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Editorial

The 27th volume of Business Studies is a compilation of eight research-oriented papers on topics pertinent to contemporary business and its environment. The lead paper serves as a ready-reckoner for management academics and practitioners grappling with the spectrum of methodological choices available in the field of business forecasting. The second paper concentrates on establishing a relationship between income distribution and economic growth. Paper Three provides an interesting glimpse into the pre-and post-globalization performance of the floriculture industry in the Indian context, based on the premise that export-oriented growth in floriculture will flourish in a globalized marketplace. The fourth paper dwells on financial and taxation issues surrounding reverse mortgage loan as an emerging financial product especially meant for senior citizens.

Although this was not intended to be a theme-based volume of the journal, Papers Five through Eight (representing 50% of the publication) converge on examining financial, managerial and conceptual aspects of *small and medium enterprises* (SMEs). This indicates the growing popularity of this theme as a fertile and socially useful area of research in the coming years.

Although the publication of this volume has been considerably delayed, and I, as associate editor, do tender my sincerest apologies in this respect, it is heartening to note that now, the journal is accredited with the ISSN number, as a refereed journal. What may appear as a welcome surprise as well as a matter of pride to our patrons, readers, and contributors (past, current and prospective) is that the ISSN accreditation of the journal was obtained way back in **July 1990**. This information, I hope, will be material to all who are our well-wishers and have been associated in some way with the journal in its glorious past. Additionally, it would put to rest much of the confusion concerning the status of "Business Studies" as a refereed journal.

In future, we resolve to expedite publication of the ensuing volumes of the journal and update the publication process at the earliest opportunity.

Kanika Chatterjee
Associate Editor

Business Forecasting Techniques: An Appraisal for Managers

J. K. Das
Reader, Department of Commerce
University of Calcutta
e-mail : jadabkdas@rediffmail.com

Abstract

Forecasting is an important tool in effective and efficient planning and decision making. Wide varieties of forecasting methods are available in the literature. There are many different areas where an organization need forecasting with different time lag such as short term, medium term and long term forecasting. Broadly there are three types of forecasting methods available: quantitative, qualitative and intuitive. The intuitive and qualitative forecasting is used in the various organizations. Qualitative and intuitive methods are simple and easy to use but not always as accurate as quantitative methods. Quantitative forecasting techniques are more complex in nature but the degree of accuracy of forecasting is much higher than intuitive or qualitative. A number of approaches come under quantitative forecasting methods and they are divided into two broad categories: time series based and explanatory variable based. This paper will attempt to make a thorough review of different forecasting methods available in the literature and their applications with an objective of making the forecasting technique understandable and usable to different people, especially to those belonging to business and management. Special emphasis is also given towards all types of exponential smoothing techniques under time series based forecasting. Some important issues viz. time horizon, forecasting accuracy, data transformation, management decisions, statistical packages etc. have been considerd.

Key-words: Forecasting; quantitative and qualitative methods; time series and explanatory variable; exponential smoothing; forecasting horizon and accuracy.

1. Introduction

In the administration of business, the need for planning is very important. The time lag between need for decision making and the occurrence of an event ranges from several years to few days or hours or even to few seconds. Forecasting is an important tool for effective and efficient planning. It is essential to make reliable and accurate estimates on the future behaviour of relevant variables in the face of uncertainty. There are large number of phenomena whose outcomes can be predicted easily by using forecasting technique. The trend which is able to predict more accurately the wider variety of events, particularly those pertaining to the business environment or economics will continue to provide a better input and support in planning. Formal forecasting methods are the roots by which the improvement over the said technique is occurring. Regardless of this improvement, two important problems must be mentioned. The first is that successful forecasting is not always directly useful to managers and others, in spite of having greater

accuracy. The second one is the distinction between uncontrollable external factors e.g. government policies, preference of customers, market structure, competitions etc. and controllable internal factors e.g. marketing, production, sales, purchase etc. The success of a company depends on both the events, but forecasting is directly applied to the former, while decision making is directly applied to the latter. Planning is actually the way of integrating the both.

Wide varieties of forecasting methods are available for business decisions. These methods range from simple to highly complex. The wide application of computers has led to generate readily available software for applying forecasting techniques. In fact, in an organization there are many different areas requiring forecasting with different time lag such as short term, medium term and long term. Broadly there are three types of forecasting methods: quantitative, qualitative and intuitive. In quantitative method sufficient time series information or the relevant explanatory variables are required. However, qualitative forecasting methods do not require sufficient quantitative information, rather it requires qualitative information. Again intuitive forecasting is applicable to the situation where a little or no information is available. Qualitative and intuitive methods are simple and easy to use but the predictions made by the methods are not always as accurate as quantitative methods. Many business organizations are still using these methods, either because they do not have any knowledge about quantitative methods or they prefer a subjective approach instead of more objective method.

A number of approaches come under quantitative forecasting methods and they are divided into two broad categories: time series based and explanatory variable based. In quantitative forecasting explanatory models assume that the variable to be forecasted exhibits an explanatory relationship with one or more independent variables. According to the explanatory forecasting, any change in the input variables will affect the output of the system in a predictable way, assuming the explanatory relationship will not change. If the data on the explanatory variables are considered over time then it will be called time series regression or panel data regression or longitudinal regression. If the data are all taken at the same time then it is called cross sectional regression. Though cross sectional regression does not deal with time explicitly, many important decisions affecting the future are made on the basis of such studies. Unlike explanatory forecasting, time series forecasting treats the prediction of future is based on historic value of a variable or past errors, but not a explanatory variables which may affect the system. The objective of such time series forecasting methods is to discover the future pattern. Both time series and explanatory models are useful in certain situations. Time series models can be used more easily to forecast, where as explanatory variables can be used with greater success for policy and decision making. Quite often it is possible to use forecast by using either explanatory or time series data. It is also possible to combine both time series and explanatory approaches in number of situations. The performance of different models can be properly evaluated on the basis of accuracy of forecasting. Implementation of forecasting is often as important as forecasts themselves.

One can find several computer-forecasting packages in the market and some of these are very efficient. However, to use them one has to understand the principles and requirements for every method applied. This paper will attempt to make forecasting understandable and usable to different people, specially business people and management personnel as wide as possible.

It is true that uses of quantitative forecasting techniques have no simple and reliable way to predict what will happen when established patterns or relationship changes. Because quantitative forecasting techniques depends their forecast on extrapolations from past patterns and relationships, they work only when future is almost similar to the past. One useful way of approaching the identification for the future is to treat observations as comprising of elements: trend, seasonality, cyclicality and randomness. A major advantage of quantitative forecasting techniques is their ability to identify these elements of time series components in an efficient and fairly objective manner and the first three components (known as systematic components) can be extrapolated for more accurate forecasting.

When quantitative forecasting techniques do not work well, human judgment with an appropriate degree of help and structure is the alternative for predicting the impact of change. Judgmental methods are also subject to a number of shortcomings. The advantage of human based forecasting approaches is that they can identify systematic change more quickly and interpret better the effect of such change in the future. Judgmental methods are most commonly in business and government organizations. Such forecasting are most often made as individual judgments or decisions. While most large organizations do use some quantitative forecasting techniques and a few qualitative methods in a continuous basis. Time series methods seek to identify historical patterns and then forecast using time extrapolation of those patterns.

Explanatory methods seek to identify the relationships that led to observed outcomes in the past and then forecast by applying those relationships to the future. Technological methods addresses long term issues of technological, societal, economic or political nature. Four sub-categories of technological methods are extrapolation (historical patter based), analogy-based, expert based, and normative based (using objectives, goals, and desired outcomes as a basis for forecasting, thereby influencing future events).

In the mid 1950s two major breakthroughs completely reorganized the forecasting field. The first was the introduction of the broad range of exponential smoothing techniques. The greatest advantage of these methods is their simplicity in concept and ease of computation. If forecasts were needed for several thousand items, an enormous amount of work was required to maintain data files. But exponential smoothing techniques simplify the system. The second major breakthrough is the introduction of computer which has made it possible to use not only exponential smoothing but also other forecasting methods on a continuous basis. Since then exponential smoothing techniques have been widely used in business.

During 1950s and 1960s researchers were trying for a unifying the forecasting theory. An approach that incorporated many of the elements of such theory become a reality with the

work of Box and Jenkins(1976 and the references there of). The method provided a systematic procedure for the analysis of time series that was sufficiently general to handle all empirically observed time series data patterns. The new methods came from variety of fields are: Kalman Filter, Vector Autoregressive models, nonlinear time series models (Bilinear model, threshold model, exponential AR model) etc. which will be considered in different articles.

The qualitative forecasting methods are used in the number of organizations. These approaches attempt to deal with long term trends where the historical data and patterns to apply quantitative forecasting approach were not available or not applicable. In the marketing field on the topics of new product and new marketing forecasting, the lack of historical data was also a problem. As the range of methods available in the late 1980s, it becomes clear that some type situations are generally covered much more efficiently by these techniques than others. Existing methods give accuracy fairly well when there is a significant level of consistency but not so well when established pattern or relationships change and it is important to measure the extent of uncertainty involved in the forecasting process.

Important Steps of forecasting

For practical situation of forecasting, the usage of an appropriate model is of great importance. Clearly, an important forecasting model, even when optimized, will be inferior to a more appropriate model. For appropriate model selection, irrespective of the method used, a manager may adopt the following steps:

- Defining the purpose of forecasting to make use of best available information to guide future objectives of an organization.
- Selection of the variables of interest which are to be forecasted.
- Determination the time horizon (short, medium or long term) of the forecast in order to predict appropriate changes in the future.
- Selection of appropriate forecasting model to make projections of future in accordance to the reasons of past changes.
- Collection of necessary data pertaining to variables for forecasting.
- Reduction of the data as per requirement.
- Building up appropriate forecasting model.
- Model extrapolation or actual forecast.
- Evaluation of accuracy of forecasting and implementation of the results.

2. Classification of Forecasting Methods

Wide ranges of forecasting methods available to business decisions: These are most simple to a highly complex method of forecasting. Broadly there are three types of forecasting methods: **quantitative, qualitative and intuitive**. In quantitative method sufficient information, either

time series or explanatory variables are available. Qualitative forecasting methods do not require sufficient quantitative information, but it requires sufficient qualitative information. But intuitive forecasting is applicable to the situation where a little or no information is available.

2.1 Intuitive Forecasting

This method is applicable when practically no information is available. For example, predicting the effect of interplanetary travel; discovery of a very cheap form of energy that produces no pollutions; long ago Charles Babbage predicted need of designing computer; Jules Verne correctly predicted the development of submarines, nuclear energy and travel to moon. Intuitive method is simple and easy to use but not always as accurate as quantitative and qualitative methods.

2.2 Qualitative Forecasting Methods

Qualitative forecasting method does not require data in same manner as quantitative forecasting methods. This method is applicable when some or no quantitative information is available, but huge qualitative information is available. The method often requires inputs from a number of specially trained people. It is more difficult to measure the usefulness qualitative forecasts. Qualitative forecasting techniques are used mostly for long term forecasts. Because of their nature and cost they are used for medium term (formulating strategy, developing new product and technology) forecasting as well. These methods consist of collecting the opinions and judgments of individuals who are expected to have the best knowledge of current activities or future plans of the organization. For example, knowledge of demand pattern and customer plans is often known to marketing executives or product managers.

Qualitative forecasting methods have the advantages that they can incorporate subjective experience as inputs along with the objective data. It is human being that permits assimilation of all types of information and the ultimate issuance of prediction. Since each human being has different knowledge, experience, and perception of reality; qualitative forecasting are likely to differ from one person to another. The less they depend on fact, the less they lend themselves to analysis and resolution of differences of opinions. A number of approaches come under qualitative forecasting methods. Some important methods and their respective references are stated below for easy and continuous readability. However, the detailed of the methods are beyond the scope of discussion. Three broad categories come under qualitative forecasting methods— a) Subjective assessment method or judgmental forecast, b) Exploratory method and c) Normative method.

a) Subjective Assessment or Judgmental Forecasting

Though these approaches are most widely used approach to forecasting (Dalrymple- 1987, Clemen-1989), the substantial limitations are remain unrecognized by managers.The different subcategories under this method are briefly discussed below:

i) The Jury of Executive Opinion

It consists of corporate executives sitting around a table and group what their best estimate for the item to be forecast. The weight assigned to each of the executive's assessment depends on their role and personality of the executives from different organizations. In this method a company generally brings together executives from sales, production, finance, purchasing and administration so as to achieve broad coverage in experience and opinion. A number of companies provide the executives involved in the assessment process with background data on the economy and various information within the company that may be useful in forecasts. This method has been described by many authors (see Dawes-1988, Kahneman et al.-1982, Hogarth and Makridakis-1981, Mentzer and Cox-1984 etc.].

ii) Sales Force Composite Method

This method consists of obtaining views of individual sales people and sales management as to the future sales outlook. The advantages most often cited for the sales force method are that it uses the specialized knowledge of those people closest to the marketplace, it places responsibility for the forecasts to those people who can most affect the actual results and it lends itself to the easy breakdown of forecasts of territory, product, customer or salesperson. This method is generally used by manufacturing concerns that distribute their products through independent channels of distribution rather than through direct contact with the users of their products. For details of this method see Waker and McClelland(1991), Winklhofer et al.(1996), Conference Board(1978) etc.

iii) Anticipatory Surveys and Market Research Based Assessments

Several surveys based on a sampling are prepared on regular basis. Two of these of particular interest is to forecasters deal with business plant and equipment expenditure and purchase of consumer durables. The general goal of such surveys is to determine how much of a given product the consumer plans to use. Sometimes the surveys limited to the customer's expected use of the companies brand of the product, but other times it may relate to the customers' use of several items. Clearly, the market research based assessment only worthwhile when its value exceeds costs. Interested researcher may pursue some of the references cited here [Holloway-1979, Vatter et al.-1978, Raffia -1968, Tryfos-1996, Bailar and Lanphier-1978, Satin and Shastry-1983 etc.].

iv) Individual Subjective Probability Assessments

This method is commonly used to incorporate individual judgment into forecasting. The method attempts to identify a range of values, instead of a single point estimate, for the uncertain events. A critical aspect in using subjective probability assessments as a part of forecasting is using appropriate weights on these individuals who are making those assessments. If the forecaster is to use such subjective estimates developed by the people either internal or external to the company, it must be determined whether those individuals are generally optimistic or

pessimistic in their assessment of their probabilities and various outcomes. A good comprehensive summery of this method is given by Bodily-1982 and Winkler-1987.

b) Exploratory Method

This method starts with knowledge and assessments about the past and seeks to forecast the future. Different techniques or subcategories under exploratory method are briefly discussed below:

i) Scenario Development Method

This method takes a well defined set of assumptions, and then develops an imaginative conception of what the future would be like if these assumptions were true. In this sense, scenarios are not are not future predictions by themselves. Rather they present a number of possible alternatives, each one based on certain assumptions and conditions. It is then up to the decision maker to assess the validity of the assumptions in deciding which scenario is most likely to occur. Much of the work on scenario development method have been developed by Kahn (1964) and Khan et al.(1976).

ii) Role Playing

To increase the forecasting accuracy role-playing approach has a significant impact. This method requires individuals or groups to play certain role and then interact with other individuals or a groups playing a different role (Armstrong, 1987). In physical sciences, the forecast being made cannot change the outcome being predicted (e.g. Weather). But social science or politics forecast can influence the event being forecast (e.g. Sales of a typical product, results of an election etc.).

iii) The Delphi Method

It uses the collective experience and judgment of a group of experts. Each expert is given a questionnaire to complete relating to the area under investigation. A summary is then prepared from all the questionnaires and a copy of it is send to each expert for revision of responses to the question included in the questionnaire in the light of the summary results. This process of summary results is repeated until the desirable consensus is reached. Experts who wish to prepare a forecast from a panel to deal with a specific question, such as when a new process will gain a wide spread acceptance or what new developments will take place in a given field of study, are kept apart so that their judgments will not influenced by social pressure or by often aspects of group behaviour. A number of evaluative studies have been made by Helmer and Rescher (1959), Helmer(1966), Clarke(1973), Sackman(1975) and Linstone and Turoff(1975). The Delphi method has its disadvantages like any qualitative forecasting methods. The most general drawback against is its low level reliability and its oversensitivity results to ambiguity in the questionnaire. In this method various experts can come up with completely different forecasts and these forecasts often are specific.

Technological and environmental forecasting method is also a special type of Delphi method concerned with new developments of technologies and environmental aspects. This type of forecasting is become extremely important to many firms in the present situation. Under technological and environmental forecasting a forecaster will group a diverse range of approaches to forecasting that are focused on the long term and deal with technology or environment. This method can also be used for demographic forecasting, raw material availability, political risk assessment, government and legislative forecasting. This method does not always provide a step by step procedure. Use of this method requires an understanding of the factors involved in each situation and need to adopt the method to that situation.

iv) Cross-Impact Matrices

A cross impact matrix describes two types of data for a set of possible future developments. The first type of estimates the probability that each development will occur within some specified time in future. The second estimates the probability that the occurrence of any one of the potential developments will have an effect on likelihood occurrence of each of the alternatives. For applications of cross impact method see Gordon and Hayward (1968), Linstone and Turoff (1975), Helmer(1977) and Nash(1989).

v) Analogy Method

Analogies are attempted to compare historical patters with existing situations in order to forecast future progress and developments. These forecasts are generally technological in nature and involve changes in various technologies or environment. There are several types of analogies: historical analogies and social physics.

To what extent analogies can be used for technological forecasting is a question that has not yet been thoroughly answered. At the present time they are not used to any great extent, nor have they been used in the past by large number of forecasters. However, they may be useful in particular situations for which data are not available or other methods are not suitable. One advantage of this method is that they can be used intuitively and without much effort in many situations (Ascher, 1978).

vi) Historical or Morphological Research

This method concerns *itself with the development and the practical application of basic methods that will allow us to discover and analyze the structural or interrelationships among objects, phenomena and concepts and explore the results obtained for the construction of a sound world* (Zwicky,1962).This definition of the morphological method goes beyond simple forecasting applications and represents an approach to systematic thinking and problem solving.

vii) Catastrophe Theory

One of the main rationales for catastrophe theory is that the assumption about the random elements is a unimodal distribution which is inappropriate in a number of situations. Here

bimodal or in general multimodal error distributions are assumed which exits in the real world. In such situations the outcome that is observed has as much chance of moving toward one modal point as toward another, so that on average it is very unlikely that it will fall in between those two modes. In fact, the average outcome is extremely unlikely to occur in many instances because not one of the modes. Complete descriptions of the use of catastrophe theory were originally described by Thom (1972) and Zeeman (1976) in forecasting.

c) Normative Method

Many forecasters have considered the use of normative methods of technological forecasting. Two of such methods is Relevance trees and System dynamics.

i) Relevance Trees

This is a type of decision theory and construction of decision trees to help decision maker for the selection of the best course of action or strategy from a number of alternatives. This uses the ideas of decision theory to assess the desirability of future goals and to select those areas of technology whose development is necessary for the achievement of those goals.

Relevance trees can be used for evaluating a wide range of projects. However, it should be realized that the cost of applying this methodology can be significant. Like morphological research, this method involves a large number of alternatives, all of which must be assessed and evaluated. This process requires considerable human and computer resources. Number of illustrations are available in articles by Ascher(1978) and Alderson & Sproull(1971).

ii) System Dynamics

Systems analysis or the systems approach is aimed at considering the relationships among the components of an organization or environment rather than looking at each component. In such applications it is the mutual interaction of each unit with other units that is of interest. Better understanding of the complex pattern of interactions among the elements composing the system often results in better predictions of future behaviour of the system. An example of this approach is system dynamics which was developed by Forrester (1958). System dynamics modeling has been applied to a variety of complex problem areas. System dynamics and traditional forecasting methods should be seen as complementary, one focusing more on internal dynamics and other to external forces.

2.3 Quantitative Forecasting Methods

In quantitative forecasting methods sufficient quantitative information is required. These methods can be used when past information about the variable being forecast is available and information can be quantified as well. Assumption in this method is that the pattern of the past will continue into the future. A number of approaches come under quantitative forecasting methods and they are divided into two types of models. The first type is known as time series model and the second type is explanatory model. Under such methods any change

in inputs will affect the output of the system in a predictable way, assuming the relationship is constant.

a) Explanatory Variable Based or Causal Model

This model can be applied to many systems: a national economy, a company's market or a household. The purpose of this model is to discover the form of the relationship and use it to forecast future values of the forecast variable. In this method any change in inputs will have impact on output of the system in a predictable manner. This method tries to identify the factors which identify the variable in some way or cause it to vary in some predictable way. Explanatory or causal model provides a better understanding of the situation and allows experimentation with different combinations of inputs to study their effects on the forecasts. Sometimes forecaster will be dealing with one dependent variable and one independent variable which is a case of *simple regression*. Sometimes there will be one dependent variable and several independent variables which will be a case of *multiple regression*. Finally in many situations there will be more than one dependent variables as well as and more than one independent variables and sometimes the forecaster will even want to let some variables be both dependent and independent variables, these situations can be handled with *econometric models*. However, in many situations the relation between dependent variable and independent variables can be nonlinear as well. A wide form of nonlinear relation (polynomial, exponential, semi-logarithmic etc.) between dependent variable and one or more independent variables are there which may be a case of *nonlinear regression.*

b) Time series models

A series of observations which are recorded over time are known as time series data. The main approach to the analysis of time series data involves an attempt to identify the components that influence each of the value in a series. There are four general components of a time series:

Trend Component (T): The long term growth or decline in time series.

