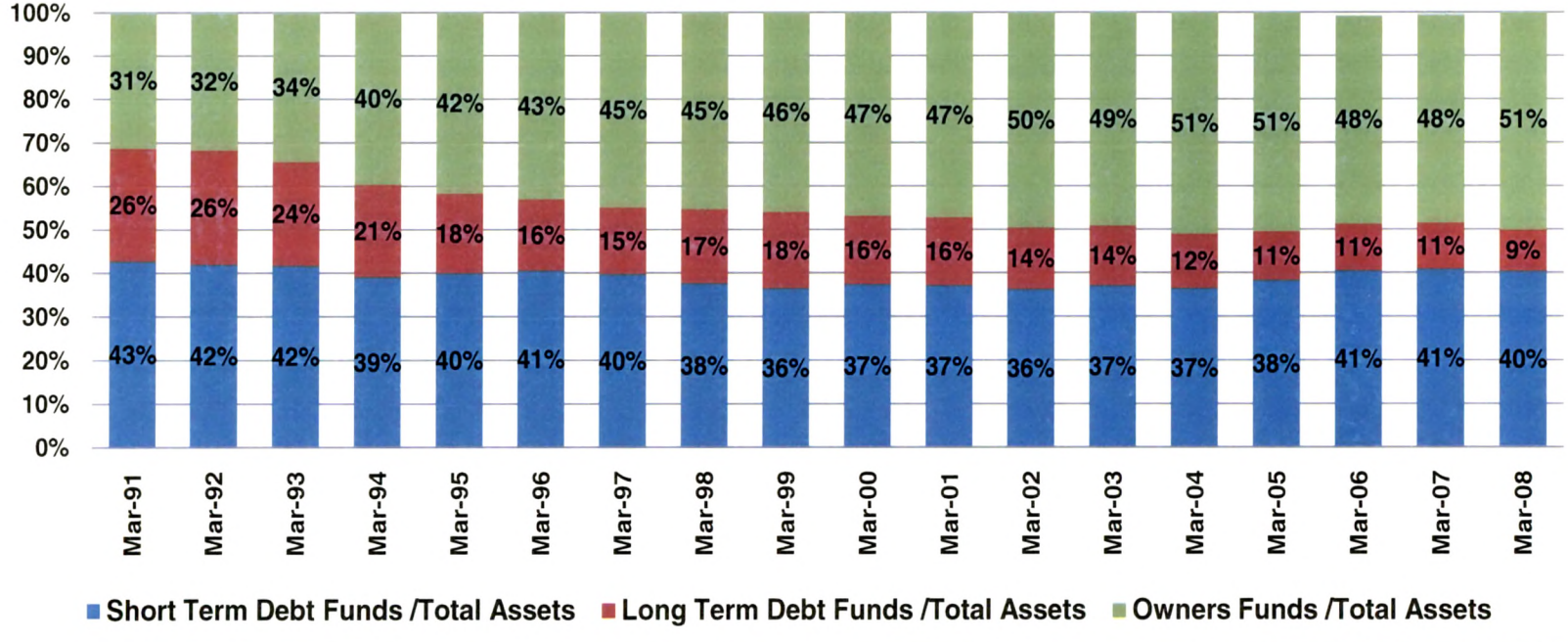


Figure 4.1.3 Total Debt Ratios by Year(140 FDI Companies)

Figure 4.1.4 - Financing Mix Adopted by 140 FDI Companies In India (1991-2008)



4.2.1 Time Trends in Capital Structure of FDI Companies

As a first step, Trends in Debt ratios for overall sample of 140 FDI Companies have been studied with the help of Linear Trend Model (Table 4.2.6).

Table 4.2.6

Linear Regression on Time Variable (140 FDI companies)

Debt Ratios	R square	Adjusted R square	Intercept	Slope	t-Statistic	p- value	F-Statistic	D Statistic
STBB+CPLTD/TA	0.757	0.742	0.136	-0.003	-7.059**	0.000	49.83	**1.338**
STD/TA	0.917	0.912	0.123	-0.004	-13.336**	0.000	177.85	**2.074**
STD1/TA	0.170	0.118	0.408	-0.002	-1.812	0.089	3.284	0.492
TC& E/TA	0.208	0.159	0.249	-0.001	-2.051	0.057	4.209	0.577
STD/NW	0.487	0.455	0.510	-0.018	-3.896**	0.001	15.17	**1.378**
STD1/NW	0.385	0.347	1.834	-0.054	-3.166**	0.006	10.025	**1.097**
LTBB/TA	0.513	0.483	0.018	0.001	4.107**	0.001	16.867	**1.322**
LTD/TA	0.881	0.874	0.249	-0.009	-10.889**	0.000	118.57	0.609
LTD/NW	0.668	0.647	1.207	0.056	-5.671**	0.000	32.16	**1.186**
LTD/(NW+LTD)	0.242	0.195	0.455	-0.015	-2.262*	0.038	5.116	**1.921**
TD/TA	0.962	0.959	0.374	-0.013	-20.084*	0.000	403.3	0.681
TL/TA	0.813	0.801	0.658	-0.011	-8.337**	0.001	69.51	0.381
TD/NW	0.683	0.663	1.717	-0.074	-5.872**	0.002	34.481	1.068
TD/(TD+NW)	0.456	0.422	0.494	-0.012	-3.663**	0.002	13.416	**1.988**
TL/NW	0.547	0.518	3.041	-0.110	-4.392**	0.000	19.29	0.980

* indicates significance at 5% level

** indicates significance at 1% level

Critical value of ' t'

Degrees of freedom	1%level of significance**	5%level of significance*
16	2.9208	2.1199

(Durbin-Watson statistic)- D statistic, K=1

N	Prob(Alpha)	D-L (lower critical value)	D-U(upper critical value)
16	0.01	0.84	1.09
16	0.05	1.10	1.37

Where N= sample size, K = Number of independent variables

However, in some Debt ratios, the problem of first order autocorrelation is detected, which can be due to specification bias in the model, that is, the ratio actually follows the non-linear trend rather than linear trend. To take care of this, the 'Quadratic Trend Model' is also fitted (Section 3.4.1, Chapter-3). If the problem of autocorrelation still persisted, the further examination of the specification of the model and the estimation of the model could not be carried out, at it decreases the degrees of freedom, with the inclusion of more and more measures.

Table 4.2.7									
Quadratic Regression on Time Variable (140 FDI companies)									
Debt Ratios	**R square**	**Adjusted R square**	**Intercept**	**Slopeß1**	**Slopeß2**	**t-Statistic ß1**	**t-Statistic ß2**	**F-Statistic**	**D Statistic**
STBB+CPLTD/TA	0.777	0.747	0.144	-0.006	0.000	-2.816* (0.013)	1.163 (0.263)	26.142 (0.000)	1.470
STD/TA	0.922	0.911	0.126	-0.005	5.80E-05	-4.005** (0.001)	0.899 (0.383)	88.27 (0.000)	2.194
STD1/TA	0.735	0.699	0.451	-0.015	0.001	-6.220** (0.000)	5.647** (0.000)	20.753 (0.000)	**1.364**
TC& E/TA	0.771	0.741	0.273	-0.008	0.000	-6.779** (0.000)	6.078** (0.000)	25.300 (0.000)	**1.877**
STD/NW	0.500	0.434	0.552	-0.031	0.001	-1.525 (0.148)	0.640 (0.532)	7.514 (0.005)	1.399
STD1/NW	0.522	0.459	2.272	-0.185	0.007	-2.838* (0.012)	2.075 (0.056)	8.202 (0.004)	**1.308**
LTBB/TA	0.585	0.530	0.025	-0.001	9.87E-05	-0.549 (0.591)	0.591 (0.128)	10.576 (0.001)	1.517
LTD/TA	0.909	0.896	0.271	-0.016	0.000	-4.905** (0.000)	2.124* (0.051)	74.558 (0.000)	0.772
LTD/NW	0.787	0.759	1.532	-0.153	0.005	-4.438** (0.000)	2.900** (0.011)	27.731 (0.000)	**1.649**
LTD/(NW+LTD)	0.244	0.143	0.47	-0.019	0.000	-0.672 (0.512)	0.159 (0.876)	2.415 (0.123)	1.922
TD/TA	0.976	0.973	0.395	-0.019	0.000	-8.722** (0.000)	2.998** (0.009)	306.848 (0.000)	1.007
TL/TA	0.968	0.964	0.723	-0.030	0.001	-12.881** (0.000)	8.516** (0.000)	226.372 (0.000)	**1.670**
TD/NW	0.771	0.740	2.082	-0.184	0.006	-3.910** (0.001)	2.398* (0.030)	25.233 (0.000)	**1.327**
TD/(TD+NW)	0.585	0.530	0.585	-0.040	0.001	-3.056** (0.008)	2.158* (0.048)	10.570 (0.001)	**2.474**
TL/NW	0.686	0.645	3.802	-0.338	0.012	-3.721** (0.002)	2.586* (0.021)	16.418 (0.000)	**1.257**

Critical value of ' t'		
Degrees of freedom	**1%level of significance****	**5%level of significance***
15	2.9467	2.1315

Durbin-Watson statistic)- D statistic, K=2			
N	**Prob(Alpha)**	**D-L (lower critical value)**	**D-U(upper critical value)**
15	0.01	0.70	1.25
15	0.05	0.95	1.54

Where N= sample size, K = Number of independent variables

Note: Figures in parentheses are p-values

Results of the models, the Linear Trend Model (Table 4.2.6) and the Quadratic Trend Model (4.2.7) for the overall sample of 140 FDI Companies are interpreted jointly as follows:

- In some of the Debt ratios linear trend is observed. They are STBB+CPLTD/TA (-ve) , STD/TA (-ve), STD/NW(-ve), LTBB/TA(+ve) and LTD/(NW+LTD) (-ve).

- The ratios in which Quadratic trend model fitted the best were STD1/TA, TC&E/TA, STD1/NW, LTD/NW, TL/TA, TD/NW, TD/(TD+NW), TL/NW. The quadratic trend indicated that these Debt ratios were decreasing at an increasing rate.

- The Debt ratios LTD/TA and TD/TA decrease at an increasing rate, however the problem of autocorrelation persists as the 'D' statistic of LTD/TA ratio lies below the lower critical value and the D' statistic of TD/TA ratio lies in the inconclusive area.

SECTION II

4.3 Industry-Wise Trends of Capital Structure of FDI Companies:

4.3.1 Trends in Capital Structure of Food Industry

The aggregate Debt ratios in Table 4.3 indicate that Long Term Debt as a proportion to Net worth (LTD/NW) account for 62% and Long Term Debt contributes only 23% towards capital employed as indicated by LTD/NW+ LTD ratio. The ratio of total outsiders funds to Owner's Funds (TL/NW) reveal that outsiders funds are 2.02 times the Owner's Funds out if which Short Term Debt funds are 1.40 times which means 69% of Total Liabilities are made up of Short Term Debt funds.

Out of Total Liabilities financing 55% of Total Assets (TL/TA ratio), Trade Credits and Equivalents contribute almost 23% indicating that Trade Credit is an important source of finance for food industry. Long Term Debt contributes only 13% towards financing of assets as indicated by LTD/TA ratio. TL/TA ratio seemed to be the

mostrepresentative measure of Capital Structure in Food industry and COV was minimum at 18.77%.

Table 4.3

Aggregate Debt Ratios of Food Industry (11 FDI Companies, 1991-2008)

Sr. No	Debt Ratios	Mean	Median	SD	COV
1	STBB+CPLTD/TA	0.11	0.12	0.05	41.64
2	STD/TA	0.10	0.10	0.05	47.82
3	STD1/TA	0.42	0.42	0.07	15.71
4	TC&E/TA	0.23	0.25	0.08	32.31
5	STD/NW	0.39	0.27	0.37	95.55
6	STD1/NW	1.40	1.14	0.94	66.72
7	LTBB/TA	0.04	0.02	0.06	123.42
8	LTD/TA	0.13	0.10	0.12	91.98
9	LTD/NW	0.62	0.27	0.83	134.14
10	LTD/(NW+LTD)	0.23	0.18	0.19	83.70
11	LTD/STD1	0.31	0.21	0.48	157.77
12	TD/TA	0.24	0.21	0.16	66.61
13	TL/TA	0.55	0.55	0.10	18.77
14	TD/NW	1.00	0.50	1.19	118.14
15	TD/(TD+NW)	0.33	0.30	0.18	54.13
16	TL/NW	2.02	1.41	1.61	79.70

The Table 4.3.1 and Figures 4.2.1, 4.2.2, 4.2.3 reveal that except for STD1/NW, LTD/NW, TD/NW and TL/NW ratio, all other Debt ratios were relatively stable throughout the time period. There was a significant decrease in preference of Long Term Debt funds as a source of finance. Even STD1/NW showed a marked decline, which meant that overall preference for Owner's Funds seemed to increase in Food industry, although Short Term Debt ratios had increased slightly in the year 2008.

Figure 4.2.4 represents the financing adopted by Food industry to finance its assets. It indicates that the contribution of Short Term Debt funds in financing mix of Food industry varies between 47% in the year 1991 to 45% in the year 2008. Contribution of Owner's Funds towards financing mix increases from 35% in the year 1991 to 45% in the year 2008. Contribution of Long Term Debt funds in financing of assets declines from 18% in 1991 to 10% in 1998. It can be concluded that FDI Companies from Food industry heavily depend on their internal funds and Short Term Debt Funds for their financing purposes.

Figure 4.2
Mean Debt Ratios of Food Industry (11 FDI Companies:1991-2008)

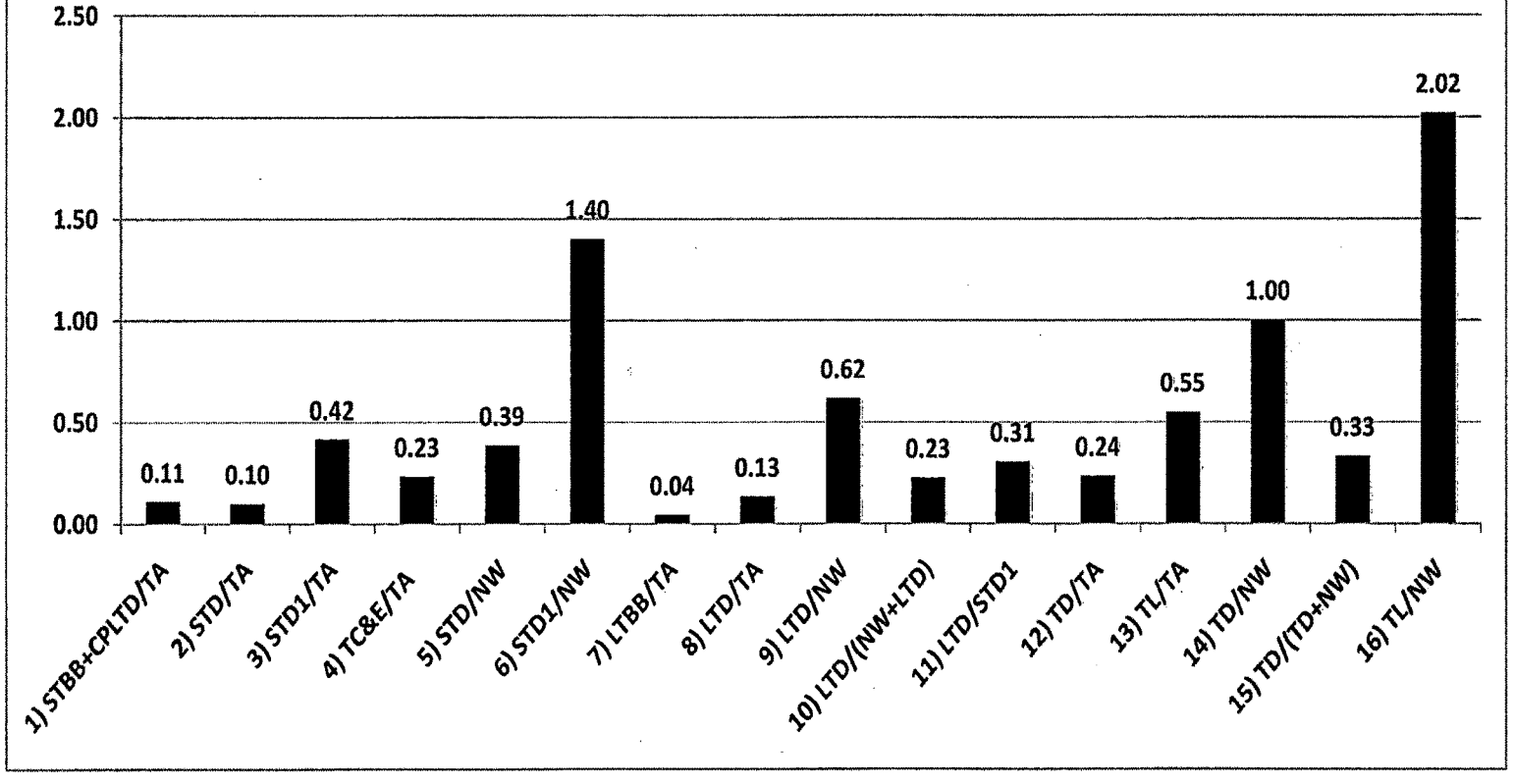


Table 4.3.1																			
Mean Debt Ratios by Year (Food industry: 11 Companies)																			Mean
	Debt Ratios	Mar-91	Mar-92	Mar-93	Mar-94	Mar-95	Mar-96	Mar-97	Mar-98	Mar-99	Mar-00	Mar-01	Mar-02	Mar-03	Mar-04	Mar-05	Mar-06	Mar-07	Mar-08	1991-2008
1	STBB+CPLTD/TA	0.09	0.10	0.13	0.08	0.19	0.17	0.16	0.13	0.11	0.08	0.10	0.12	0.13	0.10	0.09	0.07	0.07	0.09	0.11
2	STD/TA	0.08	0.10	0.12	0.10	0.18	0.16	0.15	0.11	0.10	0.07	0.07	0.11	0.10	0.09	0.09	0.06	0.04	0.06	0.10
3	STD1/TA	0.47	0.47	0.43	0.40	0.44	0.43	0.45	0.39	0.38	0.38	0.39	0.38	0.41	0.41	0.43	0.39	0.40	0.45	0.42
4	TC&E/TA	0.29	0.29	0.24	0.23	0.21	0.22	0.24	0.21	0.20	0.23	0.24	0.21	0.24	0.24	0.26	0.22	0.21	0.22	0.23
5	STD/NW	0.65	0.46	0.35	0.26	0.60	0.55	0.46	0.37	0.41	0.31	0.32	0.38	0.50	0.44	0.40	0.19	0.11	0.20	0.39
6	STD1/NW	4.40	1.89	1.13	0.95	1.30	1.37	1.24	1.08	1.36	1.09	1.11	1.04	1.47	1.34	1.38	0.93	0.97	1.21	1.40
7	LTBB/TA	0.03	0.02	0.02	0.03	0.04	0.05	0.01	0.03	0.03	0.02	0.02	0.05	0.06	0.07	0.06	0.08	0.11	0.09	0.04
8	LTD/TA	0.18	0.17	0.16	0.14	0.15	0.16	0.13	0.15	0.16	0.15	0.16	0.12	0.10	0.09	0.07	0.10	0.11	0.10	0.13
9	LTD/NW	2.25	0.77	0.45	0.39	0.58	0.64	0.40	0.58	0.88	0.58	0.54	0.39	0.47	0.58	0.49	0.40	0.36	0.38	0.62
10	LTD/(NW+LTD)	0.33	0.31	0.24	0.23	0.27	0.29	0.22	0.24	0.28	0.26	0.26	0.21	0.18	0.16	0.13	0.15	0.15	0.16	0.23
11	LTD/STD1	0.37	0.32	0.34	0.33	0.30	0.36	0.36	0.36	0.39	0.44	0.41	0.30	0.23	0.15	0.13	0.22	0.31	0.21	0.31
12	TD/TA	0.27	0.27	0.28	0.24	0.33	0.33	0.28	0.26	0.26	0.23	0.23	0.23	0.20	0.19	0.16	0.16	0.15	0.16	0.24
13	TL/TA	0.65	0.64	0.59	0.54	0.59	0.60	0.57	0.54	0.54	0.53	0.54	0.50	0.51	0.50	0.50	0.49	0.51	0.55	0.55
14	TD/NW	2.90	1.22	0.80	0.65	1.17	1.19	0.86	0.96	1.29	0.89	0.86	0.77	0.96	1.02	0.88	0.59	0.47	0.58	1.00
15	TD/(TD+NW)	0.42	0.43	0.40	0.34	0.43	0.44	0.38	0.35	0.36	0.32	0.32	0.32	0.32	0.27	0.24	0.22	0.21	0.24	0.33
16	TL/NW	6.64	2.66	1.58	1.34	1.88	2.01	1.64	1.66	2.24	1.67	1.65	1.43	1.93	1.91	1.87	1.33	1.33	1.59	2.02

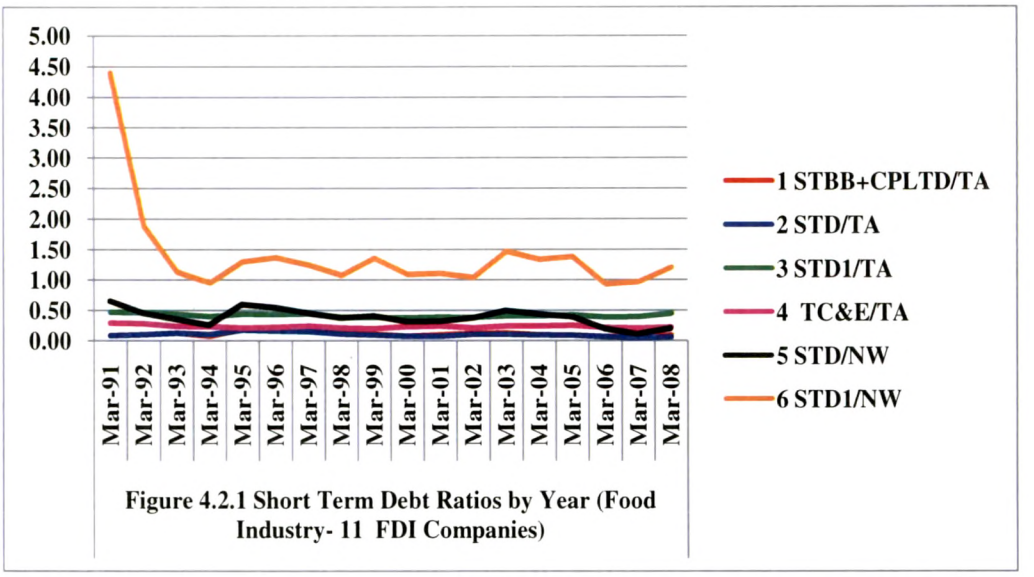


Figure 4.2.1 Short Term Debt Ratios by Year (Food Industry- 11 FDI Companies)

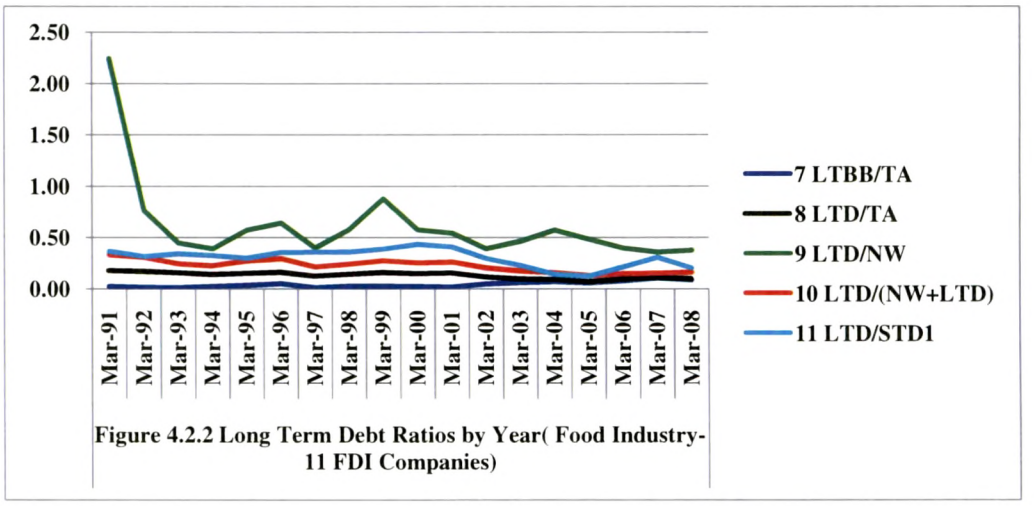


Figure 4.2.2 Long Term Debt Ratios by Year(Food Industry- 11 FDI Companies)

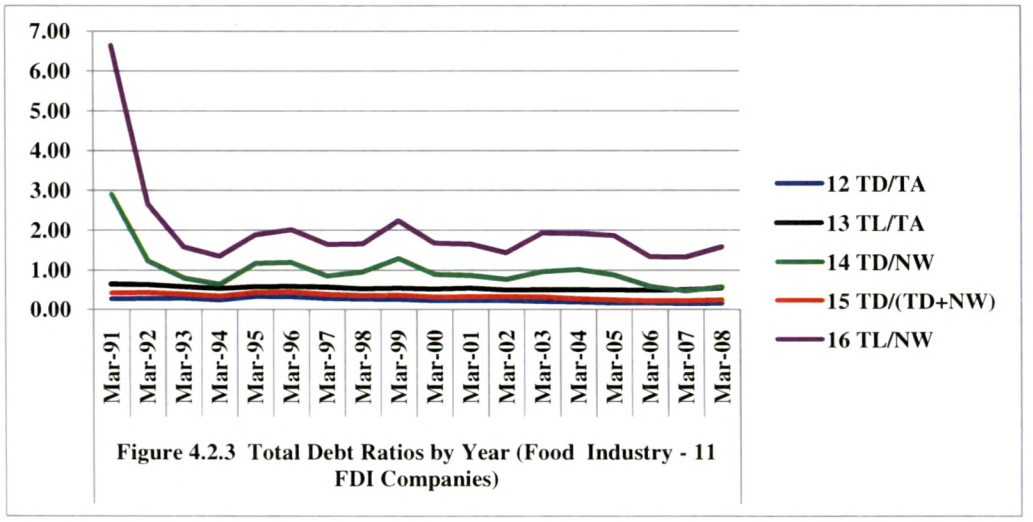
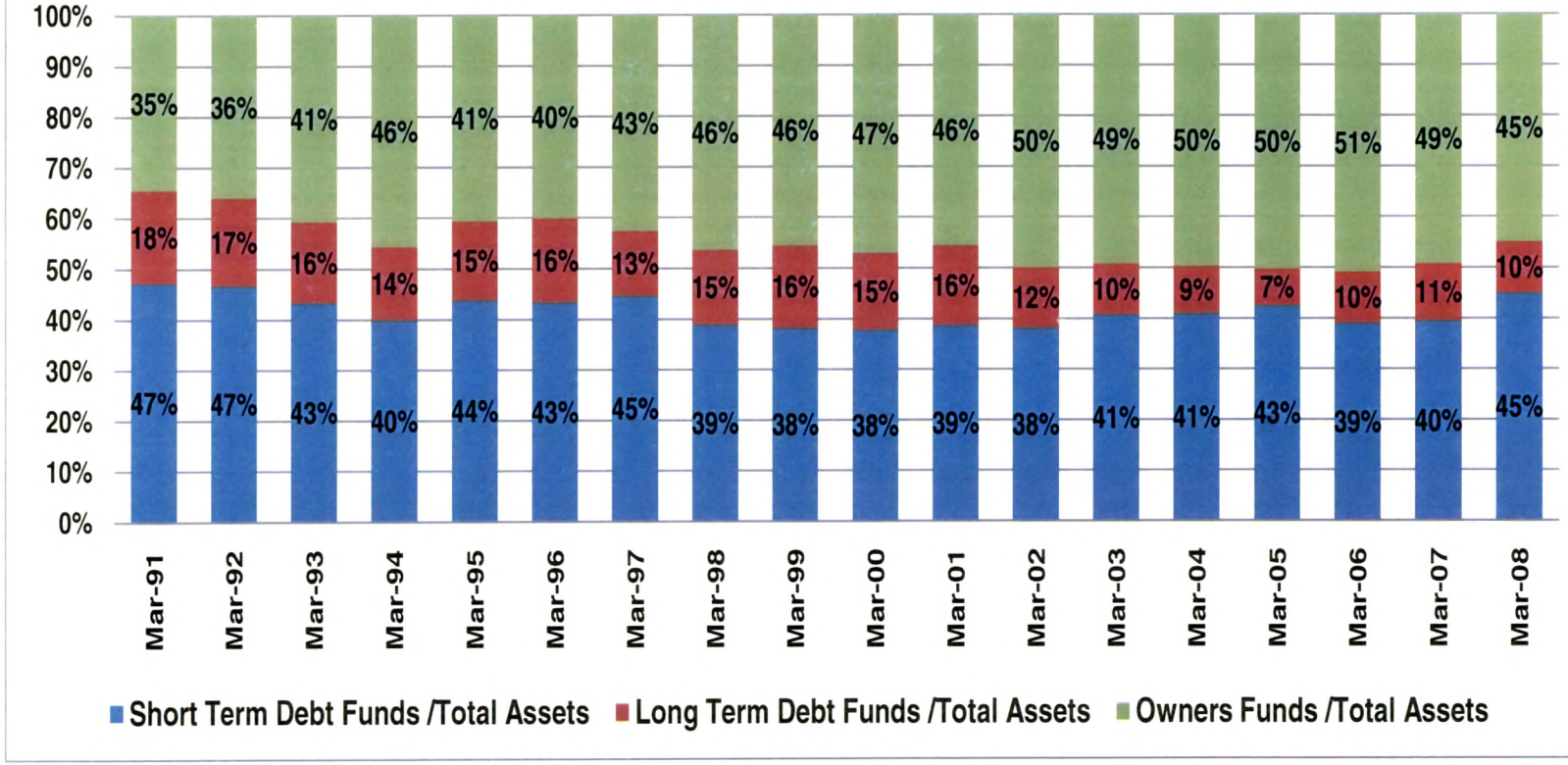


Figure 4.2.3 Total Debt Ratios by Year (Food Industry - 11 FDI Companies)

Figure 4.2.4 Financing Mix Adopted by Food Industry - 11 FDI Companies (1991-2008)



4.3.1.1 Time Trends in Capital Structure of Food Industry

Time Trends in Debt ratios for FDI Companies in Food Industry have been studied with the help of Linear Trend Model (Table 4.3.2) and Quadratic Model (Table 4.3.3).

