PROLOGUE

When I met Mr. P.N. Sharma, Chief Manager, Allahabad Bank, Rajmahal Road, Baroda office, for the purpose of summer project he wanted me to go for credit policy evaluation and formulating an integrated credit policy model for the bank.

I suggested that carrying out such a task within a period of 8 weeks would not yield desired results. The evaluation carried out would at best remain on paper. So we decided that the process could be broken down in two parts (this explains the long term and short term objectives – see executive summary) : firstly, understanding the current methodology being adopted for sanctioning of loans, formulating a rough credit policy model and then finally developing an integrated credit policy model, encapsulating all the parameters of a sound credit policy system.

CH.1 EXECUTIVE SUMMARY

OBJECTIVE: The objective of the project can be best summarized by breaking it into long term objective and a short term objective (refer prologue). The short term objective is what has been fulfilled for the current purpose.

Long Term Objective:

" To develop an integrated 'objective' credit policy model."

Short Term Objective :

" To gain an insight into the existing credit policy for working capital finance of Allahabad Bank by working on 'live projects' of the bank and formulating a ready to use credit policy policy model for working capital finance."

- The report is divided into two parts (though there is no explicit demarcation between these two parts):

(1) Understanding the existing procedure for sanctioning of working capital finance.

(2) Formulating a credit policy model for sanctioning of working capital loan by working through case studies.

- Loan proposals of the following 8 companies were analyzed for arriving at a model. These companies are:

  - Gandhi Tours
  - Gandhi Tour and Travels
  - Gandhi Travel and Tours
  - Siddique Gandhi
  - Amin Auto Garage
  - 20 Microns Limited
  - A. Saj Agricare Private Limited
  - Comed Chemicals Private Limited

  However, only three have been included for the purpose of this report: Gandhi Tours, 20 Microns Limited and Comed Chemicals Private Limited.

- At present the decision to sanction loan is based primarily on 2 things:
  - Balance sheet analysis, Profit and Loss statement analysis and computation of MPBF(Maximum Permissible Bank Finance)
  - Subjective analysis by the banker.

Hence, what the system lacks is imparting objectiveness to loan appraisal system and a clear cut methodology for decision making for loan disbursement.

- To impart objectiveness to the system a model has been formulated which takes into account the following factors:

(1) Director's report analysis
(2) Analysis of income statement and balance sheet.
(3) Financial ratio analysis
(4) Common size analysis
(5) Using distress prediction models (Altman Z score and Springate Model)
(6) Market analysis of the company – read SWOT analysis, market share, etc.
(7) Industry analysis.
(8) Subjective analysis of the management at work.

- Worksheets for financial ratio analysis, common size analysis and distress prediction were prepared and now they are being used by the bank.

- Further scope for improvement would include developing an integrated model covering all aspects of credit management policy like how to arrive at projected values, comply the system with the recommendations of Basel Committee accord, determining interest rate based on the risk return analysis, formulating an effective credit rating system,etc.

Note: The analysis carried out for the cases mentioned are brief in nature. The case study method has been followed to indicate how the model was arrived at.

Ch.2 COMPANY PROFILE

- ✓ Allahabad Bank is the oldest Public Sector Bank in India having branches all over India and serving the customers since 1865.
- ✓ It has 24 branches in Gujarat alone. Maximum branches are in Uttar Pradesh(595) followed by West Bengal (458).
- ✓ Its head office is at Kolkatta.
- ✓ The Bank works with a tradition of trust towards its customers and customer-oriented employees renders efficient services.
- ✓ 843 branches are computerized out of 1923 branches of the Bank, including bi-lingual facilitates in selected branches.
- ✓ 75.10% business has been captured through computerization.
- ✓ 47 ATMs have been installed by March 2003.

Future outlook:

i) The Bank has earmarked Rs. 50 crores for IT investment during the year.
ii) 400 additional branches are to be computerized during the next year.
iii) 80% business to be covered through computerization by March 2004.
iv) Additional 100 ATMs are to be installed taking total ATM base to 151 by March 2004.
v) Steps are underway to enable the customers to access ATMs of Corporation Bank & vice versa.
vi) Leased Line connectivity of 100 important branches at 9 cities (covering approx. 50% business) is on the anvil.

CH. 3 EXISTING GUIDELINES

(A) WORKING CAPITAL FINANCE – KEY CONCEPTS

Before starting actual business an entrepreneur has to incur certain expenditure for procurement of fixed assets, which are necessary for his business activity. Once she procures those assets and is ready to start his activity she has to incur some working expenses. For example, a manufacturer has to purchase raw material, converts those into finished products through process, sell those products to his customers and realize sale proceeds to meet the working expenses and generate profit. But the available technology and imperfect market condition delay both conversion of raw materials to finished products and realization of sale proceeds as also force him to hold inventory. Like wise a trader is also required to hold stocks for meeting the demands of the customers and to extend credit to its customers. In other words a portion of working expenses always blocked in the shape of various assets e.g. cash, inventory, debtors etc, which we call current assets. A business is a continuous process and so every cycle of operation generates these currents assets, which demand to be funded for immediate financing of working expenses. This funding of current assets for release of money needed for payment of working expenses is done by working capital.

Thus it becomes important for us to identify the components of current assets and current liabilities.

CURRENT ASSETS

In defining currentness of current assets controversy arises, which in turn creates problem for determination of working capital. The most popular definition of current assets, which is normally accepted, is " cash, bank balance and other assets, which reasonably convert into cash or consumed within one year from the date of balance sheet. But practically the

one-year temporal standard is not universally valid. In other words what is current and non-current depends on the nature of core business. Taking this fact in consideration natural business year, which is linked with operation cycle of each business. This operating cycle may be 3 months for a fruit processing unit and 3 ears for a shipbuilding unit. It may therefore be concluded that cash, bank balance and/or items which is converted or consumed within normal business year which means within operating cycle is current and all other are non current. Incidentally it should be kept in mind that an item may fulfill all the aforesaid criterion of current assets but even then may not be accepted for the purpose of financing by means of working capital finance. Such assets should be considered as non current assets for the sole purpose of calculation of working capital limit.

CURRENT LIABILITIES

The classification of current liabilities should also be done keeping in mind the aforesaid principle applicable for identification of current assets. It may therefore be defined as those obligations that are reasonably expected to be liquidated within natural business year from the date of balance sheet, either through the use of resources classed as current assets (considered for the purpose of allowing bank finance or through creation of other current liabilities). It is pertinent to note that the current liabilities, which are not to be liquidated out of assets, which though current in nature but classified as non-current for the purpose of calculation of working capital limit, should be, classified as non current liabilities.

NET WORKING CAPITAL

While financing working capital requirement, bank usually expects that a portion of the requirement will be financed by the contribution from the entrepreneur, which is popularly known as net working capital or margin. The said amount is determined by deducting the aggregate non current assets from aggregate non-current liabilities.

GUIDELINES ON CURRENT ASSETS

(1) **Cash and Bank balances**: The most liquid form of current assets. An accountant may be the happiest person in the world if the company maintains large cash or bank balances. But the finance manager will feel the opposite and so is the banker. For them it may be regarded as a sign of bad financial management and/or indication of slackening of business. The banker, like the finance manager, would definitely like the cash balance to be invested in production as soon as it is generated because idle cash does not earn anything.

(2) **Sundry debtors/receivables**: The debtors are treated as near equivalent to cash but their real value depends upon the ability of customers to meet their commitments in due time. Length of credit given to customers depends primarily upon the market command of the sellers. Composition of debtors is an important aspect considered by the bankers. A borrower may prefer to deal with a single or few large customers than an array of small customers because that saves a lot of trouble and avoidable expenditure in the administration of sales. But dependence on one or few large customers is fraught with risk; because if for any reason there is delay in payment then the unit comes to a halt immediately for want of cash. Besides, if any of these few customers goes to liquidation or stops giving orders, the unit will collapse. It is preferable therefore, to have the risk spread out amongst a fairly large number of debtors so that failure of one or even a few customers may not jolt the unit beyond tolerance however in case of monopoly seller/unit such situation may not arise. Increasing volume of debtors without a matching increase in sales is an indication of slowing down debtors' realization, which if not tackled immediately, may drive the unit towards sickness by choking the inflow of cash. This may be due to external economic reasons like general or sector recession in the market. During recession sellers' market is converted into a buyers' market; the customers demanding longer credit which, if not allowed, affects the demand immediately resulting into a cut back in production precipitating further crisis. Slowing down of debtors' collection may also be due to coming up of competitors in the field offering better products at a cheaper price. Frantic efforts to save the existing market are then made, first by

offering a discount in price and then by longer credit. If the competitors' thrust is real then financing increasing level of debtors will not solve problem. At this stage what the unit needs is long-term finance for technological renovation. Any further increase in working capital without technological renovation will be probable loss of bank's resources. An age wise analysis of debtors will definitely reveal the phenomena mentioned above. If debtors are increasingly moving to higher age bracket then it is time to prevent impending sickness of the unit. For small debtors recovery of dues through legal process is often uneconomic. These are generally written off as a bad debt and charged to profit and loss account. While suits are filed but the firm is doubtful for realization, a provision to that effect is made and amount is kept reser4ved from the profit to meet the eventuality. Besides these firms generally make provision for doubtful debts as a percentage of credit sales based on their past experience. Bankers while appraising credit proposal should compare the figures for bad debt and see whether its percentage on sales is rising or falling. If it is rising considerably over the years it indicates either over enthusiasm of the marketing department or inefficiency of the collection department.

(3) **Inventory**: this is the most crucial item of consideration in any credit proposal because bulk of the working capital finance is given against stock only. Capacity utilization determines the quantity of goods to be produced. The production process decides the quantity of raw materials needed and time taken to produce these goods, implying thereby, the blockage of stock during the production process, which is termed work in progress. If sales are in cash the stock is replenished immediately but if sales are on credit then during the credit period further stock is necessary to continue production. All these taken together determine the basic level of stock at any point of time. Most retail goods and also major industrial intermediary goods are carried to stock to ensure prompt delivery. In case of retail shops this is more important. They have to keep a reasonable quantify of all brands of particular item in order to cater to the demands of varied customers. This is necessary to maintain a competitive edge over others in the field by catering to the demand of every customer. If a firm gains a bad reputation for constantly being out of stock, it may lose in competition and be soon out of market. In profit and loss account opening

stock is taken on the expenses side and closing stock on the income side. By changing method of valuation, firm can overvalue its stock at the end of the year to show higher profit. A sizeable portion of profit may therefore remain unrealizable. Hence any payment of dividend out of this paper profit will not only make an inroad in to the net worth of the company abut also create an immediate working capital crisis. Besides paper profit attracts incidence of tax, which has to be paid from real sources of the company resulting into further erosion of working capital. Branches should always guard against any change in the method of valuation of stocks resulting into their overvaluation. " Dead inventory" i.e. slows moving items or obsolete items should not be classified as current assets.

(4) **Investment**: in shares and advances to other firms/companies, not connected with the business of the borrowing firm should be excluded from current assets.

(5) **Security deposits/tender deposits** may be classified as non current assets irrespective of whether they mature within the normal operating cycle of 1 year or not.

(6) **Spares**: should be classified as non current assets. However, the projected levels of spares on the basis of past experience but not exceeding 12 months consumption for imported items and 9 month consumption for indigenous items may be treated as current assets for the purpose of assessment of working capital requirements.

(7) Amount representing **inter connected company transaction** should be treated as current only after the nature of transactions and merits of the case. For example, advance paid to suppliers for a period more than normal trade practice, in spite of any other considerations such as regular and assured supply should not be considered as current.

(8) **Export Receivables**: may be included in the total current assets for arriving at the maximum permissible bank finance but the minimum stipulated net working capital may be reckoned after excluding the quantum of export receivables from the total current asset.

GUIDELINES ON CURRENT LIABILITIES.

(1) The concept of current liabilities would include estimated or accrued amounts which are anticipated to cover expenditure within the year for known obligation i.e. the amount of which can be determined only approximately, as for example provisions, accrued bonus payments, taxes etc.

