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# Data-Driven Decisions: Optimizing BHEL's Working Capital with Analytics

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**ABSTRACT:** Working capital management is concerned with decisions relating to current assets and current liabilities. The management of current assets is similar to that of fixed assets in the sense that in both cases a firm analyses their effects on its return and risk. The goal of working capital management is to ensure that a firm is able to continue its operations and that it has sufficient ability to satisfy both maturing short-term debt and upcoming operational expenses. The management of working capital involves managing inventories, accounts receivable and payable and cash. The term working capital refers to the capital required for day to day operating of a business enterprise. It is represented by current assets over Current liabilities. Working capital management is to manage the firm's current assets and liabilities in such a way that a satisfactory level of working capital is maintained.

## I. INTRODUCTION

The total capital employed in a business organization can be categorized as fixed capital and working capital. The fixed capital that part of the funds, which is invested in current assets. The investment in fixed assets is represented by land and buildings (for factory, office go down and stores), equipment such as machinery, furniture and fixtures, intangible assets in the form of patents and goodwill etc. To employ these fixed assets gainfully current assets are required. Current assets consist of raw materials, working progress, finished goods, stores and spares accounts, receivables, cash in hand and at bank and marketable securities.

### *WORKING CAPITAL MANAGEMENT*

Working capital management forms the inching of every business. As Gilbert Harold puts the problems. Unfortunately, there is so much disagreement among financiers, accountants, business men and economists as to the exact meaning of the term Working Capital.

Working Capital or Circulating Capital indicates circular flow of funds in the routine activities of business. The current assets are cash, marketable securities, accounts receivable and inventory. The current liabilities are those liabilities which are intended at their inception to be paid in the ordinary course of business such as bills payable, bank overdraft and outstanding expenses. The goal of working capital management to manage the firms' current assets and current liabilities in such a way that a satisfactory level of working capital is maintained. This is because if the firm cannot maintain a satisfactory level of working capital, it is likely to become insolvent and may even be forced into bankruptcy.

## II. REVIEW OF LITERATURE

**Chakraborty, A. & Sen, S. (2021):** Summary: This case study focuses on cash flow management in Indian PSEs. It provides insights into how BHEL can manage its cash flows more effectively, which is a critical component of working capital management.

**Kumar, A. & Singh, R. (2020):** This review provides an in-depth look into the working capital management practices in heavy engineering sectors. It advocates for a dynamic approach to working capital management that considers economic cycles and industry-specific challenges, which BHEL can align with.

**Singh, S. & Garg, R. (2019):** This study explores the working capital management practices in Indian PSEs, including BHEL. It highlights the importance of cash management, inventory control, and credit policies in maintaining financial health. The study suggests that BHEL can benefit from revising its working capital policies to align with current market dynamics and industry standards.

**Dixit, A. & Prasad, M. (2019):** This review examines inventory management practices in the Indian manufacturing sector, which is crucial for BHEL given its significant inventory holdings. It suggests that adopting efficient inventory management techniques can improve working capital management.

**Padmaja, P. & Siva, S. (2018):** This empirical study examines the relationship between working capital management and financial performance in Indian manufacturing companies. It offers insights into how BHEL can optimize its working capital to improve its financial health.

**Mehta, N. (2017):** This study analyses the impact of working capital management on the financial performance of manufacturing companies in India. It suggests that effective management of accounts receivable, accounts payable, and inventory can significantly enhance performance, which is directly applicable to BHEL's operational context.

**Mehta, N. (2017):** This study analyses the impact of working capital management on the financial performance of manufacturing companies in India. It suggests that effective management of accounts receivable, accounts payable, and inventory can significantly enhance performance, which is directly applicable to BHEL's operational context.

**Gupta, M. (2016):** This case study focuses on the financial performance of BHEL, including an analysis of its working capital management. It suggests that BHEL should focus on reducing the cash conversion cycle and improving the efficiency of its inventory management to enhance liquidity and profitability.