Table 4.3.2

Linear Regression on Time Variable (Food Industry: 11 FDI companies)

Debt Ratios	R square	Adjusted R square	Intercept	Slope	t-Statistic	p- value	F-Statistic	D Statistic
STBB+CPLTD/TA	0.163	0.111	0.136	-0.003	-1.766	0.096	3.118	1.246
STD/TA	0.319	0.276	0.136	-0.004	-2.735*	0.015	7.480	0.941
STD1/TA	0.179	0.127	0.44	-0.002	-1.867	0.080	3.484	1.079
TC& E/TA	0.173	0.122	0.252	-0.002	-1.832	0.086	3.356	1.003
STD/NW	0.375	0.336	0.542	-0.016	-3.100**	0.007	9.608	**1.264**
STD1/NW	0.216	0.167	2.051	-0.068	-2.099	0.052	4.406	0.899
LTBB/TA	0.617	0.593	0.007	0.004	5.078**	0.000	25.790	1.024
LTD/TA	0.691	0.672	0.180	-0.005	-5.984**	0.000	35.813	1.059
LTD/NW	0.251	0.204	1.002	-0.040	-2.313*	0.034	5.350	1.075
LTD/(NW+LTD)	0.731	0.714	0.318	-0.010	-6.597**	0.000	43.527	**1.102**
TD/TA	0.725	0.708	0.320	-0.009	-6.495**	0.000	42.189	1.031
TL/TA	0.679	0.659	0.620	-0.007	-5.816**	0.000	33.821	1.034
TD/NW	0.331	0.289	1.543	-0.057	-2.813*	0.013	7.912	**1.156**
TD/(TD+NW)	0.846	0.837	0.457	-0.013	-9.383**	0.000	88.048	**1.498**
TL/NW	0.233	0.185	3.051	-0.109	-2.202**	0.043	4.848	0.952

* indicates significance at 5% level

** indicates significance at 1% level

Critical value of ' t'

Degrees of freedom	1%level of significance**	5%level of significance*
16	2.9208	2.1199

(Durbin-Watson statistic)- D statistic, K=1

N	Prob(Alpha)	D-L (lower critical value)	D-U(upper critical value)
16	0.01	0.84	1.09
16	0.05	1.10	1.37

Where N= sample size, K = Number of independent variables

Results of both the models, the Linear Trend Model (Table 4.3.2) and the Quadratic Trend Model (4.3.3) for the FDI Companies in Food industry are interpreted jointly as follows:

- On estimation of the Quadratic model, no trend in some of the Debt ratios is observed. These ratios are STBB+CPLTD/TA, STD/TA, LTBB/TA, LTD/NW and TD/TA.

Table 4.3.3									
Quadratic Regression on Time Variable (Food Industry: 11 FDI companies)									
Debt Ratios	R square	Adjusted R square	Intercept	Slopeß1	Slopeß2	t-Statistic ß1	t-Statistic ß2	F-Statistic	D Statistic
STBB+CPLTD/TA	0.340	0.252	0.099	0.009	-0.001	1.492 (0.157)	-2.003 (0.064)	3.859 (0.044)	1.553
STD/TA	0.481	0.412	0.098	0.007	-0.001	1.387 (0.186)	-2.175* (0.047)	6.944 (0.007)	1.176
STD1/TA	0.563	0.505	0.488	-0.017	0.001	-4.113** (0.001)	3.361** (0.002)	9.659 (0.002)	**1.820**
TC& E/TA	0.377	0.294	0.282	-0.011	0.000	-2.637* (0.019)	2.217* (0.042)	4.547 (0.029)	**1.279**
STD/NW	0.404	0.325	0.480	0.002	-0.001	0.103 (0.919)	-0.853 (0.407)	5.086 (0.021)	1.346
STD1/NW	0.430	0.354	2.981	-0.347	0.015	-2.870* (0.012)	2.374* (0.031)	5.659 (0.015)	1.047
LTBB/TA	0.795	0.768	0.037	-0.005	0.000	-1.917 (0.074)	3.606** (0.003)	29.071 (0.000)	1.866
LTD/TA	0.696	0.655	0.175	-0.003	-8.70E-05	-0.918 (0.373)	-0.474 (0.642)	17.151 (0.000)	1.085
LTD/NW	0.366	0.282	1.379	-0.153	0.006	-2.183* (0.045)	1.655 (0.119)	4.335 (0.033)	1.151
LTD/(NW+LTD)	0.741	0.706	0.302	-0.005	0.000	-0.805 (0.433)	-0.753 (0.463)	21.458 (0.000)	1.171
TD/TA	0.815	0.790	0.277	0.004	-0.001	0.815 (-0.428)	-2.703* (0.016)	33.059 (0.000)	1.510
TL/TA	0.811	0.786	0.665	-0.021	0.001	-4.881** (0.000)	3.239** (0.006)	32.186 (0.000)	**1.521**
TD/NW	0.384	0.302	1.854	-0.15	0.005	-0.1776 (0.096)	1.137 (0.273)	4.676 (0.026)	1.180
TD/(TD+NW)	0.870	0.852	0.427	-0.004	0.000	-0.736 (0.473)	-1.642 (0.121)	50.037 (0.000)	1.785
TL/NW	0.411	0.333	4.356	-0.500	0.021	-2.650* (0.018)	2.136* (0.050)	5.244 (0.019)	1.075

Critical value of ' t'		
Degrees of freedom	1%level of significance**	5%level of significance*
15	2.9467	2.1315

Durbin-Watson statistic)- D statistic, K=2			
N	Prob(Alpha)	D-L (lower critical value)	D-U(upper critical value)
15	0.01	0.70	1.25
15	0.05	0.95	1.54

Where N= sample size, K = Number of independent variables

Note: Figures in parentheses are p-values

- In one of the Debt ratio: LTD/TA (-ve), linear trend is observed; although the problem of autocorrelation is detected as the 'D' statistic lies in inconclusive area.
- In some of the Debt ratios of in Food industry, a linear trend is observed. They are STD/NW (-ve) , LTD/(NW+LTD) (-ve) , TD/NW (-ve) and TD/(TD+NW) (ve-).
- The ratios in which Quadratic trend model fitted the best were STD1/TA, TC&E/TA and TL/TA. The quadratic trend indicated that these Debt ratios were decreasing at an increasing rate.
- The Debt ratio STD1/NW, TL/NW decrease at an increasing rate; however the problem of autocorrelation persists as 'D' statistic lies in the inconclusive area.

4.3.2 Trends in Capital Structure of Chemicals Industry

The aggregate Debt ratios in Table 4.4 indicate that Chemicals Industry is resorting to low debt levels in their Capital Structure. Long Term Debt as a proportion to Net worth (LTD/NW) account for only 48% as opposed to 62% in case of Food industry. Long Term Debt contributes only 23% towards capital employed as indicated by LTD/NW+ LTD ratio. The ratio of total outsiders funds to Owner's Funds (TL/NW) reveal that outsider's funds are only 1.55 times the owner's funds, which are very low as compared to other industries like Machinery or Food industry. Out of the Total Liabilities which are 1.55 times the owner's funds, Short Term Debt funds are 1.06 times (STD1/NW) which means 68% of Total Liabilities are made up of Short Term Debt funds.

52% of Total Assets are financed by external funds as indicated by TL/TA ratio. Out of these external funds which are financing 52% of Total Assets, Trade Credits & Equivalents contribute almost 23% indicating that Trade Credit is an important source of finance for Chemicals industry. Long Term Debt contributes only 14% towards financing of assets as indicated by LTD/TA ratio. TL/TA ratio was the most representative measure of Capital Structure even in case of Chemicals Industry as the COV was 25.53%, followed by STD1/TA which had a COV of 28.67%.

Table 4.4					
Aggregate Debt Ratios of Chemical Industry (37 FDI Companies, 1991-2008)					
Sr. No	Debt ratio	Mean	Median	SD	COV
1	STBB+CPLTD/TA	0.09	0.08	0.07	69.83
2	STD/TA	0.08	0.07	0.05	66.29
3	STD1/TA	0.37	0.38	0.11	28.67
4	TC&E/TA	0.23	0.22	0.09	41.42
5	STD/NW	0.26	0.21	0.25	94.69
6	STD1/NW	1.06	0.91	0.58	54.77
7	LTBB/TA	0.02	0.01	0.03	123.55
8	LTD/TA	0.14	0.11	0.12	82.41
9	LTD/NW	0.48	0.34	0.58	119.57
10	LTD/(NW+LTD)	0.23	0.21	0.17	73.18
11	LTD/STD1	0.62	0.35	0.59	96.12
12	TD/TA	0.22	0.19	0.14	64.44
13	TL/TA	0.52	0.50	0.13	25.53
14	TD/NW	0.74	0.59	0.76	102.67
15	TD/(TD+NW)	0.31	0.28	0.18	59.01
16	TL/NW	1.55	1.31	1.01	65.55

The Table 4.4.1 and the Figures 4.3.1, 4.3.2, 4.3.3 reveal that that there are wide fluctuations during 1991-1993 where there is a sudden fall in Debt ratios followed by immediate rise. This has mainly resulted due to existence of negative Net worth in Acrysil Ltd and Venlon Enterprises Ltd during the year 1992. Later in 1993, there was general increase in debt levels along with positive Net worth for both these companies; hence again noticeable spike was seen in the year 1993.From the year 1994 onwards, there was a gradual decline in all the Debt ratios, indicating that overall preference for debt in the Capital Structure of Chemical industry has declined over the period. The proportion of LTD/STD1 (Figure 4.3.2) seemed to increase temporarily in the year 1999 but overall the ratio showed a declining trend. Figure 4.3.4 indicated that Chemical industry's preference towards owners fund as source of financing the assets was showing an increasing trend from 33% contribution towards financing assets in the year 1991 to 56% contribution in the year 2008. As opposed to owner's funds, preference for Long Term Debt as a source of finance had decreased from 23% in the year 1991 to 7% in the year 2008. The proportion of Short Term Debt funds in the financing mix more or less remained stable throughout the time period in case of Chemicals Industry.

Figure 4.3
Mean Debt Ratios of Chemicals Industry (37 companies: 1991-2008)

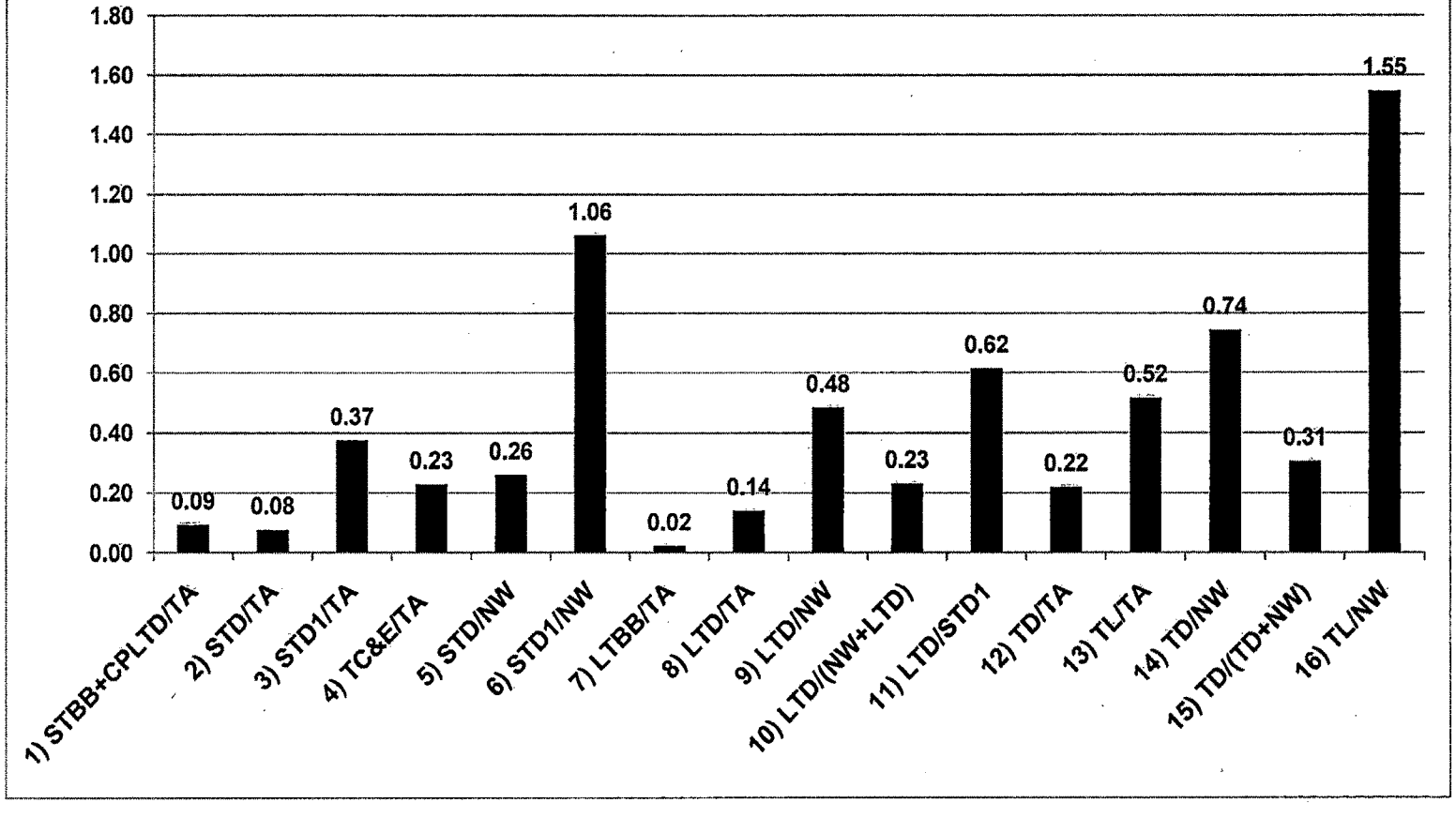


Table 4.4.1																				
Mean Debt Ratios by Year (Chemical Industry : 37 FDI Companies)																				Mean
	Debt Ratios	Mar-91	Mar-92	Mar-93	Mar-94	Mar-95	Mar-96	Mar-97	Mar-98	Mar-99	Mar-00	Mar-01	Mar-02	Mar-03	Mar-04	Mar-05	Mar-06	Mar-07	Mar-08	1991-2008
1	STBB+CPLTD/TA	0.16	0.16	0.14	0.12	0.13	0.14	0.12	0.09	0.08	0.07	0.08	0.07	0.07	0.05	0.05	0.05	0.05	0.06	0.09
2	STD/TA	0.14	0.13	0.12	0.10	0.11	0.11	0.10	0.07	0.06	0.06	0.07	0.06	0.05	0.04	0.04	0.04	0.04	0.04	0.08
3	STD1/TA	0.44	0.42	0.41	0.41	0.41	0.41	0.40	0.37	0.36	0.36	0.35	0.33	0.34	0.33	0.34	0.35	0.35	0.37	0.37
4	TC&E/TA	0.25	0.24	0.25	0.26	0.26	0.25	0.25	0.23	0.24	0.23	0.22	0.21	0.22	0.20	0.21	0.20	0.19	0.20	0.23
5	STD/NW	0.80	0.49	0.49	0.31	0.33	0.33	0.31	0.20	0.17	0.16	0.19	0.17	0.16	0.10	0.10	0.12	0.12	0.10	0.26
6	STD1/NW	2.06	1.36	1.77	1.26	1.24	1.13	1.14	0.92	0.93	0.86	0.83	0.81	0.83	0.77	0.76	0.77	0.81	0.89	1.06
7	LTBB/TA	0.03	0.02	0.02	0.01	0.02	0.04	0.03	0.03	0.03	0.03	0.02	0.01	0.01	0.02	0.02	0.02	0.02	0.02	0.02
8	LTD/TA	0.23	0.24	0.23	0.19	0.17	0.16	0.15	0.16	0.15	0.13	0.13	0.11	0.09	0.10	0.08	0.08	0.08	0.07	0.14
9	LTD/NW	1.46	0.24	1.33	0.67	0.58	0.54	0.48	0.45	0.43	0.38	0.34	0.30	0.25	0.30	0.27	0.25	0.25	0.21	0.48
10	LTD/(NW+LTD)	0.42	0.41	0.38	0.31	0.28	0.27	0.25	0.25	0.24	0.21	0.19	0.17	0.14	0.16	0.14	0.12	0.13	0.11	0.23
11	LTD/STD1	0.72	0.60	0.66	0.51	0.46	0.51	0.54	0.88	0.99	0.84	0.76	0.68	0.57	0.50	0.46	0.47	0.55	0.39	0.62
12	TD/TA	0.37	0.37	0.34	0.29	0.28	0.28	0.25	0.24	0.22	0.20	0.20	0.16	0.14	0.14	0.12	0.12	0.12	0.11	0.22
13	TL/TA	0.67	0.66	0.64	0.59	0.58	0.57	0.55	0.53	0.52	0.50	0.48	0.44	0.43	0.43	0.42	0.42	0.43	0.44	0.52
14	TD/NW	2.27	0.73	1.82	0.98	0.91	0.87	0.79	0.65	0.60	0.54	0.53	0.47	0.41	0.41	0.36	0.37	0.37	0.31	0.74
15	TD/(TD+NW)	0.53	0.51	0.49	0.41	0.39	0.38	0.35	0.32	0.30	0.26	0.27	0.23	0.20	0.20	0.18	0.17	0.17	0.15	0.31
16	TL/NW	3.52	1.59	3.10	1.93	1.83	1.67	1.62	1.37	1.36	1.24	1.17	1.11	1.08	1.07	1.02	1.02	1.06	1.10	1.55

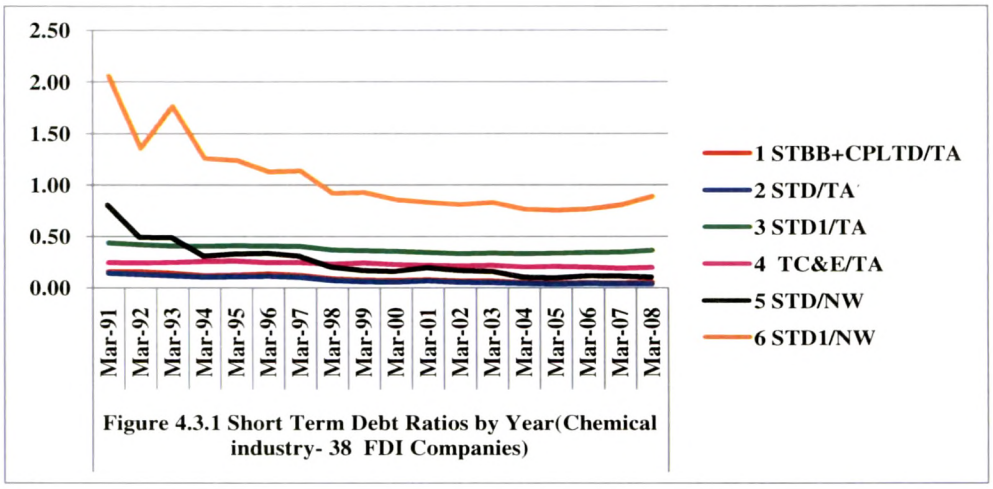


Figure 4.3.1 Short Term Debt Ratios by Year(Chemical industry- 38 FDI Companies)

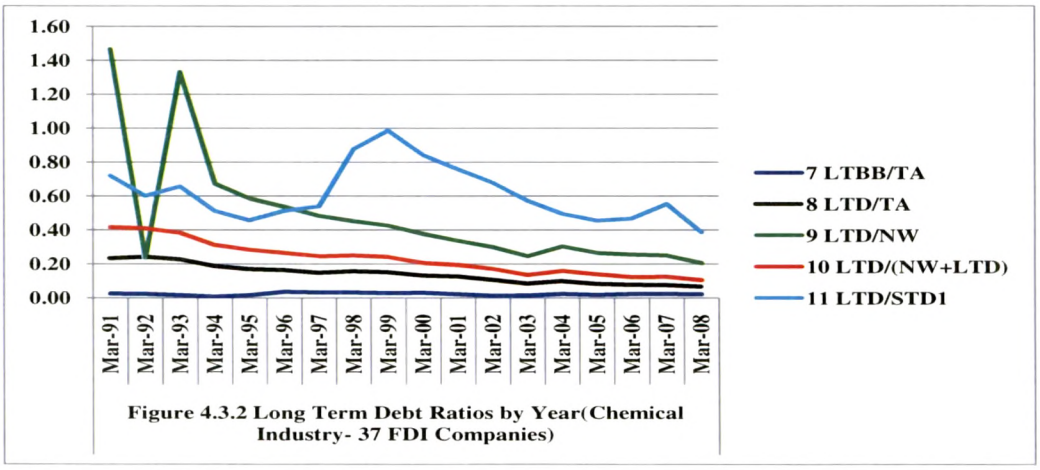


Figure 4.3.2 Long Term Debt Ratios by Year(Chemical Industry- 37 FDI Companies)

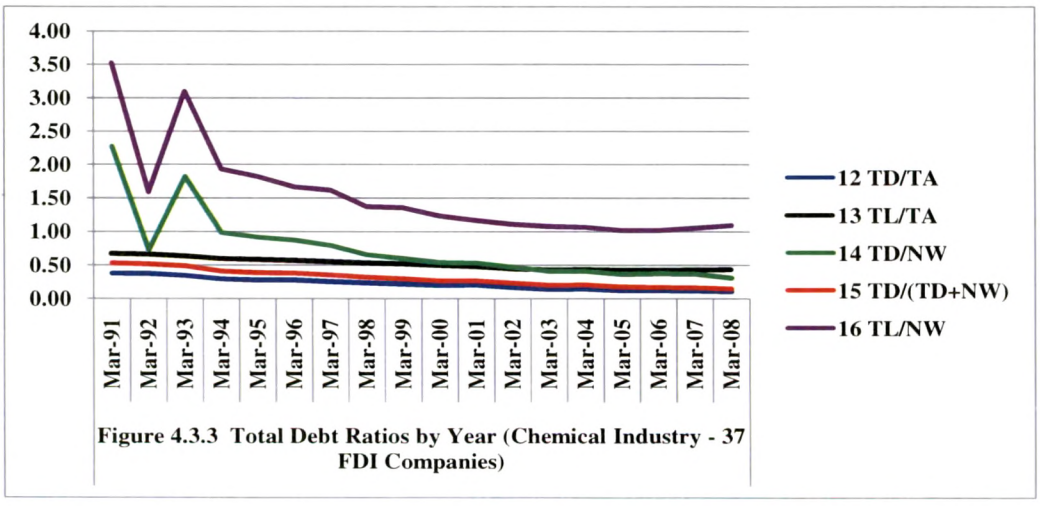
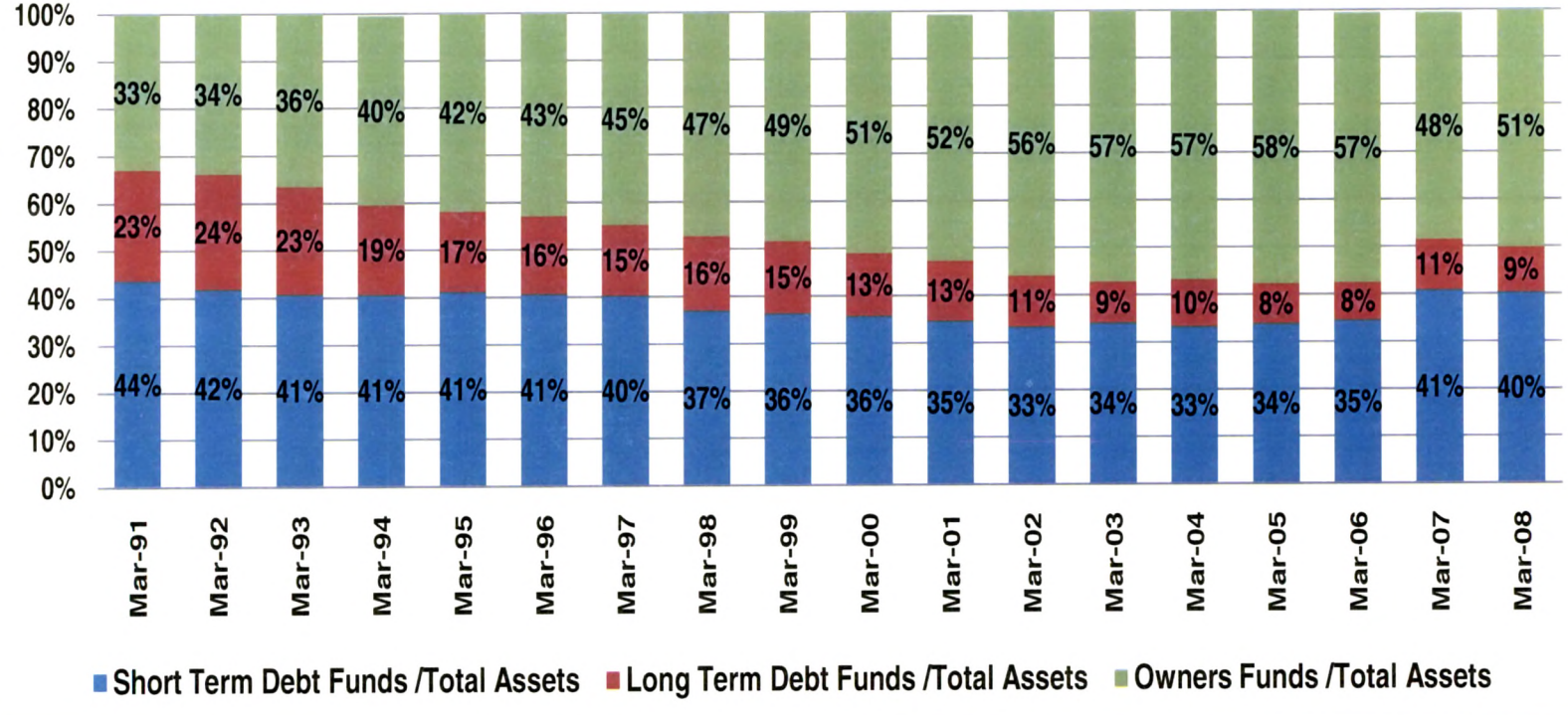


Figure 4.3.3 Total Debt Ratios by Year (Chemical Industry - 37 FDI Companies)

Figure 4.3.4 - Financing Mix Adopted by Chemical Industry - 37 FDI Companies (1991-2008)



4.3.2.1 Time Trends in Capital Structure of Chemicals Industry

Time Trends in Debt ratios for FDI Companies in Chemicals Industry have been studied with the help of Linear Trend Model (Table 4.4.2) and Quadratic Model (Table 4.4.3).

Table 4.4.2

Linear Regression on Time Variable (Chemical Industry: 37 FDI companies)

Debt Ratios	R square	Adjusted R square	Intercept	Slope	t-Statistic	p- value	F-Statistic	D Statistic
STBB+CPLTD/TA	0.893	0.887	0.160	-0.007	-11.581**	0.000	134.1	0.928
STD/TA	0.911	0.905	0.135	-0.006	-12.765**	0.000	162.933	0.884
STD1/TA	0.731	0.715	0.428	-0.006	-6.600**	0.000	43.555	0.477
TC& E/TA	0.837	0.827	0.265	-0.004	-.9.081**	0.000	82.458	**1.369**
STD/NW	0.735	0.719	0.538	-0.029	-6.666**	0.000	44.431	0.802
STD1/NW	0.686	0.666	1.602	-0.057	-5.912**	0.000	34.957	**1.289**
LTBB/TA	0.074	0.016	0.260	0.000	-1.133	0.274	1.284	1.064
LTD/TA	0.946	0.942	0.237	-0.010	-16.674**	0.000	278.022	1.036
LTD/NW	0.491	0.459	0.930	-0.047	-3.929**	0.001	15.434	**2.779**
LTD/(NW+LTD)	0.935	0.931	0.402	-0.018	-15.199**	0.000	230.999	0.564
TD/TA	0.967	0.964	0.374	-0.016	-21.498**	0.000	462.16	0.868
TL/TA	0.928	0.924	0.665	-0.016	-14.402**	0.000	207.42	0.423
TD/NW	0.614	0.590	1.471	-0.077	-5.044**	0.000	25.444	2.309
TD/(TD+NW)	0.961	0.959	0.522	-0.023	-19.940**	0.000	397.617	0.647
TL/NW	0.613	0.589	2.532	-0.104	-5.031**	0.000	25.315	**2.187**

* indicates significance at 5% level

** indicates significance at 1% level

Critical value of ' t'

Degrees of freedom	1%level of significance**	5%level of significance*
16	2.9208	2.1199

(Durbin-Watson statistic)- D statistic, K=1

N	Prob(Alpha)	D-L (lower critical value)	D-U(upper critical value)
16	0.01	0.84	1.09
16	0.05	1.10	1.37

Where N= sample size, K = Number of independent variables

Results of both the models, the Linear Trend Model (Table 4.4.2) and the Quadratic Trend Model (4.4.3) for the FDI Companies in Chemical industry are interpreted jointly as follows:

- On estimation of the Quadratic model, no trend is observed in LTBB/TA ratio.

Table 4.4.3									
Quadratic Regression on Time Variable (Chemical Industry: 37 FDI companies)									
Debt Ratios	R square	Adjusted R square	Intercept	Slopeß1	Slopeß2	t-Statistic ß1	t-Statistic ß2	F-Statistic	D Statistic
STBB+CPLTD/TA	0.931	0.922	0.18	-0.013	0.000	-6.064** (0.000)	2.854* (0.012)	101.08 (0.000)	**1.321**
STD/TA	0.947	0.94	0.152	-0.011	0.000	-6.880** (0.000)	3.189** (0.006)	133.235 (0.000)	**1.355**
STD1/TA	0.872	0.855	0.462	-0.016	0.001	-6.133** (0.000)	4.061** (0.001)	51.112 (0.000)	0.742
TC& E/TA	0.866	0.848	0.256	-0.001	0.000	-0.546 (0.593)	-1.793 (0.093)	48.547 (0.000)	1.665
STD/NW	0.898	0.884	0.729	-0.087	0.003	-7.198** (0.000)	4.883** (0.000)	65.848 (0.000)	**1.622**
STD1/NW	0.893	0.879	2.029	-0.185	0.007	-7.551** (0.000)	5.387** (0.000)	62.596 (0.000)	**3.266**
LTBB/TA	0.097	-0.024	0.023	0.001	-4.90E-05	0.330 (0.746)	-0.609 (0.551)	0.802 (0.467)	1.104
LTD/TA	0.965	0.960	0.256	-0.016	0.000	-7.486** (0.000)	2.839* (0.012)	204.353 (0.000)	**1.576**
LTD/NW	0.573	0.516	1.192	-0.125	0.004	-2.628* (0.019)	1.695 (0.111)	10.058 (0.002)	3.229
LTD/(NW+LTD)	0.978	0.975	0.454	-0.034	0.001	-11.209** (0.000)	5.398** (0.000)	333.216 (0.000)	**1.431**
TD/TA	0.985	0.983	0.405	-0.026	0.000	-11.691** (0.000)	4.386** (0.001)	504.116 (0.000)	**1.810**
TL/TA	0.976	0.973	0.714	-0.03	0.001	-11.066** (0.000)	5.500** (0.000)	308.45 (0.000)	0.895
TD/NW	0.729	0.693	1.925	-0.231	0.007	-3.831** (0.002)	2.526* (0.023)	20.187 (0.000)	**3.132**
TD/(TD+NW)	0.991	0.990	0.577	-0.039	0.001	-16.391** (0.000)	7.084** (0.000)	835.067 (0.000)	**2.428**
TL/NW	0.756	0.724	3.219	-0.31	0.011	-34.672 (0.001)	2.968** (0.010)	23.242 (0.000)	**3.276**

Critical value of 't'		
Degrees of freedom	1%level of significance**	5%level of significance*
15	2.9467	2.1315

Durbin-Watson statistic)- D statistic, K=2			
N	Prob(Alpha)	D-L (lower critical value)	D-U(upper critical value)
15	0.01	0.70	1.25
15	0.05	0.95	1.54

Where N= sample size, K = Number of independent variables

Note: Figures in parentheses are p-values

- In some of the Debt ratios of in Chemical industry, a linear trend is observed. They are TC&E/TA (-ve) and LTD/NW (-ve).

