



THE TREND ANALYSIS OF WORKING CAPITAL MANAGEMENT RELATED FACTORS- A STUDY IN INDIAN NON-FINANCIAL CORPORATE SECTORS

¹ Alak Kumar Das, ² Tarun Mandal

¹Principal, ² Principal

¹Commerce and Management,

¹ Domkal Girls' College, Domkal, Murshidabad, W.B., India

Abstract: Management of working capital becomes more important than the management of long-term funds because the day-to-day operations of any business largely depend upon this source of finance. Many firms have been seen in the past closing down for the want of short-term finance. The profitability of any business to a larger extent is affected by this source of finance due to efficient management of current assets and current liabilities. The key objective of working capital management is to ensure a smooth operating cycle. It means the working capital cycle should never stop for the lack of liquidity, whether for buying raw materials, salaries, tax payments, etc. In seasonal industries have a liquidity crunch at one point in time and excess liquidity at another. At the time of excess liquidity, the management should have good short-term investment avenues to take benefit of the idle funds. Shortage of funds for working capital has caused many businesses to fail and in many cases, has retarded their growth. Lack of efficient and effective utilization of working capital leads to earn low rate of return on capital employed or even compels to sustain losses. Considering the prerogative of working capital in business this study has been taken to analyze the trends of different factors for working capital management. To attain the objectives this study, consider the data of 203 non-financial BSE 500 listed companies in India during the period of 2012-13 to 2016-17.

Index Terms – Working Capital Management, Liquidity Position, Factors of Working Capital.

I. INTRODUCTIONS

Working capital management is a business strategy designed to ensure that a company operates efficiently by monitoring and using its current assets and liabilities to their most effective use. The company possesses appropriate resources for its daily activities means protecting the company's existence and ensuring it can keep operating as a going concern. Scarce of cash, uncontrolled commercial credit policies, or limited access to short-term financing can lead to the need for restructuring, asset sales, and even liquidation of the company.

Proper management of liquidity ensures that the company possesses enough cash resources for its ordinary business needs and unexpected needs of a reasonable amount. The lower a company's liquidity, the more likely it is going to face financial distress. On the other hand, too much cash parked in low- or non-earning assets may reflect a poor allocation of resources. Proper liquidity management is manifested at an appropriate level of cash and/or in the ability of an organization to quickly and efficiently generate

cash resources to finance its business needs. To attain the objective of this study this paper is clustered as follow:

Section-2: objective of this study

Section-3: depicts the research methodology

Section-4: study of past literature

Section-5: gives a detail analysis of different factors related to the working capital management.

Section-6: concluding part of this study

II. OBJECTIVES OF THE STUDY

The object of this study is to analyze the working capital management trends of the non-financial corporate sectors of BSE listed companies in India. Appropriate ratios are used to depict the trend of working capital management of the sample companies.

III. RESEARCH METHODOLOGY

3.1 Sample Selection

This part of the study defines the target population and selected sample. The precision of the result, quality of the study and accuracy of the inference is greatly influenced by the sample selection and process of data collection. Taking in mind the impact of the proper sample this study has traced on the proper sample selection.

In Indian context there are exist two capital market. One is Bombay Stock Exchange (BSE) and another is National Stock Exchange (NSE). The oldest and active stock exchange in India is Bombay Stock Exchange. The listed companies under BSE are more than NSE. Considering the significance of the secondary capital market, BSE listed companies under BSE 500 index are selected as sample.

The sample this study limits with in non-financial corporate sectors. Therefore, most of the corporate sectors engaged in banking, finance, stock brokerage, insurance, suppliers of consumer finance etc. are excluded from this study. The sample is selected by elimination method from population. Considering the above criteria, the sample has been selected as per following Table-3.1.

Table-3.1: Details about Sample

Sl. No.	Description	Sample
1	Total Listed Companies under BSE 500	500
2	Less: Financial Companies	70
3	Non-financial companies	430
4	Less: Data not available	227
5	Sample Companies	203

3.2: Sources of Data: this study considered the secondary data of the sample companies. Data has been collected by using PROWS data base for five years started 1st April 2012 to 31st March 2017.

