Management of Working Capital In IFFCO and KRIBHCO – A Comparative Study

**** Swaran Singh***
***** Dr. S.K. Bansal***

INTRODUCTION

The Indian Fertiliser Industry entered into the hundredth year of its existence in the year 2006. The industry had a very humble beginning in 1906, when the manufacturing unit of Single Super Phosphate (SSP) was set up in Ranipet near Chennai with annual capacity of 600 MT. The Fertiliser & Chemicals Travancore of India Ltd. (FACT) at Cochin in Kerala and the Fertiliser Corporation of India (FCI) in Sindri in Bihar were the first large sized fertiliser plants set up in forties and fifties with a view to establish an industrial base to achieve self-sufficiency in food grains. Subsequently, green revolution in the late sixties gave an impetus to the growth of fertiliser industry in India. In seventies and eighties, a significant addition to the fertiliser production capacity was witnessed. There has been spectacular growth in the production capacity and production of fertilisers, particularly during eighties and early nineties to meet the rising demand of fertilisers. The Indian fertiliser industry is one of the best in the world in terms of capacity utilisation.

Presently, there are 125 large sized fertiliser plants owned by different organisations of the fertiliser industry, operating in the country, manufacturing a wide range of nitrogenous phosphate and complex fertilisers. Out of these, 28 are urea plants, 19 are complex fertiliser plants, 66 are SSP plants, 10 are ammonium sulphate plants 1 each of CAN and ammonium chloride. The Indian fertiliser industry has succeeded in meeting, to a great extent, the demand of all chemical fertilisers except for MOP.

Working capital management involves managing the relationship between a firm's short term assets and its short term liabilities. Working capital management is concerned with the management of all the aspects of both current assets and current liabilities, so as to minimise the risk of insolvency while maximising return on assets. 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 receivables, accounts payables and cash. Working capital management calls for addressing two basic issues- how much of current assets should an organisation hold and how to finance the investment in them. It is opined that organisations which could tackle these two issues reasonably are able to combat liquidity and its related problems comparatively more efficiently. Fixing a target for working capital requirements is a more challenging task than securing finances to fund working capital needs.

Appropriate working capital management helps in maintaining the solvency of the business, creating and maintaining the goodwill, availing cash discounts and loans and advances on favourable terms, regular payment of salaries, wages and other day to day commitments, creating the ability to combat crisis and an environment of security, confidence, high morale and improves the overall efficiency of the business. Consequently, proper management of working capital is crucial for the success of the organisation.

PROFILE

1) **IFFCO**: IFFCO stands for Indian Farmers Fertilisers Co-Operative Ltd. IFFCO was registered on November 3, 1967 as a Multi-Unit Cooperative Society. On the enactment of the Multistate Cooperative Societies Act 1984 & 2002, the society is deemed to be registered as Multistate Cooperative Society. The society is primarily engaged in the production and distribution of fertilisers. Its maiden plant was set in Kandla. Another ammonia-urea plant was set up at Phulpur in Uttar Pradesh in 1981. The ammonia-urea unit at Aonla was commissioned in 1988. IFFCO acquired a fertiliser unit at Paradeep in Orissa in September 2005.

2) **KRIBHCO**: KRIBHCO represents Krishak Bharti Cooperative Limited. KRIBHCO was set up as a national level cooperative society in April 1980. Its objective is to produce and distribute chemical fertilisers and allied farm inputs. The society's ammonia-urea plant is located in Hazira near Surat in Gujarat which produces urea, ammonia and bio-fertilisers and was commissioned on February 5, 1982. The plant has two streams of ammonia plant and four streams of urea plant.

* *Research Scholar,* Punjab School of Management Studies, Punjabi University, Patiala, Punjab. E-mail: swaransingh@live.com
** *Professor*, Punjab School of Management Studies, Punjabi University, Patiala, Punjab. E-mail: skbansal_mba@rediffmail.com

OBJECTIVES

The main objective of the present study is to examine and evaluate the working capital management in IFFCO and KRIBHCO. The specific objectives, therefore, are as under:-

- To study the structure of working capital.
- To study the management of inventory, receivables, cash and payables.

