CHAPTER V

ANALYSIS AND INTERPRETATION OF THE DATA

CHAPTER V

SECTION 1

INVENTORY MANAGEMENT

CHAPTER- V

SECTION- I

INVENTORY MANAGEMENT

Management of working capital is synonymous with controlling inventories because in the sphere of working capital, efficient and effective management of inventory poses a challenging problem. Good inventory management is a good finance management as inventories occupy the most strategic position in maximisation of income. A study of corporate balance sheets shows that a firm's inventory commonly constitutes 15 to 30 per cent of its invested capital[1]. Profits mainly depend on the turnover of working capital which is mostly determined, by the turnover of inventories. L. R. Howard observes[2]: 'the proper management and control of inventory not only solves the acute problem of liquidity but also increases annual profits and causes substantial reduction in the working capital of a firm'. Inventories form a link between production and sale of product. Therefore, it is essential to have a sufficient level of investment in inventories. D. Schall Lawrence and W. Haley Charles rightly observe[3], " Managing the level of investment in inventory is like maintaining the level of water in a bath-tub with an open drain. The water is flowing out continuously. If water is let into slowly, the tub is soon empty. If water is let in too fast, the tub overflows. Like the water in the tub, the particular items of inventories keep changing, but the level may stay the same. The basic financial problems are to determine the proper level of investment in inventories and to decide how much inventory must be acquired during each period to maintain that level."

"It is estimated that the inventory holdings in India (government, public and private) is to the extent of Rs. 25,000 crores."[4] In the United States, the business inventory investment is around 15 to 20 per cent of the annual Gross National Product. This translates into approximately one trillion dollars or dollars 4000 for every person.[5] But at the same time inventory is an idle source, of course with economic value. In the words of Fred Hanssman: "an inventory is idle resource of any kind, provided that such resource has economic value."[6] As such inventory management is basically concerned with the determination of optimum level of such an idle resource to maintain continuous stock outs or pile-of-stocks. Therefore, investment in inventories should be subjected to rigorous control to ensure that every rupee of investment in inventory has contributed to increase profitability.

But unfortunately inventory management is not given that much attention that it deserves. At one of the national seminars on "State Level Public Enterprises' a key person associated with the management of State enterprise rightly observed that "as far as materials management is concerned, this is indeed a very neglected area leading to absence of proper inventory control system, wastage through bad handling and pilferage and locking-up of capital through unsystematic purchases[7]." Even though this observation was made some 13 years ago even now there seems to be no improvement in the sphere of inventory management in Indian industries.

A study conducted by the Economic Times of the financial performance of the top 200 companies during the year 1995-96 concluded that, "The corporate sector is facing a serious crisis on account of mounting inventories and receivables which have cramped the flow of funds into companies.[8]" The study revealed that growing

inventories and receivables in these companies consumed more than 53% of the total cash generated by them during the year. Few years ago i.e. in 1993-94, the increase in these two components of working capital consumed as high as 38 percent of the total cash generated. The sharp jump in inventories and receivables has possibly laid the foundation of the current slow down in corporate growth.

This section analyse the adequacy of inventory and its components compared with the working capital norms laid down in the recommendations of the Tandon committee. Further the analysis is made to find out relationship between sales, output and inventory of the selected pharmaceutical companies and to suggest a better technique of inventory management.

ADEQUACY OF INVENTORY:

The analysis of the adequacy of the inventory is based on the size of the inventory in the pharmaceutical units which is discussed below.

Table No. I -1 shows the size of total inventory in absolute amount in sample units between 1989-90 and 1998-99. It reveals an increasing trend during the period under study. The total amount of inventory was Rs. 339.01 crores in 1989-90 which increased to Rs. 676.16 crores in 1998-99 i.e., by 99.45% as compared to the base year 1989-90. Coefficient of variation of sample units of 70.82% indicates that they had high degree of variation which shows thereby that there was less uniformity with regard to the size of total inventory. If we analyse the relationship between inventory and sales on the one hand and inventory and value of output on the other using coefficient of correlation; it shows that in both cases it worked out to be +0.98.

TABLE NO. I - 1

TOTAL INVENTORIES OF PHARMACEUTICAL COMPANIES DURING THE PERIOD 1989-90 TO 1998-99

(Rs. in crores)

COMPANIES / YEARS	1989-90	1990-91	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97	1997-98	1998-99	TOTAL
1. Burroughs Wellcome Ltd.	25.25	23.02	27.79	28.39	20.78	28.74	30.55	24 91	31.89	26.75	**268.07**
2. Cipla Ltd	18.59	28.02	47.03	60.06	79.37	97.54	91.81	108.19	147.90	158.42	**836.93**
3. Duphar-Interfran Ltd.	9.40	11.49	14.11	14.98	18.52	19.92	17.73	14 84	12.77	12.60	**146.36**
4. E. Merck Ltd.	18.43	23.41	24.20	30.82	24.07	41.36	42.46	48 60	51.21	53.04	**357.60**
5. Fulford Ltd.	11.90	9.82	7.81	10.98	11.39	13.18	11.89	14 82	15.08	19.90	**126.77**
6. German Remedies Ltd.	17.72	19.95	23.94	18.11	23.03	23.57	27.63	26.18	28.57	36.83	**245.53**
7. Glaxo Ltd	66.98	83.39	101.19	118.34	96.06	74.74	96.40	114.95	133.40	127.13	**1012.58**
8. Hoechst Marion Roussel Ltd.	81.15	58.27	44.31	48.59	70.25	67.41	74.31	69.45	132.31	76.76	**722.81**
9. Knoll Pharmaceuticals Ltd.	15.21	18.72	25.47	24.14	26.64	36.40	38.70	36.51	31.98	46.33	**300.10**
10. Parke-Davis Ltd.	17.37	18.73	16.25	24.11	18.22	26.93	19.91	24.84	24.93	23.43	**214.72**
11. Pfizer Ltd.	30.84	29.97	30.05	39.40	44.62	44.39	38.74	35.97	32.85	40.18	**367.01**
12. RPG Life Sciences Ltd.	17.65	12.17	16.67	21.83	24.14	28.96	36.25	45.64	38.96	35.88	**278.15**
13. Unichem Laboratories Ltd.	8.52	11.27	16.37	14.83	14.94	18.20	17.12	10.95	16.50	18.91	**147.61**
Total	**339.01**	**348.23**	**395.19**	**454.58**	**472.03**	**521.34**	**543.50**	**575.85**	**698.35**	**676.16**	**5024.24**

Source : Appendix -I

Standard Deviation	273.72
Coefficient of Variation	70.82
r(between Sales and Inventory)	0.98
r(between Value of Output and Inventory)	0.98

This clearly indicates that there exist a very high degree of positive correlation between inventory, sales and output. This can leads to the conclusion that increases in sales and value of output were the main reasons for increase in the inventory.

A closer look in terms of trend percentage indicates that the pace of growth of total inventory was more rapid after 1993-94. The overall trend percentage of the inventory, sales and output are shown in Table I - 2. The rapid rise in the size of total inventory after 1993-94 was due to a faster increase in total output and total sales during the same period. The overall trend percentage of inventory of 2.72% in 1990-91 continuously increased and reached a peak level of 106% in 1997-98 and then marginally declined to 99.45% in 1998-99.

TABLE NO. I – 2

TREND PERCENTAGE OF TOTAL INVENTORY, SALES AND OUTPUT

(In percentage)

YEAR	TREND PERCENTAGE OF TOTAL INVENTORY	TREND PERCENTAGE OF TOTAL SALES	TREND PERCENTAGE OF VALUE OF OUTPUT
1989-90	-----	-----	-----
1990-91	2.72	14.37	12.42
1991-92	16.57	29.60	28.56
1992-93	34.90	52.89	49.97
1993-94	39.24	77.41	73.71
1994-95	53.78	90.20	92.58
1995-96	60.32	88.64	93.40
1996-97	69.86	132.13	127.36
1997-98	106.00	153.62	150.39
1998-99	99.45	187.76	184.21

Source: Appendices -I and V

Table I - 1 reveals that unit no. 2, 7 and 8 had very high amount of inventory while unit no. 3, 5 and 13 had very low amount of inventory.

With regard to unit no. 2 the inventory shows an increase from Rs. 18.59 crores in 1989-90, to Rs. 158.42 crores in 1998-99 i.e. by 752.18%. The increase in inventory is mainly due to the consistent increase in all the components of the inventory like raw materials, semi-finished goods and finished goods. Raw materials had increased from Rs. 9.89 crores to Rs. 56.40 crores, finished goods had increased from Rs. 6.44 crores to Rs. 78.84 crores and semi-finished goods had increased from Rs. 2.26 crores to Rs. 23.18 crores. The increase in the components of inventory was mainly due to increase in the value of output and sales which had increased by 608% and 572% respectively during the period under study

Unit no. 7 had the highest level of total inventory of Rs 1012.58 crores. It had a fluctuating trend during the period under study. The total amount of inventory was Rs.66.98 crores in 1989-90 which increased to Rs. 118.34 crores in 1992-93 then decreased to Rs. 74.74 crores in 1994-95. Thereafter it showed an increasing trend and reached a peak level of Rs. 133.40 crores in 1997-98 and then marginally declined to 127.13 crores in 1998-99. The high level of inventory in this unit was mainly due to large accumulation of raw materials inventory which had increased by 138% during 1998-99 as compared to 1989-90. There was also a substantial rise in the value of output and sales by 162% and 157% respectively.

The total amount of inventories in unit no. 8 varied between Rs. 44.31 crores and Rs. 132.31 crores during the period under study. The amount of inventory was Rs. 81.15 crores in 1989-90 which declined to Rs. 44.31 crores in 1991-92, thereafter increased and

reached to Rs. 74.31 crores in 1995-96. There was a sharp jump to Rs. 132.31 crores in 1997-98. The increase in inventory is mainly due to huge accumulation of semi-finished goods which increased by 221% in 1997-98 as compared to 1989-90.

The total inventories in unit no. 3 showed an increasing trend up to the year 1994-95. The amount of total inventory was Rs. 9.40 crores in 1989-90 which increased to Rs. 19.92 crores in 1994-95 and thereafter in the remaining period it gradually declined and came down to a low level of Rs.12.60 crores in 1998-99. The decrease in inventory is mainly due to decrease in holding of raw materials and semi-finished goods. The unit also had a fall in the value of output which was lowest amongst all the units.

Unit no.5 had the lowest amount of total inventories and had a fluctuating trend varying between Rs. 9.82 crores and Rs. 19.90 crores during the period under study. The total amount of inventory was Rs. 11.90 crores in 1989-90 which declined to Rs. 7.81 crores in 1991-92, thereafter increased to Rs. 13.18 crores in 1994-95. It again declined to Rs. 11.89 crores in 1995-96 and finally increased and reached to Rs.19.90 crores in 1998-99. The drastic fall in the inventory of raw materials to total inventory from 51.51% in 1989-90 to 29.30% in 1998-99 and semi-finished goods to total inventory from 14.54% in 1989-90 to 3.32% in 1998-99 caused a very low level of total inventory in the unit.

Unit no. 13 also showed a very low level of inventory. It had a total inventory of Rs. 8.52 crores in 1989-90 which increased to Rs. 18.20 crores in 1994-95. Thereafter it declined to Rs. 10.95 crores in 1996-97 and increased to an ever-highest level of Rs. 18.91 crores in 1998-99. The low inventories is mainly due to lower value of output

and also decline in raw materials inventory as a percentage of total inventory from 65.26% in 1989-90 to 49.29% in 1998-99.

TOTAL INVENTORIES TO TOTAL CURRENT ASSETS:

Total inventory to total current assets shows the amount of working capital funds invested in the inventory. Table No. I-3 shows the Total Inventory as a percentage to Total Current Assets.

It is evident from the Table I-3 that the overall percentage of inventory to total current assets registered a declining trend through out the period under study except in 1991-92, wherein there was a marginal increase in the inventory. The ratio of total inventory to total current assets was 54.09% in 1989-90, declined to 50.81% in 1990-91, then increased marginally to 52.17% in 1991-92. It continuously declined and reached to the lowest level of 36.04 % in 1998-99. This clearly indicates that a lower proportion of working capital was tied up in inventories and the sample units had managed their inventory well over the period under study.

The overall average of total inventory to total current assets of 45.80% of sample units, as compared to 36.47% of 'Pharmaceutical Industry in India' and 38.11% of 'All Industries in India' was much higher indicating that the selected units were maintaining higher level of overall inventory. Further it is observed that 'Pharmaceutical Industry in India', 'All Industries in India' and selected pharmaceutical companies all showed a declining trend during the period 1989-90 to 1998-99. The coefficient of variation of sample units was very low at 9.82% which clearly indicates that the sample units had followed a uniform policy with regard to total inventory as a percentage to total current assets during the period under study.

TABLE NO. I - 3

TOTAL INVENTORIES TO TOTAL CURRENT ASSETS OF PHARMACEUTICAL COMPANIES DURING THE PERIOD 1989-90 TO 1998-99

(In percentage)

COMPANIES / YEARS	1989-90	1990-91	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97	1997-98	1998-99	Average
1. Burroughs Wellcome Ltd.	64.35	61.72	57.39	47.92	28.11	29.77	44.05	27.69	27.98	18 84	**40.78**
2. Cipla Ltd.	42.40	43.95	53.80	54.65	59.31	55.76	31.65	36.43	36.04	30.92	**44.49**
3 Duphar-Interfran Ltd.	55.16	54.02	58.26	52.52	53.54	60.20	39.88	27.42	25 94	22.44	**44.94**
4. E Merck Ltd.	51.12	47.77	41.88	46.45	49.45	60.61	56.31	58.98	57.75	54.84	**52.51**
5. Fulford Ltd.	37.77	31.74	28.71	52.64	44.58	46.46	37.93	44.40	46.47	50.10	**42.08**
6. German Remedies Ltd.	60.50	55.79	55.57	42.64	45 70	37.17	39.36	43.87	40.42	48.18	**46.92**
7. Glaxo Ltd.	57.16	59.79	66.60	68.66	47.12	43.89	26.88	38.48	44.85	39.30	**49.27**
8. Hoechst Marion Roussel Ltd.	61.50	52.90	51.24	49.52	57.20	57.01	55.89	48 04	52.24	44.28	**52.98**
9. Knoll Pharmaceuticals Ltd.	58.95	59.58	64.63	58.07	37.01	52.74	54 89	44.44	23.00	26.02	**47.93**
10. Parke-Davis Ltd.	60.44	56.43	49.23	57.54	44.16	46.79	39.65	38.26	37 40	41.45	**47.13**
11. Pfizer Ltd.	63.73	55.34	53.25	58.20	54 61	48.55	46.06	39.73	31.06	36.20	**48.67**
12. RPG Life Sciences Ltd.	46.31	32.50	38.79	45.14	48.57	44.37	40.48	42.52	30.30	24.47	**39.34**
13. Unichem Laboratories Ltd.	43.78	49.02	58.80	40.63	43.74	38.96	31.98	18 08	27 00	31.52	**38.35**
Average	**54.09**	**50.81**	**52.17**	**51.89**	**47.16**	**47.87**	**41.92**	**39.10**	**36.96**	**36.04**	**45.80**
Pharmaceutical Industry In India	48.64	44.75	43.30	43.30	27.15	29.81	32.86	32.92	30.53	31.46	**36.47**
All Industries in India	46.06	43.22	43.09	39.03	39.44	35.73	33 50	34.32	33.07	33.62	**38.11**

Source : Appendix -I

Std. Dev	4.50
C.V.	9.82

It is observed that except two units no. 4 and 5, all other units i.e. about 85% of the sample units showed a declining trend during the later period of study. The rate of decline was very high in case of unit 1 and 3 while it was very low in case of unit no. 6. In the absence of a standard ratio for measuring inventory management, an average of the respective ratios of the units is taken over the period of study for purpose of comparison. In the interest of management, the level of inventory in current assets should be at such point whereby the unit will not face problems of inventory out and suffer any loss due to production being held up.

Among the individual companies, unit no. 4 and 8 had above the overall average, while unit no. 12 and 13 had below the overall average percentage of inventory to total current assets.

Unit no. 4 had on an average 52.51% of inventory to total current assets which was higher than the overall average of the sample units of 45.80%. The unit had 51.12% of inventory to current assets in 1989-90 which increased and reached to a peak level of 60.61% in 1994-95 and then declined to 54.84% in 1998-99. This indicates that the unit kept more than half of its current assets in the form of inventories. The ratio was high due to high level of raw materials in the total inventory.

Unit no. 8 had the highest level of average inventory to total current assets. It had on an average 52.98% of inventory to total current assets. The inventory to total current assets was 61.50% in 1989-90 which declined to 49.52% in 1992-93, and increased marginally to 57.20% in 1993-94. After that it gradually declined and reached the lowest level of 44.28% in 1998-99. The overall average was very high due to high level of inventory of raw materials and semi-finished goods in the total inventory.

In contrast to the above two units, unit no. 12 indicates a very low level of average inventory to total current assets i.e. 39.34% as compared to overall average of sample. The inventory to current assets was 46.31% in 1989-90 which declined substantially to 32.50% in 1990-91, thereafter increased and reached a peak level of 48.57% in 1993-94. It then gradually declined and reached to its lowest level of 24.47% in 1998-99. The unit had low level of inventory mainly due to low level of raw materials and semi-finished. The overall average indicates that the unit had kept less than 40% of the working capital funds in the inventories.

Unit no. 13 has the lowest level of inventory to total current assets, i.e. 38.35%. The inventory was 43.78% to total current assets in 1989-90 which increased to 58.80% in 1991-92, and then declined to a very low level of 18.08% in 1996-97. Thereafter it increased to 31.52% in 1998-99. The low level of inventory to current assets was mainly due to holding of low level of finished goods. From the analysis it seems that the management kept an optimum amount of inventory level and tried to avoid over stocking. This could be possible due to adopting modern inventory management techniques by the management of the unit.

The overall decline in the percentage to total inventory to total current assets of sample units was mainly due to decline in the level of raw materials, semi-finished goods, finished goods as well as stores and spares. An indepth analysis reveals that raw material as a percentage to total current assets declined from 20.61% in 1989-90 to 11.22% in 1998-99. Semi-finished goods as a percentage to current assets decreased from 8.92% in 1989-90 to 4.67% in 1998-99. Finished goods as a percentage to current assets decreased from 23.37% in 1989-90 to 19.73% in 1998-99. Stores and spares as a

percentage to current assets decreased from 1.71% in 1989-90 to 0.70% in 1998-99. This clearly indicates that all the components of the inventory were responsible for the decline in percentage of total inventory to total current assets. This also reveals that management could avoid excess investment in inventories during the period under study.

The size of the inventory and inventory to total current assets do not indicate the adequacy of the inventory in relation to its requirements. The common determinants to measure the adequacy of inventory are Inventory turnover ratio and inventory holding period.

INVENTORY TURNOVER RATIO (Based on cost of goods sold):

Inventory turnover ratio is a general measure of assessing the utilisation or productivity of inventory. This ratio indicates the number of times the average inventory is turned over during the period under study. Inventory turnover has a direct relationship with the profitability of an enterprise. Ordinarily the higher the rate of inventory turnover, the larger the amount of profit, smaller the amount of working capital tied up in inventory, and more current the inventory of merchandise. A high inventory turnover also means that the enterprise has conducted more business with fewer amounts of inventory and vice-versa. This ratio is interpreted as follows:

(a) The higher the ratio, the better the utilisation or productivity of inventory.

(b) The lower the ratio, the greater the chances of over stocking and poor utilisation or productivity of inventory.

A low inventory turnover ratio suggests poor inventory management. Thus, in normal situation, a high inventory turnover is

always desirable. According to Drebin and Harold 'A high inventory turnover is better than low turnover'[9]. However, it is true up to a certain point, but beyond that a higher inventory turnover may signal danger. It is because inventory turnover can be increased by carrying very small inventories which in turn, may lead to a large number of inventory outs leading to loss of sales.

Table no. I-4 and I-5 shows the inventory turnover ratio and holding period of the sample units. The overall inventory turnover ratio varied between 3.47 times to 4.95 times during the period under study. The overall average inventory turnover ratio of the sample units was 4.30 times. The average inventory turnover ratio shows an increasing trend during the period under study. The overall turnover ratio was 3.47 times in 1989-90, increased gradually and reached to 4.42 times in 1994-95, then marginally declined to 4.17 times in 95-96. Thereafter it increased and reached a peak level of 4.95 times in 1998-99. In terms of inventory holding period, the analysis reveals that it had reduced from 109 days in 1989-90 to 87 days in 1993-94 and a lowest level of 78 days in 1998-99. The increase in the inventory turnover ratio or decrease in the number of days of holding period of inventory indicates that the management had managed their inventory more efficiently and avoided overstocking and excess investment of working capital funds in inventory.

The overall average inventory holding period of 91 days of sample units was marginally lower as compared to 96 days holding period of 'Pharmaceutical Industry in India'. Contrary to this holding period was marginally higher as compared with 80 days of 'All Industries in India'. The coefficient of variation of sample units was 20.32% which indicates that had homogeneity in turnover of total inventory amongst them.

TABLE NO. I - 4

INVENTORY TURNOVER RATIO (BASED ON COST OF GOODS SOLD) OF PHARMACEUTICAL COMPANIES DURING THE PERIOD 1989-90 TO 1998-99

(In times)

COMPANIES / YEARS	1989-90	1990-91	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97	1997-98	1998-99	Average
1. Burroughs Wellcome Ltd.	2.60	3.24	3.84	4.31	5.81	5.80	3.24	5.61	5.20	5.12	**4.48**
2. Cipla Ltd	3.97	4 24	3.06	2.90	2.68	2.55	2 85	3.11	2.64	2.78	**3.08**
3. Duphar-Interfran Ltd	2.93	3.05	3.15	3.14	3.04	2.48	3.45	2.24	2.89	3.66	**3.00**
4. E Merck Ltd.	2.86	3.25	3.30	3.43	3 50	3.48	3.12	3.42	3.30	3.74	**3.34**
5. Fulford Ltd.	3.54	3.79	5.40	6.38	5.95	5.85	6.11	5.95	6.21	6.08	**5.53**
6. German Remedies Ltd.	3.30	3.07	2.92	3.68	3 91	3 92	3.85	4.23	4 54	4.52	**3.79**
7. Glaxo Ltd.	3.93	4.24	4.30	3.94	4.53	5.78	4.03	4.91	4 59	4 85	**4.51**
8. Hoechst Marion Roussel Ltd.	2.92	3.55	4.47	5.17	4.72	3.39	3 83	4.17	4 28	4.28	**4.08**
9. Knoll Pharmaceuticals Ltd.	3.92	4.17	3.94	4.45	4.75	5.21	3.82	5.09	5.67	5.33	**4.64**
10. Parke-Davis Ltd.	3.83	4.07	4.79	4.79	4.86	4.88	5.10	5.15	5.65	5.83	**4.90**
11. Pfizer Ltd.	3.50	3.36	4.15	4.09	4.09	4.38	4.82	5.62	3.44	5.63	**4.31**
12. RPG Life Sciences Ltd.	2.51	3.42	4.31	4.27	3.74	3.77	4.16	3.98	4.10	5.01	**3.93**
13. Unichem Laboratories Ltd.	5.30	5.85	5.30	5.46	5.94	6.00	5.88	8.11	8.57	7.50	**6.39**
Average	**3.47**	**3.79**	**4.07**	**4.31**	**4.42**	**4.42**	**4.17**	**4.74**	**4.70**	**4.95**	**4.30**
Pharmaceutical Industry in India	3.38	3.72	4.33	4.19	4.28	4.30	4.06	3 87	3 74	2.77	**3.86**
All Industries in India	4.17	4.55	4.52	4·49	4.26	4.92	5 36	4.94	4.46	4.29	**4.60**

Source : Appendices -II and V

Std. Dev	0.92
C.V.	21.32

TABLE NO. I - 5

INVENTORY HOLDING PERIOD (BASED ON COST OF GOODS SOLD) OF PHARMACEUTICAL COMPANIES DURING THE PERIOD 1989-90 TO 1998-99

(In no. of days)

COMPANIES / YEARS	1989-90	1990-91	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97	1997-98	1998-99	Average
1. Burroughs Wellcome Ltd.	140	113	95	85	63	63	113	65	70	71	**88**
2. Cipla Ltd.	92	86	119	126	136	143	128	117	138	131	**122**
3 Duphar-Interfran Ltd	125	120	116	116	120	147	106	163	126	100	**124**
4. E Merck Ltd.	128	112	111	107	104	105	117	107	111	98	**110**
5. Fulford Ltd.	103	96	68	57	61	62	60	61	59	60	**69**
6. German Remedies Ltd.	111	119	125	99	93	93	95	86	80	81	**98**
7. Glaxo Ltd.	93	86	85	93	80	63	91	74	80	75	**82**
8. Hoechst Marion Roussel Ltd.	125	103	82	71	77	108	95	88	85	85	**92**
9. Knoll Pharmaceuticals Ltd.	93	88	93	82	77	70	96	72	64	68	**80**
10. Parke-Davis Ltd.	95	90	76	76	75	75	72	71	65	63	**76**
11. Pfizer Ltd.	104	108	88	89	89	83	76	65	106	65	**87**
12. RPG Life Sciences Ltd.	145	107	85	85	98	97	88	92	89	73	**96**
13. Unichem Laboratories Ltd.	69	62	69	67	61	61	62	45	43	49	**59**
Average	**109**	**99**	**93**	**89**	**87**	**90**	**92**	**85**	**86**	**78**	**91**
Pharmaceutical Industry in India	108	98	84	87	85	85	90	94	98	132	**96**
All Industries in India	87	80	81	81	86	74	68	74	82	85	**80**

Source : Appendices -I, V and Table No. I - 4

Std. Dev.	18.48
C.V.	20.32

A deeper analysis of the individual units reveals that unit no. 2 and 3 had very low inventory turnover ratio, while unit no. 5 and 13 had a very high inventory turnover ratio as compared to the overall average of the sample units.

Table I- 4 shows that Unit no. 2 had a very low average inventory turnover ratio of 3.08 times during the period under study. The ratio was 3.97 times in 1989-90 which declined to 2.55 times in 1994-95. Thereafter it increased to a level of 3.11 times in 1996-97, and then again declined to a low level of 2.78 times in 1998-99. In terms of number of days of holding of inventory, the unit had 92 days of inventory in 1989-90 which gradually increased and reached to a high level of 131 days in 1998-99. Average holding period of the unit was 122 days during the period under study. The low turnover ratio was mainly due to substantial decline in the ratio of semi-finished goods and finished goods turnover from 26.39 times in 1989-90 to 15.10 times in 1998-99 and from 11.46 times in 1989-90 to 5.09 times in 1998-99 respectively. A gradual and consistent rise in the turnover ratio clearly indicates that unit no. 2 had developed tendency of keeping relatively very high inventory during the period under study.

Unit no. 3 had the lowest average inventory turnover ratio of 3.00 times. It had a fluctuating trend. The ratio was 2.93 times in 1989-90, increased to 3.45 times in 1995-96, and then declined to a lowest level of 2.24 times in 1996-97. Thereafter it increased to 3.66 times in 1998-99. This ratio in terms of number of days holding indicates that the unit had average inventory holding period of 124 days. Holding period varied between 100 days to 163 days during the period under study. Very low level of the inventory turnover may be an indication of inefficient management and low productivity of inventory. The low turnover ratio was mainly due to very low sales by

the unit. A very interesting observation which emerges about the unit is that though the unit had very low inventory level as compared to other sample units, the cost of goods sold by the unit was much lower in comparison to the inventory by it.

In contrast to the above two units, unit no. 5 had a very high average inventory turnover ratio of 5.53 times. The ratio indicates the fluctuating trend throughout the period under study. It was 3.54 times in 1989-90 which increased to 6.38 times in 1992-93. Thereafter it marginally declined to 5.85 times in 1994-95, and then increased and reached a level of 6.21 times in 1997-98. It marginally declined to 6.08 times in 1998-99. The average holding of the inventory was 69 days in case of unit no. 5. The holding period varied between 57 days to 103 days during the period under study. A high inventory turnover ratio indicates efficient inventory management and better productivity of the inventory.

Unit no. 13 had the highest average inventory turnover ratio of 6.39 times as compared to all sample units. Inventory turnover ratio was 5.30 times in 1989-90 which increased to 6.00 times in 1994-95. Thereafter it marginally declined to 5.88 times in 1995-96. During 1997-98 it increased significantly to 8.57 and then it declined to 7.50 times in 1998-99. In terms of average number of days holding the inventory it was 59 days which varied between 43 days to 69 days during the period under study. Maintaining a high inventory turnover ratio by the unit indicates that the management had deployed fewer amounts of working capital funds in the inventory.

INVENTORY TURNOVER RATIO (Based on Sales):

The cost of goods sold cannot be an ideal criterion to judge the degree of overstocking of inventory on account of differences in the cost of goods sold by individual units. A better criterion therefore seems to be the inventory turnover based on sales i.e. sales divided by inventory. A low turnover indicates an overinvestment in inventory and high turnover indicates underinvestment.

Weston and Brigham have opined that inventory to sales ratio is generally concentrated in the 12 to 20 percent range[10]. Therefore, inventory turnover needs to be within the range of 5.0 to 8.3 times. Mohsin suggests that inventory turnover should be 9 times[11]. On the basis of the above facts, we may consider inventory turnover ratio in between 5 and 9 times as a norm for manufacturing industries.

For an indepth analysis and full assessment of inventory management, a thorough analysis of each item of existing inventory is necessary. For example, a firm may have what appears to be a very good inventory turnover ratio, but it may, infact, represent an extremely rapid turnover of a very few items and a very slow or non-existent turnover of other items.

Table no. I-6 shows the inventory turnover ratio which varied between 4.31 times to 6.64 times during the period under study. The overall average inventory turnover ratio was 5.42 times. The inventory turnover ratio was 4.31 times in 1989-90 which increased to 5.68 times in 1993-94, then marginally declined to 5.34 times in 1994-95. Thereafter it increased and reached a peak level of 6.64 times in 1998-99. The increase in the inventory turnover ratio indicates that the sample units managed their inventory more efficiently during the period under study. Detailed analysis of the ratio reveals that the

TABLE NO. I - 6

TOTAL INVENTORY TURNOVER RATIO (BASED ON SALES) OF PHARMACEUTICAL COMPANIES DURING THE PERIOD 1989-90 TO 1998-1999

(In times)

COMPANIES / YEARS	1989-90	1990-91	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97	1997-98	1998-99	Average
1. Burroughs Wellcome Ltd.	3.15	4.08	4.14	4.99	8.15	6.12	3.58	7.42	5.96	7.69	**5.53**
2. Cipla Ltd.	5.00	4.41	3.22	3.31	3.09	3.06	3.95	4 18	3.50	3.94	**3.77**
3 Duphar-Interfran Ltd.	3.56	3.44	3.49	3.72	3.36	3.00	3.85	2 95	3.89	5.14	**3.64**
4. E Merck Ltd.	3.58	3.63	3.99	3.90	5.06	3.68	4.17	4.24	4.36	4.92	**4.15**
5. Fulford Ltd	4.23	4.84	7.08	6.25	6.83	6.53	7.78	6.57	7.47	6.45	**6.40**
6. German Remedies Ltd.	3.99	3.42	3.04	5.00	4.44	4.94	4.49	5.48	5.80	5.45	**4.60**
7. Glaxo Ltd.	5.08	4.99	4.88	4.68	6.57	8.27	4.77	6 14	5.72	6 86	**5.80**
8. Hoechst Marion Roussel Ltd.	3.52	5.19	6.21	6.05	5.17	4.60	4.79	5.88	4.26	6.95	**5.26**
9. Knoll Pharmaceuticals Ltd.	5.36	5.21	4.64	6.09	6.58	6.34	5 38	7.25	8.70	6.46	**6.20**
10 Parke-Davis Ltd	5.12	5.39	7.04	5.81	8.27	6.12	8.85	7.23	8.40	9.21	**7.14**
11. Pfizer Ltd.	4.09	4.00	4.68	4.35	4.79	5.49	6.57	7.62	5.02	6.57	**5.32**
12. RPG Life Sciences Ltd.	3.27	5.43	4.81	4.75	4.64	4.64	4.88	4.42	5.61	6.88	**4.93**
13. Unichem Laboratories Ltd.	6.16	6 12	5.18	6.29	6.92	6.59	7 23	13.35	9.66	9.79	**7.73**
Average	**4.31**	**4.63**	**4.80**	**5.02**	**5.68**	**5.34**	**5.41**	**6.36**	**6.03**	**6.64**	**5.42**
Pharmaceutical Industry in India	4.14	4 70	5.29	5.27	5.59	5.53	5.26	5.04	5.01	3.70	**4.95**
All Industries in India	5.06	5.52	5.53	5.46	5.35	6.11	6.53	6.07	5.56	5.31	**5.65**

Source : Appendices -I and V

Std. Dev.	1.19
C.V.	22.00

TABLE NO. I - 7

TOTAL INVENTORY HOLDING PERIOD (BASED ON SALES) OF PHARMACEUTICAL CO.S DURING THE PERIOD 1989-90 TO 1998-1999

(In no of days)

COMPANIES / YEARS	1989-90	1990-91	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97	1997-98	1998-99	Average
1 Burroughs Wellcome Ltd.	116	89	88	73	45	60	102	49	61	47	**73**
2 Cipla Ltd	73	83	113	110	118	119	92	87	104	93	**99**
3. Duphar-Interfran Ltd.	103	106	105	98	109	122	95	124	94	71	**103**
4 E. Merck Ltd.	102	100	92	94	72	99	88	86	84	74	**89**
5. Fulford Ltd	86	75	52	58	53	56	47	56	49	57	**59**
6 German Remedies Ltd.	92	107	120	73	82	74	81	67	63	67	**83**
7. Glaxo Ltd	72	73	75	78	56	44	76	59	64	53	**65**
8 Hoechst Marion Roussel Ltd.	104	70	59	60	71	79	76	62	86	53	**72**
9 Knoll Pharmaceuticals Ltd	68	70	79	60	56	58	68	50	42	57	**61**
10 Parke-Davis Ltd.	71	68	52	63	44	60	41	51	43	40	**53**
11. Pfizer Ltd	89	91	78	84	76	66	56	48	73	56	**72**
12. RPG Life Sciences Ltd	112	67	76	77	79	79	75	83	65	53	**76**
13. Unichem Laboratories Ltd.	59	60	70	58	53	55	50	27	38	37	**51**
Average	**88**	**82**	**81**	**76**	**70**	**75**	**73**	**65**	**67**	**58**	**73**
Pharmaceutical Industry in India	88	78	69	69	65	66	69	72	73	99	**75**
All Industries in India	72	66	66	67	68	60	56	60	66	69	**65**

Std. Dev.	15.74
C.V.	21.43

Source : Appendices -I, V and Table I - 6

sample units on the one hand had a continuous rise in their overall inventory, and at the same time sales of the sample units had also increased at a higher speed which ultimately leads to an increase in the inventory turnover ratio. On comparing the overall average inventory turnover of the sample units with the suggested norm recommended by experts, it is very much apparent that the selected units had overall average inventory turnover of more than 5 times. Table I-5 shows that 8 units i.e. 61% of the sample units had average inventory turnover ratio equal to more than the standard norm, while 5 units i.e. 39% of the sample units had a ratio less than the standard norm. This clearly indicates that overall the sample units had managed their inventory efficiently.

In terms of the inventory holding period in number of days, the management of the sample units had reduced number of days holding of the inventory as per Table I-7, from 88 days to 58 days during the period under study. It is thus clear from the analysis that the sample units had avoided overstocking.

The overall average holding period of inventory of 73 days of sample units was lower as compared to 75 days of 'Pharmaceutical Industry in India'. In contrast to this holding period was higher as compared with 65 days of 'All Industries in India'. The coefficient of variation of sample units was 21.43% indicating that the sample units were following a uniform policy for holding total inventory.

Indepth analysis of the individual units reveals that unit no. 2, 3, and 4 had very low inventory turnover ratio, while unit no. 10 and 13 had a very high inventory turnover ratio as compared to overall average of the sample units.

Unit no. 4 had a very low average inventory turnover ratio of 4.15 times during the period under study. Inventory turnover ratio was

3.58 times in year 1989-90, increased to 5.06 times in 1993-94, then it declined to 3.68 times in 1994-95, and again increased to a level of 4.92 times in 1998-99. In terms of average number of days holding of the inventory it was 89 days during the period under study. The holding period varied between 72 days to 102 days during the period under study. This indicates overinvestment in inventory. A low ratio seems to be due to a large inventory of non-moving items and wrong estimation of demand for the product by the unit.

Unit no. 10 had a very high average inventory turnover ratio of 7.14 times as compared to other sample units. The inventory turnover ratio had many ups and downs. It was 5.12 times in 1989-90 which increased to 7.04 times in 1991-92. Then it declined to 6.12 times in 1994-95, and it reached to a peak level of 9.21 times in 1998-99. The average holding of the inventory was 53 days during the period under study. It varied between 40 days and 71 days between 1989-90 and 1998-99. A high inventory turnover ratio indicates underinvestment in inventory. The high inventory turnover ratio of the unit was attributed to the fact that the unit could increase its sales, without corresponding proportionate increase in the inventory.

STRUCTURE OF INVENTORY:

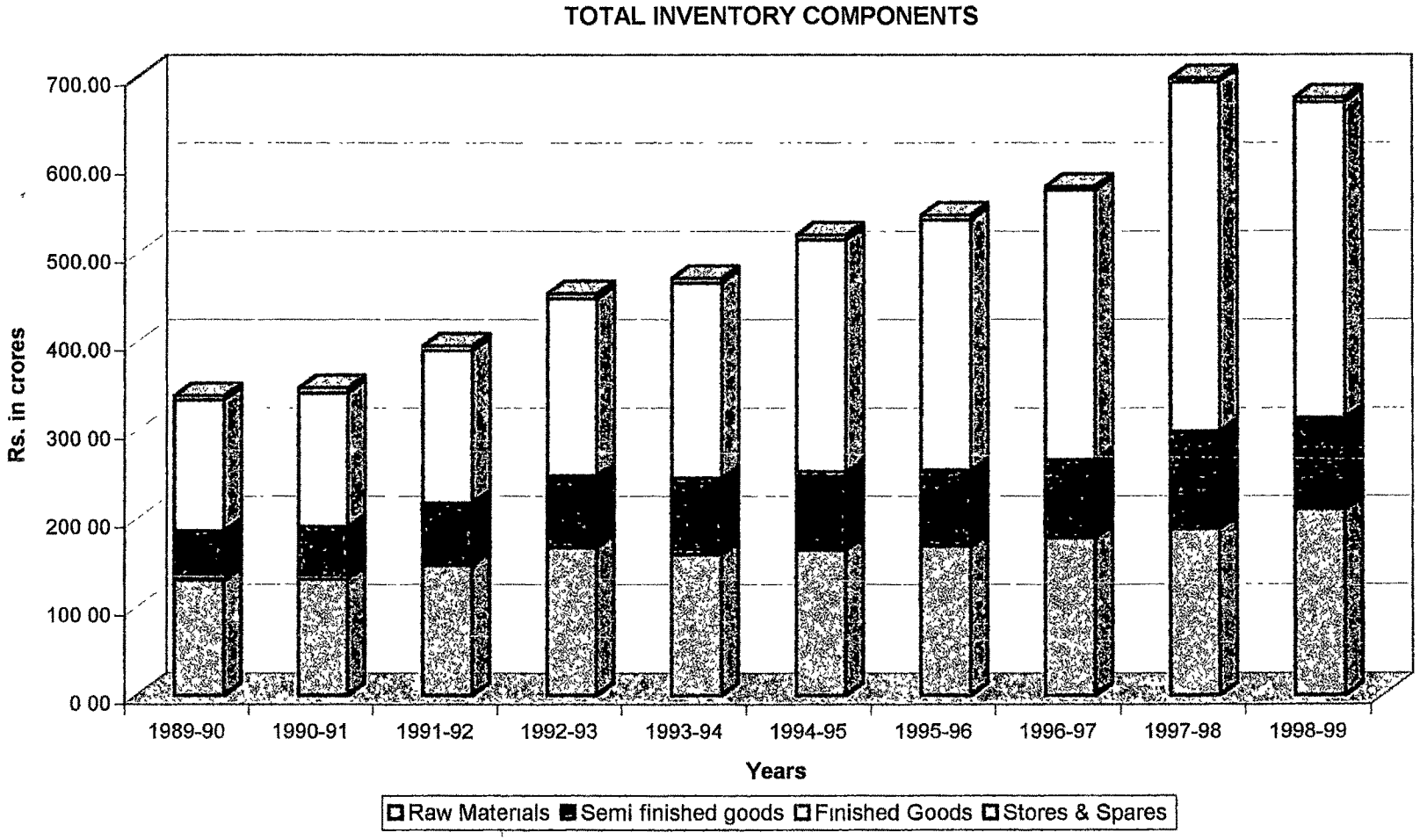
The structure of the inventory depends upon the nature of the business of a concern. According to Kholer the term 'inventory' may be defined as any class or group of materials or supplies, not yet expressed or capitalised as a maintenance supplies or construction materials[12]. Starr and Miller[13], defines the term as a stock of some kind of physical commodity. To a finance manager inventory containes the value of raw materials, work-in-process, finished goods,

stores & spares, consumables and scapes in which the company's funds have been invested[14]. A manufacturing concern has to invest in each component of the inventory, viz. raw materials, semi-finished goods, finished inventory and stores and spares. While on the other hand a trading concern has no investment in raw materials and work-in-process, but almost the entire amount of inventory would be in the form of the finished inventory only. The share of each component in the total inventories varies from industry to industry. However, proper level of inventory has to be among all these components to exercise an effective control over inventories. " All efforts of the management to control inventories should aim at maintaining various components of inventory at economic levels and in proper proportion"[15]. In pharmaceutical companies, inventory comprises of the following four components:

i) Raw materials,
ii) Semi-finished goods,
iii) Finished Goods and
iv) Stores and Spares.

Some of the above components need a high degree of control while others may not need a very high degree of control. The inventory of raw materials and stores and spares can be reduced to a level where it does not hamper the manufacturing process. For a better understanding of the components of total inventory of the selected pharmaceutical units have been depicted in Fig-5. The structure of inventories has been analysed in order to test the adequacy of different components of inventory as compared to the working capital norms suggested by the Tandon Committee.

FIG. 5


TOTAL INVENTORY COMPONENTS
Rs. in crores
700.00
600.00
500.00
400.00
300 00
200 00
100 00
0 00
1989-90
1990-91
1991-92
1992-93
1993-94
1994-95
1995-96
1996-97
1997-98
1998-99
Years
Raw Materials
Semi finished goods
Finished Goods
Stores & Spares

RAW MATERIALS:

Raw materials are a major input in any manufacturing organisation. Any interruption in the supply of raw materials results in the break down in production. The function of raw materials inventory is to act as a buffer between procurement and manufacturing. The supply of raw materials may be regular or seasonal and its sources may be local or foreign. These factors directly affect the lead-time and indirectly the level of raw materials inventory. The level of raw materials inventory is also influenced by considerations like volume of safety inventories to be, economies in large scale buying, credit available in the economy, cost and risk associated with the inventory of materials and government restrictions.

ADEQUACY OF RAW MATERIALS INVENTORY:

Table I-8 shows the size of raw materials inventory. It reveals that overall total amount of raw material was Rs. 1647.52 crores during the period under study. The overall amount of raw material shows an increasing trend and increased from Rs. 130.15 crores in 1989-90 to Rs. 211.03 crores in 1998-99 i.e. by 62.14%. The coefficient of variation of sample units of 74.61% indicates that they followed a less uniform policy with regard to the size of raw materials inventory.

Indepth analysis of size of raw materials of individual units reveals that the unit no. 2, 7 and 8 had exceptionally very high amount of raw materials inventory while unit no. 3, 5, 9 and 10 had exceptionally very low amount of inventory as compared to other sample units.

TABLE NO. I - 8

RAW MATERIALS OF PHARMACEUTICAL COMPANIES DURING THE PERIOD 1989-90 TO 1998-99

(Rs. in crores)

COMPANIES / YEARS	1989-90	1990-91	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97	1997-98	1998-99	Total
1 Burroughs Wellcome Ltd.	8.66	7.27	7.00	11.29	5.64	10.10	7.54	5.79	7.73	9 99	**81.01**
2 Cipla Ltd	9.89	15 24	23 67	24 07	25 65	34 29	31.72	35 28	43 32	56.40	**299.53**
3 Duphar-Interfran Ltd	3 98	6.08	6.81	8.44	8 89	7.77	8 97	6 68	5.87	4 86	**68.35**
4 E. Morck Ltd.	8 12	10.25	8.33	9.38	7.05	12 46	10 85	14 25	13 65	15 90	**110.24**
5 Fulford Ltd	6.13	6.62	4 27	2 61	4.05	3.65	3 98	2.86	4.17	5 83	**44.17**
6. German Remedies Ltd	6 61	9.19	9.50	7.43	9.16	10.64	9 56	11 12	13.77	18.14	**105.12**
7 Glaxo Ltd.	17.50	22.36	32.46	37.73	30 65	22 22	25.94	39 93	35.97	41.69	**306.45**
8. Hoechst Marion Roussel Ltd.	42.56	27.73	16.78	23.81	31.03	25 41	30.07	22 78	34 97	26 11	**281.25**
9. Knoll Pharmaceuticals Ltd.	3.55	5.14	8.60	8 15	8.92	9.24	6.34	4 47	2.13	3.83	**60.37**
10 Parke-Davis Ltd.	4.75	4 22	3.54	4 24	3.82	5.23	5 24	7 20	3.24	3.77	**45.25**
11. Pfizer Ltd.	7.68	8 39	9.48	14.47	10.03	9.73	7 76	8 15	6.15	7.21	**89.05**
12. RPG Life Sciences Ltd.	5.16	3.36	6 84	7.12	7.52	5.81	11 96	14 62	8.63	7.98	**79.00**
13 Unichem Laboratories Ltd.	5 56	5.98	9.93	8.43	7.19	8.29	9.27	5.07	8.69	9.32	**77.73**
Total	**130.15**	**131.83**	**147.21**	**167.17**	**159.60**	**164.84**	**169.20**	**178.20**	**188.29**	**211.03**	**1647.52**

Source : Appendix- II

Std Dev	94 56
C.V	74 61

Unit no. 2 shows a very high amount of total raw materials inventory of Rs. 299.53 crores during the period under study. The unit had Rs. 9.89 crores of raw materials inventory in 1989-90, increased to Rs. 34.29 crores in 1994-95 and then gradually increased and reached to a peak level of Rs. 56.40 crores in 1998-99. The higher level of raw materials inventory was mainly due to the increase in the value of output and consumption of raw materials during the period under study.

Unit no. 7 has the highest inventory of total raw materials of Rs. 306.45 crores. The unit had raw materials inventory of Rs. 17.50 crores in 1989-90, increased to Rs. 37.73 crores in 1992-93 and finally it reached to a peak level of Rs. 41.69 crores in 1998-99.

Unit no. 8 had a high level of total raw materials inventory of Rs. 281.25 crores, but it shows a declining trend during the period under study. It had raw materials inventory of Rs. 42.56 crores in 1989-90 which declined to Rs. 16.78 crores in 1991-92. Thereafter it increased to Rs. 31.03 crores in 1993-94, and again declined to Rs. 26.11 crores in 1998-99.

Unit no. 3 had a very low level of total raw materials inventory of Rs. 68.35 crores. The unit had raw materials inventory of Rs. 3.98 crores in 1989-90, increased to Rs. 8.89 crores in 1993-94. Thereafter it declined and reached a low level of Rs. 4.86 crores in 1998-99.

Unit no. 5 had the lowest level of total raw materials inventory of Rs. 44.17 crores. It had raw materials inventory of Rs. 6.13 crores in 1989-90 which decreased to Rs. 2.61 crores in 1992-93. Thereafter it increased to a level of Rs. 4.05 crores in 1993-94, again declined to Rs. 2.86 crores in 1996-97 and finally increased to Rs. 5.83 crores in 1998-99.

Unit no. 9 had a very low level of total raw materials inventory of Rs. 60.37 crores. It had raw materials inventory of Rs. 3.55 crores in 1989-90, gradually increasing to Rs. 9.24 crores in 1994-95. Then it declined and reached to a low level of Rs. 3.83 crores in 1998-99.

Unit no. 10 also shows a very low level of total raw materials inventory of Rs. 45.25 crores. It had raw materials inventory of Rs. 4.75 crores in 1989-90 which decreased to Rs. 3.54 crores in 1991-92. Thereafter it increased to a peak level of Rs. 7.20 crores in 1996-97 and then declined and reached a low level of Rs. 3.77 crores in 1998-99. In order to ascertain the exact proportion of raw materials in total inventory the percentage of raw materials to total inventory is calculated.

RAW MATERIALS TO TOTAL INVENTORY:

Table I-9 shows the raw materials as a percentage to total inventory. It is evident from Table I-8 that the overall average percentage marked a declining trend throughout the period under study. The percentage of raw materials to total inventory varied between 40.71% in 1990-91 and 28.35% in 1997-98. Overall average percentage of raw materials to total inventory was 34.54%. The fluctuations in the percentage of raw materials to total inventory took place due to changes in the level of inventory in the sample units.

The overall average raw materials inventory to total inventory of 34.54% of sample units as compared to 37.75% of 'Pharmaceutical Industry in India' was marginally lower. In contrast to this the overall average of sample units was marginally higher as compared to the 31.19% of 'All Industries in India'. The coefficient of variation of the sample units of 26.93% indicates that they had a low degree of

TABLE NO. I - 9

RAW MATERIAL TO TOTAL INVENTORY OF PHARMACEUTICAL COMPANIES DURING THE PERIOD 1989-90 TO 1998-99

(In percentage)

COMPANIES / YEARS	1989-90	1990-91	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97	1997-98	1998-99	Average
1. Burroughs Wellcome Ltd.	34.30	31.58	25.19	39.77	27.14	35.14	24.68	23.24	24.24	37.35	**30.26**
2 Cipla Ltd.	53.20	54.39	50.33	40.08	32.32	35.15	34.55	32.61	29 29	35.60	**39.75**
3 Duphar-Interfran Ltd	42.34	52.92	48.26	56.34	48.00	39.01	50.59	45.01	45.97	38.57	**46.70**
4 E. Merck Ltd.	44.06	43.78	34.42	30.43	29.29	30.13	25.55	29.32	26 65	29.98	**32.36**
5 Fulford Ltd	51.51	67.41	54.67	23.77	35.56	27.69	33.47	19.30	27.65	29.30	**37.03**
6. German Remedies Ltd.	37.30	46.07	39.68	41.03	39.77	45.14	34.60	42.48	48.20	49.25	**42.35**
7. Glaxo Ltd	26.13	26.81	32.08	31.88	31.91	29.73	26.91	34.74	26.96	32.79	**29.99**
8. Hoechst Marion Roussel Ltd.	52.45	47.59	37.87	49.00	44.17	37.69	40.47	32 80	26.43	34.02	**40.25**
9. Knoll Pharmaceuticals Ltd.	23.34	27.46	33.77	33.76	33.48	25.38	16 38	12.24	6.66	8.27	**22.07**
10 Parke-Davis Ltd.	27.35	22.53	21.78	17.59	20.97	19.42	26.32	28.99	13.00	16.09	**21.40**
11. Pfizer Ltd.	24.90	27.99	31.55	36.73	22.48	21.92	20.03	22.66	18.72	17.94	**24.49**
12. RPG Life Sciences Ltd.	29.24	27.61	41.03	32.62	31.15	20.06	32.99	32.03	22.15	22.24	**29.11**
13 Unichem Laboratories Ltd.	65.26	53.06	60.66	56.84	48.13	45.55	54.15	46.30	52.67	49.29	**53.19**
Average	**39.34**	**40.71**	**39.33**	**37.68**	**34.18**	**31.69**	**32.36**	**30.90**	**28.35**	**30.82**	**34.54**
Pharmaceutical Industry in India	36.68	36.70	37.68	38.49	37.91	39.56	40.52	36.49	35.49	38.03	**37.75**
All Industries in India	29.75	31.68	32.15	31.73	29.63	30.50	33 51	32.57	31.70	28.66	**31.19**

Source : Appendix -II

Std. Dev.	9.30
C.V.	26.93

variation with regard to raw materials to total inventory and followed a uniform policy in this regard.

An indepth analysis of individual unit reveals that the raw material as a percentage of total inventories was higher than overall average in the case of unit nos. 2, 3, 5, 6, 8 and 13 during the period under study. This means that 46.15% of the unit had higher inventory than overall average of the sample units. On the other hand 53.85% of the sample units had lower inventory than overall average of the sample units.

Unit no. 13 shows the highest average of 53.19% of raw materials to total inventory as compared to other sample units. This ratio was 65.26% in 1989-90 which gradually declined to 45.55% in 1994-95 and then increased to 54.15% in 1995-96 and again declined to a level of 49.29% in 1998-99. It is encouraging to note that though the overall average was highest in the unit, during the period under study it showed a declining trend of raw materials to total inventory. The high percentage was mainly due to bulk purchases of raw materials and increase in the value of output from Rs. 46.28 crores in 1989-90 to Rs. 154.50 crores in 1998-99.

Unit no. 9 had very low average of 22.07% of raw materials to total inventory. On the whole the percentage of raw materials to total inventory registered a fluctuating trend throughout the period of study. The ratio was 23.34% in 1989-90, increased in the initial period of study and reached to 33.76% in 1992-93. Thereafter it shows a continuous declining trend which reached a very low level of 8.27% in 1998-99. The decline in percentage of raw materials to total inventory reveals that the unit had managed its raw materials inventory more efficiently as compared to other sample units. This

unit had kept lower percentage of raw materials inventory because it procured a major part of raw materials from indigenous sources.

Unit no. 10 has the lowest average of 21.40% of raw materials to total inventory. The ratio of 27.35% in 1989-90 decreased to 17.59% in 1992-93. Thereafter it increased to 28.99% in 1996-97 and again declined to 13% in 1997-98. During the year 1998-99 it marginally increased to 16.09%. It would seem that the lower percentage of raw materials to total inventory was due to the aggressive policy followed by the management to avoid excessive locking up of working capital funds in the raw materials inventory.

The study of the size of raw materials in absolute amount and its percentage to total inventory do not measure its adequacy. The adequacy can be determined by an analysis and interpretation of raw materials in terms of days, cost of raw material consumption and raw material turnover ratio which is presented in Table I-9 and I-10.

RAW MATERIALS TURNOVER AND HOLDING PERIOD:

Raw materials turnover ratio is obtained by dividing the cost of raw materials consumed by average inventory of raw materials. It shows the number of times raw materials inventory rotates during the period. The holding period of raw materials in terms of days is calculated by dividing 365 by raw materials turnover ratio. The inventory turnover ratio is calculated to find out the extent of over stocking and under stocking of inventory. A low turnover indicates that excessive raw materials have been procured while a high turnover indicates that proportionately fewer materials were held in order to carry out the production programme[16]. S. K. Chakraborty in his study of working capital management in the indian corporate

sector found that quicker the inventory turnover, the less is the investment necessary in inventory, less the cost of production and more the profit[17].

Raw materials turnover ratio and holding period as shown in Table no. I-10 and I-11 reveal an overall average raw materials turnover ratio of the sample units which is 5.79 times or 72 days. The only time when it shows a very high holding period of raw material is in 1989-90, 1990-91, 1991-92 and 1995-96, when it was 82 days, 84 days, 75 days and 73 days respectively.

The overall average raw materials inventory holding period of 72 days of sample units was higher as compared to 66 days holding period of 'Pharmaceutical Industry in India' and 51 days holding period of 'All Industries in India'. Coefficient of variation of sample units of 28.97% indicates that they followed a uniform policy for holding raw material inventory.

An indepth analysis of the Table I- 9 reveals that turnover ratio was very high in case of unit no. 1, 9, 11 and 12, while it was very low in the case of unit no. 2, 3 and 13 as compared to the overall average of sample units.

Unit no. 1 had a very high average raw materials turnover ratio of 7.72 times i.e. 51 days during the period under study. The ratio was 81 days in 1989-90, decreased to 45 days in 1991-92 and increased to 54 days in1992-93. Thereafter it decreased to 37 days in 1994-95, increased to 67 days in 1995-96 and decreased to 47 days in 1998-99. The high turnover ratio or low holding period is mainly due to complete synchronisation between purchase and production department of the unit.

Unit no. 9 shows the highest average raw materials turnover ratio i.e. 8.15 times, in other words 51 days which indicates the

TABLE NO. I - 10

RAW MATERIAL TURNOVER RATIO OF PHARMACEUTICAL COMPANIES DURING THE PERIOD 1989-90 TO 1998-99

(In times)

COMPANIES / YEARS	1989-90	1990-91	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97	1997-98	1998-99	Average
1. Burroughs Wellcome Ltd.	4.52	5.15	8.10	6 75	8 54	9.74	5.47	10 18	11.10	7.71	**7.72**
2 Cipla Ltd	3.75	3.62	3.16	3.34	3.91	4.02	3.71	4.32	4 11	3.70	**3.76**
3 Duphar-Interfran Ltd	4 05	3 57	3.83	3 21	3 42	3 12	3 38	1 93	2 30	3 09	**3.19**
4. E Merck Ltd.	4 67	5 27	5 89	7.70	6 81	7 72	6 19	7 11	6 21	5 87	**6.34**
5 Fulford Ltd	3.77	2.46	3 59	6 15	6 01	4 64	4 88	6 20	6 73	5 30	**4.97**
6. German Remedies Ltd	5.47	4.00	4.11	4 73	5 43	4 73	5.44	5 50	5 01	4.78	**4.92**
7. Glaxo Ltd.	7.07	7.64	6.99	6.83	7.32	7.78	5 91	6 38	6 03	6 27	**6.82**
8. Hoechst Marion Roussel Ltd.	2.72	3 58	5.10	6.41	6.49	4.17	5 07	6 34	7.83	6 03	**5.37**
9 Knoll Pharmaceuticals Ltd	7.37	7.05	6 25	6 28	6.32	5.17	4.88	8.93	14 55	14.68	**8.15**
10. Parke-Davis Ltd.	4.94	5.33	5.75	6.67	5.72	6.96	4 85	6 43	5 31	4.98	**5.69**
11 Pfizer Ltd.	6.95	5 06	5.58	5.57	6.79	7 97	8 31	9 91	4 83	9 09	**7.01**
12. RPG Life Sciences Ltd.	4.74	4.50	6 21	6 26	6.39	8 09	8 26	7.52	8.11	12.56	**7.26**
13 Unichem Laboratories Ltd	3.11	4.24	3.74	2.98	3.24	3.42	3 42	3 97	5 38	6 87	**4.03**
Average	**4.86**	**4.73**	**5.25**	**5.60**	**5.88**	**5.96**	**5.37**	**6.52**	**6.73**	**6.99**	**5.79**
Pharmaceutical Industry in India	4.96	5 39	6 34	6.15	6 24	6 08	5 65	5 61	5.44	4.27	**5.61**
All Industries in India	6.73	7 07	6.88	6.74	6.79	8 20	8 51	7 38	6.80	6.52	**7.16**

Source : Appendices -II and V

Std Dev.	1.52
C.V.	26 20

TABLE NO. I - 11

RAW MATERIAL HOLDING PERIOD OF PHARMACEUTICAL COMPANIES DURING THE PERIOD 1989-90 TO 1998-99

(In no of days)

COMPANIES / YEARS	1989-90	1990-91	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97	1997-98	1998-99	Average
1. Burroughs Wellcome Ltd	81	71	45	54	43	37	67	36	33	47	**51**
2. Cipla Ltd	97	101	116	109	93	91	99	84	89	99	**98**
3. Duphar-Interfran Ltd	90	102	95	114	107	117	108	189	159	118	**120**
4 E Merck Ltd	78	69	62	47	54	47	59	51	59	62	**59**
5 Fulford Ltd	97	148	102	59	61	79	75	59	54	69	**80**
6 German Remedies Ltd.	67	91	89	77	67	77	67	66	73	76	**75**
7. Glaxo Ltd	52	48	52	53	50	47	62	57	60	58	**54**
8. Hoechst Marion Roussel Ltd	134	102	72	57	56	88	72	58	47	61	**75**
9 Knoll Pharmaceuticals Ltd.	50	52	58	58	58	71	75	41	25	25	**51**
10. Parke-Davis Ltd.	74	68	63	55	64	52	75	57	69	73	**65**
11. Pfizer Ltd	52	72	65	65	54	46	44	37	76	40	**55**
12 RPG Life Sciences Ltd	77	81	59	58	57	45	44	49	45	29	**54**
13 Unichem Laboratories Ltd.	117	86	98	123	113	107	107	92	68	53	**96**
Average	**82**	**84**	**75**	**72**	**67**	**70**	**73**	**67**	**66**	**62**	**72**
Pharmaceutical Industry in India	74	68	58	59	59	60	65	65	67	86	**66**
All Industries in India	54	52	53	54	54	45	43	49	54	56	**51**

Source : Appendices -II and V and Table I-10

Std Dev.	20.82
C.V.	28.97

efficiency of management in managing inventory. The ratio was 50 days in 1989-90, increased to 75 days in 1995-96 and finally came down to 25 days in 1998-99. This corroborates the previous argument on the size of the inventory that the unit having low raw materials inventories would be having higher turnover ratio. High turnover results in low cost of production and higher profitability. The profitability of the unit had increased by about 6 times in 1998-99 as compared to 1989-90.

Unit no. 11 indicates very high average raw materials turnover ratio of 7.01 times i.e.55 days during the period under study. The ratio varied between 76 days to 37 days and is higher than the average five out of ten years under study. The high ratio is mainly due to increased production by the unit.

Unit no. 12 also shows a high average raw material turnover ratio of 7.26 times i.e.54 days during the period under study. The ratio maintains a fluctuating trend which was 77 days in 1989-90 and increased to 81 days in 1990-91. Thereafter it gradually declined to 44 days in 1995-96, then increased to 49 days in 1996-97. Finally it declined to a lowest level of 29 days in 1998-99. The high ratio in the unit is mainly attributed to the fact that unit had increased the value of output without a corresponding increase in the raw materials inventory.

Unit no. 2 has a low turnover ratio of 3.76 times i.e. 98 days during the period under study. In 1989-90 the unit had a ratio which is more than 3 times, in other words the holding period was 98 days, while for the other years the unit had inventory holding period ranging between 116 days to 84 days. It is pertinent to note that the unit shows a very significant increase in the value of production, but the

increase in the inventory is much faster which caused a low turnover or higher holding period.

In case of unit no.3, it has the lowest turnover ratio of 3.19 times which means 120 days. The number of days of raw materials holding period of 90 days in 1989-90 increased to 102 days in 1990-91. Thereafter it gradually declined to 95 days in 1991-92 and then increased substantially to 189 days in 1996-97. It further declined to 118 days in 1998-99. This indicates the poor management of raw materials inventory. Low inventory turnover is primarily due to fall in value of production causing over stocking of inventory and very high holding period.

Unit no. 13 also has a very low raw materials turnover ratio of 4.03 times i.e. 96 days during the period under study. The ratio varied between 123 days to 53 days. It was 117 days in 1989-90, decreased to 86 days in 1990-91, increased to 123 days in 1992-93, and then gradually declined to 53 days in 1998-99. Low inventory turnover ratio or high number of days of holding period seems to be due to the reason that the unit had not followed standard inventory norms and lack of co-ordination between purchase and production department.

As per the norms recommended by the Tandon Committee for Drugs and Pharmaceutical Industries the inventory of raw materials should be 2 ¾th month i.e. the inventory of raw materials should be for 83 days. If we compare the same with the overall average of 72 days of the sample units it becomes apparent that these units maintained raw materials inventory much lower than the norms prescribed by the Tandon Committee for the Drugs and Pharmaceutical Industries. Detailed analysis of the table reveals that unit 2, 3 and 13 were maintaining a higher raw materials inventory than the norms laid

down by the Tandon Committee. This indicates that only 23% of the sample units had overstocked the raw materials inventory.

SEMI-FINISHED GOODS:

A manufacturing concern cannot do away with the semi-finished goods. While raw materials act as a buffer between procurement and manufacturing, semi-finished goods act as a buffer within the manufacturing itself. Semi-finished goods is the least liquid of all types of inventory. Principally, the length of the manufacturing period or production process determines the value of this inventory at any point of time. The strategy to be adopted for controlling this inventory is effective planning and co-ordination of manufacturing activities.

ADEQUACY OF SEMI-FINISHED GOODS:

Table I- 12 shows the size of semi-finished goods of the sample units. It reveals an increasing trend during the period under study. The overall total amount of semi-finished goods was Rs. 828.83 crores during 1989-90 to 1998-99. The yearwise analysis indicates that the total amount of the semi-finished goods was Rs. 55.94 crores in 1989-90 which increased to Rs. 102.73 crores in 1998-99 i.e. by 83.72% as compared to the base year. A very high coefficient of variation of 94.97% clearly indicates that the degree of variation between the sample units is very high which suggests that the sample units had not a followed uniform policy at all for holding of the semi-finished goods inventory.

Individually, unit no. 2, 7 and 8 have a very high total amount of inventory while unit no. 3, 5, 10 and 13 have a very low inventory as

TABLE NO. I - 12

SEMI FINISHED GOODS OF PHARMACEUTICAL COMPANIES DURING THE PERIOD 1989-90 TO 1998-99

(Rs. in crores)

COMPANIES / YEARS	1989-90	1990-91	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97	1997-98	1998-99	Total
1. Burroughs Wellcome Ltd	3.67	4.59	5 47	5.59	3.75	5.47	6 00	4.12	2.79	2.53	**43.98**
2 Cipla Ltd	2.26	3 66	6.75	10.26	11.45	15 07	8 33	13 40	16 28	23.18	**110.64**
3 Duphar-Interfran Ltd	1.51	1.33	2.96	2.05	2 64	2.95	2.47	1.38	1 21	1.53	**20.03**
4 E Morck Ltd	3.08	3.09	5.33	6.01	4 69	6.42	5 81	4 28	4.25	5.54	**48.50**
5. Fulford Ltd	1.73	0 76	0.66	0.90	0 80	0 78	0 85	1.52	0.39	0 66	**9.05**
6 German Remedies Ltd.	3.48	3.87	5.00	3 97	6.17	5 06	6 54	5 91	6.50	6 51	**53.01**
7 Glaxo Ltd.	15.14	20.10	20.82	27 01	26.44	18 91	19.31	21.57	27.81	25 36	**222.47**
8 Hoechst Marion Roussel Ltd	10.34	7.91	8.57	10.17	15.09	15.12	18.81	20.57	33 24	18 06	**157.88**
9. Knoll Pharmaceuticals Ltd	2.93	3.27	3.77	2.73	2.56	3.92	6 15	3.42	1 22	2 02	**31.99**
10. Parke-Davis Ltd.	2.70	2.43	1.98	2.98	1.70	3.55	1 37	1.65	0 82	0 30	**19.48**
11. Pfizer Ltd.	3 07	2 95	3.46	4.22	4.35	4 25	3 06	2.94	3.24	4.00	**35.54**
12 RPG Life Sciences Ltd.	4 82	3 24	3 03	3.40	4 59	4.69	5.47	6 87	10.96	9.62	**56.69**
13 Unichem Laboratories Ltd	1.21	1.72	2.25	2.19	1 93	2.38	1.75	0.87	1 85	3.42	**19.57**
Total	**55.94**	**58.92**	**70.05**	**81.48**	**86.16**	**88.57**	**85.92**	**88.50**	**110.56**	**102.73**	**828.83**

Source : Appendix -II

Std Dev.	60.55
C.V.	94.97

compared to the other sample units. 23.08% of the units were having inventory above the overall average; while 76.92% of the sample units were having inventory below the overall average inventory of the semi-finished goods.

Unit no. 2 has a total inventory of semi-finished goods to the tune of Rs. 110.64 crores which is very high as compared to the other sample units. The unit had inventory of semi-finished goods of Rs. 2.26 crores in 1989-90 which increased and reached a level of Rs. 15.07 crores in 1994-95. Thereafter it declined significantly to Rs. 8.33 crores in 1995-96, later on showing an increasing trend and reaching a peak level of Rs. 23.18 crores in 1998-99. The high level of semi-finished goods was due to the fact that the production and sales of the unit had increased substantially during the period under study.

Unit no. 7 has total inventory of the semi-finished goods to the tune of Rs. 222.47 crores which is the highest as compared to all the sample units. The unit had inventory of semi-finished goods at a level of Rs. 15.14 crores in 1989-90 which increased to Rs. 27.01 crores in 1992-93, then declined to Rs. 18.91 crores in 1994-95. Thereafter it increased to a level of Rs. 27.81 crores in 1997-98, and marginally declined to Rs. 25.36 crores in 1998-99. The unit had the highest level of absolute amount of semi-finished goods which should not be taken as inefficient management, because the increase in the absolute amount of inventory by itself is not an indication of the inefficiency, as the unit could increase its production and sales by a much higher proportion than an increase in the semi-finished goods. This is evident from the ratio of semi-finished goods turnover and the holding period shown in Table- I –15 and I- 16 which shows a declining trend in the unit.

Unit no. 8 has a total inventory of the semi-finished goods to the tune of Rs. 157.88 crores which is also higher as compared to the other sample units. The unit had semi-finished goods at the level of Rs. 10.34 crores in 1989-90, decreased to Rs. 7.91 crores in 1990-91, thereafter showing an increasing trend and reaching a peak level of Rs. 33.24 crores in 1997-98. Finally it marginally declined to Rs. 18.06 crores in 1998-99.

Unit No. 3 has a very low amount of semi-finished goods of Rs. 20.03 crores. Throughout the period of study it indicates a very low level varying between a narrow range of Rs. 2.96 crores in 1991-92 and Rs. 1.21 crores in 1997-98.

Unit no. 5 has the lowest amount of total semi-finished goods of Rs. 9.05 crores. It declined significantly from Rs. 1.73 crores in 1989-90 to Rs. 0.66 crores in 1998-99 i.e. by 61.85%. A consistent low level of semi-finished goods are indicative of better inventory policy of the management of the unit.