**Singh, R. & Sharma, M. (2015):** This study focuses on the relationship between credit policies and working capital management in Indian companies. It provides valuable insights for BHEL.

### III. RESEARCH METHODOLOGY

The proposed study integrates data from both primary and secondary sources to comprehensively evaluate employee satisfaction within BHEL. Primary data was gathered through the administration of questionnaires, engaging in interviews, and conducting discussions with employees to capture first hand insights and perceptions. Secondary data, on the other hand, was sourced from a variety of materials including literature booklets, statistical reports, quarterly and annual reports, industry journals, and online resources, particularly those published by BHEL. By utilizing these dual sources, the study aims to record and analyze a wide spectrum of information, ensuring a robust and well-rounded assessment of employee satisfaction within the company.

#### **NEED FOR THE STUDY**

The need for working capital to run the day-to-day business activities cannot be overemphasized. We will hardly find a business firm, which does not require any amount of working capital. We know that a firm should aim at maximizing the wealth of its shareholders. In its endeavour to do so, a firm should earn sufficient return from its operations. The firm has to invest enough funds in current assets of generating sales. Current assets are needed because sales do not convert into cash instantaneously. There is always an operating cycle involved in the conversion of sales into cash.

#### **SCOPE OF THE STUDY**

The scope of the study covers all the financial concepts related to working capital management and is focused on financial performance through comparative analysis of BHEL Limited. To know the effect of working capital management on the performance of the company and to evaluate the project by using different techniques of working capital management and accordingly suggestions are provided. The scope of the study is confined to the working capital that BHEL tapped over the years under study i.e., 6 years.

#### **OBJECTIVES OF THE STUDY**

- To know the liquidity position of the company with the help of current ratio.
- To examine the changes in assets and liabilities.
- To evaluate company's performance relating to financial statement analysis.

#### **LIMITATIONS OF THE STUDY**

A significant challenge in conducting the proposed survey is the stringent time constraint, as the project must be finalized within a strict 45-day timeline. This limitation, coupled with the reliance on the accuracy and reliability of the financial data contained within annual statements, poses a substantial hurdle.

IV. DATA ANALYSIS AND INTERPRETATION

Table 1. COMPARATIVE STATEMENT OF WORKING CAPITAL FOR 2015-2016

Particular	2015	2016	Absolute Change	Change in %
<b>Current Assets</b>	800065303	1821777224	1021711921	127.7
Inventories	991705719	1911277269	919571550	92.72
Sundry Debtors	91528024	251092974	159564950	-13.1
Cash & Bank Balance Other current assets Loans and Advances	115506801 878270934 2877076781	559090805 763136566 5306374838	443584004 1903119982 2429298057	174.3 85.87 84.43
Total Current Assets (A)	804261757	1620414304	816152547	101.5
Current Liabilities (B) Working Capital (A-B) (+) Provisions	2072815024 143258232	3685960534 433233214	1613145510 289974472	202.14 152.72
Net Working Capital	2216073256	5306374838	-115134368	384

Interpretation

Interpretation of comparative working capital statement of BHEL Company Ltd between the year 2015-2016. The working capital of BHEL company Ltd is increased from Rs 2,07,28,15,024 to Rs 3,68,59,60,534. But the provisions of BHEL company Ltd have increased from Rs 14,32,58,232 to Rs 43,32,33,214 i.e., Rs 28,99,74,982 i.e., 202.14%. In the year 2015-16 the net working capital was Rs 2,21,60,73,256. The net working capital is very beneficial to company for the purpose of maintaining managing day-to-day activities of the BHEL company Ltd. It is most beneficial for the company