RESEARCH METHODOLOGY

The companies have been selected on the basis of their dominance in the cooperative sector. The data for the present study had been extracted from the published annual reports of IFFCO and KRIBHCO starting from the year 1999-00 to 2006-07. For the purpose of analysis, both financial tools and statistical techniques have been applied.

ANALYSIS AND DISCUSSION

The analysis of working capital management in IFFCO and KRIBHCO is arranged in four parts as given below:-

1) Size-Wise Analysis
2) Ratio Analysis
3) Operating Cycle Analysis
4) t-test

1) SIZE-WISE ANALYSIS

The size-wise analysis basically includes the study of working capital and its structure of both IFFCO and KRIBHCO. The working capital comprises of inventories, receivables (debtors and bills receivables), cash and bank, loans and advances and current liabilities. Also, the concept of net working capital is used throughout the study.

The analysis is as follows:-

- **Working Capital**: The net working capital in IFFCO (as given in Table-1) showed a decreasing trend till 2001-02 and afterwards, it showed an overall increasing trend. It declined from Rs. 1471 crores in the year 1999-00 to Rs. 1355 crores in the year 2001-02. Thereafter, it increased to Rs. 1661.57 crores in the year 2003-04 and after declining in the following year to Rs. 1499.15 crores, it again rose to Rs. 3387.38 crores and Rs. 4870.74 crores in the years 2005-06 and 2006-07 respectively. On an average, it stood at Rs. 2170.44 crores with a standard deviation of Rs. 1276.30 crores and a high coefficient of variation of 59%.

In case of KRIBHCO (as given in Table-2), the net working capital depicted a decreasing trend from the year 2001-02 to 2005-06. It first decreased from Rs. 1545.53 crores in the year 1999-00 to Rs. 1493.91 crores in 2000-01. It then constantly declined from Rs. 1639.68 crores in the year 2001-02 to Rs. 1123.78 in 2005-06 and finally rested at Rs. 1234.66 crores in the final year of study i.e.2006-07. It averaged Rs. 1425.91 crores along with a standard deviation of Rs. 169.80 crores and a low variation rate of 18%.

- **Inventories**: For IFFCO (as given in Table-1), inventories emitted a fluctuating trend. They decreased from Rs. 112.45 crores to Rs. 961.99 crores in 2000-01 and then climbed up to Rs. 1137.53 crores in 2002-03 and then after falling to Rs. 931.51 crores in 2004-05, they finally rested at Rs. 2283.94 crores in 2006-07. On an average, they were Rs. 1251.82 crores and varied at a rate of 36%. On an average, they were 41% of the total current assets.

For KRIBHCO (as given in Table-2), the inventories declined from the year 2000-01 to 2003-04 with figures of Rs. 157.31 crores and Rs. 107.46 crores respectively after which they continuously increased for the remaining three years of the study with final figure of Rs. 250.91 crores in 2006-07. They averaged at Rs. 153.88 crores and varied at a low rate of 27%. On an average, they formed a very low portion of the total current assets i.e.9.08%.

- **Receivables**: Receivables in case of IFFCO (as given in Table-1) showed an overall increasing trend barring the years 2004-05 and 2006-07. The receivables increased from Rs. 263.26 crores in 1999-00 to Rs. 469.46 crores in 2003-04 but declined in the following year to Rs. 324.60 crores. They stood at Rs. 361.68 crores in 2006-07. They were Rs. 374.62 crores on an average and gave a coefficient of variation of 22%. They comprised a low percentage i.e.13.08% of the total current assets.

For KRIBHCO (as given in Table-2), receivables didn't come out with any clear cut trend. They increased from Rs. 111.97 crores in 1999-00 to Rs. 129.33 crores in 2001-02 and after increasing for two consecutive years i.e.2002-03 and 2003-04, they fell to a study period low of Rs.77.23 crores after which it increased to Rs. 152.53 crores in 2005-06 and then again fell to Rs. 140.80 crores in 2006-07. The average amounted to Rs. 146.24 crores and showed a coefficient of variation of 30% and constituted a low portion of the total current assets i.e. 8.54%.

