Chapter-6

Summary, Findings & Suggestions
Summary

Small-scale industries play very important role in the economic development of any developing or under-developed country. These industries meet the twin needs viz. solution of unemployment problem and checking the economic concentration in the hands of a few. These industries encourage self sufficiency, self-reliance and coordination. They provide beneficial reallocation of available resources and their proper utilization. The traditional village and cottage industries provide a vital means of livelihood to village artisans. These industries create the scope of employment to the rural persons.

In India Small scale industry has been accorded an important place, constituting nearly 40 percent of the total output in the private sector. Much more significant is the employment generation capacity of small scale industry. India operates today in sheer size what is perhaps the largest small industries programme in any developing country. The growth of small industry, as a priority sector has been sought to be promoted over years through various government policies and measures.

It has been observed that the SSI sector has grown rapidly over a period of time (1991-2006). The production of the SSI sector has increased at a compound growth of 18.48 per cent. The employment has registered a growth rate of 4.64 per cent during the period. The most significant achievement of the SSI sector is its performance in terms of exports, which has recorded a growth rate of 26.47 per cent during the period under review. The SSI sector is confronted with competition from the domestic segment of the large scale sector and multinational units from abroad, particularly after the introduction of the liberalization policy. The growth in the production of SSI sector declined during the nineties as compared with the earlier periods in India.

Punjab inherited a weak industrial base after the partition of the country in 1947. There were 572 registered factories with employment of 37,486 workers in Punjab in August, 1947. Among these factories, the largest number was that of ginning and pressing factories followed respectively by general and electrical engineering, iron and steel smelting, rolling and re-rolling, hosiery, aluminium, cooper and brass; wheat flour and rice milling and so on.
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If we take a look at the situation soon after independence, we see that small scale industries were mainly concentrated in the production of consumer goods such as hosiery, handloom spinning and weaving. Soon after this, Batala town started emerging as the centre of machine tools in the country. By the end of 2000, there was a shift in the small industrial production towards producer goods e.g., machine tools, general and electrical goods. This structural change in the pattern of small industrial production occurred due to two reasons. First, the small industry was shifting from the products e.g. hosiery and handloom products to the consumer goods items such as sewing machines and their parts, bicycle parts, electrical fans, etc. Second, the relative importance of export earnings and import savings products such as sports goods and machine tools was increasing.

The dominance of the small sector in the industrial sector of Punjab in the early nineties is clear from the fact that the small enterprise contributed 81.8 percent in the total net output of the state’s industrial sector in 1990-91. The share of the large sector in India was 49.9 percent of the net industrial output, it was only 18.2 percent in Punjab. Small enterprise were further categorized into the household and the non-household. The household industry accounted for about 34 percent of the total net output of 81.8 percent whereas at the national level it was only 16.9 percent. This shows that the household sector dominated the Punjab economy as compared to India.

By the end of 2000, the number of registered working small-scale industrial units in Punjab was 14,827 while for the country as a whole it was 1,59,000 Punjab’s share in this respect stood at 9.33 percent. These small units with an investment of Rs. 81.54 crore employed 1,23,544 persons. The share of this registered small sector of Punjab was 7.74 percent in the case of fixed investment and 7.48 percent with regard to employment in this sector for the country as a whole. The gross value of output of this sector in Punjab was Rs. 243.39 crore and it was about 9.35 percent of the all-India figure. The average employment in these units in Punjab was nine persons and the per unit output was Rs. 1.78 lakh.