3.3: Data analysis: Data has been analyzed using SPSS software.

3.4: Variables of this study:

i. Current Ratio (CR): This is the most important liquidity gauging factor which is counted by the ratio of current assets to current liabilities. The most permissible value of this ratio is 2:1

ii. Quick Ratio (QR): This ratio helps to measure the financial strength of liquidity and measured by the ratio of quick current assets to quick current liabilities.

iii. Debt Equity Ratio (D/E): The risk or margin of safety to the creditors is strictly determined by this ratio. It is the ratio of borrowed fund to owner's capital.

iv. Gross working capital (GWT): It is the sum of a company's current assets such as cash, accounts receivable, inventory, short-term investments, and marketable securities (Walker, 1959; Smith, 1979; Pandey, 1981). The term gross working capital indicates the total current assets (Khan and Jain, 1995; Kuchhal, 1985).

Gross Working Capital = Total current assets

v. Net working capital (NWC): This variable is a measure of a company's liquidity. It refers the excess of current assets over current liabilities (Gutmann and Dougall, 1955; Saliers, 1927; Gerstenberg, 1959). It is that portion current assets which are financed by mobilizing finance from long term sources (Khan and Jain, 1995). Net working capital also signifies the difference of short term assets and liabilities (Soloman and Pringle, 1978; Collins, 1945; Fu-gen, 1995).

vi. Gross working capital Cycle: The fund invested in working capital constantly changes its form through the business wheel (Banerjee, 1993 p.79-82). This wheel rotates in a cyclical order represents the working capital cycle. To run the business the firm pay cash for materials, this material remain in the store for a certain time then enter into the work in process, making finished goods, selling finished goods to the debtors and the cash collect from debtors. Gross working capital cycle is the period of time computed by adding the Materials storage period, Material conversion period, finished goods storage period and Debtor's collection period.

vii. Net working capital Cycle: It represent the cash conversion cycle of the company. This factor is measured after deduction of creditors' payment period from gross working capital cycle.

viii. Capital Turnover Ratio (CTR): Capital turnover indicates an organization's efficiency about the utilization of capital employed in the business, and it is calculated as a ratio of total annual turnover divided by the total amount of stockholder's equity (also known as net worth) and the higher the ratio, the better is the utilization of capital employed.

ix. Fixed assets turnover ratio (FATR): The fixed asset turnover ratio reveals how efficiently a company is generating sales from its existing fixed assets. A higher ratio implies that management is using its fixed assets more effectively.

IV. REVIEW OF LITERATURE

Higher working capital measures the higher liquidity which, reduce risk. For example, risk of reduce sale due to loss of customer, loss of stoppage production for want of raw material etc. On the other hand, higher working capital though reduces risk has a negative bearing on the profitability as it reduces working capital turnover and Return on Investment (ROI). Against this general theory many researchers have attempted to analyze the role of Working capital Management in performance of the company. There being numerous studies on these aspects we have tried to review the literature in focused way.

The debt ratio that indicates the leverage of the firm has negative effect on Working capital management (Nazir & Afza, 2009; Zariyawati et al., 2010 and Chiou & Cheng, 2006). In most of the study leverage was used as control variable to measure the effect of working capital management on profitability (Goel et. al., 2015; Nazira and Afza, 2009; Mbawuni et al., 2016; Caballero et al., 2012; Das, A. K., Mandal, T. & Kuiry N. P., 2018). It has negative and significance effect on firm value and profitability (Vural et al., 2012; Mahmoudi, 2014).

Management of inventory another crucial part of the working capital management. Some studies have analyzed the effect of this element of working capital on profitability in different business sectors. These studies examined the trends in working capital management and its impact on firm's performance. The empirical results of some study proved that there exists a positive relationship between inventory conversion period and profitability (Akinlo, 2011; Mathuva, 2010; Uremadu et al., 2012; Eneje et al., 2012). Some other study revealed that inventory conversion period and profitability are negatively associated (Egbide, 2009; Falope and Ajilore, 2009; Huynh and Jyh-tay, 2010; Raheman et al., 2010; Madishetti and Kibona, 2013). Some other studies have concluded that inventory conversion period has no significant impact with profitability (Amarjit et al., 2010)