- **Cash and Bank**: for IFFCO (as given in Table-1), cash and bank, after declining continuously for three years from Rs. 115.02 crores in 1999-00 to Rs. 78.90 crores in 2001-02 rose to Rs. 222.13 crores in 2002-03. They showed a rise-fall trend from 2002-03 onwards. In 2006-07, they stood at Rs. 330.84 crores.The average amounted to Rs. 164.87 crores with a highly moderate coefficient rate of 50%. They formed the lowest portion of the total current assets averaging 5.48%.

With regard to KRIBHCO (as given in Table-2), cash and bank has shown an overall drowning trend. They declined from Rs. 1492.69 crores in 1999-00 to Rs. 1403.22 crores in 2001-02 and further to Rs. 112.37 crores in 2002-03. However, they rose to Rs. 1232.57 crores in 2003-04 and then to Rs. 1247.61 crores in the following year and then finally fell to Rs. 802.42 crores in 2006-07. On an average, they stood at Rs. 1190.61 crores and showed a low coefficient of variation of 19%. They formed the highest portion of the total current assets averaging 68.48% indicating the dominating position of cash and bank.

- **Loans and Advances**: Overall for IFFCO (as given in Table-1), loans and advances came out with a rising trend. They were Rs. 702.96 crores in 1999-00 and Rs. 834.49 crores in 2000-01. They increased from Rs. 755.19 crores in 2001-02 to Rs. 3095.51 crores in 2006-07. They gave a mean of Rs. 1375.96 crores and varied at a high rate of 69%. They formed the second largest portion of the total current assets averaging 40.43%.

For KRIBHCO (as given in Table-2), loans and advances increased till the year 2002-03 after which they showed a declining tendency barring the year 2006-07. They increased from Rs. 153.41 crores in 1999-00 to Rs. 268.77 crores in 2002-03. However, in the year 2003-04, it declined from Rs. 239.26 crores to Rs. 180 crores in 2005-07 and finally rested at a figure of Rs. 382.88 crores in 2006-07. They depicted an average of Rs. 237.57 crores and a variation rate of 30%. They formed only 13.90% of the total current assets claiming the second position in composition.

- **Current Liabilities**: With regards to the current liabilities of IFFCO (as given in Table-1), they showed a fluctuating trend. They first declined marginally from Rs. 762.69 crores in 1999-00 to Rs. 761.46 crores in 2000-01 and then increased for two years consecutively giving Rs. 864.13 crores and 1016.32 crores in 2001-02 and 2002-03 respectively. Thereafter, it declined in 2003-04 but again rose for two consecutive years and finally dropped down to Rs. 1201.23 crores in 2006-07. They portrayed an average of Rs. 996.84 crores and a low variation rate of 22%.

As far as KRIBHCO is concerned, current liabilities (as given in Table-2) displayed a declining trend for four years till 2002-03 after which, barring the year 2003-04, it showed a rising trend. In 1999-00, they were Rs. 351.40 crores and declined continuously to Rs. 212.50 crores and then rose to Rs. 349.95 crores in the following year and after declining again in 2004-05 to Rs. 239.61 crores ,it again rose to Rs. 342.35 crores in 2006-07. They depicted an average of Rs. 302.39 crores with a low variation rate of 17% indicating the consistency of the current liabilities figures over the study period.

2) RATIO ANALYSIS

The various ratios used for the study include current ratio (CR), quick ratio (QR), profit before tax ratio (PBTR), return on total assets (ROTA), working capital turnover ratio (WCTR), inventory turnover ratio (ITR), debtors turnover ratio (DTR), cash turnover ratio (CTR), creditors turnover ratio (CrTR), inventory conversion period (ICTR), average collection period (ACP), average age of cash (AAC) and average payment period (APP).