Table 2. COMPARATIVE STATEMENT OF WORKING CAPITAL FOR 2016-17

	2016	2017	Absolute Change	Change in %
<b>Current Assets</b>	1821777224	1528406205	-293371019	-20.10
Inventories Sundry Debtors	1911277269	1539980546	-376344854	-19.63
Cash & Bank Balance Other current assets Loans and Advances	251092974 419193748 763136566	312180623 182114852 997119989	61087649 -376975953 239031554	24.32 31.53 -20.65
Total Current Assets (A)	763136566	997119989	239031554	-20.65
Current Liabilities (B)	5306374838	4559802215	746572623	-14.06
Working Capital (A-B) (+) Provisions	1620414304 3685960534 433233214	1487645302 3072156913 4559802215	-1372769002 613803621 -746572623	-8.19 16.65 -67.42
Net Working Capital	559090805	3619570734	499623014	-12.12

**Interpretation:**

Interpretation of comparative working capital statement of BHEL company Ltd between the years 2016-2017 The working capital of BHEL company Ltd is increased from Rs 3,68,59,60,534 to Rs 3,07,21,56,913 i.e., Rs 61, 38, 03,621 (16.65%). Compare to previous ,2016-2017 the total networking capital is decreased Rs 49,96,23,014, it is not satisfactory.

**Table 3. COMPARATIVE STATEMENT OF WORKING CAPITAL FOR THE YEAR 2017-2018**

Particular	2017	2018	Absolute Change	Change in %
<b>Current Assets</b>	1528406205	1970349211	441943006	28.91%
Inventories Sundry Debtors	1539980546	1535631209	-4349337	-0.28%
Cash & Bank Balance Other current assets Loans and Advances Total	312180623	198671674	65343353	6.55%
Current Assets (A)	3619570734	263218444	81103592	44.53%
Current Liabilities (B )	997119989	106263342	275785779	7.61%
Working Capital (A-B) (+)	4559802215	638879286	470531665	10.31%
Provisions	1487645302	1773856653	286211351	19.23%
	3072156913	3256477227	184320314	5.99%
	547413821	3895356513	91465465	16.70%
Net Working Capital	182114852	5030333880	-113508949	-36.36%

**Interpretation**

Interpretation of comparative working capital statement of BHEL company Ltd between the years 2017-2018. Compare to the 2016-17to 2017-18 the net working capital is very beneficial to company for the purpose of maintaining (or) managing the day today activities of BHEL Ltd.

**Table 4. COMPARATIVE STATEMENT OF WORKING CAPITAL FOR THE YEAR 2018-2019**

Particular	2018	2019	Absolute Change	Change in %
<b>Current Assets</b>				
Inventories Sundry Debtors	1970349211	2030662246	60313035	3.06%
Cash & Bank Balance Other current assets Loans and Advances	1535631209	2007943703	472312494	30.75%
Total Current Assets (A)	198671674	243527953	44856279	22.57%
Current Liabilities (B )	263218444	219176744	-44041700	19.06%
Working Capital (A-B) (+)	106263342	4635718062	740361549	-19.87%
Provisions	3895356513	5395148045	364814165	7.25%
	1773856653	1453759824	-320146829	18.045%
	3256477227	3941388221	684910994	21.03%
	638879286	694329841	55450555	8.67%
Net Working Capital	5030333880	893837399	-208625943	-20.73%

**Interpretation**

comparative working capital statement of BHEL company Ltd between the year 2018-2019

In the year 2017-18 the Net working capital of BHEL company Ltd was Rs 4,63,57,18,062 and in the year 2018-19 the net working capital was Rs 3,89,53,56,513 so there was an increased the net working capital by 19.06% i.e., Rs 74,03,61,549.