Seasonal Component (S): A strictly periodic variations with the maximum duration of one year.

Cyclical Component (C): A wavelike fluctuations with the length of the period is more than one year.

Irregular Component (I): Unpredictable or random fluctuations.

Each component is identified separately and the projection of each of the components will be combined to produce the future value of the time series. These methods are used for both short-term and long-term forecasting. A wide variety time series models are available in the literature: decomposition method, exponential smoothing, Box-Jenkins methodology (ARIMA), nonlinear time series models (bilinear model, threshold model, exponential AR model, GARCH model) etc. In this section we will consider some general types of models only and advanced models will be discussed in subsequent articles.

A wide application of forecasting through time series models in the business are: Sales, purchase, production, profit, inventories, demand of a product, stock price, interest rate, saving rate, money supply or demand, bond price, exchange rate, currency demand , bank loan, inflation rate, electricity generation and consumption, employment figures, national and international air passenger, telephone or mobile connection, number of automobiles, roadway passengers, tourists, coal exploration and consumption, export, import, credit or debit cards, savings accounts, internet users etc.

i) Decomposition Method

The decomposition method was introduced by Macauley (1930) who in the1920s introduced the ratio to moving average method. Decomposition method is one of the oldest approaches to time series which has a number of weaknesses from statistical point of view. This method splits the variation in a time series into a trend component, seasonal component, a cyclical component, and a residual.

An impetus in the development of decomposition came with the introduction and wide spread use of computer. Later, the advantages of decomposition approaches have been recognized and efforts are being made to upgrade in the direction of introducing statistical approach into these techniques (See Dagum, 1982). Mclaughlin(1962) developed a forecasting method based on the principle of decomposition. The idea based on which the technique was developed was that time series consisting of the following components: trend, seasonal, cyclical and irregular.

The mathematical model of forecasting (F_t) by decomposition method at the time period t is

$$F_t = T_t + S_t + C_t + I_t \quad \text{(Additive model)}$$

$$F_t = T_t.S_t.C_t.I_t \quad \text{(Multiplicative model)}$$

The additive model gives the best forecasting if the variation of the series fall within a band of fixed width centered on the trend. The multiplicative model is appropriate when variation series increases with time level (see Figure 2 and Figure 3). There is no need to explain the methods of extracting systematic components (trend, seasonal, cyclical) of time series. The irregular component can be forecast as zero for additive model and one for multiplicative model.

ii) Exponential Smoothing

The problem business managers frequently face is that preparing short term forecasts for a large number of different items. The production manager must schedule the production on the basis of some forecast of demand for several different products in a product line. In many of this situation it is not always possible to develop and apply a sophisticated forecasting method for each item. In such situation a class of forecasting methods applies an unequal set of weights

to past data. These weights decay in an exponential manner from the most recent data to most distant observations. Exponential smoothing continually revises an estimate in the light of more recent observations. Exponential smoothing techniques are frequently used when the forecasters are satisfied with forecasting one period at a time or they are routinely forecasting many series as is often the case of inventory. The robustness and accuracy of exponential smoothing forecasting has led to its widespread use in applications where a large number of series requires an automated procedure, such as inventory control. The stock of an item rises and falls and there is unusually some lead time needed to acquire new stock in advance.

It is not known that whether Holt (1957), Brown (1956) or Magee (1958) was the first who introduced exponential smoothing method. Since that time, the exponential smoothing technique becomes a practical method with wide application, especially in the inventories. The major advantages of using smoothing methods are simplicity of models. However, many exponential smoothing methods are nothing but special case of the general ARMA model (Box and Jenkins, 1976) which will be discussed thoroughly in a separate article.

Single Exponential Smoothing

Single exponential smoothing method provides an exponentially weighted moving average of all previous observed values. The observations are weighted with more weight given to the more recent observations. The weights used are á (known as smoothing coefficient) for more recent observation, $\alpha(1 - \alpha)$ for next most recent, $\alpha(1 - \alpha)^2$ for the next and so on. The weights assigned is exponentially decreasing with $0 < \alpha < 1$. When α is close to 1, the new forecast will include a substantial adjustment for the error in the previous forecast. If α is close to zero, the new forecast will include very little adjustment. If these weights are plotted in a graph it will be seen that they decrease exponentially, hence the name of the method is *exponential smoothing*. It is necessary to point out that á value has an important role in the forecasting error. The α value is usually estimated by minimizing the mean square error (MSE) over a test set, though the estimation procedure of smoothing coefficient is a nonlinear problem. A practitioner must remember that single exponential smoothing method is applicable to the time series data which is essentially free from trend and seasonal component.

The single exponential smoothing model is:

$$F_{t+1} = \alpha Y_t + (1 - \alpha)F_t, \quad t = 1, 2, 3, \ \ldots, n.,$$

where n = number of observations available ,

Y_t = Observation in the time period t ,

F_t = Forecast in the time period t.

The initialization process of single exponential smoothing method requires one estimate of F_1 which is not known. We can use the first observed value as the first forecast and then proceed. Another possibility may be to use average of first 4 or 5 observations in the data

set and use them as initial forecast. The initialization process plays a significant role for some period ahead.

Double Exponential Smoothing

- **Additive Trend Exponential Smoothing Model**

Holt (1957) derived the linear trend (additive trend) exponential smoothing to allow forecast with trends. In this method there are two smoothing coefficients, α and γ with $0 < \alpha < 1$ and $0 < \gamma < 1$. When upward trend is present in the time series, an estimate of current slope as well as current level is required for forecasting. One of the greatest advantages of Holt's technique is that it provides a great deal of flexibility in selecting the rates at which the level and trend is tracked. Double exponential smoothing method is applicable to the time series data where the trend is additive and is essentially free from the seasonal component. There are two smoothing equations—one for the level and one for trend.

Three equations used in the Holt's model are:

$$X_t = \alpha Y_t + (1 - \alpha)(X_{t-1} + T_{t-1})$$

$$T_t = \gamma(X_t - X_{t-1}) + (1 - \gamma)T_{t-1}$$

$$F_{t+k} = X_t + kT_t$$

with

X_t = Exponentially smoothed series or current level estimate in the time period t

T_t = The trend estimate in the time period t

k = periods to be forecast into the future

F_{t+k} = Forecast for k period into future after the time period t.

The initialization process in Holt's method require two estimates X_1 and T_1. One alternative is $X_1 = Y_1$ and $T_1 = Y_2 - Y_1$.

Another alternative is to use least squares regression on first few values of the series for X_1 and T_1.

The α and γ values are usually estimated by minimizing the mean square error (MSE) over a test set.

- **Multiplicative Trend Exponential Smoothing Model**

The multiplicative trend method has received very little attention in the literature. This is surprising that preference has not been given for multiplicative trend rather than additive trend in the exponential smoothing modeling. Pegels (1969) suggests that more real series have multiplicative trends than additive. Regardless of whether this is true, it seems likely that the more conservative forecast function of Holt's method will be more robust when applied in an automated way to a large batch of series with multiplicative trend.

Three equations used in this model are:

$$X_t = \alpha Y_t + (1 - \alpha)(X_{t-1} T_{t-1})$$

$$T_t = \gamma(X_t / X_{t-1}) + (1 - \gamma) T_{t-1}$$

$$F_{t+k} = X_t T_t^k .$$

- **Damped Additive Trend Exponential Smoothing Model**

Despite its popularity, empirical evidence has shown that the Holt linear forecast function tends to overestimate (Gardner and McKenzie, 1985). In view of this, they described how a dampening parameter, ϕ, can be used within Holt's method to give more control over trend extrapolation. Although Holt's method has become the most popular approach for linear forecast function, but it has been criticized for tending to overshoot the data beyond the short-term. Gardner and McKenzie (1985) addressed this problem by including an extra parameter in Holt's method to dampen the projected trend. The authors have explained that if $0 < \phi < 1$, the trend is damped and the forecasts approach an asymptote given by the horizontal straight line $X_t + T_t \frac{\phi}{1-\phi}$. If $\phi > 1$, the forecast function has an exponential trend. Interestingly, Hyndman *et al.* (2002) suggest a slightly different damped formulation where there is no dampening of the trend for the first forecast period. Gardner and McKenzie stated that $\phi > 1$ is probably a dangerous option in an automatic forecasting procedure. However, Tashman and Kruk (1996) show that there can be value of $\phi > 1$, if it is applied only to strongly trending series. In fact, as the method has an exponential forecast function, it would seem to be suited to series with exponential trends.

Three equations in the damped Holt method are presented here:

$$X_t = \alpha Y_t + (1 - \alpha)(X_{t-1} + \phi T_{t-1})$$

$$T_t = \gamma(X_t - X_{t-1}) + (1 - \gamma)\phi T_{t-1}$$

$$F_{t+k} = X_t + T_t \sum_{i=1}^{k} \phi^i .$$

The α, γ and ϕ values are usually estimated by minimizing the mean square error (MSE) over a test set.

Empirical studies show that the damped trend method offer improvements in accuracy (e.g. Makridakis *et al.*, 1993; Gardner, 1999 ; Makridakis and Hibon, 2000).

- **Damped Multiplicative Trend Exponential Smoothing Model**

Pegels (1969) suggests that multiplicative trend method may be more useful than the Holt's additive trend method, as multiplicative trends appear *more probable in real-life application*. However, an obvious reason for using Holt's additive trend method in preference

to Pegels' multiplicative trend method is that the more conservative trend extrapolation, provided by the additive trend method, may be more robust when applied to a variety of different series in a large-scale automated forecasting application. In view of this, there may be value in including an extra parameter in the Pegels formulation to dampen the extrapolated trend, in an analogous fashion to the dampening parameter in the damped Holt method. Motivated by the improvements seen in dampening the Holt method, Taylor (2003) introduced a damped Pegels exponential smoothing method. The method has the appeal of modelling trends in a multiplicative fashion but includes a dampening term, which should lead to more robust forecasting performance.

Three equations in the damped multiplicative trend are:

$$X_t = \alpha Y_t + (1-\alpha)(X_{t-1}T_{t-1}^{\phi})$$

$$T_t = \gamma(X_t / X_{t-1}) + (1-\gamma)T_{t-1}^{\phi}$$

$$F_{t+k} = X_t T_t^{\sum_{i=1}^{k}\phi^i}, \quad 0 < \phi < 1.$$

Triple Exponential Smoothing

- **Multiplicative Seasonality Exponential Smoothing Model**

Holt's method was extended by Winters (1960) to capture seasonal variation in the time series data. In this model trend is assumed to be additive and seasonality is assumed to be multiplicative. This method developed based on three smoothing coefficients α, γ and δ. This method is also known as Holt- Winters method which is applicable to the general time series data with all components. There are three smoothing equations – one for the level, one for trend and one for seasonality and three smoothing parameters α, γ and δ with $0 < \alpha < 1$, $0 < \gamma < 1$ and $0 < \delta < 1$.

The equations used in Winters' model are:

$$X_t = \alpha Y_t / S_{t-L} + (1 - \alpha)(X_{t-1} + T_{t-1})$$

$$T_t = \gamma(X_t - X_{t-1}) + (1 - \gamma)T_{t-1}$$

$$S_t = \delta(Y_t / X_t) + (1 - \delta)S_{t-L}$$

$$F_{t+k} = (X_t + kT_t)S_{t-L+k}$$

Where

S_t = The seasonal estimate in the time period t

L = Length of seasonality

To initialize Winters' forecasting method we need initial value of level X_L, the trend T_L and the seasonality S_i, $i = 1, 2, 3, ..., L$.

To compute initial estimate of level we need to use at least one complete seasons' data

$$X_L = (Y_1 + Y_2 + ... + Y_L) / L.$$

To initialize trend it is convenient to use two seasons

$$T_L = [(Y_{L+1} + Y_{L+2} + ... + Y_{L+L}) - (Y_1 + Y_2 + ... + Y_L)]/L^2.$$

Finally the seasonal indices are initialized by

$$S_i = Y_i / X_L \quad i = 1, 2, 3, ...,L.$$

The α, γ and δ values are usually estimated by minimizing the mean square error (MSE) over a test set.

- **Additive Seasonality Exponential Smoothing Model**

In fact there are two different models depending on whether seasonality factor is modeled with multiplicative or additive way. Winters' additive seasonality model is as follows:

$$X_t = \alpha(Y_t - S_{t-L}) + (1 - \alpha)(X_{t-1} + T_{t-1})$$

$$T_t = \gamma(X_t - X_{t-1}) + (1 - \gamma)T_{t-1}$$

$$S_t = \delta(Y_t - X_t) + (1 - \delta)S_{t-L}$$

$$F_{t+k} = X_t + kT_t + S_{t-L+k}$$

For additive model there is change in initialization of the seasonal indices. There are initialized by $S_i = Y_i - X_L$, $i = 1, 2, 3, ..., L$.

The initialization method stated here are simple and effective to start the recursion equations. But there are many other methods available in Gardner (1985). Some of them are backcasting method, least squares method, decomposition method etc.

Pegels' Classification

Pegels'. (1969) classification of exponential smoothing methods includes nine different methods. Each method is classified as being suitable for series with constant level, additive trend or multiplicative trend, and with either no seasonality, additive seasonality or multiplicative seasonality. Pegels (1969) provided a simple and useful framework for trend and seasonality aspect in a compact two way table. Nine exponential smoothing models are summarized in this two way table. Gardner and Dannenbring (1980), Gardner and McKenzie (1988) provided a guide line for appropriate exponential smoothing model selection. All good forecasting packages will give optimal parameter values automatically by minimizing the MSE

Table 1

Pegels' Classification of Exponential Smoothing Methods

Trend Component	Seasonal Component		
	None (N)	Additive (A)	Multiplicative (M)
None (N)	N-N	N-A	N-M
Additive (A) (Linear)	A-N	A-A	A-M
Multiplicative(M) (Exponential)	M-N	M-A	M-M

As some special cases

N-N denotes single exponential smoothing model

A-N denotes Holt's exponential smoothing model

A-A denotes Winters' additive exponential smoothing model

A-M denotes Winters' multiplicative exponential smoothing model

Trend component: *None, additive, multiplicative and damped.*

None: The series has no overall trend.

Additive(linear): The mean level of the series increases or decreases linearly with time.

Multiplicative (exponential): The mean level of the series increases or decreases exponentially with time.

Damped: The mean level of the series increases or decreases with time, but the rate of change will be declining with time.

Seasonal component: *None* means no seasonality, *additive* means additive seasonality and *multiplicative* means multiplicative seasonality.

Consulting Pegels(1969) notation to all nine exponential smoothing models can be summarized by the formula

$$X_t = \alpha P_t + (1 - \alpha)Q_t$$

$$T_t = \gamma R_t + (1 - \gamma)T_{t-1}$$

$$S_t = \delta T_t + (1 - \delta)S_{t-L}$$

and the k-period ahead forecast is F_{t+k} and P, Q, R, S and T vary according to the cells the method belong and finally one can get F_{t+k} .

The fact that the Pegels method expresses the trend in a unitless form can be very useful. For example, consider the introduction of a new product that is a variation on an existing product. The two products would probably share similar behaviours and could be classified together. When the product is first introduced, a forecast method would have to be implemented starting with no data. To help initialize the method, it would be reasonable to use information about the aggregate product class. Although the sales volume of the new product may be quite different to other products in the same class, they may share the same behaviour in terms of trend. With the Pegels multiplicative trend formulation, the trend for the new product could be initialized using the trend from the application of the method to a more aggregated product class, since the trend is unitless. By contrast, it is not possible to use an aggregated trend from an additive trend model.

The smoothing parameters α , γ and δ in Pegels' exponential smoothing models are estimated through trial and error method by minimizing the MSE or MAPE. If small values of parameters (0.1 or 0.2) are estimated, then forecasting system will react slowly but steady to change the data. The parameters are also estimated by non linear optimization algorithm. All good forecasting packages will give optimal estimate of parameters automatically by minimizing the MSE or MAPE.

Extended Pegels' Classification

Pegels' (1969) classification of exponential smoothing methods includes nine different methods. Hyndman et al. (2002) have extended this classification to include damped additive trend with either no seasonality, additive seasonality or multiplicative seasonality. From among the various methods, simple, Holt's, damped Holt's and Holt-Winters' exponential smoothing have been very popular with different practitioners and researchers. The Holt-Winters' method with multiplicative seasonality has been widely used (see Chatfield and Yar,1988). But with the exceptions of Pegels (1969), Makridakis et al. (1998) and Hyndman et al. (2002), the multiplicative trend methods have been very largely ignored. Although Hyndman et al. (2002) do consider trend dampening, their classification methods does not include a damped multiplicative trend. In Table 2, Taylor (2003) presented an extended version of their taxonomy where the notations are similar to that of Hyndman et al. (2002). Note that fifteen exponential smoothing models have been summarized in the following two way table (adapted from Hyndman et al., 2002 and Taylor, 2003):

Table 2

Extended Pegels' Classification of Exponential Smoothing Methods

Trend Component	Seasonal Component		
	None (N)	Additive (A)	Multiplicative (M)
None (N)	N-N	N-A	N-M
Additive (A)	A-N	A-A	A-M
Damped Additive (DA)	DA-N	DA-A	DA-M
Multiplicative (M)	M-N	M-A	M-M
Damped Multiplicative (DM)	DM-N	DM-A	DM-M

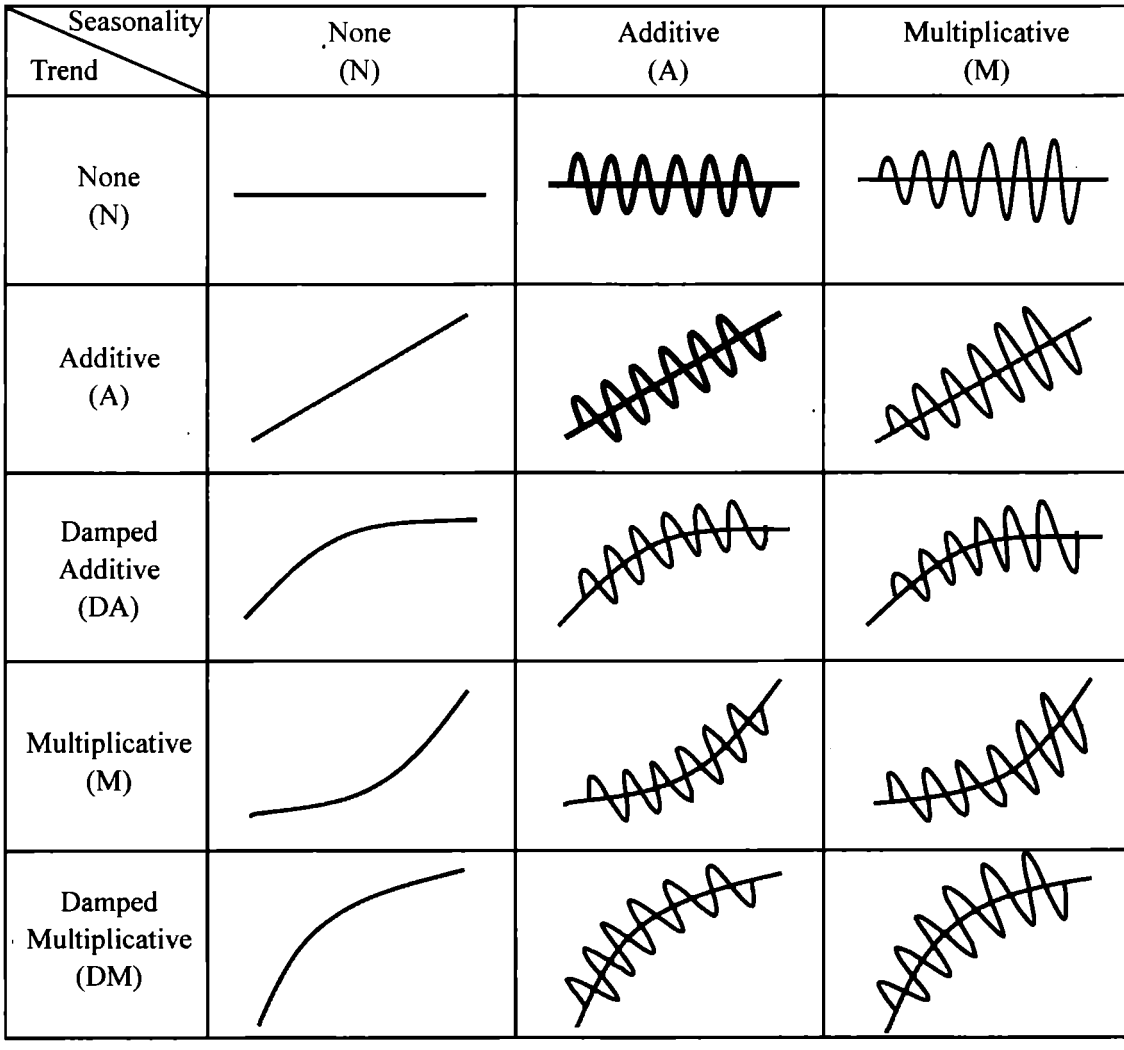
The method N-N is simple exponential smoothing, A-N is Holt's, DA-N is damped additive Holt's, A-A and A-M are the Holt-Winters' additive and multiplicative seasonal methods, and M-N is Pegels' multiplicative trend method. M-A and M-M are seasonal versions of the multiplicative trend method. The bottom row of the table is the extension of the taxonomy of Hyndman et al. (2002). The method DM-N is damped Pegels, The methods DM-A and DM-M also in the bottom row are additive and multiplicative seasonal versions of damped Pegels method.

