CHAPTER ONE

INTRODUCTION

1.1 This dissertation is on industrial sickness in India. Industrial sickness, as we know, is a global phenomenon. Whatever be the reasons for industrial sickness, the *sine qua non* of industrial sickness is that production fails to maintain cost–effectiveness, as a result of which the firm or a group of firms cannot maintain competitive efficiency. As the firm fails to meet the sunk cost, it has to close its operation. In the era of globalisation, when the economies are opening up, industrial units are increasingly being exposed to global competitiveness. The units with better technological know-how and managerial efficiency gradually eliminate others from the market. Those who cannot survive are to face the reality of getting sick and closing the operation unless they take up turnaround management and get adapted to the emerging scenario of maintaining efficiency through technological upgradation.

1.2 This brings us to the core area of our research. In order to adopt the turnaround management, the firm should get a signal that there is a threat to the existing order. The top management thus understands that there is some threat to the existing business. Whether this is reflected in the financial data of the company is the basic issue which, as we understand, has not been addressed properly in the existing literature on industrial sickness. Quantitative analysis of industrial sickness based on financial data of a company has been done by various experts following Altman's seminal work on this subject\(^1\). As we discuss in this dissertation, such analyses suffer from a basic limitation. The financial ratios which are earmarked for such an analysis are usually selected on the basis of some *a priori* considerations. The rationale for such selections has been provided by considering the theoretical implications of the chosen ratios which do not appear to have any macro foundation. As we discuss in this thesis, such a procedure might not provide us a robust set of financial ratios for analysing firm level sickness. We, on the

---

other hand, have started with macro ratios, i.e., the ratios that have been widely used by 
the economists for finding out the efficiency of a particular industry. Low efficiency 
indicating threats to viability in operation have been identified and the corresponding 
financial ratios were worked out. We then tried to experiment with these ratios so as to 
find out whether they can discriminate between good performing and bad performing 
firms. Such ratios were, therefore, translated in terms of accounting ratios which were 
then applied to a set of firms for which financial data were available for ten successive 
years.

1.3 The findings based on the discriminant analysis were quite revealing. These ratios 
which were generated endogenously, i.e., by considering economic indicators of 
efficiency, were found to be quite robust so much so that we could apply them on a set of 
panel data carefully developed from the PROWESS database and the standard analysis 
based on Z score was performed.

1.4 The basic issue, however, was to develop a predictive model, i.e., a model that could 
predict the probability of sickness that a firm is exposed to. This is necessary for getting a 
signal at the firm level so that the management can get prepared for turnaround 
management, if the probability of the firm being sick is found to be high. This exercise 
was done on the basis of a given data set by applying the tools of binary logistic 
regression. As we observed in Chapter Nine of this dissertation, the model appears to be 
quite robust. We may submit that this model is user-friendly as well. What one would 
need is a set of balance sheet and profit and loss account items of a company and apply 
them in the model. The required financial ratios and the consequent outcome in terms of 
probability of getting sick, given that the balance sheet and profit and loss account entries 
are dependable, will come up immediately.

1.5 This research theme has been developed in the context of the Indian firms. The firm 
level data aggregated at industry level at various digits are available in the official data 
published by the Annual Survey of Industries (ASI). We collected these data and 
organised them at two digit level for analysing industry level performance pertaining to
various performance indicators with respect to the time series data. We considered both $\sigma$
convergence and $\beta$ convergence with respect to fifteen groups of industries. Following
this, we identified such industry groups which appear to perform well as also such group
of industries which were harbouring most of the sick units. Such an analysis was done on
the basis of a select set of macro ratios that might indicate the status of performance of a
particular group of industry. The selection of macro ratios was done keeping an eye to the
research need of identifying the financial ratios that would correspond to the selected
macro ratios. The issue of finding the correspondence has been discussed elaborately in
Chapter Six and Chapter Eight of this dissertation.

1.6 The focus of the research, however, was on firm level analysis. For identifying the
good performing and bad performing companies, we decided to select about one hundred
firms, evenly drawn from both the groups, for which the balance sheet and profit and loss
account data would be available. The database for performing such an exercise was the
CMIE collected company level financial data which is known as the PROWESS
database. The PROWESS database often suffers from incompleteness, particularly when
one requires the time series data with respect to a particular firm. In order to get a
database for micro level analyses, we had to search over as many as six hundred and
eighty three firms for which the financial data were documented by the CMIE under the
PROWESS database. The time series data for ten successive years being thus collected
from the PROWESS database, we performed the remaining part of our empirical
exercise. The micro ratios corresponding to the macro ratios were utilised first for a
discriminant analysis. The results being encouraging, we extended the exercise further for
developing a predictive model based on binary logistic regression. The findings appear to
be statistically robust. We, however, continued with a validation exercise which also
appeared to substantiate the view that the financial ratios that we have developed might
be useful, at least in the Indian context, for predicting sickness of a company provided the
balance sheet and profit and loss account data are reliable.

1.7 In the following eight chapters, we have elaborated this theme. The findings have
been summarised in Chapter Ten where we also highlight some of the limitations of this
study.