The impact of current assets on profitability has analyzed using panel data of manufacturing company in Srilanka. The study found, those manufacturing sectors are in weak profitability position due to high volume of investment in inventory and receivable (Das, A. K., Dhar. S. 2018)

Receivables are also an important part of the current assets. Different studies have made regarding influence of receivable management on liquidity and profitability. These studies have explored that there exists an indirect relationship between Debtor's collection period and profitability (Amarjit et al., 2010; Akoto et al., 2013; Egbide, 2009; Falope and Ajilore, 2009; Huynh and Jyh-tay, 2010; Mathuva, 2010; Raheman et al., 2010; Madishetti and Kibona, 2013 Das, A. K. & Kuiry N. P., 2018). The other studies revealed that debtor's collection period is directly related with profitability (Akinlo, 2011; and Uremadu et al., 2012; Muscettola, 2014).

V. TRENDS ANALYSIS OF DIFFERENT FACTORS OF WORKING CAPITAL

5.1 Descriptive Statistics of Sample Companies

The descriptive statistics of the sample companies for the financial year 2016-17 are given in the Table-5.1. This table provides that the mean value of sales is Rs 156493.1 million with a range of Rs. 4398592 million to Rs. 2 million during the financial year 2016-17. The size of assets is also high during this year. The mean value of assets is Rs. 226079.8 million with maximum value Rs. 5475520 million to minimum value Rs. 3169.5 million. The value of profitability measurement variables like NPM, ROA and ROI in this year also depict that mean value of ROI is higher than NPM and ROA.

Table-5.1: Descriptive statistics of the sample companies for the year 2016-17

Variables	Mean	Median	Range	
			Max	Mini
Sales (Rs. In Millions)	156493.1	35760.2	4398592	2
Assets Size (Rs. In Millions)	226079.8	44227.1	5475520	3169.5
Capital (Rs. In Millions)	4196.26	537.2	10593.2	424
NPM (%)	9.17	8.01	82.7	-116.67
ROA (%)	8.87	7.93	36.85	-8.5
ROI (%)	13.77	12.1	112.19	-11.35

5.2 Trend of Working Capital of Sample Companies

In measuring the trend of the working capital related factors this study considered the descriptive statistics.

5.2.1 Gross and Net Working Capital

Table-5.2 depicts the trend of gross and net working capital of the sample companies. There is a steady upward trend of gross working capital over the study period. In the year 2012-13 it was Rs.56588.1 million and in the last year of the study period it was Rs. 69063 million. Range of gross working capital is quite high in each of the year during the study period. For example, in the 1st year of study it ranges between Rs. 87.4 million to Rs 1439760 million. Standard deviation on gross working capital is steady over the study period and it is around Rs.160000 million.

Net working capital exhibits a fluctuating trend during the study period. It was in upward trend during the first three year of the study period. But in the last two years of the study period, it was fluctuating. In the year 2012-13 the net working capital was Rs. 19634.8 million which was increased to Rs. 21399 million for the year 2014-15. A long gap is seen in the range of net working capital. This gap is very high for each year during the study period. The minimum net working capital is negative in each year. It indicates that current liabilities are more than current assets. In the last year of the study period, it ranges between Rs. (-) 452770 million to Rs. 596010 million. Standard deviation on net working capital is also fluctuating over the study period. During the first three years of the study period, it is stable and around Rs. 66080.8 million. But more deviation is seen in the year 2016-17 and it is Rs. 85036.7 million.

Table-5.2: Trend of Working Capital of Sample Companies

(Rs. In Millions)

Financial Year	Gross Working Capital				Net Working Capital			
	Mean	Range		S.D.	Mean	Range		S.D.
		Max.	Min.			Max.	Min.	
2012-13	56588.1	1439760	87.4	158204	19634.8	650380	-92195	67397.8
2013-14	61557.0	1371970	49.3	160000	20292.1	439340	-166557	66080.8
2014-15	61180.0	1161520	64.2	137563	21399.0	389860	-126951	64867.0
2015-16	62619.8	925380	79.4	134323	14865.9	432140	-324548	74702.1
2016-17	69063.0	1273421	94.7	157362	15906.0	596010	-452770	85036.7

Source: CMIE Prowess Database, Results Computed.