Unit no.10 has a low amount of total semi-finished goods of Rs. 19.48 crores. It has a fluctuating trend throughout the period under study. It decreased from 2.70 crores in 1989-90 to Rs. 1.98 crores in 1991-92, and then increased to Rs. 3.55 crores in 1994-95. Thereafter it declined to Rs. 1.37 crores in 1995-96, again increased to Rs. 1.65 crores in 1996-97, and finally declined to an ever-lowest amount of Rs. 0.30 crores in 1998-99.

Unit no.13 also had total semi-finished goods of less than Rs.19.57 crores. It registered more or less an increasing trend during the period under study. Though this unit had a low total amount of inventory, it is worth noting that the amount of semi-finished goods showed an increasing trend which in fact is not a good sign. The unit had semi-finished goods of Rs. 1.21 crores in 1989-90, increased

gradually and reached a peak level of Rs. 3.42 crores in 1998-99. This indicates that over a period of ten years semi-finished goods increased by 184.64%.

SEMI-FINISHED GOODS TO TOTAL INVENTORY:

Table I-13 shows semi-finished goods as a percentage to the total inventory. It is evident from Table I-13 that the overall average percentage of semi-finished goods to total inventory had a declining trend during the period under study. It was 16.56% in 1989-90, declined to 15.75% in 1990-91 and increased to 16.67% in 1991-92. Thereafter it continuously declined and reached a low percentage of 12.70% in 1997-98, and then marginally increased to 13.20% in 1998-99.

The overall average of 15.06% of semi-finished goods inventory to total inventory of the sample units is marginally low as compared to 16.39% of 'Pharmaceutical Industry in India' and 18.09% of 'All Industries in India'. The coefficient of variation of sample units was 32.36% indicating that the sample units had a low degree of variability and were following a uniform policy for semi-finished goods inventory.

An indepth analysis reveals that the semi-finished goods, as a percentage to total current assets was higher than the overall average in case of unit nos. 1, 6, 7, 8, and 12 during the period under study. This means that 38.46% of the sample units had a high average percentage as compared to the overall average of the sample units. On the other hand, 61.54% of the sample units had lower percentage than the overall average of the sample units.

Individually, unit no. 6 and 7 had an abnormally high percentage of semi-finished goods to total inventory, while unit no. 5, 10 and 11

TABLE NO. I - 13

SEMI FINISHED GOODS TO TOTAL INVENTORY OF PHARMACEUTICAL COMPANIES DURING THE PERIOD 1989-90 TO 1998-99

(In percentage)

COMPANIES / YEARS	1989-90	1990-91	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97	1997-98	1998-99	Average
1. Burroughs Wellcome Ltd.	14.53	19.94	19.68	19.69	18.05	19.03	19 64	16 54	8.75	9.46	**16.53**
2. Cipla Ltd.	12.16	13.06	14.35	17.08	14.43	15.45	9 07	12.39	11.01	14.63	**13.36**
3 Duphar-Interfran Ltd	16.06	11.58	20.98	13.68	14.25	14 81	13 93	9.30	9 48	12.14	**13.62**
4. E Merck Ltd	16.71	13.20	22.02	19 50	19.48	15 52	13.68	8 81	8 30	10.44	**14.77**
5 Fulford Ltd.	14.54	7.74	8.45	8 20	7.02	5.92	7.15	10 26	2 59	3.32	**7.52**
6. German Remedies Ltd.	19.64	19.40	20.89	21.92	26.79	21.47	23 67	22.57	22.75	17.68	**21.68**
7. Glaxo Ltd.	22.60	24.10	20.58	22.82	27.52	25 30	20 03	18 76	20.85	19.95	**22.25**
8. Hoechst Marion Roussel Ltd.	12.74	13.57	19.34	20.93	21.48	22.43	25 31	29 62	25.12	23.53	**21.41**
9. Knoll Pharmaceuticals Ltd.	19.26	17.47	14.80	11.31	9.61	10.77	15 89	9.37	3.81	4.36	**11.67**
10 Parke-Davis Ltd.	15.54	12.97	12.18	12.36	9.33	13.18	6.88	6.64	3.29	1.28	**9.37**
11. Pfizer Ltd	9.95	9.84	11.51	10.71	9.75	9.57	7.90	8.17	9 86	9.96	**9.72**
12. RPG Life Sciences Ltd.	27.31	26.62	18.18	15.57	19.01	16.19	15.09	15.05	28 13	26.81	**20.80**
13. Unichem Laboratories Ltd.	14.20	15.26	13.74	14.77	12.92	13.08	10.22	7.95	11.21	18.09	**13.14**
Average	**16.56**	**15.75**	**16.67**	**16.04**	**16.13**	**15.59**	**14.50**	**13.49**	**12.70**	**13.20**	**15.06**
Pharmaceutical Industry in India	13 41	14.96	14.75	15.56	16.50	16.77	17.11	18.10	18.20	18.57	**16.39**
All Industries in India	19.30	20.04	18.83	18.82	18.10	18 95	18.09	17.10	17.42	14.28	**18.09**

Source : Appendix -II

Std. Dev	4.87
C.V.	32.36

had a low percentage of semi-finished goods to the total inventory as compared to other sample units under study.

Unit no. 6 has an average of 21.68% of the semi-finished goods to the total inventory. It shows an erratic trend throughout the period of study fluctuating from 26.79% in 1993-94 to 17.68% in 1998-99.

Unit no. 7 has the highest average of 22.25% of semi-finished goods as compared to other sample units. It had 22.60% of the semi-finished goods in 1989-90 and increased to 24.10% in 1990-91. Thereafter it decreased to 20.58% in 1991-92, then increased and reached a peak level of 27.52% in 1993-94. Finally it declined to a low level of 19.95% in 1998-99.

Unit no. 5 had the lowest average of 7.52% of semi-finished goods as compared to all other sample units. It had a fluctuating trend, of 14.54% in 1989-90 which declined to a low level of 2.59% in 1997-98 and then marginal increased to 3.32% in 1998-99.

Unit no. 10 had a very low average of 9.37% of semi-finished goods. It shows an invariable trend of decline throughout the period of study except in the year 1994-95. It was 15.54% in 1989-90, declined to an exceptionally low level of 1.28% in 1998-99. Unit no. 11 also had a very low average of 9.72% of semi-finished goods. It increased marginally in the initial period of study from 9.95% in 1989-90 to 11.51% in 1991-92 and then declined in the later period to 9.96% in 1998-99.

In order to study the accumulation it is necessary to examine the turnover and holding period of semi-finished goods.

SEMI-FINISHED GOODS TURNOVER AND HOLDING PERIOD:

Semi-finished goods turnover ratio as shown in Table no. I-14 indicates a rising trend. It increased from 20.47 times in 1989-90 to 45.54 times in 1998-99. The yearwise trend reveals that the sample unit had on an average a turnover ratio of 20.47 times in 1989-90, increased to 26.34 times in 1993-94 and declined to 25.72 times in 1995-96. Thereafter it gradually increased and reached a peak level of 45.54 times in 1998-99. As shown in Table I- 15 the turnover ratio expressed in terms of holding period for semi-finished goods was 21 days in 1989-90, decreased to 17 days in 1994-95 and increased to 18 days in 1995-96. Thereafter it continuously declined and touched a level of 14 days in 1998-99. The overall average holding period of semi-finished goods was 17 days.

The overall average of 17 days semi-finished goods inventory holding period of sample units is marginally low as compared to 18 days of 'Pharmaceutical Industry in India' and it was equal i.e.17 days holding period of 'All Industries in India'. A coefficient of variation of sample units of 33.52% indicates that they followed a uniform policy for holding semi-finished goods inventory.

The unit wise indepth analysis reveals that the semi-finished goods turnover ratio was very high in case of unit no. 5, 10 and 11, while it was very low in case of unit no. 6, 7, 8 and 12.

Unit no. 5 indicates an average holding period of 9 days during the period under study. Yearwise analysis reveals that the holding period was 18 days in 1989-90, thereafter it declined and reached the lowest level of 3 days in 1998-99. The low holding period is mainly due to proper synchronisation between production and sales activities of the unit during the period 1989-90 to 1998-99.

TABLE NO. I - 14

SEMI FINISHED GOODS TURNOVER RATIO OF PHARMACEUTICAL COMPANIES DURING THE PERIOD 1989-90 TO 1998-99

(In times)

COMPANIES / YEARS	1989-90	1990-91	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97	1997-98	1998-99	Average
1. Burroughs Wellcome Ltd.	18.04	16.86	18 26	18.06	24.81	26.98	14.69	26.01	37.95	46.94	**24.86**
2. Cipla Ltd	26.39	25 90	19.07	14.98	13.82	13.61	16.85	21 03	17.56	15.10	**18.43**
3. Duphar-Interfran Ltd	16.85	20 58	17.44	15 97	20.17	16.31	20 76	16 06	25.27	27.55	**19.70**
4 E Merck Ltd	17.25	21.94	18 22	16 52	15.63	19.86	17 60	26 19	32 42	28.72	**21.44**
5 Fulford Ltd	20.68	21.16	46.93	51.73	53.24	55.48	56.97	41.73	58 81	116 25	**52.30**
6. German Remedies Ltd.	16.71	14.99	14.82	16.00	15 77	15 45	17.10	17.08	19 00	21.92	**16.88**
7 Glaxo Ltd.	14.41	15 01	16 06	15.28	14.82	16.56	14.45	18 72	17 71	16 88	**15.99**
8. Hoechst Marion Roussel Ltd	15 86	20.20	21 29	21.54	21.60	14 39	14.37	14 07	14 16	12.34	**16.98**
9 Knoll Pharmaceuticals Ltd.	18.71	20 70	23 28	30.35	39.34	33.88	16 43	20.94	44 45	62.01	**31.01**
10 Parke-Davis Ltd	24 63	27.81	35.15	34.22	36.56	38 57	39.97	65 22	72 22	135 20	**50.95**
11 Pfizer Ltd	37 06	30.17	33 18	36 47	39.62	41.53	50.33	63 99	34 12	51 54	**41.80**
12. RPG Life Sciences Ltd.	7.74	7.96	15.39	20 52	18.64	18.99	22.82	24.14	17 05	16 34	**16.96**
13. Unichem Laboratories Ltd	31.74	35.73	32.50	27.84	28.39	27.43	32.00	51.37	51 78	41.19	**36.00**
Average	**20.47**	**21.46**	**23.97**	**24.58**	**26.34**	**26.08**	**25.72**	**31.27**	**34.04**	**45.54**	**27.95**
Pharmaceutical Industry in India	21.97	22.73	25.24	23.93	22.74	21.82	20 16	18 64	17 22	13.00	**20.74**
All Industries in India	18.53	19.85	20 20	20.50	20.02	22.74	24 70	23.57	21.89	21 87	**21.38**

Source : Appendix -II

Std. Dev	12.73
C.V.	45.54

TABLE NO. I - 15

SEMI FINISHED GOODS HOLDING PERIOD OF PHARMACEUTICAL COMPANIES DURING THE PERIOD 1989-90 TO 1998-99

(In no of days)

COMPANIES / YEARS	1989-90	1990-91	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97	1997-98	1998-99	Average
1 Burroughs Wellcome Ltd	20	22	20	20	15	14	25	14	10	8	**17**
2 Cipla Ltd.	14	14	19	24	26	27	22	17	21	24	**21**
3 Duphar-Interfran Ltd	22	18	21	23	18	22	18	23	14	13	**19**
4 E. Merck Ltd	21	17	20	22	23	18	21	14	11	13	**18**
5 Fulford Ltd	18	17	8	7	7	7	6	9	6	3	**9**
6 German Remedies Ltd.	22	24	25	23	23	24	21	21	19	17	**22**
7. Glaxo Ltd.	25	24	23	24	25	22	25	19	21	22	**23**
8 Hoechst Marion Roussel Ltd	23	18	17	17	17	25	25	26	26	30	**22**
9. Knoll Pharmaceuticals Ltd.	20	18	16	12	9	11	22	17	8	6	**14**
10 Parke-Davis Ltd.	15	13	10	11	10	9	9	6	5	3	**9**
11. Pfizer Ltd	10	12	11	10	9	9	7	6	11	7	**9**
12. RPG Life Sciences Ltd	47	46	24	18	20	19	16	15	21	22	**25**
13 Unichem Laboratories Ltd.	12	10	11	13	13	13	11	7	7	9	**11**
Average	**21**	**19**	**17**	**17**	**17**	**17**	**18**	**15**	**14**	**14**	**17**
Pharmaceutical Industry in India	17	16	14	15	16	17	18	20	21	28	**18**
All Industries in India	20	18	18	18	18	16	15	15	17	17	**17**

Source : Appendices -I and V and Table I-14

Std Dev	5.63
C.V.	33 52

Unit no. 10 has an average holding period of 9 days during the ten years under study. Yearwise analysis reveals a fluctuating trend throughout the period. It was 15 days in 1989-90, decreased to 10 days in 1991-92. Thereafter it increased to 11 days in 1992-93 and then gradually declined and reached a lowest level of 3 days in 1998-99. The analysis further reveals that there was a drastic fall in holding period during the last three years of study and it was the lowest as compared to all other sample units. This indicates that the management had managed semi-finished goods inventory more efficiently during the later period of study.

Unit no. 11 also had a very high inventory turnover ratio, implying that it had a very low average holding period of semi-finished goods of 9 days during the period under study. The holding period was higher than average in five out of ten years and in the remaining years, it was lower than the average holding period of all the ten years. It seems that the unit could keep holding period at a very low level mainly due to more speed of manufacturing process and smooth flow of work-in-process.

Unit no. 6 has an average holding of inventory of 22 days during 1989-90 to 1998-99. Though in the initial period of study it shows a very high number of days of holding period, during the later period it indicates a declining trend. It was 22 days in 1989-90, increased to a high level of 25 days in 1991-92 and then declined to 17 days in 1998-99. The high holding period is the result of ineffective planning and lack of co-ordination of manufacturing activities.

Unit no. 7 has an average holding period of 23 days. Year wise analysis reveals that the holding period was 25 days in 1989-90, decreased to 23 days in 1991-92 and then increased to 25 days in 1993-94. Thereafter it decreased to 22 days in 1994-95, increased to

25 days in 1995-96 and again declined to a level of 22 days in 1998-99. The higher holding period can be attributed to a lengthy manufacturing process.

Unit no. 8 has an average holding of inventory of 22 days during the period under study. It is interesting to observe that unlike other units it showed an increasing trend particularly during the later period of study. Such an alarming situation calls for some corrective action by the management so as to arrest the level of semi-finished goods. It was 23 days in 1989-90. decreased to 17 days in 1993-94, increased significantly and reached a very high level of 30 days in 1998-99.

Unit No. 12 has the highest average holding period of semi-finished goods of 25 days. The unit had an inventory of semi-finished goods of 47 days in 1989-90, decreased to 18 days in 1992-93, thereafter it shows an increase of 20 days in 1993-94, again declined to 15 days in 1996-97 and finally reached to 22 days in 1998-99. Very high holding of the semi finished inventory shows that the unit had poor production planning and lack of co-ordination of different manufacturing activities.

As per the Tandon Committee's recommendations on the norms fixed for Drugs and Pharmaceutical Industries for the semi-finished goods, the period of conversion of work-in-process should not be more than $3/4^{th}$ of a month's cost of production i.e. 23 days. Out of the thirteen sample units, twelve units i.e. about 92% complies with the norms laid down by the Tandon Committee.

FINISHED GOODS:

Finished goods represent the goods in inventory which are ready for sale. The finished goods vary inversely with the sales. If sales fall below the expected level and production cannot be cut immediately, unsold inventories pile up. Moreover, any overstocking of finished goods shows inefficient management of inventory. As the basis of adequacy of inventory is the size and its percentage to total inventory, both the factors are discussed below.

ADEQUACY OF FINISHED GOODS:

It is evident from the Table I-16 that the size of finished goods inventory for all the sample units during the entire period of study had an infallible trend to increase except in 1998-99, wherein there was a marginal fall. The overall total amount of finished goods of the sample units was Rs. 2498.74 crores. The overall total finished goods were Rs. 148.23 crores in 1989-90, increased to a peak level of Rs. 395.47 crores in 1997-98 and then marginally declined to Rs. 357.69 crores in 1998-99. The coefficient of variation of the sample units of 68.36% indicates that they had a less uniform policy with regard to the size of finished goods inventory.

A detailed study of the Table I – 16 reveals that unit no. 2 and 7 had a very high amount of finished goods while unit no. 3, 5, 6 and 13 had a very low amount of average finished goods.

Unit no. 2 had total finished goods to the extent of Rs. 426.76 crores which is the second highest among all sample units. The unit had finished goods of Rs. 6.44 crores in 1989-90, increased and reached a peak level of Rs. 88.30 crores in 1997-98. Thereafter it

TABLE NO. I - 16

FINISHED GOODS OF PHARMACEUTICAL COMPANIES DURING THE PERIOD 1989-90 TO 1998-99

(Rs. in crores)

COMPANIES / YEARS	1989-90	1990-91	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97	1997-98	1998-99	Total
1. Burroughs Wellcome Ltd	12.79	11.07	15.17	11.39	11.30	13 08	16.92	15.00	21.37	14.23	**142.32**
2 Cipla Ltd	6.44	9 12	16 61	25 73	42.27	48 18	51 76	59.51	88 30	78 84	**426.76**
3 Duphar-Interfran Ltd	3 77	3 91	4.21	4 35	6.84	9.05	6 13	6.63	5 58	6.14	**56.61**
4 E. Merck Ltd.	6.87	9.52	9.90	14 69	11 59	21.64	24 93	28 95	31 98	30.48	**190.55**
5. Fulford Ltd.	4.04	2.44	2 88	7.47	6.54	8.75	7 06	10 44	10 52	13.41	**73.55**
6 German Remedies Ltd.	7.33	6 51	9.08	6 30	7.25	7.36	10.96	8 49	7 36	10.73	**81.37**
7 Glaxo Ltd	34.34	40 93	47.91	53.60	38 97	33 61	51.15	53 45	69.62	60.08	**483.66**
8 Hoechst Marion Roussel Ltd.	28.05	22.35	18.37	14 10	24.10	26.88	25.43	26 10	64 10	32 59	**282.07**
9 Knoll Pharmaceuticals Ltd	7 58	8.51	13.05	13.20	15 11	23 20	26 20	28.61	28.62	40.48	**204.56**
10 Parke-Davis Ltd.	8 21	9.94	8.83	14.45	9 91	15.23	10.72	15 37	20.49	19.00	**132.15**
11. Pfizer Ltd.	19.77	18.28	16.68	20.29	29.77	30.12	27.28	24 35	22.85	28.17	**237.56**
12 RPG Life Sciences Ltd	7.29	5 23	6.47	10 91	11.69	18.10	18.38	23 61	18.91	17.78	**138.37**
13 Unichem Laboratories Ltd.	1.75	3 57	4.19	4 21	5.82	7.37	5 93	4 84	5 77	5.76	**49.21**
Total	**148.23**	**151.38**	**173.35**	**200.69**	**221.16**	**262.57**	**282.85**	**305.35**	**395.47**	**357.69**	**2498.74**

Source : Appendix -II

Std. Dev.	131.40
C V	68.36

slightly declined to Rs. 78.84 crores in 1998-99. The high level of finished goods can be explained by the fact that the sales of the unit had increased substantially during the period under study.

Unit no. 7 had total finished goods to the extent of Rs. 483.66 crores which is the highest as compared to the other sample units. It had finished goods of Rs. 34.34 crores in 1989-90, increased to Rs. 53.60 crores in 1992-93, then it declined to Rs. 33.61 crores in 1994-95. Thereafter it increased to a peak level of Rs. 69.62 crores in 1997-98 and marginally declined to Rs. 60.08 crores in 1998-99. Although the unit has the highest level of finished goods, it is not an indication of inefficient management of finished goods inventory. This is because an increase in the absolute amount of inventory by itself is not an indication of inefficiency, as the unit could increase its sales in much higher proportion than an increase in the level of finished goods.

Unit no. 3 had very low amount of finished goods of Rs. 56.61 crores. It shows a fluctuating trend throughout the period under study. It had finished goods inventory of Rs. 3.77 crores in 1989-90, gradually increased and reached to Rs. 9.05 crores in 1994-95, then it declined and finally reached to Rs. 6.14 crores in 1998-99.

Unit no. 5 has total amount of Rs. 73.55 crores of finished goods. It had an inventory of Rs. 4.04 crores in 1989-90 which in the initial period declined to Rs.2.88 crores in 1991-92. Thereafter it shows an increasing trend and reached to Rs. 13.41 crores. Detailed analysis of the unit reveals that though the unit had a low total amount of finished goods, in during the later period it shows an increasing trend in the inventory. This observation leads to the conclusion that the management of the unit should take some serious steps to arrest the growth of the inventory.

Unit no. 6 has total finished goods to the extent of Rs. 81.37 crores during the period 1989-90 to 1998-99. The amount of finished goods inventory maintained a fluctuating trend during the period under study. It had finished goods of Rs. 7.33 crores in 1989-90, declined to Rs. 6.51 crores in 1990-91 and then increased to Rs. 9.08 crores in 1991-92. Thereafter it declined to Rs. 6.30 crores in 1992-93 and again increased to Rs. 10.96 crores in 1995-96. Finally it remained at the level of Rs. 10.73 crores in 1998-99.

Unit no. 13 had the lowest amount of total finished goods of Rs. 49.21 crores. It had finished goods of Rs. 1.75 crores in 1989-90, increased to Rs. 7.37 crores in 1994-95. Thereafter it again decreased to a low level of Rs. 4.84 crores in 1996-97 and then increased to Rs. 5.76 crores in 1998-99.

FINISHED GOODS TO TOTAL INVENTORY:

Table I-17 shows finished goods as a percentage to total inventory. It is evident from the table that throughout the period under study the overall average percentage shows an invariable increasing trend except in the year 1990-91 and 1998-99. The finished goods to total inventory were 42.07% in 1989-90, increased to 57.98% in 1997-98 and then marginally declined to 54.92% in 1998-99. The overall average of the finished goods to total inventory was 48.82% during the period under study.

The overall average of 48.82% of finished goods of the sample units is higher as compared to 42.38% of 'Pharmaceutical Industry in India' and 34.91% of 'All Industries in India'. The coefficient of variation of sample units of 21.20% indicates that they followed a uniform policy for holding finished goods inventory.

TABLE NO. I - 17

FINISHED GOODS TO TOTAL INVENTORY OF PHARMACEUTICAL COMPANIES DURING THE PERIOD 1989-90 TO 1998-99

(In percentage)

COMPANIES / YEARS	1989-90	1990-91	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97	1997-98	1998-99	Average
1 Burroughs Wellcome Ltd.	50.65	48 09	54.59	40.12	54.38	45.51	55 38	60 22	67 01	53.20	**52.91**
2 Cipla Ltd	34.64	32 55	35.32	42.84	53.26	49.40	56 38	55.01	59 70	49.77	**46.89**
3. Duphar-Interfran Ltd	40.11	34 03	29.84	29.04	36 93	45.43	34 57	44 68	43 70	48.73	**38.71**
4. E Merck Ltd.	37.28	40.67	40 91	47.66	48 15	52.32	58 71	59.57	62 45	57.47	**50.52**
5 Fulford Ltd.	33.95	24.85	36.88	68.03	57.42	66.39	59 38	70 45	69 76	67.39	**55.45**
6. German Remedies Ltd.	41.37	32.63	37.93	34.79	31.48	31.23	39 67	32 43	25 76	29.13	**33.64**
7. Glaxo Ltd	51.27	49.08	47 35	45 29	40.57	44.97	53.06	46.50	52.19	47.26	**47.75**
8. Hoechst Marion Roussel Ltd.	34.57	38.36	41.46	29.02	34 31	39 88	34.22	37.58	48 45	42.46	**38.03**
9 Knoll Pharmaceuticals Ltd.	49.84	45.46	51.24	54.68	56 72	63.74	67 70	78.36	89 49	87.37	**64.46**
10 Parke-Davis Ltd.	47.27	53.07	54.34	59.93	54 39	56.55	53 84	61.88	82 19	81.09	**60.46**
11 Pfizer Ltd	64.11	60.99	55 51	51.50	66 72	67.85	70 42	67 70	69 56	70.11	**64.45**
12. RPG Life Sciences Ltd.	41.30	42 97	38.81	49 98	48 43	62.50	50.70	51 73	48.54	49.55	**48.45**
13 Unichem Laboratories Ltd	20.54	31.68	25.60	28 39	38 96	40 49	34 64	44.20	34.97	30.46	**32.99**
Average	**42.07**	**41.11**	**42.29**	**44.71**	**47.82**	**51.25**	**51.44**	**54.64**	**57.98**	**54.92**	**48.24**
Pharmaceutical Industry in India	46.03	43.52	43 72	42.30	42.09	40:56	39 20	42.30	43 22	40.72	**42.38**
All Industries in India	33.37	30.40	31.44	32.31	35 22	34.76	33 73	36 62	36 99	42 84	**34.91**

Source : Appendix -II

Std Dev.	10 35
C V.	21.20

The percentage of finished goods to total inventory is higher than the overall average in the case of unit no. 1, 4, 5, 9, 10 and 11, while in case of the remaining units no. 2, 3, 6, 7, 8, 12, and 13 the average was lower. This indicates that 46.15% of the unit had average finished goods higher than the overall average of the sample units and 53.85% of the sample units had finished goods lower than the overall average of the sample units.

Individually unit no. 9, 10 and 11 have a very high percentage of finished goods, while unit no. 6 and 13 have a very low percentage of finished goods.

Unit no. 9 has the highest average of 64.46% of finished goods as compared to all sample units. It shows an increasing trend from 49.84% of finished goods in 1989-90 to 87.37% in 1998-99. It seems that industrial recession followed by the post liberalisation policies might have affected the sales of the unit resulting in the piling up of stock of finished goods.

Unit no. 10 has a very high average of 60.46% of finished goods as compared to the overall average of sample units. It had 47.27% of finished goods, increased to a very high level of 81.09% in 1998-99. It is apparent that the unit was consistently increasing its finished goods inventory without any corresponding increase in sales.

Unit no. 11 also maintained a very high average of 64.45% of finished goods to total inventory. It shows a fluctuating trend during the period under study. It had 64.11% of finished goods in 1989-90 which declined to 51.50% in 1992-93. Thereafter it increased to 70.42% in 1995-96 and again declined to 67.70% in 1996-97 and finally reached a level of 70.11% in 1998-99. Maintaining high level of finished goods is mainly due to increase in sales by 109% as compared to the base year of 1989-90.

Unit no. 6 has a very low average of finished goods of 33.64% during the period 1989-90 to 1998-99. It had finished goods of 41.37% of the total inventory in 1989-90 which declined to 31.23% in 1994-95 and then increased to 39.67% in 1995-96. Thereafter it declined to 29.13% in 1998-99. Low level of finished goods inventory suggests a better performance of the sales department of the undertaking.

Unit no. 13 had the lowest average of finished goods to total inventory of 32.99%. It had 20.54% of finished goods in 1989-90, increased to 40.49% in 1994-95, declined to 34.64% in 1995-96. Thereafter it increased to 44.20% in 1996-97 and finally declined and reached a low level of 30.46% in 1998-99. The lowest finished goods percentage to proper synchronisation of sales could be attributed and production activities of the unit.

In order to analyse the efficiency in managing the finished goods, two factors viz. finished goods turnover and its holding period are discussed below:

FINISHED GOODS TURNOVER AND HOLDING PERIOD:

Table I-18 and I-19 show the finished goods turnover ratio and holding period of the unit respectively. It indicates a fluctuating trend during the period under study. The finished goods turnover ratio was 9.18 times in 1989-90 and increased to 9.72 times in 1998-99.The turnover expressed in terms of holding period was 47 days in 1989-90 which decreased to 38 days in 1992-93. Thereafter it increased to 48 days in 1997-98 and again declined to 44 days in 1998-99.

The overall average of 43 days of finished goods inventory holding period of sample units as compared to 40 days of

TABLE NO. I - 18

FINISHED GOODS TURNOVER RATIO OF PHARMACEUTICAL COMPANIES FOR THE PERIOD 1989-90 TO1998-99

(In times)

COMPANIES / YEARS	1989-90	1990-91	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97	1997-98	1998-99	Average
1. Burroughs Wellcome Ltd.	5.14	6.55	7.43	9.12	12.58	11.79	6.40	9.76	8.11	8.43	**8.53**
2. Cipla Ltd.	11.46	12.69	8.93	7.33	5.50	4.98	5.39	5.60	4.58	5.09	**7.15**
3 Duphar-Interfran Ltd.	7.31	8.29	9.92	10 68	9 11	6.01	8 55	5.72	6 54	7.93	**8.01**
4. E. Merck Ltd.	7.67	8.30	8.09	7.67	7.31	6.86	5 62	5.79	5 40	6.24	**6.89**
5. Fulford Ltd.	10.42	12.69	17.90	11.58	9.50	9.40	9.69	9 08	8.86	8.89	**10.80**
6. German Remedies Ltd.	7.97	8.36	8.21	10.07	11.86	12.49	10.75	11.70	15 67	16.33	**11.34**
7. Glaxo Ltd	7.67	8.48	8.94	8.51	10.50	13.61	8.14	9.92	9 26	9.74	**9.48**
8. Hoechst Marion Roussel Ltd.	8.45	9.82	11.26	14.78	14.68	9.15	10.39	11.63	9.57	9.26	**10.90**
9. Knoll Pharmaceuticals Ltd.	7.87	8.79	8.07	8.41	8.51	8.58	5.81	6.99	6.79	6.04	**7.59**
10 Parke-Davis Ltd.	8.10	8.10	8.92	8 30	8.45	8.76	9.21	8 83	7 85	7.15	**8.37**
11 Pfizer Ltd.	5.46	5 38	7.13	7.68	6.87	6.51	6.98	8.13	5.01	8.06	**6.72**
12. RPG Life Sciences Ltd.	6.08	8.16	10.62	9.46	7.61	6.72	7.43	7 77	8.15	10.22	**8.22**
13. Unichem Laboratories Ltd.	25.80	21.75	18.86	20.26	17.63	15.07	15 62	21.13	22.17	23.03	**20.13**
Average	**9.18**	**9.80**	**10.33**	**10.30**	**10.01**	**9.23**	**8.46**	**9.39**	**9.07**	**9.72**	**9.55**
Pharmaceutical Industry in India	7.52	8.52	10.15	10.01	10.38	10.68	10.50	9.79	9 07	6.77	**9.34**
All Industries in India	12.51	14.33	14.59	14.08	12.57	14.08	15.66	13 99	12.12	10.74	**13.47**

Source : Appendices -II and V

Std. Dev.	3.39
C V.	35.55

TABLE NO. I - 19

FINISHED GOODS HOLDING PERIOD OF PHARMACEUTICAL COMPANIES DURING THE OERIOD 1989-90 TO 1998-99

(In no. of days)

COMPANIES / YEARS	1989-90	1990-91	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97	1997-98	1998-99	Average
1. Burroughs Wellcome Ltd.	71	56	49	40	29	31	57	37	45	43	**46**
2 Cipla Ltd	32	29	41	50	66	73	68	65	80	72	**58**
3 Duphar-Interfran Ltd	50	44	37	34	40	61	43	64	56	46	**47**
4 E. Merck Ltd.	48	44	45	48	50	53	65	63	68	59	**54**
5. Fulford Ltd	35	29	20	32	38	39	38	40	41	41	**35**
6 German Remedies Ltd.	46	44	44	36	31	29	34	31	23	22	**34**
7 Glaxo Ltd.	48	43	41	43	35	27	45	37	39	37	**39**
8. Hoechst Marion Roussel Ltd	43	37	32	25	25	40	35	31	38	39	**35**
9. Knoll Pharmaceuticals Ltd.	46	42	45	43	43	43	63	52	54	60	**49**
10. Parke-Davis Ltd.	45	45	41	44	43	42	40	41	47	51	**44**
11. Pfizer Ltd.	67	68	51	48	53	56	52	45	73	45	**56**
12 RPG Life Sciences Ltd.	60	45	34	39	48	54	49	47	45	36	**46**
13. Unichem Laboratories Ltd	14	17	19	18	21	24	23	17	16	16	**19**
Average	**47**	**42**	**39**	**38**	**40**	**44**	**47**	**44**	**48**	**44**	**43**
Pharmaceutical Industry In India	49	43	36	36	35	34	35	37	40	54	**40**
All Industries in India	29	25	25	26	29	26	23	26	30	34	**27**

Source : Appendices -I and V and Table I - 18

Std. Dev	10.33
C.V.	23 92

'Pharmaceutical Industry in India' was marginally higher. In contrast to this holding period was very high as compared to 27 days of 'All Industries in India'. The coefficient of variation of sample units of 23.92% indicates that they had followed uniform policy for holding finished goods inventory.

An indepth analysis of the Table I-19 reveals that unit no. 2,4 and 11 have high holding period while unit no. 5, 6, 7, 8 and 13 have a very low holding period as compared to the overall average of the sample units

Unit no. 2 had the highest average finished goods of 58 days during the period under study. It had inventory of 32 days in 1989-90 which increased to a very high level of 80 days in 1997-98, and marginally declined to 72 days in 1998-99. It seems that the management was optimistic of a rise in sales on the basis of sales forecast which did not result in actual sales and therefore led to overstocking of finished goods. It is evident from the analysis that the unit could increase its sales by 572%, while its finished goods inventory increased disproportionately by 1124% as compared to the base year 1989-90.

Unit no. 11 also had a high average holding period of 56 days. It had 67 days of holding period in 1989-90, increased to 68 days in 1990-91, and then declined to 48 days in 1992-93. Thereafter it increased to 73 days in 1997-98 and finally it came down to 45 days in 1998-99. Maintaining such a high level of inventory is an indication of inefficient management of finished goods inventory. As mentioned earlier though the sales had increased during the period under study the overall growth rate of sales was proportionately much lower than the increase in finished goods which resulted in a very high holding period.

Unit no. 6 shows a low holding period of finished goods of 34 days during the period under study. It was 46 days in 1989-90 which declined to 29 days in 1994-95. Thereafter it again increased to a level of 34 days in 1995-96 and gradually declined to 22 days in 1998-99. Low holding period can be attributed mainly to better marketing efforts by the unit resulting in higher sales and thereby low level of holding period.

Unit no. 8 indicates a low average holding period of 35 days during the period of 1989-90 to 1998-99. This holding period had a fluctuating trend of 43 days in 1989-90, thereafter declining and reaching a lowest of 25 days in 1993-94, again increasing to 40 days in 1994-95. During the year 1998-99 it declined to 39 days. Low holding period in this unit could be due to proper synchronisation of productions and sales activities. The data also reveals that sales of the unit had increased and the value of production had also equally increased by 90% during the 10 years period of the study.

Unit no. 13 shows the lowest holding period of finished goods of 19 days during the period under study. It was 14 days in 1989-90 increased to 24 days in 1994-95, then declining further to 16 days in 1998-99. The unit could maintain a low holding period due to tremendous marketing effort and professionally managed inventory.

As per the Tandon Committee's recommendations on the norms fixed for Drugs and Pharmaceuticals Industries, the finished goods should not be more than for 1½ months cost of goods sold which works out to be 45 days. Comparing the same with the overall average of 43 days of the sample units it indicates that these units were maintaining a low level of finished goods than the norms prescribed by the Tandon Committee.

STORES AND SPARES:

Stores and spares form a part of the total inventory. Their consumption pattern differs from that of raw materials. Consequently, the stocking pattern differs from industry to industry.

ADEQUACY OF STORES AND SPARES:

Table I-20 shows the size of stores and spares of the sample units during the period under study. The table reveals that overall inventory of stores and spares was Rs. 49.15 crores with a fluctuating trend throughout the period. The total amount of stores and spares was Rs. 4.69 crores in 1989-90 which increased to Rs. 6.10 crores in 1990-91 and then declined to 3.80 crores in 1996-97. Thereafter it increased and reached 4.71 crores in 1998-99. The high coefficient of variation of 99.43% clearly reveals that the sample units had not followed uniform policy with regard to stores and spares.

Individually unit no. 4 and 10 have a very high amount of stores and spares while unit no. 1 and 3 have a very low amount of stores and spares.

Unit no. 4 shows a very high amount of total stores and spares of Rs. 8.31 crores. It has an invariable rising trend except in the years 1998-99 during the period under study. Stores and spares were Rs. 0.36 crores in 1989-90 which gradually increased and reached a peak level of Rs.1.33 crores in 1997-98. Thereafter it shows a marginal decline to Rs.1.12 crores in 1998-99.

Unit no. 10 has the highest amount of stores and spares of Rs. 17.84 crores as compared to all the sample units. The unit had stores and spares of Rs. 1.71 crores in 1989-90 which later on increased

TABLE NO. I - 20

STORES AND SPARES OF PHARMACEUTICAL COMPANIES DURING THE PERIOD 1989-90 TO 1998-99

(Rs. in crores)

COMPANIES / YEARS	1989-90	1990-91	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97	1997-98	1998-99	Total
1 Burroughs Wellcome Ltd	0.13	0.09	0.15	0.12	0.09	0.09	0 09	N.A.	N.A.	N A.	**0.76**
2. Cipla Ltd.	N A	N A.	N A	N.A.	N A	N A.	N A.	N A	N A.	N A.	**N.A.**
3 Duphar-Interfran Ltd	0.14	0 17	0.13	0.14	0.15	0 15	0.16	0 15	0.11	0 07	**1.37**
4 E Merck Ltd	0.36	0.55	0.64	0.74	0 74	0 84	0.87	1.12	1 33	1 12	**8.31**
5. Fulford Ltd.	N.A.	N.A.	N A.	N.A.	N A	N.A.	N.A.	N.A.	N A.	N.A.	**N.A.**
6. German Remedies Ltd.	0.30	0.38	0.36	0 41	0 45	0.51	0.57	0 66	0.94	1 45	**6.03**
7. Glaxo Ltd.	N.A.	N.A.	N A	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	**N.A.**
8 Hoechst Marion Roussel Ltd.	0.20	0.28	0.59	0 51	0.03	N.A	N.A.	N.A	N.A	N.A.	**1.61**
9 Knoll Pharmaceuticals Ltd	1.15	1 80	0.05	0 06	0.05	0.04	0.01	0.01	0.01	0.00	**3.18**
10. Parke-Davis Ltd.	1.71	2 14	1.90	2 44	2.79	2.92	2.58	0.62	0 38	0 36	**17.84**
11 Pfizer Ltd.	0.32	0 35	0.43	0 42	0.47	0.29	0.64	0.53	0 61	0.80	**4.86**
12. RPG Life Sciences Ltd	0.38	0 34	0.33	0 40	0 34	0 36	0.44	0 54	0 46	0.50	**4.09**
13. Unichem Laboratories Ltd	N.A.	N.A	N A.	N.A	N.A.	0.16	0.17	0.17	0 19	0.41	**1.10**
Total	**4.69**	**6.10**	**4.58**	**5.24**	**5.11**	**5.36**	**5.53**	**3.80**	**4.03**	**4.71**	**49.15**

Source : Appendix -II

NA : Not Available

Std. Dev.	4 89
C V.	99.43

and reached a peak level of Rs. 2.92 crores in 1994-95. It significantly declined to Rs. 0.36 crores in 1998-99. There was a drastic fall in the level of stores and spares during the last three years of study.

Unit 1 had the lowest total stores and spares of Rs. 0.76 crores during the period under study. It had stores and spares of Rs. 0.13 crores in 1989-90 which increased to 0.15 crores in 1991-92 and then declined and reached to Rs. 0.09 crores in 1995-96.

Unit no. 3 also has a very low amount of stores and spares of Rs. 1.37 crores. It shows stores and spares of Rs. 0.14, crores in 1989-90 which declined to an ever-lowest level of Rs. 0.07 crores in 1998-99.

STORES AND SPARES TO TOTAL INVENTORY:

Table I-21 shows the stores and spares as a percentage to total inventory. It reveals a fluctuating trend during the period under study. The overall average of the stores and spares was 2.16% during the period 1989-90 to 1998-99. The stores and spares was 2.94% of the total inventory in 1989-90 which marginally increased to 3.51% in 1990-91, After that it shows a decline of 2.11% in 1994-95. Thereafter it increased to 2.46% in 1995-96 and then gradually declined and reached a lowest level of 1.56% 1997-98. A marginal increase to 1.71% is seen in 1998-99.

The overall average of 2.16% of stores and spares to total inventory of sample units was marginally lower as compared to 3.48% of the 'Pharmaceutical Industry in India'. Further more it was much lower as compared to 15.81% of 'All Industries in India'. The coefficient of variation of sample units of 105.94% clearly indicates that they had not followed uniform policy at all for stores and spares.

TABLE NO. I - 21

STORES AND SPARES TO TOTAL INVENTORY OF PHARMACEUTICAL COMPANIES DURING THE PERIOD 1989-90 TO 1998-99

(In percentage)

COMPANIES / YEARS	1989-90	1990-91	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97	1997-98	1998-99	Average
1. Burroughs Wellcome Ltd.	0.51	0.39	0.54	0.42	0.43	0.31	0.29	N A.	N.A	N.A.	**0.42**
2. Cipla Ltd.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A	N.A.	N.A.	N.A.	**N.A.**
3 Duphar-Interfran Ltd	1.49	1.48	0.92	0.93	0 81	0.75	0.90	1.01	0.86	0.56	**0.97**
4. E. Merck Ltd.	1.95	2.35	2.64	2.40	3.07	2.03	2.05	2 30	2.60	2.11	**2.35**
5. Fulford Ltd.	N.A.	N.A.	N A.	N.A.	N A.	N.A.	N.A.	N A	N.A.	N.A.	**N.A.**
6 German Remedies Ltd.	1.69	1.90	1.50	2.26	1.95	2.16	2.06	2 52	3.29	3 94	**2.33**
7. Glaxo Ltd.	N.A.	N.A.	N.A.	N.A.	N.A	N.A.	N.A.	N.A.	N A.	N.A.	**N.A.**
8. Hoechst Marion Roussel Ltd.	0.25	0.48	1.33	1.05	0.04	N.A.	N.A.	N.A.	N.A.	N.A.	**0.63**
9. Knoll Pharmaceuticals Ltd	7.56	9.62	0.20	0.25	0.19	0.11	0.03	0.03	0 03	0.00	**1.80**
10. Parke-Davis Ltd.	9.84	11.43	11.69	10.12	15.31	10.84	12.96	2.50	1.52	1.54	**8.78**
11. Pfizer Ltd.	1.04	1.17	1.43	1.07	1.05	0.65	1.65	1.47	1.86	1.99	**1.34**
12. RPG Life Sciences Ltd.	2.15	2.79	1.98	1.83	1.41	1.24	1.21	1.18	1.18	1.39	**1.64**
13. Unichem Laboratories Ltd.	N.A.	N.A.	N.A.	N.A.	N A.	0.88	0.99	1.55	1.15	2.17	**1.35**
Average	**2.94**	**3.51**	**2.47**	**2.26**	**2.70**	**2.11**	**2.46**	**1.57**	**1.56**	**1.71**	**2.16**
Pharmaceutical Industry in India	3.88	4.82	3.86	3.65	3 50	3.11	3 16	3.07	3.03	2 68	**3.48**
All Industries in India	17.58	17.77	17.47	17.15	16.94	15.67	14.42	13 45	13 57	14.13	**15.81**

Source : Appendix -II

NA : Not Available

Std. Dev.	2.29
C.V.	105.94

An indepth analysis reveals that stores and spares as a percentage to total inventory was higher than the overall average in case of unit no. 10, 4 and 6 which means that only 23% of the unit had average stores and spares higher than the overall average of the sample units. On the other hand 76% of the sample units had stores and spares lower than the overall average of the sample units. This shows that the drugs and pharmaceutical companies had low amount of working capital funds invested in stores and spares.

Unit no. 10 had the highest average of 8.78% of stores and spares as compared to other sample units. It had stores and spares of 9.84% in 1989-90 which increased to a high level of 15.31% in 1993-94, and later on declined then it declined to 1.54% in 1998-99. A detailed analysis reveals that the unit kept a very high level of stores and spares in the initial years and during the later years the management could efficiently manage and control the level of stores and spares inventory.

Unit no. 1 shows the lowest average of 0.42% of stores and spares as compared to other sample units. It remained below 1% throughout the period under study. The lower percentage of stores and spares to total inventory was mainly due to negligible maintenance of new machinery purchased by the unit.

STORES AND SPARES TURNOVER AND HOLDING PERIOD:

Table I-22 and I-23 gives the turnover ratio and holding period of stores and spares. The overall average turnover of stores and spares which had shown a fluctuating trend of 2.70 times in 1989-90 increased to 15.62 times in 1998-99 an increase of 478.51% as compared to the base year 1989-90. The holding period was 300

TABLE NO. I - 22

STORES & SPARES TURNOVER RATIO OF PHARMACEUTICAL COMPANIES DURING THE PERIOD 1989-90 TO 1998-99

(In times)

COMPANIES / YEARS	1989-90	1990-91	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97	1997-98	1998-99	Average
1. Burroughs Wellcome Ltd.	1.62	2.09	3.00	2.52	4.00	5.22	4.22	0 00	0.00	0.00	**2.27**
2. Cipla Ltd.	N.A	N A	N.A	N.A	N.A	N A	N.A	N.A	N.A	N.A	**N.A**
3 Duphar-Interfran Ltd	0.50	0.77	0.67	1.11	1.03	0.73	1.10	0 39	0 23	0.33	**0.69**
4. E Merck Ltd	1.69	1.67	1.26	1.62	1.46	1.57	1.50	1.62	1.67	2.00	**1.61**
5. Fulford Ltd	N.A	N.A	N.A	N.A	N.A	N.A	N A	N.A	N.A	N.A	**N.A**
6. German Remedies Ltd.	1.60	1.47	1.65	2.05	1.72	2.21	1.76	2.07	2.03	1.72	**1.83**
7. Glaxo Ltd.	N.A	N.A	N.A	N.A	N.A	N.A	N.A	N.A	N.A	N A	**N.A**
8. Hoechst Marion Roussel Ltd	7.90	9.08	4.11	4.20	7.78	N.A	N.A	N.A	N.A	N.A	**6.62**
9. Knoll Pharmaceuticals Ltd.	0.50	0.49	0.84	13 64	15.82	18 44	27.20	58.00	52.00	110.00	**29.69**
10 Parke-Davis Ltd.	5.71	5.42	5.70	5.44	5.17	5.84	5.13	N.A	N A	N.A	**5.49**
11. Pfizer Ltd.	3.75	2.66	2.69	3.36	3.33	5.00	3.48	2 12	1 46	2.09	**2.99**
12. RPG Life Sciences Ltd.	1.00	1.14	1.61	1.70	2.03	2.91	3.23	3 47	3.84	3.44	**2.44**
13. Unichem Laboratories Ltd.	N.A	N.A	N A	N.A	N.A	36.50	44.00	43.00	3 67	5 40	**26.51**
Average	**2.70**	**2.76**	**2.39**	**3.96**	**4.70**	**8.71**	**10.18**	**13.83**	**8.11**	**15.62**	**8.01**
Pharmaceutical Industry in India	1.73	1 57	1.77	2.00	2 07	2.09	1 86	1.72	1.75	1 23	**1.78**
All Industries in India	1.05	1.18	1.21	1.22	1.15	1.20	1.33	1.33	1.21	1.07	**1.20**

Source : Appendices -II and V

NA : Not Available

Std Dev.	10.03
C.V.	116.84

TABLE NO. I - 23

STORES & SPARES HOLDING PERIOD OF THE PHARMACEUTICAL COMPANIES DURING THE PERIOD 1989-90 TO 1998-99

(In no. of days)

COMPANIES / YEARS	1989-90	1990-91	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97	1997-98	1998-99	Average
1 Burroughs Wellcome Ltd.	226	175	122	145	91	70	86	N A	N A	N.A.	**131**
2. Cipla Ltd	N.A.	N.A.	N.A	N.A	N.A.	N.A	N.A.	N.A	N.A.	N.A.	**N.A.**
3 Duphar-Interfran Ltd	730	471	548	329	353	498	333	943	1582	1095	**688**
4 E. Merck Ltd	215	219	290	225	250	233	244	226	219	183	**230**
5 Fulford Ltd	N.A.	N A.	N.A.	N.A.	N A.	N A	N A.	N A.	N A	N.A.	**N.A.**
6 German Remedies Ltd	228	248	221	178	212	165	207	177	180	213	**203**
7. Glaxo Ltd	N.A.	N.A.	N A.	N A.	N.A.	N A.	N.A	N A	N A	N A.	**N.A.**
8 Hoechst Marion Roussel Ltd	46	40	89	87	47	N A.	N A.	N.A	N.A	N.A	**62**
9. Knoll Pharmaceuticals Ltd	724	738	433	27	23	20	13	6	7	3	**199**
10. Parke-Davis Ltd	64	67	64	67	71	63	71	N A	N A	N A	**67**
11 Pfizer Ltd	97	137	136	108	110	73	105	172	251	175	**136**
12 RPG Life Sciences Ltd	365	320	226	215	180	125	113	105	95	106	**185**
13. Unichem Laboratories Ltd.	N.A.	N.A.	N.A.	N.A.	N A	10	8	8	100	68	**39**
Average	**300**	**268**	**236**	**153**	**149**	**140**	**131**	**234**	**348**	**263**	**194**
Pharmaceutical Industry in India	211	232	207	183	177	174	196	213	209	297	**210**
All Industries in India	349	310	300	298	317	305	274	275	301	340	**307**

Source : Appendices -I and V and Table I - 22

N.A : Not Available

Std. Dev.	176.26
C V	90 85

days in 1989-90 which gradually declined and came down to a low of 131 days in 1995-96. Thereafter it increased to 348 days in 1997-98 and declined to 263 days in 1998-99. The overall average holding period was 194 days during the period under study.

The overall average of 194 days of stores and spares holding period of sample units is lower as compared to 210 days holding period of the 'Pharmaceutical Industry in India'. Further more, holding period is almost half as compared to 307 days of 'All Industries in India'. The coefficient of variation of sample units of 90.85% indicates that they had not followed a uniform policy for holding stores and spares.

An indepth analysis of the individual unit indicates that the holding period was exceptionally high in case of unit no. 3 and low in case of unit no. 8, 10 and 13.

Unit no. 3 had an average holding period of 688 days i.e. approx. two years of consumption of stores and spares had been kept in stock during the period 1989-90 to 1998-99. It had a holding period of 730 days in 1989-90, reduced by 57% i.e. 329 days in 1992-93. Thereafter it increased to a very high level of 1582 days in 1997-98. Finally it declined to 1095 days in 1998-99. The management attributed high holding period due to non-availability of indigenous spare parts, and longer delivery lead-time. Secondly it was the policy of the management to keep large stock in the name of 'insurance spares'.

Unit no. 8 shows a very low average holding period of 62 days during the period 1989-90 to 1998-99. It had a holding period of 46 days in 1989-90 which decreased to 40 days in 1990-91. Thereafter it increased to 89 days in 1991-92 and later on it declined to 47 days in 1993-94.

Unit no. 10 shows a very low average holding period of 67 days during the period 1989-90 to 1998-99. It had a holding period of 64 days in 1989-90 which increased to 71 days in 1993-94. Thereafter it declined to 63 days in 1994-95 and later on it increased to 71 days in 1995-96.

Unit no. 13 gives the average stores and spares holding period of 39 days which is the lowest amongst all the sample units. It had holding period of 10 days in 1994-95, declined to only 8 days in 1996-97. It shot up to a very high level of 100 days in 1997-98 and again declined to 68 days in 1998-99. The management of the unit had adopted stringent inventory control norms to keep a low inventory and thereby lower inventory turnover.

The Nakara Committee[18] suggests that stock of stores and spares should not exceed 12 months consumption of stores and spares in any public enterprise. Comparing the norm laid down by the committee, it is clear that the overall sample units had managed its stores and spares inventory below the norms. Only one unit i.e. unit no. 3 exceeded its stock higher than the norm laid down by the committee.

CHAPTER V

SECTION 2

RECEIVABLES MANAGEMENT

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RECEIVABLES MANAGEMENT

Receivables represent an important component of current assets. They occupy the second important place after inventories and constitute a substantial portion of current assets in most of the business houses.

In any sizable business organisation the bulk of sales would be on credit. This is borne out by the fact that credit allowed to customers always enables the convern to increase sales. In this sense, receivables play an important role in ensuring a higher turnover for the firm concerned.

COST OF MAINTAINING RECEIVABLES

The maintenance of receivables involves a credit sanction which means the tie up of funds with it. The main costs associated with receivables are as follows:

(1) Collection Cost

These costs are administrative costs incurerred in collecting the receivables form the customers. They include additional expenses on the creation and maintenance of credit department with staff, accounting records, stationery, postages and other related costs.

(2) Capital Cost

The time lag between the date of sale and the date of payment necessitates investment in receivables. Meanwhile the firm has to arrange additional funds to meet its own obligations. The cost of the

use of additional capital to support credit sales which alternatively could be profitably employed elsewhere, is therefore, ap part of the cost extending credit or receivables.

(3) Delinquency Cost

There is another cost associated with extending credit to customers. This arises out of the failure of the customers to meet their obligations when they fall due after the expiry of the period of credit. Such costs are called delinquency costs. The important components of this cost are:

(i) Blocking up of funds for an extended period,

(ii) Cost associated with steps that have to be initiated to collect the overdes, such as reminders and other collection efforts, legal expenses, if necessary, and so on.

(4) Default Cost

After making all the attempts to recover the money, the firm may not be able to do so because of the inability of the customers. Such debts are treated as bab debts and have to be written off as they cannot be recovered. Such cost are known as default costs associated with receivables.

OBJECTIVE OF RECEIVABLES MANAGEMENT

The basis objective of receivable management is to maximise the value of the firm by way of achieving a trade off between risk and and profitability. In fact, the firm should manage its receivables in such a way that sales are expanded in such a way that to the extent to which risk remains within an acceptable limit. In brief, the objectives of receivables management are as follows:

(i) To obtain the optimum volume of sales.

(ii) To control the cost of credit and keep it at the minimum.

(iii) To maintain the optimum level of investments in receivables.

(iv) To keep down the average collection period.

The purpose of receivables management is not sales maximisation. But an efficient and efficient managent of receivables does help to expand sales and can prove to be an effective tool of marketing. It helps to retain old customers and win new one. Well administered receivables management means profitable credit accounts. The objectives of receivable management is "to promote sales and profit until that point is reached where the return on investment in further funding of receivables is less than the cost of funds raised to finance that additional credit (i.e., cost of capital)[20].

PRINCIPLES OF CREDIT AND COLLECTION POLICIES

According to Joseph L. Wood, "The purpose of any commercial enterprise is the earning of profit. Credit in itself is utilised to increase sales, but sales must return a profit."[19] The basic objective in the management of receivables should be that of maximisation of overall returns on investment. It is obvious that the firms' objective with respect to receivables management is not merely to collect recivables quickly but give attention to the benefit cost trade off involved in the various areas of accounts receivbles management. Derermination of sound and effective credit and collection polices is the most important phase of receivables management.

CREDIT POLICY

Credit policy is an important part of the overll strategy of a firm ot market its products. An important aspect of the credit policy should be identified before establishing an optimum credit policy. The important decision variables of a firms' credit policy are: (1) Credit standards (2) Credit terms and (3) Collection efforts.

(1) Credit Standards

A firm should allow credit only to those customers who contribute good credit risks. The credit followed by the firm has an impact on sales and receivables. The sales and receivables are likely to be high if the credit standards tend to push sales up by attracting more customers. This is, however, accompanied by higher incidence of bad debts loss, a larger investment in receivables, and a higher cost of collection. Stiff credit standards have adverse effects. They tends to depress sales, reduce the incidence of bad debt loss, decrease the investment in receivables, and lower the collection cost. The firm credit standards are influenced by four C's of credit :-

i) Character – The willingness of the customer to pay.

ii) Capacity – The ability of the customer to pay.

iii) Capital – The financial position of the customer.

iv) Condition – The prevailing economic conditions.

Normally, a firm should lower its credit standards to the extent profitability of increased sale exceeds the associated costs. The extent to which credit standard can be liberalised should depend upon the matching between the profits arising due to increased sales and the cost ot be incurred on the increased sales.

(2) Credit Terms

The stipulation under which the firm sells on credit to its customers are called credit terms. Decision on the terms on which credit will be granted may cover various aspects of credit policy, namely selection of credit customers, approval of credit period, acceptance of sales discounts and provision regarding the instruments of security for credit to be accepted. The terms of credit should be determined in the light of the needs of the firm and the established norms and practices of the industry in this regard. Selection of credit customers should be made on the basis of the amount of bad debts losses which a firm can absorb during the span of any given period. "The amount of funds tied up in receivables is directly related to the limits of credit granted to customers. These limits should never be ascertained on the basis of the subject's own requirements, they should be based upon the debt paying power of the customer and his ledger record of the orders and payments."[21] The time duration for which credit is extended to the customers is referred to as credit period. It is generally Stated in terms of a net date. Usually the credit period of the firm is governed by the industry norms, but the firm can extend credit for a longer duration to stimulate sales.

Cash discount is another aspect of credit terms. Many firms offer to grant cash discount to their customers in order to induce the latter to pay their dues early. The cash discount term indicates the rate of discount and the period for which the discount has been offered. If a customer does not avail himself of this offer, he is expected to make the payment by the stipulated date. The most

desirable credit terms which increase the overall profitability of the firm, should be offered to the customers. Credit terms can be used as an instrument to push sales. The financial manager should compare costs and benefits of alternate terms to find out the most desirable credit terms.

(3) Collection Efforts

The collection programme of the firm, should aim at getting the timely recovery of receivables. It may consist[22] of the following :

(i) Monitoring the State of receivables.

(ii) Despatch of letters to customers whose due date is near.

(iii) Telegraphic and telephonic advice to customers around the due date.

(iv) The threat of legal action to overdue accounts and

(v) Legal action against overdue accounts

A rigorous collection programme tends to decrese sales, shorten the average collection period, reduce bad debt percentage and increase the collection expense. A lax collection programme, on the other hand, would push sales up, lengthen the average collection period, increase the bad debt percentage, and perhaps reduce the collection expense.

The study of receivable management in the phramaceutical companies is undertaken with a view to judge whether the working capital tied up in receivables is effciently utilised. The evaluation of the efficiency in receivables management has been done by analysing the size and composition of receivables and effciency of credit and collection policies of the pharmaceutical companies in the State of Maharashtra.

SIZE OF RECEIVABLES:

The study of the size of total receivable is used as a basis to evaluate management of receivables. Table No. R-1 presents the size of receivables in absolute amount in pharmaceutical units during the period between 1989-90 and 1998-99.

The table clearly reveals that the size of receivables of the sample units showed an invariable trend of rise throughout the period of ten years under study. The absolute amount of receivables was Rs. 248.16 crores in 1989-90, increased to Rs. 464.72 crores in 1994-95 and reached a peak level of Rs. 944.69 crores in 1998-99 i.e. it shows an increase by 280.68% as compared to the base year 1989-90. A close look in terms of trend percentage indicates that the pace of growth of total receivables had been steeper after the year 1994-95. The overall trend percentage of the receivables and sales is shown in Table R-2. The increase in the size of total receivables from the year 1995-96 had taken place due to a sharp increase in total sales during the same period. The overall trend of receivables was 18.23% in 1990-91 then it continuously increased and reached a peak level of 280.68% in 1998-99. The growth rate of receivables was lower in the initial years i.e. from 1990-91 to 1994-95, while in the later years receivables growth rate was much higher as compared to sales growth rate. Comparison of the trend reveals that though the sales of the selected units showed a rising trend, the increase in the receivables was much faster and steeper, especially from the year 1995-96. This indicates that the management had tried to push up the sales by giving more credit to the customers. This is alarming if the quality of debtors is not good.

TABLE NO. R - 1

TOTAL RECEIVABLES OF PHARMACEUTICAL COMPANIES DURING THE PERIOD 1989-90 TO 1998-99

(Rs. in crores)

COMPANIES / YEARS	1989-90	1990-91	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97	1997-98	1998-99	Total
1 Burroughs Wellcome Ltd.	13.49	12 58	14.23	23.71	42.26	54.67	31.37	32.44	38 22	41 86	**304.85**
2 Cipla Ltd	24 39	35 22	33 34	44.57	50.03	71.46	97.73	161.07	201 97	259.39	**979.17**
3 Duphar-Interfran Ltd	7.03	8 80	8 89	12.32	15 35	11 54	25 88	37 64	34 37	34.62	**196.44**
4 E Merck Ltd	16 19	24.97	32.45	34 47	23 73	26.17	32 06	32 42	33 60	41 49	**297.55**
5 Fulford Ltd	18.70	20.04	18.26	7.24	8.60	8 45	6 70	12.23	14.27	18 30	**132.79**
6 German Remedies Ltd.	9.91	13 73	17 87	22 32	25 41	32 87	38.43	29.15	37 09	36 93	**263.71**
7 Glaxo Ltd.	40.72	44 04	42.91	50.90	63.89	55 75	84.99	118 46	116.90	129 74	**748.30**
8 Hoechst Marion Roussel Ltd	49.52	48 17	36.62	38.50	42.88	42 58	51 85	71.01	118 91	95 70	**595.74**
9. Knoll Pharmaceuticals Ltd.	9.81	12.04	13.34	16.37	19 23	24.92	30 75	43 65	76 92	53 55	**300.58**
10 Parke-Davis Ltd	10 90	13.66	14.87	15.94	21.35	30.00	29 65	37 35	40 43	31.58	**245.73**
11 Pfizer Ltd	17.24	23 89	26.06	27.61	34 84	44.88	44 35	53.89	70 34	62 40	**405.50**
12. RPG Life Sciences Ltd.	19 59	24.99	24.44	24.19	23.80	33.96	42.62	48 90	76.41	98.91	**417.81**
13 Unichem Laboratories Ltd.	10.67	11.30	11.38	21.38	19.08	27 47	35 32	45 13	42.87	40.20	**264.80**
Total	**248.16**	**293.43**	**294.66**	**339.52**	**390.45**	**464.72**	**551.70**	**723.34**	**902.30**	**944.69**	**5152.97**

Source : Appendix -III

Standard Deviation	231.74
Coefficient of Variation	58.46
r(between Total sales & Total Receivables)	0 92

Coefficient of variation of 58.46% of the sample units indicates that they had followed a less uniform policy for receivables. Increase in the size of the receivables could be better explained with the coefficient of correlation of receivables and sales which was +0.92. This reveals that there exists a very high degree of positive correlation between receivables and sales. This leads to a conclusion that the increase in the sales led to increase in the receivables almost in the same proportion.

Table no. R – 2

TREND PERCENTAGE OF TOTAL RECEIVABLES AND TOTAL SALES

(In Percentage)

YEAR	TREND PERCENTAGE OF TOTAL RECEIVABLES	TREND PERCENTAGE OF TOTAL SALES
1989-90	-----	-----
1990-91	18.23	14.37
1991-92	18.73	22.59
1992-93	36.81	52.91
1993-94	57.33	77.41
1994-95	87.27	90.20
1995-96	122.32	88.64
1996-97	191.48	132.13
1997-98	263.60	153.62
1998-99	280.68	187.76

Source: Appendices I and V

An indepth analysis of the individual unit from Table no. R-1 reveals that unit no. 2 and 7 have very high amount of total receivables; while unit no. 3 and 5 have a very low amount of total

receivables as compared to other sample units. It is evident from the table that amongst all the units only unit no. 5 had a tendency to rise fast. Generally speaking, the closer the product is to the raw materials stage the smaller is the amount of receivables that a firm should accumulate[1].

Unit no. 2 has the highest amount of total receivables of Rs. 979.17 crores. It had receivables of Rs. 24.39 crores in 1989-90 which increased to Rs. 35.22 crores in 1990-91. Thereafter it marginally declined to Rs. 33.34 crores in 1991-92, and for the remaining period it continuously increased and reached a peak level of Rs. 259.39 crores in 1998-99. The increase in total receivables shows a rise of 963.51% over a period of ten years under study. The increase in the total receivables clearly shows poor management of receivables and liberal credit policy followed by the management.

Unit no. 7 had the second highest amount of total receivables of Rs. 748.30 crores. It had receivables of Rs. 40.72 crores in 1989-90, increased to Rs. 44.04 crores in 1990-91. Thereafter it marginally declined to Rs. 42.91 crores. Again shows an increase to Rs. 63.89 crores in 1993-94 and a decline to Rs. 55.75 crores in 1994-95. During the remaining period it constantly increased and reached to a peak level of Rs. 129.74 crores in 1998-99. Though the unit had a very high amount of total receivables, shown in its percentage of total receivables to total current assets as per Table R-3 was one of the lowest among the sample units. So, considering only the absolute amount of total receivables it cannot be concluded that unit had not managed well its account receivables.

Unit no. 3 also has a very low amount of receivables of Rs.196.44 crores. It had receivables of Rs. 7.03 crores in 1989-90 increased to Rs. 15.35 crores in 1993-94 and then declined to

Rs.11.54 crores in 1994-95. Finally it reached a level of Rs.34.62 crores in 1998-99.

Unit no. 5 shows the lowest amount of total receivables of Rs. 132.79 crores. It had receivables of Rs. 18.70 crores in 1989-90 increased to Rs. 20.04 crores in 1990-91. Thereafter it gradually declined and touched a level of Rs. 6.70 crores in 1995-96. In the remaining three years it continuously increased and reached a level of Rs. 18.30 crores in 1998-99. It seems that the management had followed a very conservative credit policy and hence it had the lowest total receivables.

TOTAL RECEIVABLES TO TOTAL CURRENT ASSETS:

Total receivables to total current assets shows the amount of working capital funds blocked in receivables. Table No. R-3 shows total receivables as a percentage to total current assets. It is evident from the table that the overall percentage of total receivables to total current assets shows an erratic trend through out the period under study. It varied between 42.97% in 1992-93 and 52.71% in 1997-98. The receivables to total current assets were 43.03 % in 1989-90, increased to 46.10% in 1990-91 and then marginally decreased to 43.26% in 1991-92. Thereafter it again declined to 42.97 % in 1992-93 and finally reached a level of 50.08% in 1998-99. According to Rao, in a favourable market condition the share of receivables in the current assets should be around 40%[23]. Comparing this with the overall average of sample units of 46.15%, this can be considered to be reasonable and well managed receivables.

TABLE NO. R - 3

TOTAL RECEIVABLES TO TOTAL CURRENT ASSETS OF THE PHARMACEUTICAL COMPANIES DURING THE PERIOD 1989-90 TO 1998-99

(In percentage)

COMPANIES / YEARS	1989-90	1990-91	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97	1997-98	1998-99	Average
1. Burroughs Wellcome Ltd	34.38	33.73	29.39	40.02	57.16	56.63	45.23	36.06	33.53	29.50	**39.56**
2. Cipla Ltd.	55.63	55.25	38.14	40.56	37.38	40.85	33.69	54 23	49.22	50.63	**45.56**
3 Duphar-Interfran Ltd	41 26	41.37	36.71	43.20	44 38	34 87	58 21	69 54	69 82	61.66	**50.10**
4 E. Merck Ltd	44.91	50.95	56.15	51.95	48.75	38 35	42.51	39 34	37.89	42 90	**45.37**
5 Fulford Ltd.	59.35	64.77	67.13	34.71	33 66	29 78	21.37	36 64	43 98	46.07	**43.75**
6 German Remedies Ltd	33 83	38.39	41.48	52.55	50.43	51.84	54.74	48 85	52.47	48.31	**47.29**
7. Glaxo Ltd.	34.75	31.58	28.24	29.53	31.34	32.74	23 70	39.65	39 30	40.11	**33.09**
8 Hoechst Marion Roussel Ltd	37.53	43.73	42.35	39.23	34.92	36.01	39.00	49.11	46 95	55.21	**42.40**
9. Knoll Pharmaceuticals Ltd.	38.02	38.32	33.85	39.38	26.71	36.11	43.62	53.13	55.31	30.08	**39.45**
10. Parke-Davis Ltd.	37.93	41.16	45.05	38.04	51.75	52.12	59.05	57.52	60.65	55.87	**49.91**
11. Pfizer Ltd.	35.63	44.11	46.18	40.78	42.64	49.08	52 73	59.52	66 52	56.23	**49.34**
12. RPG Life Sciences Ltd.	51.40	66.73	56.86	50.02	47.89	52.03	47.60	45.55	59.42	67.46	**54.50**
13. Unichem Laboratories Ltd.	54.83	49.15	40.88	58.58	55.85	58.81	65.97	74.51	70.15	67.01	**59.57**
Average	**43.03**	**46.10**	**43.26**	**42.97**	**43.30**	**43.79**	**45.19**	**51.05**	**52.71**	**50.08**	**46.15**
Pharmaceutical Industry in India	47.12	49.37	45.00	47.11	39 56	53.05	58.29	59.80	59.51	60.04	**51.88**
All Industries in India	47.03	48.32	48.33	47.55	48.85	48.25	48.40	51.74	54.01	52.47	**49.49**

Source : Appendices -I and II

Std. Dev	6.63
C.V.	14.36

The overall average of total receivables to total current assets of 46.15% of sample units, as compared to 51.88% of 'Pharmaceutical Industry in India' and 49.49% of 'All Industries in India' was marginally lower. Further, it is observed that 'Pharmaceutical Industry in India', 'All Industries in India' and the selected pharmaceutical companies in the State of Maharashtra all showed an increasing trend during the period from 1989-90 to 1998-99. The coefficient of variation of sample units was 14.36%, clearly indicating that the sample units had followed a uniform policy of receivables to total current assets during the period under study.

An indepth analysis reveals that units no. 3, 12 and 13 have a very high percentage of receivables, while units no. 1, 7 and 9 have a very low percentage of receivable to total current assets.

Unit no. 3 shows a very high average percentage of receivables of 50.10% during the period under study. It indicates a fluctuating trend throughout the ten years of period under study. The percentage of receivables to current assets was 41.26% in 1989-90 increased to 44.38% in 1993-94. Thereafter it declined to 34.87% in 1994-95 and again increased to a very high level of 69.82% in 1997-98. After that it marginally declined to 61.66% in 1998-99.

Unit no.12 has a very high average percentage of receivables of 54.50% during the period from 1989-90 to 1998-99. It had 51.40% of receivables in 1989-90, increased significantly to 66.73% in 1990-91. Thereafter it gradually came down to 45.55% in 1996-97.It again increased and reached a peak level of 67.46% in 1998-99. Very high percentage of account receivables indicates that 54% of working capital fund was blocked in receivables only.