- **IFFCO**: For IFFCO (as given in Table-3), CR was over 2:1 throughout the study period with an average of 3.10:1 and a low variation rate of 28%. QR was also higher than the standard norm of 1:1 averaging 1.84:1 and again showing a low variation rate of 33%. PBTR was increasing till 2002-03, after which it continuously declined giving a comparatively low average of 6.79% and a moderate variation rate of 48%. Akin was the trend for ROTA and it gave a mean of 7.31% and moderate coefficient of variation rate of 54%. WCTR, after displaying a rising trend till 2002-03, started dipping and continued so till 2006-07. It averaged 3.63 times with a low coefficient rate of 18%. With regards to ITR, it rose constantly till 2005-06 and then trickled down in 2006-07, giving a mean of 4.53 times and varied at a low rate of 27%. The ICP also decreased till 2005-06 and then increased in the final year of the study presenting an average of 85.43 days with a low variation of 24%. DTR fell till 2003-04, after which it improved for two following consecutive years after which it again plunged down implying an overall dropping trend. It averaged 18.43 times and varied a little at the rate of 24%. ACP exhibited a decent average of 20.75 days with a high consistency as given by 23% coefficient of variation. CTR was fluctuating and gave an average of 6.63% and so was the case with AAC which revealed

an average of 57.66 days and the variation rate for both were 24% and 22% respectively. CrTR declined from 2000-01 to 2002-03 and started rising 2003-04 onwards. It portrayed a mean of 7.41 times with a very low coefficient of variation of 15%. APP averaged 50.20 days and varied at a very low rate of 14%.

- **KRIBHCO**: For KRIBHCO (as given in Table-4), CR for all the years of study was much higher than 2:1 for all the years of study averaging 5.88:1 indicating excess liquidity. Akin was the case for QR which presented an average of 5.36:1. Both PBTR and ROTA were better than IFFCO as they averaged 15.86% and 7.72%, nevertheless a fluctuating trend. WCTR was extremely low for all study years depicting a mean of 0.83%. As far as ITR was concerned, overall, it came up with a rising trend, barring the years 2004-05 and 2006-07. It averaged 5.48 times. ICP averaged 69.69 days and both gave a coefficient of variation of 23%. DTR declined till 2002-03 and hiked thereafter for next three years after which it trickled down again. It averaged 8.31 times and that for ACP was comparatively higher than IFFCO at 47.66 days. CTR was very poor for the entire study period averaging 0.25 times, consequently giving a very high average ACC of 1537.51 days. CrTR and APP averaged at 6.97 times and 63.58 days respectively. The former rose from 1999-00 to 2002-03 and then stepped down from 2004-05 to 2006-07.

3) OPERATING CYCLE ANALYSIS

The operating cycle is classified as gross operating cycle (GOC) and net operating cycle (NOC). The GOC is made up of raw material conversion period; work in process conversion period, finished goods conversion period, average collection period. The NOC is derived by deducting average payment period from GOC.

- **GOC**: For IFFCO (as given in Table-5), GOC was fluctuating over the study period. It fell from 107.65 days to 86.92 days but then rose continuously for next three years reaching 94.37 days in 2003-04 and then falling to 56.10 days in 2005-06 and then it jumped to 81.60 days in 2006-07. It averaged 84.32 days with a low variation rate of 20%.In case of KRIBHCO (as given in Table-7), GOC fell constantly till 2005-06 and rose in the last year of study to 59.59 days. It was 133.90 days in 1999-00 and 134.79 days in 2000-01. It then slipped down to 65.66 days and 48.19 days in the years 2004-05 and 2005-06 respectively. It averaged comparatively higher than IFFCO at 92.08 days along with a coefficient of variation of 36%.
- **NOC**: For IFFCO (as given in Table-5), the NOC showed an overall falling trend barring the years 2001-02 and 2006-07. It lowered from 53.17 days in 1999-00 to 36.49 days in 2000-01 and then after rising to 39.12 days in 2001-02, fell continuously and reached 5.17 days in 2005-06 and then climbed up to 42.89 days. It averaged 32.96 days and gave moderate coefficient to variation of 47%. In context of KRIBHCO (as given in Table-5), the NOC rose up to the year 2002-03 and afterwards, fell for two consecutive years but ultimately, followed a rising path. It increased from 16.53 days in 1999-00 to 47.48 days in 2002-03 and then fell to 14.82 days in 2004-05. It increased from 14.84 days in 2005-06 to 27.10 days in 2006-07. It showed a comparatively lower average of 28.50 days and a moderate variation rate of 45%.