Inspite of its importance, the small-scale sector is beset with the problem of sickness. Sickness is a natural concomitant of market economy. An industrial unit is considered sick when its financial position is not satisfactory and it becomes worse year after year. It incurs losses and its capital reserves may be stretched out in course
of time. When its current liabilities are more than current assets, the organization may not be in a position to pay its liabilities. Presently the small scale industrial sector suffers from a high rate of mortality and growing incidence of sickness. According to latest estimates, the percentage of sick unit in the small scale industry varies from ten to fifty percent in various states. At the end of 2001, 249630 (7.4 percent of total SSIs) were sick (Economic Survey 2001-02). The number of SSIs which was 9.60 lakhs in 1981-82 has increased to 33.70 lakhs in 2000-01. The number of sick SSIs has increased from 25342 in 1981-82 to 249630 in 2000-01. The number of sick units as a percentage to total SSIs is continuously increasing from 1981. In Punjab 3134 units were declared sick and the large number of industrial sick units are located in Ludhiana followed by Amritsar, Jalandhar, Bathinda districts. About on 23% of total sick units have been found in Ludhiana (source R.B.I report).

During the post liberalisation period no such study appears to have been done in India, which has used discriminant analysis by taking financial and macro economic variables data for the prediction of industrial sickness. It is believed that the present study will help in predicting industrial sickness at the early stage and for taking remedial actions.

In the present study efforts have been made to identify the factors leading to industrial sickness in small scale industries in Punjab and developing a model of industrial sickness based on financial ratios and macro-economic variables.

In the present study, analysis have been carried out in two parts. In the first part an attempt has been made to find out the relation between the various factors and sickness. A questionnaire was given to 100 respondents and on the basis of there answers an attempt has been made to find out the relationship among various factors i.e. age, education, nature of operations, nature of unit and sickness. In the second part, two group linear-discriminant analysis has been used for five years before sickness. The discriminant function has been developed for each year separately. For this purpose a sample of sixty industrial units i.e. thirty sick units and thirty healthy units was taken. The size was measured in terms of capital employed, sales and total assets.
Fifty-four financial ratios were chosen on the basis of their importance in earlier studies and their relevance to the present study. These ratios were categorized under the head liquidity, activity, solvency and profitability. Six macro economic variables were also selected to know their effect along with financial ratios. The discriminant analysis has been used on these financial ratios and macro economic variables and predictive accuracy of the models was estimated. The student t-test was also applied on the financial ratios to identify the difference, if any, between their mean values.

6.1 Findings

6.1.1 Findings on basis of Entrepreneur’s opinion

It has been found in the study that the units located in urban areas are less prone to sickness than the units located in rural areas and also the sole proprietorship units are more prone to sickness than the partnership firms or units. It may be on account of their limited capital resources. It has also been found that the units owned by professionally and technically educated entrepreneurs are managed more efficiently and their units are less prone to sickness as compared to the units managed by the less educated entrepreneurs. In this study, positive relationship has been found between the age of the entrepreneur and industrial sickness. Higher the age more is the chances of sickness. The extent of sickness is more in seasonal units than the in perennial units. Seasonal units are more prone to sickness due to their idle capacity during the off season. The units which are financed through money lenders, friends or family members are more prone to sickness than the units which are financed through banks and financial institutions.

The main internal causes pointed out by the entrepreneur, which lead to sickness in accordance to their importance (as given by entrepreneur) are inappropriate financial structure, obsolete machinery, poor utilization of assets and poor working capital management. The main external causes pointed out by the entrepreneurs in order of their importance are restraints/restriction on purchases, strict credit policy, excessive taxation policy, market recession and non-availability of raw material. The various symptoms of sickness pointed out by them in order of their importance are profit fluctuation, downward trend in sales and stagnation, failure to
pay statutory liabilities and weak equity base. The various yardsticks suggested by them for measuring performance of revived sick units in order of their importance are increase in profitability, maximum use of financial resources, servicing of past liabilities and timely payment of current liabilities.

6.1.2 Findings of student t-test

The student t-test results revealed that there was a significant difference between the financial ratios of the sick units and healthy units. The mean values of the ratios of sick units and healthy units have been found to be statistically significantly different.

There has been a statistically significant difference between the mean values of profitability ratios, liquidity ratios and solvency ratios of the sick units and healthy units. The mean ratios of debt to equity, debt to value and fixed assets to shareholders' funds have also been found statistically significantly different for sick units and healthy units. However no significant difference in the activity ratios of sick units and healthy units has been observed. The activity ratios comprise of debtors turnover, creditors turnover, inventory turnover and working capital turnover ratio.