Unit no.13 shows the highest average percentage of total receivables to total current assets i.e. 59.57% as against the overall average of 46.15 % of sample units. The percentage of receivables had been constantly very high throughout the period of ten years under study. It was 54.83% in 1989-90 declined to 40.88% in 1991-92. Thereafter it increased to 58.58% in 1992-93 and which it declined to 55.85% in 1993-94. It again increased for three consecutive years and in 1996-97 it was at a peak level of 74.51% then it marginally declined to 67.01% in 1998-99. This confirms the liberal credit policy adopted by the management.

Unit no. 1 has a very low average percentage of receivable of 39.56% during the period under study. It had 34.38% receivables to total current assets in 1989-90, decreased to 29.39% in 1991-92. Thereafter it increased to 56.63% in 1994-95 and then gradually declined down to 29.50% in 1998-99.

Unit no. 7 presents the lowest average of 33.09% of receivables to total current assets. This unit had a fluctuating trend throughout the period under study. It had 34.75% of receivables in 1989-90, decreased to low level of 23.70% in 1995-96. Thereafter it shows an increasing trend and reached 40.11% in 1998-99. It seems that the management was very careful in granting credit and was able to realise the amount within the stipulated period.

Unit no. 9 also has a very low average percentage of receivables of 39.45% during the period under study. It had receivables of 38.02% in 1989-90, increased to 39.38% in 1992-93. Thereafter it declined to 26.71% in 1993-94 and then shows a continuous increase reaching 55.31% in 1997-98; but during the year 1998-99 it drastically fell to 30.08%.

COMPOSITION OF RECEIVABLES:

It is evident from the above discussion that receivables constitute the most important element of total current assets and therefore, efficient management of receivables is a must. Detailed analysis of it also enables us to find out the component where the concentration is the highest. The composition of receivables consists of debtors, loans & advances and other receivables. The size of the total receivables along with its components is shown in Fig-6.

SIZE OF TOTAL DEBTORS AND ITS PERCENTAGE TO TOTAL RECEIVABLES:

Table R- 4 shows the size of total debtors and its percentage to total receivables. The size of total debtors indicates a continuous upward trend; whereas the percentage of total debtors to total receivables marks a fluctuating trend throughout the period. The overall average of total debtors to total receivables varied between 49.23% in 1997-98 and 58.44% in 1992-93. The total debtors to total receivables were 57.20% in 1989-90 decreased to 54.55 % in 1991-92 and then increased to 58.44 % in 1992-93. Thereafter it continuously maintained a downward trend till the year 1997-98 and decreased to 49.23 %. In 1998-99 it marginally increased to 51.45 %.

The overall average of total debtors to total receivables of 53.76% of sample units, as compared with 52.86% of the 'Pharmaceutical Industry in India' and 48.38% of 'All Industries in India' is marginally higher. Further, it is observed that total debtors to total receivables percentage of the 'Pharmaceutical Industry in India',

FIG. 6

COMPONENTS OF RECEIVABLES

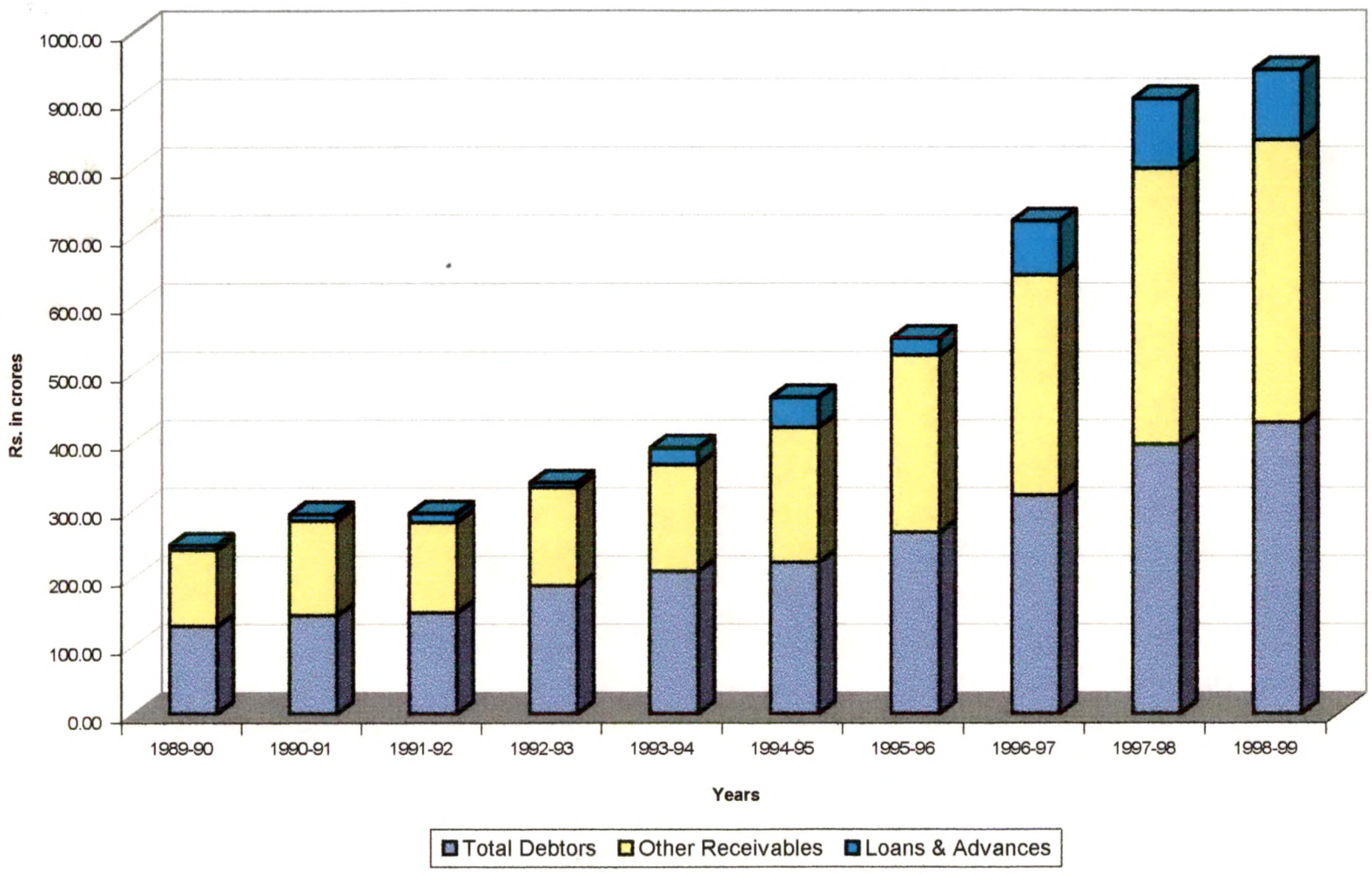

TABLE NO. R - 4

TOTAL DEBTORS AND ITS PERCENTAGE TO TOTAL RECEIVABLES OF THE PHARMACEUTICALS COMPANIES DURING THE PERIOD 1989-90 TO 1998-99

(Rs in crores)

COMPANIES / YEARS	1989-90	1990-91	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97	1997-98	1998-99	Total
1. Burroughs Wellcome Ltd.	7.21	4.67	6.16	12.35	22.75	31.97	9.89	8.67	12 41	16.83	**132.91**
	(53.45)	(37.12)	(43.29)	(52.09)	(53.83)	(58 48)	(31.53)	(26 73)	(32 47)	(40.19)	**(42.92)**
2. Cipla Ltd.	7.61	10.41	6.01	13.97	14.79	21.26	31.62	37 50	53.50	59.23	**255.90**
	(31.20)	(29.56)	(18 03)	(31.34)	(29.56)	(29.75)	(32.35)	(23.28)	(26 49)	(22.83)	**(27.44)**
3 Duphar-Interfran Ltd.	5.34	7.20	7.11	9.59	13.06	8.86	9.87	4.63	4 54	5.71	**75.91**
	(75.96)	(81.82)	(79.98)	(77.84)	(85 08)	(76.78)	(38.14)	(12 30)	(13 21)	(16.49)	**(55.76)**
4 E. Merck Ltd.	12.76	19.18	25.11	27.56	18.31	19.30	23 68	24 61	26 83	29 90	**227.24**
	(78.81)	(76.81)	(77 38)	(79.95)	(77.16)	(73.75)	(73 86)	(75 91)	(79 85)	(72.07)	**(76.56)**
5 Fulford Ltd.	12.47	14.85	12 90	3.29	3.75	4.02	3.48	9.38	11.53	14.42	**90.09**
	(66.68)	(74.10)	(70 65)	(45 44)	(43 60)	(47.57)	(51.94)	(76.70)	(80 80)	(78.80)	**(63.63)**
6. German Remedies Ltd.	6.38	6.96	9.35	13.37	14.62	15.56	16.27	21.12	25 22	27.22	**156.07**
	(64.38)	(50.69)	(52.32)	(59.90)	(57.54)	(47.34)	(42.34)	(72.45)	(68.00)	(73.71)	**(58.87)**
7. Glaxo Ltd.	13.40	13.52	12.90	17.37	24.67	20.45	37.53	60.79	61.38	74.49	**336.50**
	(32 91)	(30.70)	(30.06)	(34.13)	(38.61)	(36.68)	(44.16)	(51 32)	(52.51)	(57.41)	**(40.85)**
8. Hoechst Marion Roussel Ltd.	23.05	16.79	19.40	22.50	25.02	14.80	27.31	39.85	69 49	58.49	**316.70**
	(46 55)	(34.86)	(52.98)	(58.44)	(58 35)	(34.76)	(52.67)	(56.12)	(58 44)	(61.12)	**(51.43)**
9. Knoll Pharmaceuticals Ltd.	4.32	5.69	7.42	8.46	9 32	13.60	21.27	22.94	20 73	19.87	**133.62**
	(44.04)	(47.26)	(55.62)	(51.68)	(48.47)	(54.57)	(69 17)	(52 55)	(26.95)	(37.11)	**(48.74)**
10. Parke-Davis Ltd.	5.29	6.78	7.48	9.51	16.06	17.31	16 78	16 75	21 38	14.98	**132.32**
	(48.53)	(49.63)	(50.30)	(59.66)	(75.22)	(57.70)	(56.59)	(44 85)	(52 88)	(47.44)	**(54.28)**
11. Pfizer Ltd.	8.63	11.43	10.84	15.72	16.61	16.99	19.99	21 55	24.62	23.17	**169.55**
	(50 06)	(47.84)	(41.60)	(56.94)	(47 68)	(37.86)	(45.07)	(39.99)	(35.00)	(37.13)	**(43.92)**
12 RPG Life Sciences Ltd.	14.81	19.29	16.26	18.01	15 64	17.24	21.54	23.09	35 25	55.47	**236.60**
	(75.60)	(77.19)	(66.53)	(74.45)	(65.71)	(50.77)	(50 54)	(47.22)	(46 13)	(56.08)	**(61.02)**
13. Unichem Laboratories Ltd.	8 05	8.34	8.01	16.64	14.79	21 34	27.53	30.63	28 81	27.55	**191.69**
	(75.45)	(73.81)	(70.39)	(77.83)	(77 52)	(77.68)	(77.94)	(67.87)	(67 20)	(68.53)	**(73.42)**
Total	**129.32**	**145.11**	**148.95**	**188.34**	**209.39**	**222.70**	**266.76**	**321.51**	**395.69**	**427.33**	**2455.10**
Average Percentage	**(57.20)**	**(54.72)**	**(54.55)**	**(58.44)**	**(58.33)**	**(52.59)**	**(51.25)**	**(49.79)**	**(49.23)**	**(51.45)**	**(53.76)**
Pharmaceutical Industry in India	(55.61)	(55.24)	(54.10)	(58.60)	(54.37)	(46.52)	(47.31)	(49 72)	(53.04)	(54.10)	**(52 .86)**
All Industries in India	(48.42)	(47.95)	(48.73)	(47.72)	(50.28)	(50.04)	(48.59)	(47.99)	(45 58)	(48.46)	**(48.38)**

Source : Appendix - III

Note : Figures in brackets indicates percentages to total receivables.

Std. Dev.	(12.98)
C.V.	(24.15)

'All Industries in India' and the selected pharmaceutical companies in the State of Maharashtra moved in a narrow range throughout the period under study. The coefficient of variation of sample units was 24.15% which clearly indicates that the sample units had followed a uniform policy of maintaining total debtors during the period under study.

An indepth analysis of the table reveals that unit no. 4 and 13 had a very high percentage of total debtors, while unit no. 2 had a very low percentage of total debtors to total receivables. Out of the thirteen selected units, 46.15% of the units had a higher than overall average, while 53.85% of the units had a lower than overall average percentage of debtors to total receivables.

Unit no. 4 shows the highest percentage of total debtors to total receivables i.e. 76.56%. This percentage had been constantly very high; it was 78.81% in 1989-90 and declined to 76.81% in 1990-91. Thereafter it continuously increased and reached a peak level of 79.95% in 1992-93, declined to 73.75% in 1994-95, and again increased for three consecutive years to 79.85% in 1997-98. Finally it came down to 72.07% in 1998-99.

Unit no, 13 also has a very high average percentage of total debtors of 73.42% to total receivables during the period 1989-90 to 1998-99. It had 75.45% of debtors in 1989-90, declined to 70.39% in 1991-92. Thereafter it continuously increased and reached a peak level of 77.94% in 1995-96, and came down to 68.53% in 1998-99.

Unit no. 2 has the lowest average percentage of total debtors to total receivables i.e. 27.44%. The percentage of debtors for this unit had been consistently low; it was 31.20% in 1989-90, declined to 18.03% in 1991-92 and then increased to 31.34% in 1992-93.

Thereafter it decreased to 29.56% in 1993-94 and again increased to 32.35% in 1995-96. Finally it came down to 22.83% in 1998-99.

Since the proportion of total debtors to total receivables in the selected pharmaceutical units was very high it necessiates further analysis of the composition of debtors indepth.

COMPOSITION OF TOTAL DEBTORS:

Debtors are divided in two parts: (a) Debtors exceeding six months and (b) other debtors. The analysis of their composition provides a sound and meaningful base of liquidity of sundry debtors.

SIZE OF DEBTORS EXCEEDING SIX MONTHS AND ITS PERCENTAGE TO TOTAL DEBTORS:

Table R-5 shows the size of debtors exceeding six months and its percentage to total debtors. It reveals that overall average was 7.92%. It marks a mixed trend throughout the period under study. It varied between 6.35% in 1995-96 and 10.18% in 1998-99. The composition of debtors indicates a very healthy sign, as more than 90% of the total debtors are less then six months old. This clearly establishes the fact that the selected pharmaceutical companies we following a stringent collection policy and did not allow the debts to get old.

The overall average of debtors exceeding six months to total debtors of 7.92% of sample units, as compared with 12.83% of 'Pharmaceutical Industry in India' and 17.99% of 'All Industries in India' is lower. This indicates that the selected units followed a better

TABLE NO. R - 5

TOTAL DEBTORS EXCEEDING SIX MONTHS AND ITS PERCENTAGE TO TOTAL DEBTORS OF THE PHARMACEUTICALS COMPANIES DURING THE PERIOD 1989-90 TO 1998-99

(Rs. in crores)

COMPANIES / YEARS	1989-90	1990-91	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97	1997-98	1998-99	Total
1. Burroughs Wellcome Ltd.	0.17	0.21	0.05	0.09	0.06	0.14	0.26	0 40	0.48	0.69	2.55
	(2.36)	(4.50)	(0.81)	(0.73)	(0.26)	(0.44)	(2 63)	(4.61)	(3.87)	(4.10)	**(2.43)**
2. Cipla Ltd	0.11	0.53	0.21	0.27	0.47	1.39	3.49	6.49	7.99	9.50	30.45
	(1.45)	(5.09)	(3.49)	(1.93)	(3.18)	(6 54)	(11 04)	(17.31)	(14.93)	(16.04)	**(8.10)**
3 Duphar-Interfran Ltd.	0.34	0.29	0.56	0.64	0 60	0.59	0.49	0.43	0 18	0.01	4.13
	(6.37)	(4.03)	(7.88)	(6 67)	(4 59)	(6 66)	(4.96)	(9.29)	(3 96)	(0.18)	**(5.46)**
4. E. Merck Ltd.	0.78	2.85	1.99	4.61	1.57	2 45	2.83	3.95	2.50	2.20	25.73
	(6.11)	(14.86)	(7.93)	(16.73)	(8.57)	(12 69)	(11 95)	(16 05)	(9 32)	(7 36)	**(11.16)**
5. Fulford Ltd	0.35	0.46	0.74	0.51	0 47	0 22	0.16	0.07	0 00	0.00	2 98
	(2.81)	(3.10)	(5.74)	(15.50)	(12 53)	(5.47)	(4.60)	(0.75)	(0.00)	(0.00)	**(5.05)**
6. German Remedies Ltd.	0.74	0.54	0.70	0.83	0.62	0.70	0.87	0 90	0 00	1.84	7.74
	(11.60)	(7.76)	(7.49)	(6.21)	(4.24)	(4 50)	(5.35)	(4.26)	(0.00)	(6.76)	**(5.82)**
7 Glaxo Ltd.	3.91	1.76	1.01	2.76	3.41	2.82	1.48	6.06	6.87	9.20	39.28
	(29.18)	(13.02)	(7.83)	(15.89)	(13.82)	(13.79)	(3.94)	(9.97)	(11.19)	(12.35)	**(13.10)**
8. Hoechst Marion Roussel Ltd.	4.27	1.70	5.15	4.94	2.37	1.80	1.83	1.68	3 47	10.91	38.12
	(18.52)	(10.13)	(26.55)	(21.96)	(9.47)	(12 16)	(6.70)	(4.22)	(4.99)	(18 65)	**(13.33)**
9. Knoll Pharmaceuticals Ltd.	0.21	0.27	0.65	0.82	1.25	1.23	1.31	2.16	1.03	1.74	10.67
	(4.86)	(4 75)	(8.76)	(9.69)	(13.41)	(9.04)	(6.16)	(9.42)	(4.97)	(8.76)	**(7.98)**
10. Parke-Davis Ltd.	0.20	0.39	0.44	0.34	0.37	0.86	0.73	1.12	1.03	1.71	7.19
	(3.78)	(5.75)	(5 88)	(3.58)	(2.30)	(4.97)	(4.35)	(6.69)	(4.82)	(11.42)	**(5.35)**
11. Pfizer Ltd	0.14	0.21	0.24	0.30	0.46	0.90	0.82	0.95	0.92	3.17	8.11
	(1.62)	(1.84)	(2.21)	(1.91)	(2.77)	(5.30)	(4.10)	(4.41)	(3 74)	(13.68)	**(4.16)**
12. RPG Life Sciences Ltd.	3.08	4.49	3.31	1.72	1 36	1.33	1.49	0 18	8 50	12.76	38.22
	(20.80)	(23.28)	(20.36)	(9.55)	(8.70)	(7.71)	(6.92)	(0.78)	(24.11)	(23.00)	**(14.52)**
13. Unichem Laboratories Ltd.	0.57	0.27	0.19	0.63	0.76	1 24	2.71	4.61	0.70	2.77	14.45
	(7.08)	(3.24)	(2.37)	(3.79)	(5.14)	(5.81)	(9.84)	(15.05)	(2 43)	(10.05)	**(6.48)**
Total	14.87	13.97	15.24	18.46	13.77	15.67	18.47	29.00	33 67	56.50	229.62
Average Percentage	**(8.96)**	**(7.79)**	**(8.25)**	**(8.78)**	**(6.85)**	**(7.31)**	**(6.35)**	**(7.91)**	**(6.80)**	**(10.18)**	**(7.92)**
Pharmaceutical Industry in India	(12.86)	(10.44)	(11.22)	(10.00)	(10.02)	(10.40)	(14.13)	(17.06)	(14.59)	(17.57)	**(12.83)**
All Industries in India	(12.48)	(18 32)	(20.15)	(16.83)	(17.53)	(18 61)	(17.00)	(17 85)	(20.75)	(20.42)	**(17.99)**

Source : Appendix - III

Note : Figures in brackets indicates percentages to total Debtors.

Std Dev.	(3.74)
C.V.	(47.24)

policy with regards to keeping this type of debtors at a lower level as compared to the 'Pharmaceutical Industry in India' and 'All Industries in India' industry. The coefficient of variation of sample units was 47.24%, a indicating that debtors exceeding six months to total debtors followed a uniform pattern among the units during the period under study.

An indepth analysis reveals that the unit no. 7, 8 and 12 have very high percentage of debtors exceeding six months, while unit no. 1 and 11 have a very low percentage of debtors exceeding six months.

Unit no. 7 shows the average debtors outstanding exceeding more than six months which is 13.10%. It had a very high level of 29.18% of such debtors in 1989-90, declined to 7.83% in 1991-92. Thereafter it increased to 13.79% in 1994-95 and then declined significantly to 3.94% in 1995-96. Finally it increased to 12.35% in 1998-99. It is always better to reduce or avoid the investment in this category of receivable, because it not only blocks the working capital funds; but also adversely affects the profitability of the concern.

Unit no. 8 shows a very high average debtors exceeding six months of 13.33%. It had 18.52% of such debtors in 1989-90, and then declined to 10.13% in 1990-91. Thereafter it increased to a peak level of 26.55% in 1991-92; then gradually declined and reached 4.22% in 1996-97. Finally it increased to 18.65% in 1998-99.

Unit no. 12 had the highest average outstanding debtors of 14.52% exceeding more than six months. Out of the ten years under study, during the first three years and the last two years of study it had more than 20% of such debtors. It is always desirable to reduce the proportion of this category of debtors. It will assist in improving liquidity of the unit and will increase the profitability too.

Unit no. 1 had the lowest average debtors exceeding six months of 2.43%. It had 2.36% of such debtors in 1989-90, declined to the ever-lowest level of 0.26% in 1993-94. Thereafter it increased to 4.61% in 1996-97 and again declined to 4.10% in 1998-99. The trend clearly indicates that the unit had managed its debts strictly in accordance with the policies formulated by it and therefore it was possible by the unit to reduce the investment of working capital in this component.

Unit no. 11 had also very low average debtors exceeding six months. It was 4.16% during the period under study. It had 1.62% of such debtors in 1989-90, increased to 5.30% in 1994-95. Thereafter it declined to a low level of 3.74% in 1997-98, then increased significantly to 13.68% in 1998-99. It seems that during the last year of study the management might have lost the credit standard and therefore the percentage of debtors exceeding six months was very high.

SIZE OF DEBTORS LESS THAN SIX MONTHS AND ITS PERCENTAGE TO TOTAL DEBTORS:

Table R-6 shows the size of debtors less than six months and its percentage to total debtors during the period under study. It was 91.04 % in 1989-90, increased to 93.65 % in 1995-96 and then declined to 89.82% in 1998-99. Consistent higher percentage in this category of debtors is considered to be satisfactory because it increases the liquidity position of the unit.

The overall average percentage of debtors less than six months as a percentage to total debtors of 92.08% of sample units, as compared to 87.17% of 'Pharmaceutical Industry in India' and 82.01%

TABLE NO. R - 6

TOTAL DEBTORS LESS THAN SIX MONTHS AND ITS PERCENTAGE TO TOTAL DEBTORS OF THE PHARMACEUTICALS COMPANIES DURING THE PERIOD 1989-90 TO 1998-99

(Rs in crores)

COMPANIES / YEARS	1989-90	1990-91	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97	1997-98	1998-99	Total
1. Burroughs Wellcome Ltd.	7.04	4.46	6.11	12.26	22.69	31.83	9.63	8.27	11.93	16.14	130 36
	(97.64)	(95.50)	(99.19)	(99.27)	(99.74)	(99.56)	(97.37)	(95.39)	(96 13)	(95.90)	**(97.57)**
2. Cipla Ltd.	7.50	9.88	5.80	13.70	14.32	19.87	28.13	31.01	45.51	49.73	225.45
	(98.55)	(94.91)	(96.51)	(98.07)	(96.82)	(93.46)	(88.96)	(82.69)	(85.07)	(83.96)	**(91.90)**
3. Duphar-Interfran Ltd.	5.00	6.91	6.55	8.95	12.46	8.27	9.38	4.20	4.36	5.70	71.78
	(93.63)	(95.97)	(92.12)	(93.33)	(95 41)	(93.34)	(95.04)	(90 71)	(96 04)	(99.82)	**(94.54)**
4 E Merck Ltd	11.98	16.33	23.12	22.95	16.74	16 85	20.85	20.66	24 33	27.70	201 51
	(93 89)	(85.14)	(92.07)	(83 27)	(91.43)	(87 31)	(88 05)	(83 95)	(90 68)	(92.64)	**(88.84)**
5 Fulford Ltd	12.12	14 39	12.16	2.78	3 28	3 80	3 32	9 31	11 53	14.42	87.11
	(97.19)	(96 90)	(94.26)	(84.50)	(87.47)	(94.53)	(95.40)	(99 25)	(100 00)	(100.00)	**(94.95)**
6. German Remedies Ltd.	5.64	6.42	8.65	12.54	14.00	14.86	15.40	20 22	25 22	25 38	148 33
	(88.40)	(92.24)	(92.51)	(93.79)	(95.76)	(95 50)	(94.65)	(95 74)	(100 00)	(93 24)	**(94.18)**
7. Glaxo Ltd.	9.49	11.76	11.89	14.61	21.26	17.63	36 05	54.73	54.51	65.29	297.22
	(70.82)	(86.98)	(92.17)	(84.11)	(86.18)	(86.21)	(96.06)	(90 03)	(88 81)	(87.65)	**(86.90)**
8. Hoechst Marion Roussel Ltd.	18.78	15.09	14.25	17.56	22.65	13.00	25.48	38.17	66.02	47.58	278 58
	(81.48)	(89.87)	(73.45)	(78.04)	(90.53)	(87.84)	(93.30)	(95.78)	(95.01)	(81.35)	**(86.67)**
9. Knoll Pharmaceuticals Ltd.	4.11	5.42	6.77	7.64	8.07	12.37	19.96	20 78	19.70	18.13	122.95
	(95.14)	(95.25)	(91.24)	(90.31)	(86.59)	(90.96)	(93 84)	(90.58)	(95 03)	(91.24)	**(92.02)**
10. Parke-Davis Ltd.	5.09	6.39	7.04	9.17	15.69	16.45	16.05	15.63	20.35	13.27	125.13
	(96.22)	(94.25)	(94.12)	(96.42)	(97.70)	(95 03)	(95 65)	(93 31)	(95 18)	(88.58)	**(94.65)**
11. Pfizer Ltd	8.49	11.22	10.60	15.42	16.15	16.09	19.17	20 60	23 70	20.00	161.44
	(98.38)	(98.16)	(97.79)	(98.09)	(97.23)	(94.70)	(95.90)	(95.59)	(96.26)	(86.32)	**(95.84)**
12. RPG Life Sciences Ltd.	11.73	14.80	12.95	16.29	14.28	15.91	20.05	22.91	26.75	42.71	198 38
	(79.20)	(76.72)	(79.64)	(90.45)	(91.30)	(92.29)	(93.08)	(99.22)	(75 89)	(77.00)	**(85.48)**
13 Unichem Laboratories Ltd.	7.48	8.07	7.82	16.01	14 03	20.10	24.82	26.02	28 11	24.78	177 24
	(92.92)	(96.76)	(97 63)	(96.21)	(94 86)	(94.19)	(90.16)	(84.95)	(97 57)	(89.95)	**(93.52)**
Total	114.45	131.14	133.71	169.88	195.62	207.03	248.29	292 51	362.02	370.83	2225.48
Average Percentage	**(91.04)**	**(92.21)**	**(91.75)**	**(91.22)**	**(93.15)**	**(92.69)**	**(93.65)**	**(92.09)**	**(93.20)**	**(89.82)**	**(92.08)**
Pharmaceutical Industry in India	(87 14)	(89.56)	(88 78)	(90.00)	(89.98)	(89.60)	(85.87)	(82 94)	(85 41)	(82.43)	**(87.17)**
All Industries in India	(87.52)	(81.68)	(79.85)	(83.17)	(82 47)	(81.39)	(83 00)	(82.15)	(79 25)	(79.58)	**(82.01)**

Source : Appendix - III

Note : Figures in brackets indicates percentages to total Debtors.

Std. Dev.	(3.74)
C V	(4 06)

of 'All Industries in India' is marginally higher. This shows that the sample units had better management of receivables as compared to the 'Pharmaceutical Industry in India' and 'All Industries in India'. The coefficient of variation of sample units is very low at 4.06% which clearly indicates that with regard to the debtors less than six months there is homogeneity among the units during the period under study.

An indepth analysis of the table reveals that units no. 1 and 11 have a very high level of debtors less than six months. In contrast to this unit no. 7, 8 and 12 have a very low level of debtors less than six months.

Unit no. 1 has the highest average debtors less than six months of 97.57% during the period under study. It had 97.64% of such debtors in 1989-90 which increased to 99.74% in 1993-94. Thereafter it gradually declined to 95.90% in 1998-99. The high proportion in this category shows that the quality of debtors is good.

Unit no.11 also had a very high level of debtors less than six months. It had an average 95.84% of debtors less than six months during the period under study. It had 98.38% of debtors less than six months in 1989-90, decreased to 97.79% in 1991-92. It increased to 98.09% in 1992-93 and declined to 94.70% in 1994-95. Thereafter it increased to 96.26% in 1997-98 later declined to 86.32% in 1998-99. Though the unit had a very high average of debtors less than six months, it shows a declining trend in the later period of study. This is not a healthy sign because it may result in heavy loss on account of higher bad debts and may reduce the return on investment.

Unit no. 7 has a comparatively low average debtors less than six months of 86.90% during the period 1989-90 to 1998-99. It had 70.82% of such debtors in 1989-90 which increased to 96.06% in

1995-96. Thereafter it continuously declined and reached a low level of 87.65% in 1998-99.

Unit no. 8 shows a low level of average debtors less than six months at 86.67%. It had 81.48% of debtors less than six months in 1989-90 declined to 73.45% in 1991-92. Thereafter it increased to 95.78% in 1996-97 and again declined to 81.35% in 1998-99.

Unit no. 12 has the lowest average debtors less than six months at 85.48% during the period under study. It had 79.20% of such debtors during 1989-90 which increased to 99.22% in 1996-97. Thereafter it declined and reached to the lowest level of 77% in 1998-99. It is a grave position that the unit not only had the lowest level of debtors less than six months, but also had a declining trend which reveals that the overall quality of debtors were deteriorating over a period of time. This situation is alarming and the management should reconsider its collection policy.

SIZE OF LOANS AND ADVANCES AND ITS PERECENTAGE TO TOTAL RECEIVABLES:

Table No. R-7 shows the size and the relative proportion of component of loans and advances to total receivables. This table reveals that the percentage of loans and advances to total receivables marks more or less an upward trend through out the period. It varied between 1.66% in 1992-93 and 12.96% in 1998-99. The overall average of loans and advances to total receivables was a negligible percentage of 6.08%. The loans and advances to total receivables was 3.29% in 1989-90, decreased to 1.66% in 1992-93 and thereafter increased to a level of 12.96% in 1998-99.

TABLE NO. R - 7

LOANS AND ADVANCES AND ITS PERCENTAGE TO TOTAL RECEIVABLES OF THE PHARMACEUTICALS COMPANIES DURING THE PERIOD 1989-90 TO 1998-99

(Rs. in crores)

COMPANIES / YEARS	1989-90	1990-91	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97	1997-98	1998-99	Total
1. Burroughs Wellcome Ltd.	0.00	0.00	0 00	0.00	7.25	5.00	0 00	6.10	9.75	12 00	40.10
	(0.00)	(0.00)	(0.00)	(0.00)	(17.16)	(9 15)	(0 00)	(18 80)	(25.51)	(28.65)	**(9.93)**
2. Cipla Ltd	2.33	1.41	3.58	3.09	1.37	6 28	6.86	22 48	15.43	20.34	86.17
	(9.55)	(4.00)	(10.74)	(6.93)	(2.74)	(8.79)	(7.02)	(13.96)	(7 64)	(7.84)	**(7.92)**
3. Duphar-Interfran Ltd.	0.00	0.01	0.01	0.00	0.00	0.00	4 11	15.00	12.75	19.00	50.88
	(0 00)	(0.11)	(0.11)	(0.00)	(0.00)	(0 00)	(15.88)	(39 85)	(37 10)	(54.88)	**(14.79)**
4. E. Merck Ltd.	0.00	1.02	1.83	1.65	0.22	0.00	0.00	0.50	0 00	0.00	5 22
	(0.00)	(4.08)	(5 64)	(4.79)	(0 93)	(0.00)	(0.00)	(1.54)	(0 00)	(0 00)	**(1.70)**
5 Fulford Ltd	0.14	0.00	0.00	0.10	0 25	0.00	0 04	0 02	0 00	0.00	0 55
	(0.75)	(0.00)	(0.00)	(1.38)	(2.91)	(0.00)	(0 60)	(0 16)	(0 00)	(0.00)	**(0.58)**
6. Gorman Remodios Ltd.	1.12	0.01	0.05	0.00	0.14	0.05	0.00	0.00	0.00	0 00	1.37
	(11.30)	(0.07)	(0.28)	(0.00)	(0.55)	(0.15)	(0.00)	(0.00)	(0.00)	(0.00)	**(1.24)**
7. Glaxo Ltd.	0.75	0.80	0.80	0.80	13.48	13.48	9.75	11.35	8.00	8.00	67.21
	(1 84)	(1.82)	(1.86)	(1 57)	(21.10)	(24.18)	(11.47)	(9.58)	(6 84)	(6.17)	**(8.64)**
8. Hoechst Marion Roussel Ltd.	0.72	0.82	0.29	0 64	0.21	9.18	0.04	1.10	0 49	0.00	13.49
	(1.45)	(1.70)	(0.79)	(1.66)	(0.49)	(21.56)	(0.08)	(1.55)	(0.41)	(0.00)	**(2.97)**
9. Knoll Pharmaceuticals Ltd.	0.00	0.26	0.00	0.00	0.00	0.00	0.00	10.54	22 08	19 60	52.48
	(0.00)	(2.16)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(24.15)	(28 71)	(36.60)	**(9.16)**
10. Parke-Davis Ltd.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0 00	0.00	0.00
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	**(0.00)**
11. Pfizer Ltd	3.06	5.86	6.83	1.46	1.97	10.69	4.93	10.69	28 27	16.75	90.51
	(17.75)	(24.53)	(26.21)	(5.29)	(5.65)	(23.82)	(11.12)	(19 84)	(40 19)	(26.84)	**(20.12)**
12. RPG Life Sciences Ltd.	0.03	0.00	0.25	0.00	0.00	0.00	0.00	1.86	5.91	7.41	15.46
	(0.15)	(0.00)	(1.02)	(0.00)	(0.00)	(0.00)	(0.00)	(3.80)	(7 73)	(7.49)	**(2.02)**
13 Unichem Laboratories Ltd	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0 00	0.00	0.00	0.00
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0 00)	(0 00)	**(0.00)**
Total	8.15	10.19	13.64	7.74	24 89	44.68	25.73	79 64	102.68	103.10	420.44
Average Percentage	**(3.29)**	**(2.96)**	**(3.59)**	**(1.66)**	**(3.96)**	**(6.74)**	**(3.55)**	**(10.25)**	**(11.86)**	**(12.96)**	**(6.08)**
Pharmaceutical Industry in India	(4.22)	(3.42)	(4.12)	(5.36)	(5.49)	(7.20)	(8.09)	(8.01)	(5.22)	(4.54)	**(5.57)**
All Industries in India	(5.12)	(6.16)	(6.96)	(6.40)	(6.70)	(7 87)	(10.61)	(9 93)	(8 67)	(7.67)	**(7.61)**

Source : Appendix - III

Note : Figures in brackets indicates percentages to total Debtors.

Std. Dev.	(99.94)
C V	(6 08)

The overall average percentage of loans and advances to total receivables of 6.08% of sample units, as compared with 5.57% of 'Pharmaceutical Industry in India' is marginally higher while it is marginally lower as compared to 7.61% of 'All Industries in India'. The coefficient of variation of sample units was very high 99.94% which clearly indicates that they had not followed a uniform policy at all in maintaining loans and advances during the period under study.

An indepth unit wise analysis reveals that loans and advances as percentage of total receivables was nil in case of unit no. 10 and 13. While in case of unit no. 11 it was as high as 20.12%. Out of the total sample units, 46.15% of the units were having a higher than the overall average, while 53.85% were having a low overall average loans and advances. Unit no. 3 and 11 had exceptionally very high level of loans and advances while unit no. 5 had exceptionally very low level of loans and advances.

Unit no. 3 has a high average of loans and advances of 14.79%. The unit had negligible percentage of loans and advances during the first six years of study. It is of served that in the later years, the management had changed its policy and granted loans and advances to its associate concern which resulted in a high proportion of this component of accounts receivable.

Unit no. 11 has the highest average loans and advances of 20.12% during the ten years of period under study. It shows an erratic trend throughout the ten years period and was 17.75% of loans and advances in 1989-90 which increased to 26.21% in 1991-92. Thereafter it significantly declined to 5.29% in 1992-93, again increased to a level of 40.19% in 1997-98. Finally it declined to 26.84% in 1998-99.

Unit no. 5 indicates a very low average loans and advances of 0.58% during the period under study. Out of the ten years under study, loans and advances were nil for five years, while for the other five years it remained below 3% of the total receivables.

OTHER RECEIVABLES AND ITS PERCENTAGE TO TOTAL RECEIVABLES:

Table R- 8 shows the percentage of other receivables to total receivables and it reveals a fluctuating trend throughout the period. The average percentage of other receivables to total receivables varied between 35.59% in 1998-99 and 45.19% in 1995-96. The overall percentage of other receivables to total receivables was 39.51% in 1989-90, increased to 42.32% in 1990-91 and then declined to 37.70% in 1993-94. Thereafter it increased to 45.19% in 1995-96 and finally declined to the lowest level of 35.59% in 1998-99. Very high level of other receivables was due to the fact that none of the unit had a fixed policy in respect to control of other receivables during the period under study.

The overall average of other receivables as a percentage to total receivables of 40.16% of sample units, as compared with 41.57% of 'Pharmaceutical Industry in India' and 44.02% of 'All Industries in India' was marginally lower. The coefficient of variation of sample units of 26.79% indicates that they followed a uniform policy of maintaining other receivables during the period under study.

An indepth analysis of the individual unit reveals that the unit no. 2 and 7 have a very high percentage of other receivables, while unit no. 4 and 13 have a very low percentage of other receivables to total receivables.

TABLE NO. R - 8

OTHER RECEIVABLES AND ITS PERCENTAGE TO TOTAL DEBTORS OF THE PHARMACEUTICALS COMPANIES DURING THE PERIOD 1989-90 TO 1998-99

(Rs in crores)

COMPANIES / YEARS	1989-90	1990-91	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97	1997-98	1998-99	Total
1. Burroughs Wellcome Ltd.	6.28	7.91	8.07	11.36	12.26	17.70	21.48	17.67	16 06	13.05	131.84
	(46.55)	(62.88)	(56.71)	(47.91)	(29.01)	(32 38)	(68.47)	(54 47)	(42 02)	(31.16)	**(47.16)**
2. Cipla Ltd.	14.45	23.40	23.75	27.51	33.87	43 92	59.25	101 09	133 04	179.82	640.10
	(59.25)	(66.44)	(71.24)	(61.72)	(67.70)	(61.46)	(60.63)	(62.76)	(65 87)	(69.32)	**(64.64)**
3. Duphar-Interfran Ltd.	1.69	1.59	1.77	2.73	2.29	2.68	11.90	18 01	17.08	9.91	69.65
	(24.04)	(18 07)	(19.91)	(22.16)	(14 92)	(23 22)	(45.98)	(47 85)	(49 69)	(28.63)	**(29.45)**
4. E Merck Ltd.	3.43	4.77	5 51	5.26	5.20	6.87	8.38	7.31	6 77	11.59	65 09
	(21.19)	(19.10)	(16.98)	(15.26)	(21 91)	(26 25)	(26 14)	(22.55)	(20 15)	(27.93)	**(21.75)**
5. Fulford Ltd.	6.09	5.19	5.36	3.85	4.60	4.43	3 18	2 83	2.74	3.88	42.15
	(32.57)	(25.90)	(29.35)	(53.18)	(53.49)	(52.43)	(47.46)	(23 14)	(19 20)	(21.20)	**(35.79)**
6 German Remedies Ltd.	2.41	6.76	8.47	8.95	10.65	17.26	22.16	8.03	11.87	9.71	106 27
	(24.32)	(49 24)	(47.40)	(40 10)	(41.91)	(52 51)	(57.66)	(27.55)	(32 00)	(26.29)	**(39.90)**
7 Glaxo Ltd.	26.57	29.72	29.21	32.73	25.74	21 82	37.71	46 32	47.52	47.25	344.59
	(65.25)	(67.48)	(68.07)	(64.30)	(40.29)	(39.14)	(44.37)	(39.10)	(40.65)	(36.42)	**(50.51)**
8. Hoechst Marion Roussel Ltd.	25.75	30.56	16.93	15.36	17.65	18.60	24.50	30 06	48 93	37.21	265.55
	(52.00)	(63.44)	(46.23)	(39.90)	(41.16)	(43 68)	(47.25)	(42 33)	(41.15)	(38.88)	**(45.60)**
9 Knoll Pharmaceuticals Ltd.	5.49	6.09	5.92	7.91	9.91	11.32	9.48	10.17	34.11	14.08	114.48
	(55.96)	(50.58)	(44 38)	(48.32)	(51.53)	(45 43)	(30.83)	(23 30)	(44.34)	(26.29)	**(42.10)**
10. Parke-Davis Ltd.	5.61	6.88	7.39	6.43	5.29	12.69	12.87	20.60	19 05	16 60	113.41
	(51.47)	(50.37)	(49.70)	(40.34)	(24.78)	(42.30)	(43.41)	(55.15)	(47 12)	(52.56)	**(45.72)**
11. Pfizer Ltd.	5.55	6.60	8.39	10.43	16.26	17.20	19 43	21.65	17.45	22.48	145.44
	(32.19)	(27.63)	(32.19)	(37.78)	(46.67)	(38.32)	(43.81)	(40.17)	(24 81)	(36.03)	**(35.96)**
12. RPG Life Sciences Ltd.	4.75	5.70	7.93	6.18	8.16	16.72	21.08	23.95	35.25	36.03	165.75
	(24.25)	(22.81)	(32.45)	(25.55)	(34.29)	(49.23)	(49.46)	(48.98)	(46 13)	(36.43)	**(36.96)**
13. Unichem Laboratories Ltd.	2.62	2.96	3.37	4.74	4.29	6.13	7.79	14.50	14.06	12.65	73.11
	(24.55)	(26.19)	(29.61)	(22.17)	(22.48)	(22.32)	(22.06)	(32.13)	(32 80)	(31.47)	**(26.58)**
Total	110.69	138.13	132.07	143.44	156.17	197.34	259.21	322 19	403.93	414.26	2277.43
Average Percentage	**(39.51)**	**(42.32)**	**(41.86)**	**(39.90)**	**(37.70)**	**(40.67)**	**(45.19)**	**(39.96)**	**(38.92)**	**(35.59)**	**(40.16)**
Pharmaceutical Industry in India	(40.17)	(41.34)	(41.77)	(36.04)	(40.14)	(46.28)	(44.59)	(42.27)	(41.74)	(41.36)	**(41.57)**
All Industries in India	(46.46)	(45.90)	(44.31)	(45.88)	(43.02)	(42.09)	(40.80)	(42.08)	(45.75)	(43.87)	**(44.02)**

Source : Appendix - III

Note : Figures in brackets indicates percentages to total Debtors.

Std Dev.	(26.79)
C V	(10.76)

Unit no. 2 has the highest average of other receivables of 64.64% during the period between 1989-90 and 1998-99. The unit has a high percentage of receivables throughout the period under study. The percentage was 59.25% in 1989-90 which increased to 71.24% in 1991-92 and then declined to 60.63% in 1995-96. Thereafter it maintained an increasing trend up to 1998-99 and reached 69.32%. High percentage of this component of the receivable was mainly due to a very high amount of advance tax and its continuously increasing amount contributed to the higher percentage of receivable.

Unit no. 7 has the second highest average of 50.51% of other receivables to total receivables. It had 65.25% of other receivables in 1989-90, increased to 68.07% in 1991-92. Thereafter it showed a downward trend and declined to 36.42% in 1998-99. Detailed analysis reveals that the units had kept very huge amount of fixed deposits with the other corporate which seems to be the main reason for a very high percentage of other receivable to total receivable.

Unit no. 4 shows the lowest average of other receivables of 21.75% for the period 1989-90 to 1998-99. It had maintained an erratic trend throughout the period under study which was 21.19% in 1989-90 and decreased to 15.26% in 1992-93. Thereafter it increased to 26.25% in 1994-95, again declined to 20.15% in 1997-98. Finally it reached a level of 27.93% in 1998-99. Continuously holding very high level of account receivables led to holding of a lower percentage of other receivables to total receivables.

Unit no. 13 also has very low average of 26.58% of other receivables during the period under study. It had 24.55% of other receivables in 1989-90 increased to 29.61% in 1991-92. Thereafter it

declined to the lowest level of 22.06% in 1995-96 and again increased to 31.47% in 1998-99.

ACCOUNTS RECEIVABLE TO TOTAL SALES RATIO:

In order to assess credit-granting policy followed by the sample units, the size of receivables to total sales is examined as a trenchant tool. Receivables can be expected to fluctuate in direct proportion to the volume of sales, provided sales terms and collection practices do not change. This ratio also shows the revenue-generating capacity of each unit under study. It is be advisable for any concern to have reasonably lower percentage of receivables against the sales which indicates a good realisation of sales revenue.

Table No. R-9 shows account receivables to total sales ratio. The average percentage of accounts receivable to sales was 20.12% in 1989-90 increased to 21.72% in 1990-91. Thereafter it declined to 17.57% in 1993-94 and finally reached 24.21% in 1998-99. It varied between a range of 17.57% in 1993-94 and 28.18% in 1997-98. The overall average account receivables to sales shows fluctuating trend throughout the period under study.

The overall average of account receivables to total sales of 21.57% of sample units, as compared with 15.92% of 'Pharmaceutical Industry in India' and 11.98% of 'All Industries in India' was higher. The coefficient of variation of sample units of 30.98% indicates that they had followed a uniform policy with regard to maintaining accounts receivable as a percentage to total sales during the period under study.

An indepth analysis of the individual unit reveals that the unit no.3 and 12 have a very high percentage of account receivables,

TABLE NO. R - 9

ACCOUNTS RECEIVABLE TO TOTAL SALES RATIO OF PHARMACEUTICAL COMPANIES DURING THE PERIOD 1989-90 TO 1998-99

(In percentage)

COMPANIES / YEARS	1989-90	1990-91	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97	1997-98	1998-99	Average
1. Burroughs Wellcome Ltd.	16.98	13.39	12.36	16.73	24.94	31 08	28.70	17.56	20 12	20 37	**20.22**
2 Cipla Ltd.	26 26	28 49	22 02	22.39	20 38	23.92	26 97	35.59	39.06	41.54	**28.66**
3 Duphar-Interfran Ltd	21.02	22 26	18 05	22.10	24 65	19 34	37 94	85 92	69 22	53 46	**37.40**
4 E. Merck Ltd	24.55	29.35	33 62	28 71	19.50	17 18	18 13	15 73	15 06	15 91	**21.77**
5 Fulford Ltd	37.17	42.17	33.03	10.54	11.05	9.81	7 24	12 56	12.67	14.26	**19.05**
6 German Remedies Ltd.	14.02	20 13	24.55	24.66	24.83	28 24	30.99	20.32	22.40	18 41	**22.86**
7. Glaxo Ltd.	11.98	10.58	8 69	9.18	10 13	9.02	18.47	16 77	15.33	14.87	**12.50**
8. Hoechst Marion Roussel Ltd.	17.32	15 94	13.31	13.11	11.80	13 72	14 58	17.40	21.09	17.93	**15.62**
9 Knoll Pharmaceuticals Ltd	12.04	12.33	11.29	11.13	10.98	10.80	14.77	16 48	27 64	17.90	**14.54**
10 Parke-Davis Ltd.	12 27	13 52	13.01	11.38	14.16	18 21	16.83	20 80	19 30	14 63	**15.41**
11 Pfizer Ltd	13 66	19 93	18.54	16.12	16.29	18 41	17.41	19.67	42 67	23 65	**20.64**
12. RPG Life Sciences Ltd.	33.95	37.84	30 50	23.32	21.25	25 25	24.12	24 26	34.93	40 07	**29.55**
13 Unichem Laboratories Ltd.	20 33	16 38	13.42	22.91	18.44	22.90	28.53	30 87	26 89	21.71	**22.24**
Average	**20.12**	**21.72**	**19.41**	**17.87**	**17.57**	**19.07**	**21.90**	**25.69**	**28.18**	**24.21**	**21.57**
Pharmaceutical Industry in India	13.03	13.36	11.79	13.31	15 29	17.10	17 98	18.35	20 23	18 80	**15.92**
All Industries in India	9 78	10.48	10.75	11.42	12 70	11 56	11.70	13 12	13 79	14.48	**11.98**

Source: Appendices -III and V

Std Dev.	6.68
C V	30 98

while unit no. 7 and 9 have a very low percentage of account receivables to total sales. Under normal conditions, if 30% of receivables are outstanding against their sales, the unit's receivable management is considered to be fair[24]. In this context it is interesting to note that except unit no. 3 all the sample units had the accounts receivable of less than 30% of total sales.

Unit no. 3 shows the highest average of 37.40% of account receivables. It has a fluctuating trend through out the year. It was 21.02% in 1989-90, increased to 22.26% in 1990-91. Thereafter it declined to 18.05% in 1991-92 and later increased to an ever-highest level of 85.92% in 1996-97 and finally reached to 53.46% in 1998-99. This indicates that the management had followed a liberal credit policy in order to increase sales which resulted in disproportionate increase in account receivables as compared to sales.

Unit no. 12 also has a very high level of average account receivables to total sales of 29.55% during the ten years of study period. It was 33.95% in 1989-90, increased to 37.84% in 1990-91. Thereafter it declined to 24.12% in 1995-96, and finally it increased to 40.07% in 1998-99.

Unit no. 7 has the lowest average of accounts receivable of 12.50%. It had 11.98% of accounts receivable to total sales in 1989-90, declined to 8.69% in 1991-92, and then increased to 18.47% in 1995-96. Thereafter it shows a decline to 14.87% in 1998-99. This clearly indicates that the management had managed its accounts receivable quite well.

Unit no. 9 also has a very low average percentage of accounts receivable to total sales i.e. 14.54%. The percentage was 12.04% in 1989-90, increased to 12.33% in 1990-91. Thereafter it declined to 10.80% in 1994-95 and then increased to 27.64% in 1997-98. It finally

came down to 17.90% in 1998-99. It clearly indicates the effective credit management policy followed by the unit. The decline in the ratio from 1990-91 to 1994-95 was mainly due to increase in sales at a higher rate as compared to debtors.

The evaluation of the efficiency of granting credit and collecting past dues has been done through the turnover of debtors and average collection period. The debtors turnover in the pharmaceutical units are presented below:

DEBTORS TURNOVER RATIO:

Debtors turnover ratio indicates the efficiency achieved in using the funds invested in debtors. Higher debtors turnover ratio indicates quick collection and enables the firm to transact a larger volume of business without increase in the investment of receivables. According to Spiller and Gosman: "The analysis of the receivables turnover ratio supplements the information regarding the liquidity of the receivables[25].

Table No. R-10 shows debtors turnover ratio during 1989-90 to 1998-99. The overall average turnover ratio of sample units registered a fluctuating trend through out the period under study and was 11.40 times in 1989-90, increased to 13.69 times in 1991-92 and then shows a downward trend and fell to 10.26 times in 1997-98 and finally it marginally increased to 10.41 times in 1998-99.

The overall average of debtor turnover ratio of 12.06 times of sample units as compared with 6.91 times of 'Pharmaceutical Industry in India' is much higher i e. almost two times. Further to this it is also higher as compared with 9.17 times of 'All Industries in India'. This shows that the selected units had efficient management of

TABLE NO. R - 10

DEBTORS TURNOVER RATIO OF PHARMACEUTICAL COMPANIES DURING THE PERIOD 1989-90 TO 1998-99

(In times)

COMPANIES / YEARS	1989-90	1990-91	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97	1997-98	1998-99	Average
1. Burroughs Wellcome Ltd.	11.02	15.82	21.26	15.31	9.66	6.43	5.22	19 90	18.02	14.06	**13.67**
2. Cipla Ltd	12.21	13.72	18.44	19 92	17.07	16 57	13.70	13.10	11.36	11.08	**14.72**
3 Duphar-Interfran Ltd.	6.26	6.30	6.88	6.68	5.50	5.44	7.28	6 04	10.83	12 64	**7.39**
4. E. Merck Ltd.	5.17	5.33	4.36	4.56	5.31	8 10	8.23	8 54	8.67	9.20	**6.75**
5 Fulford Ltd.	4.03	3.48	3.98	8.48	22.11	22.17	24 67	15 14	10 77	9.89	**12.47**
6. German Remedies Ltd.	11.08	10.22	8.92	7.97	7.31	7 71	7.79	7.67	7.15	7.65	**8.35**
7. Glaxo Ltd.	25.38	30.94	37.38	36.62	30.02	27.39	15.87	14.37	12.48	12.84	**24.33**
8. Hoechst Marion Roussel Ltd.	12.40	15.17	15.21	14.02	15 29	15.58	16.89	12.16	10.31	8.34	**13.54**
9. Knoll Pharmaceuticals Ltd.	18.85	19.50	18.02	18.52	19.71	20.14	11.94	11.98	12.75	14.74	**16.62**
10 Parke-Davis Ltd.	16.80	16.74	16.04	16.49	11.79	9.88	10 34	10.71	10.99	11.87	**13.16**
11. Pfizer Ltd.	14.63	11.95	12.62	12.90	13.23	14.51	13.78	13.19	7.14	11.04	**12.50**
12 RPG Life Sciences Ltd.	3.90	3.87	4.51	6.05	6.66	8.18	9 11	9 03	7.50	5.44	**6.43**
13. Unichem Laboratories Ltd.	6.52	8.42	10.38	7.57	6.58	6 64	5.07	5 03	5.37	6.57	**6.81**
Average	**11.40**	**12.42**	**13.69**	**13.47**	**13.09**	**12.98**	**11.53**	**11.30**	**10.26**	**10.41**	**12.06**
Pharmaceutical Industry in India	7.68	8.17	9 07	8.74	7.75	6.80	6.30	5 78	5.18	3.58	**6.91**
All Industries in India	10.23	10.68	10.22	9.65	8.86	9 40	9.47	8.51	7.58	7.07	**9.17**

Source: Appendices -II and V

Std. Dev.	4.87
C.V.	40.36

receivables as compared to the 'Pharmaceutical Industry in India' and 'All Industries in India'. The coefficient of variation of sample units of 40.36% indicates that they had followed a uniform policy with regard to debtors during the period under study.

Out of the thirteen selected pharmaceutical units, 53.85% of the sample units have a turnover rate higher than the overall average of 12.06 times, while 46.15% of the units had a low overall average debtors turnover ratio.

An indepth analysis of the table reveals that unit no. 7 has a very high turnover ratio, while unit no. 4, 12 and 13 have a low turnover ratio.

Unit no. 7 shows the highest average turnover had the highest average turnover ratio of 24.33 times over the period under study. This ratio was 25.38 times in 1989-90, increased for two consecutive years and reached an ever-highest level of 37.38 times in 1991-92. Therafter it gradually declines to 12.84 times in 1998-99. This clearly indicates that in the initial years the unit had effectively managed its accounts receivable, but either due to change in the credit policy or inefficient collection department the unit could not maintain the high debtors turnover ratio.

On the other hand unit no. 4 has a very low average turnover rate of 6.75 times. Debtors turnover rate of this unit had been quite low throughout the period under study, It moved in the range of 4.36 times in 1991-92 to 9.20 times in 1998-99. It is encouraging to note that the unit shows an increasing trend of debtors turnover ratio which implies that though it had a lowest average ratio, in the later years of study it improved on this. One of the reasons for low turnover ratio seems to be the undue time taken in collection of outstanding dues.

Unit no. 12 indicates a low average turnover ratio of 6.43 times. It had turnover ratio of 3.90 times in 1989-90 which decreased to 3.87 times in 1990-91 and then gradually increased to 9.11 times in 1995-96. Thereafter it declined to 5.44 times in 1998-99. The decling trend reveals that during the later period of study the debtors were not managed properly. The reason for the sharp decrease in the turnover of debtors can be ainly due to the size of accounts receivable which increased significantly during the year without a corresponding increase in the sales.

Unit no. 13 also has a very low average turnover ratio of 6.81 times during the period from 1989-90 to 1998-99. Turnover ratio had an erratic trend throughout the study period. It was 6.52 times in 1989-90 increased to 10.38 times in 1991-92. Thereafter it declined to 5.03 times in 1996-97, again increased to 6.57 times in 1998-99. A low ratio in the unit suggests slackness of collection efforts and inefficient receivables management.

AVERAGE DEBT COLLECTION PERIOD:

Average debt collection period denotes the relationship between the average trade debtors and sales per day. It indicates the average number of days for which a firm has to wait before its receivables are converted into cash. It measures the quality of debtors. The shorter the average collection period, the better is the quality of debtors. Shorter collection period implies quick payment by debtors. According to Erciites: "The average collection period is a significant measure of the collection activity and the quality of accounts receivable"[26].

Table No. R-11 shows the average debt collection period. The average collection period of the sample units was 44 days in 1989-90 declined to 36 days in 1994-95. It increased to 39 days in 1997-98 and then marginally declined to 38 days in 1989-99. It is felt that the selected units should concentrate more on the formulation of attractive and coherent credit and collection policies. These policies determine the eventual magnitude of the units' investment in receivables and return on them.

The overall average debt collection period of 39 days of sample units, as compared to 57 days of the 'Pharmaceutical Industry in India' is much lower. Average debt collection period of the sample units was marginally lower as compared to 40 days of 'All Industries in India'. The coefficient of variation of sample units was 37.13% which indicates that they had followed a uniform policy of debt collection period during the period under study.

An indepth analysis of the table reveals that the unit no. 4, 12 and 13 have a very high debt collection period, while unit no. 2, 7 and 9 have a very low average collection period.

Unit no. 4 shows a high average debt collection period of 59 days. It presents a mixed trend of upward and downward during the period under study and had 71 days of collection period in 1989-90 which decreased to 69 days in 1990-91 and then increased to a peak level of 84 days in 1991-92. Thereafter it gradually declined to 40 days in 1998-99. It could be observed from the analysis that the management of the unit had not laid down any clear-cut policy on credit and collections.

Unit no. 12 has the highest average debt collection period of 62 days during the period. It had 94 days of debt collection period in 1989-90. Thereafter it gradually declined to 40 days in 1996-97, and

TABLE NO. R - 11

AVERAGE DEBT COLLECTION PERIOD OF PHARMACEUTICAL COMPANIES DURING THE PERIOD 1989-90 TO 1998-99

(In no.of days)

COMPANIES / YEARS	1989-90	1990-91	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97	1997-98	1998-99	Average
1. Burroughs Wellcome Ltd.	33	23	17	24	38	57	70	18	20	26	**33**
2 Cipla Ltd.	30	27	20	18	21	22	27	28	32	33	**26**
3. Duphar-Interfran Ltd	58	58	53	55	66	67	50	60	34	29	**53**
4 E Merck Ltd.	71	69	84	80	69	45	44	43	42	40	**59**
5. Fulford Ltd.	90	105	92	43	17	16	15	24	34	37	**47**
6 German Remedies Ltd.	33	36	41	46	50	47	47	48	51	48	**45**
7. Glaxo Ltd.	14	12	10	10	12	13	23	25	29	28	**18**
8. Hoechst Marion Roussel Ltd.	29	24	24	26	24	23	22	30	35	44	**28**
9. Knoll Pharmaceuticals Ltd.	19	19	20	20	19	18	31	30	29	25	**23**
10. Parke-Davis Ltd.	22	22	23	22	31	37	35	34	33	31	**29**
11. Pfizer Ltd.	25	31	29	28	28	25	26	28	51	33	**30**
12 RPG Life Sciences Ltd.	94	94	81	60	55	45	40	40	49	67	**62**
13 Unichem Laboratories Ltd.	56	43	35	48	55	55	72	73	68	56	**56**
Average	**44**	**43**	**41**	**37**	**37**	**36**	**39**	**37**	**39**	**38**	**39**
Pharmaceutical Industry in India	48	45	40	42	47	54	58	63	70	102	**57**
All Industries in India	36	34	36	38	41	39	39	43	48	52	**40**

Source: Appendices -III and V

Std. Dev.	14.53
C.V.	37.13

again increased to 67 days in 1998-99. The high debt collection period can be attributed to the increased sales by the unit. The sales of the unit increased from Rs. 57.71 crores in 1989-90 to Rs. 246.85 crores in 1998-99 -an increase of 327.74% over a period of ten years. It is very much apparent that the management had adopted a liberal credit policy to induce the customers to promote its sales which led to a higher debt collection period of the unit as compared to other sample units.

Unit no. 13 also shows a very high average debt collection period of 56 days during the period of ten years under study. It had debt collection period of 56 days in 1989-90, decreased to 35 days in 1991-92. Thereafter it increased to 73 days in 1996-97, and finally declined to 56 days in 1998-99. From the analysis it is seen that contrary to the policy of the management, the debtors may have delayed the payment causing higher debt collection period. If the unit had managed its debts strictly in accordance with the policy formulated by it, there would have been substantial reduction in investment in this component of working capital.

Unit no. 7 has the lowest average collection period of 18 days during the ten years study period . It had a collection period of 14 days in 1989-90, declined to a very low level of just 10 days in 1992-93. Thereafter it shows an increase of 29 days in 1997-98 and then marginally declined to 28 days in 1998-99. Higher collection period during the later years was mainly due to liberal credit policy followed by the management to induce the sales.

As per the norms recommended by the Tandon Committee for Drugs and Pharmaceutical Industries, the receivables should be 1½ months' sales i.e. 45 days of sales. On comparing the same with the overall average of 39 days of the sample units, it becomes apparent

that these units were keeping receivables below the level as recommended by the committee. Detailed analysis of the table reveals that unit no. 1, 2, 6, 7, 8, 9, 10, and 11 i.e. 62% of the sample units were maintaining the receivables for less than 45 days, while the remaining 38% of the units maintained debtors above 45 days.

BAD DEBTS TO TOTAL SALES:

A liberal collection policy and improper collection method results in excessive percentage of bad and doubtful debts. For efficient receivables' management it is required to keep the losses on account of bad debts at a minimum level. The real impact of bad debts losses on profitability can be measured by relating them to sales. Higher the bad debts to sales ratio, the lower the margin of profit on sales.

Table R- 12 shows the percentage of bad and doubtful debts to total sales of the selected units during 1989-90 to 1998-99. The overall average percentage of bad debts to sales show an erratic trend through out the period of ten years under study which was 0.06% in 1989-90, increasing to 0.13% in 1990-91. Thereafter it declined to 0.06% in 1992-93 and again increased to 0.22% in 1998-99.

The overall average percentage of bad debts to total sales of 0.14% of sample units, as compared with 0.23% of 'Pharmaceutical Industry in India' and 0.16% of 'All Industries in India' is marginally lower. This shows that the management of the sample units followed a better collection policy as compared to the 'Pharmaceutical Industry in India' and 'All Industries in India'. The coefficient of variation of 58.37% indicates that the pattern of bad debts to total sales was not homogenous among the selected units during the period under study.

TABLE NO. R - 12

BAD DEBTS TO TOTAL SALES OF PHARMACEUTICAL COMPANIES DURING THE PERIOD 1989-90 TO 1998-99

(In percentage)

COMPANIES / YEARS	1989-90	1990-91	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97	1997-98	1998-99	Average
1 Burroughs Wellcome Ltd.	0.00	0 36	0 00	0.00	0.00	0.00	0.74	0.36	0.35	0.32	**0.21**
2. Cipla Ltd.	0 00	0.00	0 00	0.01	0.00	0.00	0.02	0 04	0 00	0.13	**0.02**
3 Duphar-Interfran Ltd	0 06	0 00	0.02	0.00	0 02	0.00	0.00	0.07	0 08	0.46	**0.07**
4 E Merck Ltd	0 00	0.11	0 11	0 05	0.15	0 10	0.34	0 10	0 60	0.09	**0.16**
5 Fulford Ltd	0 00	0 00	0 07	0 00	0 27	0 17	0 43	0 00	0 06	0 02	**0.10**
6. German Remedies Ltd.	0.00	0.00	0.00	0 06	0.60	0 05	0 12	0 06	0 01	0.01	**0.09**
7. Glaxo Ltd	0.10	0 13	0.40	0.18	0.14	0 07	0 04	0 10	0.17	0.34	**0.17**
8 Hoechst Marion Roussel Ltd.	0 13	0.05	0.30	0.05	0.67	0 19	0 00	0 18	0.17	0.38	**0.21**
9. Knoll Pharmaceuticals Ltd	0.01	0 01	0 00	0 00	0 00	0 03	0.11	0 09	0 11	0.25	**0.06**
10 Parke-Davis Ltd	0.00	0.00	0.00	0.00	0.03	0 03	0 03	0.04	0 01	0.05	**0.02**
11 Pfizer Ltd.	0.00	0.00	0 00	0.00	0.00	0.00	0.16	0 71	0 37	0 24	**0.15**
12 RPG Life Sciences Ltd	0 21	0.41	0.29	0 48	0 24	0 13	0 07	0.18	0.14	0.37	**0.25**
13. Unichem Laboratories Ltd.	0.32	0.62	0.00	0.00	0.05	0.11	0 36	0 32	0 61	0.23	**0.26**
Average	**0.06**	**0.13**	**0.09**	**0.06**	**0.17**	**0.07**	**0.19**	**0.17**	**0.21**	**0.22**	**0.14**
Pharmaceutical Industry in India	0.06	0.09	0.10	0.08	0 09	0 11	0 12	0 20	0.60	0 81	**0.23**
All Industries in India	0 12	0.12	0.13	0.13	0.15	0.18	0.15	0.16	0 22	0 23	**0.16**

Source: Appendix -V

Standard Deviation	0.08
Cofficient of Variation	58.37
r(between bad debt and sales)	0 89

Coefficient of correlation between bad debt and total sales was 0.89, indicating a high degree of positive correlation between both the variables and suggests that they moved in the same direction and around an equal ratio.

An indepth analysis of the table reveals that unit no. 2 and 10 have very low percentage of bad and doubtful debts to sales.

Unit no. 2 shows very low average percentage of bad debts of 0.02% of sales. Out of the ten years for six years the percentage of bad debts were nil. It was 0.13% in 1998-99.

Unit no. 10 also shows the same percentage of bad debts of 0.02% of sales during the period under study. Throughout the period of ten years it remained at a very low level and was highest in the year 1998-99 at 0.05%.

BAD AND DOUBTFUL DEBTS TO TOTAL DEBTORS:

To further analyse the impact of bad debts another useful and important ratio of bad debts as a percentage of total debtors is discussed. Table R-13 shows the percentage of bad and doubtful debts to total debtors. The table reveals that the overall average shows more or less an increasing trend which it was 1.60% during the period under study. It was 0.59% in 1989-90 which increased to 1.69% in 1991-92. Thereafter it declined to 0.74% in 1992-93, again increased to 2.26% in 1998-99. The main reason for the rise in the percentage of bad debts was the liberal credit policy followed by the management over a period of ten years under study. This could also be corroborated with the fact that average collection period of few of the sample units had gone up considerably.

TABLE NO. R - 13

BAD DEBTS TO TOTAL DEBTORS OF PHARMACEUTICAL COMPANIES DURING THE PERIOD 1989-90 TO 1998-99

(In percentage)

COMPANIES / YEARS	1989-90	1990-91	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97	1997-98	1998-99	Average
1. Burroughs Wellcome Ltd.	0.00	7.28	0 00	0 00	0 00	0.00	8.19	7 73	5 32	3 92	**3.24**
2. Cipla Ltd.	0.00	0 00	0 00	0.07	0.00	0.00	0 22	0.43	0 04	1.37	**0.21**
3 Duphar-Interfran Ltd.	0.37	0.00	0.14	0 00	0 08	0.00	0.00	0.65	0 88	5 25	**0.74**
4 E Merck Ltd	0 00	0.47	0 44	0 22	0 98	0 78	2.53	0 85	4 96	0 77	**1.20**
5 Fulford Ltd	0.00	0.00	0.31	0 00	5.60	3.73	11 49	0 00	0 61	0.21	**2.20**
6 German Remedies Ltd.	0.00	0 00	0 00	0.37	4.17	0 39	0.92	0 38	0 08	0 07	**0.64**
7 Glaxo Ltd.	2 54	4.14	15 43	5.58	3 57	2.00	0.51	1.22	2 15	3.95	**4.11**
8 Hoechst Marion Roussel Ltd	1.56	0.95	4 23	0.62	9.79	4 05	0 00	1.86	1 41	3.50	**2.80**
9 Knoll Pharmaceuticals Ltd.	0 23	0.18	0.00	0.00	0.00	0 51	1 03	1 05	1 54	3 82	**0.84**
10 Parke-Davis Ltd.	0.00	0.00	0 00	0 00	0.25	0.29	0 36	0 42	0.09	0.67	**0.21**
11 Pfizer Ltd.	0.00	0.00	0 00	0 00	0 00	0 00	2.05	9 00	2 48	2.72	**1.63**
12 RPG Life Sciences Ltd	0 81	1.40	1.41	2 78	1 73	0 99	0.60	1 56	0.85	1.64	**1.38**
13. Unichem Laboratories Ltd.	2.11	5 16	0.00	0.00	0 34	0.61	1 63	1 53	3.37	1.52	**1.63**
Average	**0.59**	**1.51**	**1.69**	**0.74**	**2.04**	**1.03**	**2.27**	**2.05**	**1.83**	**2.26**	**1.60**
Pharmaceutical Industry in India	0.49	0.64	0 85	0.59	0 61	0 63	0 66	1.07	2 94	4.32	**1.28**
All Industries in India	0.01	0.01	0.01	0.01	0 01	0 02	0 01	0.01	0.02	0.02	**0.01**

Source: Appendix -V

Standard Deviation	1.15
Coefficient of Variation	71 68
r(between bad debt and debtors)	0.90

The overall average percentage of bad debts to total debtors of 1.60% of sample units, as compared with 1.28% of 'Pharmaceutical Industry in India' and 0.01% of 'All Industries in India' is marginally higher. The coefficient of variation of 71.68% clearly indicates that bad debts to total debtors did not follow a homogenous pattern among the sample units during the period under study. The coefficient of correlation between bad debt and total debtors was 0.90 indicating a high degree of positive correlation between both the variables and suggests that they had moved in the same direction and around an equal ratio.