- The ratios in which Quadratic trend model fitted the best were STBB+CPLTD/TA, STD/TA, STD/NW, STD1/NW, LTD/TA, LTD/(NW+LTD), TD/TA, TD/NW, TD/(TD+NW) and TL/NW. The quadratic trend indicated that these Debt ratios were decreasing at an increasing rate.

- The Debt ratios STD1/TA and TL/TA ratio decrease at an increasing rate, however the problem of autocorrelation persists as 'D' statistic of both these ratios lie below the critical value.

4.3.3 Trends in Capital Structure of Machinery Industry

The aggregate Debt ratios in Table 4.5 indicate that Machinery Industry is also resorting to low debt levels in their Capital Structure. Long Term Debt as a proportion to Net worth (LTD/NW) account for only 63%. Long Term Debt contributes only 39% towards capital employed as indicated by LTD/NW+LTD ratio.

Table 4.5

Aggregate Debt Ratios of Machinery Industry (38 FDI Companies, 1991-2008)

Sr. No	Debt Ratios	Mean	Median	SD	COV
1	STBB+CPLTD/TA	0.11	0.07	0.14	122.72
2	STD/TA	0.09	0.06	0.08	99.18
3	STD1/TA	0.44	0.43	0.17	37.74
4	TC&E/TA	0.29	0.27	0.13	45.78
5	STD/NW	0.30	0.18	0.29	97.84
6	STD1/NW	1.51	1.00	1.22	80.74
7	LTBB/TA	0.01	0.01	0.01	90.23
8	LTD/TA	0.13	0.11	0.09	70.81
9	LTD/NW	0.63	0.29	0.92	145.15
10	LTD/(NW+LTD)	0.39	0.18	0.94	237.41
11	LTD/STD1	0.38	0.31	0.26	70.32
12	TD/TA	0.22	0.18	0.15	67.18
13	TL/TA	0.58	0.56	0.21	35.78
14	TD/NW	0.93	0.50	1.09	117.55
15	TD/(TD+NW)	0.35	0.25	0.37	105.17
16	TL/NW	2.14	1.61	2.04	95.36

The ratio of total outsiders funds to Owner's Funds (TL/NW) reveal that outsider's funds are 2.14 times the Owner's Funds, which are little higher as compared to Chemicals industry. Out of the Total Liabilities which are 2.14 times the owner's funds, Short Term Debt funds are 1.37 times (STD1/NW) which means 64% of Total Liabilities are made up of Short Term Debt funds.

58% of Total Assets are financed by external funds as indicated by TL/TA ratio. Out of these external funds which are financing 58% of Total Assets, Trade Credits and Equivalents contribute almost 29% indicating that Trade Credit is an important source of finance even for Machinery industry. Long Term Debt contributes only 13% towards financing of assets as indicated by LTD/TA ratio. In Machinery industry also TL/TA ratio was the most representative measure of leverage as COV was 35.78%, followed by STD1/TA which had COV of 37.74%.

The Table 4.5.1 and the Figures 4.4.1, 4.4.2 and 4.4.3 reveal that there were fluctuations during the year 1997-1998 with noticeable spikes in case of all the three categories of ratios –Short Term, Long Term and Total Debt Ratios which are scaled down to Net worth. LTD/(NW+LTD) ratio again shows a similar spike in the year 2003. These spikes were mainly attributable to one company-Schlafhorst Engineering (India) Ltd. which had a very high Debt ratio in one year followed by very low ratios in subsequent years. Figure 4.4.4 indicates that Machinery industry's preference towards owners fund as source of financing has generally increased from 30% to 46% during the period from 1991 to 2008. The preference for Long Term Debt as a source of finance had decreased considerably from 23% in the year 1991 to 5% in the year 2008. The proportion of Short Term Debt funds in the financing mix more or less remained stable throughout the time period except that in recent years it is showing an increased preference.

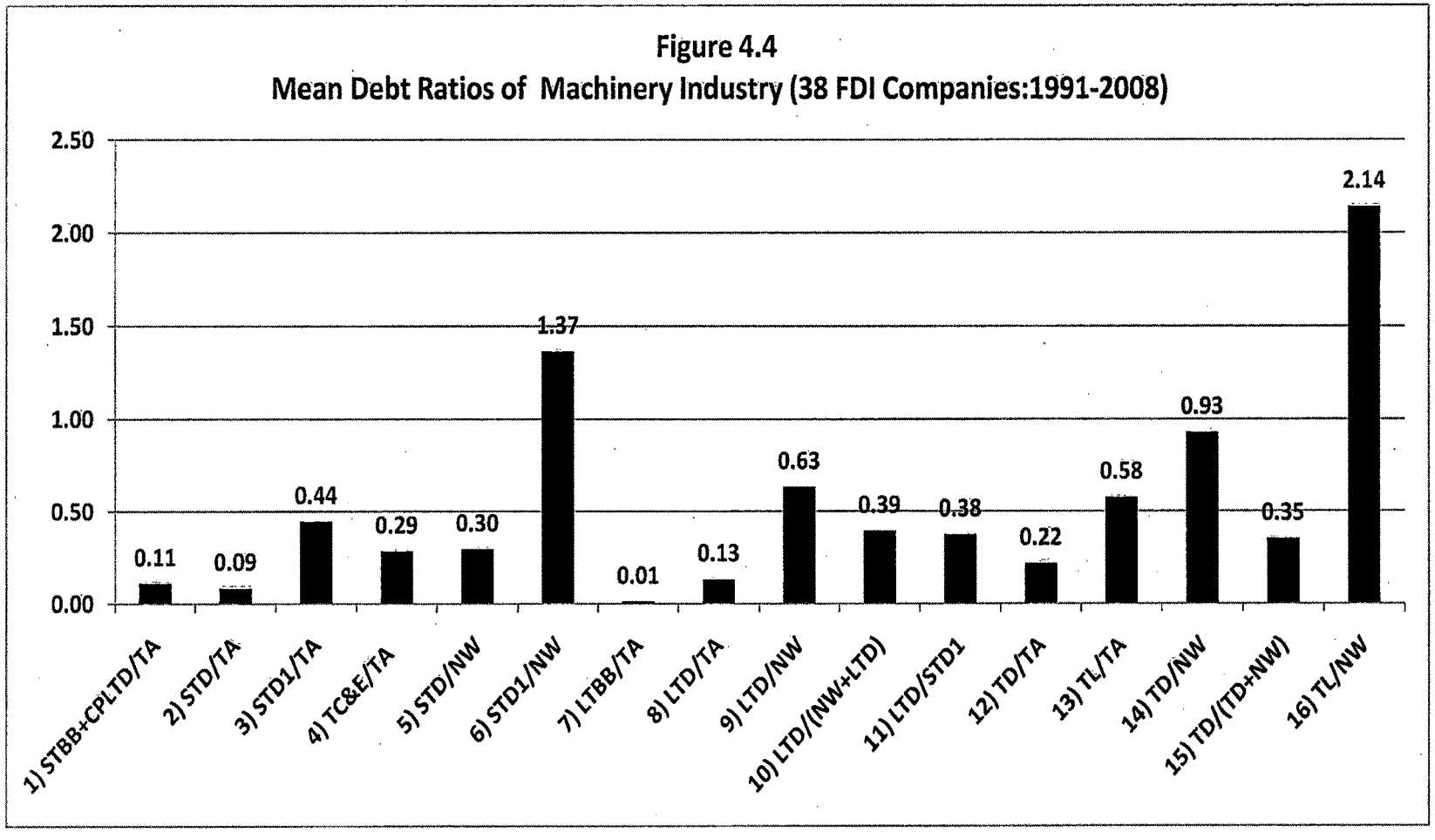


Figure 4.4
Mean Debt Ratios of Machinery Industry (38 FDI Companies:1991-2008)
2.50
2.00
1.50
1.00
0.50
0.00
0.11
0.09
0.44
0.29
0.30
1.37
0.01
0.13
0.63
0.39
0.38
0.22
0.58
0.93
0.35
2.14
1) STBB+CPLTD/TA
2) STD/TA
3) STD1/TA
4) TC&E/TA
5) STD/NW
6) STD1/NW
7) LTBB/TA
8) LTD/TA
9) LTD/NW
10) LTD/(NW+LTD)
11) LTD/STD1
12) TD/TA
13) TL/TA
14) TD/NW
15) TD/(TD+NW)
16) TL/NW

Table 4.5.1

	Mean Debt Ratios by Year (Machinery Industry: 38 Companies)																		Mean
	Debt Ratios	Mar-91	Mar-92	Mar-93	Mar-94	Mar-95	Mar-96	Mar-97	Mar-98	Mar-99	Mar-00	Mar-01	Mar-02	Mar-03	Mar-04	Mar-05	Mar-06	Mar-07	Mar-08	1991-2008
1	STBB+CPLTD/TA	0.13	0.13	0.14	0.11	0.12	0.12	0.12	0.12	0.11	0.11	0.12	0.09	0.08	0.08	0.09	0.15	0.15	0.05	0.11
2	STD/TA	0.12	0.11	0.11	0.09	0.09	0.10	0.11	0.10	0.08	0.08	0.08	0.07	0.06	0.06	0.06	0.09	0.09	0.03	0.09
3	STD1/TA	0.47	0.46	0.45	0.41	0.43	0.43	0.44	0.42	0.40	0.42	0.42	0.40	0.42	0.41	0.44	0.54	0.55	0.49	0.44
4	TC&E/TA	0.31	0.30	0.29	0.26	0.28	0.27	0.27	0.25	0.25	0.27	0.27	0.27	0.28	0.26	0.29	0.34	0.35	0.34	0.29
5	STD/NW	0.84	0.42	0.32	0.42	0.36	0.37	0.32	0.38	0.24	0.26	0.27	0.26	0.20	0.21	0.13	0.10	0.11	0.13	0.30
6	STD1/NW	2.04	2.27	1.49	1.52	1.52	1.82	1.29	2.18	0.99	1.06	1.01	1.07	0.99	1.04	1.11	1.07	1.00	1.10	1.37
7	LTBB/TA	0.02	0.02	0.02	0.01	0.01	0.02	0.01	0.01	0.01	0.01	0.01	0.02	0.01	0.01	0.01	0.01	0.01	0.01	0.01
8	LTD/TA	0.23	0.24	0.24	0.21	0.16	0.14	0.12	0.13	0.15	0.13	0.12	0.10	0.09	0.09	0.07	0.07	0.06	0.05	0.13
9	LTD/NW	2.44	1.21	0.85	0.76	0.64	1.03	0.39	1.97	0.28	0.28	0.25	0.24	0.17	0.17	0.33	0.17	0.10	0.10	0.63
10	LTD/(NW+LTD)	0.96	0.46	0.47	0.36	0.30	0.25	0.21	0.23	0.24	0.24	0.25	0.28	2.34	0.17	0.10	0.10	0.07	0.06	0.39
11	LTD/STD1	0.85	0.75	0.65	0.65	0.45	0.37	0.29	0.41	0.44	0.37	0.31	0.29	0.22	0.26	0.18	0.14	0.07	0.06	0.38
12	TD/TA	0.35	0.35	0.35	0.30	0.25	0.24	0.22	0.23	0.23	0.21	0.20	0.18	0.16	0.14	0.13	0.16	0.15	0.09	0.22
13	TL/TA	0.70	0.70	0.68	0.62	0.59	0.56	0.55	0.55	0.54	0.54	0.53	0.50	0.51	0.50	0.51	0.61	0.61	0.55	0.58
14	TD/NW	3.28	1.63	1.17	1.18	1.00	1.40	0.70	2.35	0.52	0.54	0.52	0.50	0.37	0.38	0.46	0.27	0.22	0.23	0.93
15	TD/(TD+NW)	0.53	0.52	0.51	0.43	0.38	0.36	0.33	0.33	0.32	0.32	0.34	0.35	0.81	0.24	0.27	0.10	0.08	0.11	0.35
16	TL/NW	7.05	3.48	2.35	2.28	2.15	2.85	1.67	4.15	1.27	1.34	1.26	1.31	1.16	1.21	1.44	1.25	1.11	1.20	2.14

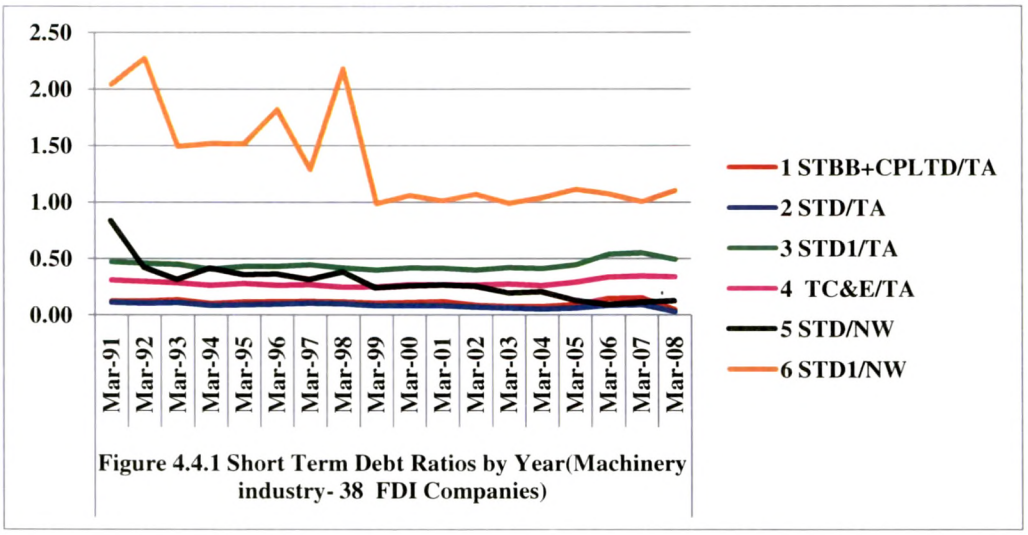


Figure 4.4.1 Short Term Debt Ratios by Year(Machinery industry- 38 FDI Companies)

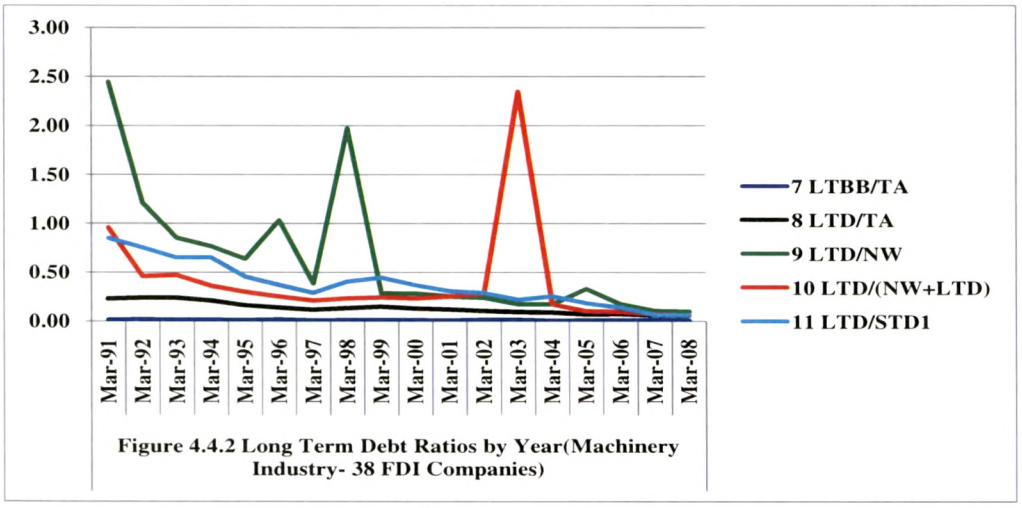


Figure 4.4.2 Long Term Debt Ratios by Year(Machinery Industry- 38 FDI Companies)

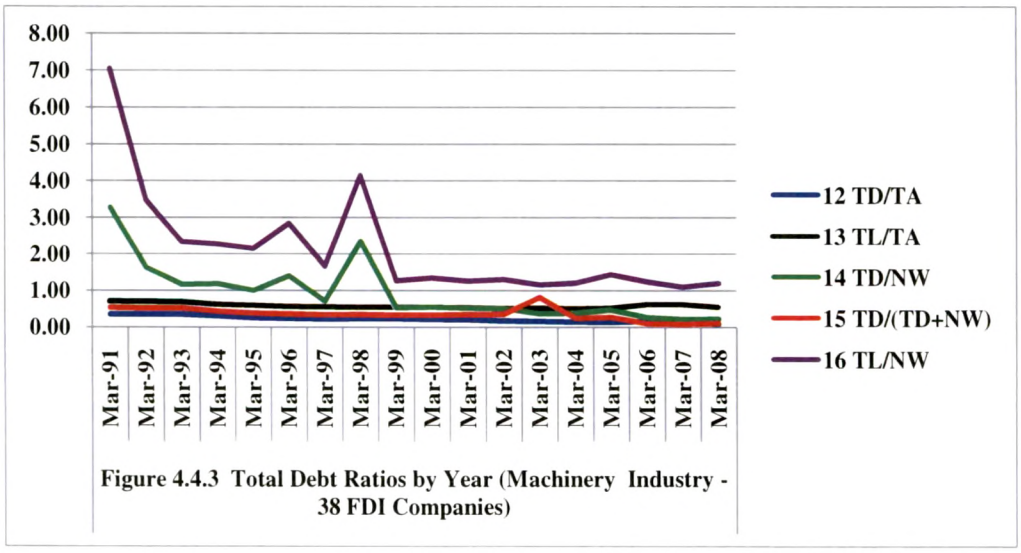
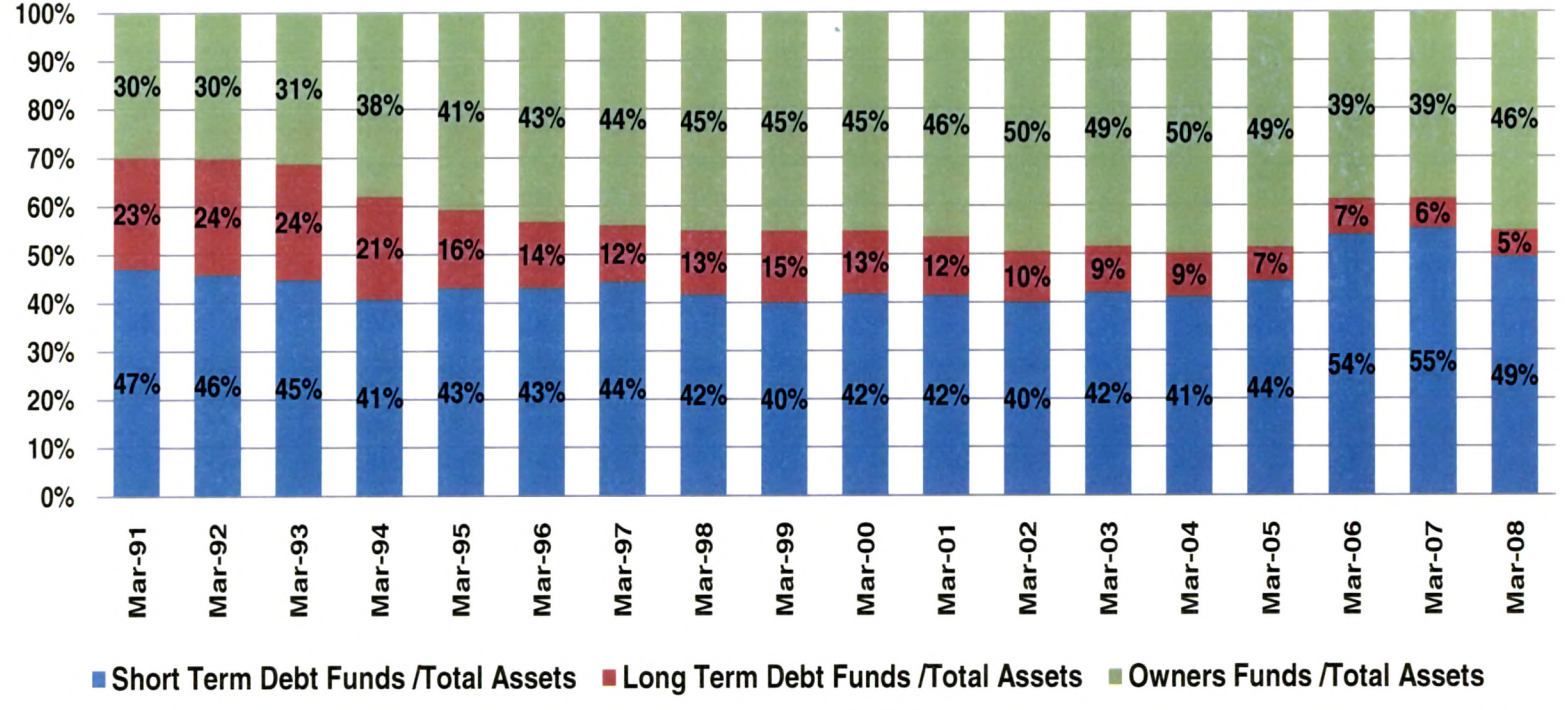


Figure 4.4.3 Total Debt Ratios by Year (Machinery Industry - 38 FDI Companies)

Figure 4.4.4 Financing Mix Adopted by Machinery Industry - 38 FDI Companies (1991-2008)



4.3.3.1 Time Trends in Capital Structure of Machinery Industry

Time Trends in Debt ratios for FDI Companies in Machinery Industry have been studied with the help of Linear Trend Model (Table 4.5.2) and Quadratic Model (Table 4.5.3).

Table 4.5.2

Linear Regression on Time Variable (Machinery Industry: 38 FDI companies)

Debt Ratios	R square	Adjusted R square	Intercept	Slope	t-Statistic	p- value	F-Statistic	D Statistic
STBB+CPLTD/TA	0.169	0.117	0.131	-0.002	-1.802	0.090	3.247	1.646
STD/TA	0.608	0.584	0.117	-0.003	-4.985**	0.000	24.846	1.583
STD1/TA	0.121	0.066	0.417	0.003	1.485	0.157	2.206	0.667
TC& E/TA	0.157	0.105	0.264	0.002	1.728	0.103	2.985	0.478
STD/NW	0.699	0.681	0.551	-0.027	-6.103**	0.000	37.244	1.424
STD1/NW	0.563	0.536	1.950	-0.062	-4.540**	0.000	20.607	2.265
LTBB/TA	0.316	0.273	0.017	0.000	-2.717*	0.015	7.380	2.000
LTD/TA	0.904	0.898	0.238	-0.011	-12.294**	0.000	151.133	0.727
LTD/NW	0.509	0.479	1.477	-0.089	-4.076**	0.001	16.616	1.995
LTD/(NW+LTD)	0.024	-0.037	0.540	-0.015	-0.632	0.536	0.400	1.995
TD/TA	0.919	0.914	0.352	-0.014	-13.456**	0.000	181.067	0.952
TL/TA	0.395	0.357	0.648	-0.008	-3.233**	0.005	10.454	0.442
TD/NW	0.568	0.541	2.026	-0.115	-4.588**	0.000	21.052	1.889
TD/(TD+NW)	0.351	0.310	0.536	-0.019	-2.942**	0.010	8.656	1.685
TL/NW	0.478	0.446	3.996	-0.195	-3.829**	0.001	14.658	1.432

* indicates significance at 5% level

** indicates significance at 1% level

Critical value of ' t'

Degrees of freedom	1%level of significance**	5%level of significance*
16	2.9208	2.1199

(Durbin-Watson statistic)- D statistic, K=1

N	Prob(Alpha)	D-L (lower critical value)	D-U(upper critical value)
16	0.01	0.84	1.09
16	0.05	1.10	1.37

Where N= sample size, K = Number of independent variables

Results of both the models, the Linear Trend Model (Table 4.5.2) and the Quadratic Trend Model (4.5.3) for the FDI Companies in Machinery industry are interpreted jointly as follows:

Table 4.5.3									
Quadratic Regression on Time Variable (Machinery Industry: 38 FDI companies)									
Debt Ratios	R square	Adjusted R square	Intercept	Slopeß1	Slopeß2	t-Statistic ß1	t-Statistic ß2	F-Statistic	D Statistic
STBB+CPLTD/TA	0.179	0.069	0.138	-0.004	0.000	-0.831 (0.419)	0.428 (0.674)	1.632 (0.228)	1.686
STD/TA	0.611	0.559	0.119	-0.004	4.45E-05	-1.433 (0.172)	0.299 (0.769)	11.76 (0.001)	1.603
STD1/TA	0.637	0.588	0.498	-0.021	0.001	-3.953** (0.001)	4.612** (0.000)	13.135 (0.001)	**1.561**
TC& E/TA	0.824	0.800	0.329	-0.017	0.001	-51.608 (0.000)	7.527** (0.000)	35.015 (0.000)	**1.872**
STD/NW	0.739	0.705	0.638	-0.053	0.001	-2.969** (0.010)	1.513 (0.151)	21.269 (0.000)	1.521
STD1/NW	0.625	0.575	2.231	-0.146	0.004	-2.657* (0.018)	1.581 (0.135)	12.518 (0.001)	2.615
LTBB/TA	0.396	0.315	0.021	-0.001	5.29E-05	-2.031 (0.060)	1.410 (0.179)	4.911 (0.023)	2.247
LTD/TA	0.928	0.918	0.262	-0.018	0.000	-5.382** (0.000)	2.208* (0.043)	96.311 (0.000)	0.975
LTD/NW	0.567	0.510	1.888	-0.212	0.006	-2.371* (0.032)	1.418 (0.177)	9.838 (0.002)	2.192
LTD/(NW+LTD)	0.025	-0.105	0.517	-0.008	0.000	-0.079 (0.938)	-0.068 (0.947)	0.190 (0.829)	1.996
TD/TA	0.940	0.932	0.382	-0.023	0.000	-5.831** (0.000)	2.312* (0.035)	117.807 (0.000)	**1.341**
TL/TA	0.849	0.829	0.762	-0.042	0.002	-8.011** (0.000)	6.720** (0.000)	42.232 (0.000)	**1.665**
TD/NW	0.625	0.575	2.528	-0.266	0.008	-2.596 (0.020)	1.512 (0.151)	12.515 (0.001)	2.091
TD/(TD+NW)	0.372	0.288	0.471	0.000	-0.001	0.005 (0.996)	-0.709 (0.489)	4.445 (0.030)	1.740
TL/NW	0.611	0.559	5.407	-0.619	0.022	-3.214** (0.006)	2.264* (0.039)	11.781 (0.001)	**1.764**

Critical value of ' t'		
Degrees of freedom	1%level of significance**	5%level of significance*
15	2.9467	2.1315

Durbin-Watson statistic)- D statistic, K=2			
N	Prob(Alpha)	D-L (lower critical value)	D-U(upper critical value)
15	0.01	0.70	1.25
15	0.05	0.95	1.54

Where N= sample size, K = Number of independent variables

Note: Figures in parentheses are p-values

- On estimation of the Quadratic model, no trend is observed in STBB+CPLTD/TA and LTD/(NW+LTD) ratio.

- In some of the Debt ratios of in Machinery industry, a linear trend is observed. They are STD/TA (-ve), STD1/NW (-ve), LTBB/TA (-ve), LTD/NW (-ve), TD/NW (-ve) and TD/ (TD+NW) (-ve).

- The ratios in which Quadratic trend model fitted the best were STD1/TA, TC&E/TA, STD/NW, TD/TA, TL/TA and TL/NW. The quadratic trend indicated that these Debt ratios were decreasing at an increasing rate.

- The Debt ratio LTD/TA decreases at an increasing rate, however the problem of autocorrelation persists as 'D' statistic lies in the inconclusive area.

4.3.4 Trends in Capital Structure of Transport Industry

The aggregate Debt ratios in Table 4.6 indicate that Long Term Debt as a proportion to Net worth (LTD/NW) account for 61% and Long Term Debt contributes 31% towards capital employed as indicated by LTD/(NW+ LTD) ratio. The ratio of total outsiders funds to Owner's Funds (TL/NW) reveal that outsiders funds are 1.98 times the Owner's Funds out of which Short Term Debt funds are 1.28 times which means 64% of Total Liabilities are made up of Short Term Debt funds.

Out of Total Liabilities financing 56% of Total Assets (TL/TA ratio), Trade Credits and Equivalents contribute almost 22% indicating that Trade Credit is an important source of finance for Transport industry. Long Term Debt contributes only 17% towards financing of assets as indicated by LTD/TA ratio. In Transport Industry also TL/TA ratio seems to be the most representative measure of Capital Structure as the COV was minimum at 21.65%.

The Table 4.6.1 and Figures 4.5.1, 4.5.2, 4.5.3 reveal that all the Debt ratios which are scaled down to Net worth increase temporarily during the year 2003, which is due to one of the sample companies- Hinduja Foundries Ltd. who had a very low Net worth during the year 2003. This resulted in spikes in these ratios. All other Debt ratios in Transport industry have been relatively stable throughout the time period.

Figure 4.5.4 indicates that there was a significant decrease in preference of Long Term Debt funds as a source to finance assets from 29% in the year 1991 to 10% in the year 2008. The overall preference for Owner's Funds seemed to increase from 31% in the year 1991 to 53% in the year 2008 , The composition of Short Term Debt funds has remained more or less stable during the study period in case of Transport industry.