4) T-TEST

T-Test was performed to check whether a significant difference exists in the working capital requirements of both the companies at 5% significance level and the results showed that no major significant difference existed with regards to the variable considered.

FINDINGS AND CONCLUSIONS

Based on the above analysis, certain findings and conclusions were made which are as follows:

- It was observed that the working capital amount (on an average) in IFFCO was higher than KRIBHCO. The high amounts of working capital in IFFCO were basically due to the large amount of business transacted while in KRIBHCO, it was basically because of large amounts of investments in the current assets. High amounts of working capital denoted that long term debts were employed for financing working capital in IFFCO and especially in KRIBHCO, which implied that long term creditors weren't secured as their money was invested in current assets.
- The analysis of composition of current assets disclosed that IFFCO had, on an average, more funds invested in loans, advances and inventories. In KRIBHCO, more funds were channelised towards cash and bank balances and loans and advances while the investments in inventories were very low.
- Through the analysis of current liabilities, it was deduced that IFFCO had the highest amount of current liabilities while the lowest amount of current liabilities were noticed in KRIBHCO.
- IFFCO showcased in the pink working capital turnover ratio. However, the situation of working capital turnover ratio with regards to KRIBHCO was not good enough as on an average, it showed a working capital

turnover ratio of even less than one, requiring urgent steps for improvement.

- The examination of the current ratio and quick ratio on the whole disclosed that concern wise, the liquidity positions of IFFCO and KRIBHCO were pretty sound and hence, their creditors were fully secured against current assets and the concerns were in a position to pay their obligations as and when they would crop up.
- On pursuing the study of cash and bank balances (in absolute terms), it was and discovered that KRIBHCO possessed hefty amounts of cash and bank balances loosely followed by IFFCO. The large amounts of cash balances in KRIBHCO were an ominous signal as the idle cash were not fetching any profits and hindering the profitability instead.
- After analysing the cash turnover ratio and average age of cash, it was found that KRIBHCO was facing difficulties in the management of cash as both these ratios turned out to be pretty poor in its case.
- In KRIBHCO, however, increased debtors were not able to increase the sales, therefore, making it imperative for the concern to take necessary steps for improving the situation as the funds were unproductively clogged.
- With the help of the study of loans and advances, it was inferred that KRIBHCO possessed the highest amount of loans and advances; nevertheless, they were declining over the study period. The second largest possessor of loans and advances was IFFCO and they were on a rise with a significant growth rate. The rising amounts of loans and advances in IFFCO indicated upon the inefficiency in the recovery of same.
- IFFCO came up with the most efficient management of debtors in comparison to KRIBHCO.
- The analysis of inventories leads to the conclusion that in IFFCO, the amount of inventories were always more than KRIBHCO. Though the inventories were rising in KRIBHCO, it possessed the minimum amount of inventories which indicated that the management was not much in favour of holding large inventories.
- The inventory turnover ratio and inventory conversion period spoke about the comparatively efficient management of inventories in KRIBHCO.

The performance of KRIBHCO in the field of inventories is basically attributed to the low level of inventories present there. The need was felt in IFFCO for the desired efforts to further improve this ratio.

- The PBTR for KRIBHCO was way ahead of IFFCO but the ROTA was almost the same for both the concerns.
- With regard to GOC and NOC, the former was comparatively better in IFFCO and the latter was comparatively better in KRIBHCO.

Hence, finally, it may be concluded that as far as management of working capital is concerned, IFFCO was performing better than KRIBHCO.