As expected the mean value of earnings and cash flow and return on investment have been found statistically significantly different for sick units and healthy units. Similarly, the ratios of cash flow from operations to total debt, return on equity, and net income to fixed assets, cash to total assets and working capital to total assets have been statistically significant different means. These ratios have been found to be unfavourable in sick units.

6.1.3 Results of the discriminant analysis

6.1.3.1 Results based on financial ratios only

The separate discriminant functions have been developed for each of the five years before the sickness separately. These are as under:

\[
D_1 = -2.333 + 7.423V_{14} + 2.130V_{12} - 0.017V_{15} + 0.060V_{17} + 0.002V_{24} + 9.333V_{29} - 1.736V_{33} + 4.412V_{41} - 0.124V_{43} + 0.878V_{46} + 1.993V_{49} + 0.118V_{53}
\]

\[
D_2 = 0.304 - 0.041V_{18} + 2.443V_{28} - 2.474V_{29} + 6.552V_{50} V_3 = -1.041 + 3.448V_{30} -
\]
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\[ 5.292 \, V_{32} + 0.644 \, V_{49} \]

\[ D_4 = -1.894 + 0.00013 \, V_{17} + 3.373 \, V_{30} + 7.165 \, V_{31} - 3.952 \, V_{33} + 5.624 \, V_{48} \]

\[ D_5 = -1.315 + 0.275 \, V_{22} + 3.329 \, V_{25} + 8.701 \, V_{31} - 2.354 \, V_{33} + 0.760 \, V_{49} \]

\[ D_1 ..5 = \text{Overall Index} \]

\[ V_{15} = \text{Inventory turnover ratio} \]

\[ V_{18} = \text{Net sales / capital employed} \]

\[ V_{24} = \text{Net sales / cash} \]

\[ V_{26} = \text{Debt to equity ratio} \]

\[ V_{33} = \text{Loan funds / (loan funds + paid up share capital)} \]

\[ V_{32} = \text{Secured creditors / total assets} \]

\[ V_{41} = \text{Cash flows / total debt} \]

\[ V_{43} = \text{Net income / fixed assets} \]

\[ V_{49} = \text{Net income / total debt} \]

\[ V_{53} = \text{Interest coverage ratio} \]

\[ V_{12} = \text{Working capital / total assets} \]

\[ V_{17} = \text{Creditors turnover ratio} \]

\[ V_{22} = \text{Net sales / current assets} \]

\[ V_{25} = \text{Cash / operative expenses} \]

\[ V_{29} = \text{Debt / total value ratio} \]

\[ V_{31} = \text{Unsecured creditors/total assets} \]

\[ V_{33} = \text{Long term debt / total assets} \]

\[ V_{43} = \text{Cash flow form operations / interest} \]

\[ V_{48} = \text{Net income / share capital} \]

\[ V_{50} = \text{Net income / working capital} \]

The mean value of discriminant scores of sick units and healthy units, calculated from the discriminant functions, for the one, two, three, four and five years before the sickness has been given below:
SUMMARY, FINDINGS AND SUGGESTIONS

Table: 6.1

Group Centroids, Eigen Value, A. and \( \lambda \) of the Discriminant Functions

<table>
<thead>
<tr>
<th>Groups</th>
<th>One year before sickness</th>
<th>Two year before sickness</th>
<th>Three year before sickness</th>
<th>Four year before sickness</th>
<th>Five year before sickness</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sick Units D Score</td>
<td>-4.766</td>
<td>-1.625</td>
<td>-1.546</td>
<td>-1.471</td>
<td>-1.313</td>
</tr>
<tr>
<td>Healthy Units D Score</td>
<td>4.766</td>
<td>1.625</td>
<td>1.546</td>
<td>1.522</td>
<td>1.358</td>
</tr>
<tr>
<td>Cut off Point (( C_{crit} ))</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0.0255</td>
<td>0.0225</td>
</tr>
<tr>
<td>Eigen value</td>
<td>23.497</td>
<td>2.732</td>
<td>2.472</td>
<td>2.318</td>
<td>1.846</td>
</tr>
<tr>
<td>Wilks' A</td>
<td>0.041</td>
<td>0.268</td>
<td>0.288</td>
<td>0.301</td>
<td>0.351</td>
</tr>
<tr>
<td>( X^2 )</td>
<td>166.325</td>
<td>73.756</td>
<td>70.328</td>
<td>65.359</td>
<td>57.003</td>
</tr>
</tbody>
</table>