Table 4.6

Aggregate Debt Ratios of Transport Industry (18 FDI Companies, 1991-2008)

Sr. No	Debt Ratios	Mean	Median	SD	COV
1	STBB+CPLTD/TA	0.13	0.10	0.08	64.27
2	STD/TA	0.10	0.08	0.07	71.58
3	STD1/TA	0.39	0.39	0.09	22.52
4	TC&E/TA	0.22	0.22	0.06	28.35
5	STD/NW	0.40	0.20	0.50	125.12
6	STD1/NW	1.28	0.86	1.03	80.36
7	LTBB/TA	0.04	0.03	0.03	83.19
8	LTD/TA	0.17	0.13	0.10	57.79
9	LTD/NW	0.61	0.40	0.62	101.15
10	LTD/(NW+LTD)	0.31	0.23	0.51	165.38
11	LTD/STD1	0.49	0.36	0.36	73.40
12	TD/TA	0.27	0.26	0.14	50.43
13	TL/TA	0.56	0.50	0.12	21.65
14	TD/NW	1.01	0.58	1.06	104.48
15	TD/(TD+NW)	0.38	0.34	0.19	48.96
16	TL/NW	1.98	1.48	1.68	84.97

Figure 4.5
Mean Debt Ratios of Transport Industry (18 FDI Companies:1991-2008)

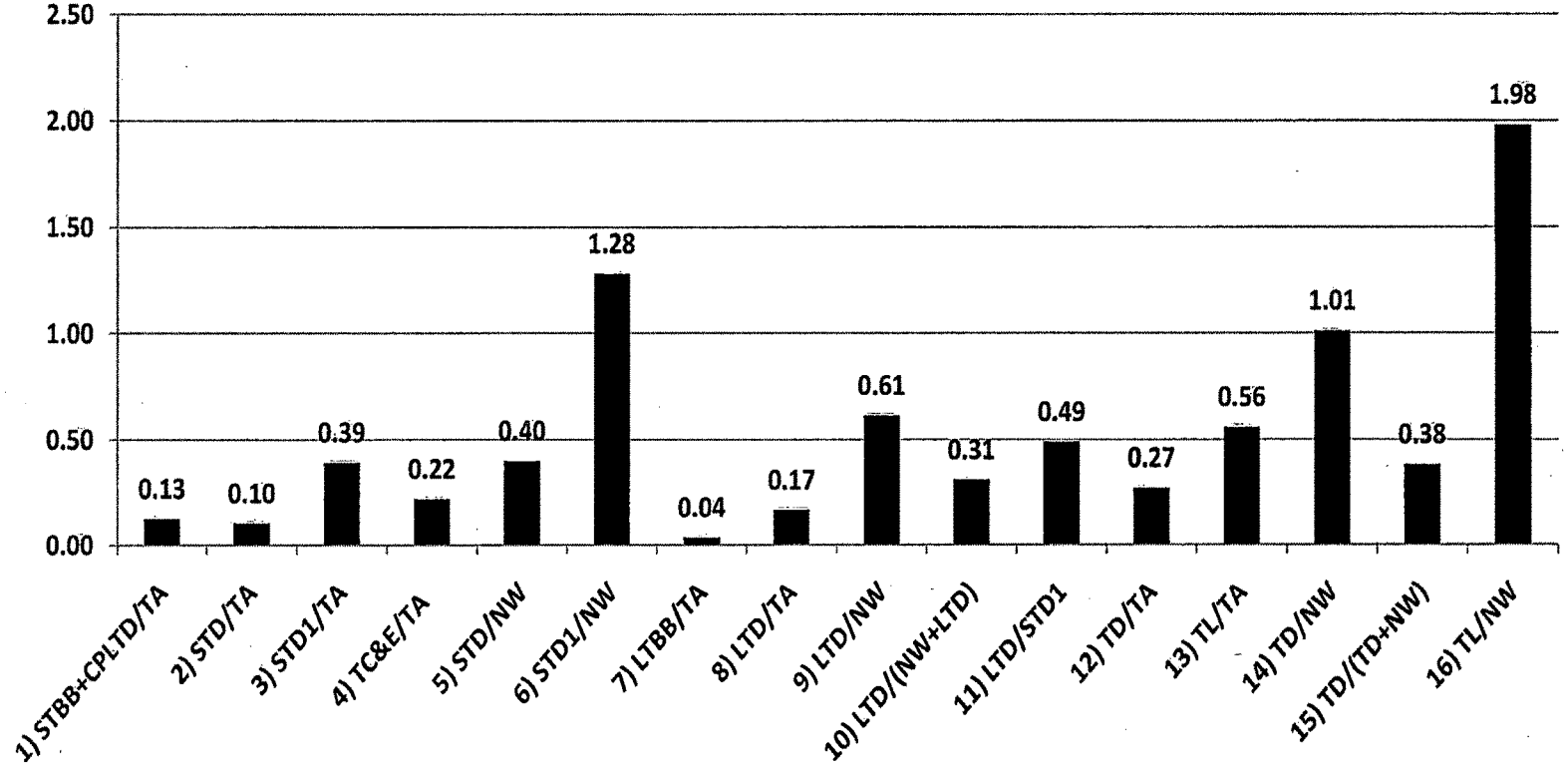


	Table 4.6.1																		
	Mean Debt Ratios by Year (Transport Industry: 18 Companies)																		Mean
	Debt Ratios	Mar-91	Mar-92	Mar-93	Mar-94	Mar-95	Mar-96	Mar-97	Mar-98	Mar-99	Mar-00	Mar-01	Mar-02	Mar-03	Mar-04	Mar-05	Mar-06	Mar-07	Mar-08	1991-2008
1	STBB+CPLTD/TA	0.13	0.13	0.16	0.15	0.14	0.16	0.13	0.13	0.13	0.13	0.13	0.12	0.11	0.09	0.10	0.08	0.13	0.12	0.13
2	STD/TA	0.11	0.11	0.14	0.13	0.12	0.13	0.11	0.11	0.12	0.11	0.11	0.10	0.09	0.07	0.08	0.06	0.09	0.08	0.10
3	STD1/TA	0.40	0.38	0.41	0.41	0.43	0.44	0.39	0.37	0.39	0.40	0.40	0.39	0.38	0.38	0.38	0.36	0.37	0.37	0.39
4	TC&E/TA	0.24	0.23	0.23	0.23	0.25	0.24	0.21	0.21	0.21	0.21	0.21	0.20	0.21	0.23	0.21	0.22	0.22	0.21	0.22
5	STD/NW	0.31	0.22	0.25	0.83	0.40	0.38	0.33	0.36	0.38	0.34	0.35	0.36	1.53	0.24	0.24	0.16	0.24	0.26	0.40
6	STD1/NW	1.12	0.91	0.85	2.35	1.37	1.18	1.04	1.04	1.07	1.03	1.08	1.26	3.89	1.07	1.01	0.93	0.93	0.96	1.28
7	LTBB/TA	0.05	0.04	0.02	0.02	0.02	0.03	0.03	0.03	0.03	0.02	0.02	0.03	0.05	0.05	0.05	0.06	0.05	0.06	0.04
8	LTD/TA	0.29	0.28	0.25	0.21	0.15	0.14	0.15	0.16	0.17	0.14	0.15	0.14	0.16	0.15	0.13	0.13	0.11	0.10	0.17
9	LTD/NW	0.73	0.68	0.53	1.32	0.44	0.37	0.41	0.46	0.49	0.43	0.53	0.62	2.14	0.50	0.42	0.38	0.31	0.30	0.61
10	LTD/(NW+LTD)	0.58	0.44	0.41	0.34	0.30	0.27	0.25	0.26	0.28	0.38	0.22	0.23	0.75	0.21	0.18	0.17	0.16	0.14	0.31
11	LTD/STD1	0.82	0.85	0.68	0.67	0.40	0.37	0.44	0.47	0.56	0.41	0.41	0.39	0.46	0.45	0.41	0.33	0.34	0.31	0.49
12	TD/TA	0.40	0.39	0.39	0.34	0.27	0.27	0.26	0.27	0.28	0.26	0.26	0.24	0.25	0.22	0.21	0.19	0.20	0.18	0.27
13	TL/TA	0.69	0.67	0.66	0.62	0.58	0.57	0.54	0.53	0.55	0.54	0.54	0.53	0.54	0.53	0.51	0.49	0.48	0.47	0.56
14	TD/NW	1.05	0.90	0.78	2.15	0.84	0.75	0.74	0.82	0.87	0.77	0.87	0.98	3.67	0.73	0.65	0.54	0.55	0.56	1.01
15	TD/(TD+NW)	0.58	0.55	0.54	0.47	0.39	0.38	0.36	0.35	0.37	0.35	0.36	0.35	0.36	0.33	0.32	0.28	0.29	0.27	0.38
16	TL/NW	4.46	2.78	2.56	2.34	2.02	2.05	1.76	2.18	1.52	1.50	1.38	1.48	1.99	2.38	1.48	1.28	1.22	1.26	1.98

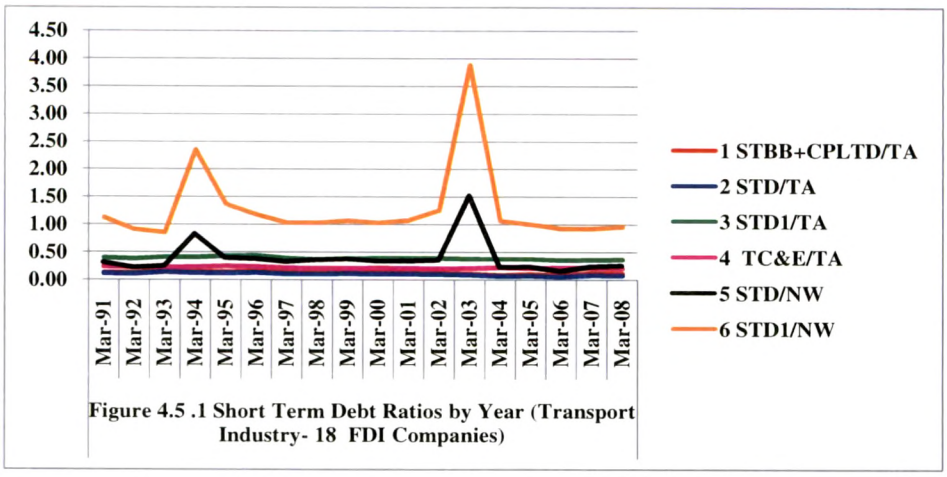


Figure 4.5 .1 Short Term Debt Ratios by Year (Transport Industry- 18 FDI Companies)

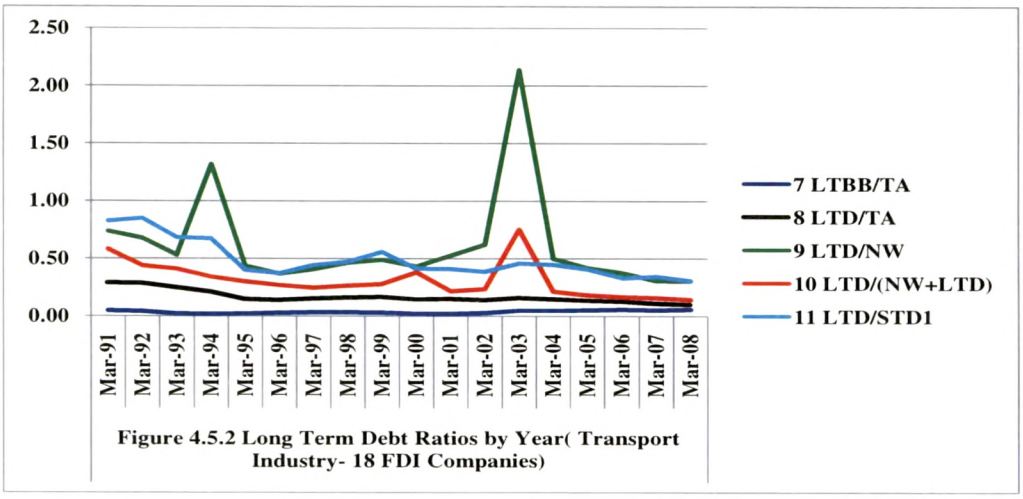


Figure 4.5.2 Long Term Debt Ratios by Year(Transport Industry- 18 FDI Companies)

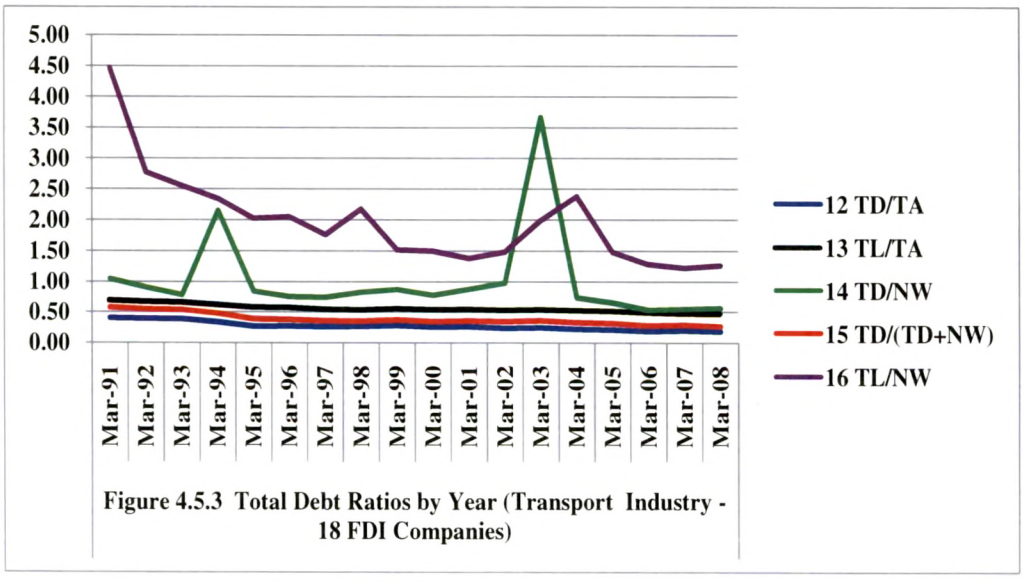


Figure 4.5.3 Total Debt Ratios by Year (Transport Industry - 18 FDI Companies)

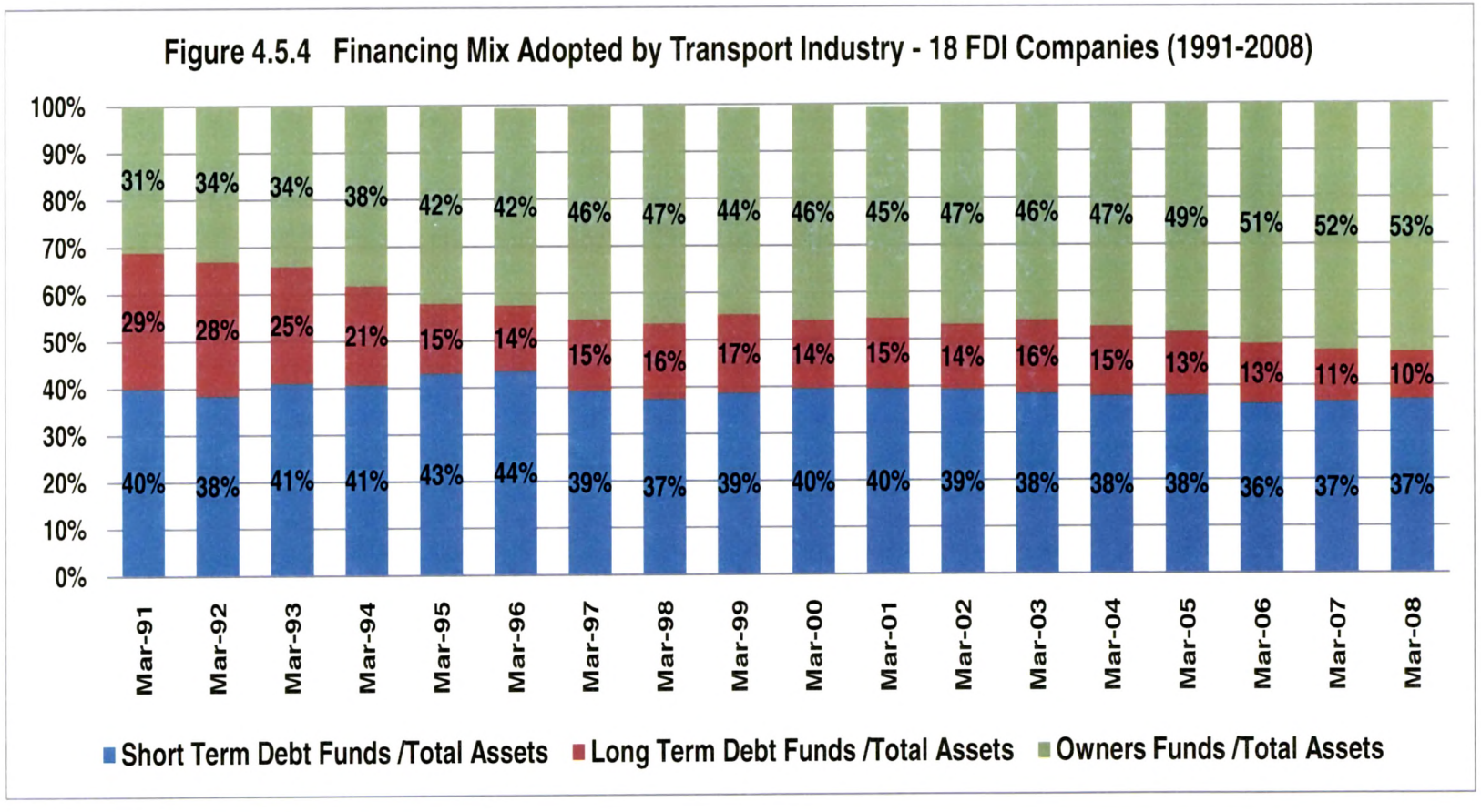


Figure 4.5.4 Financing Mix Adopted by Transport Industry - 18 FDI Companies (1991-2008)
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
31% 34% 34% 38% 42% 42% 46% 47% 44% 46% 45% 47% 46% 47% 49% 51% 52% 53%
29% 28% 25% 21% 15% 14% 15% 16% 17% 14% 15% 14% 16% 15% 13% 13% 11% 10%
40% 38% 41% 41% 43% 44% 39% 37% 39% 40% 40% 39% 38% 38% 38% 36% 37% 37%
Mar-91
Mar-92
Mar-93
Mar-94
Mar-95
Mar-96
Mar-97
Mar-98
Mar-99
Mar-00
Mar-01
Mar-02
Mar-03
Mar-04
Mar-05
Mar-06
Mar-07
Mar-08
Short Term Debt Funds /Total Assets
Long Term Debt Funds /Total Assets
Owners Funds /Total Assets

4.3.4.1 Time Trends in Capital Structure of Transport Industry

Table 4.6.2								
Linear Regression on Time Variable (Transport Industry: 18 FDI companies)								
Debt Ratios	R square	Adjusted R square	Intercept	Slope	t-Statistic	p- value	F-Statistic	D Statistic
STBB+CPLTD/TA	0.461	0.427	0.152	-0.003	-3.698**	0.002	13.675	1.500
STD/TA	0.654	0.632	0.135	-0.003	-.5.500**	0.000	30.254	1.400
STD1/TA	0.392	0.354	0.415	-0.002	-3.210**	0.005	10.305	1.259
TC& E/TA	0.329	0.287	0.235	-0.001	-2.803*	0.013	7.856	1.199
STD/NW	0.001	-0.062	0.414	-0.002	-0.106	0.917	0.011	2.117
STD1/NW	0.000	-0.062	1.270	0.001	0.040	0.968	0.002	2.015
LTBB/TA	0.340	0.299	0.022	0.002	2.870*	0.011	8.240	0.636
LTD/TA	0.685	0.665	0.248	-0.008	-5.892**	0.000	34.719	0.445
LTD/NW	0.017	-0.044	0.718	-0.011	-0.529	0.604	0.280	1.957
LTD/(NW+LTD)	0.177	0.126	0.437	-0.013	-1.855	0.082	3.440	2.135
TD/TA	0.856	0.847	0.382	-0.012	-9.758**	0.000	95.223	0.695
TL/TA	0.852	0.843	0.663	-0.011	-9.610**	0.000	92.354	0.373
TD/NW	0.008	-0.054	1.135	-0.013	-0.368	0.717	0.136	2.058
TD/(TD+NW)	0.804	0.792	0.530	-0.015	-8.111**	0.000	65.787	0.415
TL/NW	0.546	0.518	3.008	-0.108	-4.387**	0.000	19.242	0.957
* indicates significance at 5% level								
** indicates significance at 1% level								
Critical value of ' t'								
Degrees of freedom			1%level of significance**			5%level of significance*		
16			2.9208			2.1199		
(Durbin-Watson statistic)- D statistic, K=1								
N	Prob(Alpha)		D-L (lower critical value)			D-U(upper critical value)		
16	0.01		0.84			1.09		
16	0.05		1.10			1.37		
Where N= sample size, K = Number of independent variables								

Results of both the models, the Linear Trend Model (Table 4.6.2) and the Quadratic Trend Model (4.6.3) for the FDI Companies in Transport industry are interpreted jointly as follows:

- On estimation of the Quadratic model, no trend is observed in ratio STD/NW, STD1/NW, LTD/NW, LTBB/TA, LTD/(NW+LTD) and TD/NW.

Table 4.6.3									
Quadratic Regression on Time Variable (Transport Industry: 18 FDI companies)									
Debt Ratios	R square	Adjusted R square	Intercept	Slopeß1	Slopeß2	t-Statistic ß1	t-Statistic ß2	F-Statistic	D Statistic
STBB+CPLTD/TA	0.464	0.393	0.148	-0.002	-5.20E-05	-0.540 (0.597)	-0.318 (0.755)	6.504 (0.009)	1.510
STD/TA	0.710	0.671	0.122	0.001	0.000	0.273 (0.789)	-1.694 (0.111)	18.328 (0.000)	1.640
STD1/TA	0.456	0.384	0.401	0.002	0.000	0.521 (0.610)	-1.335 (0.202)	6.296 (0.010)	1.402
TC& E/TA	0.463	0.391	0.248	-0.005	0.000	-2.594* (0.020)	1.932 (0.072)	6.465 (0.009)	1.499
STD/NW	0.067	-0.057	0.205	0.061	-0.003	0.978 (0.344)	-1.032 (0.318)	0.539 (0.594)	2.261
STD1/NW	0.038	-0.09	0.904	0.111	-0.006	0.758 (0.460)	-0.771 (0.453)	0.298 (0.747)	2.089
LTBB/TA	0.696	0.655	0.044	-0.005	0.000	-3.106** (0.007)	4.192** (0.001)	17.172 (0.000)	1.141
LTD/TA	0.800	0.774	0.295	-0.023	0.001	-4.556** (0.000)	2.946** (0.010)	30.03 (0.000)	0.645
LTD/NW	0.026	-0.103	0.609	0.022	-0.002	0.243 (0.811)	-0.376 (0.712)	0.203 (0.819)	1.973
LTD/(NW+LTD)	0.177	0.068	0.446	-0.016	0.000	-0.511 (0.617)	0.089 (0.930)	1.617 (0.231)	2.136
TD/TA	0.896	0.882	0.417	-0.022	0.001	-4.930** (0.000)	2.378* (0.031)	64.289 (0.000)	0.926
TL/TA	0.911	0.899	0.702	-0.023	0.001	-5.869** (0.000)	3.131** (0.007)	76.494 (0.000)	0.558
TD/NW	0.035	-0.094	0.821	0.081	-0.005	0.537 (0.599)	-0.641 (0.531)	0.271 (0.767)	2.111
TD/(TD+NW)	0.891	0.877	0.599	-0.036	0.001	-5.863** (0.000)	3.471** (0.003)	61.621 (0.000)	0.662
TL/NW	0.831	0.649	3.77	-0.337	0.012	-3.777** (0.002)	2.638*8 (0.019)	16.684 (0.000)	1.238

Critical value of ' t'		
Degrees of freedom	1%level of significance**	5%level of significance*
15	2.9467	2.1315

Durbin-Watson statistic)- D statistic, K=2			
N	Prob(Alpha)	D-L (lower critical value)	D-U(upper critical value)
15	0.01	0.70	1.25
15	0.05	0.95	1.54

Where N= sample size, K = Number of independent variables

Note: Figures in parentheses are p-values

- In some of the Debt ratios of in Transport industry, a linear trend is observed. They are STBB+CPLTD/TA (-ve), STD/TA (-ve) and STD1/TA (-ve).

- The ratios in which Quadratic trend model fitted the best were TC&E/TA, TD/TA, TL/TA, TD/(TD+NW) and TL/NW. The quadratic trend indicated that these Debt ratios were decreasing at an increasing rate.

- The Debt ratios LTD/TA decreases at an increasing rate, however the problem of autocorrelation persists as the 'D' statistic lies below the critical value.

4.3.5 Trends in Capital Structure of Services Industry

Table 4.7 indicates that in Services Industry Long Term Debt as a proportion to Net worth (LTD/NW) account for only 76%. Long Term Debt contributes only 27% towards capital employed as indicated by LTD/NW+ LTD ratio. The ratio of total outsiders funds to Owner's Funds (TL/NW) reveal that outsider's funds are only 2.50 times the owner's funds, which are higher as compared to other industries like Food industry and Chemicals industry. Out of the Total Liabilities which are 2.50 times the owner's funds, Short Term Debt funds are 1.74 times (STD1/NW) which means 69.60% of Total Liabilities are made up of Short Term Debt funds. 54% of Total Assets are financed by external funds as indicated by TL/TA ratio. Out of these external funds which are financing 54% of Total Assets, Trade Credits and Equivalents contribute almost 22% indicating that Trade Credit is an important source of finance even for services industry. Long Term Debt contributes 18% towards financing of assets as indicated by LTD/TA ratio. TL/TA ratio was the most representative measure of Capital Structure even in case of Services Industry as the COV was 37.36%.

The Table 4.7.1 and Figures 4.6.1, 4.6.2 and 4.6.3 reveal that except for Debt ratios which were scaled down to Net worth, all other Debt ratios were relatively stable throughout the time period. The Debt ratios TD/NW, STD1/NW, TL/NW and TD/NW indicated a spike in the year 2004 which was due to one sample company-

Muller &Phipps (India) Ltd, which had a very low Net worth in the year 2004. This resulted in sudden spikes in the ratio.

There was no significant change in preferences of financing mix of Services Industry over the time period. Figure 4.6.4 indicated that the proportion of Short Term Funds and Owner's Funds towards financing assets remained more or less stable increasing marginally in 2007 and 2008. The preference for Long Term Debt funds declined from 28% in 1991 to 15% in 2008. The proportion of Owner's Funds in financing assets increased from 36% in the year 1991 to 45% in the year 2008.

Table 4.7

Aggregate Debt Ratios of Service Industry (14 FDI Companies, 1991-2008

Sr. No	Debt Ratios	Mean	Median	SD	COV
1	STBB+CPLTD/TA	0.09	0.07	0.09	100.97
2	STD/TA	0.08	0.03	0.10	125.83
3	STD1/TA	0.36	0.29	0.22	62.11
4	TC&E/TA	0.22	0.19	0.14	62.81
5	STD/NW	0.51	0.08	1.03	199.66
6	STD1/NW	1.74	0.69	2.58	148.53
7	LTBB/TA	0.05	0.01	0.09	179.18
8	LTD/TA	0.18	0.16	0.17	93.50
9	LTD/NW	0.76	0.61	0.79	103.18
10	LTD/(NW+LTD)	0.27	0.23	0.21	76.52
11	LTD/STD1	0.40	0.57	2.08	523.19
12	TD/TA	0.26	0.23	0.17	64.65
13	TL/TA	0.54	0.54	0.20	37.36
14	TD/NW	1.28	0.85	1.23	96.21
15	TD/(TD+NW)	0.57	0.35	0.85	149.32
16	TL/NW	2.50	1.96	2.62	104.80

Figure 4.6
Mean Debt Ratios of Service Industry (14 FDI Companies:1991-2008)

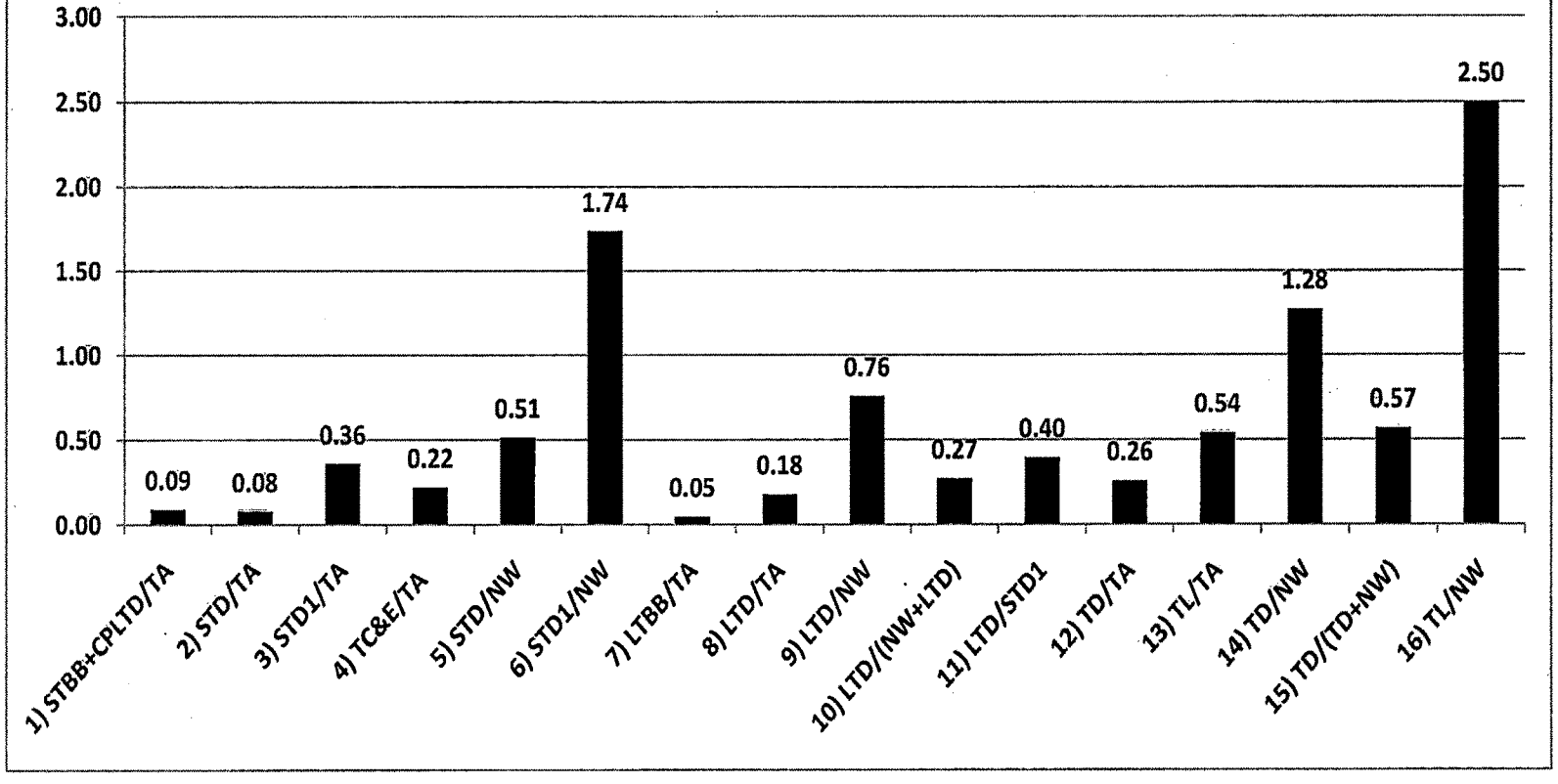


	Table 4.7.1																		
	Mean Debt Ratios by Year (Services Industry Companies)																		Mean
	Debt Ratios	Mar-91	Mar-92	Mar-93	Mar-94	Mar-95	Mar-96	Mar-97	Mar-98	Mar-99	Mar-00	Mar-01	Mar-02	Mar-03	Mar-04	Mar-05	Mar-06	Mar-07	Mar-08	1991-2008
1	STBB+CPLTD/TA	0.11	0.11	0.13	0.09	0.09	0.09	0.08	0.10	0.08	0.08	0.08	0.08	0.10	0.08	0.09	0.07	0.12	0.10	0.09
2	STD/TA	0.09	0.10	0.12	0.09	0.08	0.09	0.07	0.09	0.07	0.06	0.07	0.07	0.10	0.07	0.08	0.05	0.08	0.08	0.08
3	STD1/TA	0.36	0.41	0.45	0.36	0.34	0.33	0.33	0.35	0.30	0.33	0.34	0.31	0.35	0.36	0.40	0.37	0.40	0.40	0.36
4	TC&E/TA	0.22	0.26	0.27	0.22	0.19	0.20	0.20	0.22	0.16	0.23	0.22	0.19	0.20	0.23	0.26	0.25	0.25	0.25	0.22
5	STD/NW	0.36	0.41	0.49	0.35	0.28	0.33	0.29	0.34	0.41	0.58	0.29	0.32	0.50	3.86	0.08	0.07	0.11	0.18	0.51
6	STD1/NW	1.63	1.57	1.73	1.38	0.99	1.03	1.04	1.17	1.33	1.93	1.16	1.18	1.48	11.03	1.03	0.57	0.39	0.64	1.74
7	LTBB/TA	0.06	0.06	0.03	0.01	0.00	0.01	0.02	0.03	0.04	0.07	0.05	0.08	0.10	0.09	0.08	0.08	0.05	0.05	0.05
8	LTD/TA	0.28	0.23	0.19	0.19	0.17	0.13	0.13	0.19	0.20	0.20	0.20	0.20	0.20	0.17	0.16	0.14	0.15	0.15	0.18
9	LTD/NW	1.96	0.98	0.73	0.83	0.72	0.26	0.31	0.63	0.82	0.94	0.76	0.85	0.83	0.93	0.85	0.42	0.44	0.43	0.76
10	LTD/(NW+LTD)	0.40	0.35	0.31	0.30	0.24	0.17	0.19	0.27	0.31	0.32	0.29	0.30	0.32	0.31	0.25	0.20	0.19	0.19	0.27
11	LTD/STD1	0.52	0.30	0.15	0.18	0.28	0.53	0.46	0.54	0.54	0.72	0.64	0.38	0.39	0.28	0.27	0.32	0.28	0.36	0.40
12	TD/TA	0.37	0.33	0.31	0.28	0.24	0.21	0.21	0.27	0.27	0.26	0.27	0.26	0.29	0.24	0.24	0.18	0.23	0.23	0.26
13	TL/TA	0.65	0.64	0.64	0.56	0.51	0.46	0.46	0.54	0.49	0.53	0.54	0.51	0.55	0.53	0.56	0.51	0.55	0.55	0.54
14	TD/NW	2.33	1.39	1.22	1.19	0.99	0.60	0.60	0.97	1.23	1.52	1.04	1.17	1.33	4.78	0.94	0.49	0.56	0.61	1.28
15	TD/(TD+NW)	0.51	0.46	0.45	0.39	0.33	0.30	0.29	0.38	0.38	0.36	0.36	0.38	0.43	0.40	1.59	0.03	0.45	2.79	0.57
16	TL/NW	3.60	2.56	2.46	2.22	1.71	1.29	1.35	1.80	2.16	2.87	1.92	2.02	2.31	11.95	1.89	0.98	0.83	1.07	2.50