Table-5.3 reports some information about the trend of gross working capital cycle and net working capital cycle of the sample companies. It is observed that average gross working capital cycle is initially decreased then continuously increased over the study period. In the year 2012-13 it was 155.29 days and in the last year of the study period it was 161.86 days. It is observed that range of gross working capital cycle is quite high in each of the year during the period of study. In the year 2012-13 it ranges between 717.12 days to 5.56 days. Standard deviation on Gross working capital cycle is stable over the study period and it is more or less 101.33 days.

This Table-4 also depicts the trend of net working capital cycle of the sample companies. It is observed a horizontal trend in net working capital cycle. In the year 2012-13 it is 65.21 days and in the other year it is around 64.64 days. The ranges of this variable are very wide all over the study period. It is observed that in each of the study period the minimum value is negative in nature. The maximum range is found in the year 2012-13. It is between 688.12 days to (-) 863.95 days. Standard deviation on Net working capital cycle is steady over the study period but the values are higher. The value of standard deviation of each year is within 117.47 day to 139.89 day. Therefore, the values of Net working capital cycle are farther away from the mean.

Table-5.3: Trend of Working Capital Cycle of Sample Companies

(in Days)

Year	Gross Working Capital Cycle				Net Working Capital Cycle			
	Mean	Range		S.D.	Mean	Range		S.D.
		Max.	Min.			Max.	Min.	
2012-13	155.29	717.12	5.56	101.33	65.21	688.17	-863.95	139.89
2013-14	151.64	632.39	5.47	95.82	64.64	608.25	-487.94	117.47
2014-15	153.70	702.05	6.28	101.73	64.91	545.23	-521.53	124.81
2015-16	161.05	792.98	9.80	107.97	66.84	642.05	-577.72	129.41
2016-17	161.86	758.31	7.52	107.23	64.42	724.74	-701.46	139.26

Source: CMIE Prowess Database, Results Computed.

In the above Table-5.3, we saw a business with a positive, or normal, cycle of working capital. Sometimes, however, businesses enjoy a negative Net working capital cycle where they collect money faster than they pay off bills.

5.2.2 Trend of Liquidity Ratio of Sample Companies

From the Table-5.4, it is observed that current Ratio (CR) is not changing extensively. The positions of current ratio are slightly above the conventional bench mark value of ratio (2:1) in the year 2014-15, 2015-16 and 2016-17 where as in the year 2012-13 and 2013-14 this ratio is to some extent below the conventional ratio. The ranges of this ratio of the sample companies are very high during the last three years of the study period. The range of this ratio is very high in the year 2015-16 and it is 160:1 to 0.19:1. Standard deviation of this ratio shows a disparity with the value of first phase of first two years and third phase of last three years of the study period. The maximum deviation of 11.60 is obtained in the year 2014-15.

Table-5.4: Trend of Current Ratio of Sample Companies

(in Times)

Year	Current Ratio			
	Mean	Range		S.D.
		Max.	Min.	
2012-13	1.80	22.94	0.24	2.46
2013-14	1.82	18.72	0.22	2.39
2014-15	2.63	160.00	0.19	11.60
2015-16	2.41	112.57	0.23	8.30
2016-17	2.49	117.88	0.20	8.59

Source: CMIE Prowess Database, Results Computed.

This Table-5.5 also depicts the trend of quick ratio of the sample companies. It is observed that quick ratio has an increased state from the year 2012-13 to 2014-15, i.e. 1.26 to 2.09, and then there is a decreasing trend, i.e., from 2.09 to 1.87. But this ratio hovers around the agreed norms (1:1) in each year except 2014-15. The range of this ratio is very high in the year 2015-16 and it is 160:1 to 0.07:1. The maximum value of this ratio is exactly same with the maximum value of current ratio during the year of 2013-14 to 2016-17. Standard deviation on quick ratio is changing over the study period. To compare this ratio, study period is clustered into three phases. Year 2012-13 and 2013-14 is under first phase, 2014-15 is second phase and year 2015-16 and 2016-17 is under third phase. Standard deviation of this ratio shows a disparity with the value of first phase and third phase of the study period. The maximum distance from mean is 11.63 in the year 2014-15.