Theoretical forecast error variance formulae are often derived for exponential smoothing methods by referring to the equivalent ARIMA model. However, there is no equivalent ARIMA model for either the Pegels or the new damped Pegels methods. The lack of equivalent ARIMA models for various non-linear exponential smoothing methods has led to prediction intervals being based on the equivalent state-space model. Hyndman et al. (2001) derive theoretical forecast error variance formulae from the state-space models and Hyndman et al. (2002) generate prediction intervals by applying simulation to the models.

Patterns of time series are displayed depending on the trend pattern whether it is additive (damped or not)or multiplicative (damped or not) and also on the seasonality patterns whether additive or multiplicative. Figure 1 shows the actual graphical pattern time series data which will specially useful for the managers or practitioner of forecasting and it will be of great help to select an appropriate model of forecasting. One should thoroughly investigate the graphical behaviour of a typical time series and if the graph of the series commensurate with any of the graphs in fifteen cells of Figure 1 the respective exponential smoothing model should be selected for the prediction of the series.

Figure 1

Time Series Patterns on Extended Pegels' Classification of Exponential Smoothing Methods



3. Some Important Issues Related to Forecasting

A number of important issues have been considered in this section viz. time horizon of forecasting, measurement of forecasting accuracy, transformation of data, availability of statistical packages, appropriate management decisions for different phases of a business cycle etc. A practitioner must be acquainted with the following issues for better efficiency before applying any forecasting technique [for more details see Bomhoff (1994), Pecar (1994) Makridakis et al.(1998), Nash and Nash (2001), Hanke et al.(2005) etc.)].

3.1 Time Horizon of Forecasting

One of the most important and crucial decision for sound forecast strategy concerns the choice of variables to be forecast. Next to the choice of variables to be forecast is the choice of time span of forecast. Another important question is the choice of forecasting methodologies. Four categories of forecasting are available in the literature depending on the time horizon which is as follows:

- Immediate term (less than one month)
- Short term (one to three months)
- Medium term (3 months to 2 years)
- Long term (more than 2 years).

The period of time over which a decision may be taken will have a tremendous impact and for which the manager must plan clearly the selection of an appropriate forecasting method. Medium and long term forecasts deal with more comprehensive issues and support management decisions regarding design and development of new products, plants and processes. Quantitative forecasting techniques are used mostly for short term forecasts.

- **Short Term and Immediate Term Forecasting**

Of the four time series patterns, the most important to short term and immediate term forecast is seasonality. The trend is less important, because over a period of less than three months any regular increasing or decreasing trend to be small and dominated by seasonality. In short term many forecasts are needed. Thus it becomes preferable to use a method that can be employed in an automatic mode. In such cases exponential smoothing plays a significant role. Some examples of short term and immediate term forecasting are inventories, sales, price, cost, advertising, production, equipments and scheduling etc.

- **Medium Term Forecasting**

In the medium term the major applications of forecasting is budgeting. The tasks involve predicting growth rate, cost and revenues and other variables that influence budget. In the medium term forecasting such changes can be large and persistent because they can be caused by cyclical factors whose duration and strength vary widely. Budget may cover individual products, developments, divisions, companies. Budget require estimate of sales, price of raw materials, levels of wage and salaries, setting and other expenditures, the prices of finishing products and similar variables that determine cost and revenues. On the basis of sales, costs and revenues, budget allocations are made covering products, projects, departments, divisions, companies, geographic regions and countries. The process of forecast for budget purpose covers a span of 13 to 15 months. Such changes are caused by cyclical fluctuations. Cyclical fluctuations in the economy provide a multiplier effect, which amplifies the effect of such fluctuations of specific industries or individual firm. Some other applications are sales planning, production planning, cash budgeting, and so on.

- **Long Term Forecasting**

The principal use of forecasting in the long term is resource planning, capital, people and technology, and new product and services. The major task of forecasting is to predict long term trends and the need for new products or services in case established patterns do not change. The greatest challenge is to figure out the impact of changes in technology, competitors, raw materials and energy prices, population and demographics, customer attitude and needs, societal, legislative and political changes etc. Such changes can have a lasting impact on established trends and need to be taken in to account in long range planning. New product or service cannot be introduced overnight though it necessitates the introduction due to change of different conditions. Most of them require research and development work, some assume that consumer will accept them, and some prediction of future sales. Thus new product forecasting becomes a major element of long range planning and one of the most challenging managerial task (Assmus, 1984). Long term strategy of forecasting may be examining trend by time series approach, for production estimation an explanatory method may be useful or examining emerging technological changes one can use technological forecasting. Installing new plants, capital expenditures, research and development are some examples of long term forecasting. Long term forecasting needs two types of tasks:

- Discovering established patterns or relationships
- Determining how much may change in future.

Both of them are mostly judgmental although quantitative forecasting can also be useful. As Mendell (1985) writes, *long-term forecasting does not necessarily mean predicting the future accurately.* It is equally important to learn as much as possible about the future to develop the inner resources to cope with the change it will inevitably bring. In this respect long term forecasting becomes vehicle by which one may better understand the future change and take steps to anticipate it.

3.2 Measurement of Forecasting Accuracy of Quantitative Methods

During the late 1970s several empirical studies compared the variety of time series models (Makridakis and Hibon, 1979; Makridakis et al.(1982); Makridakis et al.(1984); Mahmoud (1984); Armstrong and Collopy,1992; Hyndman and Koehler, 2006 etc.) to examine the accuracy of forecasting.

The forecast error e_t in the time period t is defined as $e_t = Y_t - F_t$, where Y_t is the actual observation in the time period t and F_t forecast for the same time period. If the observations and forecasts are available for n time periods, there will be n error terms, then some standard statistical measures are defined as

$$\text{Mean Error (ME)} = \frac{1}{n}\sum_{t=1}^{n} e_t$$

Mean Absolute Error (MAE) = $\frac{1}{n}\sum_{t=1}^{n}|e_t|$

Mean Squared Error (MSE) = $\frac{1}{n}\sum_{t=1}^{n}e_t^2$

ME is likely to be small since positive and negative error tend to cancel one another. It will not give much indication as to the size of the typical errors. However, MAE and MSE are defined by making each error positive by taking absolute error and squared errors respectively. Each of the above statistics deals with measures of accuracy whose size depends on scale of the data.

To facilitate comparison across different time series and for different intervals we need to compute with relative or percentage error measures as follows:

Percentage Error (PE) = $(e_t / y_t)\,100$

Mean Percentage Error (MPE) = $\frac{1}{n}\sum_{t=1}^{n}(e_t / y_t)100$

Mean Absolute Percentage Error (MAPE) = $\frac{1}{n}\sum_{t=1}^{n}|e_t / y_t|100$

Makridakis and Hibon(2000) defined Symmetric Mean Absolute Percentage Error

(SMAPE) = $\frac{2}{n}\sum_{t=1}^{n}\{|e_t|/(y_t + F_t)\}100$

MPE, as with the ME, is likely to be small because positive and negative PEs tends to cancel one another; MAPE is defined using absolute value of PE.

3.3 Data Transformation

Most of the estimation of parameters assumes the observations are stationary process. If the data suggest non-stationary (e.g. the data do not fluctuate around a constant level of mean), then it may be convenient to make a transformation so as to produce a new series which is more compatible with the assumption of stationary. If the graph of the time series reveals a strong dependence of variability on the level of the time series (see Figure 2 on monthly sales of a food product), in such cases data should be transformed to reduce or eliminate this dependence.

Financial time series are mostly non-stationary (Stoll and Whaly, 1990). Broadly speaking a time series is called stationary if its mean and variance are constant over time and the value of the covariance between two time periods depends only on the lag between two time periods not on actual time. There are several tests to check whether a time series is stationary or not.

Different mathematical transformations and the effect of increasing strength of transformation for stabilizing variance on monthly sales of a food product (see Figure 3 to Figure 6) are as follows:

Square root: $Z_t = \sqrt{Y_t}$.

Cube root : $Z_t = \sqrt[3]{Y_t}$

Logarithm : $Z_t = \log Y_t$

Negative Reciprocal: $Z_t = -1/Y_t$

As we proceed from square root to negative reciprocal transformation the strength of stabilizing variance gradually increases. Forecasts are computed for transformed data instead of original data. But we are really interested in forecasts of the original data. So we must reverse the transformation to obtain the forecast on original scale.

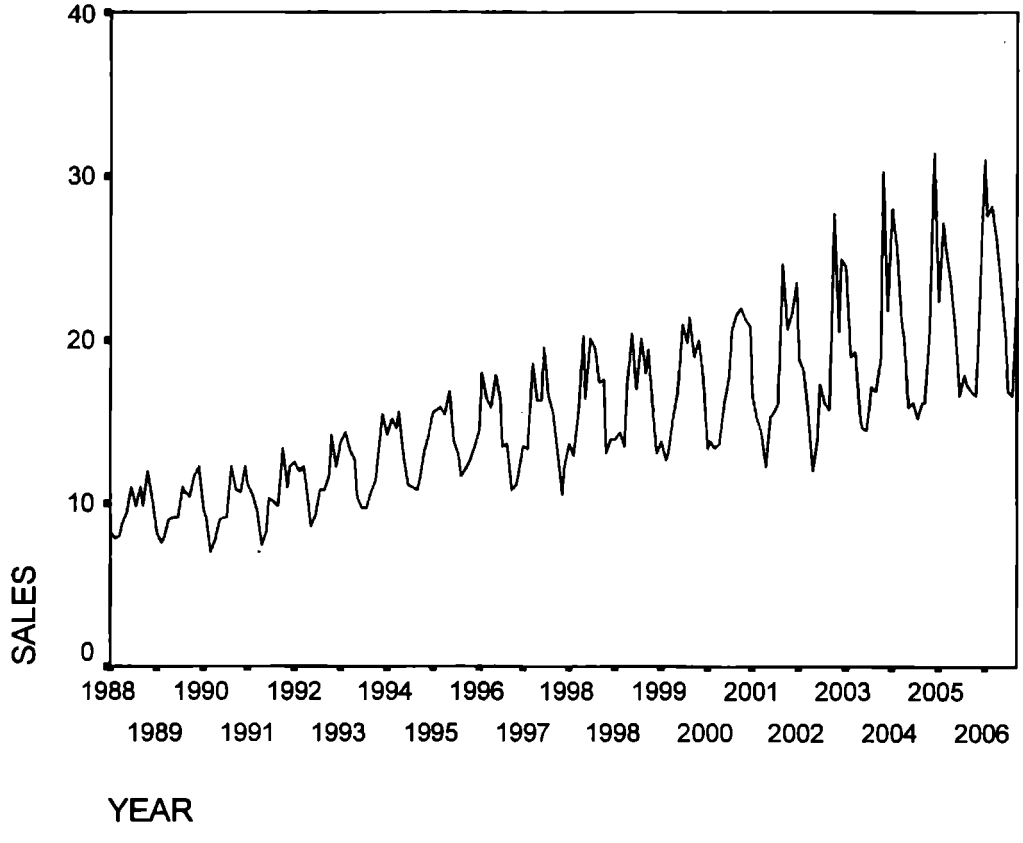


Figure 2: Shows Monthly Sales of a Food Product from Nov, 1988 to Dec, 2006

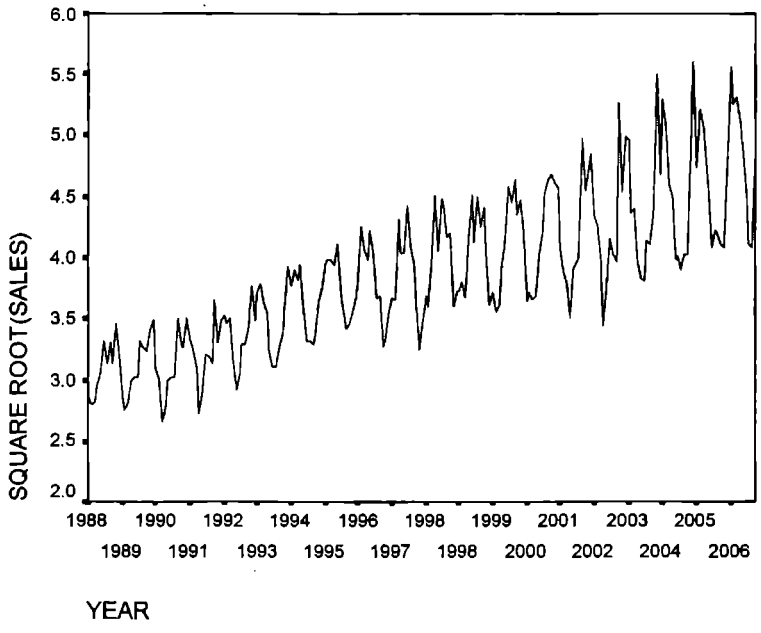


Figure 3: Square Root of Monthly Sales of a Food Product from Nov, 1988 to Dec, 2006

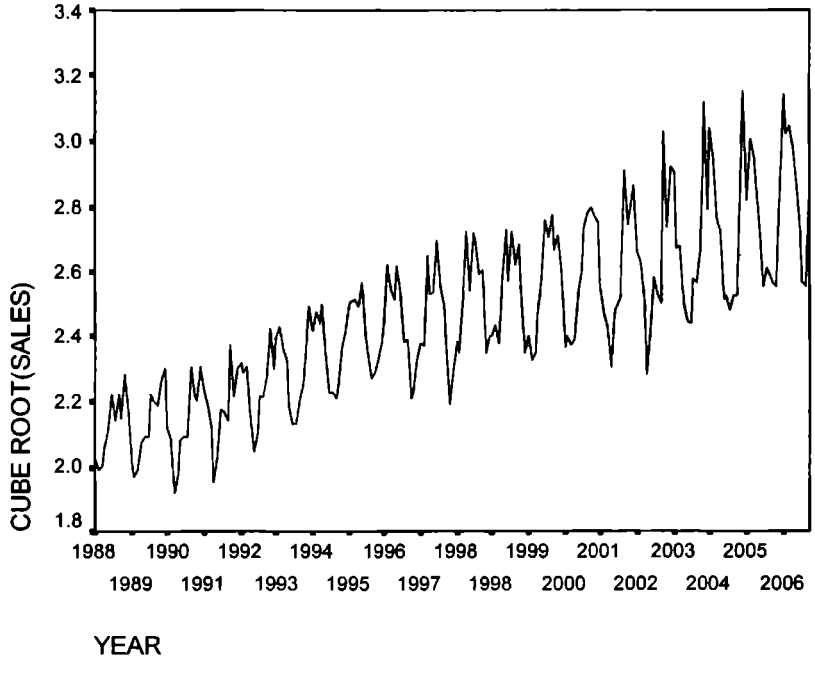


Figure 4: Cube Root of Monthly Sales of a Food Product from Nov, 1988 to Dec, 2006

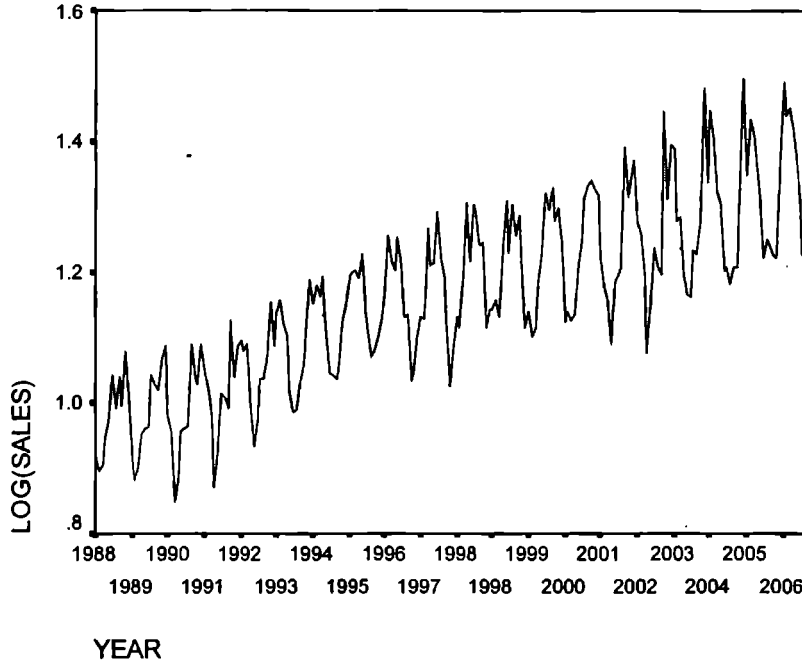


Figure 5: Logarithm of Monthly Sales of a Food Product from Nov, 1988 to Dec, 2006

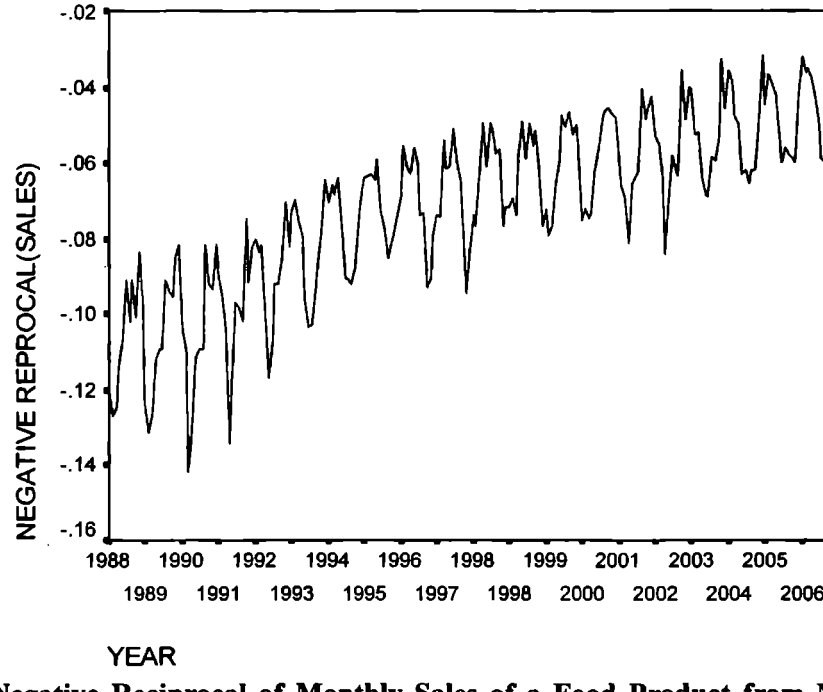


Figure 6: Negative Reciprocal of Monthly Sales of a Food Product from Nov, 1988 to Dec, 2006

3.4 Management Decisions for Different Phases of a Business Cycle

This is a special type of issue which involves in any kind business. Different types of businesses are usually cyclical in nature. A major concern of management is to take appropriate decisions in the respective phases of a business cycle.

A business cycle can be divided into six major phases in sequence viz. growth, prosperity, warning, recession, depression and recovery. Several authors have identified a useful approach for guiding actions in various phases of a business cycle(see Dauten and Valentine, 1974).

Table 3

Planning for the Six Phases of a Business Cycle

Phase	Recognition	Suggested Actions
Growth	Optimistic conditions	Expand work force. Accelerate training. Undertake plant expansion. Try to build inventories.
Prosperity	Gains in cycle charts narrow for 2-3 months	Stay in Stock. Review sales forecast. Freeze plant expansion. Unload surplus equipments.
Warning	3 months of cycle decline	Reduce inventories. Start cut training. Start cut advertisement. Start cut hiring manpower. Reduce long-term purchase commitment.
Recession	Orders falls below year-ago level	Further inventory reduction. Review purchase decision.
Depression	Decline in cycle chart narrow for 2-3 months	Freeze workforce. Keep skilled employees. Reduce work-hours if needed. Enter into long-term leases and labour contracts.
Recovery	Gains in cycle chart but still average	Prepare training programme. Rehire manpower. Build inventories. Get distributors and suppliers to build inventories.

3.5 Statistical Packages

There are different types of statistical packages available Viz. SPSS, Statistica, Statview, Sysstat, SAS, Minitab, Stata, JMulti, Gretl, TRAMO/SEATS, Autobox, Splus, R etc. With the advent of computer and statistical packages, it becomes of great advantage in practical implementation of forecasting tools in business to managers as well as to other practitioners.