(2) In cases where specific provisions have not been made for these liabilities and will be eventually paid out of general reserves, estimated amounts should be shown as current liabilities.

(3) **Trade Creditors**: Although any person allowing loan to a business or to whom the business owes money is a creditor, the sundry creditors apply specifically to suppliers of goods and services who are yet to receive payment. Length and quantum of credit available to a business are dependent upon various factors. First comes the goodwill of the business built up over a long period of time by consistent honoring of commitments. As goodwill takes some time to build up a new business do not generally get credit in the market during the initial years when it is building up goodwill. This aspect should be borne in mind while appraising credit proposal for new businesses. It is important for a businessman to ensure synchronization of maturity period of debtors and creditors. This is possible by judicious contracting of creditors and debtors in such a manner that when the former fall due for payment then the latter get realized at or around that time. A credit appraiser should examine how closer the business is towards this standard. If for genuine reasons the maturity period of debtors is much longer than that of creditors then it is dangerous to allow the business to enlarge the volume of creditors. A high level of creditors with low maturity against a high volume of debtors with long maturity may threaten the very existence of the business. Creditors include bills payable; the only difference is that bills are drawn by the suppliers on the firm incorporating therein the contracted terms of credit which when accepted by the firm becomes bills payable.

(4) **Accrued Liabilities**: this includes accrued working expenses, dividend payable, proposed dividend, and taxation liabilities. These are almost immediately payable after the finalization of annual accounts. All these liabilities are also of very short-

term nature and have their almost perpetual periodical recurrence and hence, should be taken into account while assessing the working capital gap of a business. Liabilities may also accrue in respect of capital expenditure completed but not paid for. This happens mostly in case of progress payment certified to be completed for which payment is now due. Although the expenditure is due for acquiring fixed assets which should be treated as such on the asset side of the Balance sheet, it is an immediate liability which has to be paid from out of current asset, i.e. cash, hence this liability is shown under current liability. However, this should not be confused with the funding of the expenditure. Since capital expenditure is meant for acquiring fixed assets, sound principle of lending suggests that fund should come from long-term sources and not from current liability. Whenever, therefore this type of accrued liability is observed in the balance sheet of a firm, a credit appraiser should inquire about the arrangement made to pay the dues. Unless long-term fund is contracted by the unit to meet this liability, the unit may divert working capital finance to meet the pressing demand of suppliers of fixed assets.

(5) **Advance payments from customers**: these deposits are to be classified as current liabilities. Where deposits are required, in terms of regulations framed by the government in a specified manner, the benefits of netting may be allowed to the extent of such investment in approved securities and only the balance amount need to be classified as current liability. Where on account of different accounting procedure progress payment are shown on the liability side without deduction from work in progress, bank may set off the progress payments against work in progress. Advances payment received are also adjusted progressively from the value of work completed, as agreed in the contract. Outstanding advance payments are to be reckoned as current liabilities or otherwise, depending upon whether they are adjusted within a year or later.

(6) **Deposits from dealers, selling agents, etc**: these may be treated as term liabilities, irrespective of their tenure if such deposits are accepted to be repayable only when the dealership or agency is terminated after due verification.

(7) **Provision for taxation**: netting of tax provision and advance tax may be effected for all the years uniformly and as such for the current year also the advance tax paid can be set off against provisions, if any made for that.

(8) **Sales tax, excise:** disputed excise liabilities shown as a contingent liability or by way of not to the balance sheet need not be treated as a current liability for calculating the permissible bank finance, unless it has been collected or provided for in the accounts of the borrower. Provision for disputed excise duty should be classified as current liability, unless the amount is payable in installments spread over a period exceeding one year as per the orders of the competent authority like the excise department or in terms of directions of a competent court. In such cases if the installments payable after one year are classified as long-term liability, no objection may be taken to such classification. When the provisions made for disputed excise duty is invested separately, say in fixed deposits with banks; such provisions may be set off against the relative investment. Disputed liabilities in respect of income tax, customs and electricity charges need not be treated as current liability for the purpose of computation f permissible bank finance except to the extent provided for in the books of the borrower.

(B) GUIDELINES FOR ASSESSMENT OF WC REQUIREMENT

(1) In case of borrowers whose working capital requirement is upto Rs. 2 crores (Rs. 5 crores in case of SSI Units), assessment will be done by Turnover Method. the permissible bank finance will be fixed at 25% of the projected turnover less margin, which will be 5% of the projected turnover.

(2) For assessment of the working capital requirement for borrowers falling within the band of Rs. 2 crores and below Rs. 10 crores (for SSI within 5 to 10 crores), the traditional method of computing MPBF as per second method of lending will be done. If any of the borrowers falling in this band intends to shift to cash budget system, the same will be accepted.

(3) For borrowers having working capital limit of Rs. 10 crores and above, cash budget system will be introduced at the option of the borrowers. However, if a borrower is desirous to continue with the existing MPBF system, the bank intends to permit the same

(4) In case of tea, sugar, the working capital limit will be fixed on the basis of monthly cash budget system. Facilities by way of financial guarantee, performance guarantee, letter of credit may be assessed keeping in view the borrower's level of business, financial parameters, lead period/risk profile, etc. and after detailed discussion with the borrower. Sick/ weak units under rehabilitation will be exempted from the MPBF system.

(5) In case of construction companies, while the bank may finance receivables upto an accepted level, claims in excess of 6 months may be excluded for arriving at peak level of deficit. The fund based limits (not exceeding the peak level deficit projected in the cash flow statement) and the non fund based limits sanctioned to a borrower, put together, should also not exceed nine times the net owned funds of the company. In case of construction companies considering the special features of such companies, it would be preferred if the bank follows the cash budget system for assessment for working capital requirement.

(6) All credit proposals on working capital, shall conform to the following general minimum current ratio norms:

(a) Under turnover method - minimum current ratio = 1.13

(b) Under traditional method – minimum current ratio = 1.33

(7) Lower current ratio of borrower accounts below 1.33 may be accepted in the following cases:

(a) PSU/Govt. undertakings/Municipal corporations engaged in Infrastructure developmental work, Transport, irrigation and public health, storing agricultural products, providing container services, traction/railways system

(b) Units/firms producing agricultural products both direct and indirect.

(c) Marketing agencies sole engaged in SSI promotional activities including supply of raw material.

(d) Companies engaged in extending housing loan.

(e) In case of existing borrowers, for renewal/enhancement on merit on case-to-case basis giving reasons.

(f) Working capital facilities extended under cash budget method.

(8) In case of term loan the debt equity ratio should not be higher than 5:1. However, in case of psu sector such ratio within 7:1 may be accepted.

(9) Credit limits of the borrowing units in the sugar/tea industries will be determined as per the directives of RBI issued from time to time and financials of the company.

(10) Restructuring of loan accounts and sick/weak units under rehabilitation will be exempted from the application of minimum benchmark for current ratio.

(11) With respect to norms for inventory/receivables, bank will continue to make its own assessment of credit requirements of borrowers based on a total study of borrower's business operations i.e. taking into account the production/processing cycle of the industry as well as the financial and other relevant parameters of the borrower. However, the level of holding of each item of chargeable current assets would be based on reasonable requirement of build up of current assets.

(12) The projected level of current assets and that of current liabilities should be compared with past trend and prevailing market conditions. In case there are significant abnormal variations, the position should be explained in respect of each item of variations.

(13) Stipulated minimum current ratio of 1.33 should be computed on basis of total current assets excluding export receivables and total current liabilities excluding post shipment credit.

(14) Additional credit limits of exporters arising out of fresh exports orders which are not taken into account while fixing the regular credit limit of borrowers, should be met in full even if sanction of such additional credit limits exceeds MPBF. In other words if export orders so received are additional in nature and have not been considered while computing regular credit limit (MPBF), the additional export credit in the form of pre shipment and post shipment will be considered outside the MPBF.

(15) While accepting level of projected receivables for the purpose of calculation of regular funded working capital facility those arising out of sales on deferred terms will not be considered in cases where separate bill limits is made available to borrower. In such cases projected sales less sales on deferred payment terms and receivables not relating to such deferred sales will be considered for calculation of bank finance and such discounting facility will be made available outside regular limit as permissible bank finance. Likewise for calculation of drawing power also, receivable relating to defer sales will not be considered.

CH 4. RESEARCH METHODOLOGY

Research type:

Exploratory. A case study approach was followed, wherein the actual project proposals were analyzed based on bank's current policies and an attempt was made to analyze it in retrospect to arrive at the objective.

Research Objective:

The objective of the project can be best summarized by breaking it into long term objective and a short term objective (refer prologue). The short term objective is what has been fulfilled for the current purpose.

Long Term Objective:
" To develop an integrated 'objective' credit policy model."

Short Term Objective :
" To gain an insight into the existing credit policy for working capital finance of Allahabad Bank by working on 'live projects' of the bank and formulating a ready to use credit policy policy model for working capital finance."

Research Definition:

- To undertake 'live projects' at Allahabad Bank.
- Understand process of loan appraisal based on balance sheet analysis, profit and loss statement analysis, computation of MPBF (Maximum Permissible Bank finance)
- Based on above mentioned activities formulate a credit policy model.

Data Collection Method :

Secondary data collection

Data Source:

- Annual reports of companies applying for loan.
- Websites for industry analysis.
- Guidelines provided by bank.

Limitations:

One has to rely on the annual reports provided by the companies. There are chances of discrepancies and manipulations undertaken by the company to present a healthy picture of their concern.

CH.5 CASE STUDIES

CASE STUDY # 1 : GANDHI TOURS

The company is in the business of lending buses on hire basis. The following tables give us the operating statement, analysis of balance sheet and computation of MPBF.

OPERATING STATEMENT

[Rs. in lacs]		LAST 2 YEARS ACTUAL (as per audited account)		CURRENT YEAR ESTIMATES	FOLLOWING YEAR PROJEC-TION
		31-3-2001	31/3/2002	31/3/2003	31/3/2004
1	Gross Sales				
i	Domestic sales	363.05	382.81	396.60	416.43
ii	Export sales	0.00	0.00	0.00	0.00
	T o t a l : : :	**363.05**	**382.81**	**396.60**	**416.43**
2	Less excise duty	0.00	0.00	0.00	0.00
3	Net sales (1 - 2)	363.05	382.81	396.60	416.43
4	% age rise (+) or fall (-) in net sales as compared to previous year.		5.44%	3.60%	5.00%
5	Cost of sales				
i	Raw materials (including stores and other items used in the process of manufacture)				
	a) Imported	74.08	126.95	129.25	135.71
	b) Indegeneous				
ii	Other spares				
	a) Imported				
	b) Indegeneous	34.57	26.07	26.83	26.45
iii	Power and fuel	4.58	4.24	5.22	5.48
iv	Direct labour (Factory wages & salaries)	13.93	13.76	14.02	14.72
v	Other mfg. expenses	0.01	0.15	0.05	0.05
vi	Depreciation	16.31	22.54	20.13	18.50
vii	Repair and maintenance	6.52	6.04	6.99	7.27
viii	Ad : Opening stocks-in-process	0.00	0.00	0.00	0.00
	Sub-total	**150.00**	**199.75**	**202.49**	**208.18**
ix	Deduct : Closing stocks-in Process	0.00	0.00	0.00	0.00

x	Cost of production	150.00	199.75	202.49	208.18
xi	Add : Opening stock of finished goods	0.00	0.00	0.00	0.00
	Sub-total	150.00	199.75	202.49	208.18
xii	Deduct closing stock of finished goods	0.00	0.00	0.00	0.00
xiii	**SUB-TOTAL (Total cost of sales)**	**150.00**	**199.75**	**202.49**	**208.18**
6	Selling, general and administrative expenses	197.76	159.24	172.95	181.60
7	**SUB-TOTAL (5 + 6)**	**347.76**	**358.99**	**375.44**	**389.78**
8	Operating profit before interest (3 - 7)	15.29	23.82	21.16	26.65
9	Interest	11.76	11.75	13.13	13.00
10	Operating profit after interest (8 - 9)	3.53	12.07	8.03	13.65
11	i) Add other non-operating income				
	a) other income	6.47	0.56	4.27	4.50
	Sub-total (income)	6.47	0.56	4.27	4.50
	ii) Deduct other non-operating expenses				
	a) Preliminay expenses	0.00	0.00	0.00	0.00
	b) Loss on sale of assets	0.00	0.00	0.00	0.00
	Sub-total (expenses)	0.00	0.00	0.00	0.00
	iii) Net of other non- Operating (net of 11 (i) & 11 (ii)	6.47	0.56	4.27	4.50
12	Profit before tax/loss 10 + 11 (iii)	10.00	12.63	12.30	18.15
13	Provision for taxes	0.00	0.00	0.00	0.00
14	**Net profit/loss (12-13)**	**10.00**	**12.63**	**12.30**	**18.15**
15	**Balance available for appropriation**	**10.00**	**12.63**	**12.30**	**18.15**
16	a) Equity dividend proposed[Inclu. Divi. Tax]	0.00	0.00	0.00	0.00
	b) Dividend Rate %	0.00	0%	0%	0%
17	Retained profit (15 - 16)	10.00	12.63	12.30	18.15
18	Retained profit/Net profit (%)	100.00%	100.00%	100.00%	100.00%