The inference based on the above analysis are as under:

- It has been observed from the discriminant functions that the set of variables discriminating between sick units and healthy units in different years before the sickness have been different. The number of variables which have properly discriminated between sick units and healthy units just one year before the sickness have been largest. The predictor variables decreased to four or five as we moved away from one year before of sickness.

- The variables, which best discriminated between sick units and healthy units for the case of one year before sickness, have been found to be debt service coverage ratio, cash flow ability to service debt, net income to total debt, debt to value and inventory turnover ratio. All these ratios are indicates the poor financial health of the units. These variables are important for taking managerial decisions and taking preventive actions to prevent the declining financial health of the sick units.

- The debt service coverage ratio (EBITI interest) has highest contribution (23.72%) in discriminating between sick units and healthy units one year
before the sickness. The second highest contributor ratio has been cash flow from operations to interest followed by debt to value ratio, cash to current assets ratio, inventory turnover ratio and cash flow from operations to total debt ratio.

- The variables those discriminated best in the case of two year before the sickness have been found to be capital employed turnover ratio, debt to equity ratio, debt to total value and net income to working capital ratio. The net income to working capital ratio has made highest contribution (40.33) followed by debt to equity ratio, in discriminating the sick and healthy units.

- In the case of three year before sickness, the predictor variables of sickness are debt to (debt + paid up share capital), secured creditor to total assets and net income to total debt. The secured creditors to total assets ratio has made the highest contribution (45.03%), but it did not appear in discriminant model in any of the other four years. Net income to total debt was also among the predictor variables in first and fifth year before the sickness.

- The predictor variables of the model for four years before sickness, have been creditors turnover, net income to total debt, secured creditors to total assets, unsecured creditors to total assets and loan fund to (loan funds and share capital). The unsecured creditors to total assets ratio has made highest contribution in discriminating four year before the sickness.

- The variables that discriminated best in the fifth year before the sickness has been current assets turnover, cash to operating expenses, unsecured creditors to total assets, long term debt to total assets and net income to total debt. The unsecured creditors to total assets ratio has made highest contribution in discriminating score five year before the sickness.

- The cut off point for classification of sick units and healthy units has the mean value of discriminant scores of the two groups of units the sick units and healthy units. A unit with the discriminant score less than the cut off point (given in Table: 6.2) it has been classified as sick unit and vice versa.
Table 6.2

<table>
<thead>
<tr>
<th>Years</th>
<th>Correct Classification Rate (%)</th>
<th>Misclassification Rate (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>One year before sickness</td>
<td>100.0</td>
<td>0.0</td>
</tr>
<tr>
<td>Two years before sickness</td>
<td>96.7</td>
<td>3.3</td>
</tr>
<tr>
<td>Three years before sickness</td>
<td>95.0</td>
<td>5.0</td>
</tr>
<tr>
<td>Four years before sickness</td>
<td>91.7</td>
<td>8.3</td>
</tr>
<tr>
<td>Five years before sickness</td>
<td>88.3</td>
<td>11.7</td>
</tr>
</tbody>
</table>

The accuracy of the discriminant function models has been found to be 100%, 96.7%, 95%, 91.7% and 88.3% in predicting the sickness from one to five years before the sickness. As one would expect, the accuracy of the discriminant function to decrease when period gap of prediction is increased.