4 Conclusions

In this article attempt has been made towards making the forecasting techniques understandable and usable to different practitioners, especially for the personnel engaged in business and management decisions. The major conclusions which emerge from our discussion can be outlined as follows. First, a forecaster should properly identify and define the forecasting problem. There are two kinds of information available for making prediction viz. qualitative and quantitative. When quantitative forecasting techniques do not work well, human judgment with an appropriate degree of accuracy may be helpful in this direction. However, while making prediction, the qualitative information on the relevant variables for the past and present may be required. Judgmental methods are also subject to a number of shortcomings. The advantage of human based forecasting approaches is that they can identify systematic change more quickly and interpret better the effect of any change in the future. It is difficult to measure usefulness of a wide range of qualitative forecasting methods discussed in this article. Although doubts are often expressed about the value of qualitative forecasting, it provides useful information for managers. For quantitative information it is necessary to collect historical data as well as cross sectional data on one or more variables. It is really an important task to choose and fit appropriate model for the available data. A forecaster has a wide variety of methods available that vary in respect of the degree of accuracy, scope, time horizon and cost. Once a model has been selected judiciously and its parameters are estimated properly, the model is to be used to make forecasting. However, the user must evaluate the pros and cons of the model considered. The performance of the model can only be properly evaluated if and only if the data on the variables to be forecasted are available. Examining a various measures of forecasting, a practitioner can decide to select the appropriate model. In fact, the Intuitive method of forecasting is simple and easy to use but not always as accurate as qualitative or quantitative methods.

A number of relevant issues have been considered here like time horizon of forecasting, measurement of the degree of accuracy of forecasting, transformation of data, availability of computer based statistical packages, appropriate management decisions for different phases of a business cycle etc. which will give proper direction to a practitioner for applying forecasting techniques efficiently.

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Income Inequality and Economic Growth

Saikat Bhattacharyya
Research Scholar
Department of Commerce
University of Calcutta.
Assistant Teacher, Bangabasi Collegiate School

Abstract

The primary focus of this paper is to establish a relationship between income distribution and economic growth. To this end an endogenous growth model is framed where the average rate of saving is endogenized. Now, as the distributional pattern changes along the phases of growth, the saving rate fluctuates. With variable saving rate we see the presence of multiple equilibria, one of which is unstable. Even the neo-classical production function with all its features, does not ensure the uniqueness and stability of equilibrium. Rather we have an alternative explanation of low income trap.

Key-words: Income distribution; Endogenous growth; uniqueness and stability of steady state equilibrium; low income trap.

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1. Introduction

"...if a state is to avoid... civil disintegration... extreme poverty and wealth must not be allowed to rise in any section of the citizen-body, because both lead to disasters."

PLATO *[The Laws*, p. 745, quoted in Cowell (1995)*]*

The humankind has witnessed wonderful economic progress since the industrial revolution. But still so many people on this planet are living below the poverty line. It is a moral offense against humanity. Equity in the distribution of income, wealth, education and health care facilities and also in many other spheres of life is needed for its own sake. Apart from this ethical aspect, is inequality in the distribution of income acceptable, at least temporarily, for the sake of growth? So some basic questions crop up: Does inequality of some degree is inevitable for rapid growth of GDP? What is the connection between income discrimination and economic growth? These are the central quiries of this paper.

There is a strong link between economic growth and distribution of income. Sometimes it is argued that at the initial stages of economic development the income inequality widens

and it eventually falls as the fruit of economic progress spreads [Oshima (1962), Kuznets (1963,1955)]. This is known as inverted-U hypothesis. At the initial stage there exists a trade off between inequality and growth rate.

Some studies have found that presence of poverty and inequality damage the growth process [Birdsall and Londono (1997), Ravallion and Martin (1998)]. Alesina and Rodrik (1994) and Persson and Tabellini (1994) empirically established a negative correlation between inequality and economic growth. Alesina and Rodrik (1994) used cross country data in between 1960 and 1985 to show the negative relationship. Persson and Tabellini's study was, however, for the period 1830 to 1985. There are some theoretical analysis apart from the empirical studies highlighting the same results. Galor and Zeira (1993) and Bannerjee and Newman (1993) came to similar conclusion that fair income distribution helps the process of economic growth. Despite some trivial differences, both the papers with the assumption of imperfect information in the capital market showed that a person with larger inheritance can obtain a job with greater return and consequently leaves a greater bequest for the forthcoming generation and established that a fair distribution is a necessary condition for long run prosperity.

The quest of this paper is other way round: It seeks the answer to the question: Whether the existence of inequality reduces economic growth rate in a less developed country (LDC)?

To see how the existence of high degree of inequality affects economic growth, a LDC specific endogenous growth model is framed in this paper, where saving rate has been endogenized. The fluctuation in saving rate affects economic growth. To find out the optimum saving rate, which maximize the total utility of an extended family under infinite time horizon. Galor and Ryder (1989) used a non constant saving rate to analyze the existence, uniqueness and stability of steady state equilibrium in an overlapping generation model. In contrast, this paper is to explore the existence, uniqueness, stability of steady state equilibrium and low income trap, endogenizing average rate of saving.

After specifying the behavioral assumptions in section 2 in section 3 the relationship between saving rate and inequality is established. The saving rate depends on the relative income distribution and its composition. The average rate of saving of an individual depends on his income. So, across the cross section of budget we see a variable average rate of saving. Using the inverted U hypothesis, section 4 establishes an association between *aps* (Average Propensity to Consume) and capital per unit of labor. Using *aps(k)* function, got in section 4, in section 5 we judge the existence, stability and uniqueness of the steady state equilibrium (assuming a neo-classical production function) and find the presence of multiple equilibria. One of the equilibria indicates low income trap. Thus this paper provides some sort of formalization of 'vicious circle of low percapita income'. The stability of these steady state equilibriums is not also guaranteed, even with the presence of diminishing marginal productivity and Inada

condition. Barro and Martin (1995) had shown the instability and the absence of unique steady state equilibrium in absence of diminishing marginal productivity. Finally, section 6 presents the concluding remarks.

2. The Setting

Our study considers a closed less developed economy.

Let us classify the entire population into three sections, according to income — the poor, the middle class and the rich. Let the individuals belonging to each group are homogeneous in terms of their behavior towards consumption and saving. Let, c_r, c_m and c_p be the levels of consumption of a representative individual of each group. Therefore, the percapita consumption expenditure is the weighted sum of consumption expenditures of each group. Let β_r, β_m and β_p are the proportions of people belong to each group.

$$\left.\begin{aligned} C/L = c &= \beta_r.c_r + \beta_m c_m + \beta_p c_p \\ c/y &= \beta_r.c_r/y + \beta_m c_m/y + \beta_p c_p/y \end{aligned}\right\} \qquad (1.1)$$

Where, C and c are gross and per capita consumption expenditure.

The poor cannot afford to save much. The major part of their income is consumed just to meet the minimum for their survival. Accordingly, they have a low Average Propensity to Consume (henceforth *aps).*

At the other extreme the *aps* of the rich is also assumed to be high. The Rich Class is defined here as $c >= h$, [where h is a high level of consumption] and the level of asset is assumed to be greater than or equal to a_h. It is also assumed that the Rich Class spends a considerable part of their income on luxurious consumption.

The middle class, however, do not have the problem of survival like the poor but they are far from the comforts enjoyed by the rich. They are very much aware and as well as influenced by the living standards of the rich. As a result, they are full of aspirations to realize the living style of the rich. But their income does not support such a high level of consumption. Thus they have to raise their flow of earning to such a high level so that they can maintain the consumption standard of the rich in future. Consequently the middle-income group maintains a high saving rate. Studying 49 countries Venieris and Gupta (1986) found that the poorer households have the lowest saving propensities and the highest rate of saving corresponds to the middle class.

The middle class targets a fixed (this is done to avoid externality) level of consumption, h, which is the minimum level of consumption of the rich. That is, here we are assuming that the minimum real level of percapita consumption expenditure of the rich is h. That is, for the rich $c \geq h$. When the consumption is below h (i.e. for middle class and for the poor) the marginal utility from an extra unit of consumption rises (due to high aspiration). The $c = h$

point happens to be the point of inflexion on the utility function. Beyond *h* the utility function follows the property of diminishing marginal utility.

Let us introduce an utility integral with infinite time horizon for each household, irrespective of its class.

$$U = \int_0^{\infty} u(c(t))e^{(n-\rho)}dt \qquad (1.2)$$

That is the household's utility at time 0 is the weighted sum of future flows of utility, *u(c)*. We assume:

- *u and u′ are positive for all positive values of c (percapita consumption);*
- *u″ > 0 for c < h; u″ = 0 for c = h; u″ < 0 for c > h.*

Where *n* and ρ are the rate of growth of population and intertemporal discounting, respectively.

Income of an individual, at any period, can be defined as sum of wage income and the rental earning from asset. That is, the income of an individual at the end of period-t can be written as $(w_t + r.a_t)$. Where w_t and a_t are wage income and total volume of asset at period-t respectively and *r* is the rental earning from each unit of asset (all the variables used are expressed in real terms).

Given the endowment of human capital, a worker, irrespective of his class, cannot raise the real wage rate and let us suppose that he cannot offer more than a unit of labor in each period. This amounts to assume that the total wage income of an individual cannot be raised either by raising wage rate or by increasing the working hour. The rationale behind this assumption, however unrealistic it may appear, is that if one worker has to raise his wage rate he has to raise his endowment of human capital. Once endowment of human capital is held predetermined it is not possible for the worker to augment his wage income. As far as the working hour is concerned, there is a maximum physical limit of devoting labor. Here we are assuming that the workers are operating at the maximum physical limit, which is assumed 'one unit'.

The flow budget constraint:

$$\dot{a} = w + ra - c - na \qquad (1.3)$$

Given the setting of the problem, we frame the following propositions:

1. *With a fall in income inequality (i.e. rise in relative weight of the middle class) the saving per unit of output (income) rises and vice versa. That is, a decreasing relationship between G and aps.*
2. *At the initial stages of economic progress as capital per unit of labor increases the average rate of saving falls, then reaches a minimum and then rises further. The aps(k) function takes a shape like the english alphabet 'U'.*

3. *With endogenous saving-rate the neo-classical production function alone cannot ensure unique stable steady state equilibrium.*
4. *Lowering inequality by redistribution of income through exogenous policy change raises the steady state level of capital per unit of labor. A fair distribution helps the LDCs to escape the low income trap.*

3. The Model

We consider the Utility integral of the individual consumer:

$$U = \int_0^{\infty} u(c(t))e^{(n-\rho)}dt \qquad (2.0)$$

The problem of the consumer is to

$$Maximize \quad U = \int_0^{\infty} u(c(t))e^{(n-\rho)}dt$$

$$S.t \qquad \dot{a} = w + ra - c - na$$

Where $\dot{a}$ is the rate of change in stock of asset.

This happens to be a problem of dynamic optimization (control optimization), which can be solved by means of *Hamiltonian*. The present value Hamiltonian function becomes:

$$H = u(c(t))\ e^{(n-\rho)t} + v[w + a(r - n) - c] \qquad (2.1)$$

The first order condition for optimization becomes

$$H_c = 0 \Rightarrow v = u'(c)\ e^{(n-\rho)t} \qquad (2.2)$$

$$v = -H_a = -(r - n)v \qquad (2.3)$$

The transversality condition implies:

$$\lim_{t\to\infty}\left[v(t)a(t)\right] = 0$$

Using the first order condition, given by the equations 2.2 & 2.3 and the transversality condition we obtain the *Euler equation*.

$$r = \rho - [u''(c).c/u'].[\dot{c}/c] \qquad (2.4)$$

The term $\{-[u'/u''(c).c]\}$ $(= \sigma, say)$ happens to be the elasticity of intertemporal substitution. For the poor and for the middle class the elasticity of intertemporal substitution is negative because $u'' > 0$ *for* $c < h$.

$$\therefore \sigma_{in} < 0; \sigma_p < 0; \sigma_r > 0;$$

Replacing σ into equation (2.5),

$$r = \rho + \frac{1}{\sigma}\left[\frac{\dot{c}}{c}\right] \qquad (2.5)$$

or, $[\dot{c}/c] = \sigma(r - \rho)$ *[*That is, the rate of change in consumption overtime is a function of σ and $(r - \rho)$*]*

or, $[\dot{c}/c] = \sigma(f'(k) - \delta - \rho)$ (2.6)

Assuming perfect competition in factor market, $r = [f'(k) - \delta]$

$f'(k)$, δ and ρ are the same for all the income classes as all of these are exogenous to the consumer. The $[\dot{c}/c]$ function for the i^{th} class would be:

$$[\dot{c}/c]_i = \sigma_i(f'(k) - \delta - \rho) \qquad (2.7)$$

For a developing country capital per unit of labor is low enough and so, $\{f'(k) - \delta - \rho\} > 0$. This implies σ_i is the sole determinant of the sign of $[\dot{c}/c]_i$

Differentiating equation 1.1 with respect to time we have the rate of change in percapita national consumption expenditure.

$$\dot{c} = \beta_r c_r [\dot{c}/c]_r + \beta_m c_m [\dot{c}/c]_m + \beta_p c_p [\dot{c}/c]_p \qquad (2.8)$$

Using equation 2.8 and 2.9 we have:

$$c = (f'(k) - \delta - \rho)[\beta_r c_r \sigma_r + \beta_m c_m \sigma_m + \beta_p c_p \sigma_p] \qquad (2.9)$$

Let us assume that the population is normally distributed. A better distribution of income implies increase in the proportion of middle class than before (i.e. β_m increases and β_r & β_p falls). From equation 2.9 it can be said that $\dot{c}$ falls as inequality falls.

Let G be an index of inequality. And we anticipate a positive relationship between G and $\dot{c}$. Therefore, there exists an inverse relationship between $\dot{S}$ and G. That is, as inequality rises the rate of growth of percapita saving falls. That is, the average propensity to save falls with rise in G and *vice versa*. The countries of Sub Saharan Africa and Latin America generally have higher gini-coefficient (see: table: 1) compared to that of East Asia. It is clearly seen in table: 2 that the latter group of countries have higher saving rate compared to the earlier ones. So, the proposition "*With a fall in income inequality (i.e. rise in relative weight of the middle class) the saving per unit of output (income) rises and vice versa. That is, a decreasing relationship between G and aps*" holds true.

4. Inverted U hypothesis and the aps

At the initial stages of economic progress as capital per unit of labor increases the average rate of saving falls, then reaches a minimum and then rises further. The aps(k) function takes a shape like the english alphabet 'U'. (Proposition: 2)

The pioneering work of Kuznets (1955) empirically establishes the relationship between

inequality and economic growth. Later Oshima(1962) and Kuznets (1963) shapes the empirical findings into a hypothesis, named as inverted 'U' hypothesis. It suggests that at the initial stages of economic development the income inequality widens and it eventually falls as the fruit of economic progress spreads. The hypothesis was based on cross sectional data, that is, data of different countries observed at various stages of development at about the same point of time. In the hypothesis the economic progress is measured by the percapita income. Here let us take percapita availability of capital (k) as a proxy of level of economic progress and placing in (G, k) plane we can summarize the relationship explained in the inverted–'U' hypothesis. The $G(k)$ function in the following figure depicts the relationship between G and k. As the economy develops (i.e. when the percapita availability of capital rises) lion share of the yield goes to the minority who successfully accommodates itself with the expansion. This causes an increase in G (index of inequality). The rise in k eventually raises the demand for all sorts of productive activity and as a consequence their reward rises automatically. So, after G reaching a maximum, gradually, the distribution improves and the value of G falls. The $G(k)$ function takes the shape like inverted 'U'. If any proactive or exogenous government policy reduces inequality, the value of $G(k)$ for each unit of k falls and the inverted-'U' function shifts downwards from G_0 to G_1.

This correlation between G and k in association with that in the *proposition-1* establishes a functional link between level of percapita capital stock and rate of saving. If the economy is at the initial stage of its development characterized by low k, any rise in k implies a rise inequality in the distribution of income (i.e. rise in G) and it continues to increase until a certain level of percapita capital stock is reached.

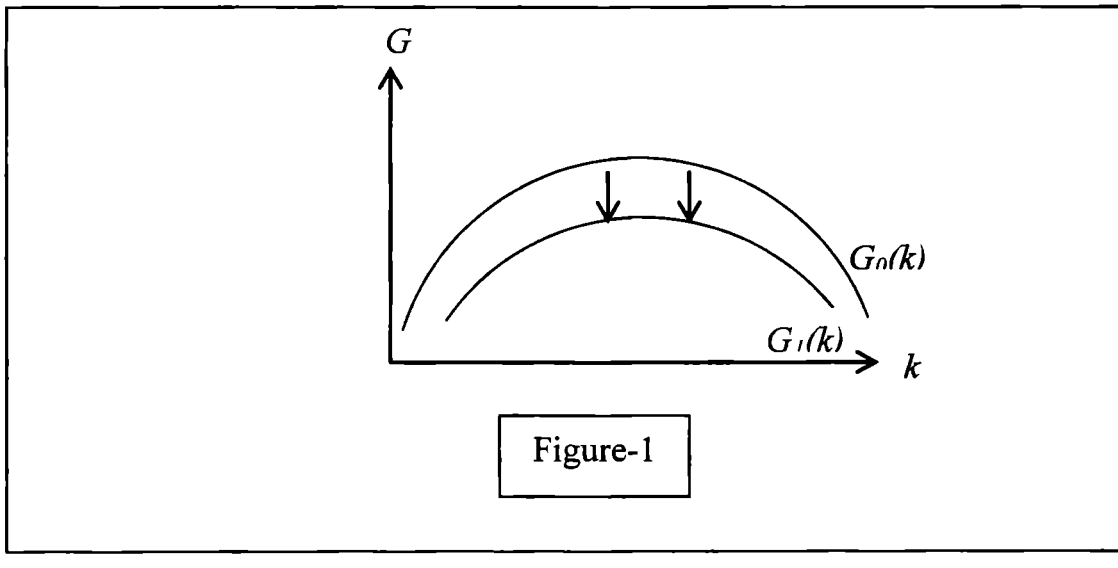
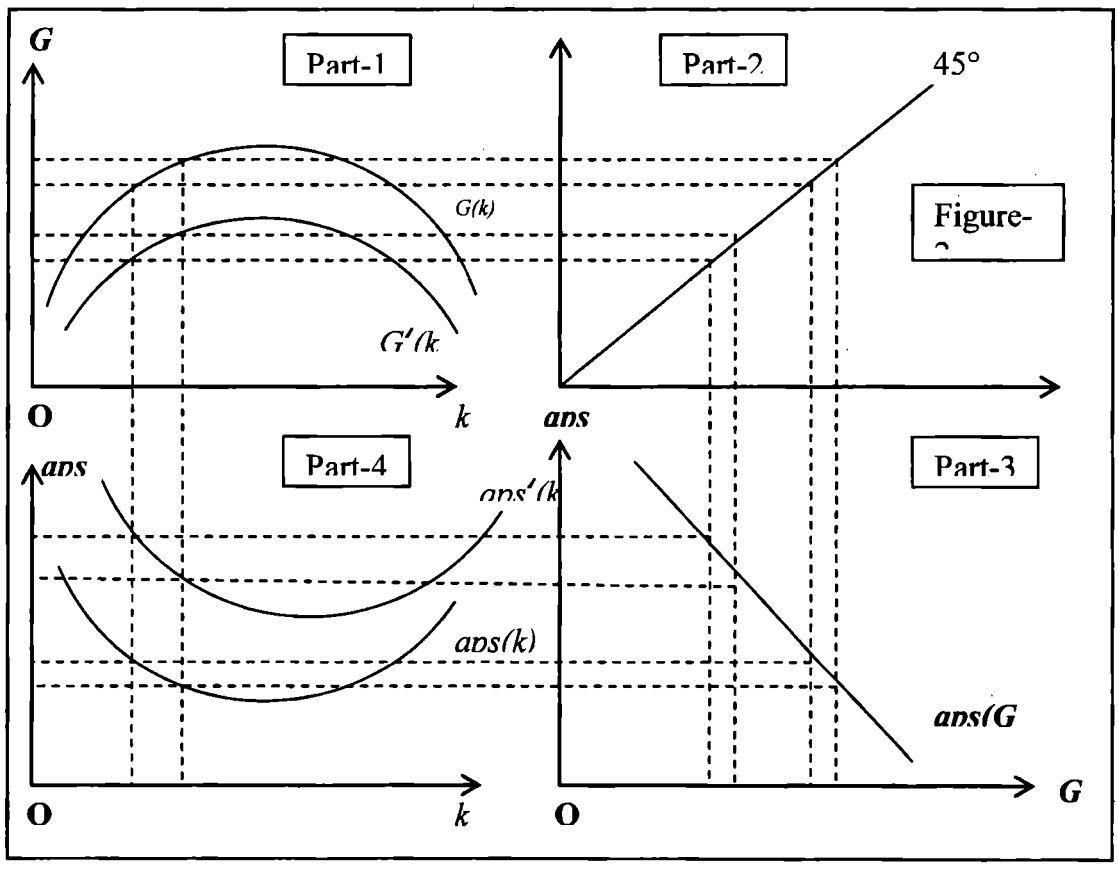


Figure-1

The aps will continue to fall due to the rise G (following proposition-1). That is, at the initial stage *aps* will decrease as k rises. At the later half after reaching a minimum level, the *aps* rises as k rises. So, the *aps* curve will look like 'U'. The *aps* curve will be a mirror image of the inverted U curve. The following self illustrative four quadrant diagram elucidates the derivation of *aps(k)* function.