ANALYSIS OF BALANCE SHEET

[Rs. in lacs]

				CURRENT YEAR ESTIMATES	FOLLOWING YEAR PROJEC-TION
			31/3/2002	31/3/2003	31/3/2004
1	**LIABILITIES**	LAST 2 YEARS ACTUAL (as per audited account) 31-3-2001	28.56	42.83	50.00
	Short-term borrowing from		**28.56**	**42.83**	**50.00**
2	Short term borrowing from other	0.00	0.00	0.00	0.00
3	Sundry creditors	18.37	39.68	22.04	25.00
4	Advance payments from customers/deposits from dealers	0.00	0.00	0.00	0.00
5	Provision for taxation	0.00	0.00	0.00	0.00
6	Dividend payable including tax thereon	0.00	0.00	0.00	0.00
7	Other statutory liabilities (due within one year)	2.89	9.51	0.00	0.00
8	Deposit/Instalments of term loans/DPGs/debentures, etc. (due within one year)	0.00	0.00	0.00	0.00
9	Other current liabilities & provision (due within one year) (Specify major items)	0.00	0.00	0.00	0.00
	Sub-total (B)	**21.26**	**49.19**	**22.04**	**25.00**
11	**TOTAL CURRENT LIABILITIES**	**72.92**	**77.75**	**64.87**	**75.00**

	TERM LIABILITIES				
12	Debentures (not maturing within one year)				
13	Preference Shares (redeemable after one year)				
14	Term loans (excluding instalments payable within one year)	11.73	43.90	20.39	15.00
15	Deferred Payment Credits excldg. instalments due within one year)	0.00	0.00	0.00	0.00
16	Term deposits (repayable after one year)	0.00	0.00	0.00	0.00
17	Unsecured loan from directors, freinds & relatives	22.71	23.20	25.78	25.72
18	**TOTAL TERM LIABILITIES** (total of 12 to 17)	**34.44**	**67.11**	**46.17**	**40.72**
19	**TOTAL OUTSIDE LIABILITIES** (11 + 18)	**107.35**	**144.85**	**111.05**	**115.72**
	NET WORTH				
20	Ordinary share capital	42.22	55.54	66.12	79.00
21	Capital Reserve	0.00	0.00	0.00	0.00
22	Investment Allowance Reserve	0.00	0.00	0.00	0.00
	Revaluation Reserve	0.00	0.00	0.00	0.00
	Amount Received under Remittance in foreign Exchange Scheme (1991)	0.00	0.00	0.00	0.00
23	General Reserve	0.00	0.00	0.00	0.00
24	Surplus (+) or deficit (-) in Profit & Loss accounts				
25	**NET WORTH**	**42.22**	**55.54**	**66.12**	**79.00**
26	**TOTAL LIABILITIES**	**149.58**	**200.39**	**177.16**	**194.72**

	ASSETS	LAST 2 YEARS ACTUAL (as per audited account)	CURRENT	FOLLOWING YEAR ESTIMATES	YEAR PROJEC-TION
		31-3-2001		31/3/2002	31/3/2003
	CURRENT ASSETS				
27	Cash and bank balances	3.55	5.18	4.10	4.31
28	Investments (other than long term investments)				
	i) Government & Other Trustee securities.	4.35	4.58	3.31	5.10
	ii) Fixed deposits with bank	2.25	2.25	1.58	1.58
	iii) bank	0.93	5.79	1.18	1.24
29	i) Receivables other than deferred & export (incldg. bills purchased & discount-ed by bank)	71.16	76.88	75.42	86.00
	ii) Export receivable (incldg. bill purchased/discounted by banks)				
30	Instalments of deffered receiv-ables (due within one month)				
31	Inventory :				
	i) Raw materials (incldg. stores & other items used in the process of manufac-ture.)				
	a) Imported				
	b) Indegenious				
	ii) Stocks-in-process	0.00	0.00	0.00	0.00
	iii) Finished goods	0.00	0.00	0.00	0.00
	iv) Other consumable spares				
	a) Imported				
	b) Indegenious	0.00	0.00	0.00	0.00
32	Advance to suppliers of raw materials & stores/spares	0.00	0.00	0.00	0.00
33	Advance payment of taxes	0.00	0.00	0.00	0.00

34	Other current assets (specify major items)	0.00	0.00	0.00	0.00
35	**TOTAL CURRENT ASSETS.** (Total of 27 to 34)	**82.25**	**94.67**	**85.59**	**98.22**
	FIXED ASSETS				
36	Gross Block (land & bldg. machinery work in-progress)	83.64	128.26	111.71	115.00
37	Depreciation to date	16.31	22.55	20.14	18.50
38	**NET BLOCK (36-37)**	**67.33**	**105.71**	**91.57**	**96.50**
	OTHER NON-CURRENT ASSETS				
39	Investment/book debts/advances/ deposits which are not Current Assets i) a) Investments in subsidi-ary companies/affiliates b) Other ii) Advance to suppliers of Capital goods & contractors iii) Deffered receivables (maturity exceeding one yr)				
40	Non-consumables stores & spares Receivable more than 180days				
41	Other non-current assets incldg. dues from directors				
42	**TOTAL OTHER NON-CURR. ASSETS** (total of 39 to 41)	**0.00**	**0.00**	**0.00**	**0.00**
43	Intangible assets (patents, goodwill, prelim expenses, bad/ doubtful debts not provide for	0.00	0.00	0.00	0.00
44	**TOTAL ASSETS** (Total of 35, 38, 42 & 43)	**149.58**	**200.39**	**177.16**	**194.72**
45	TANGIBLE NET WORTH (24 - 43)	42.22	55.54	66.12	79.00
46	**NET WORKING CAPITAL** [(18+25) - (38+42+43)]	9.33	16.93	20.72	23.22
	To tally with (35 - 11)	9.33	16.93	20.72	23.22
47	**Current Ratio (Items 35 / 11)**	**1.13**	**1.22**	**1.32**	**1.31**
48	Total Outside Liabilities/Tang-ible Net worth (19 / 45)	2.54	2.61	1.68	1.46

FUNDS FLOW STATEMENT

[Rs. in lacs]

		LAST YEAR ACTUAL (as per audi--ted account)	CURRENT YEAR ESTIMATES	FOLLOWIN G YEAR PROJEC-TION
	31/3/2001	31/3/2002	31/3/2003	31/3/2004
1 SOURCES				
a) Net profit (after tax)	10.00	12.63	12.30	18.15
b) Depreciation	16.31	22.54	20.13	18.50
c) Increase in capital		13.31	10.58	12.88
d) Increase in Term Liabilities (Incldg. Public deposits)		32.17	0.00	0.00
e) Decrease in				
i) Fixed Assets		0.00	(16.56)	0.00
ii) Other non-current assets		0.00	0.00	0.00
f) Increase in unsecured loans		0.50	2.58	0.00
g) Prior period items		0.00	0.00	0.00
h) **T O T A L**		**81.16**	**29.03**	**49.53**
2 USES				
a) Net loss		0.00	0.00	0.00
b) Decrease in Term Liabilities		0.00	0.00	0.00
c) Decrease in Unsecured Loans		0.00	0.00	0.06
d) Increase in				
i) Fixed Assets		44.62	0.00	3.29
ii) Other non-current assets		0.00	0.00	0.00
e) Dividend payments		0.00	0.00	0.00
f) **T O T A L**		**44.62**	**0.00**	**3.36**
3 Long Term Surplus (+) / Deficit (-) (1 - 2)		36.54	29.03	46.18
4 Increase/decrease in current assets		12.42	(9.08)	12.63
5 Increase/decrease in current liabilities other than Bank borrowing		27.93	(27.15)	2.96
6 Increase/decrease in working capital gap.		(15.50)	18.07	9.67
7 Net surplus (+)/deficit (-) (Difference of 3 & 6)		52.04	10.96	36.51
8 Increase/decrease in bank borrowing		(23.10)	14.27	7.17

MPBF CALCULATION

[Rs. in lacs]

			LAST YEAR ACTUAL (as per audi--ted account)	CURRENT YEAR ESTIMATES	FOLLOWIN G YEAR PROJEC-TION
			31/3/2002	31/3/2003	31/3/2004
1	Total Current Assets (9 in form IV)	82.25	94.67	85.59	98.22
2	Other Current Liabilities (Other than bank borrowing) (14 of Form IV)	21.26	49.19	22.04	25.00
3	Working Capital Gap (WCG) (1 - 2)	60.99	45.48	63.55	73.22
4	Min. stipulated net working Capital i.e. 25% of W.C.G. / 25% of total current assets as the case may be depending upon the method of lending being applied (Export receivables to be excluded under both methods)	20.56	23.67	21.40	24.56
5	Actual/projected net working capital (45 in Form III)	9.33	16.92	20.72	23.22
6	Item 3 minus item 4	40.43	21.82	42.16	48.67
7	Item 3 minus item 5	51.66	28.56	42.83	50.00
8	Maximum permissible bank finance (Item 6 or 7 whichever is lower)	40.43	21.82	42.16	48.67

TURNOVER METHOD FOR COMPUTATION OF MPBF

1.	Total Current Assets	82.25	94.67	85.59	98.22
2.	Other Current Liabilities (other than bank borrowing)	21.26	49.19	22.04	25.00
3.	25% Of Sales(WCG)	90.76	95.70	99.15	104.11
4.	Min. stipulated net working capital:	19.05	19.05	19.05	19.05
	(5% of Sales)				
5.	Actual / Projected net working capital	9.33	16.92	20.72	23.22
6.	Item-3 minus Item-4	71.71	76.65	80.10	85.06
7.	Item-3 minus Item-5	81.43	78.78	78.43	80.88
8.	Max. permissible bank finance (item-6 or 7, whichever is lower)	71.71	76.65	78.43	80.88

CONCLUSION:

Loan can be sanctioned as current ratio is good, financially the company is sound and the past performance is also good.

CASE STUDY # 2. 20 MICRONS LIMITED.

20 Microns Limited belongs to micronised minerals industry. The micronised functional minerals sold by the Company are industrial products. The range includes dry gound minerals and wet ground minerals. The company has applied for working capital loan of Rs.7.6 crores. Should the proposal be accepted?

Profit and Loss Account of 20 Micron Ltd.