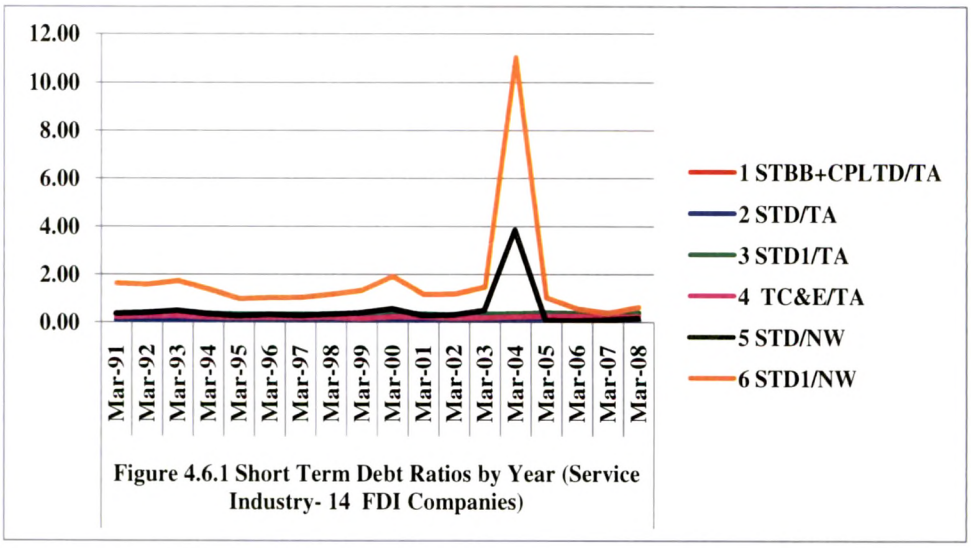


Figure 4.6.1 Short Term Debt Ratios by Year (Service Industry- 14 FDI Companies)

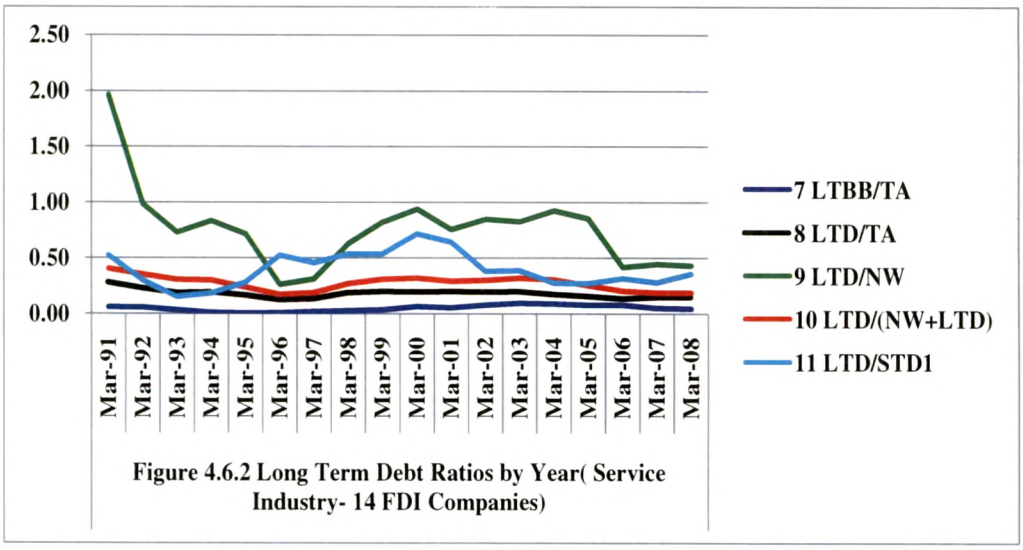


Figure 4.6.2 Long Term Debt Ratios by Year(Service Industry- 14 FDI Companies)

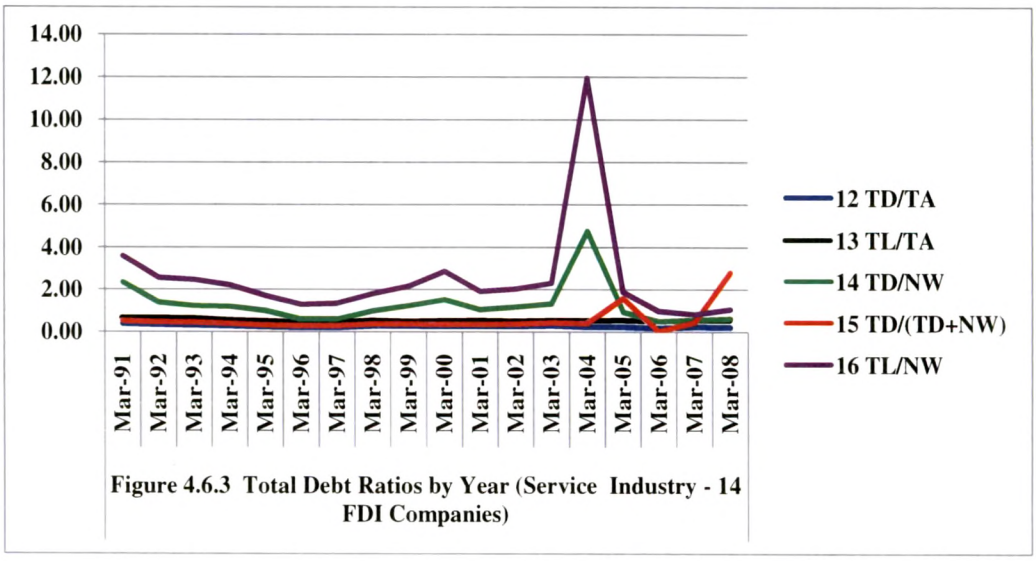
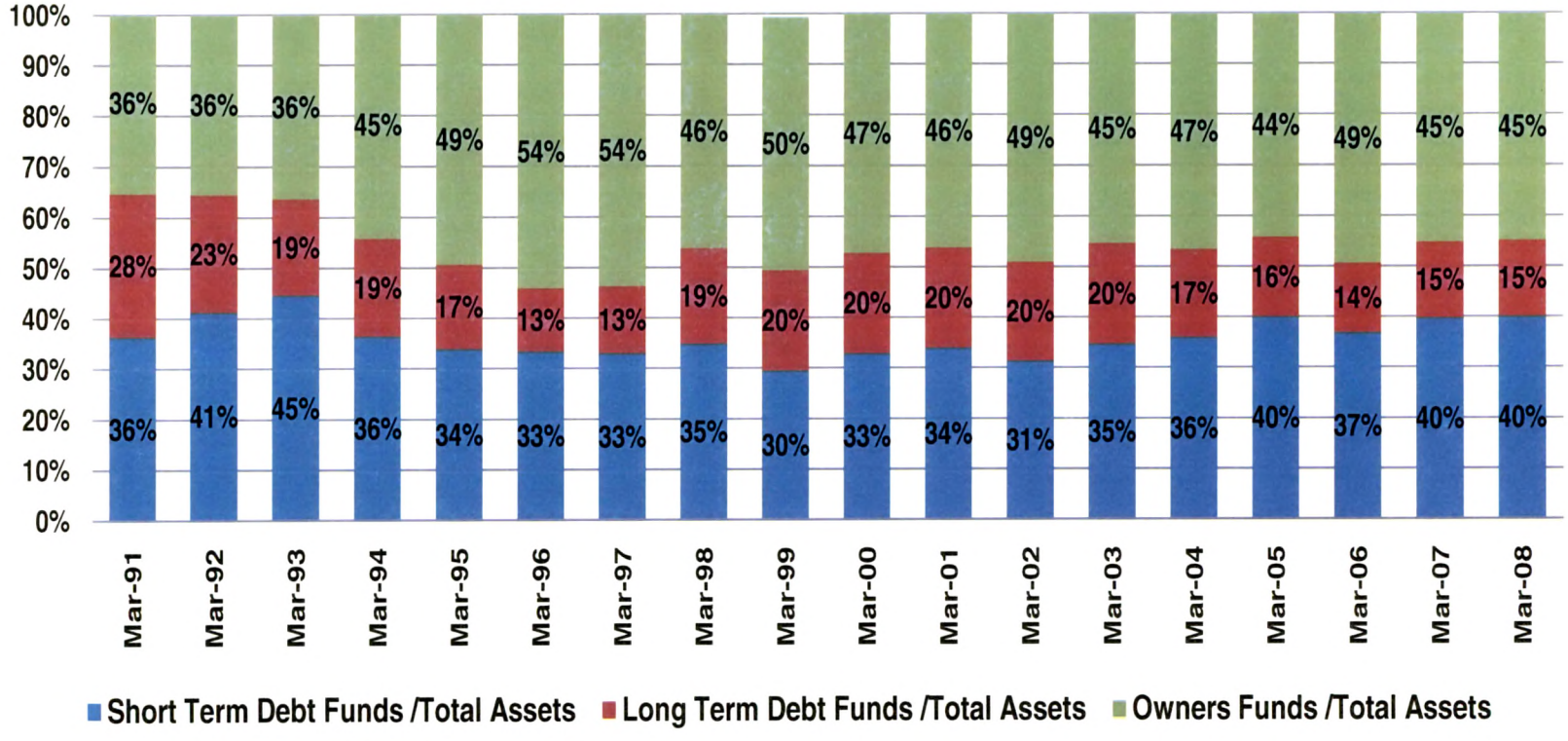


Figure 4.6.3 Total Debt Ratios by Year (Service Industry - 14 FDI Companies)

Figure 4.6.4 - Financing Mix Adopted by Service Industry - 14 FDI Companies (1991-2008)



4.3.5.1 Time Trends in Capital Structure of Services Industry

Table 4.7.2								
Linear Regression on Time Variable (Services Industry: 14 FDI companies)								
Debt Ratios	**R square**	**Adjusted R square**	**Intercept**	**Slope**	**t-Statistic**	**p- value**	**F-Statistic**	**D Statistic**
STBB+CPLTD/TA	0.091	0.034	0.102	-0.001	-1.264	0.224	1.598	1.774
STD/TA	0.281	0.236	0.097	-0.002	-2.503*	0.024	6.265	**2.041**
STD1/TA	0.000	-0.062	0.359	0.000	0.086	0.933	0.007	0.893
TC& E/TA	0.029	-0.032	0.214	0.001	0.693	0.498	0.480	1.171
STD/NW	0.013	-0.049	0.341	0.018	0.461	0.651	0.212	2.144
STD1/NW	0.009	-0.053	1.333	0.043	0.389	0.703	0.151	2.069
LTBB/TA	0.297	0.253	0.022	0.003	2.602*	0.019	6.773	0.546
LTD/TA	0.270	0.224	0.217	-0.004	-2.430*	0.027	5.907	0.611
LTD/NW	0.180	0.129	1.043	-0.030	-1.876	0.079	3.520	0.810
LTD/(NW+LTD)	0.233	0.186	0.328	-0.006	-2.207*	0.042	4.873	0.500
TD/TA	0.395	0.357	0.312	-0.005	-3.229**	0.005	10.429	0.828
TL/TA	0.134	0.079	0.579	-0.004	-1.570	0.136	2.466	0.665
TD/NW	0.004	-0.058	1.387	-0.012	-0.256	0.801	0.066	1.753
TD/(TD+NW)	0.177	0.126	0.098	0.05	1.855	0.082	3.440	1.671
TL/NW	0.001	-0.062	2.383	0.012	0.107	0.916	0.011	1.931
* indicates significance at 5% level								
** indicates significance at 1% level								
Critical value of 't'								
Degrees of freedom			**1%level of significance****			**5%level of significance***		
16			2.9208			2.1199		
(Durbin-Watson statistic)- D statistic, K=1								
N	**Prob(Alpha)**		**D-L (lower critical value)**			**D-U(upper critical value)**		
16	0.01		0.84			1.09		
16	0.05		1.10			1.37		
Where N= sample size, K = Number of independent variables								

Results of the models, the Linear Trend Model (Table 4.7.2) and the Quadratic Trend Model (4.7.3) for the Service Industry are interpreted jointly as follows:

- On estimation of the Quadratic model, no trend in some of the Debt ratios is observed. The ratios are STD/NW, STD1/NW, LTBB/TA, LTD/TA, LTD/NW, LTD/(NW+LTD), TD/TA, TD/NW, TD/(TD+NW) and TL/NW.

Table 4.7.3									
Quadratic Regression on Time Variable (Services Industry: 14 FDI companies)									
Debt Ratios	R square	Adjusted R square	Intercept	Slopeß1	Slopeß2	t-Statistic ß1	t-Statistic ß2	F-Statistic	D Statistic
STBB+CPLTD/TA	0.443	0.368	0.126	-0.008	0.00E+00	-3.359** (0.004)	3.077** (0.008)	5.956 (0.012)	**2.861**
STD/TA	0.372	0.288	0.109	-0.005	0.000	-2.039 (0.060)	1.468 (0.163)	4.436 (0.031)	2.337
STD1/TA	0.518	0.454	0.43	-0.021	0.001	-3.872** (0.002)	4.014** (0.001)	8.063 (0.004)	**1.893**
TC& E/TA	0.428	0.351	0.262	-0.013	0.001	-2.934** (0.010)	3.231** (0.006)	5.603 (0.015)	**2.022**
STD/NW	0.029	-0.101	0.068	0.100	-0.004	0.586 (0.567)	-0.493 (0.629)	0.223 (0.803)	2.174
STD1/NW	0.020	-0.110	0.698	0.233	-0.010	0.488 (0.632)	-0.411 (0.687)	0.156 (0.857)	2.089
LTBB/TA	0.304	0.211	0.028	0.001	9.80E-05	0.230 (0.821)	0.379 (0.710)	3.277 (0.066)	0.550
LTD/TA	0.298	0.205	0.233	-0.009	0.000	-1.329 (0.204)	0.784 (0.445)	3.189 (0.070)	0.606
LTD/NW	0.249	0.149	1.295	-0.105	0.004	-1.585 (0.134)	1.170 (0.260)	2.486 (0.117)	0.829
LTD/(NW+LTD)	0.234	0.132	0.332	-0.007	6.26E-05	-0.608 (0.552)	0.106 (0.917)	2.291 (0.135)	0.498
TD/TA	0.468	0.397	0.343	-0.015	0.001	-2.181 (0.046)	1.434 (0.172)	6.586 (0.009)	0.888
TL/TA	0.561	0.502	0.671	-0.031	0.001	-4.218** (0.001)	3.822** (0.002)	9.583 (0.002)	1.201
TD/NW	0.004	-0.129	1.372	-0.007	0.000	-0.036 (0.972)	-0.023 (0.982)	0.031 (0.970)	1.753
TD/(TD+NW)	0.392	0.311	0.851	-0.176	0.012	-1.744 (0.102)	2.303* (0.036)	4.835 (0.024)	2.094
TL/NW	0.004	-0.128	2.004	0.126	-0.006	0.251 (0.806)	-0.233 (0.819)	0.032 (0.968)	1.938

Critical value of ' t'		
Degrees of freedom	1%level of significance**	5%level of significance*
15	2.9467	2.1315

Durbin-Watson statistic)- D statistic, K=2			
N	Prob(Alpha)	D-L (lower critical value)	D-U(upper critical value)
15	0.01	0.70	1.25
15	0.05	0.95	1.54

Where N= sample size, K = Number of independent variables

Note: Figures in parentheses are p-values

- In one of the Debt ratios – STD/TA (-ve) a linear trend is observed.
- The ratios in which Quadratic trend model fitted the best were STBB+CPLTD/TA, STD1/TA and TC&E/TA ratio. The quadratic trend indicated that these Debt ratios were decreasing at an increasing rate.
- The Debt ratio TL/TA decreases at an increasing rate, however the problem of autocorrelation persists as 'D' statistic lies in the inconclusive area.

4.3.6 Trends in Capital Structure of Metal & Metal Products Industry

The aggregate Debt ratios in Table 4.8 indicate that Metal & Metal Products Industry has the highest TL/NW ratio among all industries. LTD/NW ratio indicates that Long Term Debt is 1.52 times the Net worth, which is also the highest among all industries. Long Term Debt contributes 53% towards capital employed as indicated by LTD/NW+LTD ratio. The TL/NW ratio reveals that outsider's funds are 2.70 times the owner's funds. Out of the total outsiders funds which are 2.70 times the Owner's Funds, Short Term Debt funds are 1.18 times (STD1/NW) which means 43% of Total Liabilities are made up of Short Term Debt funds. This means that share of Short Term Debt funds in total external funds is lowest in case of Metal& Metal Products industry.

67% of Total Assets are financed by external funds as indicated by TL/TA ratio. Out of these external funds which are financing 67% of Total Assets, Trade Credits and Equivalents contribute 23% indicating that Trade Credit is an important source of finance. Long Term Debt contributes 31% towards financing of assets as indicated by LTD/TA ratio. In Metal & Metal Products industry STBB+CPTTD/TA ratio was the most representative measure of leverage as COV was 29.21%.followed by TL/TA which had COV of 35.53%.

Table 4.8.1 and Figures 4.7.1, 4.7.2 and Figure 4.7.3 indicate that that there had been wide fluctuations in certain Debt ratios of Metal & Metal products industry. STD1/NW and STD/NW ratios even became negative due to existence of negative Net worth of Ferro Alloys Corporation Ltd, one of the member companies of the group. From the year 2004 onwards, again the ratio STD1/TW is showing an increasing trend. All the other ratios which have been scaled to Net worth also

indicated large fluctuations except that overall they showed a declining trend. Figure 4.74 indicates that owner's funds increased from 25% in 1991 to 48% in the year 2008. Proportion of Long Term funds in financing of assets declined from 37% in the year 1991 to 14% in the year 2008 indicating shift in preferences of Metal & Metal products industry's financing mix. Proportion of short term funds more or less remained stable during the study period.

Table 4.8

Aggregate Debt Ratios of Metal & Metal Products Industry (6 FDI Companies, 1991-2008)

Sr. No	Debt Ratios	Mean	Median	SD	COV
1	STBB+CPLTD/TA	0.11	0.10	0.03	29.21
2	STD/TA	0.07	0.05	0.03	51.00
3	STD1/TA	0.36	0.31	0.17	46.99
4	TC&E/TA	0.23	0.17	0.13	58.28
5	STD/NW	0.28	0.27	0.17	60.08
6	STD1/NW	1.18	1.27	0.53	44.70
7	LTBB/TA	0.03	0.02	0.03	112.84
8	LTD/TA	0.31	0.30	0.19	59.71
9	LTD/NW	1.52	1.26	1.41	92.52
10	LTD/(NW+LTD)	0.53	0.40	0.37	70.39
11	LTD/STD1	1.45	0.81	1.09	75.26
12	TD/TA	0.38	0.34	0.19	50.76
13	TL/TA	0.67	0.61	0.24	35.53
14	TD/NW	1.80	1.52	1.47	81.89
15	TD/(TD+NW)	0.43	0.40	0.22	50.31
16	TL/NW	2.70	2.37	1.71	63.42

Figure 4.7

Mean Debt Ratios of Metal & Metal Products Industry (6 FDI Companies:1991-2008)

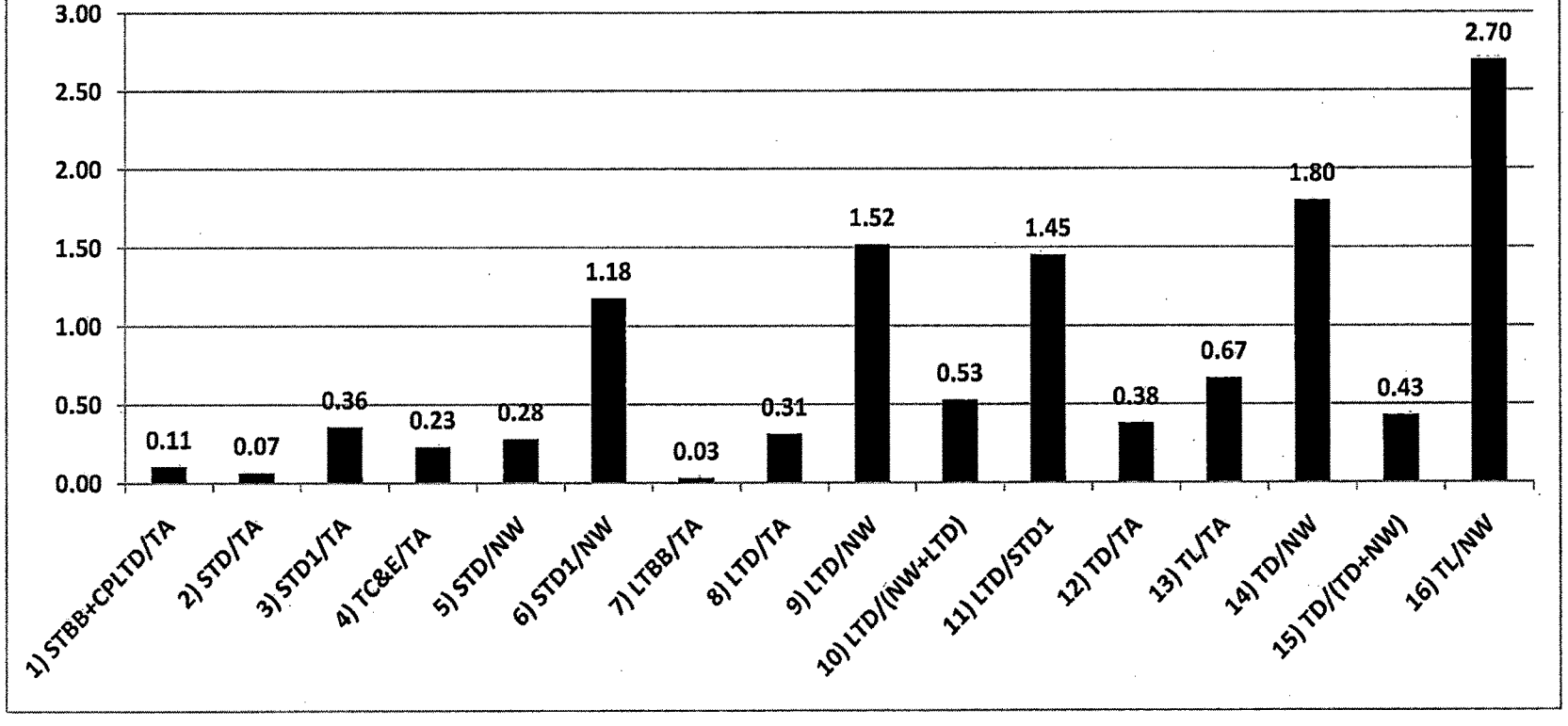


Table 4.8.1																			
	Mean Debt Ratios by Year (Metal &Metal Products Industry: 6 Companies)																		Mean
	Debt Ratios	Mar-91	Mar-92	Mar-93	Mar-94	Mar-95	Mar-96	Mar-97	Mar-98	Mar-99	Mar-00	Mar-01	Mar-02	Mar-03	Mar-04	Mar-05	Mar-06	Mar-07	Mar-08	1991-2008
1	STBB+CPLTD/TA	0.13	0.13	0.12	0.12	0.09	0.11	0.11	0.10	0.10	0.16	0.11	0.12	0.06	0.07	0.08	0.09	0.11	0.09	0.11
2	STD/TA	0.11	0.10	0.08	0.08	0.07	0.09	0.09	0.07	0.08	0.10	0.08	0.08	0.02	0.02	0.02	0.04	0.03	0.04	0.07
3	STD1/TA	0.38	0.35	0.33	0.26	0.27	0.32	0.34	0.36	0.37	0.42	0.42	0.45	0.43	0.32	0.32	0.37	0.34	0.38	0.36
4	TC&E/TA	0.25	0.22	0.22	0.17	0.18	0.19	0.21	0.24	0.27	0.27	0.30	0.33	0.35	0.21	0.18	0.19	0.19	0.17	0.23
5	STD/NW	0.54	1.04	0.57	0.38	0.48	0.38	1.00	-0.17	0.02	0.00	0.04	0.08	0.08	0.08	0.09	0.15	0.15	0.15	0.28
6	STD1/NW	1.77	3.31	2.34	1.40	1.70	1.24	2.83	-0.37	0.20	0.31	0.31	0.57	0.48	0.94	0.87	1.11	1.06	1.13	1.18
7	LTBB/TA	0.02	0.01	0.02	0.02	0.01	0.00	0.00	0.03	0.05	0.03	0.02	0.01	0.07	0.05	0.08	0.06	0.04	0.04	0.03
8	LTD/TA	0.37	0.48	0.36	0.45	0.41	0.31	0.30	0.33	0.31	0.28	0.30	0.32	0.37	0.24	0.22	0.20	0.22	0.14	0.31
9	LTD/NW	1.79	5.17	2.38	2.25	2.41	1.36	2.52	0.63	0.55	0.51	0.74	1.45	0.93	1.23	0.70	0.98	1.02	0.76	1.52
10	LTD/(NW+LTD)	0.59	0.74	0.56	0.61	0.57	0.47	0.48	0.55	0.69	3.55	-0.31	0.02	-0.52	0.34	0.31	0.30	0.32	0.23	0.53
11	LTD/STD1	1.11	2.10	1.30	2.99	2.21	1.44	1.26	1.35	1.23	1.02	1.21	1.19	1.48	1.54	1.87	0.95	1.16	0.73	1.45
12	TD/TA	0.48	0.58	0.45	0.53	0.47	0.41	0.39	0.40	0.39	0.39	0.39	0.40	0.39	0.26	0.24	0.23	0.25	0.18	0.38
13	TL/TA	0.75	0.83	0.69	0.71	0.67	0.64	0.64	0.68	0.69	0.70	0.73	0.77	0.80	0.56	0.53	0.56	0.56	0.52	0.67
14	TD/NW	2.33	6.21	2.95	2.63	2.89	1.74	3.52	0.46	0.56	0.51	0.78	1.53	1.01	1.31	0.79	1.13	1.17	0.90	1.80
15	TD/(TD+NW)	0.65	0.77	0.60	0.65	0.60	0.53	0.53	0.58	0.64	0.73	1.35	-1.01	-0.58	0.36	0.34	0.34	0.36	0.28	0.43
16	TL/NW	3.56	8.48	4.72	3.65	4.11	2.60	5.35	0.25	0.75	0.82	1.05	2.02	1.41	2.17	1.57	2.09	2.08	1.88	2.70

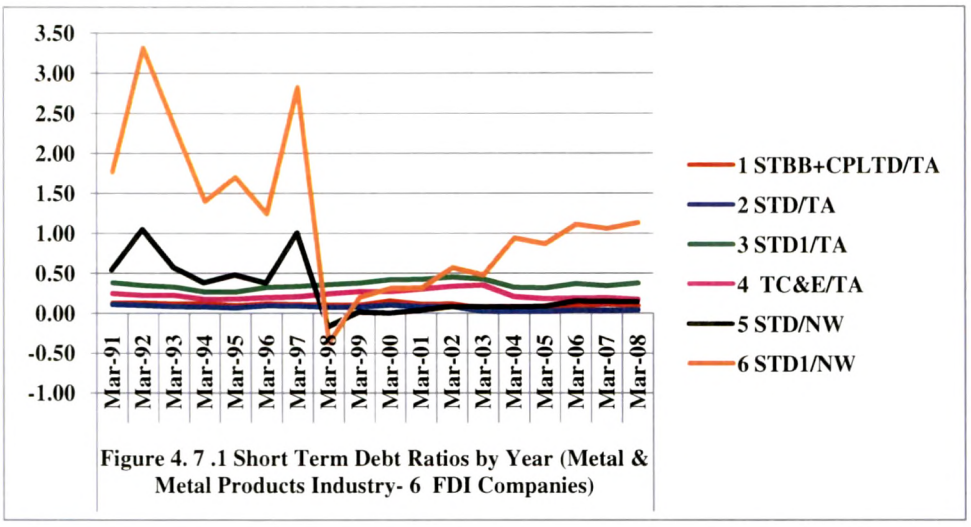


Figure 4. 7 .1 Short Term Debt Ratios by Year (Metal & Metal Products Industry- 6 FDI Companies)