The curvature of the *aps(k)* function, drawn in part-4 of the diagram (fig-2), depends on the slope of the *aps(G)*, drawn in part-3 of the following diagram. The *aps*, however, cannot rise indefinitely. There must be an upper limit, say at $s=s_{max}$. Once the s_{max} is reached, it will continue to maintain that rate (not shown in diagram). From here onwards the *aps* will remain constant at s_{max} (i.e. $\frac{\partial s}{\partial k}=0$).



Thus proposition: 2 is proved

5. Multiple Equilibria and Instability

With endogenous saving rate the neo-classical production function alone cannot ensure unique stable steady state equilibrium. (Proposition: 3)

Now, let us assume that the neo-classical production function prevails, defined as:

$$Y = f(K, L) \tag{4.1}$$

All the notations used carry their conventional meanings. Neo-classical production functions follow the following assumptions:

(1) Both the factors follow diminishing marginal productivities.

(2) The production function is subject to constant returns to scale (CRS) and

(3) The Inada condition.

The condition of CRS implies:

$$y = f(k) \tag{4.2}$$

Where y and k are Y and K respectively, expressed in percapita terms.

For such a production function the steady state equilibrium condition can be written as (see appendix: I):

$$aps(k).f(k)/k = (n + \delta) \tag{4.3}$$

Where, n = *Rate of growth of population and* δ = *rate of depreciation of capital.* Both n and δ are exogenously given, independent of the level of k. So, the $(n + \delta)$ line is parallel to the horizontal axis. Let,

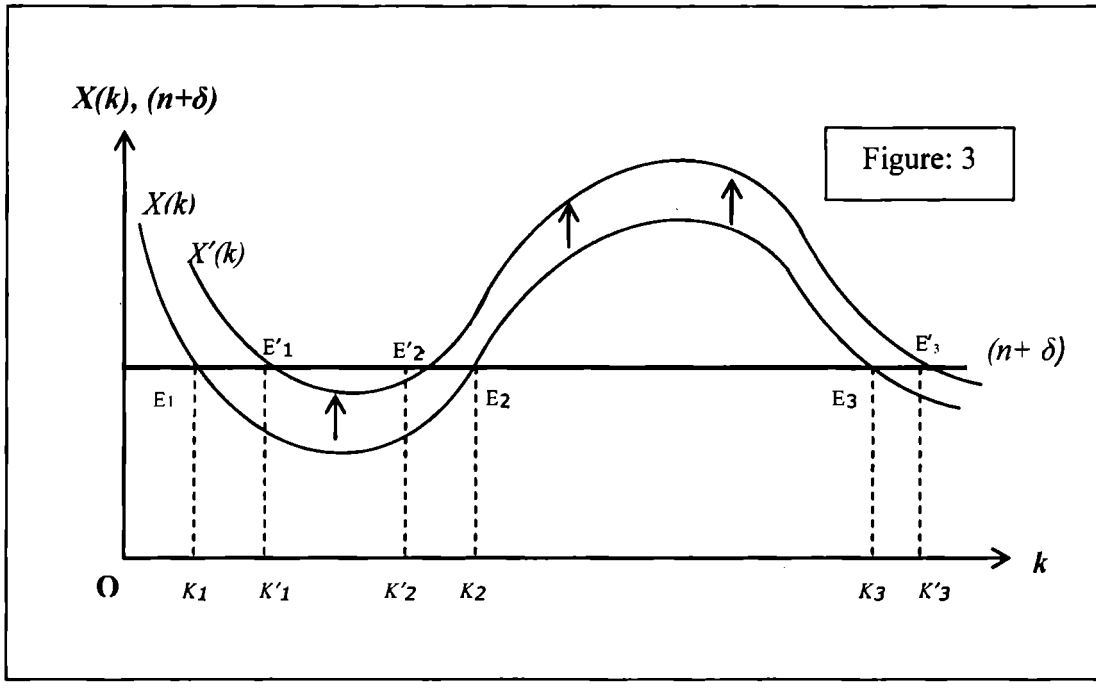
$$X(k) = aps(k).f(k)/k \tag{4.4}$$

To derive the slope of the $X(k)$ function let us differentiate equation (7) *w.r.t.* k

$$\partial X/\partial k = -aps(k)[f(k) - f'(k).k]/k^2 + f(k)aps'(k)/k \tag{4.5}$$

$[f(k) - f'(k).k]$ happens to be the marginal productivity of labor and it will be positive. In the earlier section we see that at the primary stage of development the average saving rate falls. So, as long as the $aps'(k) < 0$, the $X(k)$ function will also be downward slopping. In this phase, let the $X(k)$ line crosses the $(n+\delta)$ line at point E_1 (see: figure:6). E_1 is surely stable steady state equilibrium. However this is a low income trap. Any attempt to overcome this trap by accumulating capital either through loan or through foreign aid will result in a failure, unless the percapita capital stock crosses k_2 level. After reaching a minimum the $s(k)$ starts to increase and the $s'(k)$ becomes positive. Let the $s''(k)$ is also positive i.e. the slope gradually increases. At one point of time let us assume $f(k)\ s'(k)/k$ will exceed $s(k)[f(k) - f'(k).k] / k^2$ and the $X(k)$ function will become upward slopping. Let the $X(k)$ line crosses the $(n+\delta)$ line from below (at point E_2). E_2 is definitely an unstable equilibrium. While drawing the $s(k)$ function it was assumed that after reaching s_{max} the average rate of saving becomes constant and $s'(k)$ becomes zero. The $X(k)$ starts to fall. The $X(k)$ line crosses the $(n+\delta)$ for the third time at point E_3. E_3 symbolizes high level stable steady state equilibrium.

From the above analysis we prove proposition: 3.



Lowering inequality by redistribution of income through exogenous policy change raises the steady state level of capital per unit of labor. A fair distribution helps the LDCs to escape the low income trap. (Proposition: 4)

Let us again concentrate on the role of income distribution. A fair income distribution, as said earlier the G(k) curve in figure: 3 will shift upward and as a consequence the *aps* curve will move upwards. With such a parametric shift the *X(k)* curve will shift up. This implies a higher saving propensity for each level of k. This will increase the steady state equilibrium value of k from k_1 to k'_1 and from k_3 to k'_3. The unstable equilibrium will move leftwards from E_2 to E'_2. The corresponding level of k will fall from k_2 to k'_2. This has an immense significance. The economy can get the escape velocity with much lower level of percapita capital stock. Secondly, if the country can manage to reduce inequality to such a low level so that the *X(k)* curve crosses the *(n+δ)* line just once, the economy can escape the low income trap and we can even expect a convergence. Thus inequality should not only be considered as the result of underdevelopment but also are two of the most important causes of underdevelopment. Thus proposition: 4 is established

6. Concluding Remarks

This paper primarily emphasizes on the role of income inequality in the determination of rate of economic growth. It ascertains that the existence of high degree of income inequality reduces

the growth rate, with endogenous saving rate, which fluctuates with the stages of economic progress; this paper establishes that the presence of neo-classical production is not sufficient for unique and stable steady state equilibrium. Existence of multiple equilibria eliminates the possibility of convergence. Under such a set-up this paper establishes the inverse relationship between poverty ratio and economic growth rate.

Generally income distribution is treated as an ethical matter in the literature of economics. Indeed it is so but from a purely worldly position this paper establishes that more egalitarian distribution of income and low poverty ratio promote economic growth rate.

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Appendix: I

The production function in percapita terms is given as:

$y = f(k)$ (4.2)

$d/dt(K/L) = 1/L^2 [L (dK/dt) - K (dL/dt)]$

$= (dK/dt)/L - (K/L) (dL/dt)/L$

or, $(dK/dt)/L = d/dt(K/L) + (K/L) (dL/dt)/L$

$= dk/dt + n k$

Now, $(dK/dt) = I - \delta.K$ *and* $I = aps(k).f(K,L)$

$(dK/dt)/L = aps(k).f(k) - \delta.k$

Therefore, $dk/dt = aps(k).f(k) - (\delta+n)k$

At the steady state level of growth all the percapita variables remains constant.

Therefore, the rate of growth of k:

$dk/dt /k = aps(k).f(k)/k - (n + \delta) = 0$ (4.3)

Appendix: II

Table - 1

REGION	COUNTRY	YEAR	GINI INDEX
East Asia	China	1995cd	41.5
	China	2001	40
	Indonesia	1995ab	34.2
	Indonesia	2001	37
	Korea South	1993	31.6
	Laos	1997	37
	Malaysia	1989cd	48.4

REGION	COUNTRY	YEAR	GINI INDEX
	Malaysia	1997	49.2
	Mongolia	1995ab	33.2
	Mongolia	1998	44
	Thailand	1992ab	46.2
	Thailand	1998	41.4
	Bolivia	1990cd	42
Latin America & Carabian	Bolivia	1997	58
	Brazil	1995cd	60.1
Latin America & Carabian	Brazil	1998	60.7
	Chile	1994cd	56.5
	Chile	2000	56.7
	Colombia	1995cd	57.2
	Colombia	1996	57.1
	Costarica	1996cd	47
	Costarica	1997	45.9
	Dominican Rep.	1989cd	50.5
	Dominican Rep.	1998	47.4
	Ecuador	1994ab	46.6
	Ecuador	1995	43.7
	El Salvador	1995cd	49.9
	El Salvador	1998	52.2
	Guatemala	1989cd	59.6
	Guatemala	1998	55.8
	Guyana	1993ab	40.2
	Jamaica	1991ab	41.1
	Jamaica	2000	37.9
	Mexico	1992ab	50.3
	Mexico	1998	53.1
	Nicaragua	1993ab	50.3
	Nicaragua	1998	60.3
	Paraguay	1995	59.1
	Paraguay	1998	57.7
	Peru	1994ab	44.9
	Peru	19996	46.2
	Uruguay	1999	44.8
	Venezuela	1995cd	46.8
	Venezuela	1998	49.5
Subsaharan Africa	Burkina Faso	1994	48.2
	Central Afriacan Rep	1993	61.3

REGION	COUNTRY	YEAR	GINI INDEX
	Cote d' Ivoire	1988ab	36.9
	Cote d' Ivoire	1995	36.7
	Ethiopia	1995	40
	Ghana	1992ab	33.9
	Ghana	1999	40.7
	Kenya	1992ab	57.5
	Kenya	1997	44.9
	Lesotho	1986-87	56
	Madagaskar	1993	43.4
	Madagaskar	1999	38.1
	Mali	1994	50.5
	Mauritania	1988ab	42.5
	Mauritania	1995	37.3
	Mozambique	1996-97	39.6
	Niger	1992ab	36.1
	Niger	1995	50.5
	Nigeria	1992-93ab	45
	Nigeria	1996-97	50.6
	Rwanda	1983-84	28.9
	Senegal	1991ab	54.1
	Senegal	1995	41.3
	Sierra Leone	1989ab	62.9
	South Africa	1993	58.4
Subsaharan Africa	Tanzania	1993ab	38.1
	Uganda	1992ab	40.8
	Uganda	1996	37.4
	Zambia	1993ab	46.2
	Zambia	1998	52.6
	Zimbabwe	1990ab	56.8
	Zimbabwe	1995	50.1

'a' ⇒ refers to expenditure shares by percentiles of population.

'b' ⇒ ranked by percapita expenditures

'c' ⇒ refers to income shares by percentiles of population

'd' ⇒ ranked by percapita income

Sources: World Development Indicators, 1998 CD-ROM, World Bank

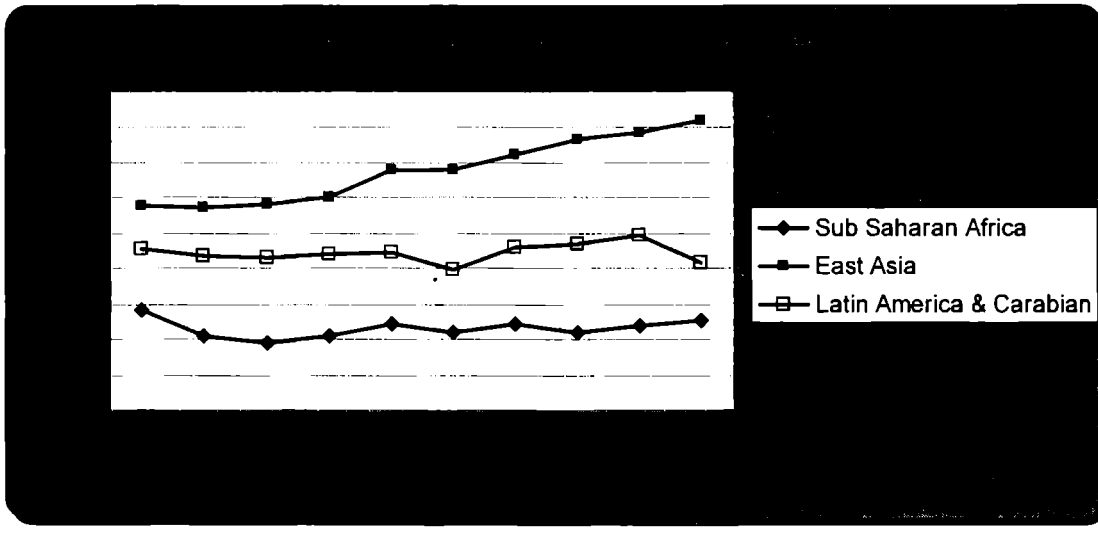
CIA The World Fact Book Data, Field Listing - of income - Gini index (Down loaded from http://www.cia.gov/cia/publications/factbook/fields/2172.html)

Table- 2

Low and Middle Income Economies: Gross Domestic Saving as a percentage of GDP

	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
Sub Saharan Africa	14.3	10.5	9.6	10.6	12.2	11	12.3	11.1	12	12.8
East Asia	28.8	28.6	29	30.2	34	34.1	36.2	38.4	39.4	41.1
Latin America & Carabian	22.7	21.7	21.5	22	22.3	19.9	23.1	23.6	24.6	20.8

Source: The World Bank Annual Report, 1991, Page: 32



Globalisation and the Indian Floriculture Industry

Sudipti Banerjea
Professor, Department of Commerce, CU

Subrata Goswami
Senior Lecturer, Bhangar Mahavidyalaya

Abstract

An attempt has been made to compare the performance of the floriculture industry in India during the pre-and post-globalisation periods in the Indian economy and assess the potential of this industry by using some relevant secondary data relating to the area under cultivation, production and export. Based on the empirical analysis, it has been concluded that India has immense potential for earning foreign exchange by exporting floricultural products. The increasing globalisation of the world economy has definitely paved the way for fast development of this industry and there are much opportunities before the export-oriented floriculture units in different parts of India.

Key-words: Globalisation; Floriculture Industry in India.

1. Introduction

Since independence, India has made substantial progress in many forms of agricultural activities, especially with respect to food and overall livelihood security. In fact, in the last few decades, India gradually emerged as one of the leading producers of rice, wheat, pulses, fruits, vegetables, milk and other commodities. The country's population increased three-fold in the last three decades. The foodgrains production increased in the same period by nearly five times and it helped India increase per capita foodgrains availability domestically till the mid-nineties. However, the share of agriculture in the GDP declined from 55% in 1950 to about 42% in 1980 and to around 19% in 2006 (Economic Survey, 2006-07). Still, the agricultural sector provides maximum employment opportunity. But, even with considerable progress, agricultural employment has decreased marginally.

There is no denying the fact that India is still an agriculture-based economy. However, perceptible changes have occurred during the last three decades. This has not only affected the growth rate of agricultural produce but has also had substantial impact from the structural point of view.

The average size of operational holdings in India declined from 2.28 ha. in 1971 to 1.57 ha. in 1991 and then further declined to 1.22 ha. in 2005 (Economic Survey, 2006-07). This has certainly had an impact on crop production. The simple message is that agricultural growth has to be essentially achieved through increasing the yield rate (i.e.,

productivity per unit of land). One important feature of the current situation is that yield rates of cereals have gone down and, at the same time, discernable changes can be noticed in consumers' preferences, which have shifted away from cereals to some high-value agricultural produce. Higher income and the integration of national markets with the global market as a result of liberalisation and reforms, are expected to increase the demand for some luxury items like floricultural products (FAO, 2004). International evidence suggests at least two concrete reasons for the increase in the demand for the floricultural products. *First,* a rise in income ultimately leads to increase in demand for luxury goods as well as normal goods. From India's domestic point of view, the floricultural products serve twin purposes. Floricultural products appear to be necessary for religious and ceremonial functions. At the same time, these are consumed as high-valued luxury items, besides other medicinal and alternative uses (ITC, 2005). The *second* source of sudden increase in demand lies in the enhanced awareness of people in general about environment. Most of the luxury items used by the households are manufactured products. Many of such products are not eco-friendly. Instead, it has been observed that products like perfumes for fragrance and adoration purposes definitely pollute the environment. Such products degrade the environment by way of resource extraction and pollution through production and its uses. It has again been noted by some environmentalists that there is about 14% swing of preference in favour of natural products in almost all the high-income countries so far as such products are concerned (Dua & Brahmi, 2003). There is a clear evidence of this substitution. And, the floricultural products appear to be the most dominant variety for substitution. Thus, apart from normal domestic and foreign demand, a distinct shift in favour of the floricultural products is noticed. Accordingly, it can be said that the growth in demand for the floricultural products ought to lie in the demand-led varieties. Such a presumption needs to be verified concretely in terms of data and analyses based on the real situation.

Turning attention again to the Indian agrarian scenario, especially on the production side, it can be argued that, if cereal pricing is related to market forces, land could be reallocated. Say, the land used for rice and wheat cultivation may be released to some extent to meet the growing demand for many non-cereal crops and also several floricultural products in accordance with the emerging consumption pattern. Thus, in a holistic way, floriculture can be promoted as a means for agro-diversification and it can be called as *colour revolution* (Ahmed, 2004). This will provide, perhaps, some impetus needed for the growth of the agricultural sector. Actually, with the increase in trade, income and also employment due to globalisation, agriculture in India is diversifying towards high-value commodities and, at the same time, offering reasonable incentives to the small-holding farmers (Vyas, 1996). The fact is that the Indian rural economy has been facing the challenge of the ability to manage the problems associated with transition of agriculture from a supply-driven chain to a demand-led market-oriented supply chain. To capture the specific features arising out

of globalisation, liberalisation and reforms in the Indian economy, particularly in the agricultural sector, it is prudent to look into what is happening to the peripheral activities in the Indian agriculture. That is why the researchers have chosen to analyse the problems and prospect of the floricultural trade in India against the backdrop of the globalised environment.

An attempt has been made to explore quantatively the difference between the nature of trade in the floricultural products between two periods. The *first* period covers 1971-72 to 1986-87, whereas the *second* period covers 1991-92 to 2005-06. In order to maintain parity with the current day's jargon, the first period has been designated as the *pre-globalisation period* and the second one as the *post-globalisation period.* It has been noted that there is a discontinuity in data structure in the sense that a consistent set of data from 1987-88 to 1990-91 is not available. Thus, the time series data involve a discontinuity. Though there is a controversy as to how and when the globalisation process started, there is no denying the fact that the process started developing from the 1980s in most of the western countries including the USA and Canada. However, from the beginning of the 1990s, almost all the lazar countries have come under the working of the globalisation process. In that sense, India's trading partners are richer in terms of experience of globalisation, than India. Another interesting fact is that, although there is an intense debate within India on the probable effects of globalisation and there is also some resistance to it, India still remains at the lower level with respect to the *index of globalization.* India's rank in terms of index of *globalisation* of 171 countries is 141 (Economic Indicators, World Bank, 2005-06). Even with this dismal performance in globalisation, no one can deny the potential and the consequential effects of globalisation on the world trade and, hence, on the world economy in the coming years. In fact, there are some optimistic projections of the Indian economy with more and more globalisation. Since 1998, there have been signs of changes both in the composition of trade and the volume of trade. Such changes have been attributed to globalisation itself which manifested itself in India in the form of changes in the policies relating to trade and finance. Several new items have come up both in the import and export baskets and some of them seem to be promising. One such item is floriculture which holds significant potential for future trade.

2. Objectives of the Study

In this paper, it has been attempted to assess the performance and the potential of the floriculture industry in India over the periods under consideration. The study also attempts to analyse and present the changing profile of this industry in India in the context of globalisation. To put the matters in concrete terms, the main objective of this study is to make a comparative analysis of the performance and appreciate the potential of the floriculture trade in the pre-and post-globalisation periods in the Indian economy.

3. Data and Methodology

The study is essentially based on secondary data. Such data have been obtained from the reports, documents etc., published by the International Trade Centre/ The United Nations Commission on Trade and Development (ITC/UNCTAD), World Trade Organisation (WTO), Flower Council of Holland, Agricultural and Processed Food Products Export Development Authority (APEDA), National Horticulture Board (NHB), Directorate General of Commercial Intelligence and Statistics (DGCIS) and the reports published by Central and State Government agencies.