(Rs. In crores)	31-3-2001	31-3-2002	31-3-2003	31-3-2004
Gross Sales	**49.74**	**45.27**	**53**	**56**
excise duty	1.24	0.95	1	1
Net Sales	**48.5**	**44.32**	**52**	**55**
Raw materials	20.58	21.3	25.5	27
other spares	0.43	0.12	0.5	0.6
power and fuel	5.96	4.4	5.5	6
direct labor	4.14	3.97	4.1	4.2
other manu expense	0.52	0.66	0.85	1
Depreciation	2.08	1.74	2	2.1
Cost of sales	**33.71**	**32.19**	**38.45**	**40.9**
opening Stock-in progress	0	0	0	0
cost of production	**33.71**	**32.19**	**38.45**	**40.9**
opening stock of finished goods	1.82	1.59	1.92	2
closing stock of finished goods	1.59	1.92	2	2.22
total cost of sales	**33.94**	**31.86**	**38.37**	**40.68**
selling & admin expenses	7.6	8.16	8.73	9.13
Sub total	**41.54**	**40.02**	**47.1**	**49.81**
profit before interest	**6.96**	**4.3**	**4.9**	**5.19**
interest	4.66	4.07	4.1	4.2
profit after interest	**2.3**	**0.23**	**0.8**	**0.99**
other non operating income	0.5	0.45	0.1	0.1
other non operating expense	0.22	0.21	0.17	0.17
profit before tax	**2.58**	**0.47**	**0.73**	**0.92**
provision for taxes	0.31	0.04	0.1	0.12
net profit	**2.27**	**0.43**	**0.63**	**0.8**
dividend paid	0.27	0	0	0
retained profit	**2**	**0.43**	**0.63**	**0.8**

ANALYSIS OF BALANCE SHEET OF 20 MICRON LTD.

Liabilities	**2001**	**2002**	**2003**	**2004**
short term borrowing from banks (including bills purchased, discounted & excess borrowing placed on repayment basis)	7.32	9.4	11	11.5
short term borrowing others	2.29	1.19	1.25	1.5
sundry creditors	2.77	3.64	3	3.2
advance payments from customers/ deposits from dealers	0.1	0.11	0.15	0.15
dividend payable	0.27	0	0	0
deposits/ installments of term loans/ DGPs/ debentures etc.(<1 year)	4.1	1.83	6.24	4.83
other current liabilities & provisions	8.43	9.04	6.2	5.8
Total Current liabilities	**25.28**	**25.21**	**27.84**	**26.98**
Debentures	0	0	0	0
preference shares	0	0	0	0
term loans	10.93	15.49	12.96	12.18
deferred payments	0.48	0.12	0.18	0.08
term deposits	1.46	1.96	4	4.5
other term liabilities	1.36	1.66	1.9	2.3
Total term liabilities	14.23	19.23	19.04	19.06
Total outside liabilities	**39.51**	**44.44**	**46.88**	**46.04**
ordinary share capital	12.41	12.44	12.44	12.44
General Reserve	3.63	3.69	3.69	3.69
Revaluation Reserves	0	0.15	0.15	0.15
other reserves	0	0	0	0
from P/l Ac	8.9	8.77	9.4	10.2
share premium	13.2	13.2	13.2	13.2
state cash subsidy	0.29	0.29	0.29	0.29
Net Worth	**38.43**	**38.54**	**39.17**	**39.97**
Total Liabilities	**77.94**	**82.98**	**86.05**	**86.01**

Assets				
	2001	**2002**	**2003**	**2004**
Current assets				
cash and bank balances	0.64	0.96	0.6	0.5
investments(other than long term)	0.21	0.47	0.7	0.7
receivables other than differed & exports (including bills purchased & discounted)	13.4	12.7	14.7	15.5
Export variables	2.07	2.61	2.8	3
inventory				
raw materials	10.41	10.92	11.7	12.4
stock in progress	0	0	0	0
finished goods	1.59	1.92	2	2.22
other consumable spares	0.04	0.08	0.15	0.2
	12.04	**12.92**	**13.85**	**14.82**
advances to suppliers of raw mat	0.22	0.28	0.3	0.35
advance payment of taxes	0.23	0.3	0.25	0.25
other current assets	0.3	0.12	0.2	0.2
Total current assets	**29.11**	**30.36**	**33.4**	**35.32**
Fixed Assets				
Gross block(land, building, machinery, work in progress)	52.15	58.57	61.04	61.23
Depreciation to date	7.27	9.22	11	13
Net Block	**44.88**	**49.35**	**50.04**	**48.23**
Total other non current assets	**2.3**	**1.42**	**0.86**	**0.86**
intangible assets	1.65	1.85	1.75	1.6
Total Assets	**77.94**	**82.98**	**86.05**	**86.01**
Tangible net worth	36.78	36.69	37.42	38.37
net working capital	**3.83**	**5.15**	**5.56**	**8.34**

RATIO ANALYSIS

Category/Ratio	Formula	Date 2001	Date 2002	Date 2003	Date proj.
LIQUIDITY RATIOS					
Current Ratio	Current Assets / Current Liabilities	1.152	1.204	1.200	1.309
Quick Ratio	CA-Inventories / Current Liabilities	0.675	0.692	0.702	0.760
Interval measure	cash+receivables +securities / daily op. expenses	125	128	124	122
Liquidity on receivables	Receivables*365 / Annual credit sales	100.845	104.592	103.183	103
Liquidity on inventories	COGS / Avg Inventory	2.800	2.491	2.776	2.760
Duration of payables	A/C payable*365 / Purchases	37.488	51.456	34.762	34.76
NWC	CA-CL	3.830	5.150	5.560	8.340
SAFETY RATIOS					
Debt to Equity Ratio	total liability / Equity	2.028	2.153	2.197	2.152
Debt Equity Ratio (for only long term debt)	long debt / Equity	0.370	0.499	0.486	0.477

EBITDA to total liability	EBITDA / TL	0.063	0.031	0.034	0.036
EBITDA to long term debt	EBITDA / LTD	0.124	0.058	0.062	0.067
enterprise value to EBITDA	Total borrowing+equity / EBITDA	5.049	10.902	10.845	9.712
PROFITABILITY					
Sales Growth	Current sales - last sales / Last sales		(9.216)	17.441	5.769
Gross Profit Margin	Gross Profit / Total Sales	0.192	0.139	0.131	0.131
Net Profit Margin	Net Profit / Total Sales	0.047	0.007	0.012	0.014
Return on Equity	Net Profit / Equity	0.059	0.008	0.016	0.020
Return on Assets	Net Profit / fixed Assets	0.051	0.006	0.013	0.017
COGS to Sales	Cost of Goods Sold / Total Sales	0.700	0.722	0.738	0.740
SG&A to Sales	SG&A Expense / Total Sales	0.157	0.184	0.168	0.166
Efficiency ratio					
Sales to Assets	Sales / Total Assets	0.622	0.534	0.604	0.639

Coverage Ratio					
cash flow coverage	$\frac{\text{EBITDA}}{\text{Annual interest payment}}$	1.047	0.629	0.707	0.736
Turnover Ratio					
assets turnover	$\frac{\text{sales}}{\text{total assets}}$	0.622	0.534	0.604	0.639
Earning power	$\frac{\text{sales * net profit after tax}}{\text{total assets * sales}}$	0.029	0.005	0.007	0.009

(1) Current ratio for the company is within limits and can be considered.

(2) Safety ratios indicate that the company has huge liabilities both short term and long term. Moreover, they show an increasing trend.

(3) Profitability ratios indicate that the profits of the company are continually decreasing. Both the COGS and SGA expenditure are increasing.

(4) Efficiency ratio indicate inadequate/poor utilization of assets.

(5) Even for highly leveraged companies, cash flow coverage ratio should be more than 2. In this case the ratio is less than 1 and is decreasing further.

(6) The earning power of the company is very low and continually decreasing.

THE ALTMAN Z SCORE:				
	2001	2002	2003	PROJECTED
PBIT	6.96	4.18	4.90	5.19
Total Assets	77.94	82.98	86.05	86.01
Sales	49.74	45.27	53.00	56.00
Market value of equity	12.41	1.00	1.00	1.00
Total Liabilities	77.94	82.98	86.05	86.01
Current Assets	29.11	30.36	33.40	35.32
Current Liabilities	25.28	25.21	27.84	26.98
Retained Earnings	2.00	0.31	0.63	0.80
working capital	3.83	5.15	5.56	8.34
PBT	2.30	0.11	0.80	0.99
Z SCORE	1.122662	0.798177	0.897978	0.98592024

Interpretation of Z score

> 3.0	Company is financial sound
2.7 to 2.99	Company needs to exercise caution
1.8 to 2.7	May go bankrupt within 2 years
<1.8	Likelihood of bankruptcy is very high

As can be seen from the Altman Z score of the company, the likelihood of bankruptcy of the company is quite high, as the score for the given period is less than 1.8.

SPRINGATE MODEL				
springate score	0.637383	1.358453	1.198963	1.13386435
if springate score is less than 0.862 then the firm is considered to be failed				

The Springate model also indicates that the firm is not doing quite well. Though the score has improved over the years, but the score is also not considerably good.

CONCLUSION

On the basis of the analysis done for 20 Micron Ltd. it can be concluded that the company is not upto the mark. I recommended that it would not be prudent to sanction any loan for this company, which was eventually accepted by the bank.

CASE # 3 COMED CHEMICALS LIMITED

Comed Chemicals Limited, a closely held limited company is engaged in manufacturing of extensive range of pharmaceutical formulations in various forms like tablets, capsules and ointments. The company has chalked out plans for expansion by installing 4 capsule making machines along with other required equipments. The working capital loan requirement is of Rs. 8 crores. Should the bank sanction this loan?

OPERATING STATEMENT

						[Rs. in crores]
			LAST 2 YEARS		CURRENT	FOLLOWING
			ACTUAL		YEAR	YEAR
			(as per audited account)		ESTIMATES	PROJEC-TION
			31-3-2001	31/3/2002	31/3/2003	31/3/2004
1		Gross Sales				
	i	Domestic sales	37.09	41.26	46.15	50.56
	ii	Export sales	0.03	0.13	0.25	0.35
		T o t a l : : :	**37.12**	**41.39**	**46.40**	**50.91**
2		Less excise duty	4.16	4.07	4.29	4.30
3		Net sales (1 - 2)	32.95	37.32	42.11	46.61
4		% age rise (+) or fall (-) in		13.24%	12.85%	10.68%
		net sales as compared to				
		previous year.				
5		Cost of sales				
	i	Raw materials (including				
		stores and other items				
		used in the process of				
		manufacture)				
		a) Imported	0.00	0.00	0.00	0.00
		b) Indegeneous	14.89	15.21	19.19	20.73
	ii	Other spares				
		a) Imported				
		b) Indegeneous				
	iii	Power and fuel	0.12	0.29	1.01	1.36
	iv	Direct labour	0.56	0.68	0.86	1.00
		(Factory wages & salaries)				

	v	Repairing & maintenance	0.15	0.09	0.06	0.05
	vi	Other mfg. expenses	1.76	2.40	2.85	3.20
	vii	Depreciation	0.29	0.47	0.97	0.95
		Ad : Opening stocks-in-	0.11	0.10	0.25	0.66
		process				
	ix	**Sub-total**	**17.88**	**19.24**	**25.19**	**27.95**
		Deduct : Closing stocks-in				
	x	process	0.10	0.25	0.66	0.80
	xi	Cost of production	17.78	18.99	24.53	27.15
		Add : Opening stock of				
		finished goods	0.63	1.84	0.94	2.80
	xii	Sub-total	18.41	20.83	25.47	29.95
		Deduct closing stock of	1.84	0.79	2.80	2.77
	xiii	finished goods				
		SUB-TOTAL (Total cost	**16.57**	**20.04**	**22.67**	**27.18**
		of sales)				
6		Selling, general and	15.32	15.64	16.53	17
		administrative expenses				
7		**SUB-TOTAL (5 + 6)**	**31.89**	**35.68**	**39.20**	**44.18**
		Operating profit before				
		interest (3 - 7)	1.06	1.64	2.91	2.43
8		PBDIT	1.35	2.10	3.87	3.38
9		Interest	0.28	0.39	0.73	0.70
10		Operating profit after				
		interest (8 - 9)	0.78	1.24	2.18	1.73
11						
		i) Add other non-operating				
		income				
		a) other income	0.06	0.02	0.07	1.00
		Sub-total (income)	0.06	0.02	0.07	1.00
		ii) Deduct other non-operating				
		expenses				
		a) Preliminay expenses				0.00
		b) Loss on sale of assets				0.00
		Sub-total (expenses)	0.00	0.00	0.00	0.00
		iii) Net of other non-				
		operating				
		(net of 11 (i) & 11 (ii)	0.06	0.02	0.07	1.00
12						