An indepth analysis of the table reveals that the percentage is very high in case of unit no. 1 and 7 while it is very low in the case of unit no. 2 and 10.

Unit no. 1 has a high average percentage of 3.24% bad and doubtful debts during the period of ten years. It was nil for five years, while for the other years it was 7.28 % in 1990-91 and later increased to 8.19% in 1995-96 and then decreased to 3.92% in 1998-99.

Unit no. 7 shows the highest average percentage of 4.11% bad and doubtful debts to total debtors. It had a fluctuating trend during the period under study and was 2.54% in 1989-90, increased abnormally to a high level of 15.43% in 1990-91. Thereafter it significantly declined to 0.51% in 1995-96, and again increased to 3.95% in 1998-99.

Unit no. 2 has a very low average percentage of 0.21% of bad and doubtful debts to total debtors during 1989-90 to 1998-99. It was nil for five years out of ten years and was at the level of 1.37% in 1998-99.

Unit no. 10 also has a very low average percentage of 0.21% of bad and doubtful debts to total debtors during the period under study. It was nil for the initial four years and thereafter it gradually increased to 0.42% in 1996-97. After that it declined to 0.09% in 1997-98 and again increased to 0.67% in 1998-99.

CHAPTER V

SECTION 3

MANAGEMENT OF CASH

CHAPTER V

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MANAGEMENT OF CASH

This chapter makes an attempt to analyse cash management in the selected pharmaceutical units in the State of Maharashtra.

Cash, the most liquid asset, is of vital importance to the daily operations of business firms. "Cash is both the beginning and the end of the working capital cycle-cash, inventories, receivables and cash."[27] Cash management may be defined as an art of capacity for maneuverability of optimum utilisation of cash resources of a unit with a view to maximise profits, without endangering its liquidity position. Its effective management is the key determinant of efficient working capital management. "Cash, like the blood stream in the human body, gives vitality and strength to a business enterprise. The steady and healthy circulation of cash throughout the entire business operation is the basis of business solvency,"[28] According to J.M Keyns[29], "It is the cash which keeps a business going. Hence every enterprise has to hold necessary cash for its existence". In a business firm, ultimately, a transaction results in either an inflow or an outflow of cash. In an efficiently managed business, static cash balance situation generally does not exist. Adequate supply of cash is necessary to meet the requirements of the business, its shortage may stop the business operations and may degenerate a firm into a State of technical insolvency and even of liquidation. Though idle cash is sterile, its retention is not without cost. "Holding of cash balance has an implicit cost in the form of its opportunity cost."[30] The higher the

level of idle cash, the greater is the cost of holding it in the manner of loss of interest which could have been earned either by investing it in securities or by reducing the burden of interest charges by paying off the loans taken previously. If the level of cash balance is more than the desired level with the firm it shows mismanagement of funds. Therefore, for its smooth running and maximum profitability proper and effective cash management in a business is of paramount importance.

OBJECTIVES OF CASH MANAGEMENT

The basic objectives of cash management are as follows:

(i) to meet the cash disbursement needs (Payment schedule),

(ii) to minimise funds committed to cash balances. These are conflicting and mutually contradictory. The task of cash management is to reconcile them.

The efficiency of cash management can be evaluated by various tests like cash to current assets, cash to current liabilities, cash flow analysis, cash as a percentage to sales etc.

The study of cash management in selected pharmaceutical companies is undertaken with a view to judge whether the cash is efficiently managed or not. The evaluation of efficiency in cash management is based on the analysis of size of cash and cash turnover of the sample units.

SIZE OF CASH BALANCE:

The size of the cash in the pharmaceutical units is discussed below.

Table C-1 presents the size of cash in absolute amount of the sample units between 1989-90 and 1998-99. The table clearly reveals the size of cash of the sample units, showing an invariable trend of rise throughout the period under the study, except in 1994-95 and 1996-97. The absolute amount of cash was Rs. 19.40 crores in 1989-90, increased to Rs. 351.48 crores in 1998-99 i.e. by 17 times. A graphical presentation of the size of cash balance also illustrates an increasing trend during the period under study as shown in Fig.-7.

The overall size of cash was Rs. 19.40 crores in 1989-90, increased to Rs. 39.75 crores in 1992-93 and then to Rs. 109.98 crores in 1993-94. It then marginally declined to Rs. 97.05 crores in 1994-95; thereafter it suddenly increased to Rs. 325.10 crores in 1995-96 and reached a peak level of Rs. 351.48 crores in 1998-99.The coefficient of variation was 127.52% of the sample units indicates that they had not followed a uniform policy at all for holding cash balance. Increase in the size of the cash balance could be better explained with the coefficient of correlation of cash and sales which was +0.83. This reveals that there exists a high degree of positive correlation between cash and sales. This leads to the conclusion that the increase in the sales will lead to increase in the cash.

A deeper analysis of the table reveals that unit no. 2 and 7 were carrying much higher total cash balance, while unit no. 10 and 13 were carrying much lower cash balance as compared to other sample units.

FIG. 7

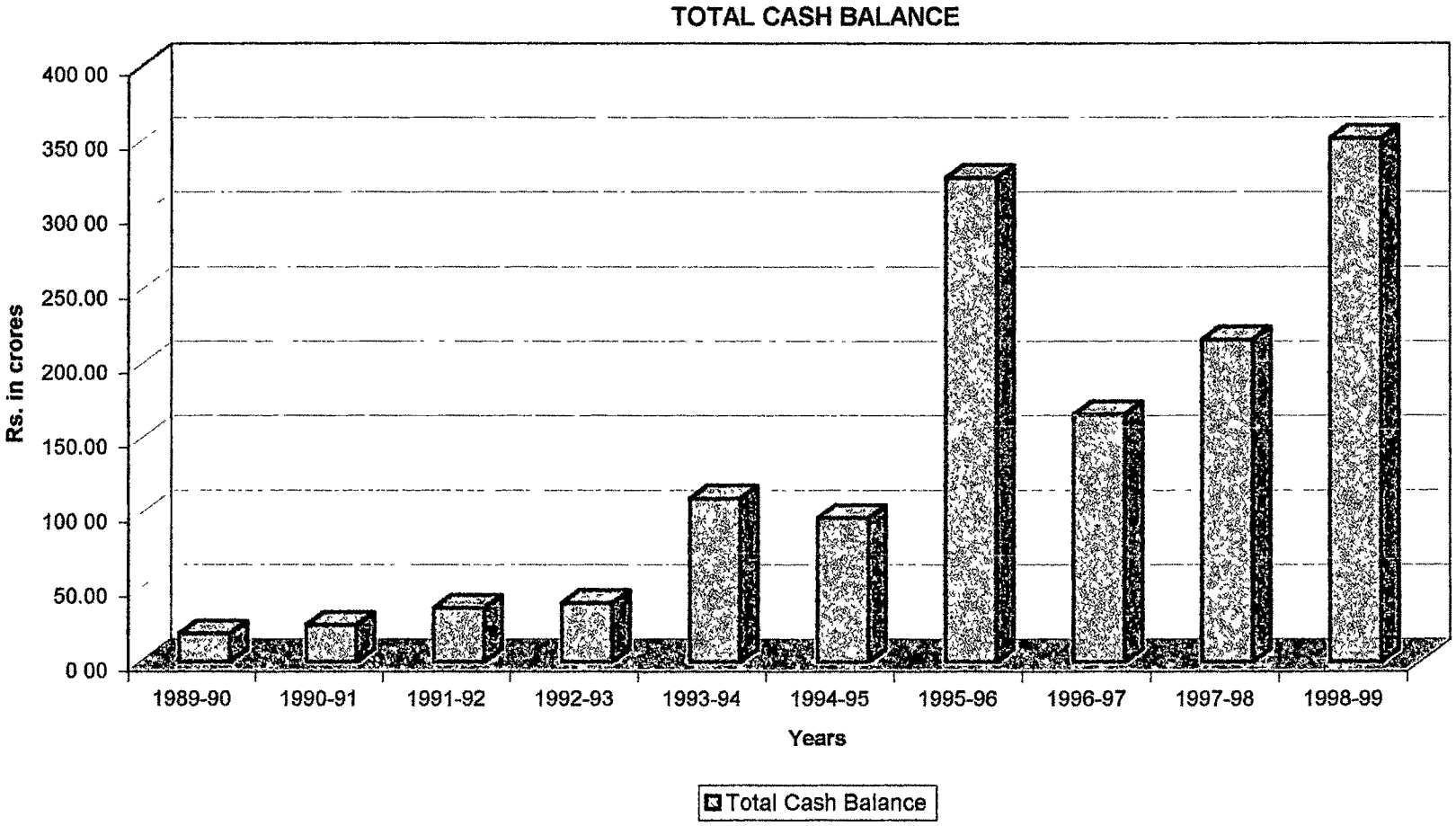

TOTAL CASH BALANCE
400 00
350 00
300 00
250.00
200.00
150.00
100 00
50.00
0 00
Rs. in crores
1989-90
1990-91
1991-92
1992-93
1993-94
1994-95
1995-96
1996-97
1997-98
1998-99
Years
Total Cash Balance

TABLE NO. C - 1

CASH , BANK BALANCE & MARKETABLE SECURITIES OF PHARMACEUTICAL COMPANIES DURING THE PERIOD 1989-90 TO 1998-99

(Rs in crores)

COMPANIES / YEARS	1989-90	1990-91	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97	1997-98	1998-99	Total
1 Burroughs Wellcome Ltd.	0.50	1.70	6.40	7.14	10.89	13 13	7.44	32 60	43 87	73.34	**197.01**
2 Cipla Ltd	0.86	0 51	7.04	5.26	4.43	5.94	100.51	27 76	60 47	94.55	**307.33**
3 Duphar-Interfran Ltd	0 61	0.98	1 22	1.22	0 72	1 63	0 85	1 65	2 09	8.93	**19.90**
4 E Merck Ltd.	1.43	0.63	1.14	1.06	0 88	0.71	0 89	1 38	3 87	2.18	**14.17**
5 Fulford Ltd	0.91	1.08	1.13	2.64	5 56	6 74	12 76	6.33	3.10	1.52	**41.77**
6 German Remedies Ltd	1 66	2.08	1.27	2.04	1.95	6 97	4.14	4 34	5 03	2 68	**32.16**
7. Glaxo Ltd.	9.47	12.04	7.83	3.12	43 92	39 78	177.24	65 32	47 16	66 59	**472.47**
8. Hoechst Marion Roussel Ltd	1.28	3 71	5 55	11.04	9.68	8.26	6.79	4 12	2 03	0.89	**53.35**
9. Knoll Pharmaceuticals Ltd	0 78	0.66	0.60	1 06	26.12	7 70	1 05	2 00	30 17	78 17	**148.31**
10 Parke-Davis Ltd.	0.47	0 80	1 89	1.85	1 69	0.63	0.65	2 74	1 30	1.51	**13.53**
11. Pfizer Ltd	0 31	0 30	0.32	0 69	2 24	2.17	1.01	0 68	2 56	8 40	**18.68**
12. RPG Life Sciences Ltd	0 87	0.29	1.87	2 34	1.76	2.35	10 67	12 81	13 22	11 84	**58.02**
13. Unichem Laboratories Ltd.	0.25	0 42	0.09	0.29	0.14	1.04	1 10	4 49	1 74	0 88	**10.44**
Total	**19.40**	**25.20**	**36.35**	**39.75**	**109.98**	**97.05**	**325.10**	**166.22**	**216.61**	**351.48**	**1387.14**

Source : Appendices -IV, and V

Standard Deviation	136.07
Coefficient of Variation	127.52
r (between Sales and Cash)	0.83

Unit no. 2 had total cash balance of Rs. 307.33 crores and had maintained an erratic trend during the period under study. The unit had a very meagre amount of cash balance of Rs. 0.86 crores in 1989-90 which increased to Rs. 5.94 crores in 1994-95. Thereafter it suddenly increased to Rs. 100.51 crores in 1995-96. This increase was mainly due to a sudden spurt in the profit of the unit during the year. The cash balance in 1996-97 was Rs. 27.76 crores increased to Rs. 94.55 crores in 1998-99. The consistent high cash balance in the later period of study was due to the fact that the unit had generated substantial funds from operation and had retained it in the form of cash balance.

Unit no. 7 has the highest amount of total cash balance of Rs. 472.47 crores. The unit was carrying cash balance of Rs. 9.47 crores in 1989-90 which increased to Rs. 12.04 crores in 1990-91. After that it declined to Rs. 3.12 crores in 1992-93 and then increased to the highest level of Rs. 177.24 crores in 1995-96. The unusually high amount of cash balance is due to the fact that the unit had sold part of its investments and had realised the amount and put it in short term securities. Thereafter the holding of cash declined to Rs. 47.16 crores in 1997-98 and again increased to Rs. 66.59 crores in 1998-99.

Unit no. 10 had a total cash balance of Rs. 13.53 crores during the period under study. It had cash balance of Rs. 0.47 crores in 1989-90, increasing to 1.89 crores in 1991-92. Thereafter it declined to Rs. 0.63 crores in 1994-95 and again increased to Rs. 1.51 crores in 1998-99. It is interesting to note that the unit had carried a very low amount of cash balance throughout the period under study.

Unit no. 13 shows that it maintained the lowest cash balance in comparison to the other sample unit i.e. Rs. 10.44 crores. The unit had a cash balance of Rs. 0.25 crores in 1989-90 which increased to Rs. 0.29 crores in 1992-93. Thereafter it declined to Rs. 0.14 crores in 1993-94 and again increased to Rs. 4.49 crores in 1996-97. Finally it declined to Rs. 0.88 crores in 1998-99. The unit could maintain low cash balance due to the fact that, it had made additions to the fixed assets from the cash generated throughout the period under study. This reveals efficient management of cash by the unit.

To analyse the growth of cash balance, average progressive growth percentage as compared to sales has been shown in Table C-2. A detailed study in terms of trend percentage indicates that the rate of growth of total cash balance had been lower as compared to growth in the sales except in the year 1991-92, 1993-94 and 1995-96. The rapid rise in the size of total cash had taken place due to increase in total sales during the period under study. Overall trend of receivables was 39.84% in 1990-91 and it increased to a very high level of 172.52% in 1991-92. Thereafter again in the year 1993-94, the growth of cash balance was 298.77%. Finally in the year 1998-99 the rate of growth was 49.08%. The growth rate of cash balance was erratic throughout the period under study. The table clearly shows that the sample units maintained an increasing trend of cash balance throughout the period under study.

Table No. C – 2

TREND PERCENTAGE OF TOTAL CASH BALANCE AND TOTAL SALES

(In percentage)

YEAR	TOTAL CASH TREND PERCENTAGE	TOTAL SALES TREND PERCENTAGE
1989-90	-----	-----
1990-91	39.84	14.37
1991-92	172.52	22.59
1992-93	49.99	52.91
1993-94	298.77	77.41
1994-95	73.56	90.20
1995-96	163.53	88.64
1996-97	74.96	132.13
1997-98	140.02	153.62
1998-99	49.08	187.76

Source: Appendices I and V

RATIO OF CASH TO CURRENT ASSETS:

In order to examine the quantum of cash maintained by the sample units, percentage of cash to the total current assets is calculated. The idle cash balances in a firm affect the profitability and also involves the cost of retaining it. In an inflationary condition cash loses its purchasing power over a period of time. The proportion of cash to current assets directly indicates the level of cash maintained by the concern. The lower the ratio, the greater may be the profitability of the unit. A downward trend in this ratio over a period of

time indicates efficient management of cash; whereas an upward trend reveals loose controls over cash resources. It is very difficult to lay down standard norms in this regard. The adequacy of cash in respect to other components of current assets can be judged only from past experience. However, in a comfortably financed business it will probably run not less than 5 to 10 percent of the current assets. Table C-3 shows the percentage of cash to total current assets.

It is evident from Table C-3 that overall average cash balance to total current assets was 8.05% which indicates that the sample units had efficiently managed the cash resources. The percentage of cash to total current assets shows an invariable rising trend throughout the period under study except in the year 1996-97. It was 2.87% in 1989-90 which increased to 12.89% in 1995-96. Thereafter it declined to 9.85% in 1996-97 and again increased to 13.88% in 1998-99.

The overall average of total cash to total current assets of 8.05% of sample units as compared to 11.64% of the 'Pharmaceutical Industry in India' and 12.40% of 'All Industries in India' is marginally lower which indicates that the selected units were maintaining lower level of cash balance. Further, it is observed that 'Pharmaceutical Industry in India', 'All Industries in India' and selected pharmaceutical units all showed an increasing trend during the period 1989-90 to 1998-99. The coefficient of variation of the sample units was very high at 73.26% which clearly indicates that the sample units has followed a less uniform policy of cash to current assets during the period under study.

TABLE NO. C - 3

CASH TO CURRENT ASSETS OF PHARMACEUTICAL COMPANIES DURING THE PERIOD 1989-90 TO 1998-99

(In percentage)

COMPANIES / YEARS	1989-90	1990-91	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97	1997-98	1998-99	Average
1. Burroughs Wellcome Ltd.	1.27	4.56	13.22	12.05	14.73	13.60	10.73	36.24	38.49	51 66	**19.65**
2. Cipla Ltd.	1.96	0.80	8 05	4.79	3.31	3.40	34 65	9 35	14 74	18.45	**9.95**
3 Duphar-Interfran Ltd	3.58	4 61	5 04	4 28	2 08	4.93	1.91	3 05	4 25	15 90	**4.96**
4. E Merck Ltd	3.97	1.29	1.97	1 60	1 81	1 04	1 18	1 67	4 36	2 25	**2.11**
5 Fulford Ltd	2 89	3.49	4 15	12.66	21 76	23.76	40 70	18 96	9 55	3 83	**14.18**
6 German Remedies Ltd	5.67	5.82	2 95	4 80	3 87	10 99	5 90	7 27	7.12	3 51	**5.79**
7 Glaxo Ltd	8.08	8 63	5 15	1.81	21.54	23.36	49 42	21 87	15 85	20 59	**17.63**
8 Hoechst Marion Roussel Ltd	0.97	3 37	6.42	11 25	7 88	6 99	5.11	2 85	0 80	0 51	**4.61**
9 Knoll Pharmaceuticals Ltd.	3.02	2.10	1.52	2 55	36.28	11.16	1.49	2 43	21 69	43 90	**12.62**
10. Parke-Davis Ltd	1.64	2.41	5.73	4 42	4 10	1 09	1 29	4 22	1 95	2 67	**2.95**
11. Pfizer Ltd.	0.64	0 55	0.57	1 02	2 74	2.37	1 20	0 75	2 42	7 57	**1.98**
12. RPG Life Sciences Ltd	2.28	0.77	4.35	4.84	3 54	3.60	11.92	11.93	10 28	8 07	**6.16**
13. Unichem Laboratories Ltd.	1.28	1.83	0.32	0 79	0 41	2.23	2 05	7.41	2.85	1.47	**2.06**
Average	**2.87**	**3.09**	**4.57**	**5.14**	**9.54**	**8.35**	**12.89**	**9.85**	**10.33**	**13.88**	**8.05**
Pharmaceutical Industry in India	4.24	5 88	11.70	9.59	33.29	17 14	8 86	7.28	9.97	8 50	**11.64**
All Industries in India	6.91	8.46	8 58	13.43	11 70	16 02	18.10	13 94	12 92	13.91	**12.40**

Source: Appendix -I

Std. Dev	5.90
C.V.	73.26

An indepth analysis reveals that units no. 1, 5, 7 and 9 had cash to current assets much above the overall average of all the sample units. While unit no. 4, 10, 11 and 13 had the cash to current assets much lower than the overall average of the sample units.

Unit no. 1 shows the highest percentage of the average holding of the cash i.e. 19.65%. It had cash balance of 1.27% to current assets in 1989-90 and increased to 14.73% in 1993-94. Thereafter it declined to 10.73% in 1995-96, and then it maintained an upward trend and reached to 51.66% in 1998-99. The increase in cash balance percentage was mainly due to the sudden spurt in funds from operation during the later period of study.

Unit no. 5 has an average cash balance of 14.18% to total current assets. It was 2.89% in 1989-90 which continuously increased and reached 40.70% in 1995-96. Thereafter it declined down to 3.83% in 1998-99. Maintaining average cash balance of more than 10% does not indicate sound cash management policy followed by the unit.

Unit no. 7 had very high percentage of the average holding of the cash to current assets of 17.63%. The unit had the percentage of cash to current assets to the tune of 8.08% in 1989-90 which increased to 8.63% in 1990-91 and then declined to 1.81% in 1992-93. Thereafter it increased to 49.42% in 1995-96, after that it decreased to 15.85% in 1997-98 and finally it increased to 20.59% in 1998-99. The higher percentage of cash balance is mainly due to fall in percentage of inventory to total current assets.

Unit no. 9 shows that it maintained an average holding of cash to current assets of 12.62% during the period under study. The trend of this ratio was erratic throughout the period under study. It was 3.02% in 1989-90 increased to 36.28% in 1993-94 and thereafter declined to 1.49% in 1995-96. It thus maintained an increasing trend and reached 43.90% in 1998-99.

A continuously high maintenance of cash balance does not indicate sound policy of the above units, as it may amount to maintaining idle cash in a business. On one hand it shows a sound liquid position of these units while on the other hand, it depicts that huge amount of idle cash balance remained in the units. The idle balance of cash is unproductive in nature and therefore it does not contribute to increase the return.

Unit no. 4 shows a very low average percentage of cash to current assets of 2.11%. It had cash to current assets of 3.97% in 1989-90, declined to 1.04% in 1994-95. Thereafter it increased to 4.36% in 1997-98 and again declined to 2.25% in 1998-99. It seems according to the policy of the management, that whatever the funds were generated from operation, were immediately invested in fixed assets and therefore the cash balance of the unit remained very low throughout the period.

Unit no. 10 also has a very low average percentage of cash to current assets of 2.95% during the period from 1989-90 to 1998-99. The ratio shows a mixed trend which was 1.64% in 1989-90 increased to 4.42% in 1992-93. Thereafter it declined to 1.09% in 1994-95, again increased to 4.22% in 1996-97. Finally it was 2.67%

in 1998-99. From the cash flow Statement it appears that the management had adopted a highly aggressive policy of investing in long term assets and therefore the balance of cash was always very low during the period under study.

Unit no. 11 has the lowest percentage of the average holding of the cash i.e. 1.98 %. This unit had the percentage of cash to current assets to the tune of 0.64% in 1989-90, increased to 2.74% in 1993-94. After that, it increased to 2.42% in 1997-98 and finally it was 7.57% in 1998-99. The trend indicates that the unit had problems of cash in the initial period of study which improved during the later part of the study, and therefore the cash balance significantly increased in 1998-99.

Unit no. 13 also has a very low average percentage of cash to current assets of 2.06%. It was 1.28% in 1989-90, declined to a very low level of 0.41% in 1993-94, then increased to 7.41% in 1996-97. Thereafter it declined to 1.47% in 1998-99. During the later period of study, the management had followed a policy to keep creditors at a very low level and it had used majority of its cash balance to make the payments to creditors; therefore cash balance remained at a low level.

In order to test the liquidity position of the pharmaceutical companies, current ratio and quick ratio are calculated as follows.

CURRENT RATIO:

Current ratio expresses the precise relation between current assets and current liabilities. It indicates the availability of current assets in rupees for every one rupee of current liabilities. A high ratio indicates high liquidity; while a low ratio indicates low liquidity. In fact a satisfactory current ratio for any given unit is difficult to judge. For most manufacturing undertakings, a ratio of 2.00:1.00 is traditionally considered a benchmark of adequate liquidity. Current ratio is a very useful tool both to the outsiders as well as to the management. To an outsider, it is a measure of the unit's ability to meet its short-term liabilities. As far as the management is concerned, the ratio discloses the magnitude of the current assets that the unit carries in relation to its current liabilities. For an outsider, the larger the ratio, the higher the liquidity of the unit. A very high ratio also indicates excess investment in current assets and may lead to a reduction in the profitability of the unit. Nevertheless, the current ratio is a quick measure of the unit's liquidity as it tests only the quantity and not the quality. The limitation of this ratio as an indicator of the liquidity lies in the size and type of the inventory and the quality of receivables of the enterprise. Table C-4 reveals the current ratio of sample units.

Table C-4 reveals that the overall average of the current ratio of the sample units varied between 1.55:1.00 and 2.22:1.00 during the period under study. The current ratio was 1.71:1.00 in 1989-90 declined to 1.60:1.00 in 1991-92 and then increased to 1.99:1.00 in 1993-94. Thereafter it marginally declined to 1.75:1.00 in 1995-96 after that it gradually increased and reached a peak level of 2.22:1.00

TABLE NO. C - 4

CURRENT RATIO OF PHARMACEUTICAL COMPANIES DURING THE PERIOD 1989-90 TO 1998-99

(In times)

COMPANIES / YEARS	1989-90	1990-91	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97	1997-98	1998-99	Average
1 Burroughs Wellcome Ltd.	1.37	1.79	1.81	1.73	2.85	1.77	1 82	2.68	3 25	3 47	**2.26**
2 Cipla Ltd	1.64	1.25	1.42	1.51	1 46	1.31	2 05	2.44	2 39	2.18	**1.76**
3 Duphar-Interfran Ltd.	1.21	1.29	1.33	1.41	1.40	1 55	2 28	4 82	5 73	5 22	**2.62**
4 E Merck Ltd	1.55	1 38	1 23	1.39	2 21	1 83	1 51	1 66	2 00	2 01	**1.68**
5 Fulford Ltd	1.38	1.55	1 72	2.40	2 10	2 08	2 00	2 03	2 46	2 51	**2.02**
6 German Remedies Ltd.	1.78	1.50	1.37	1.51	1.97	2 06	1 96	2 00	1.32	1.43	**1.69**
7 Glaxo Ltd	1.60	1.48	1.38	1 54	2 39	1 38	1 85	2 09	2 22	2 14	**1.81**
8. Hoechst Marion Roussel Ltd.	1.23	1.25	1.41	1.44	1.54	1.73	1.22	1.12	1 22	1.17	**1.33**
9. Knoll Pharmaceuticals Ltd.	1.37	1.20	1.59	1.66	1.89	1.25	1 08	1.19	1.61	1 75	**1.46**
10 Parke-Davis Ltd.	1.79	1.75	1.89	1.64	1.94	1 70	1 92	1 35	0 92	1 26	**1.62**
11 Pfizer Ltd.	1.46	1 71	1.73	1 59	1 65	1.90	1.48	1 70	1 77	1.46	**1.65**
12. RPG Life Sciences Ltd	4.76	2.75	2 64	2 41	2.98	2.41	1 99	2 28	2 32	2.10	**2.66**
13 Unichem Laboratories Ltd	1.17	1.26	1 33	1.25	1.52	2.02	1 61	1 87	1 65	1 76	**1.54**
Average	**1.71**	**1.55**	**1.60**	**1.65**	**1.99**	**1.77**	**1.75**	**2.09**	**2.22**	**2.19**	**1.85**
Pharmaceutical Industry in India	1.34	1.33	1.28	1.26	1 42	1 67	1 62	1 52	1.53	1.59	**1.46**
All Industries in India	1.43	1.33	1 26	1 34	1 32	1.39	1.43	1 38	1 35	1.28	**1.35**

Source: Appendix -I

Std Dev.	0.40
C V	21.84
r(between C A and C L)	0 99

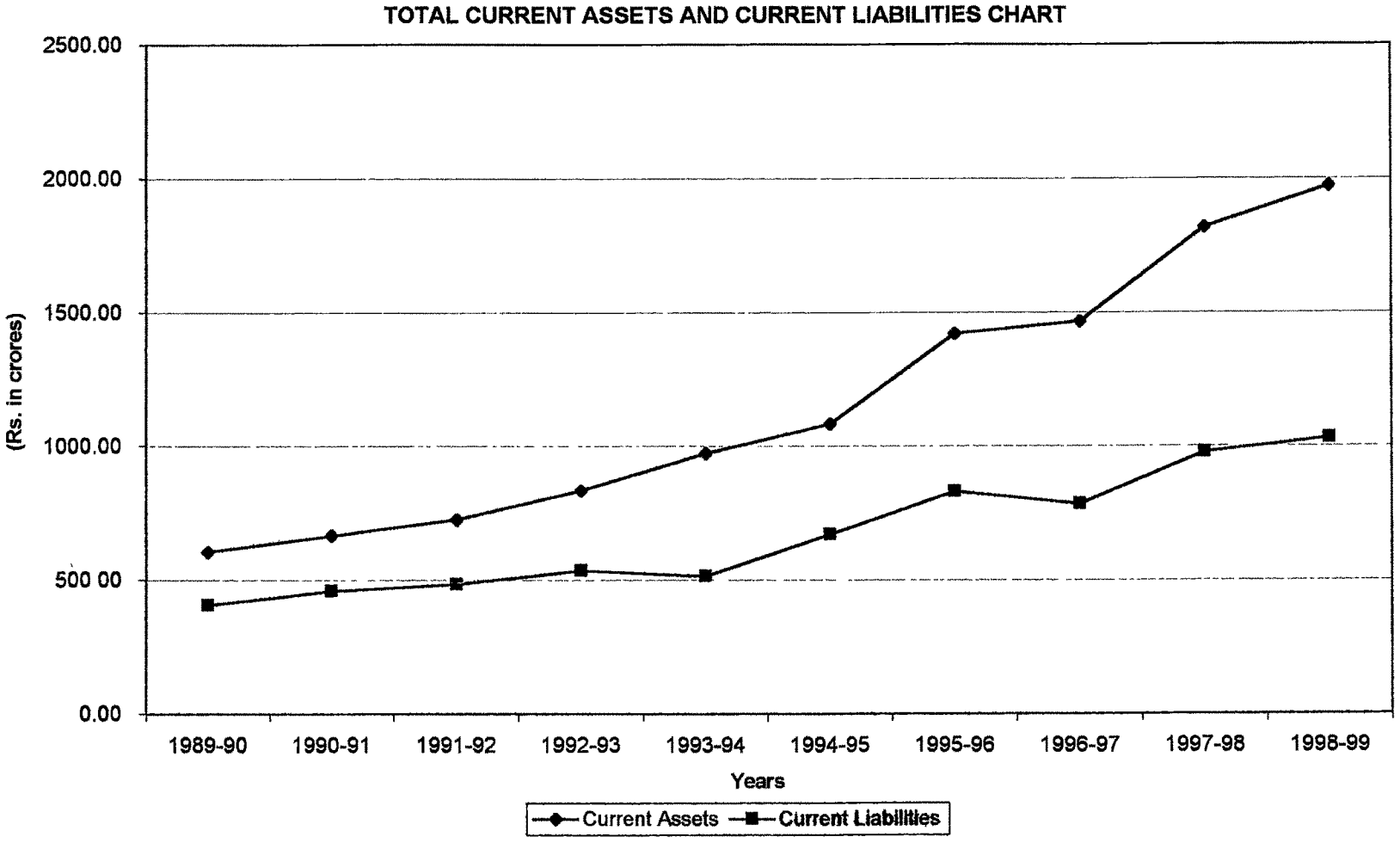
in 1997-98 and then it marginally declined to 2.19:1.00 in 1998-99. The analysis shows that the average ratio was lower than the standard which indicates that the sample units had not maintained sufficient liquidity in their enterprise. In first seven years of the study the current ratio was below 2.00:1.00 while in the latter three years it is above standard.

The overall average of current ratio of 1.85:1.00 of the sample units as compared to 1.46:1.00 of 'Pharmaceutical Industry in India' and 1.35:1.00 of 'All Industries in India' was higher. This indicates that the selected units had better liquidity. The coefficient of variation of sample units of 21.84%, shows lesser variation among the units, indicating that they had followed a uniform policy for current ratio during the period under study. The coefficient of correlation of the current assets and current liabilities was +0.99. This reveals that there exists a perfect positive correlation between current assets and current liabilities. This leads to a conclusion that increase in the current assets would lead to increase in the current liabilities in the same proportion. Total current assets and current liabilities are shown graphically in Fig. 8.

An indepth analysis of the table reveals that the unit no. 12 and 3 had a very high current ratio. In contrast to this unit no. 8 and 9 had a very low current ratio.

Unit no. 12 had the highest average current ratio of 2.66:1.00 during the period 1989-90 to 1998-99. It had 4.76:1.00 current ratio in 1989-90, decreased to 2.41:1.00 in 1992-93. Thereafter it increased to 2.98:1.00 in 1993-94 and declined to 2.10:1.00 in 1998-99. Over the span of ten years the ratio showed ups and downs. This indicates

FIG. 8


TOTAL CURRENT ASSETS AND CURRENT LIABILITIES CHART
2500.00
2000.00
1500.00
1000.00
500 00
0.00
(Rs. in crores)
1989-90
1990-91
1991-92
1992-93
1993-94
1994-95
1995-96
1996-97
1997-98
1998-99
Years
Current Assets
Current Liabilities

liberalised measure in working capital during the period. It also reveals sufficient liquidity to meet current obligations.

Unit no. 3 shows an average current ratio of 2.62:1.00 during the period under study. It shows a continuous upward trend throughout the period except in 1998-99. It was 1.21:1.00 in 1989-90 which increased to 5.73:1.00 in 1997-98 and marginally declined to 5.22:1.00 in 1998-99. The unit shows an invariably increasing trend in the current ratio. Out of the ten years of study, in the initial six years the ratio was less than 2:1; but during the later part the management followed liberalised working capital policy and therefore the ratio was higher than 2:1. The rise in the current ratio in this unit was mainly due to disproportionate increase in the two components of current assets viz. receivables and cash as compared to current liabilities.

Unit no. 8 had the lowest average current ratio of 1.33:1.00 during the period of ten years under study. It was 1.23:1.00 in 1989-90 gradually increased to 1.73:1.00 in 1994-95. Thereafter it declined to 1.12:1.00 in 1996-97 and again increased to 1.17:1.00 in 1998-99. It can be inferred from the foregoing analysis that the current ratio was very low as compared to the ideal norm of 2:1 which implies that the unit was not maintaining adequate amount of liquidity to meet its current obligation.

Unit no. 9 also had a very low average current ratio of 1.46:1.00. It shows a mixed trend of rise and fall and was 1.37:1.00 in 1989-90 increased to 1.89:1.00 in 1993-94. Thereafter it again declined to 1.08:1.00 in 1995-96 and increased to 1.75:1.00 in 1998-99. The low ratio shows that the there exist an inadequate liquid resources and over trading by the unit.

In order to examine the immediate liquidity, the quick ratio of pharmaceutical companies is calculated below.

QUICK RATIO:

Table C-5 shows quick ratio of the sample units. Quick ratio indicates the immediate liquidity of current assets. Recognising that inventory might not be very liquid, this ratio takes into account quickly realisable assets and measures them against current liabilities. This is a more refined and conservative estimate of the unit's liquidity, since it establishes a relation between quick or liquid assets and current liabilities. Conventionally, a quick ratio of 1.00:1.00 is considered to be a more satisfactory measure of liquidity position of a concern. Infact this ratio does not entirely supplement current ratio and when used in conjunction with it, tends to give a better picture of the unit's ability to meet its claims out of the quick assets.

It is evident from the Table C-5 that the overall average of quick ratio was 1.04:1.00 during the period under study. Quick ratio shows an upward trend throughout the period of ten years. It was 0.80:1.00 in 1989-90, gradually increased and reached to a peak level of 1.46:1.00 in 1998-99. It is evident from the table that overall quick ratio of the sample units taken together was more than unity, suggesting thereby that the quick assets were sufficient to meet current obligation. The trend clearly reveals that the sample units had improved the overall liquidity position over a period of time.

The overall average of acid test ratio of 1.04:1.00 of the sample units, as compared to 0.93:1.00 of 'Pharmaceutical Industry in India' and 0.84:1.00 of 'All Industries in India' was higher. This indicates that the selected units had better liquidity as compared to 'Pharmaceutical Industry in India' and also 'All Industries in India'. The coefficient of variation of sample units 30.22%, shows lesser variation among the

TABLE NO. C - 5

QUICK RATIO OF PHARMACEUTICAL COMPANIES DURING THE PERIOD 1989-90 TO 1998-99

(In times)

COMPANIES / YEARS	1989-90	1990-91	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97	1997-98	1998-99	Average
1. Burroughs Wellcome Ltd.	0.49	0.69	0.77	0.90	2.05	1.25	1.02	1.94	2.34	2.82	**1.43**
2. Cipla Ltd.	0.94	0.70	0.66	0.68	0.59	0.58	1.40	1.55	1 53	1.50	**1.01**
3. Duphar-Interfran Ltd.	0.54	0.60	0.55	0.67	0.65	0.62	1.37	3.50	4.24	4.05	**1.68**
4. E. Merck Ltd	0.76	0.72	0.71	0.74	1.12	0.72	0.66	0 68	0 84	0.91	**0.79**
5. Fulford Ltd	0.86	1.06	1 22	1.14	1.17	1.11	1.24	1.13	1.32	1.25	**1.15**
6. German Remedies Ltd.	0.70	0.66	0.61	0.87	1.07	1.29	1 19	1.12	0 79	0.74	**0.90**
7 Glaxo Ltd.	0.68	0 60	0.46	0.48	1.27	0.77	1.35	1.28	1.23	1.30	**0.94**
8. Hoechst Marion Roussel Ltd.	0.47	0.59	0.69	0.73	0.66	0.74	0.54	0.58	0.58	0.65	**0.62**
9 Knoll Pharmaceuticals Ltd.	0.56	0 48	0.56	0.69	1.19	0.59	0.49	0.66	1.24	1.29	**0.78**
10. Parke-Davis Ltd	0.71	0.76	0.96	0.70	1 08	0 91	1.16	0.83	0.58	0.74	**0.84**
11. Pfizer Ltd.	0.53	0.76	0.81	0.66	0.75	0.98	0 80	1.03	1.22	0.93	**0.85**
12. RPG Life Sciences Ltd	2 55	1.86	1.62	1.32	1.53	1.34	1.19	1.31	1 62	1.58	**1.59**
13. Unichem Laboratories Ltd.	0.66	0.64	0.55	0.74	0.85	1.23	1.10	1.53	1.21	1.20	**0.97**
Average	**0.80**	**0.78**	**0.78**	**0.79**	**1.08**	**0.93**	**1.04**	**1.32**	**1.44**	**1.46**	**1.04**
Pharmaceutical Industry in India	0.69	0.73	0.73	0.72	1.03	1.17	1.09	1.02	1.06	1.09	**0.93**
All Industries in India	0.77	0.76	0.71	0.82	0.80	0.90	0.95	0.90	0.91	0.85	**0.84**

Source: Appendix -I

Standard Deviation	0.32
Coefficient of Variation	30.22
r(between Q.A. and C.L)	0.99

units, indicates that they had followed uniform policy for quick ratio during the period under study. The coefficient of correlation of the quick assets and current liabilities was +0.99. This reveals that there exists a perfect positive correlation between quick assets and current liabilities. This leads to the conclusion that increases in quick assets leads to an increase proportion in current liabilities in the same proportion.

An indepth analysis of the table reveals that unit no. 3 and 12 had a very high quick ratio while unit no. 8 and 9 had a very low current ratio.

Unit no. 3 had the highest average of 1.68:1.00 of quick ratio. The quick ratio shows an increasing trends throughout the period of ten years under study. It was 0.54:1.00 in 1989-90 which continuously increased and reached to 4.05:1.00 in 1998-99. The high quick ratio indicates that the unit had tied-up unduly large volume of cash in quick assets, suggesting thereby inefficient management of liquid assets.

Unit no. 12 shows the second highest overall average quick ratio of 1.59:1.00 during the period under study. It has an erratic trend throughout the period which was 2.55:1.00 in 1989-90 decreased to 1.32:1.00 in 1992-93. Thereafter it gradually increased and reached a peak level of 1.62:1.00 in 1997-98 and then marginally declined to 1.58:1.00 in 1998-99. Though the unit had very high liquid assets to meet current obligations in right time, a large amount of liquid assets may be wasteful since these funds may be better employed, elsewhere more productively.

Unit no. 8 had lowest quick ratio of 0.62:1.00. The quick ratio had a mixed trend of increase and decrease during the period under study. It was 0.47:1.00 in 1989-90 increased to 0.73:1.00 in 1992-93. Thereafter it declined to 0.66:1.00 in 1993-94 then it increased to 0.65:1.00 in 1998-99. Quick ratio of the unit was always less than the standard norm of "one to one" which indicated that unit was not maintaining adequate amount of liquidity to meet its current obligation. On comparing the current and quick ratios it showed an unsatisfactory liquid position of the unit.

Unit no. 9 had very low average quick ratio of 0.78:1.00 during 1989-90 to 1998-99. It was 0.56:1.00 in 1989-90 decreased to 0.48:1.00 in 1990-91. Thereafter it increased to 1.19:1.00 in 1993-94 then declined to 0.49:1.00 in 1995-96. Finally it reached to 1.29:1.00 in 1998-99. The low quick ratio suggest that quick assets in the unit were inadequate to meet currently maturing obligations and a large part of its cash was invested in inventory.

RATIO OF CASH TO CURRENT LIABILITIES

This ratio is also known as cash position ratio. Though current ratio and acid-test ratio are important tools to measure the liquidity position of the concern; for a going concern this ratio is appropriate to measure the absolute liquidity of the concern. As such it indicates the availability of cash to meet the current obligations immediately. If the concern begins with shortage of absolute cash in meeting its current obligations and if this trend mounts up to heavy burden on the financial position of the concern, this may even cause cash insolvency of the concern. Early detection of this kind of situations by

the management is sine-qua-non for the continuity of the business. Table no. C-6 presents ratio of cash to current liabilities.

Among the units, the proportion of cash to current liabilities reveals that it was in the range of 4.63% to 36.69%. The average of all the sample units was 4.92% in 1989-90 increased to 20.24% in 1993-94 and then marginally declined to 14.46% in 1994-95. Thereafter it increased to 36.69% in 1998-99. About 62% of the units were not in a position to meet even 20% of its current liabilities with their cash balances. The study reveals that on an average the sample units over the study period maintained 17.01% of cash against its current liabilities. The acceptable specific norm for this ratio is 0.25:1.00 or 1:4 i.e. Rs 1 worth of cash is considered adequate to pay Rs. 4 worth current liabilities in time as all the creditors are not expected to demand at the same time and their cash may also be realised from receivables and inventories. As the selected units had almost equivalent to the specific norm, it indicated sound cash position of the sample units.

The overall average of total cash to total current liabilities at 17.01% of sample units, as compared with 17.06% of 'Pharmaceutical Industry in India' was almost at the same level. In contrast to this it was marginally higher as compared to 16.81% of 'All Industries in India'. The coefficient of variation of sample units was very high at 84.77% which clearly indicates that they had not followed uniform policy of maintaining cash during the period under study.

A deeper analysis of the table reveals that unit no. 1 and 7 had an exceptionally high cash balance and unit no. 11 and 13 had an exceptionally low cash balance to current liabilities.

TABLE NO. C - 6

CASH TO CURRENT LIABILITIES RATIO OF PHARMACEUTICALS DURING THE PERIOD 1989-90 TO 1998-99

(In percentage)

COMPANIES / YEARS	1989-90	1990-91	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97	1997-98	1998-99	Average
1. Burroughs Wellcome Ltd.	1.75	8.18	23.98	20.90	41.95	24.14	19.55	97.05	124.99	179.27	**54.18**
2 Cipla Ltd	3.21	1.00	11.46	7 23	4.82	4.45	70 89	22 81	35.19	40.18	**20.13**
3 Duphar-Interfran Ltd.	4.31	5.96	6 68	6 03	2.91	7.65	4.35	14 69	24 33	83 07	**16.00**
4 E Merck Ltd	6.15	1.78	2.42	2 22	3.99	1 90	1.78	2.78	8.71	4 53	**3.63**
5 Fulford Ltd	3.98	5.41	7.13	30.38	45 76	49.41	81.48	38 53	23 50	9.59	**29.52**
6. German Remedies Ltd.	10 09	8 71	4 04	7 26	7.63	22.65	11 56	14.52	9 41	5.01	**10.09**
7. Glaxo Ltd	12.90	12 80	7.10	2.79	51.55	32 23	91.22	45 67	35 24	44.04	**33.55**
8 Hoechst Marion Roussel Ltd.	1.19	4 21	9.07	16.18	12 18	12.05	6 23	3 20	0.98	0.60	**6.59**
9. Knoll Pharmaceuticals Ltd.	4.15	2 52	2.43	4.23	68.74	13 95	1.60	2 89	34 94	76.67	**21.21**
10 Parke-Davis Ltd	2.92	4 21	10 85	7.24	7.94	1.86	2.48	5.71	1 80	3 37	**4.84**
11. Pfizer Ltd.	0.94	0 95	0.98	1.62	4 53	4 52	1.77	1 28	4 29	11.08	**3.20**
12 RPG Life Sciences Ltd.	10.86	2 13	11.48	11.68	10.54	8.69	23 75	27 23	23.84	16.93	**14.71**
13. Unichem Laboratories Ltd.	1.50	2 30	0 43	0.99	0.62	4.49	3.31	13.88	4 70	2.58	**3.48**
Average	**4.92**	**4.63**	**7.54**	**9.13**	**20.24**	**14.46**	**24.61**	**22.32**	**25.53**	**36.69**	**17.01**
Pharmaceutical Industry in India	5 68	7 79	14 97	12 11	47.26	28.60	14 37	11.03	15 25	13.53	**17.06**
All Industries in India	9.89	11.27	10.77	17.95	15.42	22 32	25 96	19.18	17 50	17.81	**16.81**

Source: Appendix -I

Std Dev	14.42
C V.	84 77

Unit no. 1 shows the highest average percentage of cash to current liabilities i.e. 54.18%. The unit had the percentage of cash to current liabilities of 1.75% in 1989-90 which increased to 41.95% in 1993-94. It declined to 19.55% in 1995-96 thereafter it increased during the remaining years and reached 179.27% in 1998-99. This unit had maintained a very high proportion of cash against its claim though it indicates a high margin of safety from creditors point of view but it reveals the idle cash balance in the business which is unproductive and non -earning.

Unit no. 7 also had a very high percentage of cash to current liabilities i.e. 33.55 %. The unit had the percentage of cash to current liabilities of 12.90 % in 1989-90, increased to 51.55 % in 1993-94. It was as high as 91.22 % in 1995-96 and was 44.04% in 1998-99. During the period i.e. from 1989-90 to 98-99, there was a fluctuating trend in the amount of cash to current liabilities. Except 1995-96 in all other years it was very low.

Unit no. 11 had the lowest average percentage of cash to current liabilities of 3.20%. The ratio of 0.94% in 1989-90, increased to 4.53% in 1993-94. Thereafter it declined to 1.28% in 1996-97 and 11.08% in 1998-99.

Unit no. 13 shows very low percentage of cash to current liabilities i.e. 3.48 %. In this unit the amount of cash was not sufficient to meet the current liabilities. This unit has the percentage of cash to current liabilities of 1.50% in 1989-90, increased to 13.88 % in 1996-97; thereafter it gradually declined to 2.58 % in 1998-99.

Maintaining lower percentage of cash to current liabilities by these units reveals a very weak financial position which may lead to insolvency of the unit, if proper preventive measures are not taken in time.

In order to analyse the effectiveness of cash planning the ratio of cash to sales is analysed as follows.

RATIO OF CASH TO SALES

It is one of the important ratios to judge the effectiveness in cash planning. The increase in sale also affects the cash balance. Though this is a crude method of comparison, it helps to explain the relative behaviour of cash with sales. Prof. John Sengan observed that "The increase in sales is generally associated with larger bank balances"[31]. Table no. C-7 presents ratio of cash to sales.

The table reveals that over the period under study the sample units were maintaining on an average 4.02% of cash against their sales. About 62% of the sample units were having less than four rupees per every hundred rupees of sales. This situation explains that the cash cycle in the sample units may be suffering from the bottlenecks in realisation of cash or indicates high cash velocity. High velocity of cash means that the units were effectively utilising its cash balance.

The average percentage of cash to sales of all the sample units was 1.28% in 1989-90 increased to 3.66% in 1993-94 and then marginally declined to 3.29% in 1994-95. Thereafter it increased to 8.54% in 1989-99. The analysis further reveals that the percentage of cash to sales during the first four years varied between 1.28% and 2.01%, whereas during the remaining six years it increased and varied between 3.29% and 8.54%. It is very interesting to observe that the cash balance of the sample units had increased during the period under study along with increase in their sales which clearly

TABLE NO. C - 7

CASH TO SALES RATIO OF PHARMACEUTICAL COMPANIES DURING THE PERIOD 1989-90 TO 1998-99

(In percentage)

COMPANIES / YEARS	1989-90	1990-91	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97	1997-98	1998-99	Average
1 Burroughs Wellcome Ltd.	0 63	1.81	5.56	5.04	6.43	7.46	6 81	17 65	23 09	35.67	**11.01**
2 Cipla Ltd.	0.93	0.41	4 65	2.64	1 80	1.99	27.74	6.13	11 69	15 14	**7.31**
3 Duphar-Interfran Ltd	1.82	2.48	2 48	2.19	1 16	2.73	1 25	3.77	4 21	13 79	**3.59**
4 E Merck Ltd.	2 17	0 74	1.18	0 88	0 72	0 47	0 50	0 67	1 73	0 84	**0.99**
5. Fulford Ltd	1.81	2 27	2.04	3.85	7 14	7 83	13 79	6.50	2 75	1.18	**4.92**
6 German Remedies Ltd.	2 35	3 05	1 74	2.25	1 91	5.99	3 34	3.03	3 04	1 34	**2.80**
7. Glaxo Ltd	2 79	2 89	1.59	0.56	6 96	6 44	38 52	9 25	6 19	7 63	**8.28**
8 Hoechst Marion Roussel Ltd	0 45	1 23	2 02	3 76	2.66	2.66	1.91	1 01	0 36	0 17	**1.62**
9 Knoll Pharmaceuticals Ltd	0 96	0.68	0.51	0.72	14 91	3.34	0.50	0 76	10 84	26 13	**5.93**
10 Parke-Davis Ltd	0.53	0.79	1.65	1.32	1 12	0 38	0 37	1 53	0 62	0 70	**0.90**
11. Pfizer Ltd	0 25	0 25	0 23	0.40	1 05	0 89	0 40	0 25	1 55	3 18	**0.84**
12 RPG Life Sciences Ltd	1.51	0.44	2 33	2.26	1.57	1.75	6 04	6 36	6 04	4 80	**3.31**
13 Unichem Laboratories Ltd.	0.48	0.61	0.11	0 31	0.14	0.87	0.89	3.07	1 09	0.48	**0.80**
Average	**1.28**	**1.36**	**2.01**	**2.01**	**3.66**	**3.29**	**7.85**	**4.61**	**5.63**	**8.54**	**4.02**
Pharmaceutical Industry in India	0.57	0 86	0.62	0.61	0 42	1.13	0.57	0.30	0.29	0.19	**0.56**
All Industries in India	2 97	3.83	3.92	6.76	6.05	7.67	9 00	7 36	7 24	7.92	**6.27**

Source : Appendices -IV and V

Std Dev.	3 16
C.V.	78.47

confirms the opinion expressed by Prof. John Sengan that "The increase in sales is generally associated with larger bank balances"3.

The overall average of total cash to total sales of 4.02% of sample units, as compared with 0.56% of 'Pharmaceutical Industry in India' is high. In contrast to this it was marginally lower as compared to 6.27% of 'All Industries in India'. The coefficient of variation of sample units was very high at 78.47% which indicated that they had not followed a uniform policy of cash to sales during the period under study.

An indepth analysis of the table reveals that the unit no. 1 and 7 had a very high percentage while unit no. 4, 10, 11 and 13 had very low percentage of cash to sales.

Unit no.1 has the highest average percentage of cash of 11.01% to sales. It had a percentage of cash to sales of 0.63% in 1989-90 which increased to 5.56% in 1991-92 then marginally fell to 5.04% in 1992-93. Thereafter it maintained an increasing trend for the remaining years and reached a level of 35.67% in 1998-99. The higher ratio on one hand indicates a sound liquid position, while on the other hand it shows that a significant portion of cash balances remained unused which the management could have otherwise used profitably.

Unit no. 7 shows an average percentage of cash to sales of 8.28%. The unit had cash to sales percentage of 2.79% in 1989-90 increased to a very high level of 38.52% in 1995-96. As mentioned earlier the main reason for the significant increase was that the unit had sold huge amount of its investment and retained major part of the realisation in the form of cash in the year 1995-96. Thereafter it declined to 6.19% in 1997-98 and increased to 7.63% in 1998-99.

Unit no. 4 had an average percentage of cash to sales of 0.99%. It shows an erratic trend of percentage of cash to sales throughout the period under study and was 2.17% in 1989-90, declined gradually to 0.50% in 1995-96. Thereafter it increased to 0.84% in 1998-99. The trend reveals that the unit was holding a low cash balance as a percentage of cash which suggests efficient management of cash.

Unit no. 10 and 11 have an average percentage of cash to sales of 0.90% and 0.84% respectively. Both the units had maintained percentage of cash to sales below 2% throughout the period under study except in the year 1998-99. The unit no. 11 had cash to sales at 3.18% in 1998-99.

Unit no. 13 shows the lowest average percentage of cash to sales of 0.80%. It was 0.48% in 1989-90 declined to 0.11% in 1991-92. Thereafter increased to 3.07% in 1996-97 and then declined to 0.48% in 1998-99. This shows that the unit had a very high velocity of cash, as it did better business with low cash balance.

The pharmaceutical companies have to maintain cash to meet their daily operational requirement. The adequacy of cash in terms of operational requirement of the sample units is shown through cash in terms of days' operational requirement for cash.

RATIO OF CASH IN TERMS OF DAYS' OPERATIONAL REQUIREMENT FOR CASH:

Table no. C-8 presents the cash in terms of operational requirement for cash of the selected units. The sufficiency of cash to cater to the operational needs of the units may be measured by the turnover ratio of cash. The product of this ratio when divided by 365

TABLE NO. C - 8

CASH IN TERMS OF DAYS' OPERATIONAL REQUIREMENT FOR CASH OF PHARMACEUTICAL COMPANIES DURING THE PERIOD 1989-90 TO 1998-99

(In no. of days)

COMPANIES / YEARS	1989-90	1990-91	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97	1997-98	1998-99	Average
1. Burroughs Wellcome Ltd.	3	8	24	25	33	36	30	86	115	199	**56**
2 Cipla Ltd	5	2	23	14	10	11	164	40	76	104	**45**
3 Duphar-Interfran Ltd	8	11	11	10	5	12	5	18	22	79	**18**
4 E Merck Ltd.	9	3	5	4	4	2	3	4	9	5	**5**
5 Fulford Ltd	9	14	12	23	43	52	93	44	19	9	**32**
6. German Remedies Ltd	10	13	7	10	9	29	15	15	15	7	**13**
7 Glaxo Ltd.	13	14	7	3	34	33	197	51	33	44	**43**
8 Hoechst Marion Roussel Ltd	3	7	11	19	12	13	9	5	2	1	**8**
9. Knoll Pharmaceuticals Ltd.	4	3	2	3	75	20	3	6	80	209	**41**
10. Parke-Davis Ltd	2	3	7	6	6	2	2	8	4	5	**5**
11. Pfizer Ltd.	1	1	1	2	5	4	2	1	8	15	**4**
12. RPG Life Sciences Ltd.	8	3	13	12	8	9	32	30	30	24	**17**
13. Unichem Laboratories Ltd.	2	3	0.5	2	1	6	6	21	8	3	**5**
Average	**6**	**7**	**10**	**10**	**19**	**18**	**43**	**25**	**32**	**54**	**22**
Pharmaceutical Industry in India	10	14	27	22	119	60	29	23	33	25	**36**
All Industries in India	14	18	19	32	29	37	43	36	35	40	**30**

Source: Appendices -IV and V

Std. Dev	17.74
C.V	79 21

days gives the number of days for which cash held is sufficient to finance the cost of operation of the units. Experts are of the opinion that a business enterprise should keep its cash balance below the requirement of one month's normal expenditure. If cash exceeds the norms, it should be understood that the concern is carrying excessive cash.

Table C - 8 reveals that the overall average of the ratio was 22 days. The table further reveals that the selected units had average ratio of just 6 days in 1989-90 which gradually increased and reached to 19 days in 1993-94,decreased to 18 days in 1994-95 and then it increased to 43 days in 1995-96. The reason for the increase in this year was that the unit no. 7 had kept unusually high cash balance in this year which it had realised on sale of investments and had retained the same in the form of cash balance. Thereafter it declined to 25 days in 1996-97 and again increased to a peak level of 54 days in 1998-99. The reason for a very high cash balance in the later part of the study period is mainly to meet the demand for expansion. On comparing the ratio of the sample units with the norm laid down by the experts, it is very much apparent that the sample units during the initial period under study had maintained a reasonable level of cash and had not kept any excessive cash balance. But in the later period of study the sample units maintained a very high cash balance than the norm.

The overall average of cash in terms of days' operational requirement for cash of 22 days of the sample units was quite low as compared to 36 days of 'Pharmaceutical Industry in India' and 30 days of 'All Industries in India'. This indicates that the selected units were maintaining lower level of cash. Further, it is observed that 'Pharmaceutical Industry in India', 'All Industries in India' and selected

pharmaceutical units all showed more or less an increasing trend during the period 1989-90 to 1998-99. The coefficient of variation of sample units 79.21% indicates that the sample units had not followed the uniform policy of holding cash during the period under study.

An indepth analysis of the table reveals that the unit no. 1, 2 and 7 had kept exceptionally high level of cash balance while unit no. 4, 10, 11 and 13 had kept exceptionally low level of cash in terms of days' operational requirement for cash.

Unit no. 1 has the highest average number of days' of operational requirement of cash of 56 days. It was 3 days in 1989-90 increased gradually to 36 days in 1994-95. Thereafter it marginally declined to 30 days in 1995-96 then it kept on increasing at a faster rate and reached an unusually high level of 199 days in 1998-99. From the analysis of the last three years of study it reveals that the management had no proper planning of investment hence it resulted in to a very high cash balance. On comparing the number of days' requirement of cash with the norm, it appears that the unit had carried excessive cash throughout the period under study.

Unit no. 2 shows an average number of days' of operational requirement of 45 days. It was 5 days in 1989-90 increased to 11 days in 1994-95. Thereafter it suddenly increased to 164 days in 1995-96, and then it declined to 40 days in 1996-97. Finally it increased and reached to 104 days in 1998-99. The analysis indicates that unit had kept a very high cash balance and had ups and downs in the cash balances of the unit during the period of ten years which reflect the general negligence of the unit in planning and efficient management of cash balances.

Unit no. 7 had also had a very high average number of days' of operational requirement of 43 days. It was 13 days in 1989-90

decreased to just 3 days in 1992-93, increased to a very high level of 197 days in 1995-96. Thereafter it gradually declined to 44 days' in 1998-99. Holding very high number of days cash reflect inefficient management of cash and high amount of cash held by the unit. It further reveals that the cash funds were kept idle after the year 1993-94.

Unit no. 4, 10 and 13 had an average number of days' of operational requirement of 5 days only. The table reveals that all the three units had maintained cash for very few days' of operational requirement throughout the period under study. It is very interesting to note that unit no. 13 had maintained cash balance of less than 1 day i.e. 0.5 day requirement in 1991-92. Such lower holding of the cash balance indicates that these units may not be able to meet their short term commitments in time and may ultimately leads to insolvency of the unit.

Unit no. 11 had the lowest average operational requirement for cash of 4 days. It was just 1 day for four years out of the ten years period of study. For the remaining years also it was at a very low level and was the highest in 1998-99, when it was 15 days. Holding of cash for such a low number of days indicates that the unit did not possess enough amounts of cash for emergency. It seems that the management of this unit had a policy of keeping low cash.

Now in order to analyse financing and investing policies followed by the management of the sample units consolidated and individual cash flow Statement are prepared and analysed. Cash flow Statement is an important planning tool and has an analytical value.

CASH FLOW ANALYSIS

Table no. C-9 presents the consolidated cash flow Statement of the sample units. A detailed analysis of cash flow of the sample units had been attempted to throw light upon cash inflows and outflows. The analysis of this nature reveals the level of effective cash management in the sample units over the study period. The cash flow Statement is an important planning tool and had an analytical value. It gives a picture of the causes of changes in the unit's cash position and indicated the financing and investing policies followed by the unit. It is an important tool of short-term financial planning, especially useful to management in preparing cash budgets. A comparison of it for the previous year with the budget for that year would indicate to what extent the resources of the business were raised and used according to the plan.

During the year 1990-91, the total cash inflow of the sample units was Rs. 210.74 crores. The cash management followed in this unit reveals better picture of raising cash flows through increase in gross flows from business operation, increase in borrowed capital and increases in current liabilities. Fund from operation was Rs. 95.57 crores, increase in borrowed capital was Rs. 34.54 crores and increase in current liabilities was Rs. 52.64 crores in the year. The generated cash resources were mainly utilised for the acquisition of fixed assets i.e. Rs. 127.70 crores and increase in receivables Rs. 45.27 crores. It is apparent from the table that during the year the cash generated were sufficient to cover the requirements of increase in working capital needs. For financing fixed assets the unit had resorted partly on borrowed capital. The cash balance of this year was Rs. 19.40 crores and it increased to Rs. 25.20 crores in the end

TABLE NO. C - 9

CONSOLIDATED CASHFLOW STATEMENT OF PHARMACEUTICAL COMPANIES DURING THE PERIOD 1989-90 TO 1998-99

(Rs. in crores)

CASH INFLOWS	1990-91	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97	1997-98	1998-99	Total
Opening Cash Balance	19.40	25.20	36.35	39.75	109.98	97.05	325.10	166.22	216.61	19.40
Funds From Operation	95.57	52 24	62.19	205.87	88 83	239.31	237.52	293.08	248 87	1523.48
Sale of Fixed Assets	0.00	0.00	0.00	0.00	0.00	0.00	0 00	0.00	0.00	0.00
Sale of Investments	0 00	18.37	0.00	11.36	0.00	51.58	0.00	0.00	0.00	81.31
Issue of Shares	8.59	3.34	4.10	23 60	30.29	33 24	3.77	0 04	8 10	115.07
Increase in Borrowed Capital	34.54	30.12	62.43	0.00	0.00	0.00	52.28	83.71	0.00	263.08
Decrease in Working Capital	**52.64**	**25.84**	**50.46**	**0.00**	**155.24**	**160.74**	**0.00**	**193.48**	**74.57**	**712.97**
Receivables	0.00	0 00	0.00	0.00	0.00	0.00	0.00	0.00	0 00	0.00
Inventories	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	22.19	22.19
Current Liabilities	52.64	25.84	50.46	0.00	155.24	160.74	0 00	193 48	52.38	690.78
Total	**210.74**	**155.11**	**215.53**	**280.58**	**384.34**	**581.92**	**618.67**	**736.53**	**548.15**	**3731.57**
CASH OUTFLOWS										
Purchase of Fixed Assets	127.70	70 57	67.81	77.08	50 34	93 05	160.41	180.71	73.43	901.10
Purchase of Investments	3.35	0.00	3 72	0.00	80.72	0 00	41.42	37 75	50.19	217.15
Repayment of Loans	0.00	0.00	0.00	5.38	32.65	54 63	0.00	0 00	30.66	123.32
Increase in Working Capital	**79.69**	**84.54**	**144.00**	**198.12**	**220.63**	**434.24**	**416.84**	**518.07**	**393.87**	**2490.00**
Receivables	45.27	1.23	44.86	50.93	74.27	86.98	171.64	178 96	42.39	696.53
Inventories	9.22	46.96	59.39	17.45	49.31	22 16	32.35	122.50	0.00	359.34
Current Liabilities	0.00	0.00	0.00	19.76	0.00	0.00	46 63	0.00	0.00	66.39
Closing Cash Balance	25.20	36.35	39.75	109.98	97.05	325.10	166.22	216 61	351.48	1367.74
Total	**210.74**	**155.11**	**215.53**	**280.58**	**384.34**	**581.92**	**618.67**	**736.53**	**548.15**	**3731.57**

Source : Appendices - II, III, IV, V and VI

of the year. It is quite interesting to note that the management had followed obtaining more of credits from its creditors relatively in extending more credits to its customers. This shows that the cash position of sample units for the year 1990-91 was sound.

During the year 1991-92, the total cash inflow was Rs. 155.11 crores. In this year the main source of funds were funds from operation and increase in borrowed capital. The funds from operation was Rs. 52.24 crores and increase in borrowings was Rs. 30.12 crores. The increase in current liabilities was Rs. 25.84 crores in the year. The other sources of the cash flow were insignificant. The cash generated during the year was mainly utilised in acquisition of fixed assets i.e. Rs. 70.57 crores and investment in inventories Rs. 46.96 crores. It is evident from the table that the cash generated was sufficient to meet the working capital requirements. The balance of cash Rs. 36.35 crores indicated that cash position of the sample units was sound. Here the management had followed a policy of obtaining more of credits from its creditors relatively in extending more credits to its customers.

During the year 1992-93, The total cash inflow was Rs. 215.53 crores. Table C-9 shows that the sample units financed all their capital expenditure and increase in working capital through funds from operations increase in borrowed capital and increase in current liabilities. During the year funds from operation was Rs. 62.19 crores, increase in borrowed capital was Rs. 62.43 crores and increase in current liabilities was Rs.50.46 crores. The analysis reveals that generated cash resources were mainly utilised for the acquisition of fixed assets increase in receivables and inventories. The total purchase of fixed assets during the year was Rs. 67.81 crores i.e. 31.46 % and increase in inventories was Rs. 59.39 crores i.e. 27.55%

of the total cash outflow. The total increase in receivables for the period under study was Rs 44.86 crores which constitutes 20.81% of the total cash outflow. The cash balances of this year had increased from Rs.36.35 crores to Rs. 39.75 crores which exhibits the efficiency in management of cash.

During the year 1993-94, The total cash inflow was Rs. 280.58 crores, out of which a huge amount of Rs. 205.87 crores was generated from operations i.e. 73.37 % of total cash inflow. The issue of share capital was Rs 23.60 crores. The cash generated were mainly used in the acquisition of fixed assets, increase in receivables and payment to current liabilities. The acquisition of fixed assets was Rs.77.08 crores, the increase in receivables was Rs. 50.93 crores and payment to current liabilities was Rs. 19.76 crores. The analysis further reveals that the unit had retained major part of cash generated i.e. 39.19% of cash generated in the form of cash balance. This shows that the unit had not effectively and efficiently invested the cash for productive purposes. Keeping huge amount of idle cash does not indicate sound policy of the cash management.

During the year 1994-95 the total cash inflow was Rs. 384.34 crores. The major sources of cash flow was the fund generated from operation Rs. 88.83 crores and increase in current liabilities was Rs. 155.24 crores. The issue of share capital was Rs 30.29 crores. The cash resources were mainly utilised for the purchase of investments, increase in receivables, purchase of fixed assets and repayment of loans. The purchase of temporary investments was Rs. 80.72 crores which in the following year were sold and used for productive purposes. Increase in receivables was Rs. 74.27 crores, purchase of fixed assets was Rs. 50.34 crores and repayment of loan was 32.65

crores. The closing cash balance was Rs. 97.05 which remained more or less at the same level as that of in the previous year.

During the year 1995-96 the total cash inflow was Rs. 581.92 crores. The major source of cash was funds from operation i.e. Rs. 239.31 crores, increase in current liabilities Rs. 160.74 crores and sale of investments Rs. 51.58 crores. The cash resources were mainly utilised for the purchase of fixed assets, increase in receivables and repayment of loans. Out of the total cash inflow, Rs. 93.05 crores was used in the acquisition of fixed assets, Rs. 86.98 crores increase in receivables and Rs. 54.63 crores was used for the repayment of loan. The table reveals that the unit had generated part of their cash flow from the raising of share capital to the tune of Rs. 33.24 crores which was ever-highest during the entire period of ten years under the study. It seems from the analysis that the sample units had planned for major expansion and modernisation in the following years and therefore had raised the share capital and also retained huge amount of cash balance.

During the year 1996-97 the total cash inflow was Rs. 618.67 crores. The major sources of cash were funds from operation Rs. 237.52 crores and increase in borrowed capital Rs. 52.28 crores. The cash was mainly used to increase in receivables, purchase of fixed assets, payment of current liabilities and purchase of investments. Out of the cash inflows, Rs. 171.64 crores was blocked in receivables, Rs 160.41 crores was used in the acquisition of fixed assets, Rs. 41.42 crores was used in the purchase of investment and Rs. 46.63 for payment of creditors. The cash management followed in this year reveals better picture of raising cash flows through increase in gross flows from business operation and also by reducing the outstanding liabilities. It is quite interesting to note that the

management had followed extending more of credits to its customers relatively in obtaining credits from its creditors.

During the year 1997-98 the total cash inflow was Rs.736.53 crores which was the highest amongst all the years under study. The cash management followed in this unit reveals better picture of raising cash flows through increase in gross flows from business operation, increase in borrowed capital and increases in current liabilities. The funds from operation was Rs. 293.08 crores, increase in current liabilities Rs. 193.48 crores and increase in borrowed capital Rs. 83.71 crores during the year. The cash was mainly utilised for purchase of fixed assets, purchase of investments, increase in receivables and inventories. The acquisition of fixed assets was Rs. 180.71 crores, increase in receivables was Rs. 178.96 crores, Rs.122.50 crores was used in the inventories and purchase of investments was Rs. 37.75 crores. The analysis further reveals that the unit had retained major part of cash generated i.e. 29.40% of cash generated in the form of cash balance. This shows that the unit had not effectively and efficiently invested the cash for productive purposes. Keeping huge amount of idle cash does not indicate sound policy of the cash management.