SUGGESTIONS

Based on the above findings, certain suggestions are being made with a view to enhance the efficiency in management of working capital of both the concerns which are as follows:

- KRIBHCO had excessive investment in the working capital because of large amount of current assets and which were also financed from long term sources, leaving the long term creditors unsecured. Consequently, it should attempt to lower down its current assets level and increase current liabilities in order to improve the profitability and give some security to long term creditors.
- IFFCO had a huge amount invested in loans and advances and the amount of loans and advances were increasing, making it important for the concern to take efforts for the recovery of the same from the concerned parties in order to check its detrimental effects.
- In KRIBHCO, huge amounts of idle cash and bank balances were noticed. Hence, it should try and invest all the excess money in profitable ventures and avenues, thereby keeping an optimum level of cash and bank balances, whereby all the regular operating expenses and certain amount of contingencies are met.
- Loans and advances were growing at a good pace and were very high in the cooperative sector making it vital for the sector to recover them as early as possible and contain their growth and thereby reduce the investment in current assets.
- KRIBHCO had the worst working capital turnover ratio which was basically because of high investment in current assets and low level of sales. Hence, it should disinvest in current assets and try to boost its sales revenue.
- The increase in debtors in KRIBHCO wasn't justified by the growth in sales, consequently making it necessary to check the growth in debtors. The cooperative sector needs to improve upon their cash management by reducing its cash balances to optimum levels and reducing the period for which the cash remains idle, fetching no advantages.

- KRIBHCO possessed very little amounts of inventories which made it vulnerable to stock out positions. Therefore, it should try to maintain an optimum level of inventories.
- The concerns should make further efforts to bring down the GOC.

On the whole, if the concerned authorities would earnestly endeavour to manage their respective working capital more effectively by implementing the aforesaid suggestions along with other working capital management techniques, the performance and the profitability of the companies would scale newer heights in the years to come.

TABLES

WORKING CAPITAL STRUCTURE (In Crore Rs.) - Table-1
INDIAN FARMERS FERTILIZER COOPERATIVE LTD. (IFFCO)

Year	Inventory	% of. GWC	Receivables	% of. GWC	Cash & Bank	% of. GWC	Loan & Advances	% of. GWC	Total GWC	Current Liabilities	Net W.C.
1999-00	1112.45	49.80	263.26	11.79	155.02	6.94	702.96	31.47	2233.69	762.69	1471.00
2000-01	961.99	43.30	303.74	13.67	121.38	5.46	834.49	37.56	2221.60	761.46	1460.14
2001-02	1046.92	47.17	338.53	15.25	78.90	3.55	755.19	34.02	2219.54	864.13	1355.41
2002-03	1137.53	42.53	461.28	17.25	222.13	8.31	853.48	31.91	2674.42	1016.32	1658.10
2003-04	1020.56	39.80	469.46	18.31	113.39	4.42	960.60	37.46	2564.01	902.44	1661.57
2004-05	931.51	35.77	324.60	12.47	199.10	7.65	1148.78	44.12	2603.99	1104.84	1499.15
2005-06	1519.64	32.00	474.40	9.99	98.23	2.07	2656.70	55.94	4748.97	1361.59	3387.38
2006-07	2283.94	37.61	361.68	5.96	330.84	5.45	3095.51	50.98	6071.97	1201.23	4870.74
Total	10014.54		2997		1319		11007.71		25338.2	7974.70	17363.49
Mean	1251.82	41.00	374.62	13.08	164.87	5.48	1375.96	40.43	3167.27	996.84	2170.44
Growth rate	7.57		39.27		-3.93		65.96		31.88	28.13	31.70
S.D.	455.37		82.68		83.21		943.08		1440.60	215.01	1276.30
C.V.	0.36		0.22		0.50		0.69		0.45	0.22	0.59

WORKING CAPITAL STRUCTURE (In Crore Rs.) - Table-2
KRISHAK BHARTI COOPERATIVE LTD. (KRIBHCO)