13		Profit before tax/loss	0.84	1.27	2.25	2.73
14		Provision for taxes	0.00	0.09	0.00	0.82
15		**Net profit/loss (12-13)**	**0.84**	**1.17**	**2.25**	**1.91**
16		**Balance available for appropriation**	**0.84**	**1.17**	**2.25**	**1.91**
		a) Equity dividend proposed[Inclu. Divi. Tax]	0.00	0.00	0.00	0.00
		b) Dividend Rate %	0.00	0%	0%	0%
17						
18		Retained profit (15 - 16)	0.84	1.17	2.25	1.91
19		Retained profit/Net profit (%)	100.00%	100.00%	100.00%	100.00%

ANALYSIS OF BALANCE SHEET

						[Rs. in lacs]
		LIABILITIES	LAST 2 YEARS		CURRENT	FOLLOWING
			ACTUAL		YEAR	YEAR
			(as per audited		ESTIMATES	PROJEC-
			account)			TION
1			31-3-2001	31/3/2002	31/3/2003	31/3/2004
		Short-term borrowing from				
		banks (incld. bills purchased,				
		disconted & excess brrrowing				
		placed on repayment basis)				
		i) From applicant bank				
		ii) From Bank of Baroda	3.83	3.29	4.66	4.70
		iii) (of which BP & BD)				
2		**Sub total (A)**	**3.83**	**3.29**	**4.66**	**4.70**
		Short term borrowing from				
		other				
3		Sundry creditors (Trade)	5.98	4.65	7.24	7.22
		(others)	0.57	0.68	0.29	0.30
4		Cheque issued but not presented				
		Advance payments from				
		customers/deposits from dealers	0.03	0.00	0.01	0.01
5						
		Provision for taxation	0.00	0.09	0.00	0.82
6						
		Dividend payable including tax	0.00	0.00	0.00	0.00

		thereon				
7						
		Other statutory liabilities	0.17	0.53	0.61	0.85
		(due within one year)				
8						
		Deposit/Instalments of term	0.08	0.13	0.43	0.45
		loans/DPGs/debentures, etc.				
		(due within one year)				
9						
		Other current liabilities &				
		provision (due within one year)	0.83	1.10	1.75	1.80
		(Specify major items)				
10		**Sub-total (B)**	**7.66**	**7.18**	**10.33**	**11.45**
11	**TOTAL CURRENT LIABILITIES**		**11.48**	**10.47**	**14.98**	**16.15**
		TERM LIABILITIES				
12						
		Debentures (not maturing within				
		one year)				
13						
		Preference Shares				
		(redeemable after one year)				
14						
		Term loans (excluding instalme-				
		nts payable within one year)	0.31	1.12	0.63	0.85
15						
		Deferred Payment Credits excldg.	0.00	0.00	0.00	
		instalments due within one year)				
16						
		Term deposits (repayable after	0.00	0.00	0.00	0.00
		one year)				
17						
		Unsecured loan from				
18		directors, freinds & relatives	0.11	0.00	0.24	0.30
		TOTAL TERM LIABILITIES				
19		(total of 12 to 17)	**0.41**	**1.13**	**0.88**	**1.15**
		TOTAL OUTSIDE LIABILITIES	**11.90**	**11.59**	**15.86**	**17.30**
		(11 + 18)				
		NET WORTH				
20						

		Ordinary share capital	0.74	1.00	1.15	1.15
21						
		Capital Reserve	0.00	0.00	0.00	0.00
22						
		Investment Allwance Reserve	0.00	0.00	0.00	0.00
		Revaluation Reserve	0.00	0.00	0.00	0.00
		Amount Received under	0.00	0.00	0.00	0.00
		Remittence in foreign Exchange				
		Scheme (1991)				
		General Reserve	3.05	4.22	6.79	7.50
23						
24						
		Sirplus (+) or deficit (-) in				
25		Profit & Loss accounts	0.00	0.00	0.00	
26		**NET WORTH**	**3.79**	**5.22**	**7.95**	**8.65**
		TOTAL LIABILITIES	**15.69**	**16.82**	**23.81**	**25.95**
		ASSETS	LAST 2 YEARS		CURRENT	FOLLOWI NG
			ACTUAL		YEAR	YEAR
			(as per audited		ESTIMATE S	PROJEC-
			account)			TION
			31-3-2001	31/3/2002	31/3/2003	31/3/2004
		CURRENT ASSETS				
27						
		Cash and bank balances	0.14	0.10	0.25	0.27
28						
		Investments (other than long				
		term investments)				
		i) Government & Other Trustee	0.06	0.08	0.17	0.20
		securities.				
		ii) shares in bank and others				
29						
		i) Receivables other than				
		deferred & export (incldg.	6.49	6.72	7.10	7.40
		bills purchased & discount-				
		ed by bank)				

		ii) Export receivable (incldg.				
		bill purchased/discounted				
		by banks)				
30						
		Instalments of deffered receiv-				
		ables (due within one month)				
31						
		Inventory :				
		i) Raw materials (incldg.				
		stores & other items used				
		in the process of manufac-				
		ture.)				
		a) Imported				
		b) Indegenious	1.31	0.66	1.80	1.90
		ii) Stocks-in-process	0.10	0.25	0.66	0.80
		iii) Finished goods	1.84	1.52	2.80	2.77
		iv) Other consumable spares				
		a) Imported				
		b) Indegenious	0.23	0.20	0.24	0.97
32						
		Advance to suppliers of raw	0.00	0.00	0.00	
		materials & stores/spares				
33						
		Advance payment of taxes	0.00	0.00	0.00	0.82
34						
		Other current assets	0.58	0.89	0.77	0.80
35		(specify major items)				
		TOTAL CURRENT ASSETS.	**10.74**	**10.42**	**13.79**	**15.92**
		(Total of 27 to 34)				
		FIXED ASSETS				
36						
		Gross Block (land & bldg.	3.57	5.64	12.97	12.97
		machinery work in-progress)				
37		Capital work in progress	0.55			
38		Depreciation to date	1.43	1.90	4.18	4.00
		NET BLOCK (36-37)	**2.69**	**3.74**	**8.79**	**8.97**
		OTHER NON-CURRENT ASSETS				
39						
		Investment/book debts/advances/				
		deposits which are not				
		Current Assets				
		i) a) Investments in subsidi-	1.56	1.97	1.19	1.01
		ary companies/affiliates				

		b) Other	0.69	0.69	0.03	0.05
		ii) Advance to suppliers of				
		Capital goods & contractors				
		iii) Deffered receivables				
		(maturity exceeding one yr)				
		iv) Others				
40		v) Fixed deposits with banks				
		Non-consumables stores & spares				
41		Receivable more than 180days				
		Other non-current assets incldg.				
42		dues from directors				
		TOTAL OTHER NON-CURR. ASSETS	**2.25**	**2.66**	**1.23**	**1.06**
		(total of 39 to 41)				
43						
		Intangible assets (patents,				
		goodwill, prelim expenses, bad/				0.00
		doubtful debts not provide for				
44		etc.				
		TOTAL ASSETS	**15.68**	**16.81**	**23.81**	**25.96**
		(Total of 35, 38, 42 & 43)				
45						
		TRANGIBLE NET WORTH (24 - 43)	3.79	5.22	7.95	8.65
46						
		NET WORKING CAPITAL	(0.75)	(0.05)	(1.19)	(0.22)
		[(18+25) - (38+42+43)]	(0.74)	(0.05)	(1.19)	(0.23)
		To tally with (35 - 11)				
47						
		Current Ratio (Items 35 / 11)	0.94	1.00	0.92	0.99
48						
		Total Outside Liabilities/Tang-				
		ible Net worth (19 / 45)	3.14	2.22	2.00	2.00

FUNDS FLOW STATEMENT

						[Rs. in lacs]
				LAST YEAR	CURRENT	FOLLOWI NG
				ACTUAL	YEAR	YEAR
				(as per audi-	ESTIMATE S	PROJEC-
				-ted account)		TION
				31/3/2002	31/3/2003	31/3/2004
1						
		SOURCES				
	a)					
	b)	Net profit (after tax)	0.84	1.17	2.25	1.91
	c)	Depreciation	0.29	0.47	0.97	0.95
	d)	Increase in capital		0.26	0.15	0.00
		Increase in Term Liabilities	0.00	0.82	0.00	0.22
	e)	(Incldg. Public deposits)				
		Decrease in				
		i) Fixed Assets		0.00	0.00	0.00
	f)	ii) Other non-current assets		0.00	0.00	0.00
	g)	Increase in unsecured loans	0.00	0.00	0.00	0.00
	h)	Prior period items		0.00	0.00	0.00
2		**T O T A L**	**1.13**	**2.72**	**3.37**	**3.08**
		USES				
	a)					
	b)	Net loss		0.00	0.00	0.00
	c)	Decrease in Term Liabilities		0.00	0.00	0.00
	d)	Decrease in Unsecured Loans		0.00	0.00	0.00
		Increase in				
		i) Fixed Assets	0.00	2.07	7.34	0.00
	e)	ii) Other non-current assets	0.00	0.00	0.00	0.00
	f)	Dividend payments		0.00	0.00	0.00
	g)	Modvat Credit Reserve - depriciation recouped		0.00	0.00	0.00
3	Long Ter m Surp lus (+) /	**T O T A L**	**0.00**	**2.07**	**7.34**	**0.00**
	Deficit (-) (1 - 2)			0.65	(3.97)	3.08
4	Increase/decrease in current					

	assets *				
		(0.32)	3.38	2.13	
5	Increase/decrease in current				
	liabilities other than Bank borrowing	(0.48)	3.15	1.12	
6	Increase/decrease in working				
	capital gap.				
		0.16	0.23	1.01	
7	Net surplus (+)/deficit (-)				
	(Difference of 3 & 6)	0.49	(4.20)	2.07	
8	Increase/decrease in bank borrowing				
		0.00	0.00	0.00	

MPBF COMPUTATION

					[Rs. in crores]
	LAST YEAR ACTUAL		CURRENT YEAR ESTIMATES	FOLLOWING YEAR PROJECTION	
	(as per audited account)				
	31/3/2001	31/3/2002	31/3/2003	31/3/2004	
1 Total Current Assets	10.74	10.42	13.79	15.92	
2 Other Current Liabilities (Other than bank borrowing) (14 of Form IV)	7.66	7.18	10.33	11.45	
3 Working Capital Gap (WCG) (1 - 2)	3.08	3.24	3.47	4.48	
4 Min. stipulated net working Capital i.e. 25% of W.C.G. / 25% of total current assets as the case may be depending upon the method of lending being applied (Export receivables to be excluded under both methods)	2.68	2.60	3.45	3.98	
5 Actual/projected net working capital (45 in Form III)	(0.75)	(0.05)	(1.19)	(0.22)	
6 Item 3 minus item 4	0.40	0.63	0.02	0.49	
7 Item 3 minus item 5	3.83	3.29	4.66	4.70	
8 Maximum permissible bank finance (Item 6 or 7 whichever is lower)	0.40	0.63	0.02	0.49	

FINANCIAL RATIO ANALYSIS

Category/Ratio	Formula	Date 2001	Date 2002	Date 2003	Date proj.
LIQUIDITY RATIOS					
Current Ratio	Current Assets	0.935	0.995	0.9206	0.98609
	Current Liabilities				
Quick Ratio	CA-Inventories	0.6329	0.7437	0.5535	0.5876
	Current Liabilities				
	cash+receivables	76.562	70.483	70.02	65.0215
Interval measure	+securities				
	daily op. expenses				
NWC	CA-CL	(0.75)	(0.05)	(1.19)	(0.22)
SAFETY RATIOS					
Debt to Equity Ratio	total liability	4.1403	3.2198	2.9952	2.9988
	Equity				
Debt Equity Ratio	long debt	0.1093	0.2154	0.1102	0.13287
(for only long term debt)	Equity				
PROFITABILITY					
Sales Growth	Current sales - last sales		12.96	13.418	10.7153
	Last sales				
Gross Profit Margin	Gross Profit	0.0428	0.057	0.0937	0.094
	Total Sales				
Net Profit Margin	Net Profit	0.0255	0.0315	0.0534	0.03756
	Total Sales				
Return on Equity	Net Profit	0.2216	0.2248	0.2828	0.22092
	Equity				
Return on Assets	Net Profit	0.3119	0.314	0.2556	0.21305
	fixed Assets				
COGS to Sales	Cost of Goods Sold	0.503	0.5369	0.5383	0.5831
	Total Sales				
SG&A to Sales	SG&A Expense	0.4648	0.4192	0.3926	0.36473
	Total Sales				
EFFICIENCY					
Days in Receivables	Receivables X 360 days	70.862	64.798	60.698	57.1551
	Sales				
Days in Inventory	Inventory X 360 days	75.367	47.275	87.35	85.2421
	COGS				

Inventory Turnover	COGS	4.7766	7.6149	4.1213	4.22326
	Average Inventory				
Sales to Assets	Sales	2.1015	2.2194	1.7686	1.7955
	Total Assets				

ANALYSIS:

(1) Liquidity ratios like current ratio and quick ratio are not upto the mark. However, they show an improving trend. Desired current ratio according to bank's lending policy should be 1.33

(2) Safety ratios are also not upto the mark. However, they show decreasing trend. Also the long term debt to equity ratio is within limits. The short term debts of the company are high.