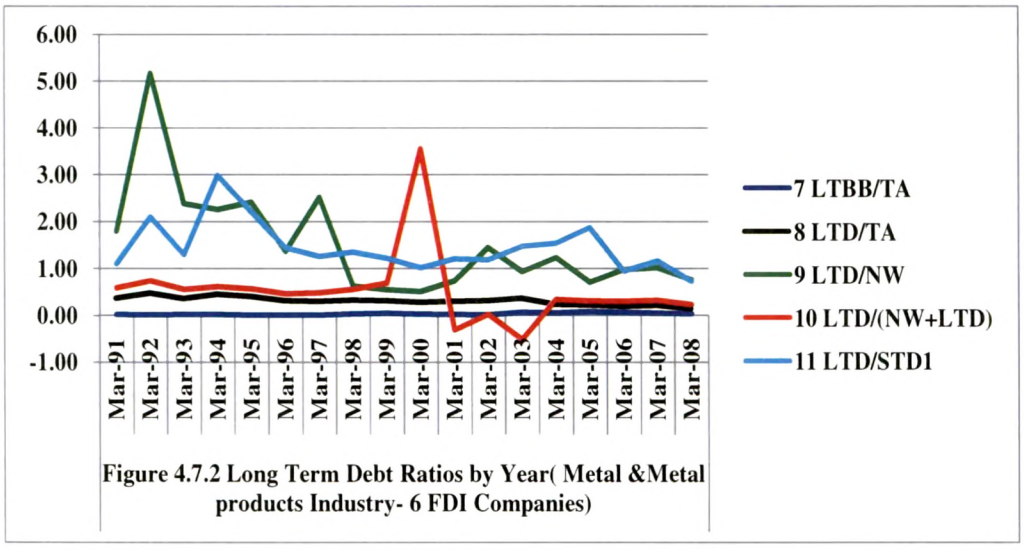


Figure 4.7.2 Long Term Debt Ratios by Year(Metal &Metal products Industry- 6 FDI Companies)

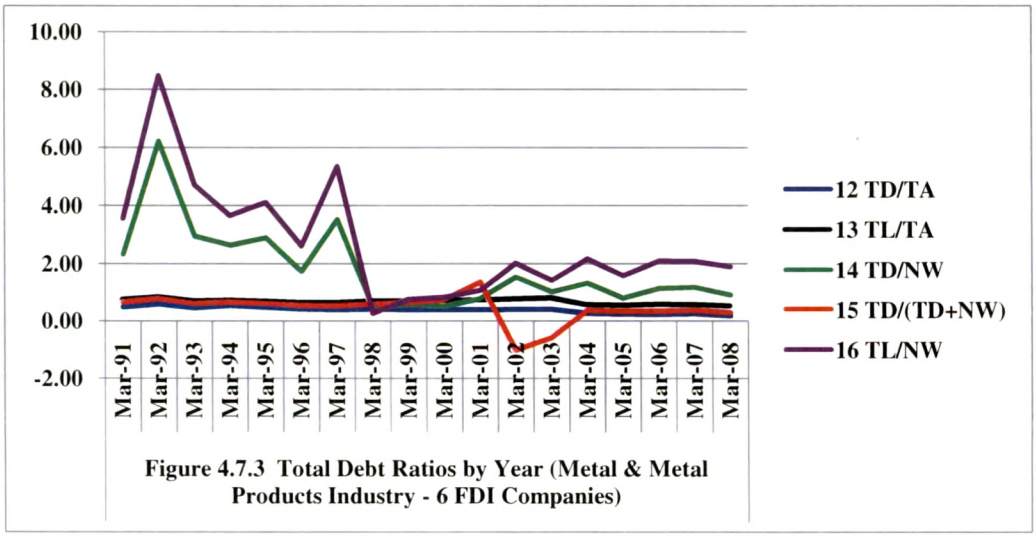
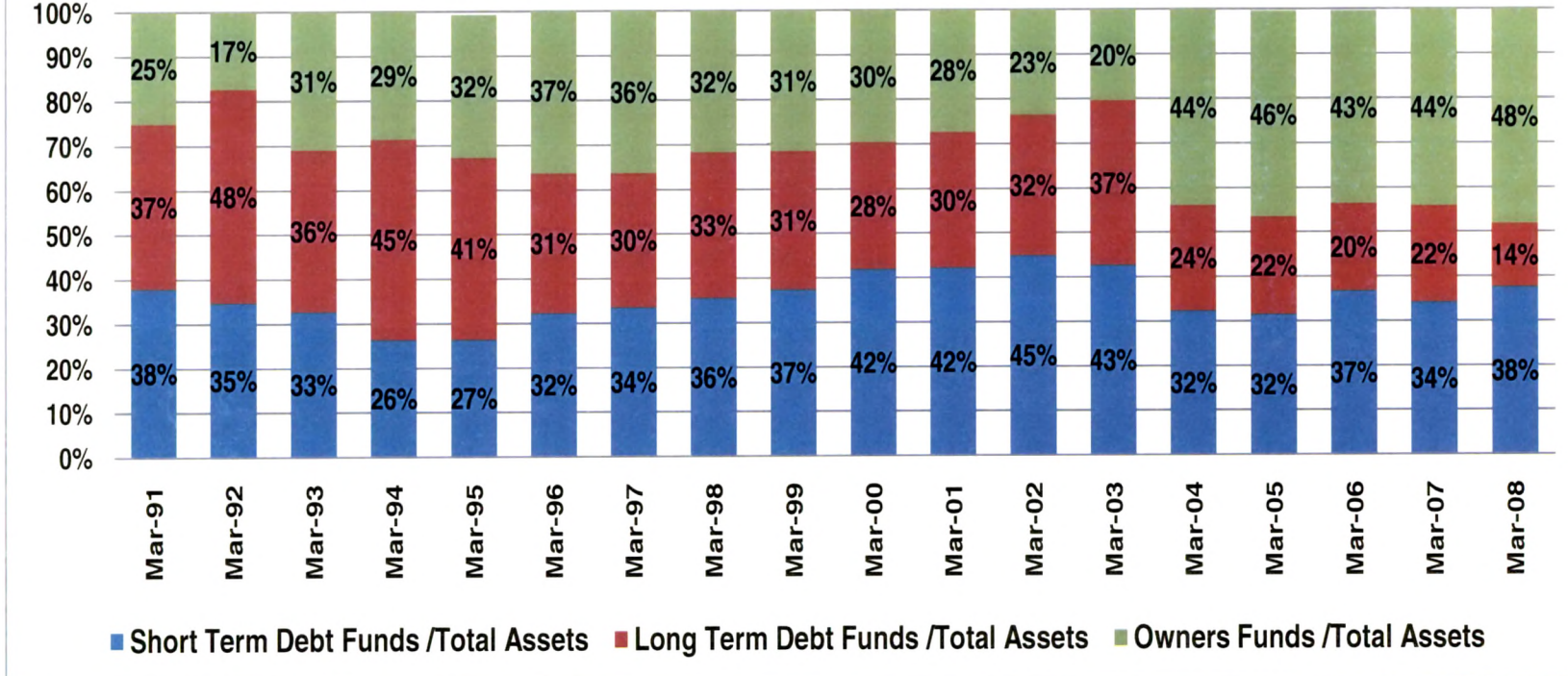


Figure 4.7.3 Total Debt Ratios by Year (Metal & Metal Products Industry - 6 FDI Companies)

Figure 4.6.4 - Financing Mix Adopted by Metal & Metal Products Industry - 6 FDI Companies (1991-2008)



4.3.7 Trends in Capital Structure of Non-Metallic Minerals Industry

The aggregate Debt ratios in Table 4.9 indicate that Long Term Debt as a proportion to Net worth (LTD/NW) is 1.2 times, which is higher than all other industries except Metal & Metal Products Industry. Long Term Debt contributes only 41% towards capital employed as indicated by LTD/NW+ LTD ratio. The TL/NW ratio reveals that outsider's funds are 2.42 times the Owner's Funds out of which Short Term Debt funds are 1.29 times which means 53% of Total Liabilities are made up of Short Term Debt funds.

Out of Total Liabilities financing 60% of Total Assets (TL/TA ratio), Trade Credits and Equivalents contribute 13%, which is lower proportion than other industries. Long Term Debt contributes 27% towards financing of assets as indicated by LTD/TA ratio. In this industry also TL/TA ratio seems to be the most representative measure of leverage with COV minimum at 18.43%.

Table 4.9

Aggregate Debt Ratios of Non-Metallic Minerals Industry (5 FDI Companies, 1991-2008)

Sr. No	Debt Ratios	Mean	Median	SD	COV
1	STBB+CPLTD/TA	0.16	0.16	0.10	62.17
2	STD/TA	0.14	0.13	0.09	66.11
3	STD1/TA	0.33	0.35	0.12	36.08
4	TC&E/TA	0.13	0.16	0.06	42.40
5	STD/NW	0.63	0.53	0.56	89.26
6	STD1/NW	1.29	1.20	0.87	67.18
7	LTBB/TA	0.03	0.02	0.03	107.18
8	LTD/TA	0.27	0.31	0.11	41.03
9	LTD/NW	1.20	0.96	0.63	52.18
10	LTD/(NW+LTD)	0.41	0.45	0.15	37.98
11	LTD/STD1	0.67	0.93	1.44	215.32
12	TD/TA	0.41	0.42	0.16	38.71
13	TL/TA	0.60	0.57	0.11	18.43
14	TD/NW	1.83	1.49	1.15	62.70
15	TD/(TD+NW)	0.50	0.47	0.18	35.71
16	TL/NW	2.49	1.80	1.40	56.31

Figure 4.8

Mean Debt Ratios of Non Metallic Minerals Industry (5 FDI Companies:1991-2008)

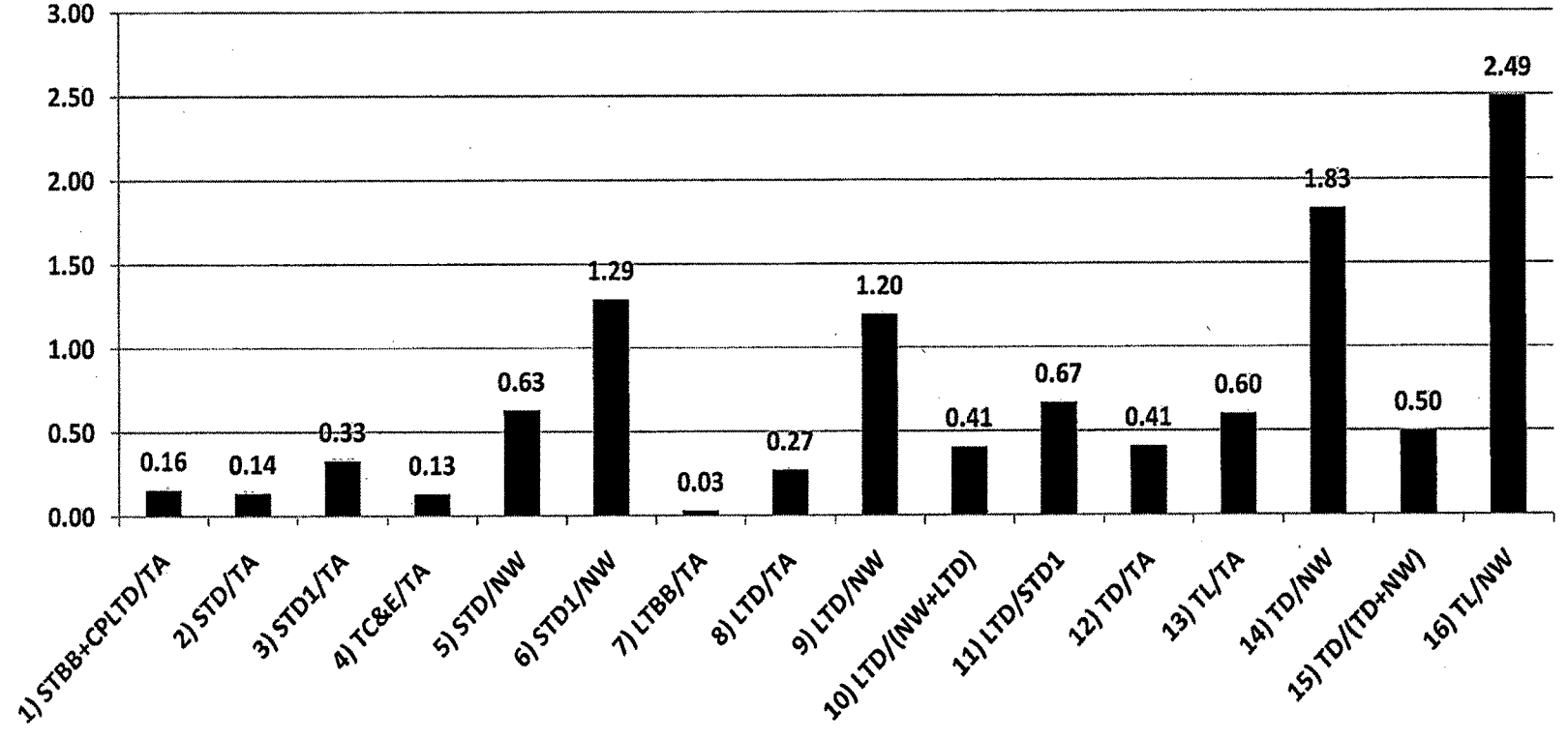


Table 4.9.1																			
Debt Ratios by Year (Non Metallic Minerals Industry: 5 Companies)																			Mean
	Debt Ratios	Mar-91	Mar-92	Mar-93	Mar-94	Mar-95	Mar-96	Mar-97	Mar-98	Mar-99	Mar-00	Mar-01	Mar-02	Mar-03	Mar-04	Mar-05	Mar-06	Mar-07	Mar-08	1991-2008
1	STBB+CPLTD/TA	0.14	0.19	0.16	0.20	0.21	0.25	0.20	0.18	0.18	0.17	0.17	0.17	0.09	0.07	0.11	0.08	0.14	0.15	0.16
2	STD/TA	0.12	0.16	0.14	0.18	0.14	0.23	0.17	0.16	0.16	0.16	0.15	0.14	0.08	0.06	0.09	0.07	0.13	0.13	0.14
3	STD1/TA	0.33	0.36	0.31	0.33	0.31	0.40	0.36	0.32	0.34	0.34	0.32	0.33	0.27	0.27	0.32	0.29	0.36	0.39	0.33
4	TC&E/TA	0.17	0.17	0.15	0.15	0.15	0.16	0.16	0.13	0.12	0.12	0.11	0.11	0.11	0.11	0.11	0.09	0.11	0.12	0.13
5	STD/NW	0.90	0.82	0.80	0.87	0.70	1.33	0.84	0.71	0.65	0.56	0.43	0.54	0.26	0.15	0.32	0.33	0.55	0.56	0.63
6	STD1/NW	2.14	1.79	1.60	1.87	1.55	2.20	1.54	1.26	1.19	1.03	0.86	1.01	0.74	0.60	0.82	0.78	1.11	1.14	1.29
7	LTBB/TA	0.06	0.01	0.01	0.00	0.06	0.05	0.06	0.09	0.08	0.02	0.04	0.01	0.01	0.01	0.03	0.01	0.00	0.01	0.03
8	LTD/TA	0.48	0.41	0.37	0.34	0.39	0.31	0.25	0.28	0.25	0.17	0.20	0.20	0.23	0.22	0.20	0.24	0.20	0.17	0.27
9	LTD/NW	2.91	1.94	2.03	2.17	1.91	1.11	0.94	1.17	0.97	0.44	0.59	0.60	0.90	0.63	0.61	0.96	0.93	0.78	1.20
10	LTD/(NW+LTD)	0.70	0.63	0.55	0.52	0.58	0.52	0.38	0.39	0.36	0.27	0.30	0.31	0.32	0.29	0.29	0.34	0.31	0.28	0.41
11	LTD/STD1	1.72	1.32	1.28	0.99	0.79	0.81	0.77	0.59	0.52	0.44	0.37	0.26	0.17	0.25	0.60	0.55	0.35	0.30	0.67
12	TD/TA	0.60	0.57	0.52	0.52	0.54	0.54	0.42	0.44	0.41	0.33	0.35	0.34	0.31	0.28	0.28	0.31	0.33	0.29	0.41
13	TL/TA	0.81	0.76	0.69	0.69	0.71	0.72	0.62	0.62	0.60	0.52	0.53	0.54	0.50	0.48	0.51	0.50	0.54	0.53	0.60
14	TD/NW	3.80	2.77	2.83	3.04	2.61	2.44	1.78	1.88	1.62	1.00	1.02	1.15	1.16	0.79	0.93	1.29	1.49	1.34	1.83
15	TD/(TD+NW)	0.75	0.71	0.63	0.63	0.66	0.67	0.52	0.52	0.48	0.39	0.41	0.41	0.37	0.34	0.34	0.37	0.40	0.36	0.50
16	TL/NW	5.05	3.74	3.64	4.05	3.46	3.31	2.48	2.43	2.16	1.47	1.45	1.62	1.64	1.23	1.43	1.74	2.05	1.92	2.49

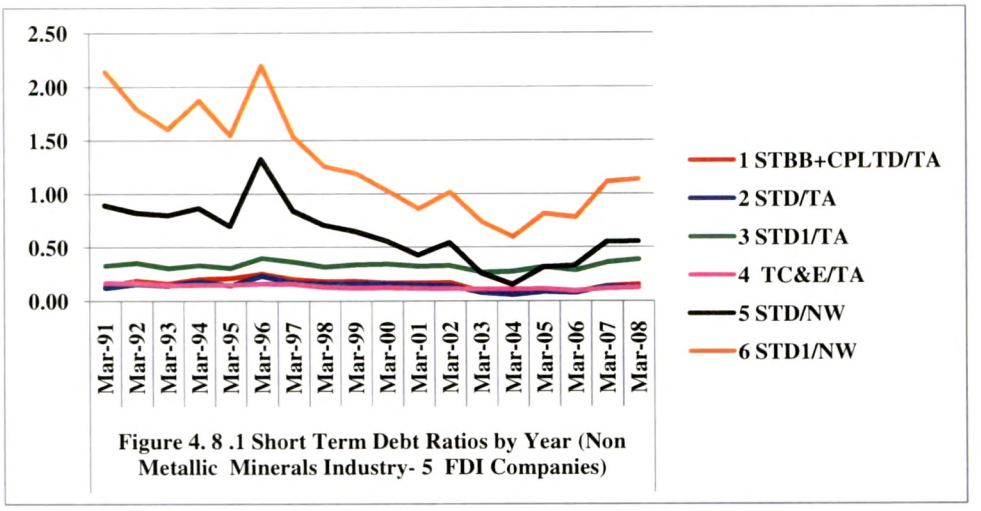


Figure 4. 8 .1 Short Term Debt Ratios by Year (Non Metallic Minerals Industry- 5 FDI Companies)

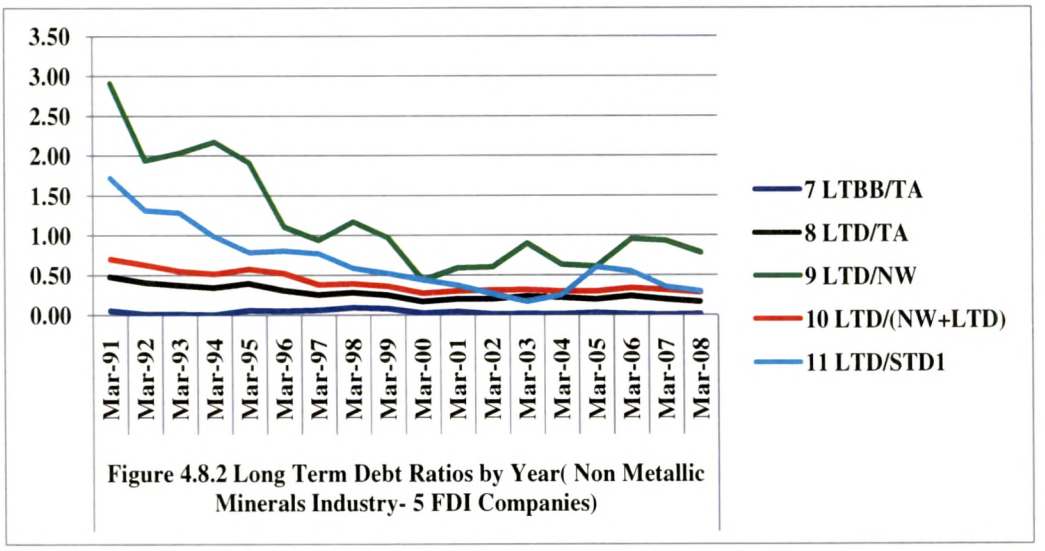


Figure 4.8.2 Long Term Debt Ratios by Year(Non Metallic Minerals Industry- 5 FDI Companies)

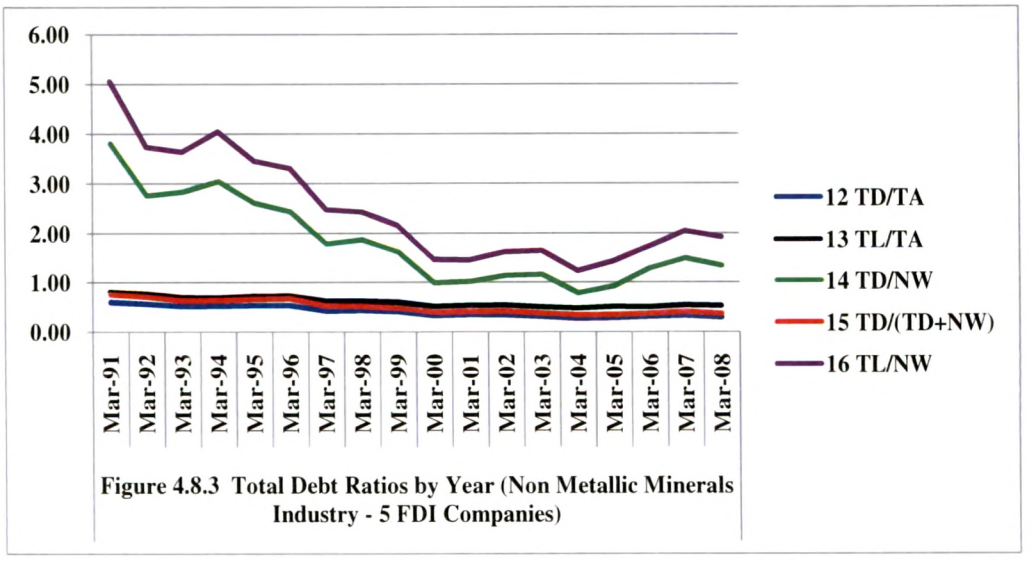


Figure 4.8.3 Total Debt Ratios by Year (Non Metallic Minerals Industry - 5 FDI Companies)

Table 4.9.1 and Figures 4.8.1, 4.8.2 and 4.8.3 indicate that Short Term Debt ratios- STD/NW and STD1/NW show a declining trend although noticeable spikes were seen in STD/NW and STD1/NW ratios during the year 1996. This was due to one of the sample company 'Asahi India Glass Ltd' which had borrowed lot of Short Term Debt funds especially Short Term Bank Borrowings during that period. Other Short Term Debt ratios were relatively stable over the time period. Long Term ratios LTD/NW and Total Debt Ratios TD/NW and TL/NW indicated a declining trend. All the other Long Term and Total Debt Ratios remained stable during the study period.

Figure 4.8.4 shows that preference of Owner's Funds to finance assets has increased in Non-Metallic Minerals Industry over the study period from 19% in the year 1991 to 44% in the year 2008. Preference for Long Term Debt funds has decreased from 48% in the year 1991 to 17% in the year 2008. Preference for Short Term Funds remained the same throughout the study period showing slight increase in the years 1996 and 2008.

4.3.8 Trends in Capital Structure of Miscellaneous Manufacturing Industry

The aggregate Debt ratios in Table 4.10 indicate that Long Term Debt as a proportion to Net worth is 62%. Long Term Debt contributes only 27% towards capital employed as indicated by LTD/NW+ LTD ratio. The TL/NW ratio reveals that outsider's funds are 1.78 times the Owner's Funds out of which Short Term Debt funds are 1.16 times which means 65% of Total Liabilities are made up of Short Term Debt funds.

Out of Total Liabilities financing 53% of Total Assets (TL/TA ratio), Trade Credits and Equivalents contribute 23% indicating that Trade Credit is an important source of finance for Miscellaneous industry. Long Term Debt contributes 27% towards financing of assets as indicated by LTD/TA ratio. In Miscellaneous Manufacturing Industry also TL/TA ratio seems to be the most representative measure of leverage with COV minimum at 23.57%.

Figure 4.8.4 - Financing Mix Adopted by Non Metallic Minerals Industry - 5 FDI Companies (1991-2008)

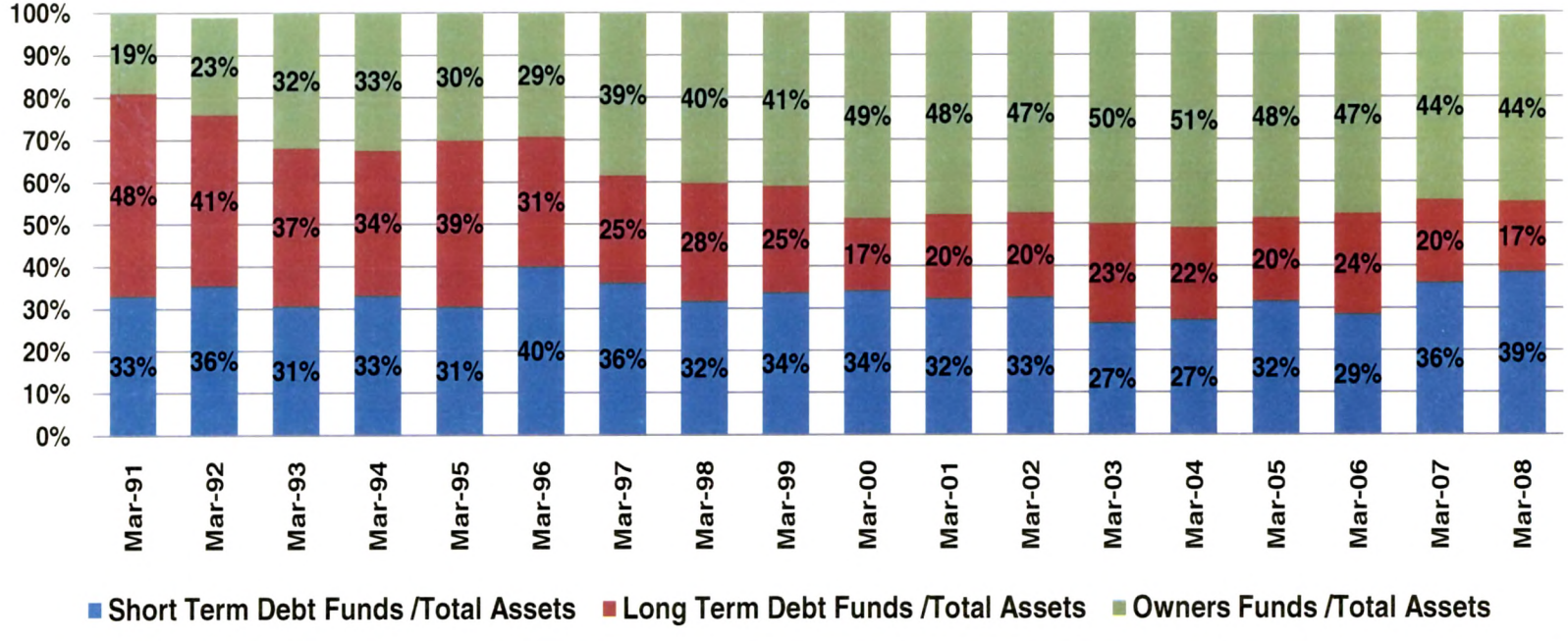


Table 4.10					
Aggregate Debt Ratios of Miscellaneous Manufacturing Industry (5 FDI Companies, 1991-2008)					
Sr. No	Debt Ratios	Mean	Median	SD	COV
1	STBB+CPLTD/TA	0.07	0.08	0.04	61.98
2	STD/TA	0.07	0.07	0.04	62.87
3	STD1/TA	0.37	0.35	0.10	26.78
4	TC&E/TA	0.23	0.25	0.09	38.72
5	STD/NW	0.24	0.23	0.18	73.62
6	STD1/NW	1.16	1.21	0.48	41.55
7	LTBB/TA	0.04	0.01	0.05	139.74
8	LTD/TA	0.16	0.18	0.12	72.69
9	LTD/NW	0.62	0.46	0.51	81.87
10	LTD/(NW+LTD)	0.27	0.28	0.18	65.80
11	LTD/STD1	0.61	0.57	0.42	69.98
12	TD/TA	0.23	0.25	0.14	60.02
13	TL/TA	0.53	0.54	0.13	23.57
14	TD/NW	0.86	0.89	0.60	69.86
15	TD/(TD+NW)	0.34	0.38	0.20	57.01
16	TL/NW	1.78	2.08	0.81	45.47

Table 4.10.1 and Figures 4.9.1, 4.9.2 and 4.9.3 indicate that STD1/NW and LTD/NW, TD/NW and TL/NW ratios indicated a sudden fall from the year 1993 to the year 1994 and 1995. This was due to the fact that the Net worth of the sample companies of Miscellaneous industry had substantially increased during the period. As a result, all the Debt ratios which were scaled down to Net worth indicated a sharp decline during the year 1994. Thereafter these Debt ratios of Miscellaneous manufacturing industry remained more or less stable. The proportion of Long Term Debt to Short Term Debt (LTD/STD1) kept on fluctuating during the study period. Other Debt ratios indicated a stable trend.