Year	Inventory	% of. GWC	Receivables	% of. GWC	Cash & Bank	% of. GWC	Loan & Advances	% of. GWC	Total GWC	Current Liabilities	Net W.C.
1999-00	138.86	7.32	111.97	5.90	1492.69	78.69	153.41	8.09	1896.93	351.40	1545.53
2000-01	157.31	8.63	146.02	8.01	1288.30	70.66	231.57	12.70	1823.20	329.29	1493.91
2001-02	139.41	7.20	129.33	6.68	1403.32	72.47	264.41	13.65	1936.47	296.79	1639.68
2002-03	137.52	7.93	204.81	11.82	1122.37	64.75	268.77	15.50	1733.47	212.50	1520.97
2003-04	107.46	6.02	207.20	11.60	1232.57	68.99	239.26	13.39	1786.49	349.95	1436.54
2004-05	146.70	8.88	77.23	4.68	1247.61	75.53	180.28	10.91	1651.82	239.61	1412.21
2005-06	152.90	10.76	152.53	10.73	935.59	65.84	180.00	12.67	1421.02	297.24	1123.78
2006-07	250.91	15.91	140.80	8.93	802.42	50.88	382.88	24.28	1577.01	342.35	1234.66
Total	1231.07		1169.9		9524.9		1900.58		13826.4	2419.13	11407.28
Mean	153.88	9.08	146.24	8.54	1190.61	68.48	237.57	13.90	1728.30	302.39	1425.91
Growth rate	7.86		25.17		-21.66		-100.00		-9.30	-15.19	-100.00
S.D.	41.98		43.82		230.35		72.24		172.11	52.19	169.80
C.V.	0.27		0.30		0.19		0.30		0.10	0.17	0.12

RATIOS

INDIAN FARMERS FERTILIZER COOPERATIVE LTD. (IFFCO) - Table-3

Year (times)	WCTR (times)	ITR (days)	ICP (times)	DTR (days)	ACP (times)	CTR (days)	AAC (times)	CrTR (days)	APP	CR	QR	PBTR (in %)	ROTA (in %)
1999-00	3.08	3.03	120.35	17.21	21.21	4.92	74.19	6.70	54.47	2.93	1.47	6.91	6.25
2000-01	3.52	3.84	95.06	18.17	20.09	5.51	66.25	7.24	50.43	2.92	1.65	4.54	4.74
2001-02	3.62	3.85	94.84	15.86	23.01	8.63	42.30	7.05	51.80	2.57	1.36	7.29	7.66
2002-03	4.04	4.03	90.62	15.23	23.96	6.75	54.06	6.55	55.76	2.63	1.51	13.25	15.05
2003-04	3.57	4.27	85.55	12.72	28.69	5.38	67.85	6.16	59.21	2.84	1.71	8.66	9.44
2004-05	4.68	6.07	60.16	18.63	19.59	7.07	51.62	7.36	49.59	2.36	1.51	6.37	8.63
2005-06	4.07	6.69	54.57	24.89	14.67	9.16	39.85	8.76	41.66	3.49	2.37	4.85	4.64

2006-07	2.50	4.43	82.33	24.71	14.77	5.60	65.19	9.43	38.71	5.05	3.15	2.43	2.12
Total	29.07	36.21	683.46	147.42	166.00	53.02	461.30	59.25	401.64	24.79	14.74	54.29	58.52
Mean	3.63	4.53	85.43	18.43	20.75	6.63	57.66	7.41	50.20	3.10	1.84	6.79	7.31
S.D.	0.66	1.23	20.80	4.35	4.68	1.58	12.59	1.13	6.95	0.86	0.61	3.24	3.93
C.V.	0.18	0.27	0.24	0.24	0.23	0.24	0.22	0.15	0.14	0.28	0.33	0.48	0.54