**Table 5. COMPARATIVE STATEMENT OF WORKING CAPITAL FOR THE YEAR 2019-2020.**

Particular	2019	2020	Absolute Change	Change in %
<b>Current Assets</b>				
Inventories Sundry Debtors	2030662246	3768827777	1738165531	46.11%
Cash & Bank Balance Other current assets Loans and Advances	2007943703	2459452581	451508878	18.36%
Total Current Assets (A)	243527953	272422341	3134188446	10.60%
Current Liabilities (B )	4635718062	7769906508	100977322	40.33%
Working Capital (A-B) (+) Provisions	893837399	2062247261	1168409862	56.65%
	5395148045	8681149372	3286001327	37.85%
	1453759824	2268292085	814532261	35.91%
	3941388221	6412857287	2471469066	38.54%
	694329841	1357049231	662719380	48.83%
Net Working Capital	219176744	118199412	28894388	-85.42%

**Interpretation**

Interpretation of comparative working capital statement of BHEL company Ltd between the year 2019-20. In the year 2018-19 the Net working capital of BHEL company Ltd was Rs 7,76,99,06,508 and in the year 2017-14 the net working capital was 4,63,57,18,062 so there was an increased the net working capital by 40.33% i.e., 3,13,41,88,446. Increasing net working capital was very beneficial to the company for the purpose of maintaining (or) managing the day today activities of BHEL Ltd.

**Table 6. Comparative Statement of Working Capital For The Year 2020-2021**

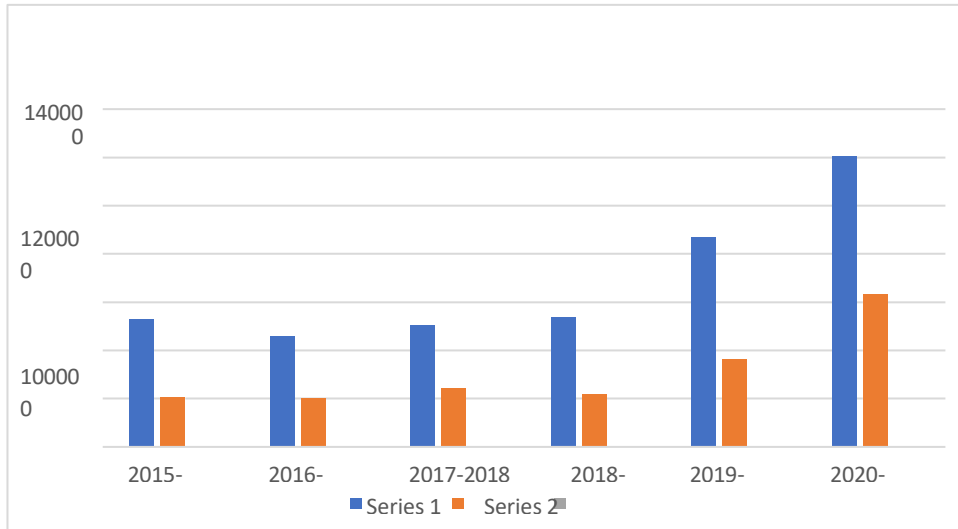
Particular	2020	2021	Absolute Change	Change in %
<b>Current Assets</b>				
Inventories Sundry Debtors	3768827777	4421701810	652874033	14.77%
Cash & Bank Balance Other current assets Loans and Advances	2459452581	2730735205	271282624	9.93%
Total Current Assets (A)	272422341	405421333	4566426280	32.81%
Current Liabilities (B )	118199412	214691785	96492373	37.02%
Working Capital (A-B) (+) Provisions	2062247261	4290179191	2227931930	51.93%
	7769906508	12336332788	3381579952	28.03%
	2268292085	3030323592	762031507	25.15%
	6412857287	9032405732	2619548445	29.00%
	1357049231	3303927056	1946877825	58.93%
Net Working Capital	8681149372	12062729324	132998992	44.94%

**Interpretation:** Interpretation of comparative working capital statement of BHEL between the year 2020-21. The working capital of BHEL Ltd in the year 2019-20 was Rs 9,03,24,05,732 and in the year 2018-19 was Rs 6,41,28,57,287, so there was an increased Rs. 2,61,95,48,445 this was happened due to the increased total current assets in the present financial year 2020-21.