Table-5.5: Trend of Quick Ratio of Sample Companies

(in Times)

Year	Current Ratio			
	Mean	Range		S.D.
		Max.	Min.	
2012-13	1.26	21.10	0.07	2.18
2013-14	1.30	18.72	0.09	2.19
2014-15	2.09	160.00	0.07	11.63
2015-16	1.87	112.57	0.06	8.32
2016-17	1.95	117.88	0.06	8.60

Source: CMIE Prowess Database, Results Computed.

From the Table-5.6 it can be seen that the trend of the debt equity ratio of the sample companies is fluctuating. The range of this ratio is quite high in each year of the study period. In the year 2014-15 the range is between 58.75 to zero. Standard deviations exhibit a fluctuating trend like those of current ratio and quick ratio.

Table-5.6: Trend of Debt Equity Ratio of Sample Companies

Year	Debt Equity Ratio			
	Mean	Range		S.D.
		Max.	Min.	
2012-13	0.73	14.83	0	1.50
2013-14	0.66	9.87	0	1.15
2014-15	0.88	58.75	0	4.34
2015-16	0.62	16.81	0	1.46
2016-17	0.55	15.35	0	1.36

Source: CMIE Prowess Database, Results Computed.

5.2.3 Trend of Capital Turnover and Total Assets Turnover of Sample Companies

Table-5.7 depicts the trend of capital turnover and total assets turnover of sample companies over the study period. A fluctuating trend is visible in the capital turnover ratio over the study period. In the year 2014-15 this ratio is higher than any other year and it is 125.18 times whereas in the year 2012-13 this ratio 99.98 times which is minimum all over the study period. In each year of the study period there found a long gap within the maximum and minimum value of the capital turnover ratio. In the year 2014-15 and 2015-16 the ranges are very high among the other years and it is between 5226.90 to 0.01 times. Standard deviation of capital turnover ratio is slightly fluctuating in nature in the year 2014-15 and 2015-16 it is approximately similar and the value is 387.31 times.

This Table-5.7 also conveys the trend of total assets turnover ratio of sample companies. A horizontal trend of total assets turnover ratio is seen over the study period. The value of this ratio is around 1.11 times. There found very small gap of this ratio within the study period. In the study period this gap is

approximately similar and it is between 4.10 times to 0.04 times. The standard deviation of total assets turnover ratio is steady over the study period and it is 0.77 times.

Table-5.7: Trend of Capital Turnover and Total Assets Turnover of Sample Companies (in Times)

Year	Capital Turnover Ratio				Total Assets Turnover Ratio			
	Mean	Range		S.D.	Mean	Range		S.D.
		Max.	Min.			Max.	Min.	
2012-13	99.98	3172.91	0.06	242.88	1.10	3.88	0.05	0.71
2013-14	108.75	3455.03	0.05	264.17	1.10	3.87	0.02	0.72
2014-15	125.18	5226.90	0.01	387.31	1.11	4.09	0.01	0.77
2015-16	124.66	5226.90	0.01	387.59	1.04	4.10	0.04	0.71
2016-17	118.03	3477.12	0.01	267.70	0.98	3.54	0.02	0.65

Source: CMIE Prowess Database, Results Computed.