6.1.4 Results Based on Financial Ratios and Macro – Economic Variables:

When the macro-economic variables have also been considered along with the financial ratios, surprisingly there has been very little effect on the discriminant function models. The set of variables appeared in the discriminant function of first year and second year before the sickness have been found to be different. The separate discriminant functions have been developed for each of the five years before the sickness separately. But the discriminant functions were same for third, fourth and fifth year before the sickness as these have been without taking into account the macro-economic variables. The discriminant function models for first year and second year before sickness have been as:

\[ D_1 = 5.524 + 9.476 V_4 + 3.016 V_{12} - 0.019 V_{16} + 0.061 V_{17} + 0.002 V_{24} + 11.046 V_{29} + 3.434 V_{30} - 2.0^{*}V_{33} + 5.061 V_{41} - 0.146 V_{43} + 1.318 V_{46} + 0.046 V_{48} + 1.639 V_{49} + 0.138 V_{63} - 0.027 V_{60} \]

\[ D_2 = 0.058 + 2.458 V_{31} - 2.284 V_{32} + 6.085 V_{54} \]

The mean value of discriminant scores of sick units and healthy units, calculated from the discriminant functions, for the first year and second year before
the sickness has been given below:

Table: 6.3
Group Centroids, Eigen Value, \( A \) and \( X^2 \) of the Discriminant Functions

<table>
<thead>
<tr>
<th>Groups</th>
<th>One Year before sickness</th>
<th>Two Years before sickness</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sick Units o Score</td>
<td>-5.630</td>
<td>-1.605</td>
</tr>
<tr>
<td>Healthy Units o Score</td>
<td>5.630</td>
<td>1.551</td>
</tr>
<tr>
<td>Cut off Point (Cent)</td>
<td>0</td>
<td>-0.027</td>
</tr>
<tr>
<td>Eigen value</td>
<td>33.788</td>
<td>2.576</td>
</tr>
<tr>
<td>Wilks' A</td>
<td>0.030</td>
<td>0.280</td>
</tr>
<tr>
<td></td>
<td>177.765</td>
<td>70.719</td>
</tr>
</tbody>
</table>

\( D_2 = \) Overall Index  
\( V_4 = \) Cash / current assets  
\( V_{15} = \) Inventory turnover ratio  
\( V_{24} = \) Net sales / cash  
\( V_{30} = \) Debt to equity ratio  
\( V_{32} = \) Secured creditors/total assets  
\( V_{45} = \) Cash flow from operations / total debt  
\( V_{46} = \) Net income / fixed assets  
\( V_{49} = \) Net Income / Total Debt  
\( V_{54} = \) EBIT / capital employed  
\( V_{12} = \) Working capital / total assets  
\( V_{17} = \) Creditors turnover ratio  
\( V_{29} = \) Debt / total value ratio  
\( V_{31} = \) Unsecured creditors / total assets  
\( V_{33} = \) Long term debt / total assets  
\( V_{43} = \) Cash flow from operations / interest  
\( V_{48} = \) Net income/paid up share capital  
\( V_{53} = \) Debt service ratio  
\( V_{60} = \) % change in bank rate
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- Fifteen variables have been found to be effective in discriminating between sick units and healthy units one year before sickness. The ratio of loan funds to (loan funds + share capital), net income to share capital and % change in bank rate have been selected in addition to the twelve ratios selected without macro-economic variables.

- In the first year before sickness only one macro-economic variable i.e. % change in bank rate, appeared in the discriminant function. But its effect was very low. It has contributing just 2.89% of the total contribution made by all predictor variables.

- Two year before the sickness although different predictor variables appeared in the discriminant function than the variables selected without taking macro-economic variables, but no macro-economic variable has been selected in the discriminant function itself. Only three variables have been found to be effective in discriminating between sick units and healthy units two year before sickness. These have been interest coverage ratio, ratio of unsecured creditors to total assets and secured creditors to total assets. There has been no change in the discriminant function for third, fourth and fifth years before sickness.

- One year before sickness, debt service ratio (EBIT/interest) has made highest contribution in the discriminant function followed by cash flow from operations to interest, debt to total value ratio, cash to total assets, inventory turnover ratio and cash flow from operations to total debt ratio.