**LIQUIDITY RATIO**

**Table 7. Current ratio = Current assets/current liabilities**

Year	Current Assets	Current Liabilities	Ratio
2015-2016	53063.74.	20536.47	2.58
2016-2017	45598.02	20350.59	2.24
2017-2018	50303.33	24127.35	2.08
2018-2019	53951.48	21480.89	2.51
2019-2020	86811.49	36253.41	2.39
2020-2021	120627.29	63342.51	1.90



Graph 1 . LIQUIDITY RATIO

**Interpretation:**

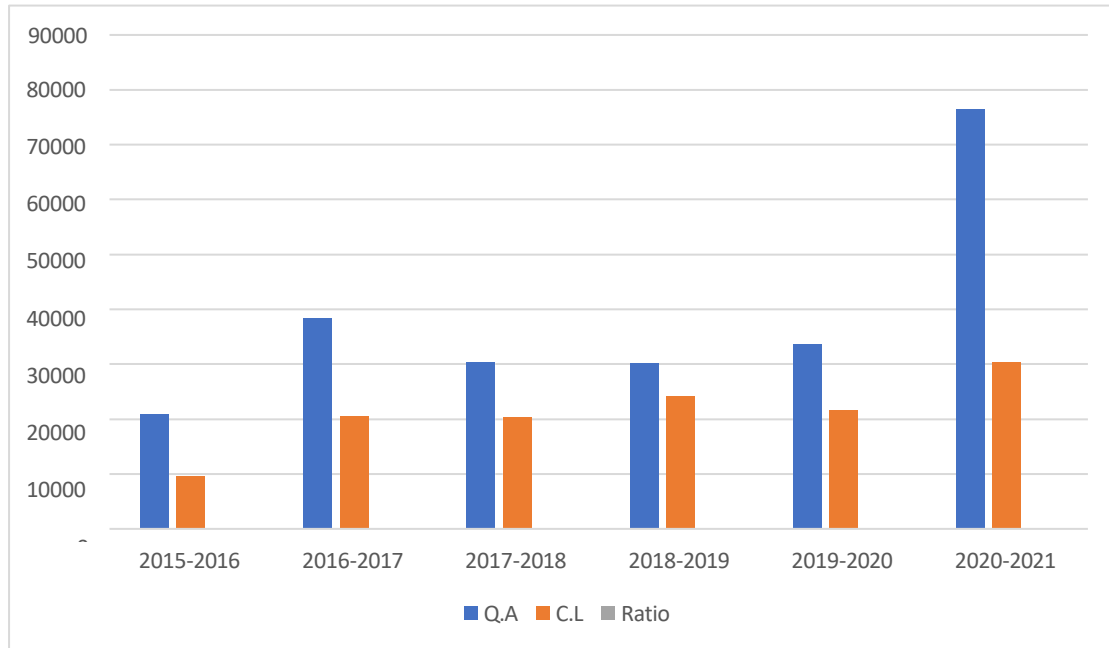
The current ratio shows fluctuating trend during the review period the ideal ratio of current ratio is 2:1 but, this company had current ratios in each year more than the ideal ratio. This indicates the company was not utilizing its current assets properly during the review period. In 2014-2015 the current ratio was 2.58% this clearly indicates the positive utilization of funds. During the review period 2019-2020 in all financial years the company made use of current assets efficiently.

**QUICK RATIO**

**Table 8. Quick ratio = quick assets/current liabilities**

Year	Quick Assets	Current Liabilities	Ratio
2015-2016	20770.11	9475.20	2.19
2016-2017	38345.97	20536.47	1.69
2017-2018	30313.96	20350.59	1.48
2018-2019	30109.82	24127.35	1.24
2019-2020	33644.85	21480.89	1.56
2020-2021	76410.28	30303.24	2.52





**Graph 2. 1. QUICK RATIO**

**Interpretation:**

The quick ratio was showing fluctuating trend during review period. The average quick ratio was found 1:24 times during 2017-14. Which is more than the ideal ratio of 1:1 which indicates the company invested more funds are created which may have good liquidity position but there is a cut in the profit of the company. The above clearly indicates that the firm is highly liquid.