5.2.4 Trend of another Turnover Ratio

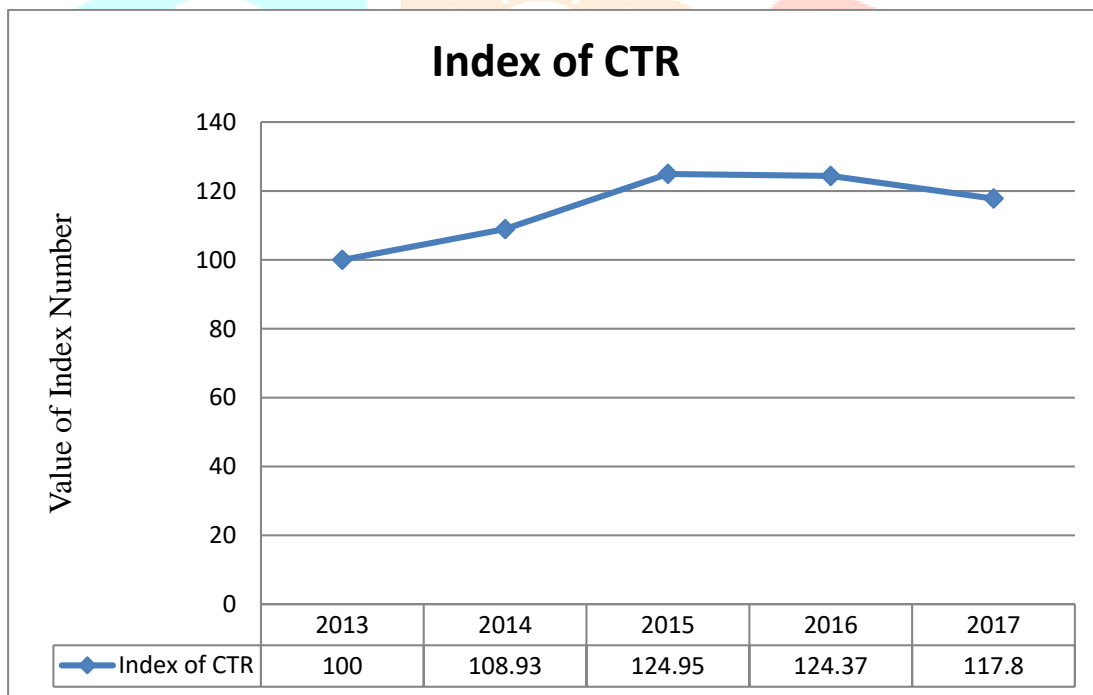


Fig-5.1: Index Number of Capital Turnover Ratio for Sample Companies during 2012-13 to 2016-17

Source: CMIE Prowess Database, Results Computed.

Capital turnover ratio (CTR) is the study between sales and total capital and this ratio is an important parameter to measure the efficiency to use the total capitals. It proves the efficiency of management. Fig-5.1 exhibits the trend of capital turnover ratio (CTR) of the sample companies for the study period from 2012-13 to 2016-17. This figure represents the index number of capital turnover ratio. After selecting the year 2012-13 as base it is found that this ratio is showing upward trend. This trend specifies that either the sample companies are increasing their sales volume or minimize the use of capital or both. The increasing trend of this ratio is the symbol of overtrading. In this situation the capital is insufficient in comparison to the sales of the companies. In that cases companies looks for its expansion without

arrangement of adequate capital. Therefore, the companies cannot issue share or debentures and adopt the policy of delay payment to debenture holders or long-term creditors.

In the year 2014-15, 2015-16 and 2016-17 the company is efficiently utilizing the amount of capital invested. In contrast, in the year 2012-13 and 2013-14, it observes that the company is not managing its capital investment efficiently to generate the required revenue, i.e., the company has to invest the funds appropriately to achieve the sales target by utilizing the owner's funds company.