During the year 1998-99 the total cash inflow was Rs. 548.15 crores. The major sources of cash were funds from operation and increase in current liabilities. The fund from operations was Rs. 248.87 crores i.e. was 45.40% of the total cash inflow. The total increase in current liabilities was Rs. 52.38 crores i.e. 9.55% of the total cash inflows. The cash was mainly utilised for purchase of fixed assets Rs. 73.43 crores, purchase of investments Rs. 50.19 crores and increase in receivables Rs. 42.39 crores. It is evident from the table that sample units had retained unusually high amount i.e. about

64.12% of cash generated in the form of cash balance. Management of the sample units must take some remedial action and put the same to some productive purposes so as to increase the return.

The study of the consolidated cash flow Statement of the selected pharmaceutical units reveals that the sample units had mainly relied on funds generated from operations for financing their assets. This indicated that overall cash position of the sample units was very much sound. To appreciate the position of the individual units it is necessary to study the cash flow statement of each unit separately.

CASH FLOW ANALYSIS OF INDIVIDUAL UNITS

The cash flow Statement of unit no. 1 for the period under study had been presented in Table C-9.1. Total cash inflow of the unit was of Rs 223.74 crores. Total cash inflow was Rs. 10.92 crores in 1990-91 increased to Rs. 78.07 crores in 1998-99 i.e. by 615%. The increase in total cash inflow was mainly from funds from operation and increase in current liabilities. The unit was maintaining a regular inflows of funds from operation from the business activities on an average of Rs. 10.84 crores except in 1995-96, wherein there was outflow of funds from operation to the tune of Rs. 3.24 crores. The total increase in current liabilities was Rs. 49.14 crores i.e. 21.96% of the total cash inflows. The generated cash resources were mainly utilised for the increase in receivables, inventories and repayment of loans. The total repayment of loan for the period under study was Rs. 17.40 crores. The total increase in receivables and inventories was Rs. 52.60 crores and Rs. 22.12 crores respectively. The cash balance of this unit was Rs. 0.50 crores in 1989-90 and increased to Rs. 73.34

TABLE NO. C - 9.1

CASHFLOW STATEMENT OF BURROUGHS WELLCOME LTD. DURING THE PERIOD 1989-90 TO 1998-99

(Rs in crores)

CASH INFLOWS	**1990-91**	**1991-92**	**1992-93**	**1993-94**	**1994-95**	**1995-96**	**1996-97**	**1997-98**	**1998-99**	**Total**
Opening Cash Balance	0.50	1.70	6.40	7.14	10 89	13.13	7.44	32.60	43 87	**0.50**
Funds From Operation	1 98	2.10	2 89	15 65	8 12	-3 24	32.14	15 82	22 04	**97.50**
Sale of Fixed Assets	0.00	0 00	0.00	0.00	0.00	0 00	0.00	0 00	0 00	**0.00**
Sale of Investments	5 04	3 34	0.00	0 00	0 00	0.00	0 00	8 87	1 21	**18.46**
Issue of Shares	0.00	0 00	0 00	1 48	0 01	0 01	1 68	0 00	0 00	**3.18**
Increase in Borrowed Capital	0 26	1.56	1.17	7.14	0 00	0.00	0.00	0.00	0 00	**10.13**
Decrease in Working Capital	**3.14**	**5.91**	**7.48**	**7.61**	**28.43**	**23.30**	**5.64**	**1.51**	**10.95**	**93.97**
Receivables	0.91	0 00	0 00	0.00	0 00	23 30	0 00	0 00	0 00	**24.21**
Inventories	2.23	0 00	0.00	7.61	0 00	0 00	5 64	0 00	5 14	**20.62**
Current Liabilities	0 00	5.91	7.48	0 00	28 43	0.00	0.00	1.51	5.81	**49.14**
Total	**10.92**	**14.61**	**17.94**	**39.02**	**47.45**	**33.20**	**46.90**	**58.80**	**78.07**	**223.74**
CASH OUTFLOWS										
Purchase of Fixed Assets	1.42	1.79	0.72	1 37	1.10	1.97	0 72	1.29	1 00	**11.38**
Purchase of Investments	0.00	0.00	0.00	0.00	0.01	2.99	7.09	0.00	0.00	**10.09**
Repayment of Loans	0.00	0 00	0.00	0.00	12 84	2.65	0 96	0 88	0 07	**17.40**
Increase in Working Capital	**9.50**	**12.82**	**17.22**	**37.65**	**33.50**	**25.59**	**38.13**	**56.63**	**77.00**	**184.87**
Receivables	0.00	1.65	9 48	18 55	12.41	0.00	1 07	5.78	3.66	**52.60**
Inventories	0.00	4.77	0.60	0.00	7.96	1.81	0.00	6.98	0.00	**22.12**
Current Liabilities	7.80	0 00	0.00	8.21	0.00	16.34	4.46	0 00	0.00	**36.81**
Closing Cash Balance	1.70	6.40	7.14	10.89	13.13	7.44	32.60	43 87	73.34	**73.34**
Total	**10.92**	**14.61**	**17.94**	**39.02**	**47.45**	**33.20**	**46.90**	**58.80**	**78.07**	**223.74**

Source : Appendices - II, III, IV, V and VI

crores in 1998-99. The cash management followed in this unit reveals better picture of raising cash flows through increase in gross flows from business operation and also by reducing the outstanding liabilities. It is quite interesting that the management had followed extending more of credits to its customers relatively in obtaining more credits from its creditors.

The cash flow Statement of unit no. 2 for the period under study had been presented in Table C-9.2. The total cash inflow in the unit was of Rs 763.54 crores. Total cash inflow was Rs. 35.77 crores in 1990-91 increased to Rs. 232.41 crores in 1998-99 by 549.73 %. The increase was on account of exorbitant increase in funds from operation and also due to increase in current liabilities during these years. The unit was maintaining a regular inflows of funds from the business activities to the tune of Rs 51.94 crores on average. The total increase in current liabilities was Rs 228.59 crores which constitutes 29.93% of the total cash inflows. The analysis reveals that generated cash resources were mainly utilised for the acquisition of fixed assets, increase in receivables and inventories. The total increase in receivables for the period under study was Rs 236.88 crores which constitutes 31.02% of the total cash outflow. The total purchase of fixed assets during the year was Rs. 173.78 crores i.e. 22.75 % and increase in inventories was 19.06% of the total cash outflow. It is quite interesting that the unit had given credit two times to that of credit availed by itself. The cash balances of the unit had increased during the period under study from Rs.0.86 crores in 1989-90 and raised to Rs. 94.55 crores in 1998-99 exhibits the efficiency in management of cash.

The cash flow Statement of unit no. 3 for the period under study had been presented in Table C-9.3. The total cash inflow in the unit

TABLE NO. C - 9.2

CASHFLOW STATEMENT OF CIPLA LTD. DURING THE PERIOD 1989-90 TO 1998-99

(Rs. in crores)

CASH INFLOWS	**1990-91**	**1991-92**	**1992-93**	**1993-94**	**1994-95**	**1995-96**	**1996-97**	**1997-98**	**1998-99**	**Total**
Opening Cash Balance	0.86	0 51	7.04	5.26	4 43	5 94	100 51	27.76	60.47	**0.86**
Funds From Operation	10 18	11 73	12 65	16 79	17 09	121 74	70 83	98 02	108 47	**467.50**
Sale of Fixed Assets	0 00	0 00	0 00	0.00	0.00	0 00	0.00	0.00	0 00	**0.00**
Sale of Investments	0 00	8.92	0 01	0 00	0 01	0 00	0 00	0 00	0.00	**8.94**
Issue of Shares	0 00	0 05	1 50	0.00	15.54	1 34	0 00	0.00	0 00	**18.43**
Increase in Borrowed Capital	0 59	4 57	11.94	14 51	0 00	0 00	0 00	0 00	0 00	**31.61**
Decrease in Working Capital	**24.14**	**12.34**	**11.39**	**19.05**	**41.61**	**14.05**	**0.00**	**50.15**	**63.47**	**236.20**
Receivables	0 00	1 88	0 00	0 00	0.00	0 00	0 00	0.00	0.00	**1.88**
Inventories	0.00	0 00	0.00	0.00	0 00	5.73	0.00	0 00	0 00	**5.73**
Current Liabilities	24.14	10.46	11.39	19.05	41.61	8.32	0 00	50.15	63 47	**228.59**
Total	**35.77**	**38.12**	**44.53**	**55.61**	**78.68**	**143.07**	**171.34**	**175.93**	**232.41**	**763.54**
CASH OUTFLOWS										
Purchase of Fixed Assets	8 49	12.07	15.01	26.41	19 42	15.26	20 25	24.15	32 72	**173.78**
Purchase of Investments	6 51	0.00	0.00	0.00	0 00	0.03	6 07	9 27	34 02	**55.90**
Repayment of Loans	0.00	0 00	0.00	0.00	13.72	1.00	17 44	1.43	3 18	**36.77**
Increase in Working Capital	**20.77**	**26.05**	**29.52**	**29.20**	**45.54**	**126.78**	**127.58**	**141.08**	**162.49**	**497.09**
Receivables	10 83	0.00	11 23	5 46	21.43	26 27	63 34	40 90	57 42	**236.88**
Inventories	9.43	19.01	13.03	19.31	18.17	0 00	16 38	39.71	10.52	**145.56**
Current Liabilities	0 00	0.00	0.00	0.00	0.00	0 00	20.10	0 00	0.00	**20.10**
Closing Cash Balance	0.51	7 04	5.26	4.43	5.94	100 51	27 76	60 47	94.55	**94.55**
Total	**35.77**	**38.12**	**44.53**	**55.61**	**78.68**	**143.07**	**171.34**	**175.93**	**232.41**	**763.54**

Source : Appendices - II, III, IV, V and VI

TABLE NO. C - 9.3

CASHFLOW STATEMENT OF DUPHAR-INTERFRAN LTD. DURING THE PERIOD 1989-90 TO 1998-99

(Rs. in crores)

CASH INFLOWS	1990-91	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97	1997-98	1998-99	Total
Opening Cash Balance	0.61	0.98	1.22	1.22	0.72	1.63	0.85	1.65	2.09	**0.61**
Funds From Operation	1.63	2.37	1.62	1.60	1.93	30 55	3.91	3.19	3 03	**49.83**
Sale of Fixed Assets	0.00	0 00	0.00	0.00	0.00	8 32	0 00	0 00	0 00	**8.32**
Sale of Investments	0.00	0.00	0.00	0 00	0.00	0.00	17.57	0 00	0 00	**17.57**
Issue of Shares	0.00	0.32	0 00	0.00	0 00	0 36	0.00	0 00	0 00	**0.68**
Increase in Borrowed Capital	1.48	0.43	2.19	0.98	2.01	0 00	0.00	0.54	2.15	**9.78**
Decrease in Working Capital	**2.29**	**1.84**	**1.96**	**4.50**	**3.81**	**2.19**	**2.89**	**5.34**	**2.33**	**27.15**
Receivables	0.00	0.00	0.00	0.00	3.81	0 00	0.00	3.27	0.00	**7.08**
Inventories	0.00	0.00	0.00	0 00	0.00	2.19	2 89	2 07	0 17	**7.32**
Current Liabilities	2.29	1.84	1.96	4.50	0.00	0.00	0.00	0.00	2.16	**12.75**
Total	**6.01**	**5.94**	**6.99**	**8.30**	**8.47**	**43.05**	**25.22**	**10.72**	**9.60**	**113.94**
CASH OUTFLOWS										
Purchase of Fixed Assets	1.12	1.76	1.47	0.99	2.02	0.00	0.83	0 38	0 42	**8.99**
Purchase of Investments	0.05	0 25	0.00	0.02	0.00	20.72	0.00	5 61	0 00	**26.65**
Repayment of Loans	0.00	0.00	0.00	0.00	0.00	5.36	2.68	0.00	0.00	**8.04**
Increase in Working Capital	**4.84**	**3.93**	**5.52**	**7.29**	**6.45**	**16.97**	**21.71**	**4.73**	**9.18**	**70.26**
Receivables	1.77	0.09	3.43	3.03	0.00	14.34	11.76	0.00	0.25	**34.67**
Inventories	2.09	2.62	0.87	3.54	1.40	0 00	0 00	0.00	0.00	**10.52**
Current Liabilities	0.00	0.00	0.00	0.00	3.42	1.78	8.30	2.64	0.00	**16.14**
Closing Cash Balance	0.98	1.22	1.22	0.72	1.63	0.85	1.65	2.09	8.93	**8.93**
Total	**6.01**	**5.94**	**6.99**	**8.30**	**8.47**	**43.05**	**25.22**	**10.72**	**9.60**	**113.94**

Source : Appendices - II, III, IV, V and VI

was Rs. 113.94 crores. Total cash inflow was Rs. 6.01 crores increased to Rs. 43.05 crores in 1995-96 i.e. by 615% from the base year 1990-91. In comparison to the base year 1990-91 the increase in total cash inflow was by 50% in 1998-99. The increase was on account of increase in funds from operations and also due to sale of investments and increase in current liabilities during these years. Total funds from operation for the period under study was Rs. 49.83 crores which constitutes 43.73% of the total cash inflow. Sale of investments and increase in current liabilities were Rs. 17.57 crores and Rs. 12.75 crores respectively. In comparison to the year 1995-96 the decrease in total cash inflow was by 77.67% in 1998-99. The cause for decline was mainly due to decrease in current liabilities during these periods, reveals relinquishment of outstanding liabilities significantly. The generated cash resources were mainly utilised for increase in receivables and purchase of investments. The total increase in receivables and purchase of investment for the period under study was Rs. 34.67 crores and Rs. 26.65 crores respectively, constitutes 30.42 % and 23.38 % respectively of the total cash outflow. The cash balances of this unit had increased consistently during the period under study. The cash balance was Rs. 0.61 crores in 1989-90 increased to Rs. 8.93 crores in 1998-99. The cash management followed in this unit reveals better picture of raising cash flows through increase in funds flow from operations and also by reducing the outstanding liabilities with increased inflows. It is also interesting to observe that the management had followed extending more of credits to its customers relatively in obtaining more credits from its current liabilities. This phenomena reveals that the unit is getting less credit and giving more credit under its management. This

situation is not considered as ideal cash management policy followed by the unit.

The cash flow Statement of unit no. 4 for the period under study had been presented in Table C-9.4. Total cash inflow was Rs. 224.80 crores for a period of ten years under study. It reveals an increase in cash inflows from the year 1990-91 to 1998-99 by 34.56 %. The main source of cash was funds from operation and increase in current liabilities. The unit was maintaining a regular inflows on an average of Rs. 10.94 crores from funds from operation from the business activities except in 1991-92 wherein there was outflow of funds from operation to the tune of Rs. 3.18 crores. The total increase in current liabilities was Rs. 56.07 crores constitutes 24.94 % of the total cash inflows. This unit had raised funds from operation very successfully under the study period and this was used for the purchase of fixed assets and increase in inventories. The purchase of fixed assets and increase in inventories for the period under study was Rs. 73.08 crores and 41.36 crores respectively of the total cash outflows. This unit was maintaining on an average Rs.1.42 crores of cash balance. The analysis reveals that the unit had availed more credit in comparison to credit extended to its customer. The overall picture of this unit from the dimensions of cash management is very efficient.

The cash flow Statement of unit no. 5 for the period under study had been presented in Table C-9.5. Total cash inflow was Rs. 49.88 crores for a period of ten years under study It reveals an increase in cash inflows from funds from operation Rs. 10.77 crores and decrease in receivables of Rs. 14.70 crores. The unit was maintaining a regular inflows of funds from operation from the business activities on an average to the tune of Rs. 1.19 crores except in 1994-95, wherein there was outflow of funds from operation to the tune of Rs.

TABLE NO. C - 9.4

CASHFLOW STATEMENT OF E. MERCK LTD. DURING THE PERIOD 1989-90 TO 1998-99

(Rs in crores)

CASH INFLOWS	**1990-91**	**1991-92**	**1992-93**	**1993-94**	**1994-95**	**1995-96**	**1996-97**	**1997-98**	**1998-99**	**Total**
Opening Cash Balance	1.43	0.63	1.14	1.06	0.88	0.71	0 89	1.38	3.87	**1.43**
Funds From Operation	2.26	-3.18	4.03	15 21	7.99	12 96	15 13	17.94	26 12	**98.46**
Sale of Fixed Assets	0 00	0 00	0 00	1.45	0 00	0 00	0 00	0 00	0 00	**1.45**
Sale of Investments	0.00	0.00	0.00	0.00	0.91	0 01	0.00	0.00	0 00	**0.92**
Issue of Shares	0 00	2.97	0.00	7.95	0 00	0.00	0 00	0.00	0.00	**10.92**
Increase in Borrowed Capital	9.09	11.93	5.58	0.00	0.00	0.00	1.44	10 02	0.00	**38.06**
Decrease in Working Capital	**12.22**	**11.61**	**0.76**	**17.49**	**15.30**	**12.53**	**0.00**	**0.00**	**3.65**	**73.56**
Receivables	0 00	0 00	0.00	10.74	0.00	0 00	0.00	0 00	0.00	**10.74**
Inventories	0.00	0.00	0.00	6.75	0.00	0 00	0.00	0 00	0 00	**6.75**
Current Liabilities	12.22	11.61	0 76	0 00	15.30	12 53	0 00	0 00	3 65	**56.07**
Total	25.00	23.96	11 51	43 16	25.08	26 21	17 46	29 34	33 64	**224.80**
CASH OUTFLOWS										
Purchase of Fixed Assets	10.61	14 55	1.81	0.00	2.68	7 17	9 31	16.53	10.42	**73.08**
Purchase of Investments	0 00	0 00	0.00	0 00	0 00	0.00	0 00	0 00	0 00	**0.00**
Repayment of Loans	0 00	0.00	0.00	16 48	1.96	11.16	0 00	0 00	11.32	**40.92**
Increase in Working Capital	**14.39**	**9.41**	**9.70**	**26.68**	**20.44**	**7.88**	**8.15**	**12.81**	**11.90**	**110.80**
Receivables	8.78	7.48	2.02	0.00	2 44	5 89	0 36	1.18	7 89	**36.04**
Inventories	4 98	0.79	6 62	0.00	17.29	1.10	6.14	2 61	1 83	**41.36**
Current Liabilities	0 00	0 00	0.00	25.80	0.00	- 0 00	0.27	5 15	0.00	**31.22**
Closing Cash Balance	0 63	1.14	1 06	0.88	0.71	0 89	1 38	3 87	2.18	**2.18**
Total	**25.00**	**23.96**	**11.51**	**43.16**	**25.08**	**26.21**	**17.46**	**29.34**	**33.64**	**224.80**

Source : Appendices - II, III, IV, V and VI

TABLE NO. C - 9.5

CASHFLOW STATEMENT OF FULFORD LTD. DURING THE PERIOD 1989-90 TO 1998-99

(Rs. in crores)

CASH INFLOWS	1990-91	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97	1997-98	1998-99	Total
Opening Cash Balance	0.91	1.08	1.13	2.64	5 56	6.74	12.76	6.33	3.10	**0.91**
Funds From Operation	0.52	0.16	0.69	0 88	-0.79	1.32	1.63	2.72	3.64	**10.77**
Sale of Fixed Assets	0 00	0.22	0.00	0.00	0.00	0 00	0.00	0.00	0.00	**0.22**
Sale of Investments	0.00	0.00	0.00	0.00	0.15	0 00	0 00	0.00	0 00	**0.15**
Issue of Shares	0 80	0.00	0.00	0.00	1.60	0.00	0.00	0.00	0.00	**2.40**
Increase in Borrowed Capital	1.50	0.01	0.31	0.67	0.68	0.16	0.18	0.06	1.38	**4.95**
Decrease in Working Capital	**2.08**	**3.79**	**11.02**	**3.46**	**1.64**	**5.06**	**0.77**	**0.00**	**2.66**	**30.48**
Receivables	0.00	1.78	11.02	0.00	0.15	1.75	0 00	0 00	0.00	**14.70**
Inventories	2.08	2.01	0.00	0.00	0.00	1.29	0.00	0.00	0.00	**5.38**
Current Liabilities	0.00	0.00	0.00	3.46	1.49	2.02	0.77	0.00	2.66	**10.40**
Total	**5.81**	**5.26**	**13.15**	**7.65**	**8.84**	**13.28**	**15.34**	**9.11**	**10.78**	**49.88**
CASH OUTFLOWS										
Purchase of Fixed Assets	0.50	0.00	0.12	0.25	0.31	0.52	0.55	0.47	0.41	**3.13**
Purchase of Investments	0.00	0.00	0.06	0.07	0.00	0.00	0.00	0.00	0.00	**0.13**
Repayment of Loans	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0 00	0.00	**0.00**
Increase in Working Capital	**5.31**	**5.26**	**12.97**	**7.33**	**8.53**	**12.76**	**14.79**	**8.64**	**10.37**	**46.62**
Receivables	1.34	0 00	0.00	1.36	0.00	0.00	5.53	2.04	4 03	**14.30**
Inventories	0.00	0.00	3.17	0.41	1.79	0.00	2.93	0.26	4 82	**13.38**
Current Liabilities	2.89	4.13	7.16	0.00	0 00	0.00	0.00	3.24	0 00	**17.42**
Closing Cash Balance	1.08	1.13	2.64	5.56	6.74	12.76	6.33	3.10	1.52	**1.52**
Total	**5.81**	**5.26**	**13.15**	**7.65**	**8.84**	**13.28**	**15.34**	**9.11**	**10.78**	**49.88**

Source : Appendices - II, III, IV, V and VI

0.79 crores. The generated resources were mainly utilised for the purchase of inventories and relinquishment of current liabilities. The cash balances of this unit had increased inconsistently during the period under study. The cash balance was Rs. 0.91 crores in 1989-90 increased to Rs. 12.76 crores in 1995-96 and after that it had fall down to 1.52 crores in 1998-99. This was due to the reason that the unit had extended more credit than what had availed. The overall cash management position of the unit exposes an efficient management policy followed in this regard.

The cash flow Statement of unit no. 6 for the period under study had been presented in Table C-9.6. This unit exposes inconsistency in managing cash inflows and cash outflows. It reveals an increase in cash inflow was from funds from operation and increase in current liabilities. The unit had regular cash inflow from funds from operation on an average of Rs. 10.18 crores except in 1990-91, when there was an outflow of cash of Rs. 0.57 crores. The increase in current liabilities contributed Rs. 48.81 crores to the total cash inflows for the period under study. The analysis reveals that the unit had utilised its cash inflows for the purchase of fixed assets and increase in receivables. The total purchase of fixed assets and increase in receivables was Rs.84.62 crores and 36.46 crores respectively during the period under study. The unit was maintaining on an average Rs. 3.39 crores of cash balance. This explains, on one hand, the viability of the unit in raising of huge funds from operation and on the other hand diversion of funds from short-term to long-term nature which needs a proper examination of funds management. The analysis reveals that this unit had availed more credit in comparison to credit extended to its customer. The overall picture of this unit from the dimensions of cash management is efficient.

TABLE NO. C - 9.6

CASHFLOW STATEMENT OF GERMAN REMEDIES LTD. DURING THE PERIOD 1989-90 TO 1998-99

(Rs. in crores)

CASH INFLOWS	1990-91	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97	1997-98	1998-99	Total
Opening Cash Balance	1.66	2.08	1.27	2.04	1.95	6.97	4.14	4.34	5.03	**1.66**
Funds From Operation	-0.57	1 97	1.92	14.23	9.78	8.23	11.42	19.10	25 57	**91.65**
Sale of Fixed Assets	0.00	0.00	0.00	0.00	0.00	0 00	0.00	0 00	0.00	**0.00**
Sale of Investments	0.00	0.12	0.01	0.00	0.00	0.00	0.00	0 00	0.01	**0.14**
Issue of Shares	3.27	0.00	0.00	1.71	0.01	0.00	0 00	0.00	0 00	**4.99**
Increase in Borrowed Capital	4.58	2.47	3.39	0.00	0.00	0.00	0.00	0.00	0.00	**10.44**
Decrease in Working Capital	**7.42**	**7.55**	**5.83**	**0.00**	**5.22**	**5.04**	**10.73**	**23.54**	**0.20**	**65.53**
Receivables	0.00	0.00	0.00	0.00	0.00	0.00	9 28	0.00	0.16	**9.44**
Inventories	0.00	0.00	5.83	0.00	0.00	0.00	1.45	0 00	0 00	**7.28**
Current Liabilities	7.42	7.55	0 00	0.00	5.22	5.04	0.00	23.54	0.04	**48.81**
Total	**16.36**	**14.19**	**12.42**	**17.98**	**16.96**	**20.24**	**26.29**	**46.98**	**30.81**	**174.41**
CASH OUTFLOWS										
Purchase of Fixed Assets	8.23	4.79	2.58	2.76	1.28	5.57	13.16	28.91	17.34	**84.62**
Purchase of Investments	0.00	0.00	0.00	0.00	0.01	0 00	0.00	0.00	0.00	**0.01**
Repayment of Loans	0.00	0.00	0.00	2.73	0.70	0.91	2.88	2.71	2 53	**12.46**
Increase in Working Capital	**8.13**	**9.40**	**9.84**	**12.49**	**14.97**	**13.76**	**10.25**	**15.36**	**10.94**	**77.32**
Receivables	3.82	4.14	4.45	3.09	7.46	5.56	0.00	7.94	0.00	**36.46**
Inventories	2.23	3.99	0.00	4.92	0.54	4.06	0.00	2.39	8.26	**26.39**
Current Liabilities	0.00	0.00	3.35	2.53	0.00	0.00	5.91	0.00	0.00	**11.79**
Closing Cash Balance	2.08	1.27	2.04	1.95	6.97	4.14	4.34	5.03	2.68	**2.68**
Total	**16.36**	**14.19**	**12.42**	**17.98**	**16.96**	**20.24**	**26.29**	**46.98**	**30.81**	**174.41**

Source : Appendices - II, III, IV, V and VI

The cash flow Statement of unit no. 7 for the period under study had been presented in Table C-9.7. This unit exposes inconsistency in managing cash inflows and cash outflows. It exposes an abnormal balance of cash ranging between Rs. 3.12 crores and Rs. 177.24 crores. The unit is having good flow of funds from operation from the business activities during the period under study varied between Rs. 5.14 crores and Rs. 82.51 crores. The total increase in current liabilities was Rs. 165.09 crores. The generated resources were mainly utilised for the purchase of investments, fixed assets and inventories. The total purchases of investment, fixed assets and increase in inventories was Rs. 157.13 crores, 110.90 crores and 110.02 crores respectively. The analysis reveals that the poor cash planning and ineffective cash management of the units. The unit's management needs to take due care by relinquishing its outstanding obligations with surplus cash balance available and adopt an effective cash management system.

The cash flow Statement of unit no. 8 for the period under study had been presented in Table C-9.8. The total cash inflow in the unit was Rs. 504.20 crores. It was due to funds from operation and increase in current liabilities. The unit was maintaining a regular inflows of funds from operation from the business activities on an average to the tune of Rs. 10.99 crores except in 1994-95 and 1998-99 when there was outflow of funds from operation to the tune of Rs. 18.19 crores and Rs. 60.67 crores respectively. The total increase in current liabilities was Rs. 156.61 crores, constitutes 31.06% of the total cash inflows. The analysis reveals that the unit had utilised its cash inflows for the purchase of fixed assets and increase in inventories. The total purchase of fixed assets and increase in inventories for the period under study was Rs. 181.33 crores and Rs.

TABLE NO. C - 9.7

CASHFLOW STATEMENT OF GLAXO LTD. DURING THE PERIOD 1989-90 TO 1998-99

(Rs. in crores)

CASH INFLOWS	**1990-91**	**1991-92**	**1992-93**	**1993-94**	**1994-95**	**1995-96**	**1996-97**	**1997-98**	**1998-99**	**Total**
Opening Cash Balance	9.47	12.04	7.83	3.12	43.92	39.78	177.24	65.32	47.16	**9.47**
Funds From Operation	13.62	11.73	15.56	82.51	34.35	5.14	35.21	25.66	65.92	**289.70**
Sale of Fixed Assets	0.00	0 00	0.00	0.00	0.00	11.84	0.00	0.00	0.00	**11.84**
Sale of Investments	0.00	0.00	0.00	1.00	0.00	78.14	0.00	0 00	0.00	**79.14**
Issue of Shares	0.00	0.00	0.00	9.89	0.00	29.89	0.00	0 00	0.00	**39.78**
Increase in Borrowed Capital	5.74	2 51	20.73	0.00	0.00	0.00	0 00	30.15	0.00	**59.13**
Decrease In Working Capital	**20.64**	**17.44**	**1.64**	**22.28**	**67.70**	**70.87**	**0.00**	**1.56**	**23.66**	**225.79**
Receivables	0.00	1.13	0.00	0.00	8.14	0.00	0 00	1.56	0.00	**10.83**
Inventories	0.00	0.00	0.00	22.28	21.32	0 00	0.00	0.00	6.27	**49.87**
Current Liabilities	20.64	16.31	1.64	0.00	38.24	70.87	0.00	0 00	17.39	**165.09**
Total	**49.47**	**43.72**	**45.76**	**118.80**	**145.97**	**235.66**	**212.45**	**122.69**	**136.74**	**714.85**
CASH OUTFLOWS										
Purchase of Fixed Assets	17.23	18.09	16.82	16 78	0.00	0.00	11 70	17.71	12.57	**110.90**
Purchase of Investments	0.47	0.00	0.68	0 00	82.86	0.00	30 31	30 15	12.66	**157.13**
Repayment of Loans	0.00	0.00	0.00	18 32	23.33	7 52	1.83	0.00	32.08	**83.08**
Increase in Working Capital	**31.77**	**25.63**	**28.26**	**83.70**	**39.78**	**228.14**	**168.61**	**74.83**	**79.43**	**363.74**
Receivables	3.32	0.00	7.99	12.99	0.00	29.24	33.47	0.00	12.84	**99.85**
Inventories	16.41	17.80	17.15	0.00	0.00	21.66	18.55	18.45	0 00	**110.02**
Current Liabilities	0.00	0.00	0.00	26.79	0.00	0.00	51.27	9.22	0.00	**87.28**
Closing Cash Balance	12.04	7.83	3.12	43 92	39.78	177.24	65 32	47.16	66.59	**66.59**
Total	**49.47**	**43.72**	**45.76**	**118.80**	**145.97**	**235.66**	**212.45**	**122.69**	**136.74**	**714.85**

Source : Appendices - II, III, IV, V and VI

TABLE NO. C - 9.8

CASHFLOW STATEMENT OF HOECHST MARION ROUSSEL LTD. DURING THE PERIOD 1989-90 TO 1998-99

(Rs. in crores)

CASH INFLOWS	**1990-91**	**1991-92**	**1992-93**	**1993-94**	**1994-95**	**1995-96**	**1996-97**	**1997-98**	**1998-99**	**Total**
Opening Cash Balance	1.28	3.71	5.55	11.04	9.68	8.26	6 79	4.12	2.03	**1.28**
Funds From Operation	55.77	8.97	7.38	29.19	-18.19	6.19	19.41	50.94	-60.67	**98.99**
Sale of Fixed Assets	0.00	0.00	0.00	0.00	3.19	0.00	0.00	0.00	21.83	**25.02**
Sale of Investments	0.00	2.90	0.00	0.46	1.03	0.08	0 00	1.44	0.00	**5.91**
Issue of Shares	0.00	0.00	0.00	1 93	11.52	0.00	0 00	0 00	0 00	**13.45**
Increase in Borrowed Capital	10.33	0.00	5.30	1.38	8 86	0 00	0 00	17.78	22.79	**66.44**
Decrease in Working Capital	**24.23**	**25.51**	**7.07**	**11.26**	**3.14**	**40.51**	**24.77**	**77.86**	**78.76**	**293.11**
Receivables	1.35	11.55	0.00	0.00	0.30	0.00	0.00	0.00	23.21	**36.41**
Inventories	22.88	13.96	0.00	0 00	2.84	0.00	4.86	0.00	55.55	**100.09**
Current Liabilities	0.00	0.00	7.07	11.26	0.00	40.51	19.91	77.86	0.00	**156.61**
Total	**91.61**	**41.09**	**25.30**	**55.26**	**19.23**	**55.04**	**50.97**	**152.14**	**64.74**	**504.20**
CASH OUTFLOWS										
Purchase of Fixed Assets	67.86	8 20	7.12	19.54	0 00	17 54	21 72	39 35	0.00	**181.33**
Purchase of Investments	0.63	0.00	0.98	0.00	0.00	0.00	0.00	0.00	4.90	**6.51**
Repayment of Loans	0.00	0.37	0.00	0.00	0.00	14.54	5.97	0.00	0.00	**20.88**
Increase in Working Capital	**23.12**	**32.52**	**17.20**	**35.72**	**19.23**	**22.96**	**23.28**	**112.79**	**59.84**	**295.48**
Receivables	0.00	0.00	1.88	4.38	0.00	9.27	19.16	47.90	0.00	**82.59**
Inventories	0.00	0.00	4.28	21.66	0.00	6.90	0.00	62.86	0.00	**95.70**
Current Liabilities	19.41	26.97	0.00	0.00	10.97	0.00	0.00	0.00	58.95	**116.30**
Closing Cash Balance	3.71	5.55	11.04	9.68	8.26	6.79	4.12	2.03	0.89	**0.89**
Total	**91.61**	**41.09**	**25.30**	**55.26**	**19.23**	**55.04**	**50.97**	**152.14**	**64.74**	**504.20**

Source : Appendices - II, III, IV, V and VI

95.70 crores respectively of the total cash outflows. This unit was maintaining on an average Rs. 5.79 crores of cash balance.

The cash flow Statement of unit no. 9 for the period under study had been presented in Table C-9.9. The total cash inflow in the unit was Rs. 253.76 crores. The amount of cash inflows fluctuated from year to year. The major sources of cash were the funds from operation and increase in current liabilities for the period under study. On average funds from operation was Rs. 11.43 crores during the period under study. During the year 1994-95, there was outflow from operation of Rs. 14.17 crores. Total increase current liabilities was Rs. 84.63 crores out of the total cash inflows for the period under study. The analysis reveals that the unit had utilised its cash inflows for the purchase of fixed assets and increase in receivables. The total purchase of fixed assets and increase in receivables for the period under study was Rs. 46.90 crores and Rs.67.11 crores respectively. The unit exposes an abnormal balance of cash ranging between Rs. 0.60 crores and Rs. 78.17 crores. It was maintaining on an average Rs. 16.39 crores of cash balance. The analysis reveals the poor cash planning and ineffective cash management of the units. The unit's management needs to take due care by relinquishing its outstanding obligations with surplus cash balance available and adopt an effective cash management system.

The cash flow Statement of unit no. 10 for the period under study had been presented in Table C-9.10. The total cash inflow in the unit was Rs. 150.98 crores. The amount of cash inflow fluctuated from year to year. Major amount of the cash resources in this concern was generated from increase in current liabilities, increase in borrowed capital and funds from operation. Total increase in current liabilities and borrowed capital were Rs. 69.48 crores and 35.05

TABLE NO. C - 9.9

CASHFLOW STATEMENT OF KNOLL PHARMACEUTICAL LTD. DURING THE PERIOD 1989-90 TO 1998-99

(Rs. in crores)

CASH INFLOWS	1990-91	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97	1997-98	1998-99	Total
Opening Cash Balance	0.78	0.66	0.60	1.06	26.12	7.70	1.05	2 00	30.17	**0.78**
Funds From Operation	4.82	5.19	4.22	6.30	-14.17	15.54	15.58	48.19	17.21	**102.88**
Sale of Fixed Assets	0.00	0.00	0.24	0.00	0.00	0.00	0.00	0.00	0.00	**0.24**
Sale of Investments	0.00	2.91	0 00	9.99	0.01	0 00	0.00	0.00	0.03	**12.94**
Issue of Shares	0.00	0.00	0.00	0 00	0 00	0.00	0.00	0 00	8.10	**8.10**
Increase in Borrowed Capital	0.00	3.07	1.65	3.08	0.00	0.00	4.97	0.00	0.00	**12.77**
Decrease in Working Capital	**7.41**	**0.00**	**1.68**	**12.92**	**17.21**	**10.33**	**5.85**	**21.68**	**38.97**	**116.05**
Receivables	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	23.37	**23.37**
Inventories	0.00	0.00	1.33	0.00	0.00	0.00	2.19	4 53	0.00	**8.05**
Current Liabilities	7.41	0.00	0.35	12.92	17.21	10.33	3.66	17.15	15.60	**84.63**
Total	**13.01**	**11.83**	**8.39**	**33.35**	**29.17**	**33.57**	**27.45**	**71.87**	**94.48**	**253.76**
CASH OUTFLOWS										
Purchase of Fixed Assets	5.31	1.72	0.00	1.87	5.36	15.71	12.55	3.05	1.33	**46.90**
Purchase of Investments	0.00	0.00	4.30	0.00	0.00	0.00	0.00	0.00	0.00	**4.30**
Repayment of Loans	1.30	0 00	0.00	0.00	0 66	8.68	0.00	5.38	0.63	**16.65**
Increase in Working Capital	**6.40**	**10.11**	**4.09**	**31.48**	**23.15**	**9.18**	**14.90**	**63.44**	**92.52**	**185.91**
Receivables	2.23	1.30	3.03	2.86	5.69	5.83	12.90	33.27	0.00	**67.11**
Inventories	3.51	6.75	0.00	2.50	9.76	2 30	0.00	0 00	14.35	**39.17**
Current Liabilities	0.00	1.46	0.00	0.00	0.00	0.00	0.00	0 00	0.00	**1.46**
Closing Cash Balance	0.66	0.60	1.06	26.12	7.70	1.05	2.00	30.17	78.17	**78.17**
Total	**13.01**	**11.83**	**8.39**	**33.35**	**29.17**	**33.57**	**27.45**	**71.87**	**94.48**	**253.76**

Source : Appendices - II, III, IV, V and VI

TABLE NO. C - 9.10

CASHFLOW STATEMENT OF PARKE-DAVIS LTD. DURING THE PERIOD 1989-90 TO 1998-99

(Rs in crores)

CASH INFLOWS	**1990-91**	**1991-92**	**1992-93**	**1993-94**	**1994-95**	**1995-96**	**1996-97**	**1997-98**	**1998-99**	**Total**
Opening Cash Balance	0.47	0.80	1.89	1.85	1.69	0.63	0 65	2.74	1.30	**0.47**
Funds From Operation	-3.45	1.16	3.99	3.90	5 03	3.79	6.76	-18.76	3.91	**6.33**
Sale of Fixed Assets	0.00	0.00	0.00	0.00	0.00	0 00	0.00	0.00	8.42	**8.42**
Sale of Investments	0.00	0.62	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.62**
Issue of Shares	4.52	0.00	0.00	0.00	0 00	0.00	0.00	0 00	0 00	**4.52**
Increase in Borrowed Capital	2.26	0.24	0.00	0 53	0.00	0 00	25 48	1 74	4.80	**35.05**
Decrease in Working Capital	**2.92**	**2.48**	**8.15**	**5.89**	**12.52**	**7.37**	**21.82**	**24.07**	**10.35**	**95.57**
Receivables	0.00	0 00	0 00	0.00	0.00	0.35	0 00	0.00	8.85	**9.20**
Inventories	0.00	2 48	0.00	5.89	0.00	7.02	0.00	0.00	1.50	**16.89**
Current Liabilities	2.92	0.00	8.15	0.00	12.52	0.00	21 82	24.07	0.00	**69.48**
Total	**6.72**	**5.30**	**14.03**	**12.17**	**19.24**	**11.79**	**54.71**	**9.79**	**28.78**	**150.98**
CASH OUTFLOWS										
Purchase of Fixed Assets	1.18	0 61	3.19	0.79	0.88	3.51	39 34	5.32	0 00	**54.82**
Purchase of Investments	0.62	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0 00	**0.62**
Repayment of Loans	0.00	0.00	0 06	0 00	0.37	0.02	0 00	0.00	0 00	**0.45**
Increase in Working Capital	**4.92**	**4.69**	**10.78**	**11.38**	**17.99**	**8.26**	**15.37**	**4.47**	**28.78**	**95.09**
Receivables	2.76	1.21	1.07	5.41	8.65	0 00	7.70	3 08	0.00	**29.88**
Inventories	1.36	0.00	7.86	0.00	8.71	0.00	4 93	0.09	0.00	**22.95**
Current Liabilities	0.00	1.59	0.00	4.28	0.00	7.61	0.00	0.00	27.27	**40.75**
Closing Cash Balance	0.80	1.89	1.85	1.69	0.63	0.65	2.74	1.30	1 51	**1.51**
Total	**6.72**	**5.30**	**14.03**	**12.17**	**19.24**	**11.79**	**54.71**	**9.79**	**28.78**	**150.98**

Source : Appendices - II, III, IV, V and VI

crores respectively. Except in 1990-91 and 1997-98, the unit had an inconsistent funds from operation i.e. Rs. 0.70 crores on an average. The analysis reveals that the unit had utilised its cash inflows for the purchase of fixed assets and increase in inventories. The total purchase of fixed assets and increase in inventories for the period under study was Rs. 54.82 crores and Rs. 22.95 crores respectively. The unit had maintained an average cash balance of Rs. 1.45 crores. Investing the short-term funds for the purchase of fixed assets does not indicate sound policy of the management.

The cash flow Statement of unit no. 11 for the period under study had been presented in Table C-9.11. The total cash inflow in the unit was Rs. 189.48 crores. This unit exposes inconsistency in managing cash inflows and cash outflows. It reveals an increase in cash inflows mainly due to funds from operation and increase in borrowed capital and current liabilities. On an average fund from operation was Rs. 7.53 crores during the period under study. The total borrowed capital and current liabilities contributed Rs. 38.92 crores and Rs. 49.26 crores to the total cash inflows for the period under study. The analysis reveals that the unit had utilised its cash inflows for the purchase of fixed assets and increase in receivables. Total purchase of fixed assets and increase in receivables for the period under study was Rs. 55.74 crores and Rs. 53.63 crores respectively. Cash balance of the unit had increased inconsistently during the period under study. The cash balance was Rs. 0.31 crores in 1989-90 increased to Rs. 8.40 crores in 1998-99. The analysis reveals that it had extended more credit than what it had availed. The overall cash management position of the unit exposes an efficient management policy followed in this regard.

TABLE NO. C - 9.11

CASHFLOW STATEMENT OF PFIZER LTD. DURING THE PERIOD 1989-90 TO 1998-99

(Rs. in crores)

CASH INFLOWS	1990-91	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97	1997-98	1998-99	Total
Opening Cash Balance	0 31	0.30	0 32	0 69	2 24	2.17	1 01	0 68	2.56	**0.31**
Funds From Operation	2.49	2.83	6 46	12 07	8.14	4 83	3 60	10 48	16 88	**67.78**
Sale of Fixed Assets	0 00	0 00	0 00	0 00	0 00	0 00	9 47	0 00	0 00	**9.47**
Sale of Investments	0.00	0.00	2 62	0.01	0 00	0 00	0.00	0 00	0 00	**2.63**
Issue of Shares	0.00	0 00	0.00	0 00	0 00	0 00	0 00	0 00	0 00	**0.00**
Increase in Borrowed Capital	7.38	0 96	8 98	0 91	8 31	0.00	0 00	12 38	0 00	**38.92**
Decrease in Working Capital	**0.87**	**0.88**	**10.16**	**6.77**	**0.23**	**15.05**	**2.77**	**9.53**	**24.11**	**70.37**
Receivables	0.00	0.00	0 00	0.00	0.00	0 53	0.00	0 00	7.94	**8.47**
Inventories	0.87	0.00	0.00	0.00	0 23	5 65	2 77	3.12	0 00	**12.64**
Current Liabilities	0.00	0 88	10.16	6.77	0.00	8 87	0.00	6 41	16 17	**49.26**
Total	**11.05**	**4.97**	**28.54**	**20.45**	**18.92**	**22.05**	**16.85**	**33.07**	**43.55**	**189.48**
CASH OUTFLOWS										
Purchase of Fixed Assets	2.64	2.40	16.95	5.76	5.31	4 02	0.00	11.09	7.57	**55.74**
Purchase of Investments	0 00	0 00	0 00	0.00	0.00	0 01	0 02	2 97	0 24	**3.24**
Repayment of Loans	0.00	0.00	0.00	0.00	0.00	17 01	2.89	0.00	20 01	**39.91**
Increase in Working Capital	**8.41**	**2.57**	**11.59**	**14.69**	**13.61**	**1.01**	**13.94**	**19.01**	**15.73**	**90.59**
Receivables	6 65	2 17	1.55	7 23	10 04	0 00	9 54	16.45	0.00	**53.63**
Inventories	0.00	0.08	9.35	5.22	0.00	0.00	0.00	0 00	7.33	**21.98**
Current Liabilities	1.46	0 00	0.00	0 00	1.40	0 00	3.72	0 00	0.00	**6.58**
Closing Cash Balance	0.30	0 32	0 69	2.24	2 17	1 01	0 68	2 56	8.40	**8.40**
Total	**11.05**	**4.97**	**28.54**	**20.45**	**18.92**	**22.05**	**16.85**	**33.07**	**43.55**	**189.48**

Source : Appendices - II, III, IV, V and VI

The cash flow Statement of unit no. 12 for the period under study had been presented in Table C-9.12. The amount of cash inflow fluctuated from year to year. Most of the cash resources in this concern throughout the period under study were funds from operation, increase in current liabilities and increase in borrowed capital. On average funds from operation was Rs. 8.95 crores. Total borrowed capital and current liabilities contributed to Rs. 76.83 crores and Rs. 65.26 crores to the total cash inflows for the period under study. The analysis reveals that the unit had utilised its cash inflows for the purchase of fixed assets and increase in inventories. Total purchase of fixed assets and increase in receivables for the period under study was Rs. 89.93 crores and Rs. 80.51 crores respectively. The cash balances of the unit had increased inconsistently during the period under study. The cash balance was Rs. 0.87 crores in 1989-90 increased to Rs. 13.22 crores in 1997-98. The unit was maintaining on an average Rs. 6.35 crores of cash balance. The cash management followed in this unit reveals a better picture of raising cash flows through increase in funds flow from operations. It is also interesting to observe that the management had followed policy of extending more credits to its customers as compared to credits obtained from its current liabilities. The unit's management needs to take due care by relinquishing its outstanding obligations with surplus cash balance available and adopt an effective cash management system.

The cash flow Statement of unit no. 13 for the period under study had been presented in Table C-9.13. The total cash inflow of the unit was Rs. 155.17 crores. This unit exposes inconsistency in managing cash inflows and cash outflows. It reveals that an increase

TABLE NO. C - 9.12

CASHFLOW STATEMENT OF RPG LIFE SCIENCES LTD. DURING THE PERIOD 1989-90 TO 1998-99

(Rs. in crores)

CASH INFLOWS	**1990-91**	**1991-92**	**1992-93**	**1993-94**	**1994-95**	**1995-96**	**1996-97**	**1997-98**	**1998-99**	**Total**
Opening Cash Balance	0.87	0.29	1.87	2.34	1.76	2.35	10.67	12 81	13 22	**0.87**
Funds From Operation	3.90	4.16	1.76	5.05	8.72	25.90	19 24	7 91	3 92	**80.56**
Sale of Fixed Assets	0.00	0.00	0.00	0.00	0 00	0 00	0 00	0 00	0.00	**0.00**
Sale of Investments	0.00	0.24	0.00	0 00	0.00	0.00	0.00	0 00	0.00	**0.24**
Issue of Shares	0.00	0 00	2.60	0.00	0.00	1.64	1 43	0 04	0.00	**5.71**
Increase in Borrowed Capital	0.00	2.19	0.00	1.46	3 89	16 81	28.49	16 23	7.76	**76.83**
Decrease in Working Capital	**11.07**	**3.24**	**3.99**	**0.39**	**10.33**	**17.90**	**2.12**	**15.09**	**17.56**	**81.69**
Receivables	0.00	0.55	0.25	0.39	0.00	0.00	0 00	0.00	0.00	**1.19**
Inventories	5.48	0.00	0.00	0.00	0 00	0 00	0.00	6.68	3.08	**15.24**
Current Liabilities	5.59	2.69	3.74	0.00	10.33	17.90	2.12	8.41	14 48	**65.26**
Total	**15.84**	**10.12**	**10.22**	**9.24**	**24.70**	**64.60**	**61.95**	**52.08**	**42.46**	**245.90**
CASH OUTFLOWS										
Purchase of Fixed Assets	2.56	3.75	1.43	1.84	7 37	35.74	17.77	11.35	8.12	**89.93**
Purchase of Investments	0.11	0.00	0.00	0.00	0.00	2.24	15.70	0.00	0.00	**18.05**
Repayment of Loans	7.48	0.00	1.29	0.00	0.00	0.00	0.00	0 00	0.00	**8.77**
Increase in Working Capital	**5.69**	**6.37**	**7.50**	**7.40**	**17.33**	**26.62**	**28.48**	**40.73**	**34.34**	**129.15**
Receivables	5.40	0.00	0.00	0.00	10.16	8.66	6.28	27.51	22 50	**80.51**
Inventories	0.00	4.50	5.16	2.31	4.82	7.29	9 39	0.00	0.00	**33.47**
Current Liabilities	0.00	0.00	0.00	3.33	0 00	0.00	0.00	0.00	0.00	**3.33**
Closing Cash Balance	0.29	1.87	2.34	1.76	2.35	10.67	12.81	13.22	11.84	**11.84**
Total	**15.84**	**10.12**	**10.22**	**9.24**	**24.70**	**64.60**	**61.95**	**52.08**	**42.46**	**245.90**

Source : Appendices - II, III, IV, V and VI

TABLE NO. C - 9.13

CASHFLOW STATEMENT OF UNICHEM LABORATORIES LTD. DURING THE PERIOD 1989-90 TO 1998-99

(Rs. in crores)

CASH INFLOWS	1990-91	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97	1997-98	1998-99	Total
Opening Cash Balance	0.25	0.42	0.09	0.29	0.14	1 04	1.10	4.49	1.74	**0.25**
Funds From Operation	2.42	3.05	-0.98	2.49	20.83	6.36	2.66	11.87	12.83	**61.53**
Sale of Fixed Assets	0.00	0.00	0.00	0.00	0.00	0.00	0 00	0.00	0 00	**0.00**
Sale of Investments	0 00	0.00	0.00	0.00	0 05	0.00	0 20	0 00	0.38	**0.63**
Issue of Shares	0.00	0.00	0 00	0.64	1.61	0 00	0 66	0 00	0 00	**2.91**
Increase in Borrowed Capital	0.11	0 55	2.54	1.49	0.00	0 00	26 37	5 21	0.28	**36.55**
Decrease in Working Capital	**1.57**	**2.74**	**9.81**	**2.30**	**0.68**	**11.16**	**6.17**	**6.89**	**2.67**	**43.99**
Receivables	0.00	0.00	0 00	2.30	0.00	0 00	0 00	2 26	2 67	**7.23**
Inventories	0.00	0.00	1.54	0.00	0 00	1.08	6 17	0.00	0 00	**8.79**
Current Liabilities	1.57	2.74	8.27	0.00	0.68	10.08	0.00	4.63	0.00	**27.97**
Total	**4.35**	**6.76**	**11.46**	**7.21**	**23.31**	**18.56**	**37.16**	**28.46**	**17.90**	**155.17**
CASH OUTFLOWS										
Purchase of Fixed Assets	0.55	1.06	0.83	0.17	7.80	6 20	21.98	21 11	11.78	**71.48**
Purchase of Investments	0 00	0.43	0.34	0.01	0 00	0.66	0 00	0 06	0 00	**1.50**
Repayment of Loans	0 00	0.00	0.00	0.00	2.82	2.75	0.00	0.00	0.00	**5.57**
Increase in Working Capital	**3.80**	**5.27**	**10.29**	**7.03**	**12.69**	**8.95**	**15.18**	**7.29**	**6.12**	**76.62**
Receivables	0.63	0.08	10.00	0 00	8.39	7.85	9.81	0.00	0.00	**36.76**
Inventories	2.75	5.10	0.00	0.11	3.26	0.00	0.00	5.55	2.41	**19.18**
Current Liabilities	0.00	0.00	0.00	6.78	0 00	0.00	0.88	0.00	2.83	**10.49**
Closing Cash Balance	0.42	0.09	0.29	0.14	1.04	1.10	4.49	1.74	0.88	**0.88**
Total	**4.35**	**6.76**	**11.46**	**7.21**	**23.31**	**18.56**	**37.16**	**28.46**	**17.90**	**155.17**

Source : Appendices - II, III, IV, V and VI

in cash inflows was mainly due to funds from operation and increase in borrowed capital and current liabilities. The unit had an inconsistent fund from operations and an average fund from operation was Rs. 6.84 crores during the period under study. The increase in borrowed capital and current liabilities contributed Rs. 36.55 crores and Rs. 27.97 crores to the total cash inflows. The analysis reveals that the unit had utilised its cash inflows for the purchase of fixed assets and increase in receivables. Total purchase of fixed assets and increase in receivables for the period was Rs. 71.48 crores and Rs. 36.76 crores respectively. Cash balances of the unit had increased inconsistently during the period under study. The cash balance was Rs. 0.25 crores in 1989-90 increased to Rs. 4.49 crores in 1996-97 and after that it had fall down to Rs. 0.88 crores in 1998-99. The analysis reveals that the unit had extended more credit than what had availed. The overall cash management position of the unit exposes an efficient management policy followed in this regard.

NET CASH FLOW TO CURRENT LIABILITIES:

Quite more than often, a manufacturing concern is not in a position to dispose of its current assets because it either does not find market for them or because its current assets lack the quality of immediate convertibility into cash. The major difference between 'technical liquidity' and 'actual liquidity' approaches stems from the point concerning the existence of a business concern. In the 'technical approach' it is assumed that the firm might become insolvent at any point of time. The 'actual approach' towards liquidity views an enterprise from the going concern hypothesis and it is quite understandable that a going concern meets its current liabilities

mostly from the cash coming from the operations. Prof. Walter has also suggested that instead of matching the current assets with current liabilities or quick assets with current liabilities, better results can be obtained by matching current liabilities with net cash flow. In the long run net cash flow is more important since they are flows whereas current liabilities only indicate the outstanding obligations on a particular date are continuously replaced. Some financial analysts are of the opinion that a firm to be actually liquid and solvent should have 100% or more net cash flows to current liabilities.

Table C-10 shows the percentage of net cash flow to current liabilities of the sample units during the period between 1989-90 and 1998-99. The ratio had more or less an upward trend throughout the period of ten years. It was 83.18% in 1989-90, gradually increased to 119.36% in 1993-94 then declined to 88.45% in 1995-96. Thereafter it increased and reached a peak level of 128.60% in 1998-99. It appears that the selected units had a very healthy position and net cash flow of the units was much higher as compared to its current liabilities. The analysis further reveals that the during the initial four years under the study it had less than 100% of net cash flow as compared to its current liabilities. But in the later five years under the study the unit had generated net cash flow much higher than their current liabilities i.e. more than 100% except in the year 1995-96.This clearly indicated that the overall sample units had greater liquidity and solvency particularly during the later period of study.

The overall average net cash flow to current liabilities of 99.32% of sample units, as compared with 41.24% of 'Pharmaceutical Industry in India' and 36.97% of 'All Industries in India' was significantly higher. This indicated that the selected units could meet their current liabilities without any difficulty as compared to the

TABLE NO. C - 10

NET CASH FLOW TO CURRENT LIABILITIES OF PHARMACEUTICAL COMPANIES DURING THE PERIOD 1989-90 TO 1998-99

(In percentage)

COMPANIES / YEARS	1989-90	1990-91	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97	1997-98	1998-99	Average
1 Burroughs Wellcome Ltd.	50 59	79.93	69.61	63 01	106 90	61 35	37.27	90 24	127 35	141.48	**82.77**
2 Cipla Ltd.	84.52	57.57	66.16	67.17	68.57	59.84	70 58	122 68	108 93	90 29	**79.63**
3 Duphar-Interfran Ltd	46 53	51 07	53 59	54 23	50 06	60 68	23 09	72 31	122 47	177 77	**71.18**
4. E. Merck Ltd.	61 29	52.47	42.33	59 82	129 90	110 36	99 36	109 52	142.45	151.70	**95.92**
5. Fulford Ltd	36.73	32.73	49 84	102 19	94 57	106 16	103 77	111.38	152 62	140 88	**93.09**
6. German Remedies Ltd	80.62	48.12	32.71	52.42	93.11	88 56	77 35	107 73	82.86	108 08	**77.16**
7. Glaxo Ltd	115.50	113 85	97.84	119.46	185.43	110.30	63 90	139.55	154 07	168 82	**126.87**
8 Hoechst Marion Roussel Ltd.	48.64	68 20	86.53	90 69	115.60	123.16	85 52	92.55	70 14	65.50	**84.65**
9. Knoll Pharmaceuticals Ltd.	122.26	109.16	134 53	154 11	148.74	123 35	100 88	111 39	104 40	93 84	**120.27**
10 Parke-Davis Ltd	144.31	149 24	181.52	174.50	231.28	165 54	221 95	140 32	104 31	181.68	**169.47**
11. Pfizer Ltd	61.61	60 79	54.69	75.33	91.10	108 95	101 65	128 60	83 53	89.70	**85.60**
12. RPG Life Sciences Ltd	181.15	118.09	117.56	116.03	165 81	133 67	97.95	93 22	93 67	95 48	**121.26**
13. Unichem Laboratories Ltd.	47.54	64.71	59 36	30.93	70.64	93.78	66 61	108.68	124 36	166 63	**83.32**
Average	**83.18**	**77.38**	**80.48**	**89.22**	**119.36**	**103.51**	**88.45**	**109.86**	**113.17**	**128.60**	**99.32**
Pharmaceutical Industry in India	36 21	38 00	35 61	40 57	35 03	42 25	45.13	44.99	43 70	50 91	**41.24**
All Industries in India	45.31	39.33	37.45	34 82	34.77	40.53	40.75	34.79	32.31	29 68	**36.97**

Source : Appendices -IV, and V

Std. Dev	26.68
C V	26.86

Pharmaceutical Industry in India' and 'All Industries in India'. The coefficient of variation of sample units 26.86%, shows lesser variation among the units, indicated that they had followed uniform policy for maintaining net cash flow during the period under study.

An indepth analysis of the table reveals that the unit no. 7 and 10 had very high percentage while unit no. 1, 3 and 6 had very low percentage of net cash flow to current liabilities.

Unit no. 7 had average percentage of net cash flow to current liabilities was 126.87%. It was 115.50% in 1989-90 increased gradually and reached to 185.43% in 1993-94, then declined to 63.90% in 1995-96. Thereafter it again increased to a peak level of 168.82% in 1998-99. The higher percentage of net cash flow to current liabilities shows that the unit had generated sufficient cash to meet the current liabilities fully. Analysis further reveals that the unit had more than standard current ratio and liquid ratio which indicated that the unit was 'technically solvent'. At the same time the high net cash flow to current liabilities ratio further substantiate the soundness of the liquidity position and establishes the fact that the unit was also 'technically sound'.

Unit no. 10 had the highest percentage of 169.47% of net cash flow to current liabilities. It was 144.31% in 1989-90, increased to an abnormally high level of 231.28% in 1993-94. Thereafter it declined to 165.45% in 1994-95, then it again increased to 221.95% in 1995-96. Finally it was at 181.68% in 1998-99. Such a high percentage of cash indicated that the unit had very high profitability and it had cash flow more than twice to meet its current obligation.

Unit no. 1 had low average percentage of 82.77% of net cash flow to current liabilities. It was 50.59% in 1989-90 increased to 106.90% in 1993-94. Thereafter it declined and reached to a very low

level of 37.27% in 1995-96, again increased to 141.48% in 1998-99. The analysis reveals that in spite of the current ratio and quick ratio of the unit is more than the standard norm, the unit was "cash-tight". This was because the cash from operations were not sufficient to meet its short-term commitments. A comparison of current ratio and liquid ratio with net cash flow to current liabilities ratio to test the 'technical solvency' and 'actual solvency' indicated that former both the ratios were higher than the standard norm, while later was less than standard norm. This reveals that the unit was 'technically solvent' but in actual practice it was not.

Unit no. 3 had the lowest average of 71.18% during the period under study. It was 46.53% in 1989-90 increased to 60.68% in 1994-95. Thereafter it declined to ever-lowest level of 23.09% in 1995-96, it then increased to 177.77% in 1998-99. The lowest percentage reveals a fact contrary to the current and quick ratio tests. Though the unit had current ratio much above 2:1 and quick ratio above 1:1, but as it had a lower percentage of cash to current liabilities, it may not be able to meet its currently maturing obligations. The most striking feature of the unit was that it had the percentage of net cash flow to current liabilities exceeding 100% in last two years under the study only. This clearly indicated that the unit was not in a position to liquidate the currently maturing obligations out of its own generated cash funds during the first eight years under the study. This State of affairs is clearly symbolic of the fact that the unit was devoid of all commercial prudence and financial pragmatism.

Unit no. 6 had low average percentage of 77.16% of net cash flow to current liabilities. It was 80.62% in 1989-90 decreased to 32.71% in 1991-92. Thereafter it increased and reached to 93.11% in

1993-94, again declined to 77.35% in 1995-96. Finally it increased and reached a peak level of 108.08% in 1998-99. The analysis reveals that the unit had below standard current ratio and quick ratio and alongwith that it had very low percentage of net cash flow to current liabilities ratio, this clearly reveals that units is 'technically' and 'actually' having lower liquidity.

COVERAGE OF CURRENT LIABILITIES RATIO:

One more test that can be applied to ascertain the liquidity of a concern is the Coverage of current liabilities. This ratio takes in to account the turnover rate of current liabilities and margin of profit on sales. Prof. Walter calls these computations as the test of actual liquidity[32]. He had not laid down any standard to distinguish between liquid or illiquid firms or solvent or insolvent firms but suggested that the currently maturing obligations should be matched with the net cash flows and thereafter an exact conclusion about the liquidity and solvency of a firm could be derived.

Table C-11 shows the coverage of current liabilities in the pharmaceutical units during the period of ten years under study. The overall average of the coverage of current liabilities of the sample units was 22.16%. It was 17.33% in 1989-90 declined to 10.35% in 1991-92. Thereafter it had an upward trend for the remaining years and reached to a peak level of 33.29% in 1998-99. It was observed that as overall average had increased in the later seven years of a study period, it clearly indicated that higher funds were generated which had increased the ability to meet the currently maturing obligations.

TABLE NO. C - 11

COVERAGE OF CURRENT LIABILITIES OF THE PHARMACEUTICAL COMPANIES DURING 1989-90 TO 1998-99

(In percentage)

COMPANIES / YEARS	1989-90	1990-91	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97	1997-98	1998-99	Average
1 Burroughs Wellcome Ltd.	7.17	10.35	8 09	8.81	21.03	16.00	-9.41	28.40	51 34	51.11	**19.29**
2 Cipla Ltd	16.11	12.38	13.45	14.23	15 91	21 38	20 43	58 14	59 34	48 85	**28.02**
3 Duphar-Interfran Ltd	7.36	7.06	5 97	5 24	3.40	5 91	173 63	34.73	38 18	35 53	**31.70**
4 E Merck Ltd	14.54	5 50	-3 31	3 55	21 14	21.42	26 79	32 96	43 82	56 11	**22.25**
5. Fulford Ltd	6.30	3.55	2.15	9.78	8.56	8 87	10.79	12 17	23 35	25 68	**11.12**
6. German Remedies Ltd.	27.04	9 80	3.53	2 81	23.80	30 94	23 76	39.06	39 24	50 99	**25.10**
7 Glaxo Ltd	20.93	11.27	4 49	9.22	24.52	68 96	52 94	33 49	30 78	57.30	**31.39**
8. Hoechst Marion Roussel Ltd	8.41	7 58	7.57	4.40	11.89	25.94	16.43	15 70	15 53	13 82	**12.73**
9. Knoll Pharmaceuticals Ltd	25.19	22.11	23.98	23 64	21.24	13 06	15.41	29 60	57.83	26 52	**25.86**
10 Parke-Davis Ltd	32.01	17.41	19.23	25 85	33 26	28 72	28 89	21 03	10 51	15.46	**23.24**
11. Pfizer Ltd.	11.14	11.03	8 12	7.59	21 25	16 85	18 78	35.71	23 11	16 60	**17.02**
12 RPG Life Sciences Ltd.	50.69	30.29	28.30	22 02	34 91	36.70	29 25	17 24	8 29	5.30	**26.30**
13 Unichem Laboratories Ltd.	-1.56	10.03	12.96	6.43	18 02	27.07	16.61	10 72	10 84	29.51	**14.06**
Average	**17.33**	**12.18**	**10.35**	**11.04**	**19.92**	**24.76**	**32.64**	**28.38**	**31.71**	**33.29**	**22.16**
Pharmaceutical Industry in India	5.74	3.18	3.39	7.30	13.57	21.59	15.39	9.13	5.31	10.22	**9.48**
All Industries in India	9.49	7.79	6.15	5.53	8 47	14.47	14.13	8.26	5 68	4.42	**8.44**

Source : Appendices -IV, and V

Std. Dev.	6 58
C.V.	29.68

The overall average coverage of current liabilities of 22.16% of sample units, as compared with 9.48% of 'Pharmaceutical Industry in India' and 8.44% of 'All Industries in India' was significantly higher. This indicated that the selected units had higher coverage of their current liabilities as compared to the Pharmaceutical Industry in India' and 'All Industries in India'. The coefficient of variation of sample units 29.68%, shows lesser variation among the units, indicated that they had followed uniform policy for coverage of current liabilities during the period under study.

An indepth analysis of the table reveals that the unit no. 2 and 7 had the very high average percentage while unit no. 5 and 8 had very low percentage of coverage of current liabilities during the period 1989-90 to 1998-99.

Unit no. 3 had highest average percentage of 31.70% of coverage of current liabilities during the period under study. It was 7.36% in 1989-90 declined to 3.40% in 1993-94. Thereafter it increased to exceptionally high level of 173.63% in 1995-96 and then it declined to 35.53% in 1998-99. Rise in the coverage ratio was mainly due to exponential rise in the profit of the unit after 1990-91 i.e. from Rs. 6.31 crores in 1990-91 increased to Rs. 114.95 crores in 1998-99. High coverage ratio of the unit indicated that the unit had better liquidity and was able to meet its short-term commitment in time.

Unit no. 7 had the second highest average percentage of 31.39% of coverage of current liabilities. It was 20.93% in 1989-90 declined to a very low level of 4.49% in 1991-92. Thereafter it increased and reached to a very high level of 68.96% in 1994-95, then started declining and reached to 30.78% in 1997-98. Finally it reached to 57.30% in 1998-99. The main reason for the high

coverage ratio was due to the reason that the profit had increased at a faster rate than the current liabilities of the unit. Profit of the unit had increased from Rs. 15.36 crores in 1989-90 to Rs. 86.64 crores in 1998-99, while the current liabilities of the unit had increased from Rs. 73.40 in 1989-90 to Rs. 151.21 crores in 1998-99, i.e. growth of profit was by 462.11% and of current liabilities by 106%.

Unit no. 5 had the lowest average of 11.12% of coverage of current liabilities during the period of ten years under the study. It was 6.30% in 1989-90 declined to ever-lowest level of 2.15% in 1991-92. Thereafter for the remaining years under study it had an invariable trend of rising and reached to 25.68% in 1998-99. From the analysis it reveals that though in the initial years the unit had very low coverage but during the later period under study it had improved its liquidity position.

Unit no. 8 had low average percentage of 12.73% of coverage of current liabilities. Coverage of current liabilities ratio had a fluctuating trend through out the period under study. It was 8.41% in 1989-90 declined to 4.40% in 1992-93. Thereafter it increased to 29.12% in 1994-95, then it declined to 13.82% in 1998-99. During the later part of the study the coverage of current liabilities suffered a setback, clearly indicating that the liquidity and solvency of the firm deteriorated after the year 1994-95.

CHAPTER V

SECTION 4

WORKING FINANCE

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Working finance means the excess of current assets over current liabilities excluding short-term bank borrowings[33]. Tandon study group identifies this as working capital gap i.e. the requirements of working capital in the selected pharmaceutical units during a specified period of time. According to S. S. Sahay[33], "the total working capital requirements of a business (measured by its total current assets) are financed by the various components of its current liabilities and a part of the permanent funds in the business. Maintenance of operational efficiency as well as reduction in the cost of financing should be a guiding criteria in the choice of the forms of financing. Normally the current assets of the firm are supported by a combination of long-term and short-term sources of financing. The important sources of long-term financing are shares, debentures, retained earnings and loans from specialised financial institutions[35]. The short-term sources of finance referred to current liabilities and short-term bank borrowings which provide a major support for current assets. The real choice of financing lies between short-term and long-term financing[36].

The objective of this chapter is to study the structure of working finance in the selected pharmaceutical units in the State of Maharashtra during the period from 1989-90 to 1998-99, with a view

to highlight relative roles played by different sources of finance in meeting the working capital needs of the sample units. At the same time, an attempt is also made to evaluate the adequacy of the bank borrowings and the contribution of long-term funds to finance the working capital requirement of the sample units.

The requirement of working capital in the pharmaceutical companies is shown through the size of working finance in each of the unit during the period under study. The size of working finance is as follows.

SIZE OF WORKING FINANCE:

Table WF-1 shows the size of working finance of the selected pharmaceutical units from 1989-90 to 1998-99. The table shows that the range of working finance of the sample units in absolute amount was between Rs. 313.27 crores and Rs. 1048.87 crores. The table further reveals that the overall total amount of working finance of sample units showed an infallible trend to rise throughout the period of study. The total amount of working finance was Rs. 313.27 crores in 1989-90 which gradually increased to 485.29 crores in 1992-93 thereafter it shows a sudden increase to Rs. 584.72 crores in 1993-94. Finally it increased to a peak level of Rs. 1048.87 crores in 1998-99. Fast increase of working finance is attributed to the faster rise in the size of current assets. The coefficient of variation of sample units of 69.93% indicates that they had less uniformity in their policy of working finance during the period under study.