Figure 4.9.4 indicated that preference for Owner's Funds has a substantial increase from 25% in the year 1991 to 62% in the year 2008 whereas preference for Long Term Debt funds decreased from 27% in the year 1991 to 10% in the year 2008. Even preference for Short Term Debt funds declined over the study period from 48% in the year 1991 to 28% in the year 2008

Figure 4.9

Mean Debt Ratios of Miscellaneous manufacturing Industry (5 FDI Companies:1991-2008)

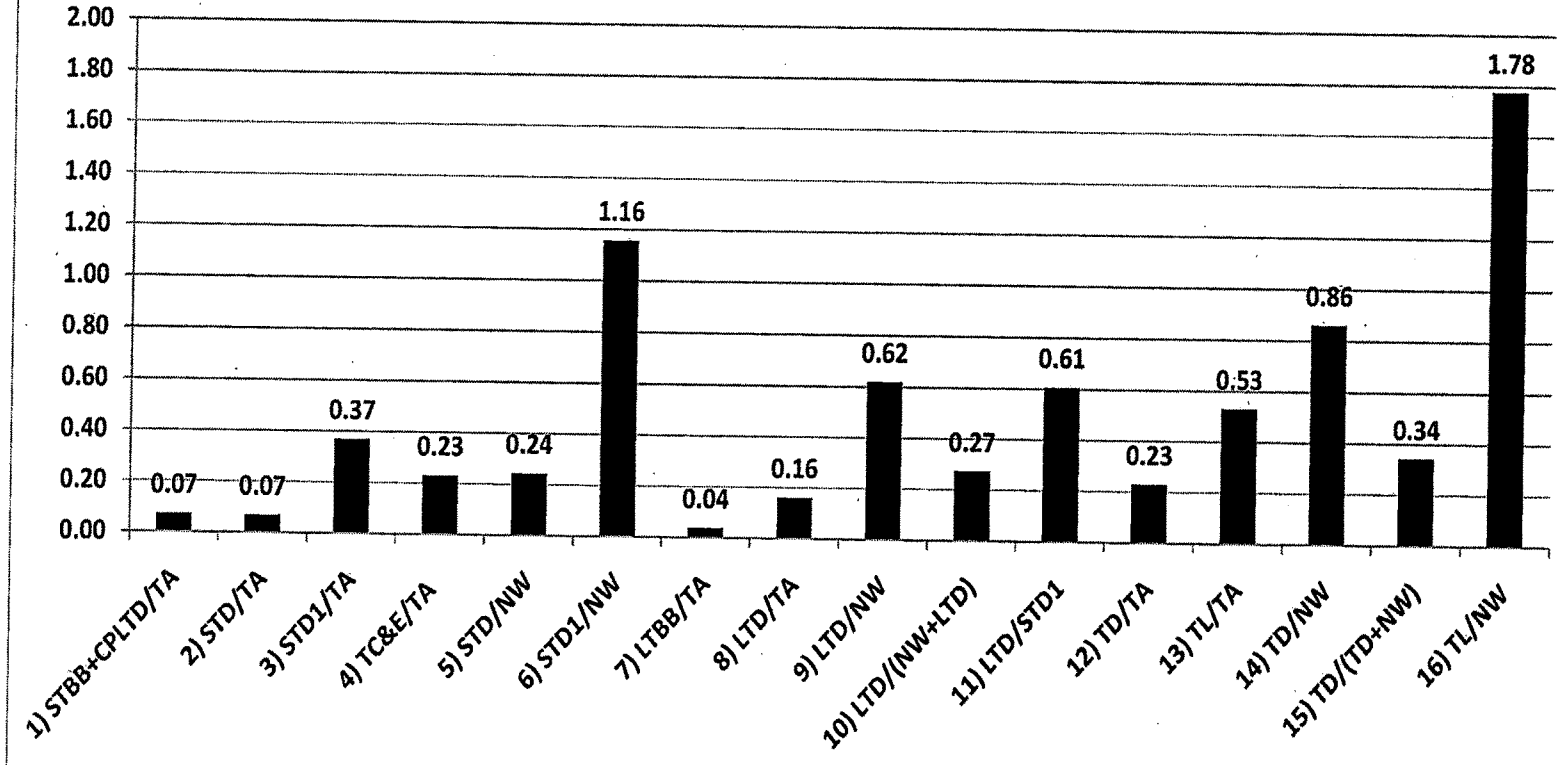


Table 4.10.1

Mean Debt Ratios by Year (Miscellaneous Manufacturing Industry: 5 Companies)

	Debt Ratios	Mar-91	Mar-92	Mar-93	Mar-94	Mar-95	Mar-96	Mar-97	Mar-98	Mar-99	Mar-00	Mar-01	Mar-02	Mar-03	Mar-04	Mar-05	Mar-06	Mar-07	Mar-08	Mean 1991-2008
1	STBB+CPLTD/TA	0.10	0.09	0.08	0.05	0.06	0.07	0.06	0.05	0.05	0.05	0.07	0.06	0.08	0.11	0.11	0.08	0.08	0.06	0.07
2	STD/TA	0.10	0.09	0.08	0.05	0.06	0.07	0.06	0.05	0.05	0.05	0.07	0.06	0.07	0.11	0.10	0.07	0.06	0.06	0.07
3	STD1/TA	0.48	0.48	0.49	0.44	0.36	0.38	0.36	0.33	0.33	0.33	0.34	0.30	0.29	0.36	0.39	0.43	0.30	0.28	0.37
4	TC&E/TA	0.26	0.26	0.31	0.27	0.23	0.19	0.20	0.24	0.27	0.22	0.20	0.20	0.18	0.19	0.24	0.32	0.19	0.19	0.23
5	STD/NW	0.47	0.40	0.43	0.12	0.15	0.31	0.27	0.13	0.14	0.15	0.18	0.20	0.20	0.28	0.40	0.21	0.17	0.14	0.24
6	STD1/NW	2.05	1.92	2.39	1.16	0.89	1.24	1.11	0.74	0.86	0.80	0.80	0.87	0.79	1.00	1.56	1.27	0.73	0.67	1.16
7	LTBB/TA	0.03	0.02	0.04	0.01	0.00	0.00	0.00	0.01	0.04	0.07	0.07	0.06	0.05	0.03	0.08	0.05	0.07	0.08	0.04
8	LTD/TA	0.27	0.26	0.26	0.17	0.16	0.16	0.16	0.13	0.17	0.17	0.15	0.17	0.16	0.11	0.13	0.09	0.09	0.10	0.16
9	LTD/NW	1.54	1.24	1.48	0.56	0.33	0.40	0.42	0.33	0.58	0.55	0.49	0.75	0.62	0.37	0.51	0.30	0.33	0.36	0.62
10	LTD/(NW+LTD)	0.46	0.45	0.50	0.28	0.23	0.25	0.26	0.21	0.27	0.26	0.21	0.27	0.27	0.21	0.28	0.19	0.16	0.15	0.27
11	LTD/STD1	0.79	0.66	0.60	0.54	0.75	0.79	0.68	0.41	0.67	0.70	0.76	0.87	0.72	0.43	0.38	0.28	0.37	0.52	0.61
12	TD/TA	0.36	0.35	0.34	0.22	0.21	0.22	0.22	0.18	0.22	0.22	0.22	0.23	0.23	0.22	0.23	0.16	0.16	0.16	0.23
13	TL/TA	0.74	0.74	0.75	0.61	0.52	0.53	0.52	0.46	0.51	0.50	0.49	0.47	0.45	0.48	0.52	0.52	0.39	0.38	0.53
14	TD/NW	2.01	1.64	1.91	0.68	0.48	0.71	0.69	0.46	0.72	0.70	0.67	0.95	0.82	0.66	0.92	0.51	0.50	0.50	0.86
15	TD/(TD+NW)	0.54	0.52	0.56	0.34	0.29	0.32	0.31	0.25	0.31	0.30	0.29	0.32	0.33	0.33	0.39	0.29	0.24	0.23	0.34
16	TL/NW	3.58	3.16	3.87	1.72	1.21	1.64	1.53	1.07	1.43	1.35	1.29	1.62	1.41	1.37	2.08	1.58	1.06	1.03	1.78

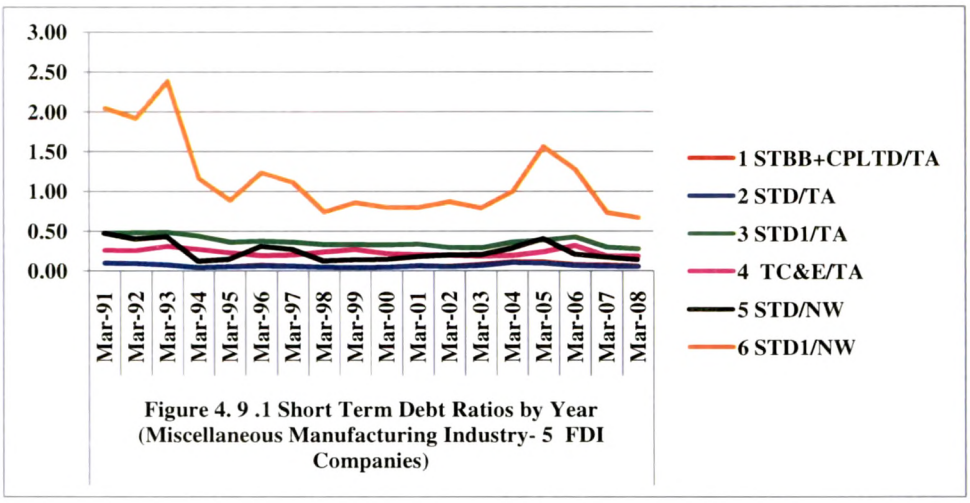


Figure 4. 9 .1 Short Term Debt Ratios by Year (Miscellaneous Manufacturing Industry- 5 FDI Companies)

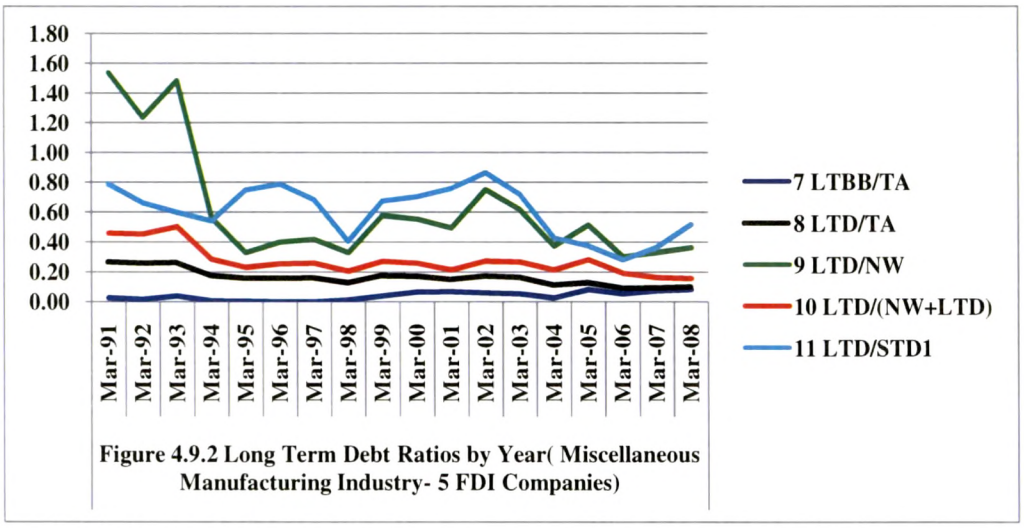


Figure 4.9.2 Long Term Debt Ratios by Year(Miscellaneous Manufacturing Industry- 5 FDI Companies)

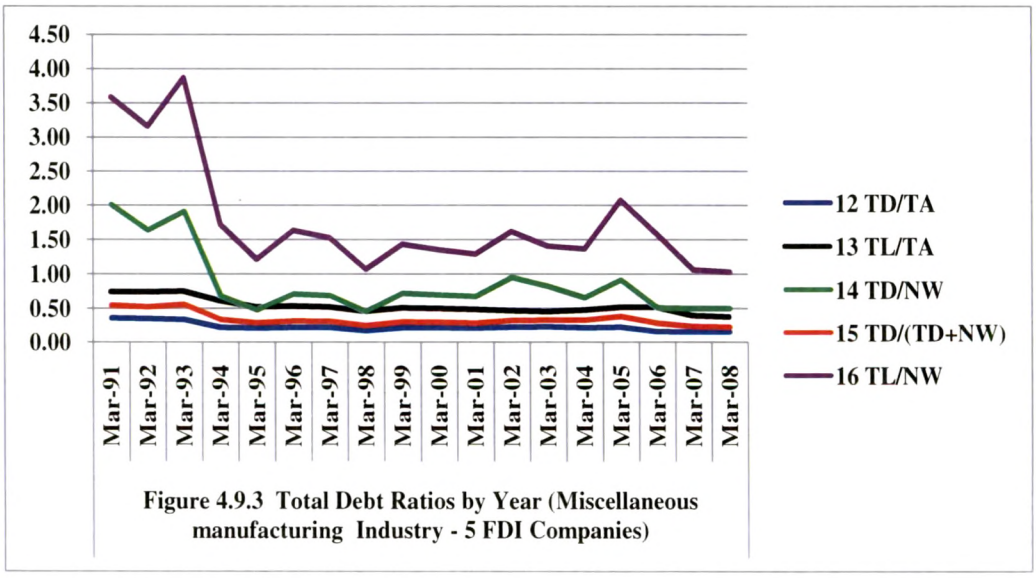
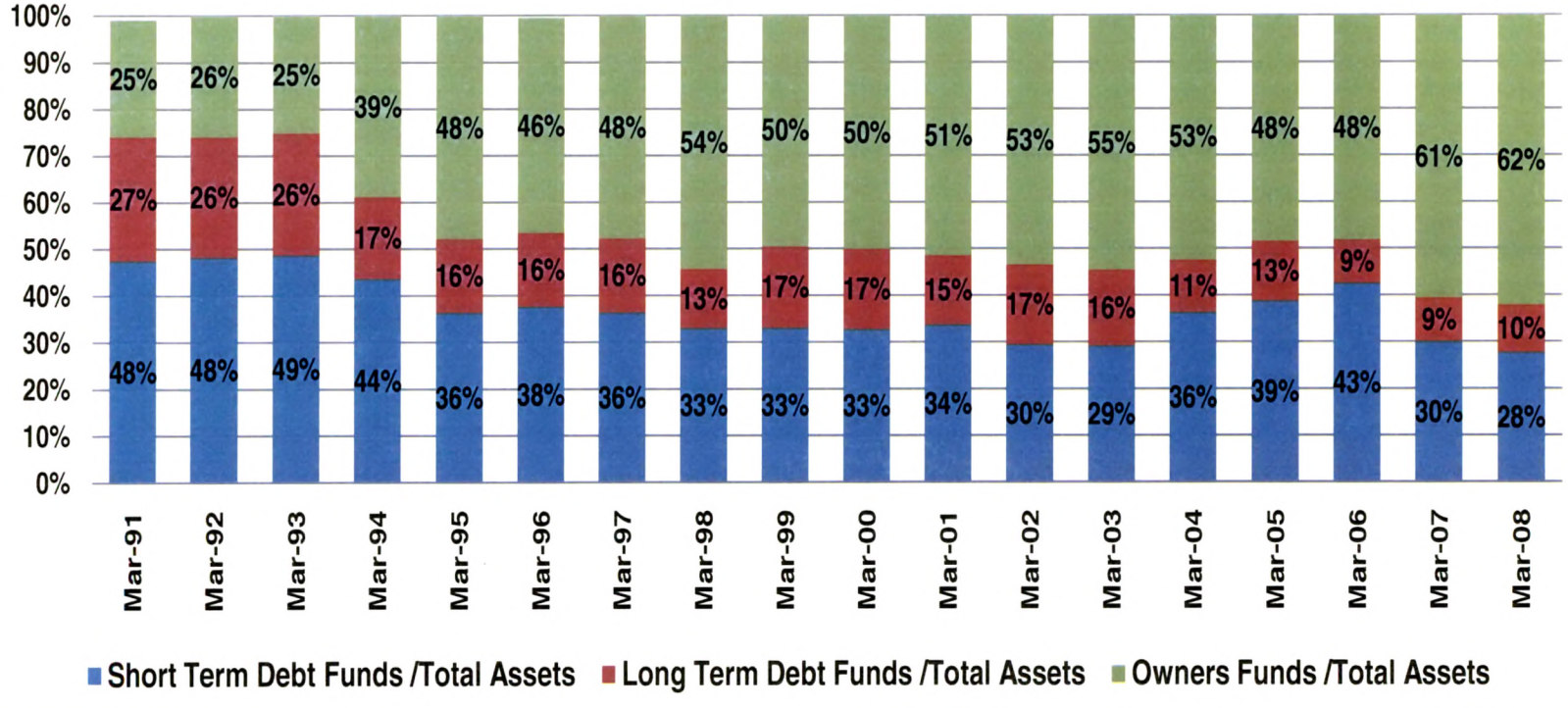


Figure 4.9.3 Total Debt Ratios by Year (Miscellaneous manufacturing Industry - 5 FDI Companies)

Figure 4.9.4 - Financing Mix Adopted by Miscellaneous Manufacturing Industry - 5 FDI Companies (1991-2008)



4.3.9 Trends in Capital Structure of Textiles Industry

Aggregate Debt ratios in Table 4.11 indicate that Long Term Debt as a proportion to Net worth is 1.17 times. Long Term Debt contributes only 42% towards capital employed as indicated by LTD/NW+ LTD ratio. The 'TL/NW ratio reveals that outsider's funds are 1.97 times the Owner's Funds out of which Short Term Debt funds are .80 times which means 40.60% of Total Liabilities are made up of Short Term Debt funds.

Out of Total Liabilities financing 55% of Total Assets (TL/TA ratio), Trade Credits and Equivalents contribute 14% and total Short Term Debt funds contribute 25% towards financing the assets, the rest 30% being financed by Long Term Debt funds. In Textiles industry, STD1/TA ratio seems to be the most representative measure of leverage with COV minimum at 8.17%.

Table 4.11

Aggregate Debt Ratios of Textiles Industry (3 FDI Companies, 1991-2008)

Sr. No	Debt Ratios	Mean	Median	SD	COV
1	STBB+CPLTD/TA	0.13	0.15	0.09	68.64
2	STD/TA	0.09	0.09	0.06	64.16
3	STD1/TA	0.25	0.26	0.02	8.17
4	TC&E/TA	0.14	0.15	0.04	25.14
5	STD/NW	0.31	0.39	0.23	73.46
6	STD1/NW	0.80	0.84	0.45	55.97
7	LTBB/TA	0.08	0.09	0.04	57.26
8	LTD/TA	0.30	0.39	0.21	71.65
9	LTD/NW	1.17	1.27	1.02	87.65
10	LTD/(NW+LTD)	0.42	0.54	0.31	73.22
11	LTD/STD1	1.24	1.71	0.88	71.02
12	TD/TA	0.23	0.09	0.26	114.98
13	TL/TA	0.55	0.65	0.23	42.54
14	TD/NW	1.47	1.75	1.21	82.05
15	TD/(TD+NW)	0.47	0.62	0.32	67.16
16	TL/NW	1.97	2.10	1.47	74.80

Figure 4.10
Mean Debt Ratios of Textiles Industry (3 FDI Companies:1991-2008)

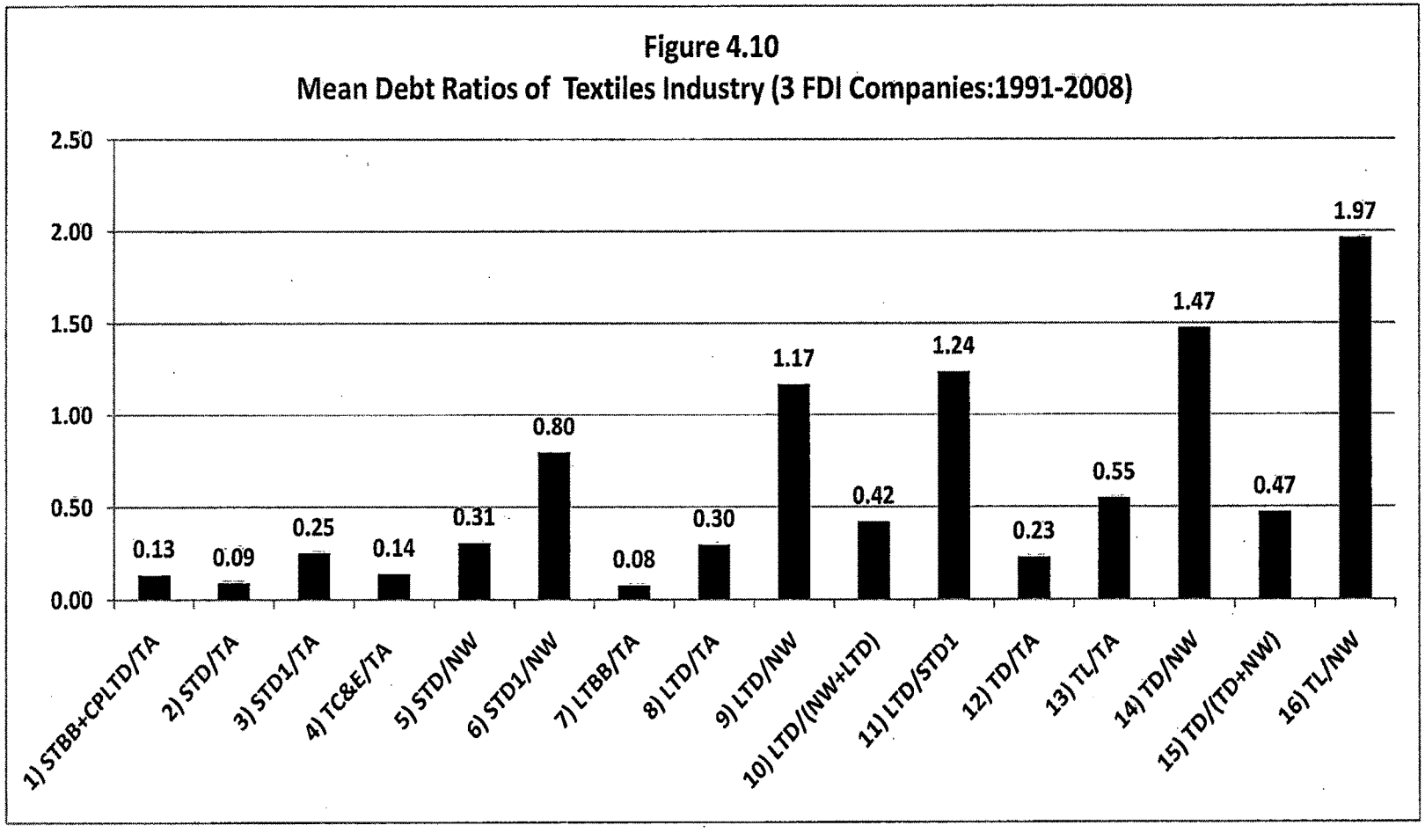


Table 4.10.1																			
Mean Debt Ratios by Year (Textiles Industry-3 Companies)																			Mean
	Debt Ratios	Mar-91	Mar-92	Mar-93	Mar-94	Mar-95	Mar-96	Mar-97	Mar-98	Mar-99	Mar-00	Mar-01	Mar-02	Mar-03	Mar-04	Mar-05	Mar-06	Mar-07	Mar-08	1991-2008
1	STBB+CPLTD/TA	0.16	0.16	0.18	0.19	0.13	0.15	0.13	0.17	0.14	0.10	0.13	0.12	0.13	0.11	0.10	0.10	0.10	0.11	**0.13**
2	STD/TA	0.14	0.13	0.17	0.17	0.10	0.11	0.08	0.10	0.09	0.07	0.05	0.05	0.07	0.05	0.06	0.05	0.06	0.06	**0.09**
3	STD1/TA	0.33	0.31	0.36	0.30	0.22	0.27	0.21	0.23	0.24	0.25	0.23	0.21	0.24	0.22	0.24	0.22	0.21	0.24	**0.25**
4	TC&E/TA	0.17	0.16	0.17	0.12	0.09	0.14	0.12	0.11	0.14	0.16	0.16	0.14	0.15	0.13	0.15	0.14	0.13	0.15	**0.14**
5	STD/NW	0.49	0.65	0.60	0.53	0.23	0.32	0.23	0.31	0.34	0.27	0.15	0.15	0.22	0.14	0.20	0.16	0.24	0.29	**0.31**
6	STD1/NW	1.09	1.27	1.22	0.94	0.46	0.74	0.56	0.66	0.86	0.86	0.71	0.60	0.83	0.62	0.67	0.60	0.76	0.92	**0.80**
7	LTBB/TA	0.10	0.04	0.03	0.02	0.03	0.03	0.05	0.05	0.04	0.03	0.08	0.08	0.09	0.15	0.14	0.12	0.15	0.17	**0.08**
8	LTD/TA	0.32	0.38	0.30	0.26	0.30	0.30	0.34	0.34	0.34	0.32	0.31	0.27	0.24	0.23	0.24	0.24	0.30	0.32	**0.30**
9	LTD/NW	1.04	1.72	1.09	0.97	0.78	0.97	1.08	1.22	1.68	1.62	1.48	1.13	1.02	0.79	0.82	0.76	1.30	1.56	**1.17**
10	LTD/(NW+LTD)	0.48	0.55	0.48	0.39	0.37	0.41	0.43	0.44	0.44	0.42	0.40	0.39	0.38	0.36	0.37	0.35	0.44	0.46	**0.42**
11	LTD/STD1	1.02	1.35	0.86	0.77	1.59	1.13	1.62	1.54	1.42	1.37	1.43	1.41	0.88	0.96	0.97	0.97	1.47	1.48	**1.24**
12	TD/TA	0.33	0.41	0.37	0.27	0.29	0.28	0.29	0.27	0.24	0.23	0.22	0.17	0.15	0.13	0.11	0.11	0.13	0.14	**0.23**
13	TL/TA	0.64	0.69	0.66	0.56	0.52	0.58	0.55	0.57	0.58	0.57	0.55	0.48	0.48	0.45	0.48	0.45	0.51	0.56	**0.55**
14	TD/NW	1.52	2.37	1.69	1.50	1.01	1.29	1.31	1.53	2.02	1.89	1.63	1.28	1.24	0.93	1.02	0.92	1.55	1.85	**1.47**
15	TD/(TD+NW)	0.56	0.62	0.58	0.49	0.44	0.49	0.48	0.50	0.48	0.45	0.44	0.42	0.43	0.39	0.40	0.39	0.46	0.48	**0.47**
16	TL/NW	2.12	2.99	2.31	1.90	1.24	1.71	1.63	1.88	2.54	2.49	2.19	1.73	1.84	1.41	1.49	1.36	2.06	2.48	**1.97**

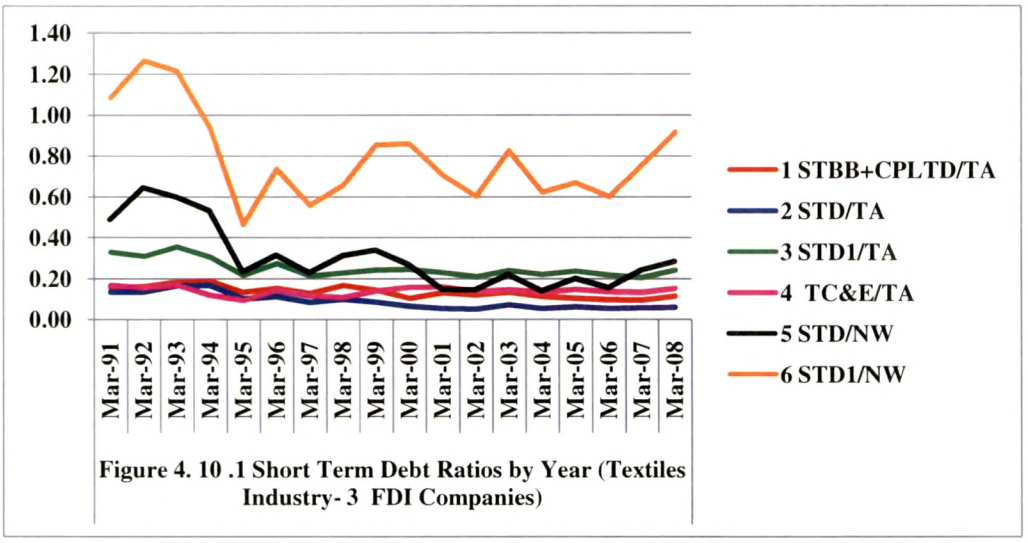


Figure 4. 10 .1 Short Term Debt Ratios by Year (Textiles Industry- 3 FDI Companies)

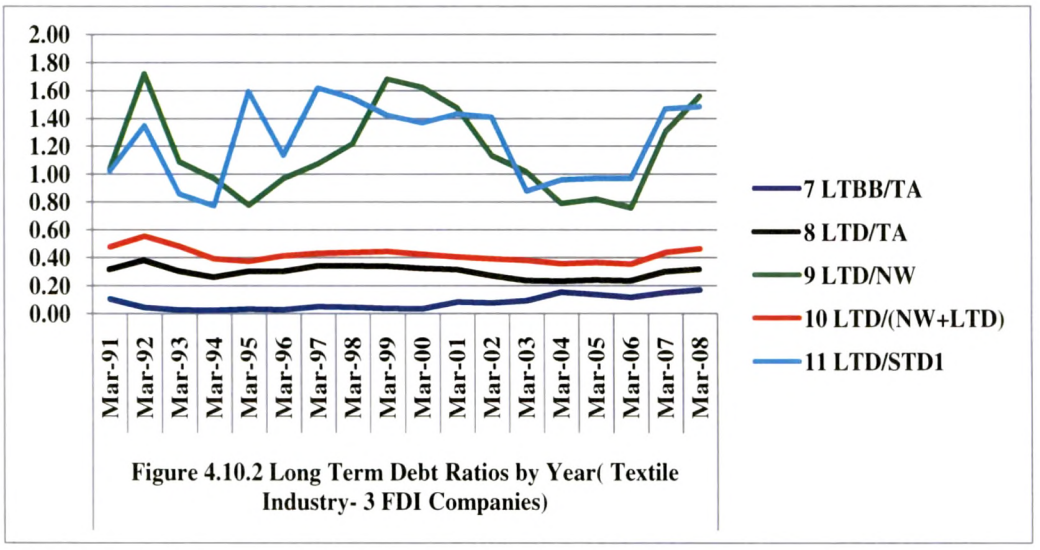


Figure 4.10.2 Long Term Debt Ratios by Year(Textile Industry- 3 FDI Companies)

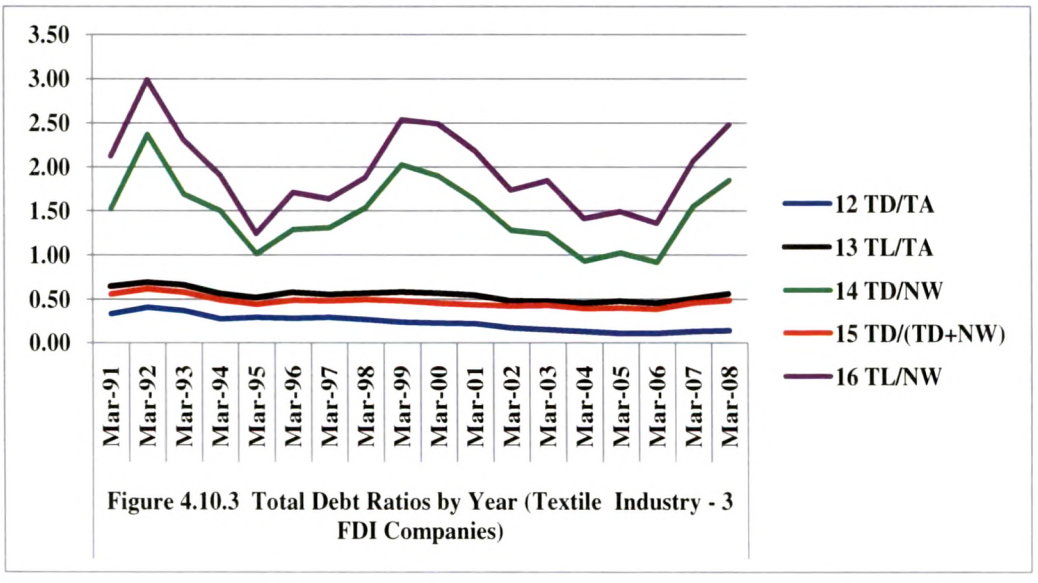


Figure 4.10.3 Total Debt Ratios by Year (Textile Industry - 3 FDI Companies)

Table 4.10.1 and Figure 4.10.1 indicated that STD1/NW ratio showed wide fluctuations during the study period with a decline in the year 1995 to a gradual rise in the year 2008. This was due to sudden increase in Net worth of the sample companies in Textile industry in the year 1995, without corresponding equivalent increase in short term debt. Similar fluctuations were observed in the Long Term Debt ratios and Total Debt Ratios which were scaled down to Net worth, indicating shift in preferences of financing mix over the study period. The Net worth of sample companies in Textile industry did not indicate a steady increase and proportion of Long Term Debt in financing of assets seemed to be reduced in the years 2003, 2004 and 2005 (Figure 4.10.4). Hence the ratio LTD/NW indicated wide fluctuations. Similar trends were also observed in LTD/STD1 ratio, as the Short Term Debt to Long Term Debt mix kept on changing throughout the study period (Figure 4.10.4). All other short term, Long Term and Total Debt Ratios remained stable during the study period.