- In the two year before sickness also, debt service ratio has made highest contribution to the discriminant function followed by secured creditors to total assets and unsecured creditors to total assets.

Table 6.4

<table>
<thead>
<tr>
<th>Years</th>
<th>Correct Classification Rate (%)</th>
<th>Misclassification Rate (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>One year before sickness</td>
<td>100.0</td>
<td>0.0</td>
</tr>
<tr>
<td>Two years before sickness</td>
<td>96.7</td>
<td>3.3</td>
</tr>
</tbody>
</table>

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SUMMARY, FINDINGS AND SUGGESTIONS

The accuracy of the discriminant functions first year and second year before sickness with macro economic variables has been found to be 100% and 96.7% respectively.

Table 6.5
Classification Results of Two Years Before Sickness

<table>
<thead>
<tr>
<th>Actual Membership</th>
<th>Predicted Group Membership</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>G1</td>
<td>G2</td>
</tr>
<tr>
<td>Count</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Year 1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>100% of original grouped cases classified</td>
<td>Count</td>
<td>G1 150</td>
</tr>
<tr>
<td></td>
<td>%</td>
<td>G1 100</td>
</tr>
<tr>
<td>Year 2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>96.7% of original grouped cases correctly classified</td>
<td>Count</td>
<td>G1 135</td>
</tr>
<tr>
<td></td>
<td>%</td>
<td>G1 96.7</td>
</tr>
</tbody>
</table>

It has been observed from discriminant scores table that all units have been placed in the right group. This means sick units are predicted in sick group and healthy units in healthy group. The model has classified 100% of the original cases correctly one year before sickness.

It has been observed that one unit has greater score than -0.027. It has been taken into healthy group of unit but actually it is a sick unit. All the healthy units have been correctly classified. 96.7% of the total sick units and 100% of healthy units have been correctly classified. 3.3% of sick units have been misclassified. 98.3 of the original grouped cases have been classified correctly two year before sickness.

The accuracy of the discriminant functions for the five years has been shown below:
Table : 6.6
Accuracy of the Discriminant Functions

<table>
<thead>
<tr>
<th>Years</th>
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</tr>
<tr>
<td>Five years before sickness</td>
<td>88.3</td>
<td>11.7</td>
</tr>
</tbody>
</table>

The accuracy of the discriminant function is decreasing as we move away from one year ahead before sickness.

When the macro-economic variables have been taken along with the financial ratios, the results have been found to be different for the first and second year before sickness. The results have been found same from third to fifth year before sickness. 15 variables are effective in discriminating between sick units and healthy units one year before sickness. The ratio of loan funds to (loan funds + share capital, net income to share capital and % change in bank rate) are selected in addition to the 12 ratios selected without macro economic variables. Only 3 variables have been found to be effective in discriminating between sick units and healthy units 2 year before sickness. These are interest coverage ratio, ratio of unsecured creditors to total assets and secured creditors to total assets.

There is 100% and 96.7% accuracy of the discriminant functions one year and two year before sickness with macro economic variables.
6.2 Conclusion

From the foregoing analysis, it can be concluded that:

- The significant variables that point towards sickness are cash ratio, working capital to total assets ratio, inventory turnover, debt to equity ratio, loan funds to total funds, net income to fixed assets, return on assets, debt service ratio, cash flow from operations to interest and annual percentage change in the bank rate.

- When the macro-economic variables are used along with the financial ratios in developing discriminant model, no change in the discriminant function for the year three, four and five before the sickness has been observed. Fifteen variables instead of twelve variables appeared in the discriminant model for one year before the sickness. The macro economic variables, annual percentage change in the bank rate, and financial ratios such as debt ratio and income to share capital appeared in the model along with the twelve financial ratios that appeared in the financial ratios discriminant model. The financial ratios such as interest coverage ratio, ratio of unsecured creditors to total assets, secured creditors to total assets and return on assets appeared in the discriminant model of two year before the sickness. It appears that financial ratios based discriminant model could be used for predicting industrial sickness.
6.3 Suggestions

The industrial sickness adversely affects the economic growth of a country. It results in loss of capital, production and employment and brings panic among the owners, financial institutions, the government, investors and the employees. India being a developing country with limited economic resources and high unemployment can not afford this situation. Industrial sickness is the process that takes considerable period of time. With the awareness of the symptoms of sickness it is possible to minimize the failure of sick units. The following suggestions may prove useful in minimizing the incident of sickness.