Relevant statistical techniques have been employed for analysis and interpretation of such data. Tables and graphs have been used extensively in support of the text in the appropriate places.

However, there are some limitations of data which are used for the empirical analyses in this work. Unfortunately, the researchers have faced severe difficulties in getting appropriate and reliable aggregate data with respect to many aspects of the floriculture industry.

The *first* problem that arises relating to the reporting of production data is that the number of varieties under the name *floriculture* is too large for the purpose of aggregation. *Secondly*, the problem of physical identification is also there especially for the enumerators. *Third*, flower is a perishable product and, due to non-availability of adequate storage facility, verification of the data becomes nearly impossible. Moreover, the Directorate of Agriculture, as well as the other agencies involved in reporting agricultural data, often ignores the floriculture industry. Again, neither the inputs nor the outputs of this industry are transacted in the organized markets. Consequently, this industry almost entirely belongs to the informal sector. Hence, reliable data relating to market transaction are very difficult to obtain and, in many cases, it becomes almost impossible to conduct an industrial research work. An individual researcher does not get a consistent set of data on the full-range of activities of this industry. Data-related limitations, due to the above reasons, have so far largely discouraged research interest in this field. The present research also suffers from this limitation.

4. Performance of the Floriculture Industry

Based on the data for the period from 1971-72 to 1986-87, which can be termed as the *pre-globalisation period*, it can be said that Indian floricultural products were exported to 42 countries, whereas since 1991 (beginning of the *post-globalisation period*) the number of export-destination countries is increasing and the figure was 103 in the year 2005-06, a positive development indeed in terms of production (and thereby increase in area under cultivation) and export also. From **Table-1**, covering a period of nine (9) years (i.e., 1997-98 to 2005-06), it can be said that, on an average, the leading export-destination countries are the USA, the Netherlands, Germany, the UK, Japan and Italy. **Table-1** also shows the share of trade of the respective countries (in percentage).

Table-1

Changing Profile of the Leading Buyers of the Indian Floricultural Products First Five Positions (1997-98 to 2005-06) [in terms of MT]

Rank Year	1st	2nd	3rd	4th	5th
1997-98	Netherlands (29.41)	USA (27.54)	Japan (8.31)	UK (6.99)	Germany (5.65)
1998-99	USA (28.98)	Netherlands (20.16)	Japan (19.99)	UK (4.86)	Germany (4.79)
1999-00	Netherlands (38.38)	USA (32.01)	Germany (6.26)	UK (6.17)	Japan (6.14)
2000-01	USA (29.27)	Netherlands (27.04)	Japan (10.17)	Germany (6.26)	UK (5.96)
2001-02	USA (27.15)	Netherlands (17.63)	Japan (17.56)	UK (6.71)	Germany (5.55)
2002-03	USA (36.19)	Netherlands (13.05)	Japan (11.28)	UK (7.85)	Germany (5.71)
2003-04	USA (38.88)	UK (11.78)	Germany (8.70)	Netherlands (8.20)	Italy (5.88)
2004-05	USA (27.72)	UK (12.32)	Netherlands (9.13)	Germany (8.85)	Italy (4.88)
2005-06	USA (37.44)	UK (10.78)	Japan (9.62)	Germany (8.49)	Netherlands (6.35)

Source: Worked out on the basis of secondary data [Export Statistics (1997-98 to 2005-06)] published by DGCIS, Ministry of Commerce, Government of India, Kolkata

The data relating to growth rate of export (in terms of %) for sixteen years before globalisation (the period being 1971-72 to 1986-87), indicate that category-wise (i.e., cut flower, bulbs, etc.) cut flower and bulbs had improved performance in spite of ups and downs, whereas performance relating to plants, cactus and foliage were far less than adequate. It has to be noted that the ups and downs in the export growth rate are due to certain uncontrollable factors like quality expected and demand in the overseas markets **(Table-2)**.

Table-2

Growth Rate of Export Value before Globalisation (%)

Year	Cut Flower	Bulbs	Plants	Foliage	Cactus
1971-72	—	—	—	—	—
1972-73	131.66	47.31	49.3	37.44	–100
1973-74	–97.15	–75.35	15.12	449.62	—
1974-75	2771.94	39.31	24.19	–91.5	—
1975-76	–64.36	–32.11	31.99	–13.18	—
1976-77	179.49	19.31	–75.3	4952.32	345.7
1777-78	6062.95	–30.82	7.22	37.4	2097.48
1778-79	–21.98	48.09	257.84	–42.05	–75.87
1979-80	–58.53	655.97	–24.69	–93.27	–71.95
1980-81	–33.24	155.55	47.51	–45.87	719.49
1981-82	–30.08	10	–54.78	715.68	–87.98
1982-83	26.55	61.82	180.35	–94.41	76.64
1983-84	175.88	–37.94	–38.91	232.65	–1661.8
1984-85	61.98	–17.3	104.27	565.61	–28.55
1985-86	19.87	16.89	–10.59	–90.55	–36.63
1986-87	64.3	113.27	–15.46	–78.31	186.12

Source: Worked out on the basis of secondary data [Export Statistics (1971-72 to 1986-87)] published by DGCIS, Ministry of Commerce, Government of India, Kolkata

For the same period (i.e., 1971-72 to 1986-87), the export growth rate, in spite of ups and downs for all the categories taken together, had substantially improved. Again, as expected, there were wide ups and downs in some years, which can be attributed to high price fluctuations in the international markets **(Table-3)**.

Table-3

Export of the Indian Floricultural Products (Rs. in lakh) before Globalisation and the Mean, Coefficient of Variation (C.V.) and Growth Rate of Export

Year	Cut Flower	Bulbs	Plants	Foliage	Cactus	Total Export	Growth (%)
1971-72	0.3351	1.1628	3.1761	0.2505	0.2091	5.1336	—
1972-73	0.7763	1.7129	4.742	—	0.2874	7.5186	46.45
1973-74	0.0221	0.4223	5.4589	—	1.5796	7.4829	–0.47
1974-75	0.6347	0.5883	6.7796	0.2908	0.1343	8.4277	12.62
1975-76	0.2262	0.2817	8.9483	—	0.1166	9.5728	13.58
1976-77	0.6322	0.3361	2.2103	0.3457	5.891	9.4153	–1.64
1777-78	38.9622	0.2325	2.3698	7.5967	8.0941	57.2553	508.11
1778-79	30.3988	0.3443	8.48	1.8334	4.6909	45.7474	–20.1
1979-80	12.6059	2.6028	6.3866	3.1526	0.3157	25.0636	–45.21
1980-81	8.4153	6.6514	9.4207	25.8352	0.1709	50.4935	101.05
1981-82	5.8839	7.3169	4.26	3.1046	1.394	21.9594	–56.51
1982-83	7.4463	11.8403	11.943	0.7252	0.0778	32.0326	45.87
1983-84	20.5432	7.3476	7.2964	12.7722	0.2588	48.2182	50.52
1984-85	33.2775	6.0762	14.9047	9.1263	1.7226	65.1073	35.02
1985-86	39.3884	7.1023	13.3257	12.4692	0.1628	72.4484	11.27
1986-87	64.7162	15.1475	11.2656	35.6768	0.0353	126.8414	75.07
Mean	16.51652	4.322869	7.560481	8.706092	1.571306	37.04488	
C.V.	**117.69**	**107.13**	**51.39**	**125.75**	**156.33**	**89.23**	

Source: Worked out on the basis of secondary data [Export Statistics (1971-72 to 1986-87)] published by DGCIS, Ministry of Commerce, Government of India, Kolkata

Note: The figures in the table are at constant prices.

During the *post-globalisation period* under study (i.e., 1991-92 to 2005-06), presented in Table 4, the situation had substantially improved in case of all the varieties, viz., cut flower, bulbs, plants, cactus, foliage and dried flowers, in spite of ups and downs, which can be

attributed to simplification of exemption policy, plant quarantine procedures, availability of cold storage facilities in the major airports, and export-friendly environment. One very positive and interesting feature is that the dried flower category has come to the picture in the *post-globalisation period* under study and, in spite of price fluctuations (which can be attributed to high exchange rate fluctuations), the position of this category has improved, a positive development indeed, at least in terms of product diversification. The share of this category (i.e., dried flower) in the Indian export basket was about 22% in the year 2005-2006 **(Table-4)**.

Table-4

Export of the Indian Floricultural Products (Rs. in lakh) after Globalisation and the Mean, Coefficient of Variation (C.V.) and Growth Rate of Export

Year	Cut Flower	Bulbs	Plants	Foliage	Cactus	Dried Flower	Total Export	Growth (%)
1990-91	n.a	n.a	n.a	n.a	n.a	n.a	786.4	
1991-92	39.805	120.593	401.532	274.753	—	643.5	1480.183	88.22
1992-93	101.265	78.343	305.663	262.32	—	743.1	1490.691	0.7
1993-94	99.769	149.531	298.377	243.976	—	1092.1	1883.753	26.36
1994-95	299.8	118.3	604.3	103.5	—	1957.8	3083.7	63.69
1995-96	1003.297	192.1591	792.7598	377.806	2.56458	3645.563	6014.149	5.41
1996-97	1808.649	128.4265	911.1155	256.7527	1.00661	3233.909	6339.859	28.08
1997-98	1894.12	298.081	116.3333	483.8772	0.95916	5327.299	8120.67	18.96
1998-99	2511.659	110.729	114.7359	1816.506	3.31766	5104.018	9660.966	8.84
1999-00	2912.74	127.7068	106.5262	2929.408	3.94823	4435.31	10515.64	17.08
2000-01	3909.682	328.1579	197.5751	2186.626	2.232199	5688.039	12312.31	-6.27
2001-02	3799.086	361.8013	197.6417	1983.42	1.158	5196.033	11539.14	43.73
2002-03	4323.383	288.4256	201.514	5954.746	2.72835	5814.882	16585.68	50.46
2003-04	4574.154	218.015	2212.531	11106.84	3.09697	6840.203	24954.84	-15.45
2004-05	3534.984	193.1294	2195.407	9203.483	10.675	5961.321	21099	44.55
2005-06	7413.066	278.6817	2791.72	12914.26	15.253	6528.281	29941.26	41.9
Mean	**2548.364**	**199.472**	**763.1821**	**3339.885**	**4.267251**	**4147.424**	**10363.02**	
C.V.	**82.67**	**45.49**	**116.65**	**130.07**	**106.04**	**51.52**	**85.23**	

Source: Worked out on the basis of secondary data [Export Statistics (1990-91 to 2005-06)] published by DGCIS, Ministry of Commerce, Government of India, Kolkata

Note: The figures in the table are at constant prices.

A look at the figures relating to *Mean* and *Coefficient of Variation (C.V.)* with respect to the different categories of floricultural products and, as a whole, for both the *pre-globalisation period* (1971-72 to 1986-87) and the *post-globalisation period* (1991-92 to 2005-06) indicates that the *mean* figures (for both *category-wise* and *as a whole*) had improved substantially in the *post-globalisation period* as compared to the *pre-globalisation period*. It is also important to note that the figures relating to *coefficient of variation* (for the sets of data) indicate that variation has decreased in case of cut flowers, bulbs and cactus, a positive development indeed. However, it is to be noted that, with respect to plants and foliage, the variation has increased, certainly an issue of concern.

The *correlation coefficient (r)* calculated on the basis of *area under cultivation* and *production* during the *pre*-and post-*globalisation periods* are **0.754703** and **0.303947** respectively (Table-5), indicating, though less than ideal, a positive relationship between the *area under cultivation* and *production* during both the periods in varying degrees.

Table-5

Area (Hectare) and Production (Metric Ton) of Floricultural Products

Year	Production	Area	Year	Production	Area
1979-80	107859	21645	1996-97	366274	71213
1980-81	113545	20897	1997-98	366258	73536
1981-82	128756	22522	1998-99	459163	73970
1982-83	171498	18230	1999-00	509193	88607
1983-84	190474	24239	2000-01	556424	98447
1984-85	185697	27536	2001-02	534576	106477
1985-86	210478	26238	2002-03	734912	70419
1986-87	238569	29430	2003-04	579484	101185
1987-88	265812	34000	2004-05	659172	117863
1988-89	287425	32524	2005-06	693401	126235
Correlation Coefficient 0.754703			**Correlation Coefficient 0.303947**		

Source: Worked out on the basis of secondary data [Annual Reports (1979-80 to 1988-89 and 1996-97 to 2005-06)] published by NHB, Gurgaon and Ministry of Agriculture, Govt. of India.

An attempt has been made to compute the *land productivity* (per ha.) by using the data relating to *production* and *area under cultivation* during the *pre*-and *post-globalisation periods* (**Table-6**). Such computation indicates that compared to 1996-97, land productivity increased in 2004-05. However, there are some ups and downs during the said period which may be attributed to lack of technical skill, poor post-harvest management and poor quality of plant materials. The situation during the *pre-globalisation period* was also quite commendable.

Table-6

Trend in Productivity of Floricultural Products

Year	Productivity/Hectare	Year	Productivity/Hectare
1979-80	4.98	1996-97	5.14
1980-81	5.43	1997-98	4.98
1981-82	5.71	1998-99	6.20
1982-83	9.40	1999-00	5.74
1983-84	7.85	2000-01	5.65
1984-85	6.74	2001-02	5.02
1985-86	8.02	2002-03	10.43
1986-87	8.10	2003-04	5.72
1987-88	7.81	2004-05	5.59
1988-89	8.83	2005-06	5.49

Source: Worked out on the basis of secondary data [Annual Report (1979-80 to 1988-89 and 1996-97 to 2005-06)] published by NHB, Gurgaon and Ministry of Agriculture, Government of India.

Attempt has also been made to work out the *income elasticity of demand* in the countries which are the India's major export destinations during the *post-globalisation period* (**Table-7**). Such computation indicates that, if the said countries are ranked in order of *income elasticity of demand*, then France comes first followed by Italy, Germany, the UK Japan, the USA and the Netherlands.

While coming to the very low figure relating to the Netherlands, it has been observed that, though the Netherlands has the largest flower market in the world, still the Indian floricultural products have largely failed to enter into the said market because of deficiency in terms of quality and international standards expected in that most important world market. It is a matter of serious concern demanding immediate attention of the policy-makers in this field.

Table-7

Income Elasticity of Demand of the Indian Floricultural Products in the Overseas Markets

Country	Income Elasticity of Demand
USA	10.443
The Netherlands	1.672
United Kingdom	53.035
Germany	92.355
Japan	19.860
Italy	184.766
France	458.168

Source: Worked out on the basis of secondary data [Economic Indicators (2005-06)] and [Export Statistics (2005-06)] published by World Bank, New York, & DGCIS, Kolkata, respectively

5. Conclusion

Based on the analysis of data, it can be said that compared to the pre-globalisation period considered in the study (i.e., 1971-72 to 1986-87), the area under cultivation, production, and export of floricultural products have substantially improved during the post-globalisation period (considered upto the year 2005-06). Though the Indian floriculture industry is suffering from varied problems some of which are largely uncontrollable even in the foreseeable future, there is no doubt that this industry, eco-friendly in nature, has much prospect both in terms of production and export, apart from its employment-generation potential for the backward and rural people including a large number of women. Certainly, globalization, in the wider sense, is catalyzing the positive developments that are taking place in this industry.

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Reverse Mortgage in India : Issues and Concerns

Goutam Bhowmik
Lecturer-in-Commerce,
Islampur College, Islampur
Uttar Dinajpur, West Bengal

Abstract

As National Housing Bank (NHB) finalised the operational guidelines on Reverse Mortgage Loan (RML), a novel financial product, especially meant for senior citizens, is on the offing. In this regard, the paper highlights the basic features of RML as laid down in NHB guidelines along with its tax implications. It also compares the case of USA so as to identify areas that need serious consideration from the regulatory authority.

Key-words: National Housing Bank, Reverse Mortgage Loan, Senior Citizens.

1. Introduction

With the breakdown of joint family system and the social support system of the past, the elderly people, now a days, face a lot of difficulties to survive with dignity. On the face of ever increasing inflation, they face a financial hurdle to maintain a decent lifestyle. In a country like India where about 90% of the population does not come under the purview of any old age benefit like pension, old age allowance or any other form of social security, the plight of these people can be easily understood. Even those who come under pension scheme find it difficult to meet their daily needs because the pension amount is meager and insufficient. Moreover, the growing age compels them to spend a lot of money in medication. In these circumstances, what they need is a regular cash flow stream to supplement pension or other sources of income. But here arises a crucial question—where from will the money come? In most of the cases, it is found that the senior citizens or retired persons have only one valuable asset under their possession—a house, which does not, generally, produce any income instead costs money for maintenance. Until recently, they were left with only two options: either sell their house and shift to a rented house or borrow money from any financial institution by keeping the house as mortgage with the latter. The first option is less preferable to them as they are emotionally attached to their house and do not like to incur rent because that would in turn cost money. The second option is also unacceptable, as they have to pay monthly installments to the lender. With the introduction of Reverse Mortgage Loans (RMLs) in India, the house-rich and cash-poor senior citizens get the third and probably the best alternative to lead financially independent and dignified life. As the name suggests, the RML is essentially a mortgage agreement but has certain reverse characteristics. Simply speaking, RML is a special

type of loan that allows senior citizens to convert a part of the home equity into cash while continuing to live in the house for as long as they want. This type of loan is called 'reverse' mortgage because payments flow from the lender to the homeowner.

RML, as a part of social security system, has been there in the developed countries like USA, UK, Canada, Australia, etc since 1980s. Observing the popularity and success of the scheme in these countries, the Government of India, in its budget for the year 2007-08 had proposed the introduction of RML in India– "The National Housing Bank (NHB) will shortly introduce a novel product for senior citizens: A 'reverse mortgage' under which a senior citizen who is the owner of the house can avail himself of a monthly stream of income against the mortgage of his house, while remaining the owner and occupying the house throughout his life time without repayment or servicing of the loan." (P.Chidambaram, Hon'ble Finance Minister, Government of India, Paragraph 89, Budget Speech, 2007-08).

It is beyond doubt that the introduction of RML in our country essentially helps elderly people to convert their house into cash-generating asset. On the other hand, it is likely to deepen the housing sector as well as to accelerate overall economic activities by empowering the elderly people to spend money. As the NHB has finalized operational guidelines and financial institutions are gearing up to launch their respective RML, it becomes relevant to have an insight about RML, its basic features, differences with ordinary mortgage loan, tax implication, and loopholes, if any. Accordingly, the paper is designed to address the following objectives:

- to define RML and to point out its differences with home loan mortgage;
- to consider the basic features of the RML as enshrined in the NHB Operational Guidelines;
- to discuss the tax implication of RML; and
- to compare the case of USA with that of India.

In order to address the above objectives, the reminder of the paper is organised as under. Section two defines RML while section three points out its differences with ordinary mortgage. Section four deals with the basic features of the RML as enshrined in the NHB Operational Guidelines. Tax implication of the RML is discussed in section five. In section six, we compare the case of USA with that of India so as to identify the areas that need immediate improvements. The last section is devoted to concluding observations.

2. Definition of Reverse Mortgage Loan (RML)

Conceptually, reverse mortgage seeks to monetize the house as an asset and specifically the owner's equity in the house. The scheme involves the senior citizen mortgaging the house property to the lender, who then makes periodic payments to the borrower during the latter's lifetime. He is not required to service the loan during his lifetime. Thus, a reverse mortgage, unlike other mortgages, is a home loan that does not require to be paid back as long as a

borrower or his spouse occupies the property. It provides a way of converting the house equity into cash.

Viewing from this angle, reverse mortgage may be defined as an agreement by which a house owner borrows against the equity in his house and receives regular payments from the lender. Here equity is the value of the property over and above any mortgage or other liabilities relating to it. Thus, reverse mortgage is a contract between a house owner and a financier, which enables the house owner to receive a stream of income, especially in retirement, from the future realizable value of the house. It essentially helps in unlocking the wealth otherwise locked in a residential asset.

3. Reverse Mortgage Loan Vs. Home Loan Mortgage

Reverse and home loan mortgage may have some common features in the sense that both help you remain the owner of the house and both require payment of the entire loan with interest. But they differ, to a large extent, with respect to their intention as well as the mode of repayment.

A home loan mortgage helps to build up equity. The monthly payments towards the repayment of the mortgage loan help to reduce the loan balance while the equity portion keeps on increasing as the time progresses. After paying all the installments, debt will come to an end while the equity portion will be equal to the value of the house. However, reverse mortgage works in contrast to this and is therefore, known as 'falling equity and rising debt'. Here the entire loan amount along with interest is paid back out of the sale proceeds of the house when the last surviving owner dies, or when he abandons the entire property. Table-1 demonstrates the contrasting features of the reverse and home loan mortgage.

Table–1 : Contrasting Features of Reverse and Conventional Mortgage

Differentiating Criteria	Reverse Mortgage	Home Loan Mortgage
Purpose of loan	To release the equity[1] in the house and use the proceeds to live a more comfortable, stress-free, retirement life.	To purchase or to complete the construction of a house.
Position of borrower before loan agreement	The borrower has substantial equity in the house as he owns the house and enjoys the ownership privileges.	Borrower has no or little equity in the house as he needs finance in order to purchase or complete the construction of the house.