TABLE NO. WF - 1

WORKING FINANCE OF THE PHARMACEUTICAL COMPANIES DURING THE PERIOD 1989-90 TO 1998-99

(Rs in crores)

COMPANIES / YEARS	1989-90	1990-91	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97	1997-98	1998-99	Total
1. Burroughs Wellcome Ltd.	20.11	25.30	33.09	39.79	54 17	76 03	52.97	61 10	79 53	101.06	**543.15**
2. Cipla Ltd.	26.00	31.46	54 82	65.73	81.96	111 12	217 72	183 15	244 63	300 82	**1317.41**
3 Duphar-Interfran Ltd	7.04	10.54	11.88	16.01	18.70	17.94	27.36	46.19	40 64	45.40	**241.70**
4. E Merck Ltd	12.80	22 37	24 68	33 97	27 40	39 06	47 37	44 57	49 65	49.54	**351 41**
5 Fulford Ltd	15 80	13.47	13.74	12 46	13.40	14.73	16.85	16.95	19 26	23 87	**160.53**
6 German Remedies Ltd	15.53	20.69	26 08	27.61	29 83	33 30	37.51	31.28	17.25	27 62	**266.70**
7 Glaxo Ltd	55.80	69 48	78.19	90 26	121.20	52 29	183 68	160 99	163 64	173 09	**1148.62**
8 Hoechst Marion Roussel Ltd.	58.42	57.19	45 05	59 48	62 69	59 11	57.14	56 10	111.59	48 28	**615.05**
9 Knoll Pharmaceuticals Ltd.	13 32	14.79	20.73	21 09	46 13	28 26	17 46	13 81	52 72	76.10	**304.41**
10 Parke-Davis Ltd	15.08	16 79	17.84	20 99	21.48	35 91	28 89	26 00	27.92	27 69	**238.59**
11. Pfizer Ltd.	33 34	35.53	42 69	49.06	54 64	67 29	45.47	39 96	46 95	36 75	**451.68**
12. RPG Life Sciences Ltd.	30.10	28.78	30.87	35 01	35.21	43.08	55.77	74 86	88 94	103 48	**526.10**
13. Unichem Laboratories Ltd	9.93	10.22	13.01	13 83	17.91	29.04	31 55	38 60	36.30	35 17	**235.56**
Total	**313.27**	**356.61**	**412.67**	**485.29**	**584.72**	**607.16**	**819.74**	**793.56**	**979.02**	**1048.87**	**6400.91**

Source: Appendix -I

Std Dev.	344.32
C V.	69.93

Table WF-2

RELATIONSHIP BETWEEN WORKING FINANCE, CURRENT ASSETS, AND SALES

(Rs. In crores)

YEAR	WORKING FINANCE	CURRENT ASSETS	SALES
1989-90	313.27	606.59	1425.33
1990-91	356.61	666.86	1630.15
1991-92	412.67	726.20	1847.29
1992-93	485.29	833.85	2179.21
1993-94	584.72	972.46	2528.67
1994-95	607.16	1083.11	2710.93
1995-96	819.74	1420.41	2688.68
1996-97	793.56	1465.41	3308.66
1997-98	979.02	1817.26	3614.99
1998-99	1048.87	1972.33	4101.50
COEFFICIENT OF CORRELATION		**0.99**	**0.97**

Sources: Appendices I and V

On analysing the relationship between current assets and working finance using the co-efficient of correlation for the sample units, reveals that during the period under study the coefficient of correlation between current assets and working finance was +0.99. This clearly indicated that there exists a perfectly positive co-relation between current assets and working finance i.e. as the current assets increased working finance also increased and the rate of change between two variables was the same. Coefficient of correlation between working finance and sales was +0.97. This shows that there

exists a high degree of positive correlation between working finance and sales. It can be concluded that the increase in the sales led to increase in the working finance in the same proportion.

An indepth analysis of the table WF-1 reveals that the units no. 2 and 7 had a very high amount of total working finance, while units no. 5 and 13 had a very low total working finance during the period under study.

Unit no. 2 shows the highest total amount of working finance of Rs. 1317.41 crores. Working finance showed an upward trend throughout the period under study. The working finance was Rs. 26 crores in 1989-90 increased gradually to Rs. 111.12 crores in 1994-95 then it increased to Rs. 217.72 in 1995-96. Finally it reached the highest level of Rs. 300.82 crores in 1998-99. High amount of working finance in this unit was can be explained by the fact a very high amount of current assets, significant increase in sales and huge expansion programme during the period under study. This can be further substantiated by the fact that it had carried 68.33% of current assets out of the total assets held by it. Apart from this, sales of the unit had also increased substantially which also caused an increase in the working finance.

Unit no. 7 indicates total amount of working finance of Rs. 1148.62 crores. The unit had a working finance of Rs. 55.80 crores in 1989-90 which increased to Rs.121.20 crores in 1993-94. Thereafter it declined to Rs. 52.29 crores in 1994-95 and again increased to Rs. 173.09 crores in 1998-99. High amount of working finance in this unit was mainly due to the fact that it had carried a very high amount of inventories and receivables during the period under study.

Unit no. 5 shows the lowest total amount of working finance to the tune of Rs. 160.53 crores during the period under study. The

amount of working finance was Rs. 15.80 crores in 1989-90 declined to Rs. 12.46 crores in 1992-93; thereafter it gradually increased to Rs. 23.87 crores in 1998-99. The low amount of working finance is due to lower rate of growth of current assets as compared to current liabilities.

Unit no. 13 also has a very low amount of working finance during the period under study. Working finance was Rs. 9.93 crores in 1989-90 which gradually increased to Rs. 38.60 crores in 1996-97. Thereafter it declined to Rs. 35.17 crores in 1998-99. The efficient and quick transmutation of working capital into income and profit and back to working capital prevented the accumulation of excessive working finance in a unit.

GROWTH OF WORKING FINANCE:

It is obvious that the size of a business enterprise is determined by the growth in its output and the resultant sales. Further it is also a well known proposition that the growth of output should necessitate greater acquisition of raw materials, stores and spares etc. and consequently a large amount of working finance. It means that the volume of the working finance should subsequently increase with the increase in the volume of the business.

Table WF- 3 shows the growth of working finance, total output and total sales during the ten-year period of the study.

The table shows that total amount of working finance had increased from Rs. 313.27 crores in 1989-90 to 1048.87 crores in 1998-99. Total value of output had increased from Rs. 1275.21 crores in 1989-90 to Rs. 3624.27 crores in 1998-99 and total sales had increased from Rs. 1425.33 crores in 1989-90 to Rs. 4101.50 crores in 1998-99.

TABLE NO. WF - 3

GROWTH PERCENTAGE OF WORKING FINANCE, TOTAL OUTPUT AND TOTAL SALES OF THE PHARMACEUTICAL COMPANIES DURING THE PERIOD 1989-90 TO 1998-99

(Rs. in crores)

YEAR	WORKING FINANCE		TOTAL VALUE OF OUTPUT		TOTAL SALES	
	Total	Growth(%)	Total	Growth(%)	Total	Growth(%)
1989-90	313.27	---	1275 21	---	1425.33	---
1990-91	356 61	13 83	1433.54	12.42	1630 15	14 37
1991-92	412.67	15 72	1639 46	14 36	1847 29	13 32
1992-93	485.29	17.60	1912.46	16 65	2179.21	17 97
1993-94	584.72	20.49	2215.19	15.83	2528.67	16 04
1994-95	607.16	3.84	2455 80	10 86	2710 93	7 21
1995-96	819.74	35.01	2466.26	0 43	2688 68	-0 82
1996-97	793.56	-3.19	2899.28	17 56	3308.66	23.06
1997-98	979.02	23.37	3193.04	10.13	3614 99	9 26
1998-99	1048.87	7.13	3624.27	13 51	4101.50	13.46
Total / Average	**6400.91**	**14.87**	**23114.51**	**12.42**	**26035.41**	**12.65**

Source: Appendices - I and V

r (between Working Finance and Output)	1.00
r (between Working Finance and Sales)	1.00

Except in 1996-97 the overall trend percentage of working finance presents a rising trend throughout the period under study. The overall growth percentage of output had an infallible rising trend throughout the period under study. The sales growth also showed an upward trend during the period under study except in 1995-96. In all the years the positive rate of growth of all the three variables indicates that the business expansion had mainly contributed to the growth of working finance. The statistical tool of coefficient of correlation as discussed below further substantiates this fact.

During the period under study the coefficient of correlation between working finance and output as calculated above is +1. Similarly the coefficient of correlation between working finance and sales is also +1. This clearly indicates that there exists a perfectly positive co-relation between working finance and output and also working finance and sales. This suggests that as the output and sales increase in the sample units it also results in an increase in the working finance and the rate of change between the two variables would be the same.

WORKING FINANCE IN TERMS OF MONTHS' COST OF PRODUCTION:

Size of the working finance is not an indicator of the adequacy of working finance. Adequacy is to be judged in terms of production requirements and sales values. Table WF-4 shows the working finance in terms of months' cost of production. This is an important ratio to measure the adequacy of the working capital of the unit.

The table WF-4 shows that overall average working capital in terms of number of months' cost of production of all the sample units during

TABLE NO. WF - 4

WORKING FINANCE IN TERMS OF MONTHS' COST OF PRODUCTION OF PHARMACEUTICALS COMPANIES DURING THE PERIOD 1989-90 TO 1998-99

(In months)

COMPANIES / YEARS	1989-90	1990-91	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97	1997-98	1998-99	Average
1. Burroughs Wellcome Ltd	3.65	4.36	4.32	4.78	5.61	7 34	7.54	5 57	7 28	9.71	**6.02**
2 Cipla Ltd	5.23	4.93	6 63	6.19	6.56	7 39	13 25	9 62	11 27	12 12	**8.32**
3 Duphar-Interfran Ltd	3.32	4.33	3 81	4 80	4.75	4 72	5 84	17 93	14 90	14.44	**7.88**
4 E Merck Ltd	2.89	3 97	3 86	4 35	3.93	4 25	5 28	4.05	4 31	4.23	**4.11**
5 Fulford Ltd.	5.30	6.14	4.95	3.71	3.55	4 03	4 35	4.11	4 12	4.69	**4.50**
6. German Remedies Ltd.	3.20	4 51	4.76	4 62	4 48	4 61	4 54	3 53	1 76	2 32	**3.83**
7 Glaxo Ltd.	3.07	3 15	2 86	2.96	3 67	1 67	7 98	5.05	4 49	4.63	**3.95**
8. Hoechst Marion Roussel Ltd	4.27	3.72	3 08	3.54	2.76	3 26	2 81	2 43	3 51	1 83	**3.12**
9. Knoll Pharmaceuticals Ltd.	2.92	2.77	3.04	2 57	5 32	3 09	2.53	1 65	6 13	9 09	**3.91**
10. Parke-Davis Ltd	2.72	2 83	2.76	2 97	3 01	4 26	3.53	3 17	3 76	4 39	**3.34**
11. Pfizer Ltd	3.52	4.70	4 82	4.20	3.86	4 52	2.97	2.50	5 34	2.36	**3.88**
12. RPG Life Sciences Ltd	9.68	10.77	7.68	6 37	5.67	5 87	5.77	6 03	7 02	7 38	**7.22**
13. Unichem Laboratories Ltd.	3.10	2.34	2.42	2 69	3 67	5.90	5 73	6.88	6 19	3.89	**4.28**
Average	**4.07**	**4.50**	**4.23**	**4.13**	**4.37**	**4.68**	**5.55**	**5.58**	**6.16**	**6.24**	**4.95**
Pharmaceutical Industry in India	3.93	3 83	3.50	3.91	5 99	7.58	7 54	6 66	6 98	6.20	**5.61**
All Industries in India	2.94	3.27	3.17	3.55	4.03	3 78	4 03	4.41	4 68	4.57	**3.84**

Std Dev	1 71
C V.	34 54

Source: Appendices -I and V

the period of study which was 4.95 months. The sample units showed more or less an increasing trend during the period under study. The ratio was 4.07 months in 1989-90 increased to 4.50 months in 1990-91 and then declined to 4.13 months in 1992-93. Thereafter during the remaining period it maintained an increasing trend and reached a peak level of 6.24 months in 1998-99. If we compare the working capital norms suggested by the Tandon study group the working finance in the pharmaceutical units should not be more than 6.50 months' cost of production. In the present study the overall average of the sample units was 4.95 months which was much below the norm suggested by the Tandon study group. This indicates that the sample units had kept the working capital much below the standard norm. An interesting observation noted is that the sample units had a rising trend of working finance which must be checked and its growth should be arrested.

The overall average working finance in terms of months' cost of production of 4.95 of sample units was lower as compared to 5.61 months of 'Pharmaceutical Industry in India'. In contrast to this the ratio was higher as compared to 3.84 months of 'All Industries in India'. The coefficient of variation of sample units of 34.54% indicates that they had followed a uniform policy for working finance in terms of the months' cost of production.

A closer analysis of the individual unit reveals that this ratio was very high in case of unit no. 2 and 3 and was very low in case of unit no. 8 and 10.

Unit no. 2 shows the highest average ratio of 8.32 months' cost of production to working finance as compared to all other sample units. The ratio was 5.23 months in 1989-90, and declined to 4.93 months in 1990-91; thereafter it increased to 13.25 months in 1995-

96. Then it further declined to 9.62 months in 1996-97, increased and reached to 12.12 months in 1998-99. The unit had kept the working finance much above the standard norm which clearly implies that the working capital of the unit was excessive. The higher ratio of working finance in terms' of months cost of production was mainly due to faster increase in working finance as compared to the cost of production. The increase in working finance was mainly due to increase in all the components of current assets.

Unit no. 3 has a very high average of 7.88 months compared to the overall average of the sample units. The ratio was at a low level of 3.32 months in 1989-90 gradually increased and reached a peak level of 17.93 months in 1996-97. Thereafter it declined to 14.44 months in 1998-99. This unit also shows a trend similar to that of the aforesaid unit, the increase in working finance resulted in higher ratio.

Unit no. 8 shows the lowest average ratio of working finance in terms of months' cost of production of 3.12 months during the period of ten years of the study. The ratio was 4.27 months in 1989-90, declined to 2.76 months in 1993-94 then increased to 3.26 months in 1994-95. Thereafter it substantially declined to 1.83 months in 1998-99. The lower level of working finance in the unit had been due to that the faster growth of liabilities which neutralised the impact of rising current assets on working finance.

Unit no. 10 indicates an average working finance in terms of months' cost of production of 3.34 months during the period under study. This ratio was 2.72 months in 1989-90, increased to 4.26 months in 1994-95 and then decreased to 3.17 months in 1996-97. Thereafter it increased to 4.39 months in 1998-99.

WORKING FINANCE IN TERMS OF MONTHS' SALES:

Table WF-5 shows the working finance in terms of months' sales of the sample units. This ratio is a better indicator to measure the adequacy of the working capital of the concern because of the fact that the market forces determine selling prices and it does not include any operational efficiency or inefficiency of the individual unit. The table WF-5 reveals that average working finance in terms of number of months'; the sales of the all sample units during the period under study was 3.15 months. The ratio shows a mixed trend of upward and downward during the period under study. The ratio was 2.91 months in 1989-90 increased to 3.00 months in 1991-92. Thereafter it declined to 2.86 months in 1992-93 again increased to 3.50 months in 1995-96. Finally it declined to 3.33 months in 1998-99. The overall average of working finance in terms of months' sales was 3.15 of sample units which was marginally lower as compared to 3.71 months of the 'Pharmaceutical Industry in India', while it was higher as compared to 2.65 months of 'All Industries in India'. The coefficient of variation of sample units of 36.61% indicates that they had followed a uniform policy for working finance in terms of months' sales.

An indepth analysis of the table reveals that the ratio of working finance in terms of months' sales was very high in the case of unit no. 2 and 3 and was very low in the case of unit no. 9 and 10.

Unit no. 2 had average working finance in terms of months' sales of 4.67 months. The ratio was 3.36 months in 1989-90, declined to 3.05 months in 1990-91, thereafter it increased significantly to 7.21 months in 1995-96. Finally it declined to 5.78 months in 1998-99.

Unit no. 3 gives the highest average of working finance in terms of months' sales of 5.50 months. The ratio was at a very low level of

TABLE NO. WF - 5

WORKING FINANCE IN TERMS OF MONTHS' SALES OF PHARMACEUTICALS COMPANIES DURING THE PERIOD 1989-90 TO 1998-99

(In months)

COMPANIES / YEARS	1989-90	1990-91	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97	1997-98	1998-99	Average
1. Burroughs Wellcome Ltd	3.04	3.23	3.45	3.37	3.84	5.19	5 82	3 97	5.02	5.90	**4.28**
2. Cipla Ltd	3.36	3 05	4.35	3.96	4.01	4.46	7.21	4 86	5.68	5.78	**4.67**
3 Duphar-Interfran Ltd.	2.53	3 20	2.89	3.45	3 60	3 61	4 81	12 65	9 82	8 41	**5.50**
4. E. Merck Ltd.	2.33	3.15	3.07	3.40	2.70	3.08	3 21	2.59	2 67	2.28	**2.85**
5 Fulford Ltd.	3.77	3.40	2.98	2.18	2.07	2 05	2.19	2 09	2 05	2 23	**2.50**
6. German Remedies Ltd.	2.64	3 64	4 30	3.66	3.50	3.43	3 63	2.62	1 25	1.65	**3.03**
7 Glaxo Ltd	1.97	2.00	1.90	1.95	2.30	1.02	4 79	2.74	2 58	2.38	**2.36**
8. Hoechst Marion Roussel Ltd.	2.45	2 27	1.96	2.43	2 07	2.29	1 93	1 65	2 38	1.09	**2.05**
9. Knoll Pharmaceuticals Ltd	1.96	1 82	2.11	1.72	3.16	1.47	1.01	0.63	2 27	3.05	**1.92**
10. Parke-Davis Ltd	2.04	1 99	1 87	1.80	1.71	2.62	1.97	1.74	1 60	1.54	**1.89**
11. Pfizer Ltd.	3.17	3.56	3.65	3.44	3.07	3.31	2.14	1 75	3 42	1.67	**2.92**
12. RPG Life Sciences Ltd.	6.26	5 23	4.62	4.05	3 77	3.84	3 79	4 46	4.88	5 03	**4.59**
13 Unichem Laboratories Ltd	2.27	1.78	1 84	1.78	2.08	2.91	3.06	3 17	2 73	2 28	**2.39**
Average	**2.91**	**2.95**	**3.00**	**2.86**	**2.91**	**3.02**	**3.50**	**3.45**	**3.57**	**3.33**	**3.15**
Pharmaceutical Industry in India	2.80	2 63	2.48	2.69	3.92	4.98	4.90	4 34	4 35	4.00	**3.71**
All Industries in India	2.08	2.32	2 25	2 51	2 78	2.60	2 82	3 00	3.18	2 98	**2.65**

Source: Appendices -I and V

Std Dev	1 15
C V	36 61

2.53 months in 1989-90, increased to 4.81 months in 1995-96, further increased significantly and reached a peak level of 12.65 months in 1996-97. Thereafter it declined to 8.41 months in 1998-99.

Unit no. 9 shows a very low ratio of working finance in terms of months' sales of 1.92 months. The ratio was 1.96 months in 1989-90, increased to 3.16 months in 1993-94, then declined significantly to 0.63 months in 1996-97. Thereafter it increased to 3.05 months in 1998-99.

Unit no. 10 has the lowest ratio of working finance in terms of months' sales of 1.89 months as compared to all the sample units. The ratio was 2.04 months in 1989-90, then showed a downward trend and declined to 1.71 months in 1993-94. Then it increased to 2.62 months in 1994-95, thereafter it again decreased to 1.54 months in 1998-99.

The study of the funds flow Statement in the pharmaceutical companies will help to ascertain how the activities of the business have been financed and how the financial resources have been used during the period under study[37].

FUNDS FLOW STATEMENT:

The balance sheet presents a snapshot of the financial position at a given point of time and the profit and loss account shows a summary of revenue during the accounting period. Their usefulness is limited to analysis and planning. The financial analyst must know the flow of funds underlying the balance sheet changes. Funds flow means movement in the funds position of any business during a given period as revealed by its financial Statements. Such movements may be both inward and outward. The former is called 'inflows' and the.

later 'outflows'. The funds flow Statement shows the sources of funds and their application between two balance sheet dates. Kuchhal points out that, "the Statement showing sources and uses of funds is popularly known as funds flow Statement. It is a condensed report of how the activities of the business have been financed and how the financial resources have been used during the period covered by the Statement."[38]

According to Paton and Paton[39] "It is widely accepted that the term 'fund' in the funds flow analysis means the working capital and as such this analysis is concerned with all the financial streams passing through the realm of working capital". Funds in this Statement means net working capital funds as distinguished from the actual cash funds. The Statement of funds flow Statement has become an increasingly useful technique.

Table WF-6 shows consolidated funds flow Statement of the sample units. The analysis of the table reveals that the funds flow had maintained an increasing trend during the entire period under study. An interesting observation which emerges from the consolidated funds flow Statement is that the sample unit had raised a major amount from funds from operation. The total amount of funds from operation was Rs. 1523.48 crores which worked out to be 75.13% of the total funds generated. This indicates that the management relied heavily on funds from operation and had tapped other sources only when required. Similar findings were also observed in the research study carried by Johri, on corporate behaviour of multinational drug companies in India during the period 1973 to 1978. He concluded that the multinational drug companies were financed mainly by internal funds during the period 1973 to 1978.

TABLE NO. WF - 6

CONSOLIDATED FUND FLOW STATEMENT OF PHARMACEUTICALS COMPANIES DURING THE PERIOD 1989-90 TO 1998-99

(Rs in crores)

PARTICULARS	1990-91	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97	1997-98	1998-99	Total
Sources										
Funds from Operation	95.57	52 24	62.19	205 87	88 83	239 31	237 52	293 08	248 87	**1523.48**
Sale of Fixed Assets	0.00	0 00	0 00	0 00	0 00	0 00	0 00	0 00	0 00	**0.00**
Sale of Investments	0 00	18 37	0 00	11 36	0 00	51 58	0 00	0 00	0 00	**81.31**
Issue of Share Capital	8.59	3 34	4.10	23.60	30.29	33 24	3.77	0 04	8.10	**115.07**
Increase in Borrowed Capital	34.54	30 12	62 43	0 00	0 00	0 00	52 28	83 71	0 00	**263.08**
Decrease in Working Capital	0.00	0 00	0.00	0 00	44 59	0 00	0 00	0 00	0 00	**44.59**
Total	**138.70**	**104.07**	**128.72**	**240.83**	**163.71**	**324.13**	**293.57**	**376.83**	**256.97**	**2027.53**
Application										
Purchase of Fixed Assets	127.70	70 57	67 81	77 08	50.34	93 05	160 41	180.71	73 43	**901.10**
Purchase of Investment	3.35	0 00	3.72	0.00	80 72	0 00	41 42	37 75	50 19	**217.15**
Repayment of Loans	0 00	0.00	0 00	5.38	32 65	54 63	0 00	0 00	30 66	**123.32**
Increase in Working Capital	7.65	33 50	57 19	158 37	0.00	176 45	91 74	158 37	102 69	**785.96**
Total	**138.70**	**104.07**	**128.72**	**240.83**	**163.71**	**324.13**	**293.57**	**376.83**	**256.97**	**2027.53**

Source : Appendices - I, II, V and VI

Year wise analysis reveals that during the year 1990-91 the total inflow of funds were Rs. 138.70 crores out of which a major amount had been from funds from operation i.e. Rs. 95.57 crores. Sample units had also increased their borrowings by Rs. 34.54 crores and from the issue of additional share capital they had raised funds to the tune of Rs. 8.59 crores. These funds were utilised mainly for purchases of the fixed assets to the tune of Rs. 127.70 crores. Further to this additional investments were made during the year upto Rs. 3.35 crores. Balance funds were utilised in financing the increase in net working capital of the sample units. Similar trend was followed in 1991-92 and 1992-93, but there was a sudden spurt of funds from operation in 1993-94, as compared to the year 1992-93. The rise in the funds from operation was 231% in 1993-94. During this year further funds were raised were from sale of investments and issue of share capital to the amount of Rs. 11.36 crores and Rs. 23.60 crores respectively. These funds were deployed in the purchase of fixed assets, repayment of loans and increase in net working capital to the extent of Rs. 77.08 crores, Rs. 5.38 crores and Rs. 158.37 crores respectively. Again in 1995-96, there was a substantial rise in the funds generated by the sample units. This increase in funds generated was 169% as compared to the year 1994-95. In this year funds generated from operation, sale of investments and issue of share capital were to the tune of Rs. 239.31 crores, Rs. 51.58 crores and Rs. 33.24 crores respectively. These funds were applied for purchase of fixed assets, repayment of loans and increase in net working capital amounting to Rs. 93.05 crores, Rs. 54.63 crores and Rs. 176.45 crores respectively. In 1998-99 the total amount of funds generated by the sample units was Rs. 256.97 crores. These funds were from the funds from operation and issue of share capital to the

amount of Rs. 248.87 crores and Rs. 8.10 crores respectively. The funds were utilised for the purchase of fixed assets worth Rs. 73.43 crores, purchase of investments of Rs. 50.19 crores, repayment of loans worth Rs. 30.66 crores and increase in net working capital amounting to Rs. 102.69 crores.

In financial analysis the direction of change over a period of time is of crucial importance. Funds management is one of the important areas of financial management. It is therefore essential for an analyst to study the trend and direction of funds generated.

The linear least square values of fund inflows of the sample units are shown in table WF- 7. The annual increase in funds flow comes to Rs. 28.41 crores. The trend values of the funds flow differ materially i.e. more than 25%, from the actual fund flow during the year 1991-92, 1992-93, 1994-95 and 1998-99. The deviations during the other years were not so significant. The deviations were negative during the year 1991-92, 1992-93, 1994-95 and 1998-99, while they shows positive trend in the rest of the years during the period under study. The trend values and actual values of the funds flow have been represented graphically in Fig. 9.

To test the significance between the differences of actual values and trend values of funds flow of the sample units, the chi-square test has been applied. It can be observed that the Table value of chi-square at 5 percent level of significance is 11.07, while the calculated value of chi-square is 105.83. As the calculated value is more than the table value, it shows that the differences between actual values and trend values of funds flow capital were significant.

TABLE NO. WF - 7

ORIGINAL AND TREND VALUES OF FUNDS GENERATED BY PHARMACEUTICAL COMPANIES DURING THE PERIOD 1989-90 TO 1998-99

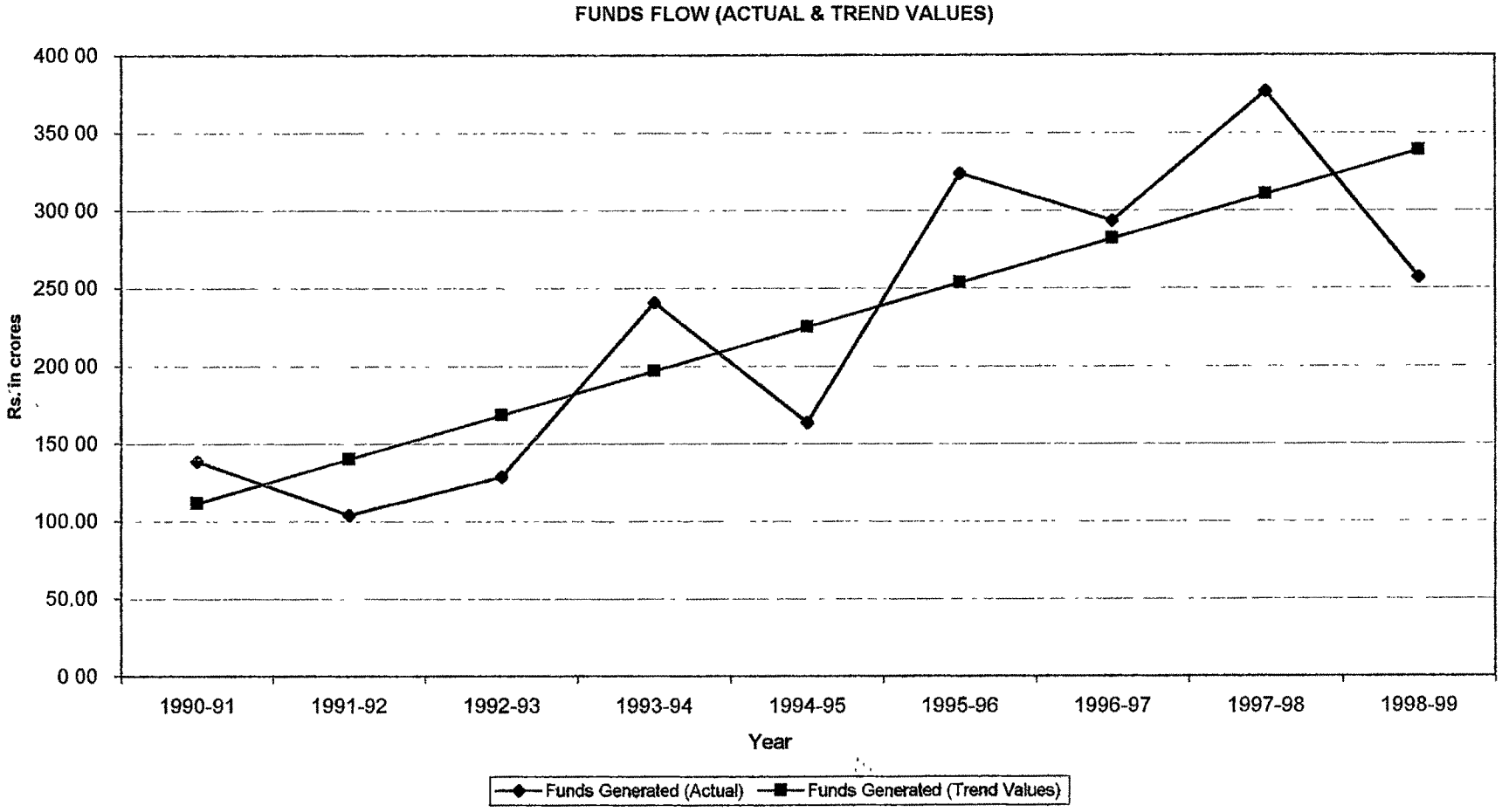
(Rs. in crores)

YEAR	FUNDS GENERATED	
	ORGINAL VALUES	TREND VALUES
1990-91	138.70	111.66
1991-92	104 07	140 06
1992-93	128.72	168.47
1993-94	240.83	196.88
1994-95	163.71	225 28
1995-96	324 13	253 69
1996-97	293.57	282 09
1997-98	376.83	310 50
1998-99	256.97	338 91

Yc = 111.66 + 28 41 X (Orgin of X: 1989-90, X in companies of years and Y in crores of Rupees)

Source : Table No. WF - 6

FIG. 9


FUNDS FLOW (ACTUAL & TREND VALUES)
400 00
350 00
300 00
250 00
200 00
150 00
100.00
50.00
0 00
Rs. in crores
1990-91
1991-92
1992-93
1993-94
1994-95
1995-96
1996-97
1997-98
1998-99
Year
Funds Generated (Actual)
Funds Generated (Trend Values)

WORKING CAPITAL GAP OTHER THAN SHORT-TERM BANK BORROWINGS:

Table WF-8 shows that the current assets of the sample units are met by current liabilities other than bank borrowings. The working capital gap is generally financed through the short-term bank borrowings and long term sources. The proportion of working capital gap varies from 51.64% to 60.13% of the total current assets during the period under study. The percentage of working capital gap was 51.64% in 1989-90 which gradually increased year after year and reached a peak level of 60.13% in 1993-94. Thereafter it declined to 56.06% and again increased to 57.72% in 1995-96 which later declined to 53.18% in 1998-99. The average percentage of working capital gap to total current assets during the period under study was 55.53%. The working capital gap to the extent of 10.17% to 41.54% was financed through short-term bank borrowings and the balance portion was financed through the long-term sources.

The Reserve Bank of India had set up a committee in July, 1974 to frame the guidelines for follow up of bank credit under the chairmanship of Mr. Prakash Tandon, the then chairman of Punjab National Bank. The committee discussed all the aspects of working capital at length and came out with the various important recommendations for financing of working capital by commercial banks. The committee suggested:

1. norms for current assets
2. style of lending; and
3. follow-up information

TABLE NO. WF - 8

WORKING CAPITAL GAP OF THE PHARMACEUTICALS COMPANIES DURING THE PERIOD 1989-90 TO 1998-99

(Rs in crores)

YEAR	1989-90	1990-91	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97	1997-98	1998-99
Total Current Assets	606 59	666 86	726 20	833 85	972 46	1083 11	1420 30	1465 41	1817 26	1972.33
Current Liabilities (Other than Bank Borrowings)	293 32	310 25	313 53	348 56	387 74	475 95	600 56	671 85	838 24	923 46
Working Capital Gap	313 27	356.61	412 67	485 29	584 72	607.16	819 74	793 56	979 02	1048 87
Percentage of Working Capital Gap to Total Current Assets	51 64	53 48	56 83	58 20	60 13	56 06	57 72	54 15	53 87	53 18
Bank Finance to Working Capital Gap	112.41	148 12	170 68	186 11	127.17	194 20	230 33	112 41	139 50	106 66
Percentage of Bank Finance to Working Capital Gap	35 88	41 54	41.36	38 35	21 75	31 98	28 10	14.17	14 25	10 17

Source: Appendix - I

The committee suggested three methods for lending. The committee was of the opinion that the borrower should gradually reduce the dependence on bank borrowings and increase their own funds for financing their working capital needs.

First Method

Under this method, working capital gap is determined by deducting current liabilities from current assets, and 25% of such working capital gap should be financed from long-term sources. The balance amount is the maximum that can be financed by banks. The committee suggested that borrowers should preferably be put straight into Second method of lending, hence First method of lending was not so important from the view-point of bank financing for working capital.

Second Method

Under the second method the borrower is required to procure his own source of finance i.e. long-term sources to the amount of 25% of the total current assets. The banker will provide balance amount to meet the working capital gap.

Third Method

Under the third method suggested by the study group, the company at the outset should identify the kind of core current assets. This part of current assets is to be financed out of the long-term funds. Then from the balance amount of current assets, the borrower

has to meet further 25% from the long-term sources. Finally from the balance amount, current liabilities other than bank borrowings is deducted and then any shortage of fund will then be provided by the bank.

Out of the suggested three methods of lending suggested by the committee, the second method had been followed by the commercial banks during the period under study. The Chore committee appointed by the Reserve Bank of India suggested that in order to ensure that the borrowers enhance their contributions to working capital and improve their current ratio, it is necessary to place them under the second method of lending recommended by the Tandon Committee which would give minimum current ratio of 1.33:1.00. (Report of the working group to review the system of cash credit, Reserve Bank of India, ed. 1990, p. 50). Considering this fact, the calculation of maximum permissible bank finance for the selected units had been done on the basis of the second method of lending suggested by the Tandon Committee.

In its approach to the method of lending, the committee sought to identify the reasonable level of current assets as the basis of calculation of different methods. For this purpose the committee suggested norms for carrying the raw materials, work-in-process, finished goods and receivables with respect to the fifteen different major industries including drug and pharmaceutical industry.

REASONABLE LEVEL OF TOTAL CURRENT ASSETS AS PER TANDON COMMITTEE NORMS:

Tandon committee suggested the following norms for the reasonable level of current assets to be held by the Drugs and Pharmaceutical industries.

Raw-materials - 2 ¾ months
Work-in-process - ¾ months
Finished Goods - 1 ½ months
Receivables - 1½ months

For about more than 25 years commercial banks in India as members of banking system have been supplying credit to industry on the basis of the inventory norms and maximum permissible bank finance (MPBF) laid down by the Reserve Bank of India based on the recommendations of Tandon Committee. The Reserve Bank of India had given complete freedom to bank to fix their own norms of holding current assets and style of lending. Even after complete freedom was granted to banks at present the banks are still following the same method and style of lending as recommended by the Tandon Committee. Considering this view point of the banker and the soundness on the basis suggested by the Tandon Committee for arriving at the maximum permissible bank finance; the present study has considered the Second method of lending as given by the Tandon Committee for calculation to arrive at the maximum permissible bank finance of the sample units.

COMPUTATION OF MAXIMUM PERMISSIBLE BANK FINANCE AS PER TANDON COMMITTEE NORMS BASED ON ACTUAL CURRENT ASSETS:

Table WF-9 shows the maximum amount of permissible bank finance as per the Second method of lending based on actual current assets. The table clearly indicates that throughout the period under study the sample units had borrowed much lower amount as compared to their permissible bank finance. It seems that the management of the sample units had adopted a policy of not resorting to bank borrowings as a means of working capital finance; instead they relied heavily on long-term sources as a means of financing working capital.

MAXIMUM PERMISSIBLE BANK FINANCE BASED ON REASONABLE LEVEL OF CURRENT ASSETS AS PER TANDON COMMITTEE NORMS:

(Second method of Lending):

Table WF-10 presents the maximum permissible bank finance based on reasonable level of current assets and Second method of lending as recommended by the Tandon Committee for the drugs and pharmaceutical industry. As per the norm the current assets for the year 1989-90 to 1998-99 should be Rs. 657.55, Rs. 754.70, Rs. 854.61, Rs. 981.46, Rs. 1187.13, Rs. 1263.84, Rs. 1510.91, Rs. 1659.89, Rs. 1897.13 and Rs. 2171.66 crores, as against these the actual current assets were Rs. 606.59, Rs. 666.86, Rs. 726.20, Rs. 833.85, Rs. 972.46, Rs. 1083.11, Rs. 1420.30, Rs.1465.41, Rs. 1817.26 and Rs. 1972.33 crores respectively for the period under

TABLE NO. WF - 9

COMPUTATION OF MAXIMUM PERMISSIBLE BANK BORROWINGS FOR THE TOTAL SAMPLE UNITS
AS PER TANDON COMMITTEE (IIND METHOD)

(Rs in crores)

PARTICULARS	1989-90	1990-91	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97	1997-98	1998-99
Current Assets	606 59	666 86	726 20	833 85	972 46	1083.11	1420 30	1465.41	1817.26	1972.33
Less: 25% from Long-Term Sources	151 65	166.72	181.55	208 46	243.12	270.78	355 08	366 35	454 32	493.08
Working Capital Gap	454 94	500 15	544.65	625.39	729.35	812.33	1065 23	1099.06	1362 95	1479.25
Less· Other Current Liabilities	293.32	310.25	313.53	348.56	387 74	475 95	600.56	671.85	838.24	923.46
Max. Permissible Bank Borrowings	**161.62**	**189.90**	**231.12**	**276.83**	**341.61**	**336.38**	**464.67**	**427.21**	**524.71**	**555.79**
Actual Bank Borrowings	112.41	148.12	170.68	186.11	127.17	194 20	230.33	112 41	139.50	106.66

Source: Appendix - I

TABLE NO. WF - 10

MAXIMUM PERMISSIBLE BANK FINANCE (Based on II nd Method) AND REASONABLE LEVEL OF CURRENT ASSETS OF PHARMACEUTICAL COMPANIES DURING THE PERIOD 1989-90 TO 1998-99 AS PER TANDON COMMITTEE

(Rs In crores)

PARTICULARS	1989-90	1990-91	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97	1997-98	1998-99
ANNUAL DATA										
Consumption of Raw Materials	573 73	616 78	738 25	881 16	980 54	923 93	867 01	1068 20	1120 07	1174 49
Cost of Production	991 31	1084 09	1286 90	1491 72	1683 28	1720 99	1657 78	1945 50	2075 04	2209 34
Cost of Sales	1144 13	1297 69	1499 60	1741 81	1959 86	2090 00	2055 65	2464 56	2653 10	3025 51
Sales	1425 33	1630 15	1847 29	2179 21	2528 67	2710 93	2688 68	3308 66	3614.99	4101 50
REASONABLE LEVEL OF CURRENT ASSETS										
Raw Materials (Norm 2 3/4 Months)	131 48	141 35	169 18	201 93	224 71	211 73	198 69	244 80	256 68	269 15
Semi Finished Goods (Norm 3/4 Month)	61 96	67 76	80 43	93 23	105 21	107 56	103 61	121 59	129 69	138 08
Finished Goods (Norm 1 1/2 Month)	143 02	162 21	187 45	217 73	244 98	261 25	256.96	308 07	331 64	378 19
Debtors (Norm 1 1/2 Month)	178 17	203 77	230.91	272 40	316 08	338 87	336 09	413 58	451 87	512 69
Total	**514.62**	**575.08**	**667.97**	**785.29**	**890.98**	**919.41**	**895.34**	**1088.04**	**1169.88**	**1298.11**
Add Stores and Spares	4 69	6 10	4 58	5 24	5 11	5 36	5 53	3 80	4 03	4 71
Other Receivables	118 84	148 32	145 71	151 18	181 06	242 02	284 94	401 83	506 61	517 36
Cash, Bank & Marketable Securities	19 40	25 20	36 35	39 75	109 98	97 05	325 10	166 22	216 61	351 48
Total Reasonable level of Current Assets	657.55	754 70	854 61	981 46	1187 13	1263 84	1510 91	1659 89	1897 13	2171.66
Less 25% from Long-Term Sources	164 39	188 68	213 65	245 37	296 78	315 96	377 73	414 97	474 28	542 92
Working Capital Gap	493 16	566 03	640 96	736 10	890 35	947 88	1133 18	1244 92	1422 85	1628 75
Less Other Current Liabilities	293 32	310 25	313 53	348 56	387 74	475 95	600 56	671 85	838 24	923 46
Max Permissible Bank Borrowings	199.84	255 78	327 43	387 54	502 61	471 93	532 62	573 07	584 61	705 29
Actual Bank Borrowings	112 41	148 12	170 68	186 11	127.17	194 20	230.33	112 41	139 50	106 66
Excess / Short Borrowings	-87 43	-107 66	-156 75	-201 43	-375 44	-277 73	-302 29	-460 66	-445 11	-598 63

Source: Appendices - I, III, IV and V

study. On comparing the reasonable assets and actual current assets, it is very interesting to note that during the entire period under study the sample units had maintained actual current assets at a lower level than the reasonable current assets as suggested by the Tandon committee. This shows efficient management of working capital by the sample units. Table WF-8 shows the maximum permissible bank finance calculated as per the Tandon Committee norms. On comparing the maximum permissible bank finance with the actual borrowings from the banks, the data reveals that during the entire period under study the sample units had not made any excess bank borrowings.

Table WF-10 further reveals that the maximum permissible bank finance as per the Tandon Committee norms for the year from 1989-90 to 1998-99 should be Rs. 199.84, Rs. 255.78, Rs. 327.43, Rs. 387.54, Rs. 502.61, Rs. 471.93, Rs. 532.62, Rs. 573.07, Rs. 584.61 and Rs. 705.29 crores, as against these the actual bank borrowings were Rs. 112.41, Rs. 148.12, Rs. 170.68, Rs.186.11, Rs. 127.17, Rs. 194.20, Rs. 230.33, Rs. 112.41, Rs. 139.50 and Rs. 106.66 crores respectively. This leads to a very interesting observation that unlike the normal case, the sample units had not resorted to bank finance in spite of their higher eligibility of bank finance year after year. On the contrary the selected pharmaceutical units had reduced its amount of borrowings over a period of time. As mentioned above their borrowings had reduced from Rs. 112.41 crores in 1989-90 to Rs. 106.66 crores in 1998-99.

The Jillani Committee set up by RBI to review the cash credit system suggested that the borrowers enjoying fund based working capital limits of Rs. 10 crores and more from the banking system should be subjected to a minimum current ratio of 1.50:1.00. The

excess borrowings or the shortfall in the net working capital of the borrower arising out of the enhanced current ratio should be carved out of the cash credit account of the borrower and kept in a separate loan account together with the interest thereon should be repaid by the borrower within a period of three to five years, depending on the cash generating potential and the capacity to service long-term debt. The RBI had accepted the recommendation on 17th April, 1995 and directed the banks to introduce the system. However, earlier the Tandon Committee also recommended in their report the current ratio of 1.33:1.00 under the second method of lending.

Table WF- 11

OVERALL AVERAGE CURRENT RATIO OF THE SAMPLE UNITS DURING THE PERIOD 1989-90 TO 1998-99

(Times)

YEAR	CURRENT RATIO
1989-90	1.71:1.00
1990-91	1.55:1.00
1991-92	1.60:1.00
1992-93	1.65:1.00
1993-94	1.99:1.00
1994-95	1.77:1.00
1995-96	1.75:1.00
1996-97	2.09:1.00
1997-98	2.22:1.00
1998-99	2.19:1.00
AVERAGE	**1.85:1.00**

Source: Table no. C- 4

An indepth analysis of the table WF-11, reveals that the overall average current ratio of the all the sample units was 1.85:1.00. The current ratio had fluctuated between 1.55:1.00 to 2.22:1.00 during the period under study. Current ratio was 1.71:1.00 in 1989-90 which declined to the lowest level of 1.55:1.00 in 1990-91. Thereafter increased to 1.99:1.00 in 1993-94 and again declined to 1.75:1.00 in 1995-96 and then reached a level of 2.19:1 in 1998-99.

If we compare the norms laid down by the Jillani committee with the selected pharmaceutical units' overall current ratio; it is observed that throughout the period under study, the sample units had current ratio higher than 1.50:1.00. Individually unitwise analysis reveals that except for unit no. 8, all the other units had an average current ratio higher than 1.50:1.00. This clearly indicates that the sample units had been efficiently managing their working capital during the period under study. All the sample units met with the current ratio of 1.33:1.00 recommended by the Tandon Committee under the second method of lending.

Two recent committees appointed by the RBI have suggested a radical change from the traditional method of working capital financing. Nayak Committee and Vaz Committee recommended that banks would extend working capital finance upto not less than 20% of the projected turnover. The borrower has to bring in a margin of 5% of the projected turnover from long-term sources as his contribution and 20% would be provided by the financing bank. If we apply these norms, it clearly indicates that none of the individual selected units had borrowed more than their eligible limit of permissible finance under these norms and they had also met with the criteria of bringing in more than 5% margin from long-term sources. This indicates that

the selected units had not depended much on short-term bank borrowings for their working capital requirements.

SOURCES OF WORKING FINANCE:

Sources for financing of working capital is an important area to be studied in the working capital management. The various sources of financing could be:

1. Short-term bank borrowings in the form of cash-credit or overdraft.
2. Funds from operation,
3. Long term source.

Different sources of working finance of the pharmaceutical companies are shown in Fig. 10. The extent of working capital finance met through short-term bank borrowings is discussed below.

PERCENTAGE OF SHORT TERM BANK BORROWINGS TO WORKING FINANCE :

Table WF-12 shows the percentage of short-term bank borrowings to working finance during the period from 1989-90 to 1998-99. The ratio showed a declining trend over a period of ten years under study. It was 36.34% in 1989-90 declined to the lowest level of 14.52% in 1998-99. This clearly indicates that the sample units had reduced their dependence on short-term bank borrowings as a means of working capital financing and resorted to other sources of financing. It is very interesting to note that none of the unit had average percentage of short-term bank borrowings to working finance

FIG. 10

SOURCES OF WORKING FINANCE

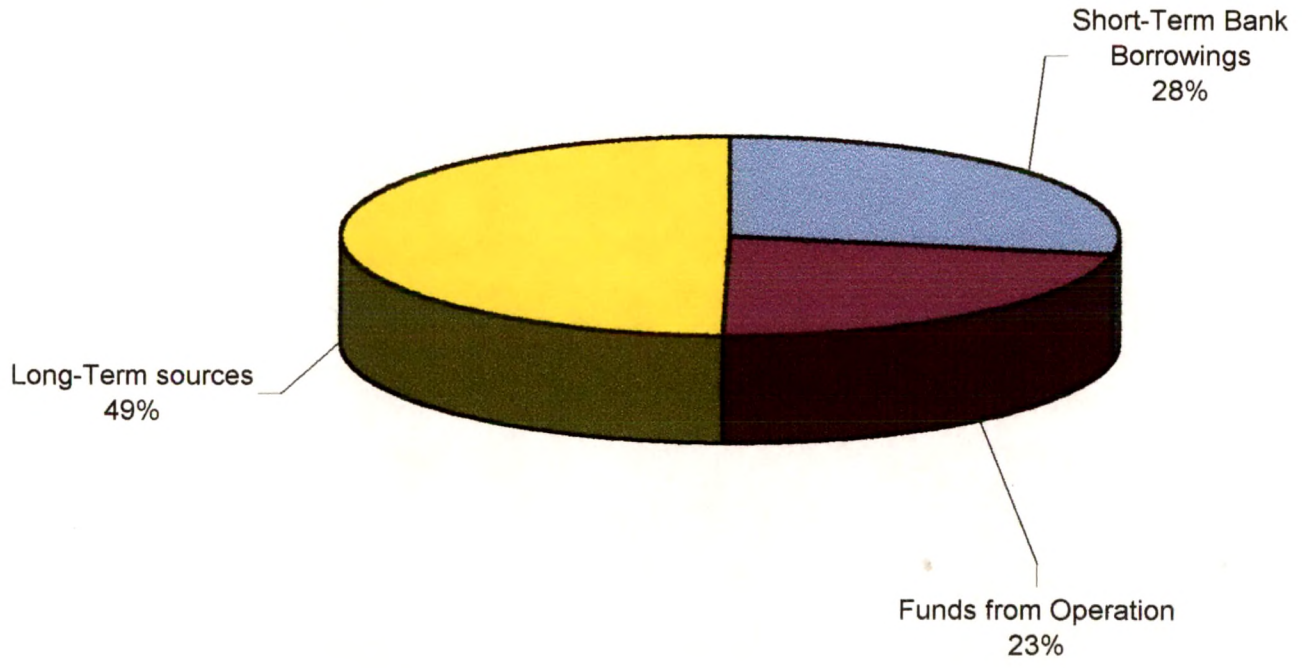


TABLE NO. WF - 12

PERCENTAGE OF SHORT TERM BANK BOORROWINGS TO WORKING CAPITAL FINANCE OF THE PHARMACEUTICAL COMPANIES DURING THE PERIOD 1989-90 TO 1998-99

(In percentage)

COMPANIES / YEARS	1989-90	1990-91	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97	1997-98	1998-99	Average
1. Burroughs Wellcome Ltd.	46.99	34.70	34 33	36.99	11 45	44 56	40.89	7 76	0.82	0.00	**25.85**
2. Cipla Ltd	34.50	59.31	52 57	43 57	48.78	62.67	31 90	4 26	2 50	7.90	**34.80**
3 Duphar-Interfran Ltd	58.81	54.08	49 92	48 22	47.27	34.34	8 88	7.12	0 00	0 00	**30.86**
4. E. Merck Ltd.	0.00	39.47	56.60	45.51	2.77	20.89	46 08	26 41	10.92	1.88	**25.05**
5. Fulford Ltd	45.32	18.63	17 39	2.33	0 00	0 00	6.88	0 00	0 00	0.00	**9.06**
6 German Remedies Ltd	17.39	42.58	55.33	47.88	16.73	1.98	8 32	4.83	0.00	16 87	**21.19**
7. Glaxo Ltd	21.56	34.61	46.82	33.12	2 09	10.44	10 54	3.29	0 00	0.49	**16.30**
8. Hoechst Marion Roussel Ltd	58.23	61 51	43 82	49.75	30.91	15 89	58.16	72 14	58 38	47.20	**49.60**
9 Knoll Pharmaceuticals Ltd.	47.30	64.64	29.18	21.81	26.32	51.13	71.59	6 15	0 00	0.00	**31.81**
10. Parke-Davis Ltd.	16.11	15 54	12.61	22 20	7 03	33 86	16.89	34.96	100 00	57.75	**31.70**
11 Pfizer Ltd	54.17	36 65	44.01	49.02	41.00	35 53	40.25	6.58	1 75	4 24	**31.32**
12 RPG Life Sciences Ltd.	0.00	17.13	13.54	19.08	6.28	11.23	20 01	19 45	17 78	25 89	**15.04**
13 Unichem Laboratories Ltd	72 00	53.62	47.35	47.65	34.79	18.90	35 66	26 92	33 55	26.56	**39.70**
Average	**36.34**	**40.96**	**38.73**	**35.93**	**21.19**	**26.26**	**30.47**	**16.91**	**17.36**	**14.52**	**27.87**
Pharmaceutical Industry in India	46.26	45.07	48.88	55 25	35 59	33 07	38 78	41 97	38 77	35.45	**41.91**
All Industries in India	25.20	41.69	50 35	39.35	46 08	37.75	35 81	42 32	44 67	49 84	**41.30**

Source: Appendix -I

Std Dev.	10 45
C.V	37.51

of more than 50% during the period under study. Inspite of having the higher eligibility of borrowings from the bank considering the MPBF the sample units had not resorted much on this source.

The overall average percentage of short-term bank borrowings of 27.87% of sample units was significantly lower as compared to 41.91% of 'Pharmaceutical Industry in India' and 41.30% of 'All Industries in India'. The coefficient of variation of sample units 37.51% indicates that they had followed a uniform policy for using the short-term bank borrowings as a means of financing working capital.. An indepth analysis of the table reveals that unit no.8 shows an exceptionally high ratio while unit no. 5 had a very low ratio of short-term bank borrowings to working finance.

Unit no. 8 has the highest average ratio of short-term bank borrowings of 49.60% during the period under study. It was 58.23% in 1989-90, increased to 61.51% in 1990-91 then it continuously declined to 15.89% in 1994-95. Thereafter it increased to the highest level of 72.14% in 1996-97 and finally declined to 47.20% in 1998-99. The high ratio reveals that the unit had heavily relied on this source for financing the working capital requirements.

Unit no. 5 shows the lowest average ratio of short-term bank borrowings of 9.06% to working finance. It was 45.32% in 1989-90 declined to 2.33% in 1992-93. Thereafter, out of the remaining six years for five years it showed no borrowings and so the ratio was zero in the year 1993-94, 1994-95 and from 1996-97 to 1998-99. The low ratio in the unit clearly shows that the unit had not resorted to this source of financing for working finance, and had used other sources for financing the working capital.

PERCENTAGE OF FUNDS FROM OPERATION TO WORKING FINANCE:

Apart from short-term bank borrowings, the funds from operation constitute as a major contributor towards working capital. Funds from operation mean the amount of retained profit plus depreciation. These are considered as the long-term funds from owners' sources.

Table WF-13 shows the percentage of funds from operation to working finance of the selected pharmaceutical units under study. The overall average of funds from operation as a source of working finance was 22.53%. It was 18.45% in 1989-90 declined to 11.37% in 1992-93, then gradually increased and reached upto 33.13% in 1997-98. Thereafter it declined to 28.97% in 1998-99. The table reveals that during the later period of study the sample units could increase the share of funds from operation as a means of financing the working capital. This is due to higher profits generated by the units and the unit had retained the same.

The overall average percentage of funds from operation to working finance of 22.53% of sample units was lower as compared to 30.48% of 'Pharmaceutical Industry in India' and 22.64% of 'All Industries in India'. The coefficient of variation of sample units 37.54% indicates that the sample units had followed a uniform policy for using funds from operation to finance the working capital.

An indepth analysis of the table reveals that unit no. 6 and 9 had a very high percentage while unit no. 5 and 10 had a very low percentage of funds from operation to working finance during the period under study.

TABLE NO. WF - 13

PERCENTAGE OF FUNDS FROM OPERATION TO WORKING FINANCE OF THE PHARMACEUTICAL COMPANIES DURING THE PERIOD 1989-90 TO 1998-99

(In percentage)

COMPANIES / YEARS	1989-90	1990-91	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97	1997-98	1998-99	Average
1. Burroughs Wellcome Ltd.	8.85	7.83	6.35	7.26	28.89	10.68	0.00	52 60	19 89	21.81	**16.42**
2. Cipla Ltd	28.69	32.36	21.40	19.25	20 49	15 38	55.92	38 67	40 07	36.06	**30.83**
3. Duphar-Interfran Ltd.	20.88	15.46	19.95	10.12	8 56	10 76	91.12	8.47	7 85	6.67	**19.98**
4. E Merck Ltd.	22.50	10 10	0 00	11.86	55.51	20 46	27 36	33.95	36 13	52 73	**27.06**
5. Fulford Ltd	9.24	3.86	1.16	5 54	6.57	0 00	7.83	9 62	14 12	15.25	**7.32**
6. German Remedies Ltd.	30.91	0 00	7.55	6.95	47.70	29 37	21 94	36 51	100 00	83.13	**36.41**
7 Glaxo Ltd	26.67	19.60	15.00	17.24	68.08	65.69	2 80	21.87	15.68	38 08	**29.07**
8 Hoechst Marion Roussel Ltd.	18.13	38.49	19.91	12.41	46.56	0 00	10 83	27 86	41.62	0.00	**21.58**
9 Knoll Pharmaceuticals Ltd.	25.75	32.59	25 04	20.01	13 66	0 00	28 41	93 85	91 41	22 61	**35.33**
10 Parke-Davis Ltd.	22.21	0.00	6 50	19.01	18.16	14.01	13 12	26 00	0.00	14.12	**13.31**
11. Pfizer Ltd.	10.26	7 01	6.63	13.17	22.09	12.10	10.62	9 01	22 32	45.93	**15.91**
12. RPG Life Sciences Ltd.	13.85	13.55	13 48	5.03	14.34	20 24	46.44	25.70	8 89	3.79	**16.53**
13 Unichem Laboratories Ltd.	1.91	23 68	23 44	0.00	13.90	71 73	20 16	6 89	32 70	36.48	**23.09**
Average	**18.45**	**15.73**	**12.80**	**11.37**	**28.04**	**20.80**	**25.89**	**30.08**	**33.13**	**28.97**	**22.53**
Pharmaceutical Industry in India	23.47	19.52	5.89	25.83	64.41	62.70	25 06	11.26	2.10	64 55	**30.48**
All Industries in India	69.03	14.87	15.99	12.88	13 83	24 81	31 59	24 21	13.60	5.62	**22.64**

Std Dev	8.46
C V.	37 54

Source: Appendices - I and V

Unit no. 6 shows the highest average percentage of funds from operation of 36.41% to working finance. It was 30.91% in 1989-90 declined to a zero level in 1990-91. Thereafter it increased to 47.70% in 1993-94, again declined to 21.94% in 1995-96. In the year 1997-98 it was 100% from this source. Finally it declined to 83.13% in 1998-99. It seems from that the management wanted to reduce their working operating cost in order to reduce the cost of working finance to minimum. Thus by using funds from operation the unit became free from any payment liability of interest. This had resulted into increase in profitability of the unit which was evident from the fact that the profit had increased from Rs. 4.45 crores in 1989-90 to Rs. 27.27 crores in 1998-99.

Unit no. 9 gives an average percentage of funds from operation of 35.33% during the period of ten years under study. It was 25.75% in 1989-90 increased to 32.59% in 1990-91, then decreased to zero level in 1994-95. Thereafter it increased to 93.85% in 1996-97 finally in the year 1998-99 it again went down 22.61.

Unit no. 5 has the lowest average of funds from operation 7.32% to working finance. It was 9.24% in 1989-90 declined to zero level in 1994-95. Thereafter it shows a rising trend and reached at 15.25% in 1998-99. Due to poor profitability it was not possible for the management to use larger share from funds from operation to finance the requirement for working capital.

Unit no. 10 has a low average of funds from operation of 13.31% to working finance. It was 22.21% in 1989-90 declined to zero level in 1990-91. Thereafter it increased to 26% in 1996-97 again declined to zero level in 1997-98. Finally it increased to 14.12% in 1998-99.

PERCENTAGE OF LONG-TERM FUNDS TO WORKING FINANCE:

In addition to short-term bank borrowings and funds from operation, long-term funds are also used to meet the working capital requirements of an enterprise. Excess dependence on this source indicates the weakness of the enterprise to generate funds from operation.

Table WF-14 shows the percentage of long-term funds to working finance of the selected pharmaceutical units under study. The overall average percentage of long-term funds was 49.60% to working finance. The ratio shows more or less an increasing trend and was 45.21% in 1989-90. It had increased to 52.69% in 1992-93 declined to 43.65% in 1995-96. Thereafter it increased to 56.50% in 1998-99. This clearly indicates that the long-term funds were the single largest source of working finance during the period of ten years under the study. The analysis further reveals that the selected units had increased its dependence on long-term funds as a means of financing its working capital requirement during the later period of study.

The overall average percentage of long term funds to working finance of 49.60% of sample units was significantly higher as compared to 27.61% of 'Pharmaceutical Industry in India' and 36.05% of 'All Industries in India'. The coefficient of variation of sample units which was 29.56% indicates that they had followed uniform policy for using long-term funds to finance the working capital.

Closer analysis of the table reveals that unit no.5 and 12 had very high percentage while unit no. 2 and 8 had a low percentage of the long-term funds to working finance.

TABLE NO. WF - 14

PERCENTAGE OF LONG TERM FUNDS TO WORKING FINANCE OF THE PHARMACEUTICAL COMPANIES DURING THE PERIOD 1989-90 TO 1998-99

(In percentage)

COMPANIES / YEARS	1989-90	1990-91	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97	1997-98	1998-99	Average
1. Burroughs Wellcome Ltd.	44.16	57.47	59 32	55.74	59.66	44 76	59.11	39 64	79.29	78 19	**57.73**
2. Cipla Ltd.	36.81	8.33	26 03	37.18	30.73	21.95	12.19	57.06	57 43	56 04	**34.38**
3. Duphar-Interfran Ltd	20.31	30.46	30.13	41.66	44.17	54.01	0 00	84 41	92.15	93 33	**49.15**
4 E Merck Ltd	77.50	50.42	43 40	42.63	41 72	58.65	26.56	39 65	52.95	45.40	**47.89**
5. Fulford Ltd.	45.44	77.51	81 44	92.13	93 43	100 00	85 28	90 38	85 88	84 75	**83.63**
6 German Remedies Ltd.	51.71	57 42	37.12	45.16	35.57	68 65	69.74	58 66	0 00	0 00	**42.40**
7. Glaxo Ltd	51.77	45.78	38.18	49.65	29 83	23 87	86 66	74 84	84 32	61 43	**54.63**
8. Hoechst Marion Roussel Ltd	23.64	0.00	36.27	37.84	22 52	84.11	31.01	0 00	0 00	52 80	**28.82**
9 Knoll Pharmaceuticals Ltd	26.95	2.77	45.78	58 18	60.03	48 87	0.00	0.00	8 59	77.39	**32.86**
10 Parke-Davis Ltd.	61.67	84 46	80.89	58.79	74.81	52.13	69 99	39.04	0.00	28.13	**54.99**
11. Pfizer Ltd	35.57	56.35	49.36	37.81	36 91	52 37	49 13	84.41	75 93	49 82	**52.77**
12. RPG Life Sciences Ltd	86.15	69.32	72.98	75.89	79.38	68 52	33.55	54 85	73.33	70.32	**68.43**
13 Unichem Laboratories Ltd	26 08	22.70	29.21	52.35	51.31	9 37	44.18	66.19	33.75	36.96	**37.21**
Average	**45.21**	**43.31**	**48.47**	**52.69**	**50.78**	**52.93**	**43.65**	**53.01**	**49.51**	**56.50**	**49.60**
Pharmaceutical Industry in India	30.27	35.41	45.24	18.92	0.00	4 23	36.16	46 77	59.12	0.00	**27.61**
All Industries in India	5.77	43.44	33.66	47.76	40.09	37.44	32 60	33.47	41.73	44.55	**36.05**

Source: Appendix -I

Std. Dev	14.66
C.V.	29.56

Unit no. 5 has the highest average percentage of long-term funds of 83.63% to working finance. It was as high as 100% in 1994-95, while in other years also it showed high percentage. Such a high percentage indicates that the management had adopted a very conservative approach and heavily relied on the long-term funds. From the analysis it is evident that the management had adopted a policy to use fixed deposit for financing the working capital requirement because it does not require any security and comparatively the interest was also lower on this form of financing.

Unit no. 12 has an average percentage of long-term funds of 68.43% to working finance. It was 86.15% in 1989-90 which gradually declined to 33.55% in 1995-96. Thereafter it increased to 70.32% in 1998-99.

Unit no. 2 shows average percentage of long-term funds of 34.38% to working finance. It was 36.81% in 1989-90 declined to a very low level of 8.33% in 1990-91. Thereafter it increased to 37.18% in 1992-93 again declined to 12.19% in 1995-96. Finally it increased to 56.04% in 1998-99.

Unit no. 8 had the lowest average percentage of long-term funds of 28.82% to working finance. It was 23.64% in 1989-90 declined to zero level in 1990-91, increased to 84.11% in 1994-95. Again it decreased to zero level in 1996-97 and 1997-98 and finally increased to 52.80% in 1998-99.

Now in order to ascertain the proportion of total assets of the pharmaceutical companies, finance through current liabilities the ratio of current liabilities to total assets is calculated and discussed below.

RATIO OF CURRENT LIABILITIES TO TOTAL ASSETS:

Table WF-15 shows the ratio of current liabilities to total assets of the sample units. This ratio indicates the percentage of total assets financed by the current liabilities. A very high ratio of current liabilities to total assets may lead to a risk of insolvency if it is utilised for financing the fixed assets of a business enterprise, as the enterprise may not be able to meet its liabilities which is short-term in nature.

Table W-15 shows that this ratio was between 34.45% and 45.84% during the period under study. The ratio shows more or less a declining trend throughout the period of ten years under study. It was 45.84% in 1989-90, maintained a declining trend and reached to 38.40% in 1993-94, it again increased to 41.96% in 1994-95. Finally it declined and reached to the lowest level to 34.45% in 1998-99. The average level of current liabilities to total assets was 40.74% during the period under study. The declining trend in the ratio was due to the fact that, the long-term sources of financing had increased during the later period under study. This means that the sample units had substituted long-term sources of finance in place of short-term sources of finance. This situation may look better from the viewpoint of the outsider, as the unit would not be hard pressed to meet its short-term liabilities. But from the viewpoint of the management, this may lead to a very high amount of long-term committed funds which are deployed in the business which being more expensive ultimately leads to reduction in the profitability.

The overall average of current liabilities to total assets of 40.74% of sample units were marginally lower as compared to 42.30% of 'Pharmaceutical Industry in India'. In contrast to this it was marginally higher as compared to 38.79% of 'All Industries in India'.

TABLE NO. WF - 15

PERCENTAGE OF CURRENT LIABILITIES TO TOTAL ASSETS OF PHARMACEUTICAL COMPANIES DURING THE PERIOD 1989-90 TO 1998-99

(In percentage)

COMPANIES / YEARS	1989-90	1990-91	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97	1997-98	1998-99	Average
1. Burroughs Wellcome Ltd.	48.53	39.50	43.51	47 47	29.76	49.51	43 83	29.41	27.29	26.52	**38.53**
2. Cipla Ltd.	36.05	48.54	48 04	45.35	44.30	51.06	36 87	29 69	31.34	33.30	**40.46**
3. Duphar-Interfran Ltd.	60.32	58.18	56.39	54.25	57.13	49.71	27 45	17.72	13 45	15.23	**40.98**
4 E. Merck Ltd	40.20	44.40	46.43	43.90	25.02	34.97	42.34	38 06	29 88	29.84	**37.51**
5. Fulford Ltd	70.65	62.13	56 17	39.68	45.47	46 21	47 82	46 90	38 61	38.27	**49.19**
6 German Remedies Ltd.	41.15	44.53	48 98	43 53	34 73	35 77	37 05	30 87	39.70	34 95	**39.13**
7. Glaxo Ltd	38.10	41 94	45 15	41.22	27.69	35 83	43.20	34 00	29 41	30.60	**36.71**
8. Hoechst Marion Roussel Ltd.	49.67	34.15	26.35	27.96	28.78	25 59	36.62	40 17	46.51	41 54	**35.73**
9. Knoll Pharmaceuticals Ltd.	42 42	48 87	42 36	39.56	45.03	59.73	60 42	50 32	45 07	44 88	**47.87**
10. Parke-Davis Ltd.	45.55	46.46	43.52	50.03	42.39	50.98	42.74	42.67	63 53	47.05	**47.49**
11. Pfizer Ltd.	52.85	45.45	44 76	44 94	44.26	38.85	48.46	43 83	40 39	50.18	**45.40**
12. RPG Life Sciences Ltd.	17.40	28.87	29 46	33.06	26.78	32 27	31 34	24.24	25.03	28.94	**27.74**
13 Unichem Laboratories Ltd.	53.07	51.94	51.59	58 90	47 83	34.98	42 74	31.40	30.41	26.54	**42.94**
Average	**45.84**	**45.76**	**44.82**	**43.83**	**38.40**	**41.96**	**41.61**	**35.33**	**35.43**	**34.45**	**40.74**
Pharmaceutical Industry in India	51.16	47.64	49.14	49.11	47.99	37.59	35 87	35.66	34.44	34.38	**42.30**
All Industries in India	35.93	39 64	41.35	41 01	41.60	38 68	37 40	38 18	37.67	36 47	**38.79**

Source: Appendices - I and VI

Std Dev	5 70
C V.	13 99

The coefficient of variation of sample units 13.99% indicates that they had followed a uniform policy with regard to current liabilities to total assets.

An indepth analysis of the unit reveals that unit no. 5 had an exceptionally high ratio while unit no. 12 had a low ratio of current liabilities to total assets.

Unit no. 5 has the highest percentage of current liabilities of 49.19% to total assets during the period under study. It was 70.65% in 1989-90 declined to 39.68% in 1992-93. Thereafter it increased to 47.82% in 1995-96, again declined to 38.27% in 1998-99. The high ratio reveals high risk, but during the later period, it had declined which indicates that the management could reduce the risk during the later part of the study period.

Unit no. 12 had the lowest percentage of current liabilities of 27.74% to total assets. It was at the very low level of 17.40% in 1989-90 increased to 33.06% in 1992-93. Thereafter it declined to 26.78% in 1993-94, again increased to 32.27% in 1994-95. Finally it declined and reached to 28.94% in 1998-99.

AVERAGE DEBT COLLECTION PERIOD AND AVERAGE PAYMENT PERIOD:

Theses two ratios are used to find out the credit policies followed by the management of the pharmaceutical companies for the purchase and sales of goods. Credit policies of a concern determine the terms of purchase and sales. Less cash is tied up if the terms of purchase are favourable to the enterprise. If terms of purchase are cash and sales on credit; the working capital requirements will be relatively higher as there is no payables to match the receivables.