(3) Gross profit margin and net profit margin show an increasing trend. The expenses of the company are not allowed to exceed disproportionately with increase in sales.

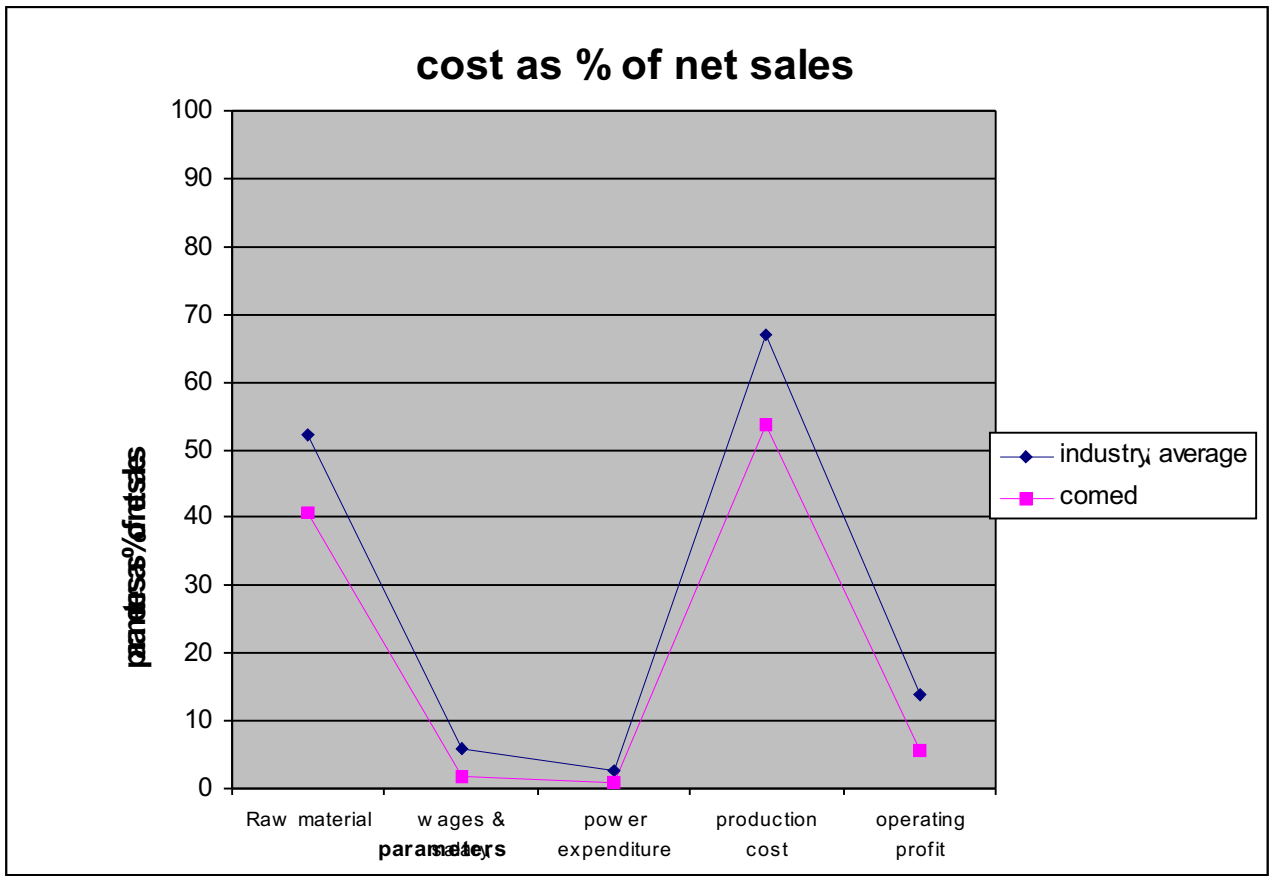
(4) Gross sales of the company show a good growth over the period considered.

(5) COGS to gross sales are increasing over the period. But the increase is not much. SGA expenses to gross sales are decreasing over the period. This indicates that the management is making adequate efforts to reduce expenses related to SGA.

(6) Days in receivable are decreasing over the period. This shows a good collection policy being followed. However the ratio should also not be too low otherwise it would indicate an excessively restrictive credit policy which might prove to be counter productive.

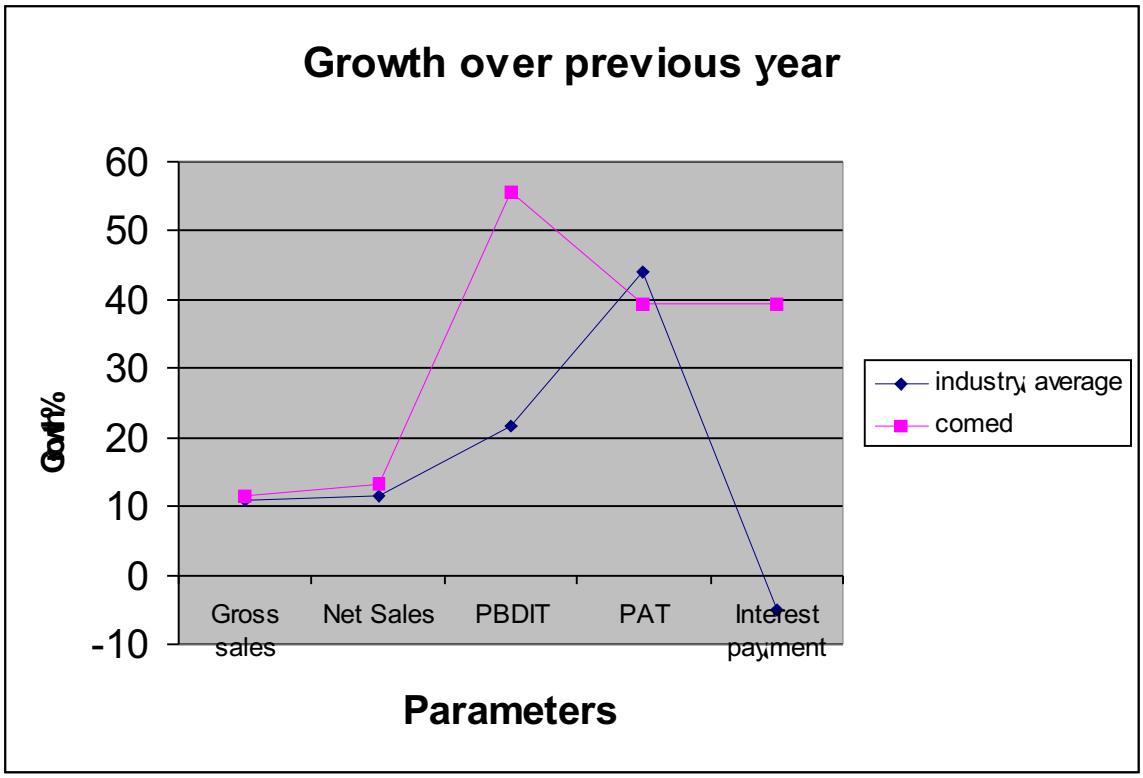
(7) Sales to asset ratio is high which indicates that the company is making good utilization of its assets. This also indicates that the company may need to invest more if increase in sales are required.

COMPARISON WITH PHARMA INDUSTRY AVERAGES



- As can be seen the cost of various components as percentage of net sales is lower than the industry average which is a good indication of sound management.

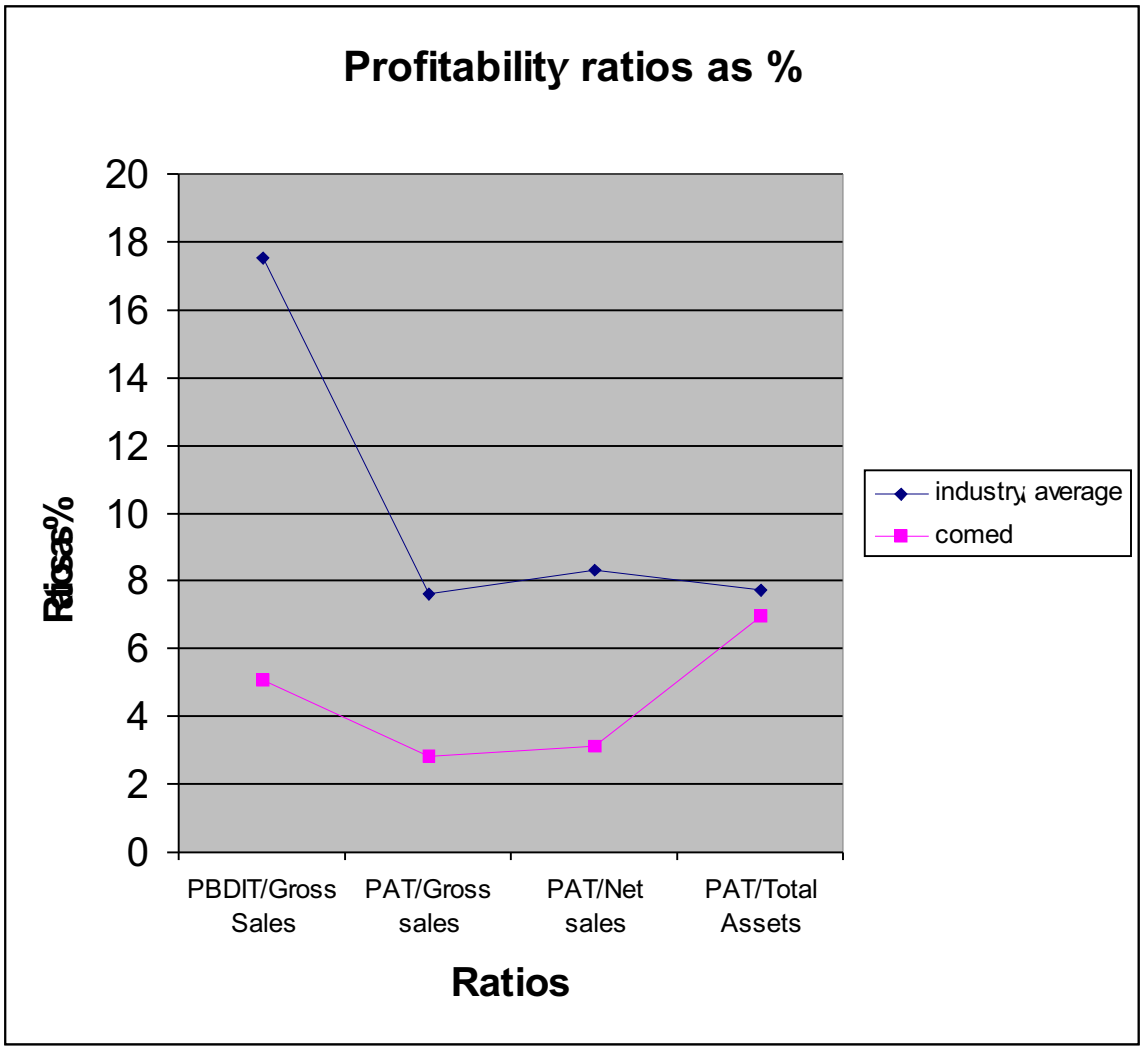
- The negative point is that the operating profit as percentage of net sales is also lower than the industry average.