To remove the sickness in small scale sector a few suggestions at different levels are made on the basis of forgoing study:

1. Adequate infrastructural facilities shall be provided in the rural areas to minimize industrial sickness as it has been found that units located in rural areas are more prone to sickness.

2. The financial resources of small scale sector particularly that of sole proprietary concerns is limited. These limited resources may lead to industrial sickness. The liberal financial assistance at the low rate of interest shall be provided to this sector for the acquisition of fixed assets and working capital. The central government shall also take steps to reinforce the existing revival and rehabilitation packages making them more efficient to eradicate sickness in Small scale industries.

3. Separate institution shall be set up, to monitor the symptoms of magnitude of the sickness regularly in small scale units so that corrective action can be taken at the early stage of sickness.

4. The state government should consistently monitor the progress of revival of sick units and it should ensure that the concessions or relief’s given by different government departments at the state level shall reach to these units. If the unit is irregular in the payments the concerned authorities should be informed immediately in order to take timely actions to reset the unit.
5. One of the important problems of the sick units is inadequate supply of raw material. The efforts should be made to make available adequate quantity of raw material to Small scale industries so as to keep the production process continuous.

6. The entrepreneur has stated obsolete machinery as main cause of sickness. The state government should set up a mechanism at the directorate of industries at state level to collect detailed information about the latest technology and plant and machinery which is available to small scale industries units. These information’s shall be provided to entrepreneur through DIC to prevent industrial sickness on account of obsolete machinery

7. A centralized data bank of small scale units shall be established and operated by DIC at the district level to monitor the financial and operating performance of small scale units to detect the symptoms of sickness at the earliest stage. It should be empowered to sanction the relief’s and all concessions to the sick small scale industrial units in its jurisdiction for which special fund may be created.

8. Banks and financial institutions should also keep positive attitude to revive the sick small scale sector industrial units. Simultaneously bank should keep proper control over these units by periodical appraisal to ensure financial assistance has been properly used to revive these units.

9. The entrepreneurs should conduct periodical studies of his business variables. Prenatal care should be taken in order to avoid infant sickness.

10. The entrepreneurs should be given training on technical and managerial backgrounds. Theoretical knowledge in combination with field experience will definitely help the entrepreneurs to run their unit efficiently.

11. Deficiencies in production management are the key factor which leads the units to fall sick. The entrepreneur should give proper attention on maintenance and renovation of existing machinery in order to ensure smooth flow of production.
12. The entrepreneur shall be guided and motivated to produce, if possible filling products during the off season by using same plant and machinery in the case of seasonal industry it will help in minimizing the incident of sickness.

6.4 Area for Future Research

Although, financial ratio analysis in the model developed shows a high degree of accuracy, it is necessary to emphasis that continuing research is also needed in this area to achieve degree of refinement. At this point, there appear to be a scope of further research in the following areas:

1) The inclusion of non financial measures like operational and technical parameters might improve the results of the present study. A combination of operational technical and financial parameters may prove a better indicator between sick and healthy units for early detection of sickness.

2) The research in the direction of analyzing the impact of price level adjustments on predictive ability of financial ratios is also important.

3) The limitation of secondary data has remained within this study. A more useful and practical study can be undertaken by collecting data from primary sources. Further the model should be updated after four or five years in the light of the additional information or changes in the overall economic environment as the predictive power of the ratios keeps on changing with the environment.

4) There is further scope to carry-out district-wise and industry-wise analysis between sick and healthy units as the predictive power of the ratios may be different for different geographical location/industries.