Table WF-16 shows the average collection period and average payment period of the selected pharmaceutical units during the period of ten years 1989-90 to 1998-99. The table reveals that overall average payment period was 3.6 times higher than the average debt collection period. The table further reveals that the average payment period had increased significantly from 141 days to 183 days, while on the other hand the average debt collection period had declined from 44 days to 38 days during the 1989-90 and 1998-99 respectively.

The overall average debt collection period of 39 days of the sample units was lower as compared to 57 days of 'Pharmaceutical Industry in India' and 40 days of 'All Industries in India'. The overall average payment period of 141 days of sample units was significantly higher as compared to 119 days of 'Pharmaceutical Industry in India' and 113 days of 'All Industries in India'. The coefficient of variation of 40.36% of debt collection period and 40.78% of average payment period indicate that the sample units had followed a uniform policy for collection and payment during the period under study.

An indepth analysis of the individual unit reveals that unit no. 2 had low average debt collection period of 26 days, while its average payment period was 67 days. The debt collection period was 30 days in 1989-90 which marginally increased to 33 days in 1998-99. Average payment period was 50 days in 1989-90 increased to 76 days in 1998-99. A high average payment period and low debt collection period indicates that the requirement of working finance from long-term sources was very less.

Unit no. 7 has lowest average debt collection period of 18 days while its average payment period was 126 days. The average debt collection period was 14 days in 1989-90 decreased to 10 days in

TABLE NO. WF - 16

AVERAGE DEBT COLLECTION PERIOD AND AVERAGE PAYMENT PERIOD OF THE PHARMACEUTICAL COMPANIES DURING THE PERIOD 1989-90 TO 1998-99

(No of days)

COMPANIES / YEARS	1989-90	1990-91	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97	1997-98	1998-99	Average
1. Burroughs Wellcome Ltd.	33	23	17	24	38	57	70	18	20	26	33
	(140)	(110)	(71)	(88)	(85)	(80)	(117)	(95)	(112)	(146)	(104)
2 Cipla Ltd.	30	27	20	18	21	22	27	28	32	33	26
	(50)	(74)	(79)	(75)	(75)	(71)	(66)	(43)	(59)	(76)	(67)
3 Duphar-Interfran Ltd.	58	58	53	55	66	67	50	60	34	29	53
	(213)	(197)	(158)	(171)	(163)	(206)	(198)	(281)	(187)	(183)	(196)
4 E Merck Ltd	71	69	84	80	69	45	44	43	42	40	59
	(205)	(174)	(186)	(145)	(132)	(98)	(117)	(109)	(122)	(125)	(141)
5. Fulford Ltd	90	105	92	43	17	16	15	24	34	37	47
	(185)	(288)	(198)	(108)	(93)	(123)	(86)	(92)	(91)	(64)	(133)
6. German Remedies Ltd.	33	36	41	46	50	47	47	48	51	48	45
	(130)	(136)	(109)	(92)	(63)	(73)	(67)	(70)	(82)	(62)	(88)
7. Glaxo Ltd.	14	12	10	10	12	13	23	25	29	28	18
	(150)	(128)	(109)	(96)	(94)	(104)	(147)	(138)	(152)	(142)	(126)
8 Hoechst Marion Roussel Ltd.	29	24	24	26	24	23	22	30	35	44	28
	(186)	(144)	(110)	(77)	(65)	(115)	(111)	(115)	(127)	(173)	(122)
9. Knoll Pharmaceuticals Ltd.	19	19	20	20	19	18	31	30	29	25	23
	(115)	(120)	(101)	(88)	(105)	(200)	(389)	(397)	(454)	(571)	(254)
10 Parke-Davis Ltd	22	22	23	22	31	37	35	34	33	31	29
	(148)	(169)	(193)	(192)	(238)	(170)	(210)	(183)	(338)	(429)	(227)
11. Pfizer Ltd	25	31	29	28	28	25	26	28	51	33	30
	(73)	(108)	(85)	(68)	(82)	(100)	(121)	(125)	(274)	(200)	(124)
12 RPG Life Sciences Ltd	94	94	81	60	55	45	40	40	49	67	62
	(53)	(57)	(42)	(34)	(40)	(56)	(73)	(63)	(76)	(92)	(59)
13. Unichem Laboratories Ltd.	56	43	35	48	55	55	72	73	68	56	56
	(188)	(157)	(162)	(237)	(247)	(180)	(188)	(229)	(190)	(120)	(190)
Average	44	43	41	37	37	36	39	37	39	38	39
	(141)	(143)	(124)	(113)	(114)	(121)	(145)	(149)	(174)	(183)	(141)
Pharmaceutical Industry in India	48	45	40	42	47	54	58	63	70	102	57
All Industries in India	36	34	36	38	41	39	39	43	48	52	40
Pharmaceutical Industry in India	(131)	(121)	(103)	(100)	(99)	(102)	(107)	(113)	(131)	(180)	(119)
All Industries in India	(101)	(104)	(105)	(122)	(120)	(99)	(97)	(116)	(127)	(136)	(113)

Source: Appendices - III, V and VI

Note : Figures in brackets indicates Average Payment Period

C. V. (Av Debt Coll Period)	40.36
C. V (Av. Payment Period)	(40.78)

1992-93 and then increased to 29 days in 1997-98. It was marginally declined to 28 days in 1998-99. The payment period showed a fluctuating trend throughout the period under study. It was 150 days in 1989-90 decreased to 94 days in 1993-94 and then increased to 152 days in 1997-98. Therefater it declined to 142 days in 1998-99.

Unit no. 9 has an exceptionally very high average payment period of 254 days. It had an invariable rising trend during the period under study. The payment period was 115 days in 1989-90 increased to a peak level of 571 days in 1998-99. It seems that the management of this unit had completely used and misused the creditors as a means of finacing its working capital to the maximum extent. The period of 571 days means that the unit was paying its dues almost in 1.5 years time form the date of transaction. The avarage debt collection period was 23 days. It was 19 days in 1989-90 marginally increased to 25 days in 1998-99. It is very interesting to note that on the one hand the unit had kept its receivables period at second lowest among the selected units and on the other hand it had the highest payment period. This clearly implies that the unit had heavily relied on creditors as a means of financing its working capital requirement. Very high ratio also implies the unit's inability to pay its dues to creditors in time.

Unit no. 10 shows a very high average payment period of 227 days. Average payment period showed a rising trend during the period under study. It was 148 days in 1989-90 gradually increased to a very high level of 429 days in 1998-99. It seems that the management of the unit had adopted a policy of delaying payment to its creditors. Apart from this, the management had considered this as interest free source of financing the working capital needs of the unit. Therefore the unit had a consistently high payment period. The

average debt collection period of the unit was 29days. It was 22 days in 1989-90 increased to 31 days in 1998-99.

Unit no. 12 shows the highest average debt collection period of 62 days during the period, While its lowest average payment period was 59 days. This was the only unit which had overall average debt collection period higher than the average payment period. Average debt collection period was 94 days in 1989-90 declined to 67 days in 1998-99. It is apparent that the management had adopted a liberal credit policy to induce the customers to promote its sales, due to which the debt collection period of the unit was higher as compared to the other sample units. The average payment period was 53 days in 1989-90 increased to 92 days in 1998-99. It is very interesting to note that though in the initial period management had a policy of making early payment, but during the later part of the study period it had adopted a similar policy as that of the other sample units which fall in to the same category of having higher payment period and lower collection period.

CREDITORS TO RAW MATERIALS INVENTORY RATIO:

The ratio of creditors to raw materials inventory shows the extent to which inventories are procured through credit purchases. If this ratio is less than unity, it reveals that the credit available is lower than the total inventory required. It also explains the extent of inventory procured through cash resources. Indirectly it shows the inventory financing policy of the unit. If the ratio is more than one time, it reveals that the entire inventory is purchased on credit.

Table No. WF-17 shows creditors to raw materials inventory. That table shows that the overall average of creditors to inventory

TABLE NO. WF - 17

CREDITORS TO TOTAL RAW MATERIALS INVENTORY OF THE PHARMACEUTICAL COMPANIES DURING THE YEAR 1989-90 TO 1998-99

(In times)

COMPANIES / YEARS	1989-90	1990-91	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97	1997-98	1998-99	Average
1. Burroughs Wellcome Ltd.	1.74	1.34	1.83	1.49	2.98	1.67	1.86	3.65	3.20	2.98	**2.28**
2. Cipla Ltd	0.52	0.87	0.56	0.81	0.80	0.78	0.55	0.47	0 83	0.72	**0.69**
3. Duphar-Interfran Ltd.	2.36	1.64	1.68	1.36	1.69	1.85	1.82	1.03	1 34	1.81	**1.66**
4 E Merck Ltd	2.62	2.42	3 73	2.47	2.45	1.87	2.10	2 13	2.00	2 01	**2.38**
5. Fulford Ltd.	1.91	1.97	1.91	1.68	1.43	1.70	0.64	2.86	0.88	0.96	**1.59**
6 German Remedies Ltd.	1.94	1.17	1.28	1.07	0.82	1.05	0.94	1.15	1.10	0.59	**1.11**
7. Glaxo Ltd	2.89	2.49	1.82	1.78	2.01	2 48	2.29	2.51	2.53	2.36	**2.32**
8 Hoechst Marion Roussel Ltd.	1.38	1.44	1.71	1.11	1.20	1 45	1.62	2 48	2 90	2.82	**1.81**
9. Knoll Pharmaceuticals Ltd.	2.32	2.30	1.40	1.65	1.96	3.69	7.42	12.95	28.86	19.67	**8.22**
10. Parke-Davis Ltd.	2.00	2.97	3 13	3.80	3.64	2.95	2 63	3 64	7.74	4 24	**3.68**
11. Pfizer Ltd	1.40	1.58	1.07	1.03	2.24	2 14	3.56	3 25	4.11	5.71	**2.61**
12. RPG Life Sciences Ltd.	0.68	0.74	0 70	0.45	0.95	1.60	1.69	0.99	2.86	3.49	**1.42**
13. Unichem Laboratories Ltd.	1.61	2.03	1.43	2 53	1.79	1 59	1 91	3.52	2 36	2.17	**2.10**
Average	**1.80**	**1.77**	**1.71**	**1.63**	**1.84**	**1.91**	**2.23**	**3.13**	**4.67**	**3.81**	**2.45**
Pharmaceutical Industry in India	1.77	1.79	1.78	1.62	1.75	1.66	1.64	1 85	2 05	2.21	**1.81**
All Industries in India	1.87	1.81	1.81	2.12	2.11	2.10	2.00	2.15	2.32	2.52	**2.08**

Source : Appendices -II and VI

Std. Dev.	1.81
C V.	74.00

ratio was 2.45 times. Year wise analysis of the sample units reveals that the ratio was 1.80 times in 1989-90, decreased to 1.63 times in 1992-93. Thereafter it constantly increased and reached a peak level of 4.67 times in 1997-98, then it declined to 3.81 times in 1998-99. The high ratio of the sample unit indicates that the entire inventory was purchased on credit. It further explains that the management had not used cash to procure inventory. It also shows that the sample units had got free flow of credit and were in a position to manage their operations effectively with the short-term credit available and making the cash cycle to operate successfully.

The overall average creditors to raw materials inventory of 2.45 times of sample units was higher as compared to 1.81 times of 'Pharmaceutical Industry in India' and 2.08 times of 'All Industries in India'. The coefficient of variation of 74% of sample units indicates that they had less uniformity in policy with regard to creditors to raw materials inventory.

Analysis of the table reveals that the ratio was exceptionally very high in case of unit no. 9, while incase of unit no. 2 shows that creditors to raw materials inventory ratio was very low.

An indepth analysis shows that except unit no. 2 all other sample units had this ratio at more than one. The analysis reveals that except one unit all other sample units had followed the policy of purchasing the entire raw materials on credit which indicates that, the sample units had relied heavily on creditors for financing their raw materials inventory.

It is very interesting to observe that unit no. 9 has the highest average ratio of 8.22 as compared to other sample units. The ratio was 2.32 in 1989-90, decreased to 1.40 in 1991-92. Thereafter it substantially increased and reached a peak level of 28.86 in 1997-98,

and then it again declined and was 19.67 in 1998-99. The very high ratio of this unit indicates that for financing working capital it depended mainly on spontaneous sources of working capital.

In the case of unit no. 2 the ratio was 0.52 in 1989-90 which increased to 0.87 in 1990-91, then declined to a level of 0.56 in 1991-92. Thereafter it increased to 0.81 in 1992-93 and then it declined and reached to a very low level of 0.47 in 1996-97. Thereafter it increased again to 0.83 in 1997-98 and then marginally declined to 0.72 in 1998-99. The low ratio indicates that the credit available was lower to procure inventory.

The following section analyse gross margin, net margin, earning power, assets turnover ratios to test the fund generating capacity for financing the working capital requirements of the selected pharmaceutical companies in the State of Maharashtra. Profitability of operations provides to a business enterprise the most dependable source of working finance. To quote Chiuminatto[40] "Operate the business at a profit. If this is done, there is little danger of insufficient working capital.

GROSS PROFIT TO TOTAL CAPITAL EMPLOYED:

The gross profit on total capital employed has been aptly regarded as a primary ratio because it specifies the relative profit earned on the total capital employed. This is one single measure where the final outcome of all the business activities gets recorded. It functions not only as a vehicle but also focuses attention on whether an adequate return has been earned in accordance with the expectations of investors on the capital contributed by them. The gross profits representing the earning before interest and taxes as a

percentage of total capital employed in different years for the selected unit stand as shown in Table WF-18.

The table shows that the overall average gross profit to capital employed of the sample units was 17.12% during the period between 1989-90 and 1998-99. The ratio was 14.90% in 1989-90 increased to 20.06% in 1995-96, then marginally declined to 18.75% in 1998-99. Though it had a low return in the initial years under study, it showed higher return during the later period of study.

The overall average percentage of gross profit to total capital employed of 17.12% of sample units was higher as compared to 11.61% of 'Pharmaceutical Industry in India' and 10.52% of 'All Industries in India'. The coefficient of variation of 19.10% of sample units indicates that they had maintained uniformity in earning gross profit on total capital employed.

An indepth analysis of the table reveals that unit no. 7 and 10 have a very high percentage while unit no. 8 and 13 show a very low percentage of gross profit to total capital employed.

Unit no. 7 has average percentage of gross profit of 21.88% during the period under study. It was 17.31% in 1989-90 decreased to 11.91% in 1991-92. Thereafter it had increased and reached a peak level of 33.60% in 1995-96 and again declined to 18.33% in 1997-98 but finally increased to 26.17% in 1998-99. High degree of operating leverage was the main reason for high rate of return on total capital employed.

Unit no. 10 had the highest average percentage of gross profit 22.65% to total capital employed during the period under study. The ratio showed a downward trend and was 23.07% in 1989-90 decreased to 18.08% in 1990-91. Thereafter it increased to 33.63% in 1993-94, then it declined gradually to 14.07% in 1997-98. Finally it

TABLE NO. WF - 18

PERCENTAGE OF GROSS PROFIT TO CAPITAL EMPLOYED OF THE PHARMACEUTICAL COMPANIES DURING THE PERIOD 1989-90 TO 1998-99 (EBIT)

(In percentage)

COMPANIES / YEARS	1989-90	1990-91	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97	1997-98	1998-99	Average
1. Burroughs Wellcome Ltd	12.87	15.00	13.73	13.66	16.82	16.79	1.31	18.26	24 56	24.73	**15.77**
2. Cipla Ltd	11.39	13.45	15.26	16.40	15.49	17.90	14.36	28 48	24.68	22 50	**17.99**
3 Duphar-Interfran Ltd	11.86	12 54	12.13	12 28	10 90	12 46	52.14	10 26	8 89	12 71	**15.62**
4. E. Merck Ltd	11.17	10.25	7.72	14.49	18 05	20.90	25 72	26 48	23 35	25 91	**18.40**
5 Fulford Ltd.	14.33	10.17	11 91	16.76	13.74	14 60	13.71	14 22	17 74	17 89	**14.51**
6. German Remedies Ltd	22.23	10.78	8.34	10 56	19.74	20.18	16.85	20.06	22.23	25.51	**17.65**
7 Glaxo Ltd	17.31	14.37	11.91	16.08	17.56	41.03	33.60	22.46	18 33	26 17	**21.88**
8 Hoechst Marion Roussel Ltd	10.64	8.98	8 20	8 86	13.95	13.15	13.38	14.01	13.17	11 89	**11.62**
9 Knoll Pharmaceuticals Ltd.	21.64	21.46	23.12	20.76	19.73	10.62	16 68	24.34	36 19	15 25	**20.98**
10 Parke-Davis Ltd	23.07	18.08	21 23	29.88	33 63	29.00	21.31	17.74	14 07	18 50	**22.65**
11. Pfizer Ltd.	14.91	13.15	10.11	16.33	22.15	16.11	22 28	29 14	17.76	17 56	**17.95**
12. RPG Life Sciences Ltd	15.32	15.58	16.24	16 99	20 53	22 09	15.37	11 02	9 06	9.59	**15.18**
13 Unichem Laboratories Ltd	7.00	11.10	16 12	9 42	15.57	17 34	14.05	7.41	10 19	15.49	**12.37**
Average	**14.90**	**13.45**	**13.54**	**15.57**	**18.30**	**19.40**	**20.06**	**18.76**	**18.48**	**18.75**	**17.12**
Pharmaceutical Industry in India	11.76	10.00	10.81	12.81	13 09	14.24	12.01	10 85	8 76	11 73	**11.61**
All Industries in India	10.62	10 71	10.67	10.31	11 25	12 81	12.46	10.33	8 73	7.26	**10.52**

Source: Appendices - V and VI

Std. Dev	3.27
C.V.	19 10

increased to 18.50% in 1998-99. Though overall average ratio of the unit was high, but during the later part of the study period it had declined which indicates increase in operating inefficiency of the management.

Unit no. 8 shows the lowest average percentage of gross profit of 11.62% to total capital employed. It was 10.64% in 1989-90 declined to a very low level of 8.20% in 1991-92. Thereafter it increased to 14.01% in 1996-97, again declined to 11.89% in 1998-99. The tariff commission had recommended a minimum return of 14% on total capital employed in public sector undertakings. As compared to this standard the sample units had earned very low rate of return on its total capital employed. The main reason for the low profit was due to low earning power of the unit.

Unit no. 13 has the second lowest average percentage of gross profit of 12.37%. It was just 7.00% in 1989-90 increased to 16.12% in 1991-92 then declined to 9.42% in 1992-93. Thereafter it increased to 17.34% in 1994-95 and finally decreased to 15.49% in 1998-99. As compared to the other sample units the ratio was very low which makes it quite evident that the gross profits earned by the unit were extremely poor and highly depressing. Over capitalisation was one of the main reasons for the low profitability in the unit.

PERCENTAGE OF PROFIT AFTER TAX TO NET WORTH:

The ratio of profit after tax to net worth is shown in Table WF-19. This ratio measures the return on owners' funds. This is probably the singlemost important ratio to judge whether the firm has earned a satisfactory return for its equity holders or not[41]. The table shows that the overall average of the selected units was 18.99% during the

TABLE NO. WF - 19

PERCENTAGE OF PROFIT AFTER TAX TO NET WORTH OF THE PHARMACEUTICAL COMPANIES DURING THE PERIOD 1989-90 TO 1998-99

(In percentage)

COMPANIES / YEARS	1989-90	1990-91	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97	1997-98	1998-99	Average
1. Burroughs Wellcome Ltd.	10.38	10.23	9.70	12 41	13.45	18.27	-8 22	12 49	19.99	19 00	**11.77**
2. Cipla Ltd	13.05	16.19	17.65	18.44	21.05	29 85	13 70	25 80	28 02	24 88	**20 86**
3 Duphar-Interfran Ltd.	17.99	17.03	12.53	11 23	8 43	11 51	73 11	7.87	6 29	7.00	**17.30**
4. E Merck Ltd.	24.85	13.59	-12.67	12.54	13.34	19 86	26.75	26.67	26 03	28.42	**17.94**
5 Fulford Ltd	28.07	11.25	5 24	12.11	13.49	14 51	18 00	18.66	23 64	25 05	**17.00**
6 German Remedies Ltd	35.66	16.58	7.59	5.29	20 79	25 61	19 48	22 17	30 12	30.13	**21.34**
7. Glaxo Ltd	20.20	13 05	5.99	11.80	12 39	44 67	44 25	18 68	15 26	26.77	**21.31**
8 Hoechst Marion Roussel Ltd	13.77	5.74	3.93	2.56	6.91	13 63	13 33	14.09	18.70	17.15	**10.98**
9 Knoll Pharmaceuticals Ltd	24.70	25.89	23 22	20.77	24 06	28 78	25 61	34 22	48 90	22.03	**27.82**
10 Parke-Davis Ltd	29.68	18.63	18.38	31.15	29.40	34 64	24 71	29 21	78 14	49 64	**34.36**
11. Pfizer Ltd.	12.93	11.79	8 57	9.54	24 41	16 83	21 38	31.38	20 28	16.72	**17.38**
12. RPG Life Sciences Ltd	17.62	15.85	15.72	13.72	16 29	23 09	19 36	9.21	5.07	4.18	**14.01**
13 Unichem Laboratories Ltd.	-2.99	17.01	20.89	16.79	29.33	17.83	14 01	8 85	8 37	17.52	**14.76**
Average	**18.92**	**14.83**	**10.52**	**13.72**	**17.95**	**23.01**	**23.50**	**19.95**	**25.29**	**22.19**	**18.99**
Pharmaceutical Industry in India	15.74	6.96	8.42	15.10	22.02	19 69	13 00	8 05	4.73	8 80	**12.25**
All Industries in India	11.91	11.31	9.64	9.00	13.28	18.57	15.69	9.13	6.55	5 09	**11.02**

Source: Appendices - V and VI

Std. Dev.	6.19
C V	32.60

period of ten years under study. It varied between 10.52% in 1991-92 to 25.29% in 1997-98. It was 18.92% in 1989-90 decreased to 10.52% in 1991-92 increased to a peak level of 25.29% in 1997-98 and then marginally declined to 22.19% in 1998-99. The encouraging factor about the selected unit was that during the later period of study it shows an increasing trend and was also higher as compared to the initial period of study. The higher ratio indicates that the sample units had good profitability.

The overall average percentage of profit after tax to net worth of 18.99% of sample units was much higher as compared to 12.25% of 'Pharmaceutical Industry in India' and 11.02% of 'All Industries in India'. The coefficient of variation of 32.60% of sample units indicates that the variation was less in earning on net worth.

A closer look at the table reveals that unit no. 9 and 10 have a very high percentage while unit no. 1 and 8 have a low percentage of net profits to net worth.

Unit no. 9 has an average percentage of net profit of 27.82% to net worth during the period under study. It had maintained an upward trend for major part of the study period. It was 24.70% in 1989-90 increased to 25.89% in 1990-91 declined to 20.77% in 1992-93. Thereafter it increased to a peak level of 48.90% in 1997-98 and finally declined significantly to 22.03% in 1998-99.

Unit no. 10 gives the highest average percentage of net profit of 34.36% to net worth. It was 29.68% in 1989-90 declined to 18.38% in 1991-92, again increased to 34.64% in 1994-95. Thereafter it declined to 24.71% in 1995-96, then it reached to a very high level of 78.14% in 1997-98 and finally declined to 49.64% in 1998-99. The high return on net worth clearly indicates that the unit had earned satisfactory return on owners' fund.

Unit no. 1 has an average percentage of net profit of 11.77% to net worth. It shows a fluctuating trend and was 10.38% in 1989-90 which declined to 9.70% in 1991-92. Thereafter it increased to 18.27% in 1994-95 then it showed a negative trend at –8.22% in 1995-96 and finally increased to 19.00% in 1998-99.

Unit no. 8 has the lowest average percentage of 10.98% to net worth. It was 13.77% in 1989-90 declined to a very low level of 2.56% in 1992-93. Thereafter it gradually increased to 17.15% in 1998-99. The main reason for low return on net worth is that the unit had inadequate earning power. The ratio had been the lowest amongst the sample unit at 4.53% during the period under study.

EARNING POWER:

The earning power is a crucial measure of the overall profitability and operational efficiency of a firm. It shows the interaction of profitability and activity ratios. It implies that the performance of a firm can be improved either by generating more sales volume per rupee of investment or by increasing the profit margin per rupee of sales[42]. The ratio is combination of key ratios: I) Net profit margin ratio II) Investment turnover ratio.

Table WF-20 shows the earning power of selected pharmaceutical units during the period of ten years under study. Overall average of the sample unit was 8.08%. The ratio had a fluctuating trend during the period under study. It was 6.65% in 1989-90 decreased to a very low level of 4.30% in 1991-92. Thereafter it had an upward trend and reached a peak level of 11.71% in 1995-96, then it declined to 10.75% in 1998-99. Increase in the ratio during the

TABLE NO. WF - 20

EARNING POWER OF THE PHARMACEUTICAL COMPANIES DURING THE PERIOD 1989-90 TO 1998-99 (PAT)

(In percentage)

COMPANIES / YEARS	1989-90	1990-91	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97	1997-98	1998-99	Average
1. Burroughs Wellcome Ltd.	3.48	4.09	3.52	4.18	6.26	7.92	-4.12	8.35	14 01	13.55	**6.12**
2 Cipla Ltd.	5.81	6.01	6.46	6.45	7.05	10 92	7.53	17.27	18.60	16.27	**10.24**
3. Duphar-Interfran Ltd.	4.44	4.11	3.36	2.84	1.94	2.94	47.65	6.15	5.14	5.41	**8.40**
4. E. Merck Ltd.	5.84	2.44	-1.54	1.56	5.29	7.49	11.34	12.55	13.10	16.74	**7.48**
5 Fulford Ltd.	4.45	2.21	1.20	3 88	3.89	4 10	5.16	5.71	9.02	9.83	**4.94**
6. German Remedies Ltd.	11.13	4.36	1.73	1 22	8.26	11.07	8.80	12.06	15.58	17.82	**9.20**
7. Glaxo Ltd.	7.97	4.73	2.03	3.80	6.79	24.71	22 87	11.39	9 05	17.53	**11.09**
8. Hoechst Marion Roussel Ltd.	4.18	2.59	1.99	1.23	3.42	6 64	6 02	6.31	7.22	5 74	**4.53**
9 Knoll Pharmaceuticals Ltd.	10.68	10.80	10.16	9.35	9.56	7.80	9.31	14.89	26.07	11.90	**12.05**
10 Parke-Davis Ltd	14.58	8.09	8.37	12.93	14.10	14.64	12.35	8.97	6.68	7.27	**10.80**
11. Pfizer Ltd.	5.89	5.01	3.63	3.41	9.41	6.55	9.10	15.65	9.34	8.33	**7.63**
12. RPG Life Sciences Ltd.	8.82	8.75	8.34	7.28	9.35	11.84	9.17	4.18	2.08	1.54	**7.13**
13. Unichem Laboratories Ltd.	-0.83	5.21	6.68	3.78	8.62	9.47	7.10	3.37	3.30	7.83	**5.45**
Average	**6.65**	**5.26**	**4.30**	**4.76**	**7.23**	**9.70**	**11.71**	**9.76**	**10.71**	**10.75**	**8.08**
Pharmaceutical Industry in India	2.98	1.54	1.69	3.67	6.64	8.26	5.63	3 33	1.88	3.63	**3.92**
All Industries in India	3.43	3.10	2.56	2.28	3.55	5.64	5 33	3.19	2.16	1.63	**3.29**

Source: Appendices - V and VI

Std. Dev.	2.37
C.V.	29.28

later period of study was mainly due to increase in net margin to sales ratio.

The overall average earning power of 8.08% of sample units was significantly higher as compared to 3.92% of 'Pharmaceutical Industry in India' and 3.29% of 'All Industries in India'. The coefficient of variation of 29.28% of sample units indicates that they had uniform earning power during the period under study.

An indepth analysis of the table reveals that unit no. 7 and 9 had a high earning power while unit no. 5 and 8 had a very low earning power.

Unit no. 7 has an average earning power of 11.09% during the period under study. The ratio showed a fluctuating trend throughout the period under study. It was 7.97% in 1989-90 declined to a very low level of 2.03% in 1991-92. Thereafter it increased to a peak level of 24.71% in 1994-95, again declined to 9.05% in 1997-98 and finally increased to 17.53% in 1998-99.

Unit no. 9 shows the highest average earning power ratio of 12.05%. The ratio had an erratic trend throughout the study period. It was 10.68% in 1989-90 declined to 7.80% in 1994-95. Thereafter it increased to 26.07% in 1997-98, again declined to 11.90% in 1998-99.

Unit no. 5 has an average earning power ratio of 4.94% during the period under study. It was 4.45% in 1989-90 declined to a very low level of 1.20% in 1991-92. Thereafter it showed a rising trend and reached to 9.83% in 1998-99. The low earning power in the initial period of study was mainly due to very low net margin on sales of the unit.

Unit no. 8 has the lowest average earning power ratio of 4.53% during the period of ten years under study. It was 4.18% in 1989-90

declined to 1.23% in 1992-93. Thereafter it showed an increasing trend and reached to 7.22% in 1997-98, finally it declined to 5.74% in 1998-99. The reasons for low percentage of earning power were very low net margin on sales of the unit throughout the period under study and moreover the unit also had a very low turnover of the capital employed.

PERCENTAGE OF GROSS MARGIN TO SALES:

The ratio of gross margin indicates the relationship between prices, sales volume and cost. A high gross margin ratio is a sign of good management as it implies that the cost of production of the frim is relatively low. A relatively low gross margin is definitely a danger signal, warranting a careful and detailed analysis of the factors responsible for it. The ratio of gross profit to sales have been presented in table WF- 21. The overall average of the selected pharmaceutical unit was 11.15% during the period of ten years under the study. It showed a mixed trend of upward and downward movement throughout the period under study. It was 9.32% in 1989-90 decreased to 8.12% in 1991-92. Thereafter it had gradually increased and reached a peak level of 15.19% in 1995-96, then again declined to 13.22% in 1998-99.

The overall average percentage of gross margin to sales of 11.15% of sample units was almost the same as compared to 11.05% of 'Pharmaceutical Industry in India'. The ratio was higher as compared to 9.84% of 'All Industries in India'. The coefficient of variation of 26.25% of sample units indicates that they had uniformity in percentage of gross margin to sales during the period under study.

TABLE NO. WF - 21

PERCENTAGE OF GROSS MARGIN TO SALES OF THE PHARMACEUTICAL COMPANIES DURING THE PERIOD 1989-90 TO 1998-99 (EBIT)

(In percentage)

COMPANIES / YEARS	1989-90	1990-91	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97	1997-98	1998-99	Average
1. Burroughs Wellcome Ltd.	9.54	8.40	7.31	6.94	8.66	10.49	1.04	11.29	16 63	18.56	**9 89**
2 Cipla Ltd	9.12	11.42	12.89	13.23	13.08	15 66	15 23	25.78	26 17	25.47	**16.80**
3 Duphar-Interfran Ltd.	8.31	8.96	7.98	8.22	7.58	8 95	54.38	14.84	11.44	13.85	**14.45**
4. E. Merck Ltd.	9.80	9.63	8.11	13.15	13.06	14 66	17.13	16 74	15 57	16.01	**13.39**
5. Fulford Ltd.	9.22	6.88	6.08	5.35	4.72	5.00	4 85	5.12	5 38	5.78	**5.84**
6. German Remedies Ltd.	12.58	8.48	7.35	7.52	14.19	14.92	13.14	13.55	18.07	19.46	**12.92**
7. Glaxo Ltd	9.81	7.74	5.89	7.88	8.56	22.88	32.85	13.38	10.94	14.82	**13.48**
8. Hoechst Marion Roussel Ltd	8.06	7.67	6.92	7.36	10.60	11.35	11.20	11.02	10 38	7.93	**9.25**
9. Knoll Pharmaceuticals Ltd.	11.76	11.78	11.43	8.95	9.50	4 25	8.69	12.64	24 91	11.58	**11.55**
10. Parke-Davis Ltd.	9.17	7.32	7.43	10.90	11.20	11.67	7 41	11.12	7.63	8.16	**9.20**
11. Pfizer Ltd	7.40	7.64	5.23	9.06	11.57	8.18	10.27	12.91	15.90	10.05	**9.82**
12. RPG Life Sciences Ltd.	12.22	11.11	11.21	9.92	11.43	13.76	12.47	10.62	9.18	9.39	**11.13**
13. Unichem Laboratories Ltd.	4.19	5.65	7.73	5.01	7.08	9.57	8.83	5.23	7 78	10.77	**7.18**
Average	**9.32**	**8.67**	**8.12**	**8.73**	**10.09**	**11.64**	**15.19**	**12.63**	**13.84**	**13.22**	**11.15**
Pharmaceutical Industry in India	8.42	7.65	8.21	9.73	13.41	15.44	13.19	12.11	10.38	12.00	**11.05**
All Industries in India	8.82	9.13	9.32	9.40	10.52	11.28	11.44	10.28	9.49	8.76	**9.84**

Source: Appendix - V

Std Dev.	2.93
C.V.	26.25

An indepth analysis of the table reveals that the unit no. 2 and 3 have a very high percentage of gross margin while unit no. 5 and 13 shows a very low percentage of gross margin to sales ratio.

Unit no. 2 has the highest average of gross margin of 16.80% to sales during the period under study. It had more or less a rising trend during the period of ten years under study. It was 9.12% in 1989-90 increased to a peak level of 26.17% in 1997-98. Thereafter it marginally declined to 25.47% in 1998-99.

Unit no. 3 has an average percenatge of gross margin of 14.45% to sales. It was 8.31% in 1989-90 increased to 8.96% in 1990-91. Thereafter it declined to 7.58% in 1993-94 and then increased to 54.38% in 1995-96. The main reason for the sudden spurt in the ratio was non-recurring income earned by the unit. Because it was abnormally high in this year it resulted in such a high ratio in this particular year. Finally the ratio was 13.85% in the year 1998-99.

Unit no. 5, shows the lowest average ratio of gross margin of 5.84% to sales during the period under study. It was 9.22% in 1989-90 declined gradually to 4.72% in 1993-94. Therafter it increased and reached to 5.78% in 1998-99. The lower ratio was mainly due to high cost of sales in the unit. The cost of sales to sales was the highest in the unit at 84.24% during the period of ten years under study.

Unit no. 13 also has the second lowest average gross margin of 7.18% to sales. It was 4.19% in 1989-90, increased to 7.73% in 1991-92. Thereafter it declined to 5.01% in 1992-93, then it gradually increased to 10.77% in 1998-99.

PERCENTAGE OF NET MARGIN TO SALES:

The net margin to sales ratio reflects the management's ability to operate business to recoup all costs and expenses including depreciation, interest and taxes and also provide a compensation to owners. A high net margin ratio would ensure adequate return to the owners as well as enable a firm to withstand adverse economic conditions especially when selling price is declining, the cost of production is rising and the demand for the product is falling. While low net margin has contraty implications.

Table WF-22 shows percentage of net margin to sales of selected pharmaceutical units during the period of ten year from 1989-90 to 1998-99.

The table shows that the overall average of the sample units was 5.40% during the period under study. It was 4.11% in 1989-90 declined to 2.43% in 1991-92. Thereafter it gradually increased to 9.48% in 1995-96. Finally it came down to 7.64% in 1998-99.

The overall average net profit margin to sales of 5.40% of sample units was significantly higher as compared to 3.90% of 'Pharmaceutical Industry in India' and 3.05% of 'All Industries in India'. The coefficient of variation of 40.18% of sample units indicates that they had uniformity in net margin to sales during the period under study. Coefficient of correlation +0.94 of the net profit margin and net sales reveals that there exists a high degree of positive correlation between both the variables. It suggests that increase in the sales would lead to increase in the net margin of the sample units.

An indepth analysis of the table reveals that unit no. 2 and 3 had very high percentage while unit no. 5 and 13 had very low percentage of net margin to sales.

TABLE NO. WF - 22

PERCENTAGE OF NET MARGIN TO SALES OF THE PHARMACEUTICAL COMPANIES DURING THE PERIOD 1989-90 TO 1998-99 (PAT)

(In percentage)

COMPANIES / YEARS	1989-90	1990-91	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97	1997-98	1998-99	Average
1. Burroughs Wellcome Ltd.	2.58	2.29	1.88	2.12	3.22	4.95	-3 28	5.16	9.49	10.17	**3.86**
2. Cipla Ltd	4 65	5.10	5.46	5.21	5.95	9 55	7.99	15 63	19.72	18.41	**9.77**
3 Duphar-Interfran Ltd.	3.11	2.93	2.21	1.90	1 35	2.11	49.71	8.90	6 61	5.90	**8.47**
4 E Merck Ltd	5.13	2.29	-1 62	1.42	3 83	5 25	7 55	7.93	8 73	10 35	**5.09**
5 Fulford Ltd	2.86	1.49	0.61	1.24	1.34	1 40	1 83	2 05	2 74	3.17	**1.87**
6 German Remedies Ltd.	6.30	3.43	1.53	0.87	5 94	8.18	6 86	8.14	12 66	13.59	**6.75**
7. Glaxo Ltd	4.52	2.55	1.00	1.86	3 31	13.78	22 36	6.78	5 40	9 93	**7.15**
8 Hoechst Marion Roussel Ltd.	3.16	2.21	1.68	1 02	2.60	5 73	5 04	4 96	5.70	3 83	**3.59**
9 Knoll Pharmaceuticals Ltd.	5 81	5.93	5.02	4.03	4.61	3 12	4 85	7.73	17 94	9 04	**6.81**
10 Parke-Davis Ltd.	5.80	3.28	2.93	4.72	4.70	5 89	4 30	5.63	3 62	3.21	**4.41**
11. Pfizer Ltd	2.92	2.91	1.88	1.89	4.91	3.32	4.20	6 94	8 36	4 77	**4.21**
12. RPG Life Sciences Ltd	7.04	6.24	5.75	4 25	5 20	7.38	7.44	4 02	2 10	1.50	**5.09**
13. Unichem Laboratories Ltd	-0.50	2 65	3.21	2.01	3.91	5.23	4 46	2.37	2 51	5.44	**3.13**
Average	**4.11**	**3.33**	**2.43**	**2.50**	**3.91**	**5.84**	**9.48**	**6.64**	**8.12**	**7.64**	**5.40**
Pharmaceutical Industry in India	2.13	1.17	1.28	2.79	6.80	8.96	6.18	3.72	2.23	3.72	**3.90**
All Industries in India	2.85	2.65	2.23	2 08	3.32	4.97	4 90	3 17	2.35	1 97	**3.05**

Source: Appendix - V

Standard Deviation	2.17
Coefficient of Variation	40 18
r(between Net Margin and Sales)	0 94

The unit no. 2 has the highest average percentage of net margin of 9.77% to sales during the period under study. It was 4.65 in 1989-90 increased to 9.55% in 1994-95. Thereafter it declined to 7.99% in 1995-96 and again increased to a peak level of 19.72% in 1997-98. Finally in 1998-99 it marginally declined to 18.41%. higher net margin ratio refelects that the operating effciency of management is better as compared to other sample units specifically during the later period of study.

Unit no. 3 has an average net margin of 8.47% to sales. It was 3.11% in 1989-90 declined to 1.35% in 1993-4. Thereafter it increased to a very high level of 49.71% in 1995-96. As discussed earlier the reason for the sudden spurt was due to a significant increase in the non-recurring income during this specific year. Then it declined to 5.90% in 1998-99.

Unit no. 5 had the lowest average of net margin of 1.87% to sales. It was 2.86% in 1989-90 declined to a very low level of 0.61% in 1991-92. Thereafter it increased to 3.17% in 1998-99. It is very discouraging to note that throughout the period under study, the unit had a very low percentage of net profit margin. The low net margin was mainly due to high overhead cost and lower utilisation of capacity during the period under study. This indicates that the unit had least margin of safety.

Unit no. 13 has an average net margin of 3.13% to sales during the period of ten years under the study. The ratio showed an erratic trend throughout the period of ten years. It was negative -0.50% in 1989-90, increased to 5.23% in 1994-95. Thereafter it declined to 2.37% in 1996-97 and again increased to 5.44% in 1998-99. Very low margin on sales of the unit indicates that the unit is suceptible to a

very high operating risk as even a marginal fall in the selling price or increase in price of materials put the unit in a dangerous position.

The positive profitability in the phramaceutical companies shows that the percentage of cost of sales was much less than the sales price. This is explained through two ratios, percentage of cost of sales to sales and percentage of raw materials consumed to cost of production.

PERCENTAGE OF TOTAL COST OF SALES TO SALES:

The cost of sales to sales ratio shows what percentage of sales is consumed by cost of goods sold. As a working proposition, a low ratio is favourable, while high ratio is unfavorable.

Table WF-23 shows the percentage of total cost of sales to sales of the selected pharmaceutical units during the period under study. The table shows that the overall average of the sample units was 78.24%. The ratio showed a declining trend during the period of ten years under study. It was 80.58% in 1989-90 declined to 77.25% in 1994-95 increased to 78.53% in 1995-96 and further declined to 73.92% in 1998-99. The declining trend of the ratio shows the efficiency of management in controlling the cost.

The overall average percentage of total cost of sales to sales was 78.24% of sample units which was almost equal to 78.62% of 'Pharmaceutical Industry in India'. The ratio was lower as compared to 83.26% of 'All Industries in India'. The coefficient of variation 5.60% of sample units indicates that they had uniform percentage of total cost to total sales during the period under study.

TABLE NO. WF - 23

PERCENTAGE OF TOTAL COST OF SALES TO SALES OF THE PHARMACEUTICAL COMPANIES DURING THE PERIOD 1989-90 TO 1998-99

(In percentage)

COMPANIES / YEARS	1989-90	1990-91	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97	1997-98	1998-99	Average
1. Burroughs Wellcome Ltd	82.69	83.10	84.64	85 45	84.23	81.68	87.83	84.29	77.67	72.96	**82.45**
2 Cipla Ltd	79.45	79.84	75.91	77.92	76 22	75 39	74 35	68 78	65.48	68.14	**74.15**
3 Duphar-Interfran Ltd.	82.39	80.57	81.77	81.96	81 83	80 04	95 18	83 31	80 40	71 74	**81.92**
4. E. Merck Ltd.	79.89	79.95	81.38	78 53	78.91	74.85	73 95	75 62	73 77	74 67	**77.15**
5 Fulford Ltd.	83.70	86.51	86.13	87.31	85.48	83 46	82 76	81.61	82 50	82 94	**84.24**
6. German Remedies Ltd.	82.64	84.78	87.95	85 56	78.51	78.42	79.40	79 33	75 00	73 61	**80.52**
7 Glaxo Ltd.	77.45	76.64	80.39	77 93	77 05	79 96	74.98	73 44	74 71	72 37	**76.49**
8. Hoechst Marion Roussel Ltd.	82.92	81.86	83.30	81.70	77.15	75 20	76 40	73 40	76 60	83 91	**79.24**
9. Knoll Pharmaceuticals Ltd	73.20	72.45	73.64	75.07	68.80	71.19	68.91	72.33	69 76	69 79	**71.51**
10. Parke-Davis Ltd	74.81	72.79	73.19	68.98	68.24	66.85	67.80	64.18	67.17	65.37	**68.94**
11. Pfizer Ltd.	85.48	85.36	88.64	82.90	80.38	79.98	78 70	76.62	71.72	77 90	**80.77**
12 RPG Life Sciences Ltd.	76.85	77.32	77.53	79 25	76 75	74.45	76.68	80 93	79.23	75 93	**77.49**
13 Unichem Laboratories Ltd	86.02	83 89	86 27	91.17	85 46	82.84	83 90	77 84	73 75	71.68	**82.28**
Average	**80.58**	**80.39**	**81.60**	**81.06**	**78.39**	**77.25**	**78.53**	**76.28**	**74.44**	**73.92**	**78.24**
Pharmaceutical Industry in India	80.70	80.82	81.61	79 60	77.00	77.35	77.51	77.32	76 54	77.73	**78.62**
All Industries in India	84.78	84.29	83.48	83.53	81.95	82.18	82.68	83 24	82.79	83.68	**83.26**

Source: Appendix - V

Std. Dev.	4.38
C V	5.60

An indepth analysis of the table reveals that unit no. 1 and 5 had comparatively high ratio while unit no. 9 and 10 had comparatively low ratio of total cost of sales to sales.

Unit no. 1 had the average ratio of 82.45% of total cost of sales to sales. It was 82.69% in 1989-90 increased to 85.45% in 1992-93 then declined to 81.68% in 1994-95. Thereafter it increased to a peak level of 87.83% in 1995-96 and again it declined to 72.96% in 1998-99. High overheads cost had contributed to the high cost of sales in this unit.

Unit no. 5 shows the highest average of total cost of 84.24% to sales. The ratio was 83.70% in 1989-90 increased to 87.31% in 1992-93. Thereafter it declined to 81.61% in 1996-97. Finally it marginally increased to 82.94% in 1998-99. The analysis reveals that the unit had a very high material cost which had resulted into a high cost of sales.

Unit no. 9 has an average ratio of total cost of 71.51% to sales during the period under study. The ratio was 73.20% in 1989-90 declined to 68.80% in 1993-94 then it increased to 72.33% in 1996-97. Thereafter it declined to 69.79% in 1998-99.

Unit no. 10 has the lowest average ratio of total cost of sales 68.94% to sales. The ratio had more or less a declining trend throughout the period of ten years under the study. It was 74.81% in 1989-90 declined to 68.98% in 1992-93 further declined and reached to a low level of 65.37% in 1998-99. The unit had the lowest percentage of materials cost which was the main reason for the low cost of sales in the unit.

PERCENTAGE OF RAW MATERIALS CONSUMED TO COST OF PRODUCTION:

The ratio of raw materials consumed to cost of production shows the proportion of raw materials consumed by the firm out of the total cost of production. The ratio is very useful to analyse the reason for low gross margin of the unit. Raw material consumption being the major element of cost, therefore becomes an important factor to study how the percentage of raw materials varied with respect to the cost of production.

Table WF-24 shows the percentage of raw materials consumed to the cost of production of the selected pharmaceutical units during the period under study. The table shows that the overall average ratio of the sample units was 53.91% during 1989-90 to 1998-99. The ratio moved within a narrow range 49.98% to 57.73% over a period of ten years. It was 57.73% in 1989-90 decreased to 55.87% in 1990-91. Thereafter it increased to 57.09% in 1991-92 and later gradually declined to 49.98% in 1998-99.

The overall average percentage of raw materials consumed to the cost of production was 53.91% of sample units. It was significantly lower as compared to 64.01% of 'Pharmaceutical Industry in India' and 57.18% of 'All Industries in India'. The coefficient of variation of 18.29% of sample units indicates that they had uniform percentage of raw material cost with regard to cost of production. Coefficient of correlation of the 0.99 between raw material consumption and cost of production indicates that there was perfect positive correlation between both the variables. This suggests that both the variables had moved in the same direction and in the same proportion during the period under study.

TABLE NO. WF - 24

PERCENTAGE OF RAW MATERIALS CONUSMED TO COST OF PRODUCTION OF THE PHARMACEUTICAL COMPANIES DURING THE PERIOD 1989-90 TO 1998-99

(In percentage)

COMPANIES / YEARS	1989-90	1990-91	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97	1997-98	1998-99	Average
1. Burroughs Wellcome Ltd	59.14	58 85	62.96	61 78	62 41	61.61	57.23	51 54	57 23	54 68	**58.74**
2 Cipla Ltd	62.21	59.40	61.93	62 50	64.72	66 74	62 04	63 40	61.97	61 93	**62.68**
3 Duphar-Interfran Ltd	63.26	61.38	66 02	61.11	62.66	56.91	50 21	48 95	44 10	43 93	**55.85**
4 E. Morck Ltd	71.40	71.48	71.38	72 75	66.93	68 26	67 04	67 49	62 66	61.64	**68.10**
5. Fulford Ltd.	64.52	59.64	58.61	52.44	44.24	40.75	40.08	42 87	42.09	43.40	**48.87**
6. German Remedies Ltd.	62.21	57.40	58.40	55.77	56.32	53 96	55 42	53 51	52.85	53 47	**55.93**
7 Glaxo Ltd.	56 69	57.55	58.31	65 56	63.18	54 79	51 59	54.93	52.38	54.26	**56.92**
8 Hoechst Marion Roussel Ltd.	70.55	68.19	64.64	64 48	65 23	54.12	57 67	60 43	59.33	58.21	**62.29**
9. Knoll Pharmaceuticals Ltd.	47.71	47.73	52.43	53.30	51.81	42.78	46.00	48.19	46.56	43.55	**48.01**
10 Parke-Davis Ltd.	35.29	33.51	28.80	30.55	26.96	31.09	25 80	40.62	31 06	23.05	**30.67**
11. Pfizer Ltd	46.95	44.74	46.90	47.65	48 99	44.08	39.53	41 06	32 74	32.53	**42.52**
12. RPG Life Sciences Ltd.	65.55	59.74	65.67	66.28	62 84	61.24	63 27	67.10	62 04	62.01	**63.57**
13. Unichem Laboratories Ltd.	45.05	46.69	46.07	44.24	43.24	44.75	45.40	42.25	52.51	57.02	**46.72**
Average	**57.73**	**55.87**	**57.09**	**56.80**	**55.35**	**52.39**	**50.87**	**52.49**	**50.58**	**49.98**	**53.91**
Pharmaceutical Industry in India	61.67	61.17	63.01	64.48	65.14	64.95	66.26	65 69	62 60	65.10	**64.01**
All Industries in India	56 02	55.70	56.12	55.77	56.29	58.48	59.94	58.86	57.82	56.84	**57.18**

Source: Appendix - V

Standard Deviation	9.86
Coefficient of Variation	18 29
r(between RMC and Cost of Prod)	0.99

An indepth analysis of the table reveals that unit no. 4 and 12 have a very high percentage while unit no. 10 and 11 have a very low percentage of raw materials consumed to the cost of production.

Unit no. 4 has the highest average percentage of raw materials consumed i.e. of 68.10% to the cost of production. The ratio was 71.40% in 1989-90 increased to 72.75% in 1992-93. Thereafter it showed a downward trend and declined to 61.64% in 1998-99. Very high cost of the raw materials of the unit reveals that the unit had poor control over the materials cost. It may be due to higher price paid for the procurement of raw materials and in turn shows the inefficiency of the purchase department.

Unit no. 12 has the average percentage of raw materials consumed of 63.57% to cost of production. The ratio was 65.55% in 1989-90 declined to 59.74% in 1990-91, then increased to 66.28% in 1992-93. Thereafter it declined to 61.24% in 1994-95 and again increased to 67.10% in 1996-97. Finally it declined to 62.01% in 1998-99. It seems that the high cost of materials cost in the unit was mainly due to faulty production planning leading to more wastage.

Unit no. 10 has the lowest average percentage of raw materials consumed of 30.67% to cost of production. The ratio was 35.29% in 1989-90 declined to 26.96% in 1993-94 then increased to 40.62% in 1996-97. Thereafter it declined to 23.05% in 1998-99. Decline in the raw materials consumption reveals an improvement in the overall materials utilisation of materials.

Unit no. 11 shows an average percentage of raw materials consumed of 42.52% to cost of production. It was 46.95% in 1989-90 declined to 39.53% in 1995-96. Thereafter it increased to 41.06% in 1996-97 then declined to the ever-lowest level of 32.53% in 1998-99.

The high profitability of the selected pharmaceutical companies was mainly the due to the high total assets turnover and high fixed assets turnover. Both these ratios are discussed as follows.

TURNOVER OF TOTAL CAPITAL EMPLOYED:

This ratio indicates the efficiency in utilisation of assets to generate sales i.e. the value of sales obtained per rupee of investment. This ratio indicates the ability of the enterprise to generate sales from all the financial resources committed to enterprise. The higher ratio indicates that more revenue is generated per rupee of investments in assets.

Table WF-25 shows the turnover of capital employed during the period under study. The table depicts that overall average turnover of capital employed was 1.66 times. It was 1.61 times in 1989-90 increased to 1.89 times in 1993-94. Thereafter it declined to 1.45 times in 1997-98 and increased to 1.56 times in 1998-99. The ratio greater than unity indicates higher efficiency of the sample units in utilisation of assets to generate sales.

The overall average turnover of capital employed of 1.66 times of sample units was higher as compared to 1.09 times of 'Pharmaceutical Industry in India' and 1.07 times of 'All Industries in India'. The coefficient of variation of 27.08% of sample units indicates that they had uniformity in turnover of capital employed.

An indepth analysis of the table reveals that unit no. 5 and 10 have a very high turnover while unit no. 2 and 8 have a very low turnover of capital employed.

Unit no. 5 has an average turnover of 2.60 times of capital employed. The ratio was 1.55 times in 1989-90 increased to 3.14

TABLE NO. WF - 25

TURNOVER OF CAPITAL EMPLOYED OF THE PHARMACEUTICAL COMPANIES DURING THE PERIOD 1989-90 TO 1998-99

(In times)

COMPANIES / YEARS	1989-90	1990-91	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97	1997-98	1998-99	Average
1. Burroughs Wellcome Ltd	1.35	1.79	1.88	1.97	1.94	1.60	1.26	1.62	1.48	1 33	**1.62**
2. Cipla Ltd.	1.25	1.18	1.18	1.24	1.18	1.14	0 94	1.10	0.94	0.88	**1.11**
3 Duphar-Interfran Ltd	1.43	1.40	1.52	1 50	1.44	1.39	0 96	0.69	0 78	0 92	**1.20**
4 E. Merck Ltd.	1.14	1.07	0.95	1.10	1.38	1.43	1.50	1.58	1.50	1 62	**1.33**
5. Fulford Ltd.	1.55	1.48	1.96	3.14	2.91	2.92	2.83	2.78	3 30	3.10	**2.60**
6. German Remedies Ltd.	1.77	1.27	1.13	1.40	1 39	1.35	1 28	1 48	1.23	1.31	**1.36**
7. Glaxo Ltd	1.76	1.86	2.02	2.04	2 05	1.79	1 02	1 68	1.68	1 77	**1.77**
8. Hoechst Marion Roussel Ltd.	1.32	1.17	1.19	1 20	1.32	1.16	1 19	1 27	1.27	1 50	**1.26**
9 Knoll Pharmaceuticals Ltd	1.84	1.82	2.02	2.32	2.08	2.50	1 92	1.93	1.45	1.32	**1.92**
10. Parke-Davis Ltd.	2.52	2.47	2.86	2.74	3 00	2.48	2 87	1.60	1 85	2 27	**2.47**
11 Pfizer Ltd.	2.02	1.72	1.93	1 80	1.91	1.97	2.17	2 26	1 12	1 75	**1.86**
12. RPG Life Sciences Ltd	1.25	1 40	1.45	1 71	1.80	1.61	1 23	1 04	0.99	1 02	**1.35**
13. Unichem Laboratories Ltd	1.67	1.96	2.08	1.88	2.20	1.81	1 59	1 42	1 31	1.44	**1.74**
Average	**1.61**	**1.58**	**1.71**	**1.85**	**1.89**	**1.78**	**1.60**	**1.57**	**1.45**	**1.56**	**1.66**
Pharmaceutical Industry in India	1.40	1.31	1.32	1.32	0.98	0 92	0 91	0.90	0 84	0.98	**1.09**
All Industries in India	1.20	1.17	1 14	1.10	1.07	1.14	1 09	1 01	0 92	0 83	**1.07**

Source: Appendices - V and VI

Std Dev.	0.45
C.V.	27.08

times in 1992-93. Thereafter it declined to 2.78 times in 1996-97, again increased and reached a peak level of 3.30 times in 1997-98 then it marginally declined to 3.10 times in 1998-99. The higher ratio reveals that the management had effectively utilised its assets.

Unit no. 10 shows an average turnover of capital employed of 2.47 times during the period under study. The ratio was 2.52 times in 1989-90 increased to 3 times in 1993-94. Thereafter it declined to 1.60 times in 1996-97 and again increased to 2.27 times in 1998-99.

Unit no. 2 has the lowest average turnover of 1.11 times of capital employed. It was 1.25 times in 1989-90 declined to 0.94 times in 1995-96. Thereafter it increased to 1.10 times in 1996-97, again declined to 0.88 times in 1998-99. The low ratio reveals that the management could not productively use its assets to generate sufficient amount of sales.

Unit no. 8 has an average turnover of 1.26 times of the capital employed. It was 1.32 times in 1989-90 declined to 1.16 times in 1994-95. Thereafter it increased to 1.50 times in 1998-99.

TURNOVER OF FIXED ASSETS:

The turnover of fixed assets measures the efficiency of a firm in managing and utilising its assets. The higher the turnover ratio, more efficient is the management and utilisation of the assets while low turnover ratios are indicative of under utilisation of available resources and presence of idle capacity[43].

The turnover of fixed assets is shown in Table WF-26. The table shows that the overall average ratio of the sample units was 11.18 times. The ratio was 10.76 times in 1989-90 declined to 8.88 times in 1990-91. Thereafter it showed an increasing tendency and reached a

TABLE NO. WF - 26

TURNOVER OF FIXED ASSETS OF THE PHARMACEUTICAL COMPANIES DURING THE PERIOD 1989-90 TO 1998-99

(In percentage)

COMPANIES / YEARS	1989-90	1990-91	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97	1997-98	1998-99	Average
1. Burroughs Wellcome Ltd.	7.05	7.85	8.91	11.12	12.74	13 21	7.56	13.04	14.17	16.71	**11.24**
2. Cipla Ltd.	3.31	3.83	3.75	3.93	3.34	3 45	3.84	4.24	4.22	4.31	**3.82**
3. Duphar-Interfran Ltd.	6.01	6.10	6.62	6.94	7.84	6.62	13 07	8.20	9.70	13.14	**8.38**
4. E. Merck Ltd.	3.16	2.84	2.26	2.88	3.16	3.95	4 17	4.30	3 71	4.04	**3.45**
5. Fulford Ltd.	61.35	40.27	56.42	73.04	77.83	76.22	67 04	59.73	66 63	76.36	**65.49**
6. German Remedies Ltd.	6.84	3.90	3.49	4.15	4.46	5.20	4.73	3.88	2.60	2.63	**4.19**
7. Glaxo Ltd.	4.52	4.96	5.38	5 66	6.11	6 79	5.35	8.16	8.29	9.45	**6.47**
8. Hoechst Marion Roussel Ltd.	3.56	2.11	1.92	2 06	2.41	2.10	2.18	2.33	2.95	3.00	**2.46**
9. Knoll Pharmaceuticals Ltd.	8.29	7.22	8.92	12.47	14.18	9.87	5.49	4.79	5.30	6.09	**8.26**
10. Parke-Davis Ltd.	13.50	14.21	16.29	15.21	16.83	18.81	15 89	3.77	4 47	5 57	**12.46**
11. Pfizer Ltd.	10.87	9.34	10.33	6.28	7.12	7.56	7.64	8.89	4.24	7.17	**7.95**
12. RPG Life Sciences Ltd.	7.46	7.06	6.53	8.52	8.89	7.30	3.43	2.93	2.92	3.21	**5.82**
13. Unichem Laboratories Ltd.	4.41	5.70	6.86	7.56	8.62	6.41	5.43	3.54	2.69	2.73	**5.40**
Average	**10.76**	**8.88**	**10.59**	**12.30**	**13.35**	**12.88**	**11.22**	**9.83**	**10.15**	**11.88**	**11.18**
Pharmaceutical Industry in India	4.98	3.88	3.77	3.78	3.32	2.73	2.40	2.21	2 05	2.45	**3.16**
All Industries in India	2.73	2.88	2.82	2.61	2.52	2.65	2.53	2.26	2.01	1.75	**2.47**

Source: Appendices - V and VI

Std. Dev.	15.94
C.V.	142.49

peak level of 13.35 times in 1993-94, then it declined to 9.83 times in 1996-97 and finally reached to 11.88 times in 1998-99. Every entrepreneur should utilise to the optimum level the available resources in the business. Analysis reveals that 23.07% of the total sample units had the turnover ratio of more than 10 times during the period under study. This indicates that the management of these units had very efficiently used their fixed assets to generate higher production and thereby sales.

The overall average turnover of fixed assets of 11.18 times of sample units was significantly higher as compared to 3.16 times of 'Pharmaceutical Industry in India' and 2.47 times of 'All Industries in India'. The coefficient of variation of 142.49% of sample units indicates that there was no uniformity in the turnover of fixed assets during the period under study.

An indepth analysis of the table reveals that unit no. 5 and 10 have a very high ratio while unit no. 4 and 8 have a very low ratio of turnover of fixed assets.

Unit no. 5 shows exceptionally very high average ratio of 65.49 times of turnover of capital employed. It was 61.35 times in 1989-90 declined to 40.27% in 1990-91. Thereafter it increased to 77.83 times in 1993-94, again declined to 59.73 times in 1996-97. Finally it increased to 76.36 times in 1998-99. Very high ratio in the unit was mainly due to very low fixed assets held by the unit. This clearly indicates the over trading by the management.

Unit no. 10 has an average ratio of 12.46 times of turnover of fixed assets. It was 13.50 times in 1989-90 gradually increased to 18.81 times in 1994-95. Thereafter it declined to 3.77 times in 1996-97, then increased to 5.57 times in 1998-99. The analysis reveals that

during the later period of study efficiency in utilisation of fixed assets had declined significantly.

Unit no. 4 has a low average turnover of 3.45 times of the capital employed. It was 3.16 times in 1989-90 declined to 2.26 times in 1991-92. Thereafter it increased to 4.30 times in 1996-97 and then marginally declined to 4.04 times in 1998-99.

Unit no. 8 shows the lowest average turnover of 2.46 times of capital employed. It was 3.56 times in 1989-90 declined to 1.92 times in 1991-92. Thereafter it gradually increased to 3.00 times in 1998-99. This shows that there was under utilisation of fixed assets and presence of idle capacity in the unit.

RATIO OF CURRENT ASSETS TO TOTAL ASSETS:

Table WF-27 reveals the ratio of current assets to total assets of the sample units. This ratio shows the effect of the level of current assets on profitability risk trade-off. This ratio indicates the percentage of total assets that are in the form of current assets.

The ratio of current assets to total assets of the sample units moved in a very narrow range varying from 67.61% to 73.25% during the period under study. This ratio was 70.35% in 1989-90 declined to 69.12% in 1990-91. It then maintained an increasing trend and reached a peak level of 73.25% in 1993-94. Thereafter it declined to 67.61% in 1996-97, again increased to 67.89% in 1998-99. Average percentage of current assets to total assets was 70.13% during the period under study. This shows the conservative policy adopted by the management of the sample units. The increase in the proportion of current assets to total assets may lead to a decline in the profitability of the unit. The increase in the ratio implies high liquidity,

TABLE NO. W F- 27

CURRENT ASSETS TO TOTAL ASSETS OF THE PHARMACEUTICAL COMPANIES DURING THE PERIOD 1989-90 TO 1998-99

(In percentage)

COMPANIES / YEARS	1989-90	1990-91	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97	1997-98	1998-99	Average
1. Burroughs Wellcome Ltd.	66.63	70.90	78.94	82.30	84.75	87.88	79.89	78.76	88.62	92.02	**81.07**
2 Cipla Ltd.	58.96	60.74	68.38	68.45	64.55	66.92	75.44	72.48	74.85	72.51	**68.33**
3. Duphar-Interfran Ltd.	72.70	75.32	74.75	76.48	79.90	77.19	62 48	85 41	77.08	79.53	**76.08**
4. E. Merck Ltd.	62.34	61.35	57.00	60.88	55 27	63.91	64 02	63.23	59 62	59 99	**60.76**
5. Fulford Ltd.	97.34	96.21	96.39	95.25	95.62	96.10	95.73	95.29	94 99	95.90	**95.88**
6. German Remedies Ltd.	73.23	66.68	67.13	65.84	68.49	73.72	72.63	61.60	52.51	49.95	**65.18**
7 Glaxo Ltd.	60.81	62.19	62.16	63.44	66.27	49.42	79.73	71.01	65.37	65.46	**64.59**
8. Hoechst Marion Roussel Ltd	60.94	42.67	37.25	40.20	44.46	44.15	44.65	45 04	56 95	48.71	**46.50**
9. Knoll Pharmaceuticals Ltd.	58.28	58.63	67.51	65.58	85.32	74 66	64.99	59 75	72.59	78.38	**68.57**
10. Parke-Davis Ltd.	81.37	81.11	82.46	81.98	82.16	86.79	81.91	57.70	58.75	59 33	**75.36**
11. Pfizer Ltd.	77.24	77.77	77.64	71.27	73.12	73 91	71 59	74 58	71 65	73.48	**74.22**
12. RPG Life Sciences Ltd.	82.79	79.51	77.72	79.83	79.71	77.93	62.46	55.30	58 04	60.68	**71.40**
13. Unichem Laboratories Ltd	61.92	65.42	68.42	73.47	72.68	70 55	68 84	58.77	50.24	46 62	**63.69**
Average	**70.35**	**69.12**	**70.44**	**71.15**	**73.25**	**72.55**	**71.10**	**67.61**	**67.79**	**67.89**	**70.13**
Pharmaceutical Industry in India	68.43	63.15	62.85	62.03	68.13	62.75	58.21	54.03	52.69	54.72	**60.70**
All Industries in India	51.44	52.78	51.92	54.83	54.83	53.88	53.65	52.53	51.04	46.69	**52.36**

Source: Appendices -I and VI

Standard Deviation	11.14
Coefficient of Variation	15.88
r(between C A and Total Assets)	1.00

assuming no change in current liabilities; will increase net working capital of the unit. A very high proportion of so-called short-lived assets keeps funds tied-up on a permanent basis. To ensure maximum profitability, these assets therefore are required to be managed skillfully.

The overall average current assets to total assets of 70.13% of sample units were much higher as compared to 60.70% of 'Pharmaceutical Industry in India'. Further to this it was significantly higher as compared to 52.36% of 'All Industries in India'. The coefficient of variation of sample units 15.88% indicates that they had followed a uniform policy with regard to the current assets to total assets. It is very interesting to note that the sample units had perfectly positive correlation of +1.00 between current assets and total assets. This indicates that both variables had moved in the same direction and in the same proportion throughout the period under study.

An indepth analysis of the table reveals that unit no. 1 and 5 had a very high percentage while unit no. 4 and 8 had a very low percentage of current assets to total assets.

Unit no. 1 shows an average percentage of current assets of 81.07% to total assets. The ratio has a rising trend during the period under study. It was 66.63% in 1989-90 gradually increased to 87.88% in 1994-95 then marginally declined to 78.76% in 1996-97. Thereafter it again increased to 92.02% in 1998-99.

Unit no. 5 has the highest average percentage of current assets of 95.88% to total assets during the period under study. It was 97.34% in 1989-90, remained more or less around 95% throughout the period of ten years. It was 95.90% in 1998-99. The increase in percentage of current assets to total assets will lead to decline in profitability. This is because current assets are assumed to be less

profitable than the fixed assets and second effect of the increase in the ratio will be that; the risk of technical insolvency would also decrease because the increase in current assets will result in the increase in net working capital

Unit no. 4 shows an average percentage of current assets of 60.76% to total assets. The trend of the ratio fluctuated during the period under study. It was 62.34% in 1989-90 declined to 57% in 1991-92. Thereafter it increased to 64.02% in 1995-96 and finally reached to 59.99% in 1998-99.

Unit no. 8 has the lowest average ratio of current assets of 46.50% during the period under study. It was 60.94% in 1989-90 declined to ever-lowest level of 37.25% in 1991-92. Thereafter it increased to 56.95% in 1997-98 again declined to 48.71% in 1998-99.

DEBT EQUITY RATIO:

To judge the long-term financial position of a firm capital structure ratio is calculated. This ratio indicates the funds provided by the owners and creditors. It is calculated by dividing the long-term debts with that of shareholders' fund. The debt equity ratio is a measure of relative claims of creditors and owners against firms' assets.

Debt equity ratio of the selected pharmaceutical units has been shown in Table WF- 28. The ratio was 0.61:1.00 in 1989-90 increased to a very high level of 0.87:1.00 in 1992-93.Thereafter it started falling and declined to a very low level of 0.27:1.00 1995-96. Finally it increased to 0.46:1.00 in 1998-99.

The overall average debt equity ratio 0.55:1.00 of sample units was significantly lower as compared to 0.95:1.00 of 'Pharmaceutical

TABLE NO. WF - 28

DEBT EQUITY RATIO OF THE PHARMACEUTICAL COMPANIES DURING THE PERIOD 1989-90 TO 1998-99

(In percentage)

COMPANIES / YEARS	1989-90	1990-91	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97	1997-98	1998-99	Average
1. Burroughs Wellcome Ltd.	0.53	0.51	0 56	0.56	0.51	0 16	0.12	0.06	0.04	0.03	**0.31**
2. Cipla Ltd	0.44	0 39	0.42	0 56	0.66	0 34	0 15	0.05	0 03	0 02	**0.31**
3. Duphar-Interfran Ltd	0.61	0 73	0.62	0.81	0 86	0 97	0.11	0 05	0 06	0 10	**0.49**
4. E. Merck Ltd	1.54	2.10	3.41	3 51	0 89	0.72	0 36	0 32	0 39	0.19	**1.34**
5 Fulford Ltd.	0.85	0 93	0.91	0.88	0 89	0 90	0 82	0.74	0 61	0 57	**0.81**
6. German Remedies Ltd	0.89	1.11	1.24	1.44	0 64	0.49	0 39	0 27	0 17	0.10	**0.67**
7. Glaxo Ltd.	0.57	0.60	0.62	0.83	0 32	0.16	0.10	0 08	0 19	0.06	**0.35**
8 Hoechst Marion Roussel Ltd.	0.66	0.46	0.45	0.50	0.44	0.53	0 40	0.34	0 38	0 75	**0.49**
9. Knoll Pharmaceuticals Ltd.	0.33	0.23	0.32	0 34	0 38	0.49	0 09	0 14	0 03	0.02	**0.24**
10 Parke-Davis Ltd	0.11	0 23	0 24	0 20	0.20	0.16	0.15	0.87	3 27	2 61	**0.80**
11. Pfizer Ltd	0 04	0.28	0.30	0 54	0 45	0 57	0 21	0.13	0.29	0.00	**0.28**
12. RPG Life Sciences Ltd.	0.65	0.29	0 33	0 26	0.28	0.32	0 45	0.67	0.83	0 94	**0.50**
13. Unichem Laboratories Ltd	0.69	0.57	0.51	0.82	0.78	0.22	0.13	0.80	0 77	0 64	**0.59**
Average	**0.61**	**0.65**	**0.76**	**0.87**	**0.56**	**0.46**	**0.27**	**0.35**	**0.54**	**0.46**	**0.55**
Pharmaceutical Industry in India	1.62	1.41	1.57	1 14	0.76	0.51	0.51	0 59	0.69	0.64	**0.95**
All Industries in India	1 24	1.21	1.22	1.34	1.20	1.04	0.86	0.79	0.91	1.01	**1.08**

Source: Appendix - V

Standard Deviation	0.29
Coefficient of Variation	52.92
r (between Debt and Equity)	0.61

Industry in India' and 1.08:1.00 of 'All Industries in India'. This indicates that the selected units were "low geared". It also suggests a high margin of safety to creditors. It indicates too much dependence on equity capital by the sample units. The coefficient of variation of 52.92% of sample units indicates that they had not followed uniform policy with regard to debt equity mix as a source of financing.