- As shown above the company is in a better position with respect to almost all the parameters mentioned.

- However, PAT of the company is lower than the industry average.

- The high interest payment explains the lowering in PAT



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- Profitability ratios of the company are not so good compared to the industry averages.

- However, the PAT/Total Assets ratio is reasonably adequate.

THE ALTMAN Z SCORE:					
		2001	2002	2003	PROJECTED
PBIT		1.06	1.64	2.91	2.43
Total Assets		15.68	16.81	23.81	25.96
Sales		37.12	41.39	46.40	50.91
Market value of equity		1.00	1.00	1.00	1.00
Total Liabilities		15.69	16.82	23.81	25.95
Current Assets		10.74	10.42	13.79	15.92
Current Liabilities		11.48	10.47	14.98	16.15
Retained Earnings		0.84	1.17	2.25	1.91
working capital		(0.75)	(0.05)	(1.19)	(0.22)
PBT		0.78	1.24	2.18	1.73
Z SCORE		2.644508	2.909893	2.447303	2.38413302

Interpretation

> 3.0	Company is financial sound
2.7 to 2.99	Company needs to exercise caution
1.8 to 2.7	May go bankrupt within 2 years
<1.8	Likelihood of bankruptcy is very high

SPRINGATE MODEL

springate score 1.15084 1.35845 1.19896 1.1338643
if springate score is less than 0.862 then the firm is considered to be failed

- The Altman Z score indicates that the company needs to exercise caution.

- The springate score indicates that the company can not be considered to be failed.

INDUSTRY ANALYSIS

SIZE OF INDIAN PHARMACEUTICAL INDUSTRY

The Indian pharmaceutical industry, with an estimated production of around Rs. 265 billion in FY2002, reported an impressive compounded annual growth rate (CAGR) of 16% between FY1995 and FY2002 to emerge as an attractive segment of the Indian manufacturing sector. The Indian pharmaceutical industry is one of the largest among those of developing countries. It accounted for 8% of the global market in volume terms in calendar 2000. However, in value terms, India's share of the global pharmaceuticals market was a mere 1% in 2000. This low value share is attributable to the relatively lower prices of drugs in India. Thus, even though the Indian pharmaceutical industry ranked 4 th in terms of volume (globally), it ranked 13th in terms of value (globally) in calendar 2000.

OUTLOOK

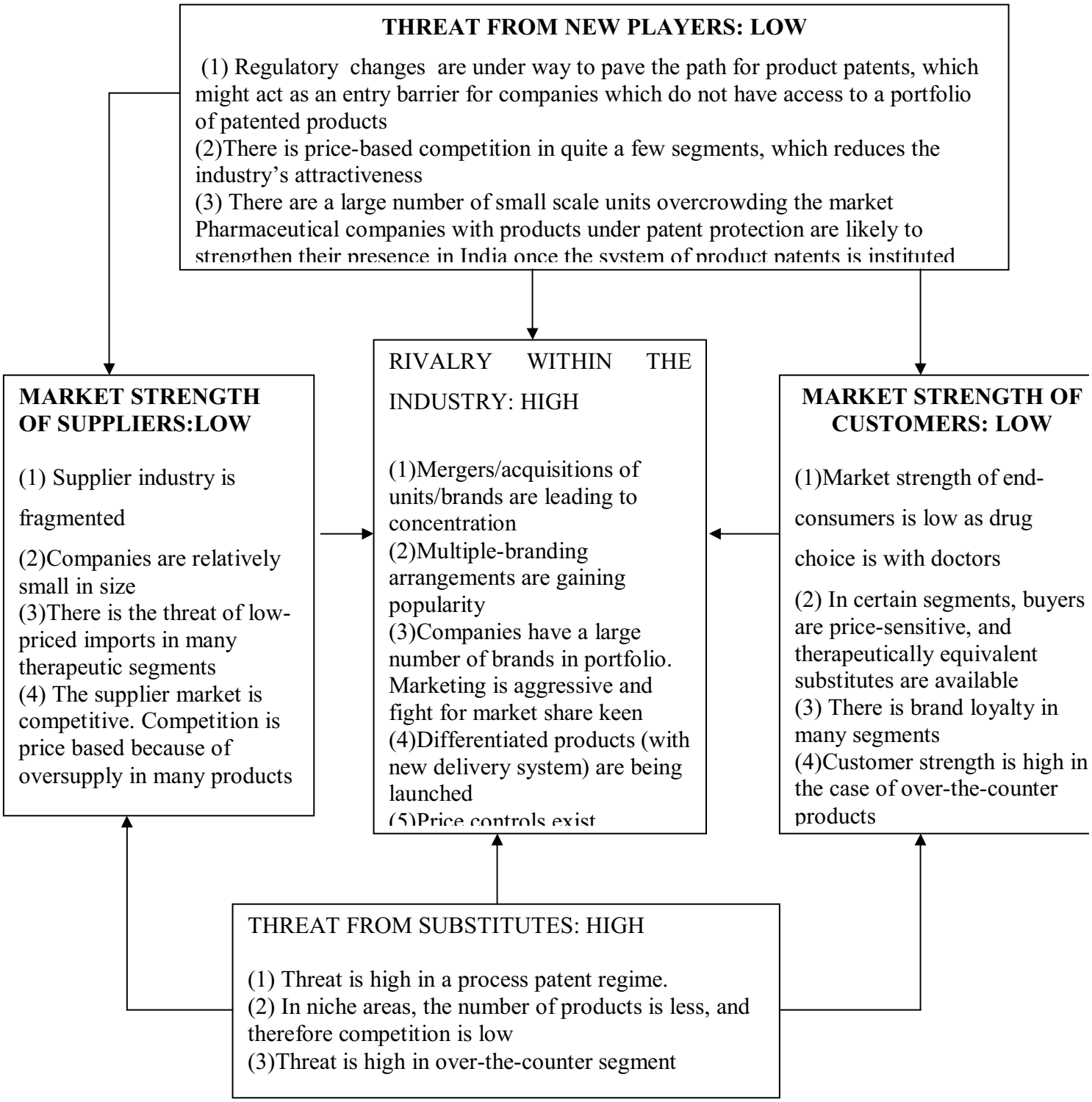
In the short to medium term, the Indian pharmaceutical industry is expected to post healthy growth rates, with exports being the key driver. Quite a few pharmaceutical companies have established their presence in the generics markets of developed countries and some have effectively tapped export opportunities in the relatively unregulated markets. However, even as Indian companies increase their exposure to the developed markets, the business risks on this count are on the rise. That is so because the risks of litigation and product liability are higher in the highly regulated developed markets. Further, risks also emanate from the strategy of Indian companies to realise higher profits from generics in the US market 15 . Nevertheless, despite the higher risks, the increasing share of pharmaceutical exports to developed markets is likely to help Indian companies improve their financial performance in the short to medium term. The Indian pharmaceutical industry's FY2002 performance was characterised by sales growth of

around 16%, accompanied by a sharp decline in the material cost and interest outgo, both of which led to an expansion in margins and returns. For the first nine months of FY2003, the performance of select pharmaceutical companies indicates an improvement in margins following a decline in material costs and overheads. With the expected improvement in profits and returns during the current fiscal, the outlook for the industry remains positive.

The industry's medium term performance is likely to be characterised by better realisation from exports and higher capacity utilisation, which are likely to translate into improved profitability. Further, income flows from R&D operations for some pharmaceutical companies may help them improve their financial performance in the medium term. Also, with the new price control order expected to be passed in FY2004 and the coverage of price control being substantially reduced, some of the players with strong brands may experience a positive impact on sales. However, this would depend on their ability to increase prices, given the presence of a large number of substitutes. Overall, an improvement in profit and margins may be expected in the medium term.

Beyond the medium term, the growth rate for the Indian pharmaceutical industry would be influenced by changes on the domestic regulatory front, shift in the country's demographic and disease profiles, and extent of exports. Further, with a shift in the research focus of prominent Indian pharmaceutical companies (as they prepare for the products patent regime), the risks associated with higher investments in R&D are expected to increase.For individual companies, the major factors that would determine their financial performance include capabilities in R&D,manufacturing,marketing and portfolio management,and in tapping the opportunities in the domestic as well as international markets.

COMPETITIVE FORCES IN INDIAN PHARMACEUTICAL INDUSTRY



MARKET SCENARIO OF TOP 10 PRODUCTS OF THE COMPANY

	BRAND	COMPANY	MAT	% GROWTH
1	**Lyser D**	**Comed**	**3.17**	**98.6**
	Emanzen – D	Emcure	4.7	7.1
	Biozobid	SPPL	3.94	-3.0
	Direct	Ozon	2.57	11.4
2	**Milcef**	**Comed**	**1.48**	**87.2**
	Ceftum	Glaxo	51.0	8.3
	C-Tri	Emcure	11.03	-7.1
	Cetil	Lupin	9.4	-25.5
3	**Caldob**	**Comed**	**1.65**	**100.4**
	Dobesil	Ochoa	3.61	65.4
	Osil	Ozone	1.71	63.65
	Dobest	Wallace	1.29	145
4	**Grisomed – 375**	**Comed**	**0.9**	**28.6**
	Grisovin – FP	Glaxo	8.76	27.9
	Gris – OD	DRL	4.99	-1.8
	Fluvin	B.T.	0.95	-11.6
5	**Lyser**	**Comed**	**2.98**	**27.5**
	Bidanzen	Glaxo	16.3	24.7
	Biosuganril	Sarabhai	3.64	-14.3
	Flenzen	Sigma	2.43	-27.4
6	**Lacom**	**Comed**	**1.99**	**38.6**
	Novaclox	Cipla	18.79	9.6
	Suprimox	Ranbaxy	8.81	14.5
	Novaclox LB	Cipla	6.72	29.1
7	**Medler**	**Comed**	**1.5**	**19.4**
	Sinarest	Centaur	16.68	26.6
	Fabrex Plus	Indoco	13.44	12.6
	Wikoryl	Alembic	11.56	-2.8
8	**Eromed – 333**	**Comed**	**1.19**	**-13.0**
	Althrocin	Alembic	47.88	-1.1
	Erythrocin	Abbot	14.0	-41.1
	Eltocin	IPCA	6.46	-15.8
9	**Codroxil**	**Comed**	**2.73**	**43.5**
	Cefadur	Cipla	19.94	4.4
	Odoxil	Lupin	19.03	-20.5
	Droxyl	Torrent	15.87	6.6
10	**Ranicom D**	**Comed**	**0.743**	**177**
	Ranidom	Mankind	4.8	224
	Zomitac	Emcure	2.3	-2.0
	RD-V	Brawn	0.7	1.34

The company has a good hold over its top 10 products.

WOTS UP COMED?

WEAKNESS

(1) The company's formulation products are sold on ethical basis only i.e. on the prescription of doctors. They are thus having limited market exposure.
(2) The market for HGC(Hard Gelatin Capsule) is cyclic in nature with wide demand fluctuation.

OPPORTUNITIES

(1) The OTC market is to look out for. The market exposure of the company's product can increase if sold on OTC basis.
(2) The company is working out to set up empty hard gelatin capsules manufacturing plant at Nairobi. There is no such plant there and the Government is seriously interested to give necessary clearances and facilities etc in this regard.

THREATS

(1) After 2005, the company may not be able to manufacture products, which are patented. However, the company plans to phase out such products before December 2004.
(2) Many financially sound companies are going for mergers and acquisitions. Comed could become a target for acquisition if the management is not able to generate requisite profits for the company in the changing scenario.