Figure 4.10.4 indicated increase in preference for owner's funds from 36% in the year 1991 to 44% in the year 2008. The proportion of Long Term Debt in financing of assets declined in years 2002-2006 and again increased in the years 2007 and 2008. Preference for Short Term Debt funds also kept on fluctuating but generally showed a declining trend in Textiles industry.

4.3.10 Trends in Capital Structure of Construction Industry

The aggregate Debt ratios in Table 4.12 indicate that Long Term Debt as a proportion to Net worth is 87%. Long Term Debt contributes only 30% towards capital employed as indicated by LTD/NW+ LTD ratio. The TL/NW ratio reveals that outsider's funds are 2.85 times the Owner's Funds out of which Short Term Debt funds are 1.98 times which means 69% of Total Liabilities are made up of Short Term Debt funds. Out of Total Liabilities financing 67% of Total Assets (TL/TA ratio), Trade Credits and Equivalents contribute 35% indicating that Trade Credit is a very important source of finance for Construction industry. Long Term Debt contributes 22% towards financing of assets as indicated by LTD/TA ratio. In Construction industry also TL/TA ratio seems to be the most representative measure of leverage with COV minimum at 11.56%.

Figure 4.10.4 - Financing Mix Adopted by Textiles Industry - 3 FDI Companies (1991-2008)

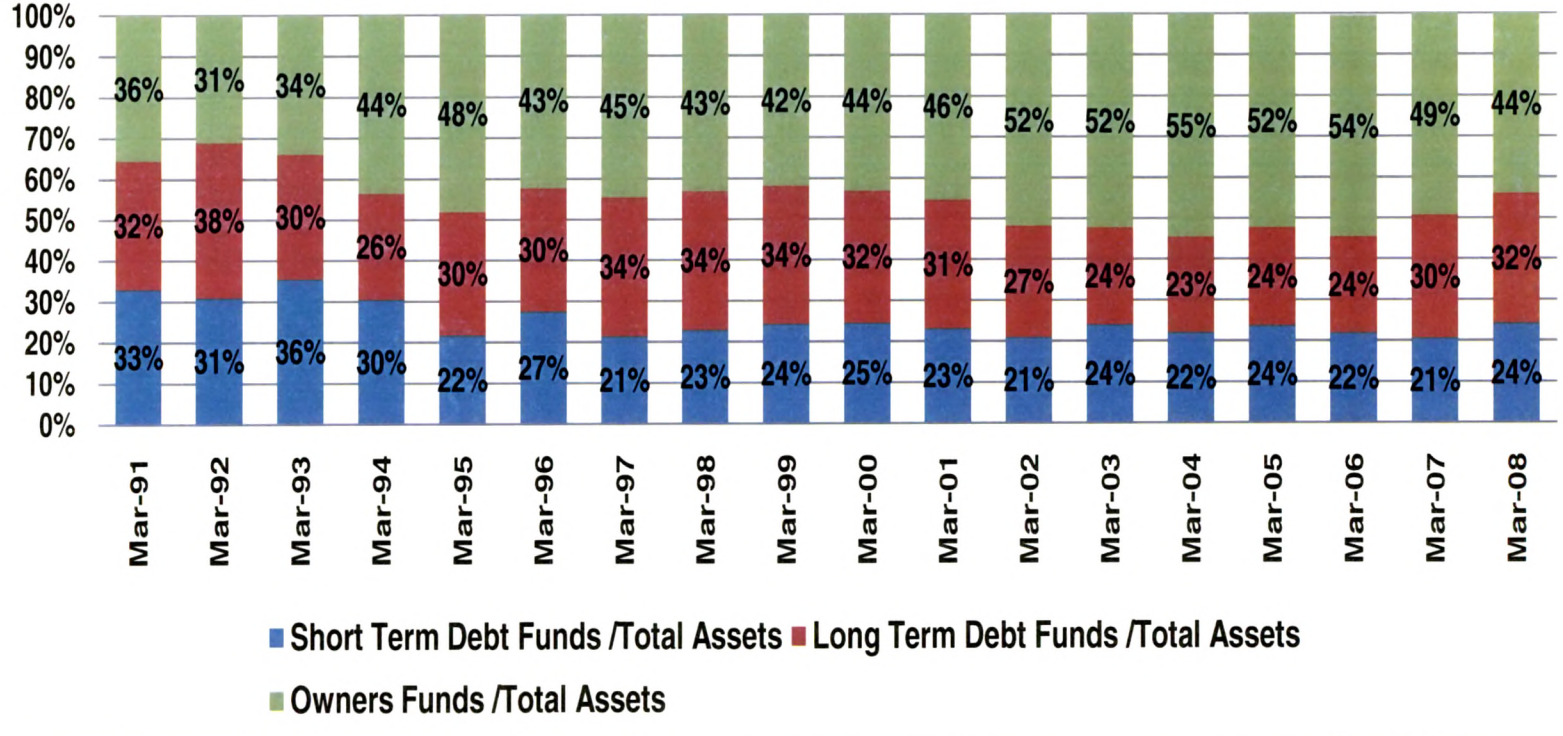


Table 4.12					
Aggregate Debt Ratios of Construction Industry (2 FDI Companies, 1991-2008)					
Sr. No	Debt Ratios	Mean	Median	SD	COV
1	STBB+CPLTD/TA	0.07	0.07	0.03	35.33
2	STD/TA	0.07	0.07	0.03	50.19
3	STD1/TA	0.45	0.45	0.37	82.89
4	TC&E/TA	0.35	0.35	0.33	95.11
5	STD/NW	0.32	0.32	0.26	81.34
6	STD1/NW	1.98	1.98	1.89	95.71
7	LTBB/TA	0.10	0.10	0.13	137.81
8	LTD/TA	0.22	0.22	0.29	132.32
9	LTD/NW	0.87	0.87	1.12	129.41
10	LTD/(NW+LTD)	0.30	0.30	0.34	114.36
11	LTD/STD1	0.02	1.80	2.52	11556.83
12	TD/TA	0.29	0.29	0.26	90.50
13	TL/TA	0.67	0.67	0.08	11.56
14	TD/NW	1.19	1.19	0.87	73.16
15	TD/(TD+NW)	0.38	0.32	0.36	96.59
16	TL/NW	2.85	2.85	0.77	26.94

The Table 4.12.1 and Figures 4.11.1, 4.11.2 and 4.11.3 indicate that there were wide fluctuations in the financing mix adopted by sample companies of Construction industry during the study period. Average STD1/NW ratio varied from 1.03 times in the year 1991 to .86 times in the year 2008, even going up to 4.09 times in the year 2006. This was due to very low Net worth of ITD Cementation India Ltd in the year 2006. A noticeable spike was observed in the year 1992 in the LTD/NW ratio which was due to Aban Offshore Ltd. which had borrowed heavily from Long Term Debt funds in that year. As there was no proportionate increase in Net worth of the company, the average LTD/NW ratio indicated a sudden rise. Similar fluctuations were seen in TD/NW and TL/NW ratios. Other Debt ratios were relatively stable throughout the study period.

From Figure 4.11.4, wide fluctuations in the financing mix were observed. The proportion of Long Term Debt in financing mix of Construction industry was reduced to 13% in the year 1995 and 1996 from 22% in the year 1991. It seems that temporarily, the financing requirements were met through Short Term Debt funds as the proportion of Short Term Debt funds in financing mix increased up to 63% in the year 1995 and 1996 from 40% in the year 1991.

Figure 4.11
Mean Debt Ratios of Construction Industry (2 FDI Companies:1991-2008)

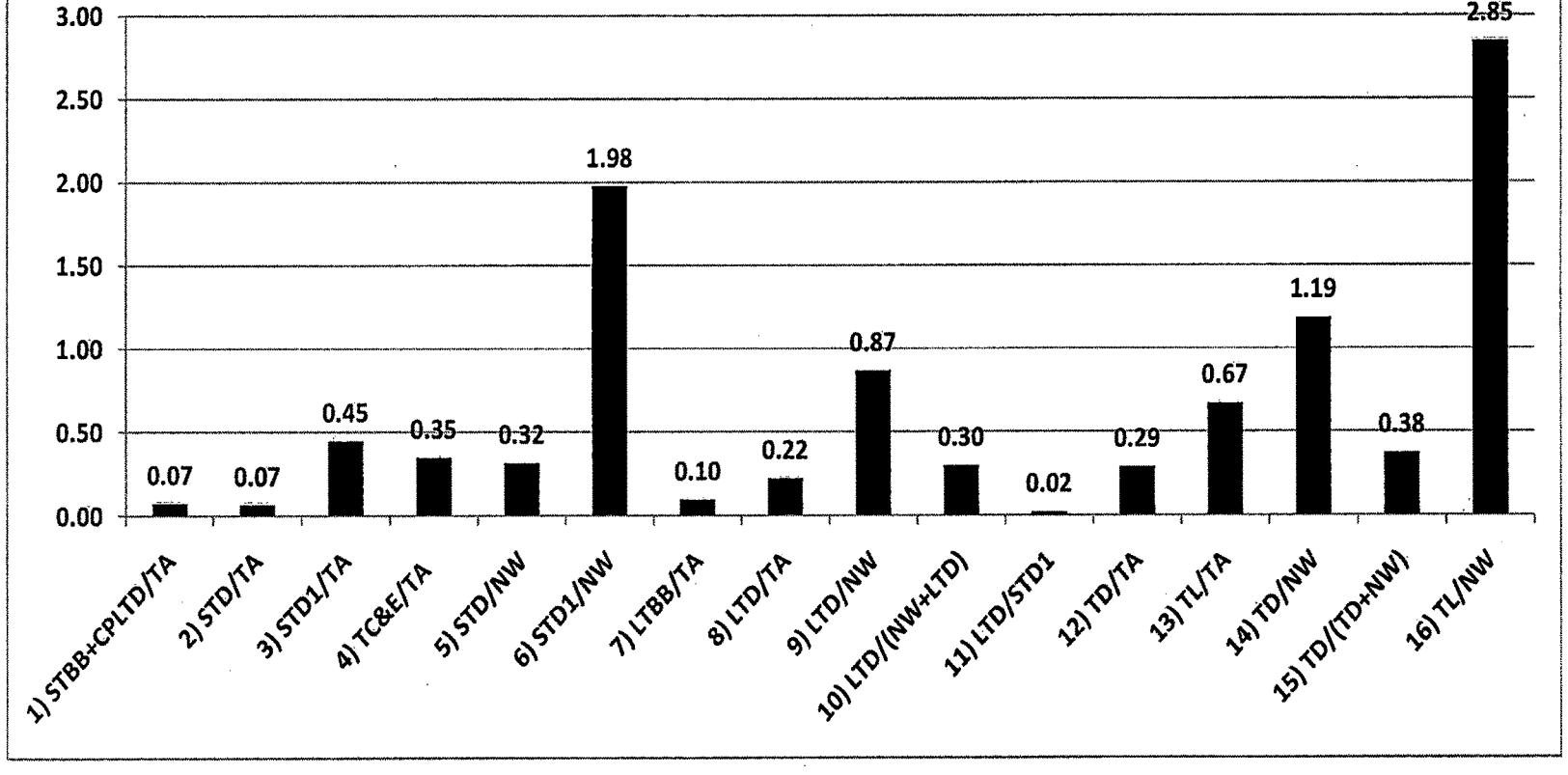


Table 4.12.1																				
Mean Debt Ratios by Year (Construction Industry-2 Companies)																				Mean
	Debt Ratios	Mar-91	Mar-92	Mar-93	Mar-94	Mar-95	Mar-96	Mar-97	Mar-98	Mar-99	Mar-00	Mar-01	Mar-02	Mar-03	Mar-04	Mar-05	Mar-06	Mar-07	Mar-08	1991-2008
1	STBB+CPLTD/TA	0.12	0.04	0.01	0.03	0.01	0.03	0.05	0.04	0.10	0.07	0.07	0.05	0.02	0.04	0.01	0.04	0.01	0.27	0.06
2	STD/TA	0.10	0.05	0.02	0.01	0.08	0.09	0.10	0.08	0.04	0.06	0.06	0.03	0.03	0.06	0.06	0.16	0.10	0.07	0.07
3	STD1/TA	0.40	0.39	0.41	0.46	0.63	0.63	0.48	0.48	0.41	0.42	0.39	0.46	0.39	0.43	0.42	0.50	0.43	0.34	0.45
4	TC&E/TA	0.27	0.32	0.37	0.40	0.52	0.51	0.37	0.37	0.34	0.32	0.28	0.33	0.34	0.33	0.33	0.31	0.30	0.25	0.35
5	STD/NW	0.28	0.28	0.06	0.03	0.35	0.44	0.47	0.41	0.08	0.14	0.13	0.11	0.11	0.26	0.44	1.29	0.63	0.18	0.32
6	STD1/NW	1.03	1.69	1.29	2.18	2.72	2.92	2.51	2.61	1.12	1.06	0.87	1.63	1.58	1.84	3.01	4.09	2.58	0.86	1.98
7	LTBB/TA	0.07	0.03	0.03	0.01	0.01	0.01	0.05	0.03	0.02	0.01	0.01	0.07	0.31	0.23	0.33	0.21	0.15	0.17	0.10
8	LTD/TA	0.22	0.38	0.27	0.20	0.13	0.13	0.23	0.16	0.13	0.11	0.14	0.24	0.31	0.23	0.37	0.25	0.29	0.25	0.22
9	LTD/NW	0.72	4.07	0.78	0.41	0.51	0.47	0.60	0.32	0.22	0.19	0.25	1.06	1.24	0.65	1.83	0.75	0.92	0.66	0.87
10	LTD/(NW+LTD)	0.30	0.46	0.31	0.22	0.25	0.24	0.32	0.22	0.15	0.14	0.17	0.34	0.36	0.28	0.54	0.32	0.42	0.35	0.30
11	LTD/STD1	0.00	0.01	0.00	0.00	0.00	0.00	0.03	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.09	0.01	0.06	0.17	0.02
12	TD/TA	0.32	0.43	0.28	0.21	0.21	0.22	0.32	0.24	0.16	0.17	0.20	0.27	0.34	0.29	0.43	0.40	0.39	0.32	0.29
13	TL/TA	0.62	0.77	0.67	0.66	0.76	0.76	0.71	0.64	0.54	0.53	0.52	0.71	0.70	0.66	0.79	0.74	0.72	0.59	0.67
14	TD/NW	1.00	4.35	0.84	0.43	0.85	0.91	1.07	0.73	0.30	0.33	0.39	1.17	1.35	0.91	2.27	2.04	1.55	0.84	1.19
15	TD/(TD+NW)	0.54	0.53	0.50	0.43	0.40	0.39	0.36	0.36	0.35	0.33	0.37	0.26	0.41	0.28	0.40	0.18	0.22	0.45	0.38
16	TL/NW	1.75	5.76	2.08	2.58	3.23	3.38	3.11	2.93	1.34	1.25	1.12	2.69	2.82	2.50	4.84	4.84	3.50	1.51	2.85

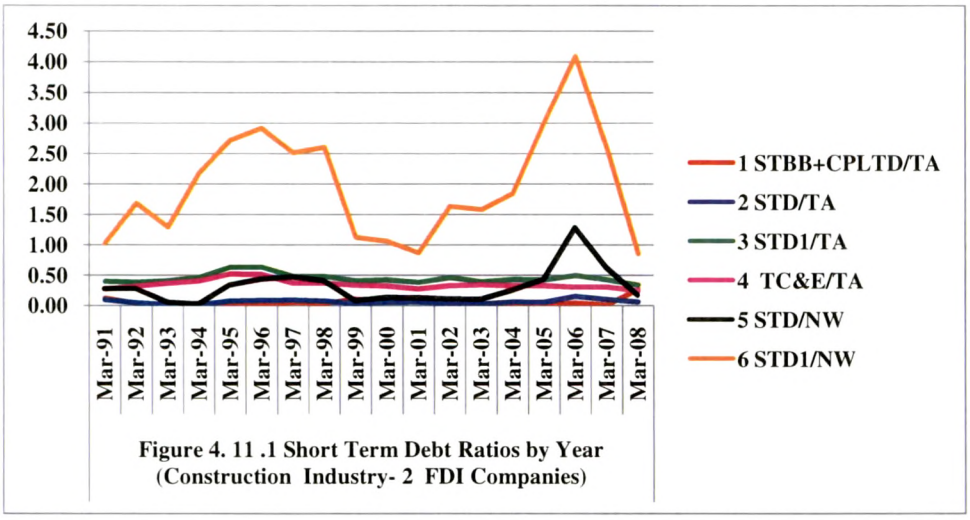


Figure 4. 11 .1 Short Term Debt Ratios by Year (Construction Industry- 2 FDI Companies)

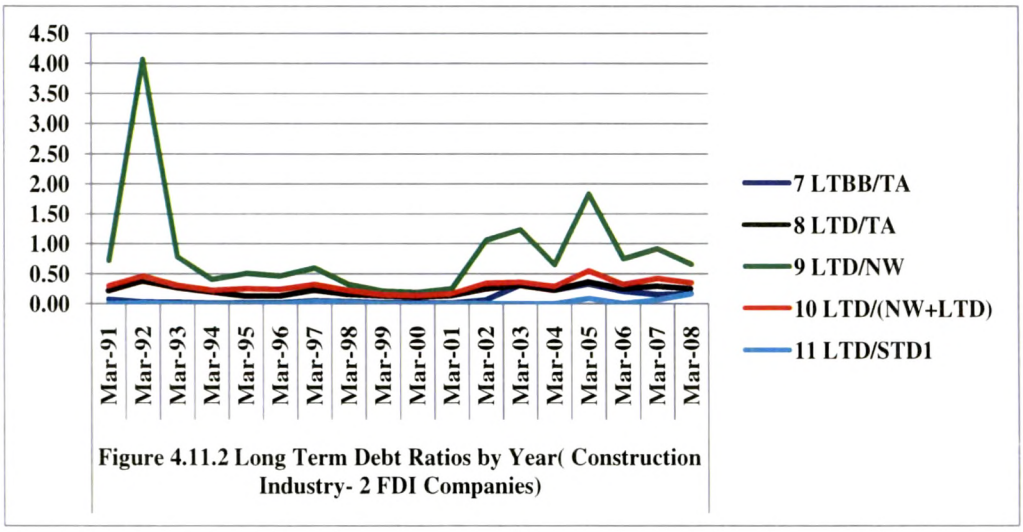


Figure 4.11.2 Long Term Debt Ratios by Year(Construction Industry- 2 FDI Companies)

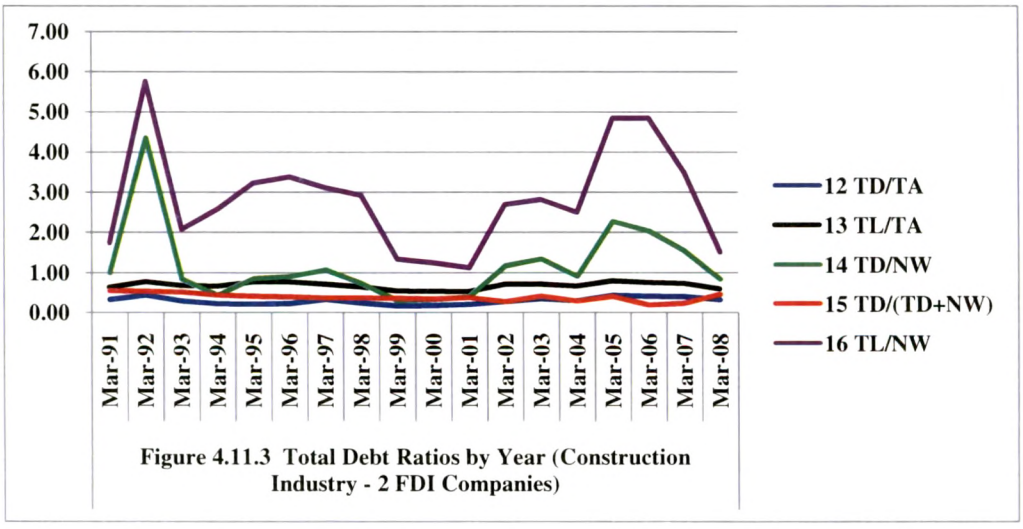
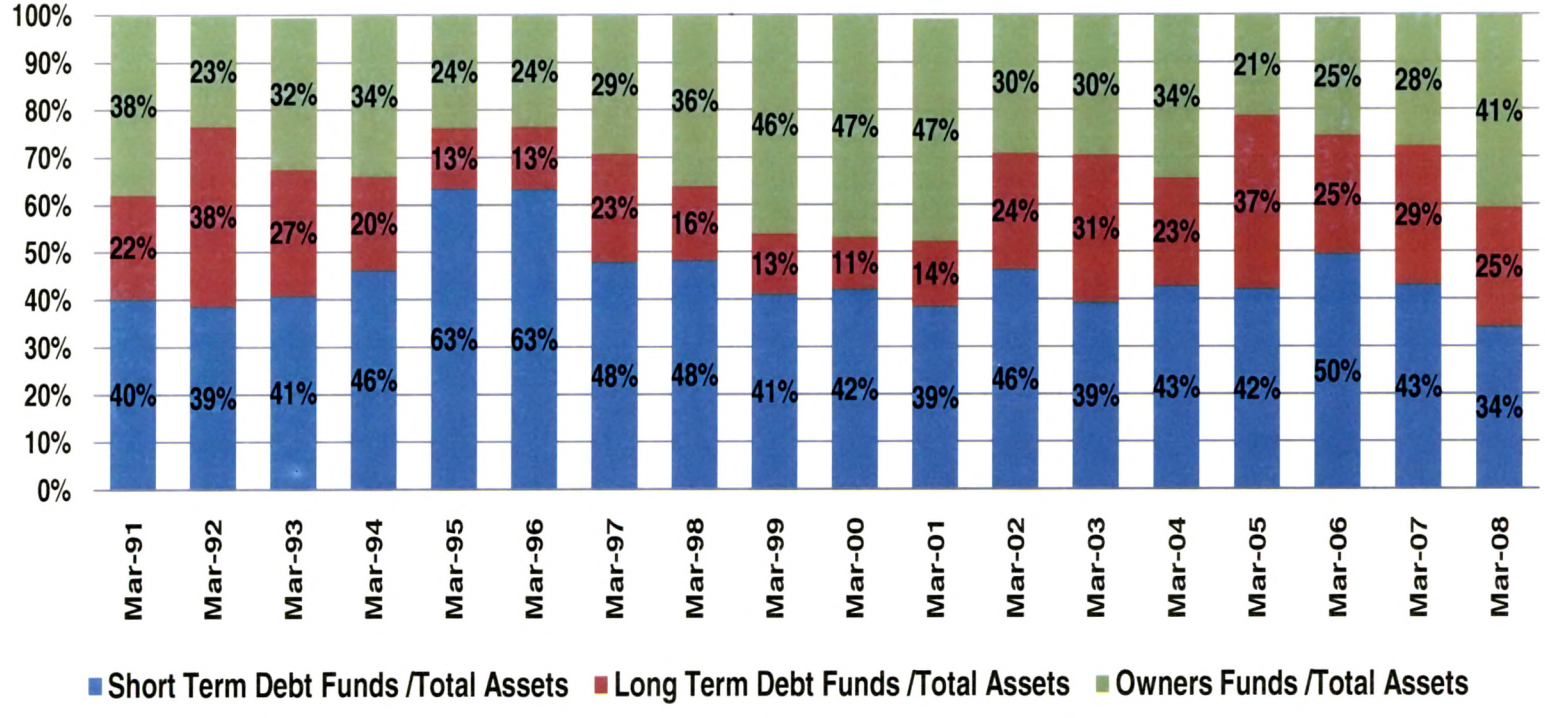


Figure 4.11.3 Total Debt Ratios by Year (Construction Industry - 2 FDI Companies)

Figure 4.11.4 - Financing Mix Adopted by Construction Industry - 2 FDI Companies (1991-2008)



4.4 Conclusion: Trend Analysis

This chapter examines the Trends in Capital Structure of FDI Companies in India. The major findings of trend analysis of Capital Structure of FDI Companies in India are:

I - Time Trends

1. The study rejects the null hypotheses that no significant linear trend is observed in Debt ratios of FDI Companies over a period of time and that the Debt ratios of FDI Companies do not change with passage of time and accepts the alternative hypotheses that significant linear or quadratic (curvilinear) trends are observed in Debt ratios of FDI Companies in India.

2. The study rejects the null hypothesis that no significant linear trend is observed in industry-wise Debt ratios of FDI Companies over a period of time and that the industry-wise Debt ratios of FDI Companies do not change with passage of time and accepts the alternative hypotheses that significant linear or quadratic (curvilinear) trends are observed in industry-wise Debt ratios of FDI Companies over a period of time.

3. To study the Time Trends in Capital Structure for the overall sample of 140 FDI Companies, the 'Method of Least Squares' is applied. First Linear Trend Model (Table 4.2.6-The simple linear regression) was run. On examining 'D' statistics, need was felt to apply quadratic equation and hence Quadratic Trend Model (4.2.7) was also applied. Time trend analysis revealed that some Debt ratios exhibited linear trend. They are STBB+CPLTD/TA(-ve), STD/TA (-ve), STD/NW (-ve), LTBB/TA (+ve), and LTD/(NW+LTD) (-ve). The ratios in which Quadratic trend model fitted the best are STD1/TA, TC&E/TA, STD1/NW, LTD/NW, TL/TA, TD/NW, TD/(TD+NW), TL/NW. The quadratic trend indicated that these Debt ratios are decreasing at an increasing rate. The Debt ratios LTD/TA and TD/TA decrease at an increasing rate, however the problem of autocorrelation persists as the 'D' statistic of LTD/TA ratio lies below the lower critical value and the D' statistic of TD/TA ratio lies in the inconclusive area.

4. For studying industry-wise time trends, five major industry groups are selected- Chemical Industry, Food Industry, Machinery Industry, Services industry and Transport Industry. The industry-wise time trends observed are summarized as follows:

Table 4.13 Industry-Wise Results of Time Trends	
LINEAR TREND	
Industry	**Debt Ratios**
Food	STD/NW(-ve), LTD/(NW+LTD)(-ve), TD/NW(-ve) and TD/(TD+NW) (-ve)
Chemicals	TC&E/TA (-ve) and LTD/NW (-ve)
Machinery	STD/TA(-ve), STD1/NW(-ve), LTBB/TA(-ve), LTD/NW(-ve), TD/NW (-ve), TD/(TD+NW) (-ve).
Transport	STBB+CPLTD/TA (-ve), STD/TA (-ve) and STD1/TA (-ve)
Services	STD/TA (-ve)
QUADRATIC TREND	
Industry	**Debt Ratios**
Food	STD1/TA, TC&E/TA and TL/TA
Chemicals	STBB+CPLTD/TA, STD/TA, STD/NW, STD1/NW, LTD/TA, LTD/(NW+LTD), TD/TA, TD/NW, TD/(TD+NW) and TL/NW
Machinery	STD1/TA, TC&E/TA, STD/NW, TD/TA, TL/TA and TL/NW.
Transport	TC&E/TA, TD/TA, TL/TA, TD/(TD+NW) and TL/NW.
Services	STBB+CPLTD/TA, STD1/TA and TC&E/TA
NO TREND	
Industry	**Debt Ratios**
Food	STBB+CPLTD/TA, STD/TA, LTBB/TA, LTD/NW and TD/TA
Chemicals	LTBB/TA
Machinery	STBB+CPLTD/TA and LTD/(NW+LTD)
Transport	STD/NW, STD1/NW, LTD/NW, LTBB/TA, LTD/(NW+LTD) and TD/NW.
Services	STD/NW, STD1/NW, LTBB/TA, LTD/TA, LTD/NW, LTD/(NW+LTD), TD/TA, TD/NW, TD/(TD+NW) and TL/NW

Ratios Decreasing at an Increasing Rate but Problem of Autocorrelation Persists	
Industry	**Debt Ratios**
Food	STD1/NW, TL/NW
Chemicals	STD1/TA and TL/TA
Machinery	LTD/TA
Transport	LTD/TA
Services	TL/TA

II- Overall and Industry-wise Trends in Capital Structure

5. FDI Companies in India resort to low debt levels in their Capital Structure. During the initial years of liberalization in 1991 and 1992, the debt levels seem to be high and then show a continuous declining trend (Table 4.2.1). There has been a marked decline in preference of Long Term Debt Funds as Long Term Debt ratios have shown a significant decline throughout the study period (Figure 4.1.4). Even Long Term Debt ratios in various industries show a similar declining trend indicating that preference for Long Term Debt in the Capital Structure of FDI Companies in India has declined over the study period.

6. A major proportion of Total Liabilities (Table 4.2.4) consist of Short Term Debt Funds which include Short Term Bank Borrowings, Commercial Paper and Current Liabilities & Provisions. In Short Term Debt Funds, Current Liabilities & Provisions are the most dominant and the most preferred source of finance and contribute a major proportion towards financing mix adopted by FDI Companies in India. Commercial paper contributes a negligible proportion towards Short Term Debt Funds. It was observed that although STD = Short Term Bank Borrowings + Commercial paper , the contribution of commercial paper towards Short Term Debt Funds is negligible.

7. The average composition of Owner's Funds of FDI Companies (Table 4.2.2) indicates that the proportion of Internal Funds in the form of Reserves &

Surplus have shown a marked increase over the study period, whereas the proportion of Share Capital in Owner's Funds has declined over the study period indicating that these companies must be profitable companies with high Retention Ratios. The average Retention Ratios prove the fact that indeed FDI Companies have very high Retention Ratios (Table 4.2.5).

8. FDI Companies in India believe in using more of internally generated funds rather than externally generated funds to finance their investments and prefer Short Term Debt over Long Term Debt, then use Long Term Debt to finance their long term assets and do not prefer to issue additional equity to raise finance. This seems to be characteristic feature of FDI Companies in India, which in turn might be making them an attractive FDI destination companies.

9. An important point to be noted was that, although some of the Debt ratios indicated a declining trend, other than Long Term Debt funds, the proportion of Short Term Debt Funds in financing mix of assets seemed to be more or less constant through the study period (Figure 4.1.4). Short Term Debt ratios scaled down to Total Assets did not indicate significant fluctuations, but Short Term Debt ratios scaled down to Net worth indicated a considerable decline. This was for the reason that the contribution of Owners' Funds (Table 4.2.2) towards financing assets had significantly increased during the study period. Since Owner's Funds i.e. Net worth of these companies increased during the study period, those Debt ratios which were scaled down to Net worth indicated a significant decline. In case of Long Term Debt ratios, the use of Long Term Debt had considerably declined during the study period and hence all these ratios indicated a general decline.

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