1 Equity in house means the realizable value of the house property over and above any liability attached to the house.

Differentiating Criteria	Reverse Mortgage	Home Loan Mortgage
After loan agreement	In the initial months, borrower owes very little and has substantial equity as loan amount accounts for very low portion of equity.	Borrower owes a lot as loan amount accounts for very large proportion of the total value of the house.
During the tenure of the loan	House owner receives regular payments from the lender. So loan balance rises and equity in house declines. Thus, it symbolizes a process of 'falling equity and rising debt'.	Borrower makes payments to the lender on monthly basis. As a result, loan balance declines and equity portion grows with the passage of time. Thus, the process signifies 'falling debt and rising equity'.
At the end of the loan term	Borrower owes whatever amount he received during the tenure of the loan along with the accrued interest on it. As a result, he has little or no equity.	Borrower owes nothing as the loan amount is repaid along with interest. So, he acquires substantial equity.
Pattern of the loan	Rising Debt-Falling Equity Loan Programme	Falling Debt-Rising Equity Loan Product
Income proof of the borrower	Lender is least concerned about the repayment capacity of the borrower. Hence, no income proof is required.	Lender verifies the minimum income or net take home salary to assess the capacity of the borrower to repay.
Credit worthiness of the borrower	Lender is least bothered about the credit worthiness of the borrower.	Credit worthiness of the prospective borrower is a vital decision input for lender.
Restriction on use of the loan proceeds	There is no restriction on the end-use of the proceeds. Funds can be used for any genuine purposes.	The loan amount must be utilised either for construction/purchase of house or for repair and renovation.
Eligibility age	Borrower must be a senior citizen i.e. a person aged 60 years or above.	There is no age bar to subscribe for the loan.

4. Basic Features of Reverse Mortgage Loan as per NHB Guidelines

Eligible Lender: Only Primary Lending Institutions (PLIs) viz. Scheduled Banks and Housing Finance Companies registered with the NHB can offer RML in India. NHB guarantees borrowers for obligations of lenders to make regular payments.

Eligible Borrower: A senior citizen of India i.e. a person aged 60 or above can subscribe for RML either in his own name or jointly with his spouse provided that he is the owner of a self-acquired and self-occupied residential house property (not commercial) in India, which is being used as his permanent primary residence.

Amount of Loan: The amount of loan depends on three factors—market value of residential house property, age of the borrower at the entry level and interest rate. In general, the loan amount will be higher if the borrower is older/value of the house is higher/interest rate is lower and vice-versa. Table 2 presents the tentative loan amount corresponding to the age of the borrower as suggested by the NHB. Moreover, the loan amount is subject to revision based on the revaluation of the house property at such frequency as per the agreement of the loan, which in any case shall be at least once in every five years.

Table-2 : Tentative Loan Amount for Different Age Group

Age of the Borrower at the Entry Level	Loan Amount as a Percentage of Assessed Value of House Property
60–65	40%
66–70	50%
71–75	55%
Above 75	60%

Source: National Housing Bank. (2007) "Reverse Mortgage Loan (RML): Operational Guidelines", May.

Payment Options: Borrowers with mutual agreement with the PLI can opt for any combination of the following three payment options:

- Periodic payments (monthly, quarterly, half-yearly, and annual);
- Lump-sum payments in one or more tranches; and
- Committed line of credit that allows the borrower to decide how much cash to use and when to use.

Eligible End-use of Loan Amount: Loan amount can be used for up-gradation, renovation, extension, improvement, and maintenance of house; medical or any other emergent expenditure of family; as a supplement of pension/other income and meeting any other genuine need. The

inclusion of any 'genuine need' keeps the door open for the borrowers to use the loan amount for any valid reason.

Tenure of Loan: Borrowers can be allowed to receive the installment of loan for a maximum of 15 years. After the expiry of 15 years, borrowers stops receiving the installment but can live in the house continually till his death or death of his spouse as the case may be.

Right to Rescission: Senior citizen borrowers are given right to rescission in keeping with international best practices. Under this right, borrower can cancel the loan agreement within three business days of entering into the agreement.

Non-Recourse Feature: RML is of non-recourse type, which means that the lender does not have any right to recourse to anything other than the house property to recover the loan. The borrower can never owe more than the net sale proceeds of the house property mortgaged. The burden of any shortfall will have to borne by the lender. The excess of net sale proceeds over and above the loan amount inclusive of interest, however, will be returned to the legal heir(s) of the borrower.

Reverse Mortgage Fees: Apart from interest, RML attracts some other costs in the form of origination, appraisal and inspection fees, verification charges paid to third parties, title examination fees, legal charges and property survey and valuation charges. The cost for any item charged to the borrower shall not normally exceed the cost paid by the lender or charged to the lender by the provider of any such services. NHB made it compulsory for lender to provide a detailed schedule of all such costs to the prospective borrower.

Settlement of Loan: There will be no prepayment penalty if the borrower wishes to refund back the loan before the expiry of the term. The loan, however, shall become due and payable only when the last surviving borrower dies or would like to sell the house or permanently moves out of the house for aged care to an institution or to relatives. Borrower or his heirs are given the first right and adequate time (say, upto 2 months) to settle the loan along with the accumulated interest, without sale of the property. If they refuse to exercise their right, the house will be sold and loan is settled with the sale proceeds.

5. Tax Implication of Reverse Mortgage Loan

Incidence of tax on RML depends on the nature of tax. So far as wealth tax is concerned, tax liability does not occur because the house is exclusively used for residential purposes of the owner and hence cannot be considered as 'an asset' for levy of wealth tax as per section 2(ea)(i)(1) of the Wealth Tax Act, 1957. On the other hand, the question of Income Tax does not arise, as the amount received, under the scheme either in terms of monthly installments or lump sum, is mortgage loan amount, which is repayable. Moreover, as the mortgage of house cannot be regarded as 'transfer' as given in section 2(47) of Income Tax Act, 1961, capital gain should not be calculated at the time when the property is mortgaged. The question of

calculation of capital gain arises only when the house is sold by the bank or the owner or his/her heir, as the case may be.

Operational guidelines issued by the NHB, however, remained silent about the taxability of the RML. As a result of this confusion persists. According to Mr.S.Sridhar, chairman and managing director of NHB, senior citizens as well as housing finance companies will be liable to pay tax on reverse mortgage products unless and until the Government clarifies the taxation of reverse mortgage (http:// www.moneycontrol.com). He further clarified that the amount received by senior citizens every month are not income but the payment of the value of the house that he had mortgaged, thereby it attracts tax. On the contrary, tax experts feel that the house is just mortgaged and not sold. Hence the loan installments cannot be subject to capital gain tax either. But at the time of sale of the house by the bank, capital gain or loss will be computed as per Income tax Act, 1961 after taking into account the cost of inflation index and become taxable in the hands of the house owner or his legal heirs, as the case may be. In this context, it should be noted that RML is considered as a tax-free equity all over the world. For example, in the USA, the Government had exempted RML from tax as it is meant to help senior citizens during their old ages. Other courtiers like UK, Australia, and Singapore have followed the footsteps of USA in this regard.

With a view to popularize the product in the India, tax policy should be such that the installments should be treated as loans and not income in the hands of the senior citizens who opted for RML. Tax should be assessed at the time of the sale of the mortgaged house. Otherwise, the product would fail to address the stated objective of rendering benefits to our senior generation.

6. Reverse Mortgage in USA and in India: A Comparison

RML is a popular social security instrument in the west especially in the USA. A banker named Nelson Haynes of Deering Savings and Loan (Portland, ME), Maine issued the first known reverse mortgage in the year 1961. He delivered the product to Nellie Young, the widow of his high school football coach (Bhattachrjee, 2007). But since 1980s, RML had started receiving widespread popularity and Government endorsement in the USA and in the recent past, it has witnessed a phenomenal growth. For example, the number of senior citizens opted for the RML has increased significantly from 157 in 1990 to 59,780 by 2006 (Satish and Bharati, 2006). In India, Dewan Housing Finance Company Ltd. introduced the first reverse mortgage product named "Sakhsam", in 2006. Recently, NHB devised operational guidelines for RML. Punjab National Bank is the first nationalised bank, which came out with reverse mortgage product after the issuance of NHB guideline. So, RML is a very new concept to Indian people especially to the seniors. The following observations can be made when we compare RML in USA and the model suggested by NHB in India:

- The US reverse mortgage scheme allows senior citizens lifetime payments whereas in our case, it is for the maximum of 15 years.
- The eligibility age in USA is fixed at 62 whereas in India, NHB fixed it at 60 years. The age bar in case of USA is justified on the ground that the life expectancy there is quite high. As life expectancy of people in India is much lower than that of USA, the regulatory authority should think of reduction in the age bar so as to broad base the prospective borrowers.
- A house mortgage insurance (Home Equity Conversion Mortgage Insurance) in the US assures lender, in one hand, of compensation if the sale proceeds of the house fall short of the outstanding amount and on the other hand, guarantees the senior citizens against any lender default. This mechanism helps to keep lender's risk within safe limit while providing adequate comfort to the elders. But in our case, operational guidelines issued by the NHB does not contain any such risk reduction mechanism. The US experience suggests that apart from risk reduction, the reverse mortgage insurance contributed significantly in the popularity of the product. In USA, the RML went up more than four fold in just three years only after Home Equity Conversion Mortgage Insurance was introduced. In view of this, Government should seriously consider the introduction of reverse mortgage insurance scheme in India with dual objectives – risk reduction and to make the product more popular so that an efficient reverse mortgage market may be developed in India. But the positive development in this regard is that the NHB has already started negotiations with international companies to set up a mortgage guarantee company as a joint venture with majority stake lying with the NHB.
- As far as taxability of the RML is concerned, the US Federal Government made it tax free equity. But in our case confusion persists as the operational guidelines remain silent on the tax implication of this product. Unless and until, the Government clarifies its stand on this contentious issue, the RML is taxable in India as suggested by Mr. S.Sridhar, Managing Director of NHB.

Apart from these differences, there are some other obstacles, which stand on the way of developing an efficient RML market in India. Firstly, there exists a lot of valuation related anomalies. Because of the absence of any independent valuation authority and a transparent valuation mechanism, under-valuation of real estates is rampant in India. Secondly, the traditional mindset of the people of India who believe that it is a social stigma to mortgage their houses and avail of financing against it. They generally attach a high emotional value to the house and desire to leave it as a legacy to their children.

7. Concluding Observation

RML is introduced in India with two fold objectives—to deepen the housing sector and to provide the senior citizens who are cash-poor but house-rich with a form of social security.

It is true that India is a late runner so far as introduction of RML is concerned. But late running offers some advantages as well like, she can learn valuable lessons from the experience of the developed nations. Thus, she has the opportunity to take pro-active measures while devising necessary regulatory structures so as to facilitate the development of an efficient reverse mortgage market. However, the absence of any independent valuation authority, transparent valuation measures, reverse mortgage insurance mechanism, and clear-cut tax policy with respect to the product are some of the gray areas that need to be addressed with due diligence. The regulatory authority must remember that there are some apprehension in the minds of the prospective borrowers regarding the interest rate charged on RML, service charges to avail RML and possible harassment in the hands of lender through unreasonable property maintenance conditions, stoppage of monthly installment or the threat of eviction from the house. A massive awareness programme involving all possible channels needs to be undertaken to clear the apprehensions of the prospective borrowers. The Government must also ensure that only credible financial institutions are allowed to offer RML at a reasonable interest rate. The terms and conditions should be made hassle free with no hidden clause associated with the service charges and recovery of loan. While devising norms, the regulators and the lenders should not lose sight of the fact that the product is meant for our seniors and essentially in the form of social security and try to develop the product with adequate empathy. Only then, the product can meet the needs of our senior generations on one hand and enable the lenders to unlock the huge potential of this novel product on the other.

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On-line Resources

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Rejuvenating India's Small and Medium Enterprises Sector: The Role of SME Rating

Mausumi Bhattacharyya
Senior Lecturer in Commerce
Serampore College
Serampore, Hooghly

Abstract

Small and medium enterprises have always assumed a significant position in the socio economic development paradigm of India. It generates a handsome amount of revenue for the government, produces the largest chunk of export items and provides a substantial number of employments to the Indian masses. However, this sector has long been neglected by our policy makers. A general lack of credibility cripples the growth of this sector. Liberalization of Indian economy adds to its vulnerability. Recently credit rating agencies have come up with a new product, SME rating which is expected to revitalize this sector. Ratings might help established SME credibility and ensure better credit arrangements. This paper delves into SME sector and its rating scenario.

Key-words: SME, micro-enterprises, credit rating, DUNS Number, Basel II Accord.

1. Introduction

Small and medium enterprises (SMEs) sector has been a principal driver of India's development since independence. India, in recent times, has accorded high priority to the SME sector and pursued policies to make this sector vibrant. It is one of the major sources of employment for Indian mass. At the same time, many a large corporate depend on this sector for the supply of their inputs. Thus, SME sector, though crippled with a host of structural and financial problems, hold a huge potential of becoming a major contributor to GDP. Small and medium enterprises sector epitomizes India's socio-economic development model and has met India's long term expectations in terms of employment, export and GDP growth. SMEs occupy a position of strategic importance in the Indian economic structure due to their significant contribution in terms of output, exports and employment. The small scale enterprises (SSE) alone with over 3.2 million units scattered throughout the country, account for 40% of gross industrial value addition and 50% of total manufacturing exports (Raju, 2008). It is estimated that over 15 million people are employed in SSEs while SMEs as a whole provide employment to about 29.4 million people (Kazami and Farooquie, 2000). The SME sector, consisting of 90% of industrial units in India is facing tough competition since the opening up of the economy. Besides the organic problems inherent in the very nature of their size, shape and mode of operations, the process of globalization threw some major challenges to this sector in terms

of use of technology, competition, and manufacturing strategy. Recognizing the importance of this sector the Government of India has initiated a host of measures aimed at facilitating its growth and competitiveness.

Besides the governmental efforts, credit rating agencies (CRAs) in India as information intermediaries are doing their bit to rejuvenate the SME sector. They have devised a new product 'SME Rating service' for the SMEs to gauge and establish their own credibility in the globalized era of operations. SME rating is said to give the SMEs extra mileage in overcoming their financing difficulties. Against this backdrop, this paper attempts to revisit the present SME scenario and explore the potential of SME rating service in India.

2. Connotative Implications

Small and medium enterprises vary in size and shape across the globe. The variations occur due to the varying nature of economic development in each country. While the US definition of SME is based on the number of employees as well as turnover, the European Union relates it only to number of employees. The UK defines SME on the basis of turnover alone. China follows the US way of categorization by giving emphasis on both turnover and head-count.

There had been considerable debate over the definition of small and medium enterprises in India. This debate has been sorted out by the enactment of a law—The Micro, Small and Medium Enterprises Act, 2006, which defines the three enterprise categories as :

Enterprise Category (Manufacturing Enterprises)	**Investment (in plant and machinery) Rs.**
Micro Enterprises	Less than 25 lac
Small Enterprises	More than 25 lac and less than 5 crore
Medium Enterprises	More than 5 crore and less than 10 crore

For the service enterprises engaged in rendering services the investment limits are Rs10 lac, Rs 2 crore and Rs 5 crore respectively. The SMEs in India are categorised on the basis of amount invested in plant and machinery irrespective of whether they are manufacturing or service sector enterprises. The Act (MSME) used the age-old limit of investment as the criterion for categorization which could not fully justify the growing importance of this sector in the development of Indian economy.

From the bank's point of view, however, small and medium enterprises rank at par except that small enterprises belong to priority sector. The Act expanded the investment limit to the disadvantage of the small enterprises. Banks are required to lend up to 40% to the priority sector, and in that case banks are most likely to prefer larger firms among the MSMEs with better financial strength to the smaller ones. Moreover, the big enterprises can bargain with banks on interest rates while smaller ones have no other choice than accepting loans at higher rates.

Despite giving special attention to the SME sector, financing by banks and financial institutions, has not been satisfactory. Only 14.3% of registered enterprises have availed of institutional credit, as per the 3rd All India Census of Small Scale Industries of 2001-02. Despite high level of liquidity in the banking system between the year 2000 and 2004, institutional credit for micro and small industries did not pick up (Sobha Rani and Rao, 2008). However, following the Union Finance Ministry's directive to public sector banks to double credit flow to SMEs during the five-year period 2005-10, this sector has recently started showing good progress in this direction.

3. SME Sector in the Era of Liberalization

The process of liberalization of Indian economy has exposed SME sector to intense competition. This is partly due to removal of restriction on foreign direct investment. The formation of the World Trade Organization forcing its member-countries to drastically scale down quantitative and non-quantitative restrictions on imports posed another challenge before the SME sector. Globalization, as enshrined by Stiglitz (2002) encompasses closer integration of the countries and people of the world brought about by the drastic reduction of cost of communication and breaking down artificial barriers to the flow of capital, goods, services and knowledge across borders. This wave of integration did touch the SME sector of India as well. But the SMEs in India were not prepared for such integration and consequently found it hard to cope with the global competition. At the national level, the slackening of command and control regime provided firms with greater degree of freedom of expansion and diversification, which, of course benefited the big corporate houses. The SMEs with little resources found themselves at bay. Unable to lift them up to the global benchmark, many a small enterprise had to pull their shutters down.

The declining importance of public sector in India in the era of privatization, also added to the woes of SME sector. Indian public sector used to source supplies mostly from SMEs. With the weakening of demands from public sector, SMEs started facing the problem of marketing their products. Hence they were forced to scale down their operations. Problems of marketing on the one hand and difficulties in raising capital on the other threatened the very existence of SMEs. Lack of funds constrained technological upgradation need of units, which was highly warranted on the face of steep competition.

Further, removal of protective measures for small industries so as to promote more competitiveness had a major impact on this sector (Kulkarni, 2008). Instead of providing protection for small industries, the policy framework attempted to address the basic concerns of this sector namely, technology, finance and marketing. Consequent to this significant policy change, the number of items reserved for small industry manufacturing has been gradually brought down from 842 in 1991 to 239 in 2007 (Raju, 2008).

Hanorati and Megistae (2007) showed that excessive labour regulation, power shortages

and problems of access to finance have significant influences on industrial growth in India. The effects of each of the three factors on business growth seem also to depend on a fourth element, namely, corruption. Quite obviously, India, being one of the top rankers in the corruption index of the world, finds her SME sector vulnerable.

4. SMEs and Credit Crunch

The small and medium enterprises traditionally lack institutional finance for start-ups and face higher cost of credit relative to larger enterprises. The working capital support extended by commercial banks is evidently far from adequate. Lack of proper credit assessment technique and expertise, higher transaction cost, and more importantly, the higher incidence of non-performing loans do not encourage the commercial banks to extend credit to this sector (Ramchandran, Das, Singh, 2006).

In 1969, when priority-sector lending was introduced, 58% of the total was extended towards SSI sector. This share has been falling consistently. It was 39% in 1992, declining thereafter to around 24% in 2004 (RBI Report on Trend and Progress of Banking in India 2003-2004). Although such developments reflect the changing facets of economic progress, there is a genuine concern about the falling share of credit to this sector. Timely and adequate access to finance is a major hurdle that SMEs face. There are several reasons for low SME credit penetration, key among them being insufficient credit information on SMEs, low market credibility in spite of their intrinsic strengths and constraints in analysis. These lead to sub-optimal delivery of credit and services to the sector.

The Hon'ble Finance Minister, Government of India has announced certain measures in the Parliament on August 10, 2005 for stepping up Small and Medium Enterprises which are required to be implemented by all public sector banks. It was stated that only SSIs will be included in the priority sector. In order to increase the outreach of formal credit to the SME sector, all banks including regional rural banks are required to make concerted efforts to provide credit cover on an average to at least five new small/medium enterprises at each of their semi-urban/urban branches per year. The policy package also suggested cluster based approach for financing SME sector so as to reduce transaction cost, mitigation of risk and for providing appropriate scale for improvement in infrastructure. About 338 clusters were identified for this purpose. In view of the benefits accruing on account of cluster based approach for financing SME sector, banks were instructed to treat it as a thrust area and to adopt the same for SME financing.

5. SME Rating

With the growing realization that the sector's contribution to the economy is constrained by credit inadequacy, the concept of rating has captured wide attention. SME rating is an independent third-party comprehensive assessment of the overall conditions of the SMEs, who

face high unit transaction cost because of relatively small loan size granted to them. In its circular (RPCD. PLNFS. BC. No. 31/06.02.31/2005-06) RBI advised public sector banks to follow a transparent rating system with cost of credit being linked to the credit rating of the enterprise. They are also advised to consider the ratings given by the external rating agencies and to structure their rates suitably.

Following the thrust on the SME sector put by the policy makers, credit rating agencies devised a rating model for this sector. All the Indian rating agencies in collaboration with National Small Industries Corporation (NSIC), the nodal body set up by the Government of India, formulated a uniform five-point rating scale for Small Scale Industries. At the same time, they framed a similar model for Small and Medium Enterprises together.