**2. LEVERAGE RATIO**

**Table 9. FIXED ASSETS TURNOVER RATIO**

Fixed assets turnover ratio = net sales/net fixed assets

Year	Sales ( In Lakhs)	Net fixed assets	Ratio
2015-2016	134479.03	60794.08	2.21
2016-2017	134440.3	62647.10	2.14
2017-2018	138917.83	59008.51	2.35
2018-2019	156572.14	56993.09	2.74
2019-2020	251645.89	110519.01	2.27
2020-2021	344032.16	171883.45	2.00

**Graph 3. FIXED ASSETS TURNOVER RATIO**

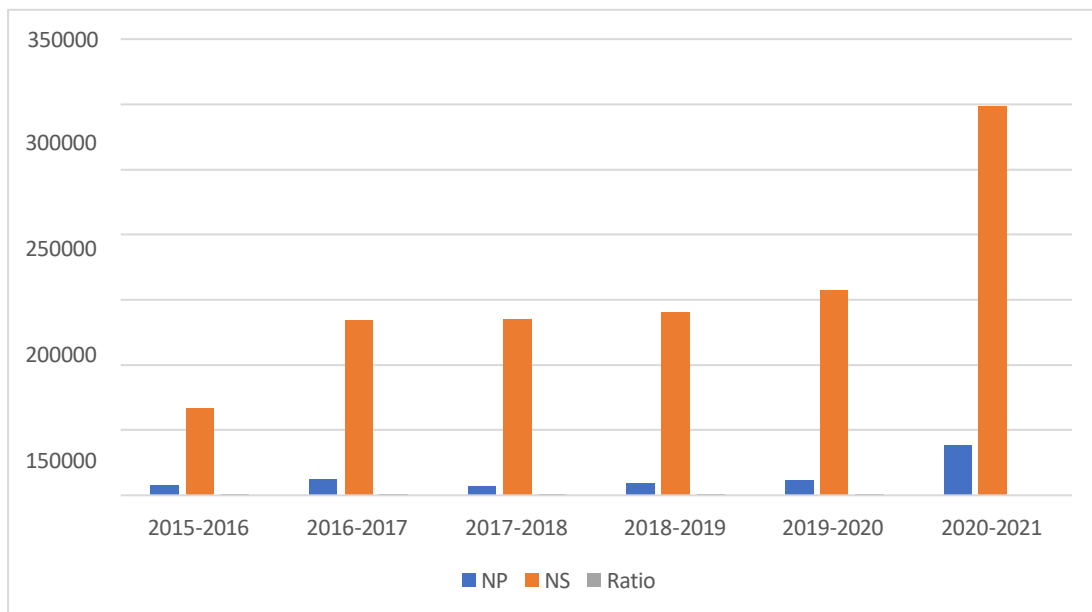
**Interpretation:**

The fixed assets turnover ratio was showing the fluctuating trend during the review period. The fixed assets turnover ratio is high in the year 2014-11 compare to all given financial year all these ratios are less than 3 but the deal ideal fixed assets turnover ratio is 5 A high fixed turnover ratio includes better utilization of the firm fixed assets The firm fixed asset turnover ratio has to increase, these it is desirable.