Except for unit no. 4, all the sample units had less than 1:1 debt equity ratio. This shows that the management was very conservative in using debt financing. Out of the thirteen sample units, three units showed increase in the debt component during the later three years of study, while all other units had reduced debt component significantly during the later period of study. Very low ratio of debt suggests that the management had not used the financial leverage to their maximum benefit.

An indepth analysis of the table reveals that unit no. 4 had exceptionally very high ratio while unit no. 9 and 11 had very low ratio of debt to equity. The analysis reveals that not a single unit had reached a standard norm 2:1 during the period under study. The selected pharmaceutical units could have made more use of debt funds and could have enjoyed the fruits of financial leverage. It seems that the sample units had relied on owners' fund and had used the debt as a last resort only.

Unit no. 4 had comparatively high average debt equity ratio of 1.34:1.00. The ratio was 1.54:1.00 in 1989-90 increased to a very high level of 3.51:1.00 in 1992-93. Thereafter it showed a downward trend and declined during six years and came down to 0.19:1.00 in 1998-99. A very high debt burden affects the profitability of the unit. However as per the standard norm the ratio should be 2:1. Comparing this standard norm, this unit had a higher compared to the

ratio in the three years under study i.e. in 1990-91, 1991-92 and 1992-93. It seems that in the initial years under study, management had adopted aggressive financing policy to take the advantage of financial leverage.

Unit no. 9 had the lowest average debt equity ratio of 0.24:1.00 during the period under study. The ratio was 0.33:1.00 in 1989-90 declined to 0.23:1.00 in 1990-91. Thereafter it increased to 0.49:1.00 in 1994-95 and finally declined to the ever-lowest level of 0.02:1.00 in 1998-99. The low debt equity ratio indicates that the unit had greater risk bearing capacity and lesser risk of failure. It seems that because of sound profitability and management policy to plough back larger amount of profits into the business, the share of equity capital was relatively higher than the debt capital throughout the period of ten years under the study.

Unit no. 11 had average debt equity ratio of 0.28:1.00 during the period under study. It was 0.04:1.00 in 1989-90 increased to 0.57:1.00 in 1994-95 declined to ever-lowest level of 0.00:1.00 in 1998-99. The analysis reveals that the management was not keen to use debt as a source of debt financing. This clearly indicates that the management could not use the debt funds which is low cost to magnify its earnings.

CHAPTER V

SECTION 5

WORKING CAPITAL MANAGEMENT

CHAPTER V

SECTION 5

WORKING CAPITAL MANAGEMENT

Working capital management means management of net working capital. Net working capital management is one of the important fields of financial management. It is therefore very essential for an analyst to make a study about the size, trend, direction and turnover of net working capital.

SIZE OF NET WORKING CAPITAL

Table W-1 shows the size of net working capital of the sample units from 1989-90 to 1998-99. The table shows that the range of net working capital of sample units in absolute amount was between Rs. 200.86 crores and Rs. 942.21 crores. The overall net working capital of sample units maintained a rising trend throughout the study period. Total amount of net working capital was Rs. 200.86 crores in 1989-90 which gradually increased to 299.18 crores in 1992-93 thereafter it suddenly increased to Rs. 457.55 crores in 1993-94. After this it marginally declined to Rs. 412.96 crores in 1994-95, and increased to a peak level of Rs. 942.21 crores in 1998-99. A rapid increase in net working capital is attributed to a faster growth in the size of current assets. The coefficient of variation of sample units was very high at 76.63% indicates that they had no uniformity with regard to net working capital during the period under study.

TABLE NO. W - 1

NET WORKING CAPITAL OF PHARMACEUTICALS COMPANIES DURING THE PERIOD 1989-90 TO 1998-99

(Rs. in crores)

COMPANIES / YEARS	1989-90	1990-91	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97	1997-98	1998-99	Total
1 Burroughs Wellcome Ltd.	10.66	16 52	21.73	25 07	47.97	42.15	31.31	56 36	78 88	101.06	**431.71**
2. Cipla Ltd.	17.03	12 80	26 00	37 09	41.98	41.48	148.27	175 34	238 51	277.06	**1015.56**
3 Duphar-Interfran Ltd	2.90	4 84	5.95	8 29	9.86	11 78	24.93	42.90	40 64	45.40	**197.49**
4. E. Merck Ltd	12.80	13.54	10.71	18.51	26.64	30.90	25.54	32.80	44 23	48.61	**264.28**
5. Fulford Ltd	8.64	10.96	11.35	12.17	13.40	14.73	15.69	16 95	19 26	23 87	**147.02**
6. German Remedies Ltd	12.83	11.88	11.65	14.39	24.84	32.64	34.39	29.77	17.25	22.96	**212.60**
7. Glaxo Ltd.	43 77	45.43	41.58	60.37	118.67	46.83	164.32	155 69	163 64	172.25	**1012.55**
8 Hoechst Marion Roussel Ltd.	24.40	22.01	25.31	29.89	43.31	49 72	23.91	15.63	46 44	25.49	**306.11**
9. Knoll Pharmaceuticals Ltd	7.02	5 23	14.68	16.49	33.99	13 81	4 96	12 96	52.72	76 10	**237.96**
10. Parke-Davis Ltd.	12.65	14.18	15.59	16.33	19.97	23 75	24.01	16.91	-5.43	11.70	**149.66**
11. Pfizer Ltd	15.28	22.51	23 90	25.01	32.24	43.38	27.17	37 33	46 13	35.19	**308.14**
12. RPG Life Sciences Ltd.	30.10	23.85	26.69	28.33	33.00	38.24	44.61	60 30	73 13	76.69	**434.94**
13 Unichem Laboratories Ltd.	2.78	4.74	6.85	7.24	11.68	23 55	20 30	28 21	24.12	25.83	**155.30**
Total	**200.86**	**208.49**	**241.99**	**299.18**	**457.55**	**412.96**	**589.41**	**681.15**	**839.52**	**942.21**	**4873.32**

Source: Appendix -I

Std. Dev.	287.26
C.V.	76.63

Table W– 2

TREND PERCENTAGE OF NET WORKING CAPITAL

(In percentage)

YEAR	TREND PERCENTAGE OF NET WORKING CAPITAL
1989-90	-----
1990-91	3.80
1991-92	20.48
1992-93	48.95
1993-94	127.80
1994-95	105.60
1995-96	193.44
1996-97	239.12
1997-98	317.96
1998-99	369.08

Source : Appendix – I

Table W-2 shows the trend percentage of net working capital of the sample units during the period from 1989-90 to 1998-99. The annual rate of growth of net working capital shows positive fluctuating trend. The percentage rate of growth of net working capital was 3.80% in 1990-91 as compared to the base year 1989-90. The rate of growth increased from 20.48% in 1991-92 to 127.80% in 1993-94, and then it declined to 105.60% in 1994-95. It shows an increase to 369.08% in 1998-99. The higher growth of net working capital was mainly due to increase in current assets and increase in sales of the sample units.

Table W- 3

RELATIONSHIP BETWEEN CURRENT ASSETS, NET WORKING CAPITAL AND SALES

(Rs. In crores)

YEAR	NET WORKING CAPITAL	CURRENT ASSETS	SALES
1989-90	200.86	606.59	1425.33
1990-91	208.49	666.86	1630.15
1991-92	241.99	726.20	1847.29
1992-93	299.18	833.85	2179.21
1993-94	457.55	972.46	2528.67
1994-95	412.96	1083.11	2710.93
1995-96	589.41	1420.41	2688.68
1996-97	681.15	1465.41	3308.66
1997-98	839.52	1817.26	3614.99
1998-99	942.21	1972.33	4101.50
COEFFICIENT OF CORRELATION		**0.99**	**0.98**

Source : Appendices I and V

Table W-3 shows the coefficient of correlation between current assets and net working capital for the sample units; it works out to be +0.99 during the period. This clearly indicates that there exists an almost perfect, positive co-relation between current assets and net working capital i.e. as the current assets increased net working capital also increased and the rate of change between two variables was

same. The coefficient of correlation between net working capital and sales is +0.98. This reveals that there exists a high degree of positive correlation between net working capital and sales. This leads to the conclusion that increase in sales leads to increase in investment of net working capital almost in the same proportion.

An indepth analysis of the Table W-1 reveals that the unit no. 2 and 7 had a very high amount of total net working capital; while unit no. 5 and 10 show a very low total net working capital during the period under study.

Unit no. 2 had the highest total amount of net working capital of Rs. 1015.56 crores. Net working capital shows an invariably rising trend throughout the period under study except in the year 1990-91, when it fell marginally. Net working capital was Rs. 17.03 crores in 1989-90, declined to Rs. 12.80 crores in 1990-91, and later increased to Rs. 37.09 crores in 1992-93. This further increased to Rs. 148.27 crores in 1995-96 and reached a peak level of Rs. 277.06 crores in 1998-99. High amount of net working capital in this unit was due to the fact that it carried a very high amount of current assets during the period under study. This can be further substantiated by the fact that it carried 68.33% of current assets out of the total assets held by it. Apart from this, sales of the unit had also increased substantially which also caused an increase in the net working capital.

Unit no. 7 shows a total amount of net working capital of Rs. 1012.55 crores. The unit had net working capital of Rs. 43.77 crores in 1989-90 which increased to Rs.118.67 crores in 1993-94. Thereafter it declined to Rs. 46.83 crores in 1994-95 and increased to Rs. 172.25 crores in 1998-99. High amount of net working capital in this unit can be explained by the fact that it carried a very high amount of inventories and receivables during the period under study.

Unit no. 5 had the lowest total amount of net working capital to the tune of Rs. 147.02 crores during the period under study. The amount of net working capital exhibits an invariable upward trend throughout the period. This unit had net working capital of Rs. 8.64 crores in 1989-90 which gradually increased to Rs. 23.87 crores in 1998-99. The low amount of net working capital is due to lower rate of growth of current assets as compared to current liabilities.

Unit no. 10 also had a very low amount of net working capital during the period under study. Net working capital was Rs. 12.65 crores in 1989-90 which gradually increased to Rs. 24.01 crores in 1995-96. Thereafter it declined to Rs. 16.91 crores in 1996-97. The only unit and the only year in which the net working capital shows a negative amount of Rs. – 5.43 crores in 1997-98. The main reason for the negative working capital was a substantial increase in short-term borrowings by the unit in that year. Later on it increased to Rs. 11.70 crores.

WORKING CAPITAL TRENDS:

In financial analysis the direction of change over a period of time is of crucial importance. Net working capital being one of important area of financial management, it is therefore very essential for an analyst to undertake a study about the trend and direction of net working capital. Further, a study should also be conducted about the trend of the components of the net working capital movements to provide a deep and broad base, while examining the net working capital management of an industry. This analysis will provide a basis to judge whether the practice and the prevailing policy of the management with regard to net working capital is sound or whether

any improvement is needed in managing the net working capital funds. Further any one trend by itself is not very important and therefore, the analyst should also make comparisons of related trends. To illustrate, an upward trend in net working capital, coupled with a downward trend in sales would usually reflect an unfavorable situation; whereas an upward trend of current assets, inventories, accounts receivables, cash and bank balances and other current assets, in concert with a downward trend of current liabilities, is usually viewed favourably. Such conclusions throw light on one or more aspects of the net working capital position and have to be reconciled with those from other aspects.

NET WORKING CAPITAL TRENDS:

The linear least square values of net working capital in the sample units are shown in Table W-4. The yearly increase in net working capital comes to Rs. 85.52 crores. The trend values of the net working capital differ materially i.e. more than 25%, from actual net working capital during the year 1989-90 and 1994-95. The deviations during the other years are not so significant. The deviations were negative during the years 1991-92, 1992-93, 1994-95, 1995-96 and 1996-97, while they are positive in the rest of the years during the period under study. Net working capital of the sample units increased during the period under study due to the fact that overall current assets of the sample units increased during the period under study. The trend values and actual values of the net working capital have been also depicted in Fig. 11.

To test the significance between the differences of actual values and trend values of net working capital of the sample units, the chi-

TABLE NO. W - 4

ORIGINAL AND TREND VALUES OF NET WORKING CAPITAL OF PHARMACEUTICAL COMPANIES DURING THE PERIOD 1989-90 TO 1998-99

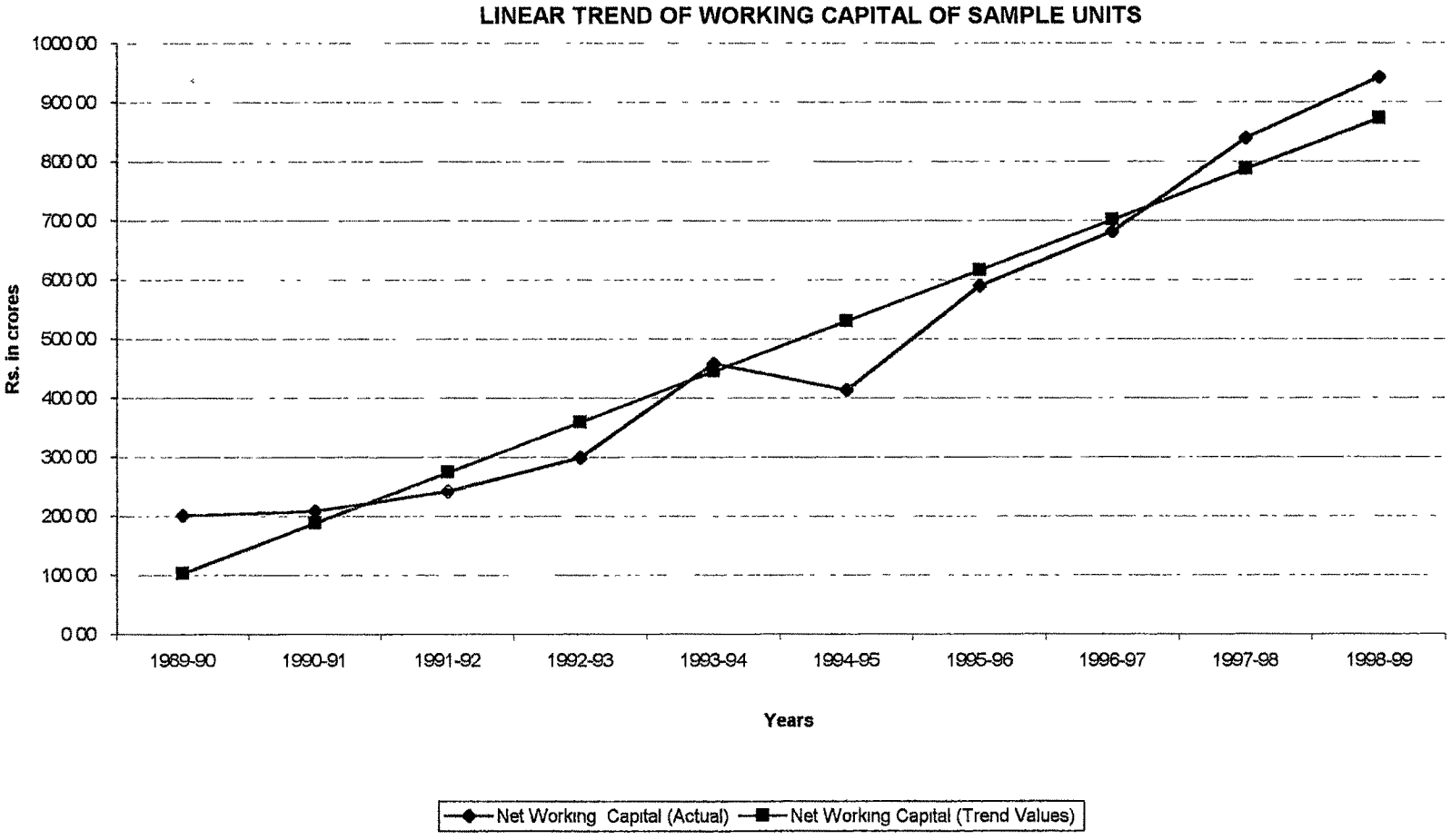
(Rs in crores)

YEAR	NET WORKING CAPITAL	
	ORGINAL VALUES	TREND VALUES
1989-90	200 86	102.48
1990-91	208 49	188.00
1991-92	241.99	273.53
1992-93	299 18	359 05
1993-94	457.55	444.57
1994-95	412.96	530.09
1995-96	589.41	615.62
1996-97	681.15	701.14
1997-98	839 52	786.66
1998-99	942 21	872.18

Yc = 102.48 + 85.52 X (Orgin of X: 1989-90, X in companies of years and Y in crores of Rupees)

Source: Appendix -I

FIG. 11


LINEAR TREND OF WORKING CAPITAL OF SAMPLE UNITS
1000 00
900 00
800 00
700 00
600 00
500 00
400 00
300 00
200 00
100 00
0 00
Rs. in crores
1989-90
1990-91
1991-92
1992-93
1993-94
1994-95
1995-96
1996-97
1997-98
1998-99
Years
Net Working Capital (Actual)
Net Working Capital (Trend Values)

square test has been applied. It can be observed that the Table value of chi-square at 5 percent level of significance is 11.07, while the calculated value of chi-square is 147.42. As the calculated value is more than the Table value, it shows that the differences between actual values and trend values of net working capital were significant.

CURRENT ASSETS TRENDS:

The linear least square values of current assets in the sample units are shown in Table W-5. The yearly increase in current assets comes to Rs. 157.03 crores. The trend values of the current assets deviated significantly i.e. more than 25% as compared to actual values in 1989-90. The deviations during the other years were not so significant. The deviations were negative in 1991-92 to 1994-95 and 1996-97. The positive deviations were recorded in rest of the years. The positive deviations were due to the high jumps in the current assets of the sample units during these years. The trend values and actual values of the current assets have also been shown by way of Fig.12.

To test the significance between the differences of actual values and trend values of current assets of the sample units, the chi-square test has been applied. It can be observed that the Table value of chi-square at 5 percent level of significance is 11.07, while the calculated value of chi-square is 118.42. As the calculated value is more than the Table value, it shows that the differences between actual values and trend values of current assets are significant.

TABLE NO. W - 5

ORIGINAL AND TREND VALUES OF CURRENT ASSETS OF PHARMACEUTICAL COMPANIES DURING THE PERIOD 1989-90 TO 1998-99

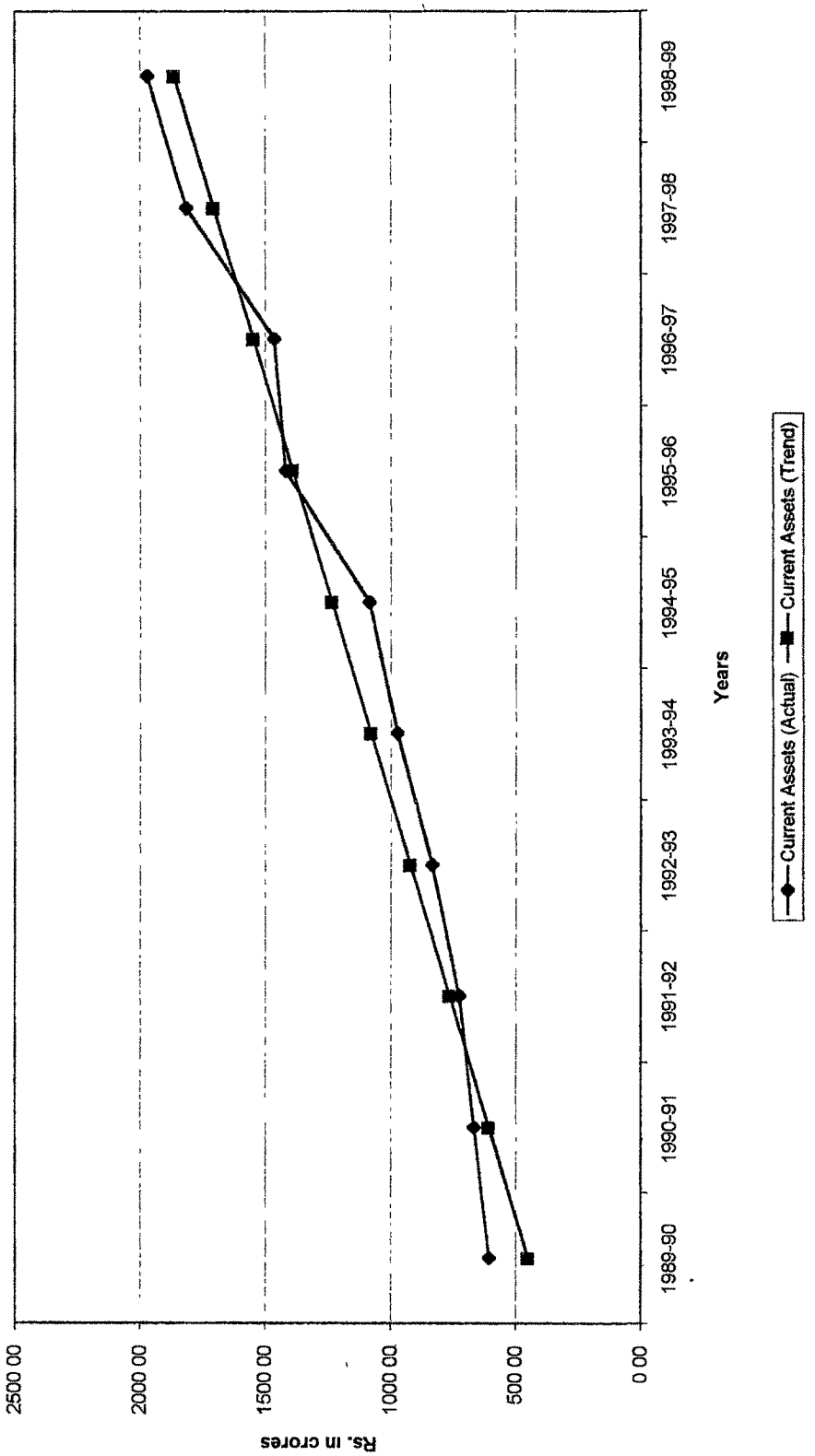
(Rs in crores)

YEAR	CURRENT ASSETS	
	ORGINAL VALUES	TREND VALUES
1989-90	606 59	449 79
1990-91	666.86	606.82
1991-92	726.20	763 85
1992-93	833 85	920 89
1993-94	972 46	1077 92
1994-95	1083.11	1234.95
1995-96	1420.30	1391.99
1996-97	1465 41	1549.02
1997-98	1817.26	1706.05
1998-99	1972.33	1863.09

Yc = 449.79 + 157.03 X (Orgin of X: 1989-90, X in companies of years and Y in crores of Rupees)

Source: Appendix -I

FIG. 12


LINEAR TREND OF CURRENT ASSETS OF SAMPLE UNITS
Rs. in crores
2500 00
2000 00
1500 00
1000 00
500 00
0 00
1989-90
1990-91
1991-92
1992-93
1993-94
1994-95
1995-96
1996-97
1997-98
1998-99
Years
Current Assets (Actual)
Current Assets (Trend)

CURRENT LIABILITIES TRENDS:

The linear least square values of current liabilities in the sample units are shown in Table W-6. The yearly increase in net working capital comes to Rs. 71.51 crores. The trend values of the current liabilities did not deviate significantly i.e. by more than 25% as compared to the actual values during the entire period under study. The deviations were negative in 1991-92 to 1994-95 and 1996-97. The positive deviations were recorded in rest other years. The trend values and actual values of the current liabilities are also shown by way of Fig.13.

To test the significance between the differences of actual values and trend values of current liabilities of the sample units, the chi-square test has been applied. It can be observed that the Table value of chi-square at 5 percent level of significance is 11.07, while the calculated value of chi-square is 52.67. As the calculated value is more than the Table value, it shows that the differences between actual values and trend values of current liabilities are significant.

TOTAL SALES TRENDS:

The linear least square values of sales of the sample units are shown in Table W-7. The yearly increase in sales comes to Rs. 284.83 crores. The trend values of the sales did not deviate significantly i.e. by more than 25% as compared to actual values during the entire period under study. The deviations are negative in 1991-92, 1994-95 to 1996-97. Positive deviations were recorded for

TABLE NO. W - 6

ORIGINAL AND TREND VALUES OF CURRENT LIABILITIES OF PHARMACEUTICAL COMPANIES DURING THE PERIOD 1989-90 TO 1998-99

(Rs in crores)

YEAR	CURRENT LIABILITIES	
	ORGINAL VALUES	TREND VALUES
1989-90	405.73	347 31
1990-91	458.37	418 82
1991-92	484 21	490.33
1992-93	534.67	561 84
1993-94	514.91	633.35
1994-95	670.15	704.86
1995-96	830 89	776.37
1996-97	784 26	847 88
1997-98	977.74	919.39
1998-99	1030.12	990.90

Yc = 347.31 + 71.51 X (Orgin of X: 1989-90, X in companies of years and Y in crores of Rupees)

Source: Appendix -I

FIG. 13

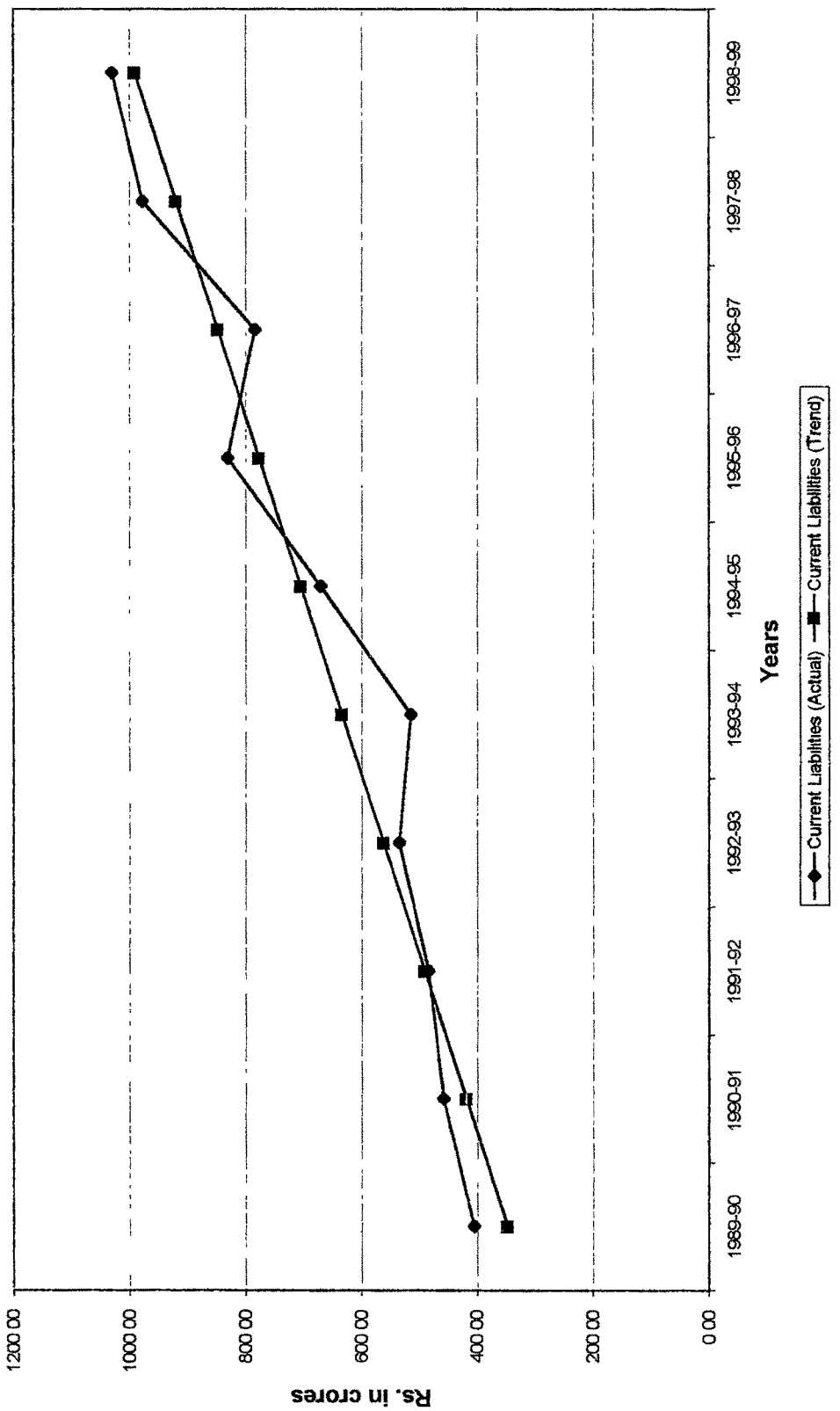

LINEAR TREND OF CURRENT LIABILITIES OF SAMPLE UNITS
Rs. in crores
1200.00
1000.00
800.00
600.00
400.00
200.00
0.00
1989-90
1990-91
1991-92
1992-93
1993-94
1994-95
1995-96
1996-97
1997-98
1998-99
Years
Current Liabilities (Actual)
Current Liabilities (Trend)

TABLE NO. W - 7

ORIGINAL AND TREND VALUES OF SALES OF PHARMACEUTICAL COMPANIES DURING THE PERIOD 1989-90 TO 1998-99

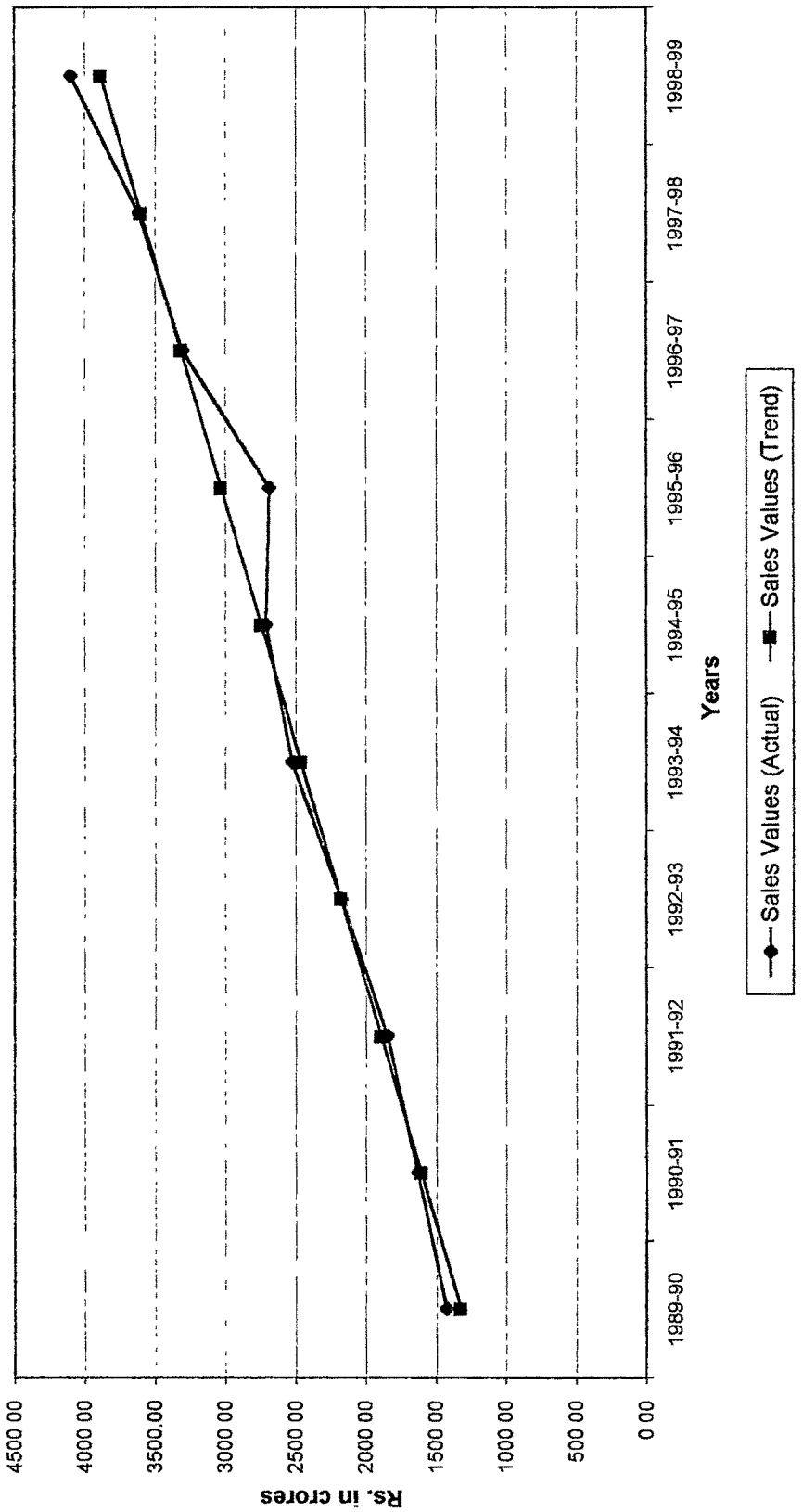
(Rs. in crores)

YEAR	SALES	
	ORGINAL VALUES	TREND VALUES
1989-90	1425.33	1321 81
1990-91	1630.15	1606.64
1991-92	1847.29	1891.47
1992-93	2179.21	2176 30
1993-94	2528.67	2461.13
1994-95	2710.93	2745 96
1995-96	2688.68	3030.79
1996-97	3308.66	3315.62
1997-98	3614.99	3600.45
1998-99	4101 50	3885 28

Yc = 1321.81 + 284.83 X (Orgin of X: 1989-90, X in companies of years and Y in crores of Rupees)

Source: Appendix -V

FIG. 14


LINEAR TREND OF SALES OF SAMPLE UNITS
Rs. in crores
4500.00
4000.00
3500.00
3000.00
2500.00
2000.00
1500.00
1000.00
500.00
0.00
1989-90
1990-91
1991-92
1992-93
1993-94
1994-95
1995-96
1996-97
1997-98
1998-99
Years
Sales Values (Actual)
Sales Values (Trend)

other years. The trend values and actual values of the sales have also been presented by way of Fig. 14.

To test the significance between the differences of actual values and trend values of sales of the sample units, the chi-square test has been applied. It is observed that the Table value of chi-square at 5 percent level of significance is 11.07, while the calculated value of chi-square is 62.51. As the calculated value is more than the Table value, it shows that the differences between actual values and trend values of sales were significant.

The trend analysis reveals that current assets, current liabilities and sales show a rising trend. This situation should be viewed favourably as they had moved in concert and each of this have been the cause for the increasing trend in net working capital. Though increase in current liabilities would reduce the net working capital; the trend shows that yearly increase of the current liabilities was less than 50% as compared to the yearly increase in current assets. The analysis further reveals that as the calculated value is more than the Table value, it shows that the differences between actual values and trend values of net working capital, current assets, current liabilities and sales were significant.

PERCENTAGE OF GROSS WORKING CAPITAL TO TOTAL CAPITAL EMPLOYED:

Table W-8 shows the percentage of gross working capital to total capital employed during the period 1989-90 to 1998-99. This ratio depicts the relationship between the working capital and total capital employed. This ratio indicates the extent to which total funds are invested in current assets. There is no rule of thumb for this ratio.

TABLE NO. W - 8

PERCENTAGE OF GROSS WORKING CAPTIAL TO TOAL CAPITAL EMPLOYED OF THE PHARMACEUTICAL COMPANIES DURING THE PERIOD 1989-90 TO 1998-99

(In percentage)

COMPANIES / YEARS	1989-90	1990-91	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97	1997-98	1998-99	Average
1 Burroughs Wellcome Ltd.	66.63	70.90	78 94	82.30	84.75	87.88	79.89	78.76	88 62	92.02	**81.07**
2. Cipla Ltd	58.96	60.74	68.38	68.45	64.55	66.92	75.44	72.48	74.85	72 51	**68.33**
3. Duphar-Interfran Ltd.	72.70	75.32	74.75	76.48	79.90	77.19	62.48	85 41	77.08	79.53	**76.08**
4. E. Morck Ltd.	62.34	61.35	57.00	60.88	55.27	63.91	64.02	63 23	59 62	59.99	**60.76**
5. Fulford Ltd.	97.34	96.21	96.39	95.25	95.62	96.10	95.73	95.29	94.99	95.90	**95.88**
6. German Remedies Ltd.	73.23	66.68	67.13	65.84	68.49	73 72	72.63	61.60	52.51	49.95	**65.18**
7. Glaxo Ltd.	60.81	62.19	62.16	63.44	66.27	49.42	79.73	71 01	65 37	65 46	**64.59**
8. Hoechst Marion Roussel Ltd.	60.94	42.67	37.25	40.20	44.46	44.15	44.65	45.04	56.95	48.71	**46.50**
9. Knoll Pharmaceuticals Ltd.	58.28	58.63	67.51	65.58	85.32	74.66	64.99	59.75	72.59	78.38	**68.57**
10. Parke-Davis Ltd.	81.37	81.11	82.46	81.98	82.16	86.79	81.91	57.70	58.75	59.33	**75.36**
11. Pfizer Ltd.	77.24	77.77	77.64	71.27	73.12	73.91	71.59	74.58	71.65	73.48	**74.22**
12. RPG Life Sciences Ltd.	82.79	79.51	77.72	79.83	79.71	77.93	62.46	55.30	58.04	60.68	**71.40**
13. Unichem Laboratories Ltd.	61.92	65.42	68.42	73.47	72.68	70.55	68.84	58 77	50.24	46.62	**63.69**
Average	**70.35**	**69.12**	**70.44**	**71.15**	**73.25**	**72.55**	**71.10**	**67.61**	**67.79**	**67.89**	**70.13**
Pharmaceutical Industry in India	69.46	64.02	63.81	63.44	69.44	63.88	59.36	55.28	54.09	56.56	**61.94**
All Industries in India	51.71	53.06	52.23	55.23	55.29	54.36	54.17	53.09	51.58	47.17	**52.79**

Source : Appendices - I and VI

Std. Dev.	11.14
C.V	15.88

The table shows that the overall average percentage of working capital to total capital employed is 70.13%. It is evident from the table that the working capital occupies a substantial portion of total capital employed by the selected pharmaceutical units. The ratio was 70.35% in 1989-90 decreased to 69.12% in 1990-91. Thereafter it increased to 73.25% in 1993-94 and then again declined to 67.89% in 1998-99.

The overall average percentage of working capital to total capital employed of 70.13% of sample units was higher as compared to 61.94% of 'Pharmaceutical Industry in India' and significantly very high as compared to 52.79% of 'All Industries in India'. The coefficient of variation of sample units of 15.88% indicates that they followed a uniform policy for gross working capital to total capital employed during the period under study.

An indepth analysis of the table reveals that unit no. 1 and 5 had a very high percentage while unit 8 and 13 had very low percentage of working capital to total capital employed.

Unit no. 1 had high average percentage of working capital of 81.07% to total capital employed. The percentage of working capital shows a fluctuating trend throughout the study period which was 66.63% in 1989-90 increased to 87.88% in 1994-95 and again declined to 78.76% in 1996-97. Finally it reached a peak level of 92.02% in 1998-99. Very high cash balance and its increased proportion caused high working capital of the unit. Percentage of cash to current assets increased from 1.27% in 1989-90 to 51.66% in 1998-99.

Unit no. 5 had the highest average percentage of working capital of 95.88% to the total capital employed. It was as high as 97.34% in 1989-90, remained more or less at the same level and than

marginally declined to 95.90% in 1998-99. It was observed that the unit had invested more than 95% of its total funds throughout the study period in the current assets. The high working capital was mainly due to high proportion of inventory and receivables in total current assets.

Unit no.4 had the second lowest average percentage of working capital of 60.76% to total capital employed. It was 62.34% in 1989-90, decreased to 55.27% in 1993-94. Thereafter it increased to 64.02% in 1995-96 and again declined to 59.99% in 1998-99.

Unit no. 8 had the lowest average percentage of working capital of 46.50% to total capital employed. It was 60.94% in 1989-90 decreased to 37.25% in 1991-92. Thereafter it shows an upward trend and reached to 56.95% in 1997-98. Finally it declined to 48.71% in 1998-99.

NET WORKING CAPITAL TURNOVER RATIO:

This ratio is obtained by dividing net sales by net working capital. The ratio indicates the efficiency with which the net working capital has been used in a business enterprise. The net working capital turnover ratio indicates the velocity of the utilisation of net working capital. The higher turnover of net working capital indicates lower investment in current assets and greater profitability. However, a very high turnover of net working capital might indicate that the net working capital is insufficient for the given volume of business. A low net working capital turnover ratio should clearly be taken to mean that the capital is not sufficiently active. A low turnover may be the outcome of an excess net working capital, slow turnover of

inventories and receivables and over investment in net working capital. According to Kothari[44] the ratio of 5 times is ideal.

Table W-9 shows the turnover of net working capital of the sample units. Comparing the average turnover with the suggested norm of 5 times by experts, it is clearly revealed that the sample units were efficient in using the working capital funds during the period from 1989-90 to 1998-99. The overall average of net working capital turnover was 6.96 times during the period under study. It had mixed trend of upward and downward throughout the period of ten years. The turnover of working capital was 8.31 times in 1989-90, increased to 8.55 times in 1990-91 then it declined to 5.81 times in 1993-94. Thereafter it increased to a peak level of 8.58 times in 1995-96, declined to a very low level of 1.77 times in 1997-98 and again increased to 7.04 times in 1998-99. The high turnover indicates that the sample units had efficiently utilised inventory and had put proper checks on the purchases of materials and extension of credit. The main reason for the high transmutation of net working capital has been the lower share of inventories in the current assets. During the year 1989-90 the percentage of inventory to total current assets was 54.09% declined to 36.04% in 1998-99. Again considering the average, the total inventories were 45.80% of the total current assets. This simply indicates that the maintenance of lower inventories influenced the size of net working capital in all the selected pharmaceutical units. The efficient management of receivables also seem to be a cause for higher transmutation of net working capital, on an average the percentage of receivables was 46.15% of the total current assets. The overall situation of the selected units confirms 'higher the turnover greater the efficiency'[45].

TABLE NO. W - 9

TURNOVER OF NET WORKING CAPITALOF THE PHARMACEUTICAL COMPANIES DURING THE PERIOD 1989-90 TO 1998-99

(In times)

COMPANIES / YEARS	1989-90	1990-91	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97	1997-98	1998-99	Average
1. Burroughs Wellcome Ltd.	7.45	5.69	5.30	5.65	3.53	4.17	3.49	3.28	2.41	2.03	**4.30**
2 Cipla Ltd.	5.45	9.66	5.82	5.37	5.85	7.20	2.44	2.58	2 17	2.25	**4.88**
3. Duphar-Interfran Ltd.	11.53	8.17	8.28	6.72	6.31	5 07	2.74	1 02	1.22	1.43	**5.25**
4. E. Merck Ltd.	5.15	6.28	9.01	6.49	4.57	4 93	6.92	6 28	5.04	5 37	**6.01**
5. Fulford Ltd	5.82	4.34	4.87	5.64	5.81	5.85	5.90	5.74	5.85	5.37	**5.52**
6. German Remedies Ltd.	5.51	5.74	6.25	6.29	4.12	3.57	3.61	4.82	9.60	8.74	**5.82**
7. Glaxo Ltd.	7.77	9.17	11 88	9.18	5.32	13.19	2.80	4.54	4.66	5.07	**7.36**
8 Hoechst Marion Roussel Ltd	11.72	13.73	10.87	9.83	8.39	6 24	14.88	26.12	12.14	20.94	**13.48**
9. Knoll Pharmaceuticals Ltd.	11.60	18.67	8.05	8.92	5.15	16.71	41.98	20.44	5.28	3.93	**14.07**
10. Parke-Davis Ltd.	7.02	7.13	7.33	8.58	7.55	6.94	7.34	10.62	-38.57	18.45	**4.24**
11. Pfizer Ltd.	8.26	5.32	5.88	6.85	6.63	5.62	9.37	7 34	3.57	7.50	**6.63**
12. RPG Life Sciences Ltd.	1.92	2.77	3.00	3.66	3.39	3.52	3.96	3.34	2.99	3.22	**3.18**
13. Unichem Laboratories Ltd.	18.88	14.55	12.38	12.89	8.86	5.09	6.10	5.18	6 61	7.17	**9.77**
Average	**8.31**	**8.55**	**7.61**	**7.39**	**5.81**	**6.78**	**8.58**	**7.79**	**1.77**	**7.04**	**6.96**
Pharmaceutical Industry in India	7.97	8.31	9.46	9.96	4.76	3.60	4.00	4.77	4.50	4.65	**6.20**
All Industries in India	7.73	8.88	10.76	7.89	8.02	7.40	6.64	6.93	6.82	8.02	**7.91**

Source : Appendices -I and V

Std. Dev.	3.30
C.V.	47.41

The overall average turnover of working capital of 6.96 times of sample units was higher as compared to 6.20 times of 'Pharmaceutical Industry in India'. It was lower as compared to 7.91 times of 'All Industries in India'. The coefficient of variation of sample units 47.41% indicates that they had uniformity in the working capital turnover during the period under study.

An indepth analysis of the table reveals that the unit no. 8 and 9 had an exceptionally very high turnover while unit no. 10 and 12 had exceptionally very low turnover during the period 1989-90 to 1998-99.

Unit no. 8 shows very high average net working capital turnover ratio of 13.48 times during the period of ten years. It was 11.72 times in 1989-90 increased to 13.73 times in 1990-91. Thereafter it had a downward trend and declined to 6.24 times in 1994-95, again increased and reached a high level of 26.12 times in 1996-97. Finally in 1998-99 it declined to 20.94 times. Higher turnover of the unit clearly indicates that the unit had efficiently utilised its net working capital specifically during the later period under study.

Unit no. 9 has the highest average net working capital turnover ratio of 14.07 times. It was 11.60 times in 1989-90 increased to 18.67 times in 1990-91 it then declined to 5.15 times in 1993-94. Thereafter it increased significantly and reached to 41.98 times in 1995-96. It is very interesting to observe that though the unit has the highest net working capital turnover ratio; during the last two years of the study it's performance deteriorated and had a very low turnover ratio of 5.28 times and 3.93 times in 1997-98 and 1998-99 respectively. A high turnover indicates that the unit achieved better performance in utilisation of its net working capital in raising the turnover.

Unit no. 10 presents an average net working capital turnover of 4.24 times during the period under study. It was 7.02 times in 1989-

90 gradually declined to 6.94 times in 1994-95. Thereafter it showed a negative turnover of net working capital of –38.57 times in 1997-98 as the net working capital was negative. Finally it was 18.45 times in 1998-99. The low ratio of the unit implies a sub-optimal utilisation of net working capital by the management.

Unit no. 12 indicates the lowest average net working capital turnover of 3.18 times. The ratio of net working capital varied between a narrow range of 1.92 times to 3.96 times during the period of ten years under the study. It was 1.92 times in 1989-90, gradually increased to 3.96 times in 1995-96. Thereafter it declined to 3.22 times in 1998-99. Very low turnover throughout the period under study can be explained due to the liberal credit policy followed by the management. This further substantiates the fact that the percentage of receivables to total current assets which was 54.40% in 1989-90 increased significantly to 67.10% in 1998-99. The low turnover indicates inefficiency in the use of the financial resources of the unit.

PERCENTAGE OF NET PROFIT TO GROSS WORKING CAPITAL:

Return on gross working capital is yet another useful economic indicator of the profitability of the enterprise and thus indicates the efficiency with which the working capital is put to use.

Table W-10 shows the percentage of net profit to gross working capital during the period under study. The overall average of net profit was 11.88% to working capital. The ratio shows a fluctuating trend throughout the period under study. It was 9.50% in 1989-90 declined to 6.53% in 1992-93, then increased and reached a peak level of 17.35% in 1995-96. Thereafter it declined to 16.50% in 1998-99. The overall position of the sample units indicates that the units had earned

TABLE NO. W - 10

PERCENTAGE OF NET PROFIT TO GROSS WORKING CAPITAL OF THE PHARMACEUTICAL COMPANIES DURING THE PERIOD 1989-90 TO 1998-99

(In percentage)

COMPANIES / YEARS	1989-90	1990-91	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97	1997-98	1998-99	Average
1 Burroughs Wellcome Ltd.	5.22	5.76	4.46	5.08	7.39	9 01	-5 16	10 61	15 81	14.73	**7.29**
2 Cipla Ltd	9.85	9 90	9 45	9 43	10.92	16 31	9 98	23 82	24 85	22 44	**14.70**
3 Duphar-Interfran Ltd	6.10	5 45	4.50	3 72	2 43	3 81	76 27	7 20	6 66	6 80	**12.30**
4 E. Merck Ltd.	9 38	3.98	-2.70	2 56	9 57	11 72	17 72	19 84	21 97	27 91	**12.19**
5 Fulford Ltd	4 57	2.29	1 25	4.07	4 07	4 27	5 39	5.99	9 49	10 25	**5.16**
6 German Remedies Ltd.	15.19	6.54	2 58	1.86	12 07	15 01	12 12	19.57	29 66	35.68	**15.03**
7. Glaxo Ltd	13 11	7 60	3 26	5.99	10 25	50 00	28 68	16.03	13 85	26 79	**17.56**
8. Hoechst Marion Roussel Ltd.	6.85	6.06	5.35	3.06	7.69	15.04	13 48	14 01	12 68	11 79	**9.60**
9. Knoll Pharmaceuticals Ltd.	18 33	18.43	15 05	14 27	11.21	10 45	14.33	24.93	35 91	15.19	**17.81**
10 Parke-Davis Ltd	17 92	9.97	10.15	15.78	17.16	16.87	15 08	15 56	11 37	12 26	**14.21**
11. Pfizer Ltd.	7.63	6.44	4 68	4 79	12.86	8 86	12 71	20 99	13 03	11 34	**10.33**
12. RPG Life Sciences Ltd	10 65	11 00	10.73	9 12	11.73	15.20	14 68	7.55	3 58	2.53	**9.68**
13 Unichem Laboratories Ltd	-1.34	7.96	9 77	5.15	11.86	13 42	10 31	5 73	6 56	16 80	**8.62**
Average	**9.50**	**7.80**	**6.04**	**6.53**	**9.94**	**14.61**	**17.35**	**14.76**	**15.80**	**16.50**	**11.88**
Pharmaceutical Industry in India	4.29	2.40	2.65	5.78	9.56	12.93	9 48	6 03	3.47	6.42	**6.30**
All Industries in India	6.63	5.85	4 90	4 14	6.43	10 38	9 85	6 01	4.19	3 45	**6.18**

Source : Appendices -I and V

Std Dev.	3.72
C.V	31.32

sufficient return on their working capital. Increase in percentage during the later period indicates that the sample units had increased the efficiency it utilisation of their working capital.

The overall average percentage of net profit to working capital of 11.88% of sample units was significantly higher as compared to 6.30% of 'Pharmaceutical Industry in India' and 6.18% of 'All Industries in India'. The coefficient of variation of sample units of 31.32% indicates that they had uniformity in earning net profit on working capital during the period under study.

A closer analysis of the table reveals that the unit no. 7 and 9 had exceptionally high percentage while unit no. 1 and 5 had exceptionally low percentage as compared to other sample units.

Unit no. 7 shows a very high average percentage of net profit of 17.56% to net working capital. It was 13.11% in 1989-90 and then decreased to 3.26% in 1991-92. Thereafter it increased continuously and reached a peak level of 50.00% in 1994-95, then it declined to 26.79% in 1998-99. Fall in operating cycle period was the main cause for increasing the returns.

Unit no. 9 has the highest average percentage of net profit of 17.81% during the period under study. It was 18.33% in 1989-90 decreased to 10.45% in 1994-95. Thereafter it increased to 35.91% in 1997-98 and then declined to a very low level of 15.19% in 1998-99.

Unit no. 1 shows a low average percentage of net profit of 7.29% of working capital during the period of ten years under the study. It was 5.22% in 1989-90 decreased to 4.46% in 1991-92, increased to 9.01% in 1994-95. Thereafter in 1995-96 it shows negative return of –5.16%. Finally it was 14.73% in 1998-99. Lower profitability was mainly due to significant rise in operating cycle period from 176 days in 1989-90 to 307 days in 1998-99.

Unit no. 5 has the lowest average percentage of net profit of 5.16% of working capital. It was 4.57% in 1989-90 declined to a very low level of 1.25% in 1991-92. Thereafter it shows a continuously rising trend reaching 10.25% in 1998-99. Though the unit had the lowest percentage as compared to other sample units; it shows encouraging trend of rise during the later period of study.

PERCENTAGE OF INVENTORY TO NET WORKING CAPITAL:

This ratio shows the relationship between inventory and net working capital. According to Foulke[46] inventory in any enterprise should not be more than 75% of its working capital. Inventory in which exceeds this limit is a sign of indiscreet buying and slow use of materials. A lower ratio indicates a sound working capital position of a concern.

Table W- 11 shows the percentage of inventory to net working capital during the period between 1989-90 to 1998-99. The table reveals that the overall average percentage was 137.10% during the period under study. It was 192.04% in 1989-90 gradually declined to 110.81% in 1993-94. Thereafter it increased to 161.06% in 1995-96, then declined to 50.34% in 1997-98. Finally it was 102.66% in 1998-99. The analysis indicates that except for the year 1997-98, throughout the period under study the inventory remained much above the standard. This clearly reveals that the sample units had indiscreet buying and stocking of the inventory during the period under study. This leads to the inference that the reduction of working capital is possible through a better management of inventory in the selected pharmaceutical units.

TABLE NO. W - 11

PERCENTAGE OF INVENTORY TO NET WORKING CAPITAL OF THE PHARMACEUTICAL COMPANIES DURING THE PERIOD 1989-90 TO 1998-99

(In percentage)

COMPANIES / YEARS	1989-90	1990-91	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97	1997-98	1998-99	Average
1 Burroughs Wellcome Ltd.	236 87	139.35	127 89	113.24	43.32	68.19	97 57	44 20	40 43	26 47	**93.75**
2 Cipla Ltd	109 16	218.91	180 88	161.93	189 07	235 15	61 92	61.70	62 01	57 18	**133.79**
3 Duphar-Interfran Ltd.	324.14	237.40	237.14	180 70	187 83	169 10	71.12	34 59	31 42	27 75	**150.12**
4 E. Merck Ltd	143 98	172 90	225 96	166 50	90 35	133 85	166 25	148 17	115 78	109.11	**147.29**
5 Fulford Ltd	137.73	89 60	68.81	90.22	85 00	89 48	75 78	87 43	78 30	83.37	**88.57**
6 German Remedies Ltd.	138.11	167.93	205.49	125.85	92 71	72 21	80 34	87 94	165 62	160 41	**129.66**
7 Glaxo Ltd.	153.03	183 56	243 36	196 02	80 95	159 60	58 67	73.83	81 52	73 81	**130.43**
8 Hoechst Marion Roussel Ltd	332.58	264.74	175 07	162.56	162 20	135 58	310 79	444 34	284 91	301.14	**257.39**
9 Knoll Pharmaceuticals Ltd	216.67	357.93	173 50	146.39	78.38	263 58	780.24	281 71	60 66	60 88	**241.99**
10. Parke-Davis Ltd	137.31	132.09	104.23	147.64	91 24	113.39	82.92	146 90	-459 12	200 26	**69.69**
11. Pfizer Ltd	201.83	133.14	125 73	157 54	138 40	102.33	142 58	96 36	71 21	114 18	**128.33**
12 RPG Life Sciences Ltd.	58 64	51.03	62 46	77.06	73.15	75.73	81.26	75 69	53 27	46.79	**65.51**
13. Unichem Laboratories Ltd	306.47	237.76	238.98	204.83	127 91	77 28	84.33	38.82	68 41	73 21	**145.80**
Average	**192.04**	**183.56**	**166.89**	**148.50**	**110.81**	**130.42**	**161.06**	**124.74**	**50.34**	**102.66**	**137.10**
Pharmaceutical Industry in India	192.78	182.15	198 44	207.93	91 85	74 36	85 64	96 85	88 13	84 65	**130.28**
All Industries in India	152.82	173.64	211.65	154.86	163.47	126 64	110 63	125 62	126 27	153 53	**149.91**

Source: Appendix -I

Std. Dev	55.41
C.V.	40.42

The overall average percentage of inventory to working capital of 137.10% of sample units was higher as compared to 130.28% of 'Pharmaceutical Industry in India'. In contrast to this it was lower as compared to 149.91% of 'All Industries in India'. The coefficient of variation of sample units of 40.42% indicates that they had followed a uniform policy in maintaining inventory as a percentage to working capital during the period under study.

An indepth analysis of the table reveals that unit no.8 and 9 had very high percentage while unit no. 10 and 12 had a very low percentage of inventory to net working capital.

Unit no. 8 shows the highest average percentage of inventory 257.39% to net working capital. It was 332.58% in 1989-90 declined gradually to 135.58% in 1994-95. Thereafter it increased and reached an exceptionally high level of 444.34% in 1996-97. Finally it declined to 301.14% in 1998-99. It was observed that in none of the years did inventory remain below the standard norm. This indicates that there was excess investment in inventory in this unit and therefore there was a need to reduce the inventory by using different techniques of inventory control.

Unit no. 9 also indicates a very high average percentage of inventory of 241.99% to net working capital during the period 1989-90 to 1998-99. It was 216.67% in 1989-90 increased to 357.93% in 1990-91 and then declined to 78.38% in 1993-94. Thereafter it increased to the highest level of 780.24% in 1995-96 and later had a declining trend which went down to 60.88% in 1998-99. The trend indicates that during the later period of study the management had better control over the inventory.

Unit no. 10 shows an average percentage of inventory of 69.69% to net working capital. It was 137.31% in 1989-90 gradually

declined to 82.92% in 1995-96. Thereafter it had a negative percentage of –459.12% in 1997-98. Finally it was 200.26% in 1998-99. The high proportion of receivables clearly indicates the liberal credit and collection policies followed by the management.

Unit no. 12 has the lowest average percentage of inventory of 65.51% to net working capital. It was 58.64% in 1989-90 declined to 51.03% in 1990-91. Thereafter it increased to 81.26% in 1995-96 again declined to 46.79% in 1998-99. The unit maintained an inventory percentage below 75% through all the years except for the years 1992-93, 1995-96 and 196-97. This clearly indicates that the unit had managed its inventory in a better way and the working capital position of the unit was very sound.

PERCENTAGE OF RECEIVABLES TO NET WORKING CAPITAL:

This ratio shows the relationship between receivables and net working capital. A lower ratio indicates a sound working capital position of a concern.

Table W-12 shows the ratio of percentage of receivables to net working capital of the selected pharmaceutical units during the period under study. It was 155.07% in 1989-90 declined to 98.34% in 1993-94. Thereafter it increased to 153.44% in 1995-96 and again declined to 57.41% in 1997-98. Finally increased to 137.47% in 1998-99. The predominant position of the receivables in the current assets is evident from the table, as the percentage of receivables remained consistently high throughout the study period.

The overall average percentage of receivables to working capital of 129.23% of sample units was significantly lower as compared to 174.75% of 'Pharmaceutical Industry in India' and

TABLE NO. W - 12

PERCENTAGE OF RECEIVABLES TO NET WORKING CAPITAL OF THE PHARMACEUTICAL COMPANIES DURING THE PERIOD 1989-90 TO 1998-99

(In percentage)

COMPANIES / YEARS	1989-90	1990-91	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97	1997-98	1998-99	Average
1. Burroughs Wellcome Ltd	126 55	76.15	65 49	94 58	88 10	129 70	100 19	57 56	48 45	41 44	**82.82**
2 Cipla Ltd	143 22	275 16	128 23	120.17	119 18	172 28	65 91	91 86	84 68	93 62	**129.43**
3 Duphar-Interfran Ltd	242.41	181.82	149 41	148 61	155 68	97 96	103 81	87 74	84 57	76 26	**132.83**
4 E Merck Ltd.	126 48	184 42	302 99	186.22	89 08	84 69	125 53	98 84	75 97	85 35	**135.96**
5. Fulford Ltd.	216 44	182.85	160.88	59 49	64 18	57 37	42.70	72 15	74 09	76 67	**100.68**
6 German Remedies Ltd.	77.24	115.57	153.39	155.11	102.29	100.70	111 75	97 92	215 01	160.84	**128.98**
7. Glaxo Ltd	93 03	96.94	103 20	84 31	53.84	119 05	51 72	76 09	71 44	75 32	**82.49**
8 Hoechst Marion Roussel Ltd	202.95	218 86	144.69	128 81	99 01	85 64	216 85	454 32	256 05	375 44	**218.26**
9. Knoll Pharmaceuticals Ltd.	139 74	230.21	90 87	99.27	56.58	180.45	619 96	336 81	145 90	70 37	**197.02**
10 Parke-Davis Ltd	86.17	96.33	95.38	97.61	106.91	126.32	123 49	220 88	-744 57	269 91	**47.84**
11. Pfizer Ltd	112.83	106 13	109 04	110.40	108.06	103.46	163.23	144 36	152 48	177 32	**128.73**
12. RPG Life Sciences Ltd.	65 08	104.78	91.57	85 39	72.12	88 81	95 54	81 09	104.49	128.97	**91.78**
13. Unichem Laboratories Ltd	383.81	238.40	166.13	295.30	163.36	116.65	173.99	159 98	177 74	155.63	**203.10**
Average	**155.07**	**162.12**	**135.48**	**128.10**	**98.34**	**112.54**	**153.44**	**152.28**	**57.41**	**137.47**	**129.23**
Pharmaceutical Industry in India	186 75	200 93	206 22	226 23	133 85	132 35	151 91	175 90	171 79	161 53	**174.75**
All Industries in India	156 00	194.12	237.36	188 68	202 47	170 99	159 81	189 38	206 26	239.65	**194.47**

Source: Appendix -I

Std Dev	49.00
C V.	37.92

194.47% of 'All Industries in India'. The coefficient of variation of sample units 37.92% indicates that they followed a uniform policy with regard to receivables to working capital during the period under study.

An indepth analysis of the table reveals that the unit no. 8 and 13 had a very high percentage while unit no. 7 and 10 had very low percentage of receivables to net working capital.

Unit no. 8 shows the highest average of percentage of receivables 218.26% to net working capital during the period of ten years under study. It was 202.95% in 1989-90 increased to 218.86% in 1990-91. Thereafter it had a downward trend and declined to 85.64% in 1994-95 and again increased significantly and reached to 454.32% in 1996-97. Finally it declined to 375.44% in 1998-99. The analysis makes it clear that the excess balance of receivables existed in the unit during the period under review. The inference drawn is that the investment in receivables need better planning and tighter control for the purpose of improving the management of working capital. This indicates the liberal credit and collection policy followed by the management.

Unit no. 13 has a very high average percentage of receivables of 203.10% to net working capital. It was 383.81% in 1989-90 decreased to 166.13% in 1991-92. Thereafter it increased to 295.30% in 1992-93, again declined to 116.65% in 1994-95 increased to 177.74% in 1997-98. Then it finally came down to 155.63% in 1998-99. Thus it may be observed that excessive receivables inflated the size of the current assets and in turn the net working capital also increased significantly from Rs. 2.78 crores in 1989-90 to Rs. 25.83 crores in 1998-99.

Unit no. 7 indicates a very low percentage of receivables of 82.49% to net working capital. It was 93.03% in 1989-90 increased to

103.20% in 1991-92 declined to 53.84% in 1993-94, increased to 119.05% in 1994-95. Thereafter it declined to a very low level of 71.44% in 1997-98 and then marginally increased to 75.32% in 1998-99.

Unit no. 10 has the lowest average percentage of receivables of 47.84% to net working capital. It was 86.17% in 1989-90 increased to 220.88% in 1996-97. It shows a negative percentage of –744.57% in 1997-98, as the net working capital was negative in the year. Finally it was 269.91% in 1998-99. It seems that the credit and collection policy of the unit had wide variations during the ten years period under study. An indepth analysis indicates that the unit had a low ratio due to faster rate of increase in net working capital as compared to its receivables.

PERCENTAGE OF CASH TO NET WORKNIG CAPITAL:

The study of cash and net working capital relationship in the selected pharmaceutical units have been presented in Table W- 13 during the period 1989-90 to 1998-99.

The table reveals that the overall average of the percentage of cash to net working capital was 18.54%. The ratio shows a continuous upward trend throughout the period of ten years except in the year 1996-97 and 1997-98, when there was a marginal fall in the ratio. It was 9.31% in 1989-90 which gradually increased and reached a peak level of 29.62% in 1995-96. Then it declined to 18.26% in 1997-98, and again increased to 26.88% in 1998-99. The rising trend of the ratio indicates that the sample units had a sound 'actual liquidity' and sufficient cash generating power.

TABLE NO. W - 13

PERCENTAGE OF CASH TO NET WORKING CAPITAL OF THE PHARMACEUTICAL COMPANIES DURING THE PERIOD 1989-90 TO 1998-99

(In percentage)

COMPANIES / YEARS	1989-90	1990-91	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97	1997-98	1998-99	Average
1. Burroughs Wellcome Ltd	4.69	10 29	29 45	28.48	22.70	31.15	23.76	57 84	55 62	72 57	**33.66**
2 Cipla Ltd	5.05	3 98	27.08	14 18	10 55	14.32	67 79	15 83	25 35	34 13	**21.83**
3 Duphar-Interfran Ltd	21 03	20.25	20 50	14 72	7.30	13 84	3 41	3 85	5 14	19 67	**12.97**
4 E Merck Ltd	11 17	4 65	10 64	5.73	3.30	2.30	3 48	4 21	8 75	4 48	**5.87**
5. Fulford Ltd	10 53	9.85	9.96	21.69	41 49	45.76	81.33	37.35	16 10	6 37	**28.04**
6 German Remedies Ltd	12.94	17.51	10 90	14 18	7 85	21.35	12 04	14 58	29 16	11 67	**15.22**
7. Glaxo Ltd	21.64	26.50	18 83	5.17	37.01	84 95	107 86	41 96	28 82	38.66	**41.14**
8. Hoechst Marion Roussel Ltd.	5.25	16.86	21 93	36.94	22.35	16 61	28 40	26 36	4 37	3 49	**18.25**
9 Knoll Pharmaceuticals Ltd.	11.11	12 62	4.09	6.43	76 85	55.76	21.17	15.43	57 23	102 72	**36.34**
10 Parke-Davis Ltd	3 72	5.64	12.12	11 33	8 46	2.65	2.71	16 20	-23 94	12.91	**5.18**
11. Pfizer Ltd	2.03	1 33	1 34	2.76	6 95	5 00	3 72	1 82	5 55	23 87	**5.44**
12. RPG Life Sciences Ltd	2.89	1 22	7 01	8 26	5 33	6.15	23.92	21 24	18 08	15 44	**10.95**
13 Unichem Laboratories Ltd	8.99	8.86	1.31	4 01	1.20	4 42	5 42	15 92	7 21	3 41	**6.07**
Average	**9.31**	**10.74**	**13.47**	**13.37**	**19.33**	**23.40**	**29.62**	**20.97**	**18.26**	**26.88**	**18.54**
Pharmaceutical Industry in India	16 82	23 93	53.63	46 03	112 64	42.75	23 08	21.41	28 78	22 88	**39.19**
All Industries in India	22.92	34.00	42.14	53 28	48.50	56 79	59 75	51 02	49 33	63 55	**48.13**

Source: Appendix -I

Std Dev	12.16
C V	65 61

The overall average percentage of cash to working capital of 18.54% of sample units was significantly lower as compared to 39.19% of 'Pharmaceutical Industry in India' and 48.13% of 'All Industries in India'. The coefficient of variation of sample units 65.61% indicates that they had less uniformity in maintaining cash as a percentage to working capital during the period under study.

A closer look at the table reveals that the unit no. 7 and 9 had an exceptionally high average percentage while unit no. 10 and 11 had a low average percentage of cash to net working capital during the period under study.

Unit no. 7 shows the highest average percentage of cash of 41.14% to net working capital. It was 21.64% in 1989-90 increased to 26.50% in 1990-91. Thereafter it declined to a very low level of 5.17% in 1992-93, then increased to a significantly high level of 107.86% in 1995-96. Finally it declined to 38.66% in 1998-99. The continuous high percentage of cash indicates that the management not only had 'technical liquidity' but also 'actual liquidity' during the period under study.

Unit no. 9 shows an average percentage of cash to net working capital which was 36.34% during the period under study. It was 11.11% in 1989-90 and then declined to 4.09% in 1991-92.Therafter it increased to 76.85% in 1993-94 and again fell to 15.43% in 1996-97. Finally it increased to a level of 102.72% in 1998-99.

Unit no. 10 had the lowest average percentage of cash to net working capital which was 5.18%. It shows 3.72% in 1989-90 increased to 12.12% in 1991-92 declined to the lowest level of 2.65% in 1994-95. In the year 1997-98 it was –23.94%. It showed a negative trend, as the net working capital of the unit was negative in the year. Finally it was 12.91% in 1998-99. During the time span of

this study, the unit not only lacked the technical solvency and liquidity but also worked without introducing modern techniques, because of paucity of funds. Therefore it seems that the management had carried low cash either due to conscious planning or may be it was consequence of acute scarcity.

Unit no. 11 indicates the second lowest average of cash of 5.44% to net working capital. It was 2.03% in 1989-90 declined to an ever-lowest level of 1.33% in 1990-91. Thereafter it increased to 6.95% in 1993-94 and then declined to 1.82% in 1996-97. Finally it increased to 23.87% in 1998-99. The trend indicates that the credit and collection policies and their administration had been highly unsound in the unit.

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