STRENGTH

(1) The plant is WHO – GMP approved for manufacturing formulations. It is an ISO 9001 registered unit.

(2) This is the only company in the state of Gujarat manufacturing 4 million empty hard gelatin capsules per day on its fully automatic computerized manufacturing lines. Going in for major expansion by increasing its manufacturing capacity i.e. 6 millions per day.
(3) 2nd rank on national basis for Lyser group of products (analgesic and anti inflammatory agents) as per ORG.
(4) The promoters are having wide and rich experience of over two decades in the pharmaceutical industry.
(5) Strong marketing division having nation wide distributors, own branch offices manned by Branch managers and 750 medical representatives, who constantly remain in contact with more than 75,000 doctors.

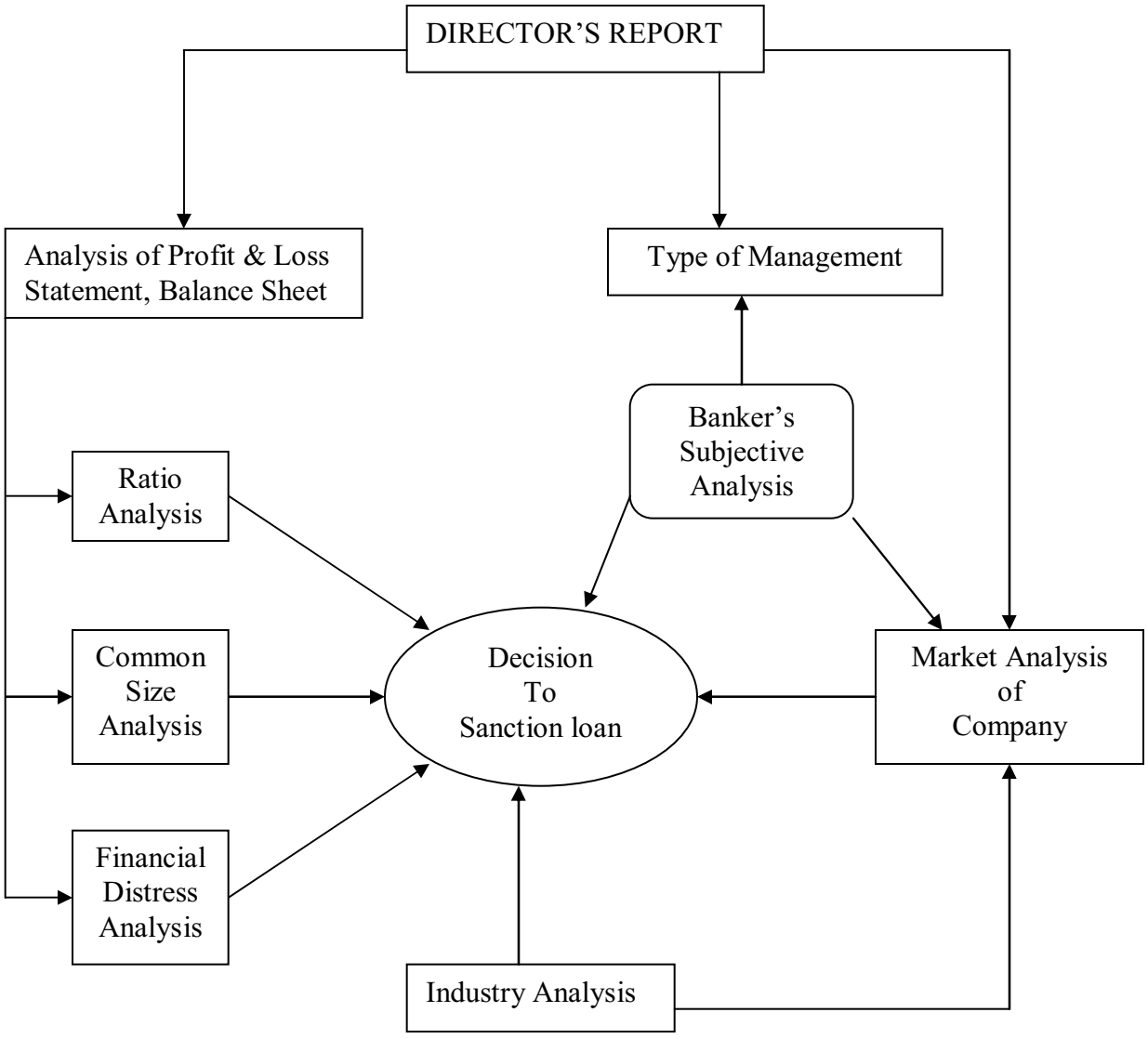
On the basis of the SWOT analysis of the company, we find that the strength and the opportunities before the company offset the weaknesses and the threats to the company. This coupled with the industry analysis presents a favorable picture for the company.

CONCLUSION

Though there are no. of shortcomings and it seems that the company is not financially very sound. But a complete analysis as mentioned above indicates that loan can be sanctioned. Allahabad Bank is actively considering sanctioning of the loan.

CH.6 RECOMMENDATIONS

PROPOSED LOAN APPRAISAL MODEL



PRESENT SCENARIO:

At present the decision to sanction loan is based on primarily 2 things:

(1) Balance sheet analysis and Profit and Loss statement analysis.
(2) Subjective analysis by the banker.

Hence, what the system lacks is imparting objectiveness to loan appraisal system.

PROPOSED MODEL:

The proposed model strives to remove/reduce the subjective ness existing in the system. The various steps involved in the proposed model are as follows:

Step 1. Analyze the director's report. This is a very important step as it indicates the areas where one should concentrate while going in for Profit & Loss statement analysis and Balance Sheet Analysis. It also helps in understanding the management of the company and understanding the market position of the company and its future outlook.

Step 2. Analyze the P&L statement, Balance Sheet and compute MPBF.

Step 3. Financial ratio analysis. Important ratios pertaining to liquidity, profitability, safety and efficiency should be found out. This can be compared with the industry average.

Step 4. Common size analysis: This offers additional insight vis-à-vis financial ratio analysis as balance sheet and income statement items are expressed as percentages.

Step 5. Making use of financial distress prediction models: Models like Altman Z score and Springate model are quite effective for estimating the associated default risk and hence arriving at a decision for sanctioning of loan.

Step 6. Industry analysis and market analysis help to understand the current position of the company and also to estimate future trends of the company.

Step 7. Understanding the management of the company: This helps to determine whether the company is in safe and efficient hands or not.

ACHIEVEMENT

Worksheets for financial ratio analysis, common size analysis and distress prediction were developed and they are now being actually used by the bank.

EPILOGUE

The objective of the summer project has been met. But the road ahead should not be overlooked.

Following points need to be considered:

- How to go for projecting future values of income statement and balance sheet?
- Risk – return analysis needs to be considered. This would have a definite bearing on the interest rate being charged.
- How to go in for credit rating?
- What should be the weighting given to each parameters of the model like financial ratios, distress prediction scores, market analysis, etc.?
- The credit policy system should endeavor to comply with norms as laid down by the Basel Committee.

ANNEXURE

DISTRESS PREDICTION MODELS

(A) ALTMAN Z SCORE MODEL

Edward I. Altman was the first person to successfully use step-wise multiple discriminate analysis to develop a prediction model with a high degree of accuracy. Using the sample of 66 companies, 33 failed and 33 successful, Altman's model achieved an accuracy rate of 95.0%. Altman's model takes the following form -:

$Z = 1.2A + 1.4B + 3.3C + 0.6D + .999E$

A = Working Capital/Total Assets

B = Retained Earnings/Total Assets

C = Earnings before Interest and Taxes/Total Assets

D = Market Value of Equity/Book Value of Total Debt

E = Sales/Total Assets

Z score interpretation

> 3.0	Company is financial sound
2.7 to 2.99	Company needs to exercise caution
1.8 to 2.7	May go bankrupt within 2 years
<1.8	Likelihood of bankruptcy is very high

Working Capital/Total Assets (WC/TA).

The working capital/total assets ratio, frequently found in studies of corporate problems, is a measure of the net liquid assets of the firm relative to the total capitalization. Working capital is defined as the difference between current assets and current liabilities. Liquidity and size characteristics are explicitly considered. Ordinarily, a firm experiencing consistent operating losses will have shrinking current assets in relation to total assets. Of the three liquidity ratios evaluated, this one proved to be the most valuable. Two other liquidity ratios tested were the current ratio and the quick ratio. There were found to be less helpful and subject to perverse trends for some failing firms.

Retained Earnings/Total Assets (RE/TA).

Retained earnings is the account which reports the total amount of reinvested earnings and/or losses of a firm over its entire life. The account is also referred to as earned surplus. It should be noted that the retained earnings account is subject to "manipulation" via corporate quasi-reorganizations and stock dividend declarations. While these occurrences are not evident in this study, it is conceivable that a bias would be created by a substantial reorganization or stock dividend and appropriate readjustments should be made to the accounts. This measure of cumulative profitability over time is what I referred to earlier as a “new” ratio. The age of a firm is implicitly considered in this ratio. For example, a relatively young firm will probably show a low RE/TA ratio because it has not had time to build up its cumulative profits. Therefore, it may be argued that the young firm is somewhat discriminated against in this analysis, and its chance of being classified as bankrupt is relatively higher than that of another older firm, *ceteris paribu*s. But, this is precisely the situation in the real world. The incidence of failure is much higher in a firm’s earlier years. In 1993, approximately 50% of all firms that failed did so in the first five years of their existence (Dun & Bradstreet, 1994). In addition, the RE/TA ratio measures the leverage of a firm. Those firms with high RE, relative to TA, have financed their assets through retention of profits and have not utilized as much debt.

Earnings Before Interest and Taxes/Total Assets (EBIT/TA).

This ratio is a measure of the true productivity of the firm's assets, independent of any tax or leverage factors. Since a firm's ultimate existence is based on the earning power of its assets, this ratio appears to be particularly appropriate for studies dealing with corporate failure. Furthermore, insolvency in a bankrupt sense occurs when the total liabilities exceed a fair valuation of the firm's assets with value determined by the earning power of the assets. As we will show, this ratio continually outperforms other profitability measures, including cash flow.

Market Value of Equity/Book Value of Total Liabilities (MVE/TL).

Equity is measured by the combined market value of all shares of stock, preferred and common, while liabilities include both current and long term. The measure shows how much the firm's assets can decline in value (measured by market value of equity plus debt) before the liabilities exceed the assets and the firm becomes insolvent. For example, a company with a market value of its equity of $1,000 and debt of $500 could experience a two-thirds drop in asset value before insolvency. However, the same firm with $250 equity will be insolvent if assets drop only one-third in value. This ratio adds a market value dimension which most other failure studies did not consider.

Sales/Total Assets (S/TA).

The capital-turnover ratio is a standard financial ratio illustrating the sales generating ability of the firm's assets. It is one measure of management's capacity in dealing with competitive conditions. This final ratio is quite important because it is the least significant ratio on an individual basis. In fact, based on the univariate statistical significance test, it would not have appeared at all. However, because of its unique relationship to other variables in the model, the sales/total assets ratio ranks second in its contribution to the overall discriminating ability of the model.

(B) SPRINGATE MODEL

This model was developed in 1978 at S.F.U. by Gordon L.V. Springate, following procedures developed by Altman in the U.S. Springate used step-wise multiple discriminate analysis to select four out of 19 popular financial ratios that best distinguished between sound business and those that actually failed. The Springate model takes the following form -:

$Z = 1.03A + 3.07B + 0.66C + 0.4D$

$Z < 0.862$; then the firm is classified as "failed"

WHERE A = Working Capital/Total Assets

B = Net Profit before Interest and Taxes/Total Assets

C = Net Profit before Taxes/Current Liabilities

D = Sales/Total Assets

This model achieved an accuracy rate of 92.5% using the 40 companies tested by Springate. Botheras (1979) tested the Springate Model on 50 companies with an average asset size of $2.5 million and found an 88.0% accuracy rate. Sands (1980) tested the Springate Model on 24 companies with an average asset size of $63.4 million and found an accuracy rate of 83.3%.

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