1. PROFITABILITY RATIO

Table10. NET PROFIT RATIO  
 $\text{Net profit ratio} = \frac{\text{net profit}}{\text{net sales}}$

Year	Net profit	Net sales	Ratio
2015-2016	8027.80	67214.21	11.94
2016-2017	12541.56	134543.30	9.32
2017-2018	7441.66	135375.20	5.49
2018-2019	9298.54	140116.20	6.63
2019-2020	11850.44	157648.40	7.51
2020-2021	38335.04	298792.21	12.83



Graph 4. NET PROFIT RATIO

Interpretation

The above ratio shows fluctuating trend during the review period. In the year 2019-2020 the profit was 12.83% by this we can find that the highest profit earning financial year. In the net profit ratio increases the company performance is good and the profit will be increased. The above ratio is satisfactory for all given financial years.

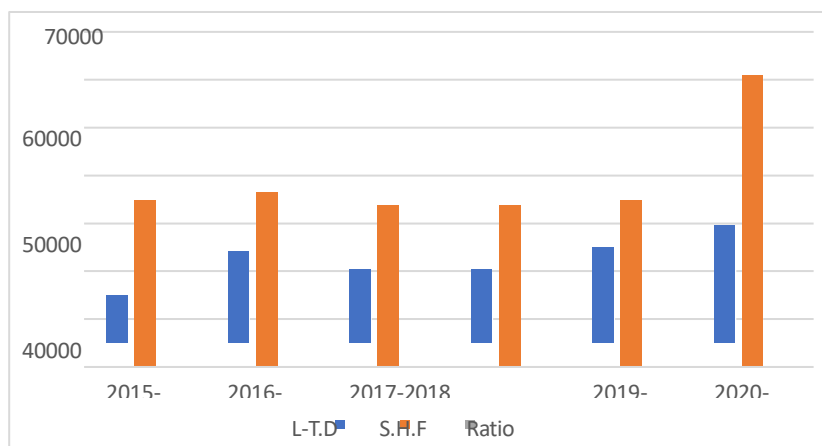
1. SOLVENCY RATIO

Table 11. DEBT AND EQUITY RATIO  
 $\text{DEBIT-EQUITY RATIO} = \frac{\text{LONG TERM DEBIT}}{\text{SHARE HOLDER FUNDS}}$

Year	Long-term debts	Shareholder funds	Ratio
2015-2016	9917.06	34869.39	0.28
2016-2017	19112.77	36491.77	0.52

2017-2018	15399.8	33881.86	0.45
2018-2019	15356.31	33878.40	0.45
2019-2020	20079.43	34848.27	0.57
2020-2021	24594.52	60869.28	0.40

**Graph 5. DEBT AND EQUITY RATIO**



**Interpretation**

The above ratio was shown little fluctuating trend during review period The ideal debt- equity ratio is 2:1 the firms seemed to pay a little amount to the creditors because the firm debit-equity ratios are very less than the ideal debt equity ratio any year. The low debt equity implies that there us a less risk to the creditors and have sufficient safety margin. The company is maintaining a good level of long-term loans.

**V. FINDINGS**

While BHEL demonstrates a healthy profitability position with satisfactory asset turnover ratios, further optimization is possible. Strategic utilization of idle funds and investments, coupled with cost reduction initiatives, can enhance profitability. Additionally, streamlining credit management policies to improve debtor collection and focusing on marketing efforts in the domestic market will maximize sales and shareholder wealth. Maintaining strong customer relationships is also crucial for brand awareness and continued success.

**SUGGESTIONS**

This analysis recommends several key working capital management improvements for BHEL. Maintaining a higher level of liquid assets will enhance the company's liquidity position and prepare for unforeseen circumstances. Additionally, focusing on potential future contingencies is crucial for financial stability.

**VI. CONCLUSION**

In today's business scenario working capital management is becoming very crucial part of any organization. Good management of working capital shall ensure that a business has cash and resources available to have successful and healthy business operations and meet its current liabilities without which a company shall always be under the risk of having a working capital deficit thereby hampering its business operations. Managing working capital involves managing the relationship between a company's current assets and current liabilities. Hence working capital and its management is essential to ensure that the company is able to continue its operations with sufficient liquidity and optimum mix of receivables, inventory cash and creditors.

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