KRISHAK BHARTI COOPERATIVE LTD. (KRIBHCO) - Table-4

Year (times)	WCTR (times)	ITR (days)	ICP (times)	DTR (days)	ACP (times)	CTR (days)	AAC (times)	CrTR (days)	APP	CR	QR	PBTR (in %)	ROTA (in %)
1999-00	0.57	4.16	87.81	7.92	46.09	0.24	1550.46	3.11	117.37	5.40	5.00	9.01	3.56
2000-01	0.65	4.18	87.40	7.70	47.39	0.24	1541.29	3.48	104.99	5.54	5.06	21.15	9.15
2001-02	0.63	4.26	85.74	7.13	51.19	0.22	1655.11	5.30	68.89	6.52	6.05	25.30	10.55
2002-03	0.56	5.01	72.80	5.30	68.82	0.17	2169.12	7.14	51.12	8.16	7.51	4.52	1.76
2003-04	0.81	6.23	58.63	5.83	62.61	0.30	1228.11	7.36	49.60	5.10	4.80	18.28	8.84
2004-05	0.80	5.93	61.59	8.02	45.53	0.19	1889.04	7.18	50.84	6.89	6.28	16.30	7.96
2005-06	1.19	7.19	50.79	13.13	27.80	0.27	1340.45	10.94	33.36	4.78	4.27	18.58	11.20
2006-07	1.43	6.92	52.74	11.46	31.85	0.39	926.50	11.23	32.49	4.61	3.87	13.77	8.72
Total	6.64	43.86	557.50	66.49	381.29	2.02	12300.07	55.74	508.67	47.00	42.85	126.90	61.75
Mean	0.83	5.48	69.69	8.31	47.66	0.25	1537.51	6.97	63.58	5.88	5.36	15.86	7.72
S.D.	0.32	1.25	15.77	2.68	13.81	0.07	386.27	3.03	31.69	1.22	1.19	6.66	3.32
C.V.	0.38	0.23	0.23	0.32	0.29	0.28	0.25	0.43	0.50	0.21	0.22	0.42	0.43

GROSS OPERATING CYCLE (GOC) & NET OPERATING CYCLE (NOC) Table-5

Year	GOC		NOC	
	IFFCO	KRIBHCO	IFFCO	KRIBHCO
1999-00	107.65	133.90	53.17	16.53
2000-01	86.92	134.79	36.49	29.80
2001-02	90.91	114.15	39.12	45.27
2002-03	92.85	98.60	37.09	47.48
2003-04	94.37	81.74	35.16	32.14
2004-05	64.17	65.66	14.59	14.82
2005-06	56.10	48.19	5.17	14.84
2006-07	81.60	59.59	42.89	27.10
Total	674.57	736.63	263.68	227.96
Mean	84.32	92.08	32.96	28.50
S.D.	16.81	33.57	15.53	12.96
C.V.	0.20	0.36	0.47	0.45

ABBREVIATIONS USED

WCTR = Working capital turnover ratio
ITR = Inventory turnover ratio
ICP = Inventory conversion period
DTR = Debtors turnover ratio
ACP = Average collection period
CTR = Cash turnover ratio
AAC = Average age of cash
CrTR = Creditors turnover ratio
APP = Average payment period
CR = Current ratio
QR = Quick ratio
PBTR= Profit before tax ratio
ROTA = Return on total assets ratio
GOC = Gross operating cycle
NOC = Net operating cycle

t-TEST - SIGNIFICANT DIFFERENCE EXISTS IN THE WORKING CAPITAL REQUIREMENTS OF IFFCO & KRIBHCO

H_0 : No Significant Difference Exists In The Working Capital Requirements of IFFCO and KRIBHCO

H_1 : Significant Difference Exists In The Working Capital Requirements of IFFCO and KRIBHCO

NET WORKING CAPITAL (in Rs. in Crores)

Year	IFFCO	KRIBHCO
1999-00	1471.00	1545.53
2000-01	1460.14	1493.91
2001-02	1355.41	1639.68
2002-03	1658.10	1520.97
2003-04	1661.57	1436.54
2004-05	1499.15	1412.21
2005-06	3387.38	1123.78
2006-07	4870.74	1234.66
t =0.0036		

Degree of freedom (d.o.f.) = $n_1+n_2-2 = 8+8-2 =14$

$t_{0.05}$ i.e. t at 5% significance level for 14 d.o.f. = 2.145

Since $t_{0.05} > t$, therefore, the null hypothesis (H_0) is accepted i.e no significant difference exists in the net working capital requirements of IFFCO and KRIBHCO.

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