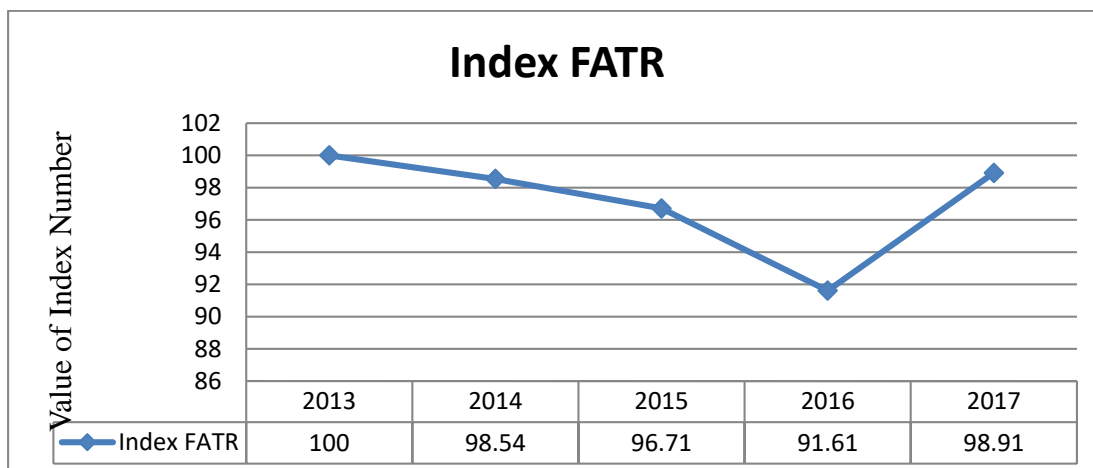


Fig-5.2: Index Number of Fixed Assets Turnover Ratio for Sample Companies during 2012-13 to 2016-17

Source: CMIE Prowess Database, Results Computed.

The fixed assets turnover ratio (FATR) is computed by comparing sales to fixed assets. Fig.-5.2 provides a graphical picture of the trends of this ratio. It is seen from this figure that up to the study period of 2015-16 index of fixed assets turnover ratio is declining from 100 to 91.61 and then it turns upward. This declining trend of fixed assets turnover ratio signifies excessive investment in fixed assets.

From the study period 2012-13 to 2015-16 the business is underperforming in sales and has a relatively high amount of investment in fixed assets. This is especially true for manufacturing businesses that utilize big machines and facilities. But this declining trend cannot indicate a bad situation, if the company just made some new large purchases of fixed assets for modernization, the low FAT may have a negative connotation. A declining ratio may also suggest that the company is over-investing in its fixed assets. In the year 2015-16 to 2016-17 FAT is shifting upward it indicates that there is greater efficiency in regards to managing fixed assets; therefore, it gives higher returns on asset investments.

VI. FINDINGS AND CONCLUSION OF THE STUDY

After empirical analysis this study found the trend of working capital management as per follow.

- Upward trend of gross working capital is found over the study period. It implies that the use of current assets is increasing year by year.
- Standard deviation on gross working capital is steady over the study period. It means the use of current assets is increasing year by year at a fixed rate.
- Net working capital exhibits a fluctuating trend during the study period.
- The mean value of NWC is positive in nature which reveals that the firms are using long term sources of capital in financing in part of current assets.
- The minimum net working capital is negative in each year. It indicates that current liabilities are more than current assets.
- The range of net working capital is very high in each year during the study period.
- average gross working capital cycle is initially decreased then continuously increased over the study period
- It is observed that range of gross working capital cycle is quite high in each of the year during the period of study
- Maximum range of gross working capital cycle is around 700 days where as minimum range is only around 6 days.

- j) a horizontal trend in net working capital cycle is found.
- k) The ranges of net working capital cycle are very wide all over the study period.
- l) Minimum range of net working capital cycle is negative and it is also fluctuating.
- m) The SD values of Net working capital cycle are far away from the mean.
- n) The current ratios for the year 2014-15, 2015-16 and 2016-17 are slightly above the conventional bench mark value of ratio (2:1) where as in the year 2012-13 and 2013-14 this ratio is to some extent below the conventional ratio.
- o) Very high range of current ratio is found in the last three years
- p) Quick ratio hovers around the agreed norms (1:1) in each year except 2014-15
- q) The trend of the debt equity ratio of the sample companies is fluctuating.
- r) Standard deviations of debt equity ratio are fluctuating in the study period.
- s) A fluctuating trend is visible in the capital turnover ratio over the study period.
- t) Long gap is found within the maximum and minimum value of the capital turnover ratio.
- u) Standard deviation of capital turnover ratio is slightly fluctuating in nature
- v) A horizontal trend of total assets turnover ratio is seen over the study period. The gap between maximum and minimum value of this ratio is very small and standard deviation is steady over the study period.

Working capital management is focused on enhancement firms' financial performance. The most important part of working capital management is to maintain optimum liquidity. However, profitability is inversely related with higher liquidity. Any company has to maintain precise balance between liquidity and profitability. Sample companies are chosen from different industry sectors. Hence their working capital management policy varies widely. In this study absolute working capital and various ratios are used to depict the trend and to understand working capital practice of sample companies.

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