Rating penetration in India is low and mainly covers instruments rather than the enterprises or issuers. However, rating of SME units involves evaluation of the company as a whole as against the usual practice of rating debt issues or project finance of the company. A recent ASEAN study of this region revealed that 71% of the banks would appreciate such a service from a rating agency. It was with this intention that SME Rating Agency of India (SMERA) was set up as a sequel to a government policy package announced in August 2005. This is the world's first SME rating agency.

Besides CRISIL, ICRA, CARE, Fitch India and ONICRA, SMERA emerged exclusively for offering rating services to SME sector. SMERA is a joint initiative by Small Industries Development Bank of India (SIDBI), Dun & Bradstreet Information Services India Private Limited (D&B), Credit Information Bureau (India) Limited (CIBIL) and several leading banks in the country. SMERA is the country's first rating agency that focuses primarily on the Indian SME segment. SMERA ratings offer SMEs DUNS number, an internationally acceptable number along with its rating reports (Dubey, 2006c). DUNS stands for "Data Universal Numbering System". It is a unique nine digit numbering system which is used to identify a business in a global supply chain. Under the WTO regime, new opportunities are being created for linkages among SMEs across the globe. Sectors such as biotechnology, IT and ITES etc. also have shown promising potential (Rao, 2006). Therefore, the SMEs with DUNS number find it easy to access the global market. This system has been developed by Dun and Bradstreet. Dun and Bradstreet's expertise on rating SME units is an important factor that distinguishes SMERA ratings from other ratings. SMERA's primary objective is to provide ratings that are comprehensive, transparent and reliable. This would facilitate greater and easier flow of credit from the banking sector to SMEs.

Policy makers are trying to revitalize SMEs by establishing a credibility benchmark through rating. Ratings can make SMEs access to financial services more efficiently by providing benchmarks and improving transparency. Independent agency ratings for SMEs can provide greater confidence to lenders and consequently broaden the range of financial resources

available to SMEs. It enables the better SMEs to differentiate themselves from other SMEs, and to establish credibility with business partners.

The rapid growth of the SME sector creates exciting lending opportunities for banks and financial institutions. A credit rating takes a significant chunk of the perceived uncertainty out of their lending decisions and reduces time and transaction costs in the system. On the other hand, SMEs can leverage their ratings for negotiating better borrowing rates and strengthening their relationships with bankers. Ratings can also facilitate faster processing of credit facilities, as rating reports provide sufficient information banks need for approving loans. Further, SMEs can use ratings to enhance their credibility with other counter parties too such as technology provider, suppliers and customers. It can also provide an impetus in raising standards through better financial discipline, disclosure and governance practices. (Ravi Mohan, 2006)

6. Rating Methodology

The methodology covers three broad categories of risk—business risk, management risk and financial risk. Although the risk factors are similar to those of large corporates, the approach to assessing the risk elements, peer group comparisons and weightages for the various parameters, are different.

Business Risk

Under business risk, CRAs assess the sustainability of the business plan and the long-term viability of the unit. It comprises qualitative assessment of the track record of the business, the profile of the rated entity's customers and suppliers, the use of technology and their growth strategies. SMEs hardly have any control over pricing due to their poor competitiveness, low technology levels, and weak financial health and so on. SMEs' price flexibility stems from their relationship with key customers and strong control over costs, which is again a factor of many endogenous parameters. Direct interaction with customers, suppliers and other key parties is an essential part of the rating process.

Management risk

Management evaluation, which is typically an evaluation of the promoters' competence, is a critical factor for SME rating. Performance of SMEs depends on the entrepreneurship and resourcefulness of the promoters unlike the big corporates (Dubey, 2006d). Thus, rating exercise involves the assessment of the promoters' ability to successfully manage the entity through business cycles. A high degree of professionalism in the running of the SMEs is vital to the long term sustainability of the entity.

Financial Risk

Disclosed financial statements form the basis of CRAs' financial risk analysis. Assessment of financial risk involves the evaluation of size and efficiency of capital, profitability, working

capital management, and interest and debt service coverage and so on. Assessment of financial flexibility of the SMEs and their relationship with the banks are given due importance in rating.

The rating model evaluates all dimensions of business, both quantitative and qualitative. The size of the firm is kept in mind while assessing comparable parameters based on industry averages. This prevents the omnibus approach and ensures that the smaller companies do not suffer untenable comparisons. Rating model takes into consideration various industry specific issues as well. For example, in many manufacturing industries quality and environmental certification plays a crucial role. Therefore these issues are given relatively higher weightage. Weights assigned to rating parameters vary across industries and even across individual firms within the same industry. Rating of service sector SMEs have certain peculiarities. For instance, some intangibles are included in the calculation of net worth. Therefore, SME rating process is tailored for each individual firm to accommodate all firm specific issues.

All the rating agencies in India follow an eight-point scale for measuring the credibility of SMEs. However, SMERA rating consists of two parts, composite appraisal or condition indicator and size indicator. That is to say, besides the usual eight point scale, SMERA applies a four point size indicator scale ranging from A to D. The size indicator scale is based on the level of net worth. Small scale enterprise rating, a subset of the larger domain of SME rating, measures performance capability and financial strength as two distinct dimensions. Rating scale for SSEs has been designed to evaluate both performance capability and financial strength at a time.

RATING SCALE

Performance Capability	**Financial Strength**		
	High	**Moderate**	**Low**
Highest	SE1A	SE1B	SE1C
High	SE2A	SE2B	SE2C
Moderate	SE3A	SE3B	SE3C
Weak	SE4A	SE4B	SE4C
Poor	SE5A	SE5B	SE5C

Performance capabilities are measured on a 5 point scale and financial strength is measured in the categories A to C. Therefore, a rating grade indicates a composite position of an entity with respect to both performance capability and financial strength.

7. Role of rating

In the 2006 budget announcement, the government proposed that SMEs in the service sector will get the status of SSIs in the manufacturing sector. This will help the service sector units enjoy the priority sector lending. Given the maturing phase of economy, the service sector seems

to be gaining prominence and opting for external evaluation purely from marketability perspective by receiving the competitive edge through a better rating. (Dubey, 2006c)

In the context of Basel II Accord, ratings assume further significance in India. For banks, it is an important development as they need to get all advances beyond Rs. 5 crore rated as per Basel II norms. After the banks develop adequate data base, skill and infrastructure, they can use their own ratings under the internal rating based approach (Dubey 2006b). Ratings by rating agencies are expected to provide banks an opportunity to increase credit to this priority sector on the back of full information availability and expert opinion (Dubey, 2006a). Banks are increasingly exhibiting their preference for ratings from external rating agencies. This has been manifested in interest rate rebates offered to enterprises getting acceptable ratings from CRAs. SMERA, for example, claims there has been interest rate rebates to the tune of 450 basis points. This has strengthened the belief that transparency pays and benefits in the long term. The perception about transparency in SMEs seems to be associated with the structured presentation of financials amongst corporate SME units. Ratings help SMEs to systematize their presentations. Several state agencies like railway, defense service, PSUs etc source a large chunk of their requirements from SMEs. Here, ratings may well be used in evaluation of SMEs from which to procure. SMEs can use ratings as a marketing tool.

Question arises whether SMEs will be able to provide reliable and quality information required for credit rating exercise. Interaction with SMEs at CRISIL has revealed that most players are willing to share reliable financial and operational information for credit rating as they see the tangible benefits that ratings provide.

The fees to be charged by the rating agencies may pose to be another constraint for the SMEs. To sort out this problem, the NSIC has launched a scheme for SMEs, providing a subsidy of as much as 75% of the rating fees. However, with the gradual phasing out of the subsidies, small units may face problems in providing the fees (Ravi Mohan, 2006).

Fees structure for rating (after subsidy)

CRAs	Turnover< Rs.50 lac (Rs.)	Turnover 50-200 lac Rs.	Turnover>200lac Rs.
CRISIL	19000	19590	26120
ICRA	19896	20508	21732
CARE	7400	9900	13200
FITCH INDIA	22141	20508	16120
ONICRA	9270	11236	15169

SMERA charges fees on the basis of both net worth volume and turnover level. Therefore it has a wide range of fees structure starting from Rs. 8427 to Rs. 42416.

8. A CRISIL Study

Due to lack of professionalism in management and consequent vulnerability to sickness and failure, SMEs need special treatment. At the same time, it is to be kept in mind that the sector does not constitute a homogeneous group. Type of organizations varies as do sector specific policy guidelines. Thus, a cluster based rating approach seems to be more effective (Dubey, 2005)

CRISIL has a team of qualified personnel for SME ratings. It has certified over 1000 SMEs under its certification acts as an authentication as SMEs for prospective trading partners and lenders. Crisil has also carried out 8 SME cluster studies by the beginning of 2006 (The Hindu, 2006). SMEs account for the bulk of commercial activities in India. Yet for various reasons SMEs have traditionally been perceived as less creditworthy than larger corporates. CRISIL has carried out a study comprising 2500 large corporates and 3200 SMEs in the Indian manufacturing sector for understanding the validity of this perception. The study has been structured on the basis of four key parameters used in credit analysis. The parameters are capital structure, interest coverage ratios, cash flows in relation to debts and profitability ratios. The study reveals that SMEs are much less leveraged than their larger counterparts. Because most SMEs have a low gearing ratio, there is significant leeway for banks to extend credit to the sector. As regards interest coverage ratios, the top 25% of the SME population has interest cover in excess of 7.75 times, significantly stronger than that of most large corporates. However the bottom 25% of the SME population has interest coverage less than 1.0 time, indicating a high probability of default. SME ratings can help lenders identify the weaker units and avoid exposure to them. SMEs fare slightly worse than the large corporates in respect of cash flow in relation to debt. This is largely due to their poor profitability rather than high indebtedness. With respect to all profitability ratios, a large section of SMEs score poorer than big corporates. However, the impact of low profitability is offset by the more favourable gearing ratios. Another striking revelation of the study is that SMEs vary widely from one another in performance and credit quality. Therefore, the performance and credit quality of an individual SME can not be judged on the basis of conclusions drawn from evaluating the performance and credit quality of the SME sector in general. Entity specific credit ratings find relevance on the face of this wide diversity (Muthuraman and Deshpande). Thus, given the wide variety in the nature of operations, the rating of SME units need to be customized. Rating exercises will have to be tailored keeping in mind the unique features of the SME concerned.

9. Concluding Remarks

The President of India under a notification (dated May 9, 2007) amended the GOI (Allocation and Business) Rules 1961. Pursuant to this amendment, Ministry of Agro and Rural Industries

and Ministry of Small Scale Industries were merged together into a single Ministry, namely, Ministry of Micro, Small and Medium Enterprises. This move may help bring greater coordination among the interdependent units of diverse nature operating within the same umbrella. This enhancement of strength is in conformity with the Union Finance Minister's directive to the public sector banks to double the credit flow to SMEs from Rs. 67600 crore in 2004-05 to Rs.135000 crore by 2009-10. This will foster SMEs' competitiveness in which credit ratings will be instrumental. What the sector needs to take serious care about are lack of transparency in the business model followed by the promoters and lack of correlation between the financial reporting and actual performance. These elements adversely affect the rating of an SME unit. There is no denying the fact that SME performance banks heavily on the contribution of the individuals running the SME concerned. The biggest challenge with most of the SMEs is to create a strong second line of management backup system, particularly in case of single promoter driven enterprise. Rating agencies caution the sector of this point of danger. Rating agencies act to supplement the initiatives taken by the Government in infusing vigor to the SME sector. And for banks to substantially increase lending, officials not only need more training to understand the concerns of small businesses but more crucially a freer decision making culture, so that the fear of penalties that leads to rejection of even healthy risk proposals can be arrested (Dubey, 2005). Therefore the potential good that can come from credit rating of SMEs needs to be harvested by easing out the rigidities inherent in the banking system.

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The New Micro, Small and Medium Enterprises Development Act, 2006–A Brief Review

D.R. Dandapat
Reader
Department of Commerce
University of Calcutta

Manidipa Das Gupta
University Research Fellow
Department of Commerce
University of Calcutta

Abstract

The small scale industrial sector figures crucially well in the context of India's economic development playing a vital role in addressing the contemporary issues of unemployment, poverty and social unrest. Distressingly enough, the sector is suffering from ills in addition to the threat posed by globalization. To strengthen this sector and to recognize the medium-sized units, the *Micro, Small and Medium Enterprises Development Act, 2006* has been enacted for facilitating the promotion and competitiveness of the concerned enterprises. This paper aims at examining the modifications and amendments made under the aforesaid Act and also evaluates the policy framework, promotional package and schemes introduced by it along with a critical appraisal of the present norms.

Key-words: SSI, MSME, MSMED Act, Enterprise, Entrepreneur Memorandum, Delayed Payment.

1. Introduction

The small scale industrial (SSI) sector plays a vitally important role in the economic development of any nation. It ensures a remarkable range of products, export promotion, employment generation, value addition to the economy and effective mobilization of resources of capital and labour with a nominal amount of investment in fixed assets. It acts as the pathfinder in resolving the variety of contemporaneous hazards of our nation including unemployment, poverty, regional disparities and social unrest.

Despite boosting up the process of economic development with a growth rate of 9.94 percent (in 2005-2006), which is higher than the overall industry growth rate (8.4 percent in 2005-2006) (Ministry of SSI, Government of India, Annual Report, 2005-2006), the SSI sector does not enjoy a congenial atmosphere. With a heterogeneous set up, it has to operate under bureaucratic restrictions, an irrational legislative framework including a hazardous process of registration, infrastructural bottlenecks, technological obsolescence, lacuna in institutional credit

and random inspections. Moreover, a large majority of the units faces several challenges within the globalized and liberalized economic environment, inviting cheaper products of foreign competitors in the market.

With a view to harnessing its potential by availing of the increasing opportunities generated by trade liberalization, the Government of India has initiated appropriate steps to enable the SSI sector to meet the challenges of globalization. Towards providing an appropriate legal framework for the sector to facilitate its growth and development under a single legislation and to fulfill the long standing demands of the SSI units, the Government of India has recently enacted the *Micro, Small and Medium Enterprises Development (MSMED) Act 2006*, which has received the assent of the President of India on June 16, 2006 to come into force with effect from October 2, 2006. The MSMED Act 2006 is implemented in compliance with the Gupta Committee Report.

This paper makes an attempt to emphasize the *statutory structure* of the concerned ministry; the *modifications and amendments* introduced under the guidance of the MSMED Act; the *policies, schemes,* implemented by this Act and the *evaluation of the related issues* under the Act.

Keeping in view the above objectives, remainder of the paper has been designed as follows:

Section 2: The Ministry of Micro, Small and Medium Enterprises (MSME),

Section 3: Major Modifications, Amendments under MSMED Act, 2006,

Section 4: Policies and Promotional Package of MSMED Act, 2006,

Section 5: Developmental Schemes of Ministry of MSME,

Section 6: Evaluation of MSMED Act, 2006, and

Section 7: Conclusion and Suggestions.

2. The Ministry of Micro, Small and Medium Enterprises (MSME)

Emphasizing the changing world scenario and resulting challenges to the existence of SSI sector, the Government of India created the Ministry of Small Scale Industries (SSI) and Agro and Rural Industries (ARI) in October 1999, as the nodal Ministry for formation of policy and coordination of Central assistance relating to the promotion and development of SSI sector in India. The Ministry of SSI and ARI was subsequently bifurcated into two separate Ministries—Ministry of SSI (Laghu Udyyog Mantralaya) and Ministry of ARI (Krishi Evam Gramin Udyyog Mantralya) in September 2001 for providing increased attention to the SSI sector and accelerating its potentiality and competitiveness in different dimensions. However, owing to a decline in employment in the Khadi sector, stagnation in the sale of Khadi products and continuous pressures from the small, khadi and village industries, the Government of India has recently established a new Ministry—*Ministry of Micro, Small and Medium Enterprises*—by merging Ministry of SSI and Ministry of ARI {on the basis of the amendment of Government of India

(Allocation of Business) Rule, 1961, notified on May 9, 2007 and by considering the Medium Scale Industries under its purview} with an objective to provide for facilitating the promotion and development and enhancing the competitiveness of micro, small and medium enterprises.

Section 3 of MSMED Act 2006, has provided for constitution of a Board (statutory), named as *National Board for Micro, Small and Medium Enterprises (NBMSME)*, considered to be the apex consultative body, with 47 members as against earlier non-statutory SSI Board (1954), constituted by the Government of India to render advice on all issues pertaining to the SSI Sector. The Board is headed by the Central Minister in charge of MSMEs and comprises members from (i) MPs, (ii) Representatives of Central Ministries, (iii) State Governments, (iii) Union Territories Administration, (iv) RBI, SIDBI, NABARD, (v) Associations of MSMEs including women (vi) Persons of eminence and (vii) Central Trade Union Organisations.

Section 5 of the Act provides that the functions of the board will be to (i) examine the factors affecting the promotion and development of MSMEs and review the policies and programmes of the Central Government in this regard, (ii) make recommendations on matters referred to it by the Central Government, (iii) advise the Central Government in the use of fund or funds, constituted under section 12 of the MSMED Act.

The Act also provides for constitution of an *Advisory Committee*, for a period of two years with effect from 27th September, 2006, which is headed by Union Secretary In-Charge of MSMEs. The other members are Union Secretaries of Ministry/Department of Commerce, Food Processing Industries, Labour and Employment, Revenue, Advisor (VSI), Planning Commission; Secretaries dealing with MSMEs of the State Governments of Andhra Pradesh, Assam, Uttar Pradesh; President, Tamilnadu Association of Cottage and Tiny Entrepreneurs, Chennai; President, Federation of Indian Micro, Small and Medium Enterprises, New Delhi and President, CII, New Delhi. Its member secretary will be the Union Additional Secretary and Development Commissioner (SSI), New Delhi. Functions of the Advisory Committee will be to (i) examine the matters referred to it by the National Board, (ii) advise Central Government on matters specified in clause 7(i), 9, 10, 11, 12 and 14 of MSMED Act, 2006, (iii) advice State Governments on matters specified in the rules under clause 32 of the MSMED Act, 2006.

3. Major Modifications/Amendments under MSMED Act, 2006

The year 2006 observed a phenomenal growth in the micro, small and medium industrial sector. The industry has experienced a sea change in the conceptual and structural recognition of its respective three sectors with the introduction of MSMED Act in 2006. Important changes are briefly stated below.

Change in Nomenclature: The word 'Industry' now has been replaced by the word 'Enterprise' which means *any industrial undertaking or a business concern or any other establishment, by whatever name called, engaged in the manufacture or production of goods, in any manner pertaining to any industry specified in the First Schedule to the Industries (Development and*

Regulation) Act, 1951 or engaged in providing or rendering of any service or services. [section 2(e) of MSMED Act, 2006].

Section 7(1) of MSMED Act, 2006 envisages to include Proprietorship, Hindu Undivided Family, Association of Persons, Cooperatives, Society, Partnership Firm, Company or Undertaking, by whatever name called, within the scope of enterprise, covered under the Act.

In the 7th Meeting of the Consultative Committee attached to Ministry of SSI and ARI, Sri Mahabir Prasad, the Union Minister of Small Scale Industries and Agro and Rural Industries, has clarified that the concept of 'Enterprise' as against the 'Industry' is increasing worldwide and for this the need is being felt for the policy framework for Small Enterprises so that they may develop into medium level enterprises and be capable of adopting better technologies and be competitive in the present era of globalization. He has added also that the inclusion of service sector along with the manufacturing sector tends to modify the term 'Industry' for the term 'Enterprise'.

Changes in the Conceptual Framework and Classification of Enterprise: In India, before the enactment of MSMED Act, 2006, the classification of industrial sector was determined on the basis of investment ceiling in the Fixed Asset (especially in plant and machinery), not on the basis of operations (Manufacturing and Service) of the concerned units. Based on this criterion, Industry could be classified as Large Scale Industry, Medium Scale Industry, Small Scale Industry (both traditional and modern). SSI could again be sub-divided into four categories according to Industrial (Development and Regulation) Act, 1951 as (i) Ancillary Industrial Undertaking, (ii) Small Scale Industrial Unit, (iii) Tiny Units and (iv) Small Scale (Industry related) Service and Business Enterprises (SSSBEs).

However, it is identified that service sector can produce a remarkable and promising performance and holds a dominant position (more than 57 percent of total SSI in India as per Third Census 2003-2004) in total SSI sector. Therefore, it is keenly required to focus the service sector with more specific and clear definition. Taking into consideration the forceful requirement, section 7(1) of the first single comprehensive legislation, MSMED Act, 2006, has mentioned the main divisions of enterprise (Notification No. S.O. 1642(E) dated September 29th, 2006) based on the functions of the units. The divisions are as follows:

- *Manufacturing Enterprise*: An enterprise, which is engaged in the manufacture or production of goods pertaining to any industry, specified in the first schedule to the Industries (Development and Regulation) Act, 1951, will be defined in terms of *investment in plant and machinery.*
- *Service Enterprise*: An enterprise, which is engaged in providing or rendering of services, will be defined in terms of *investment in equipment.*

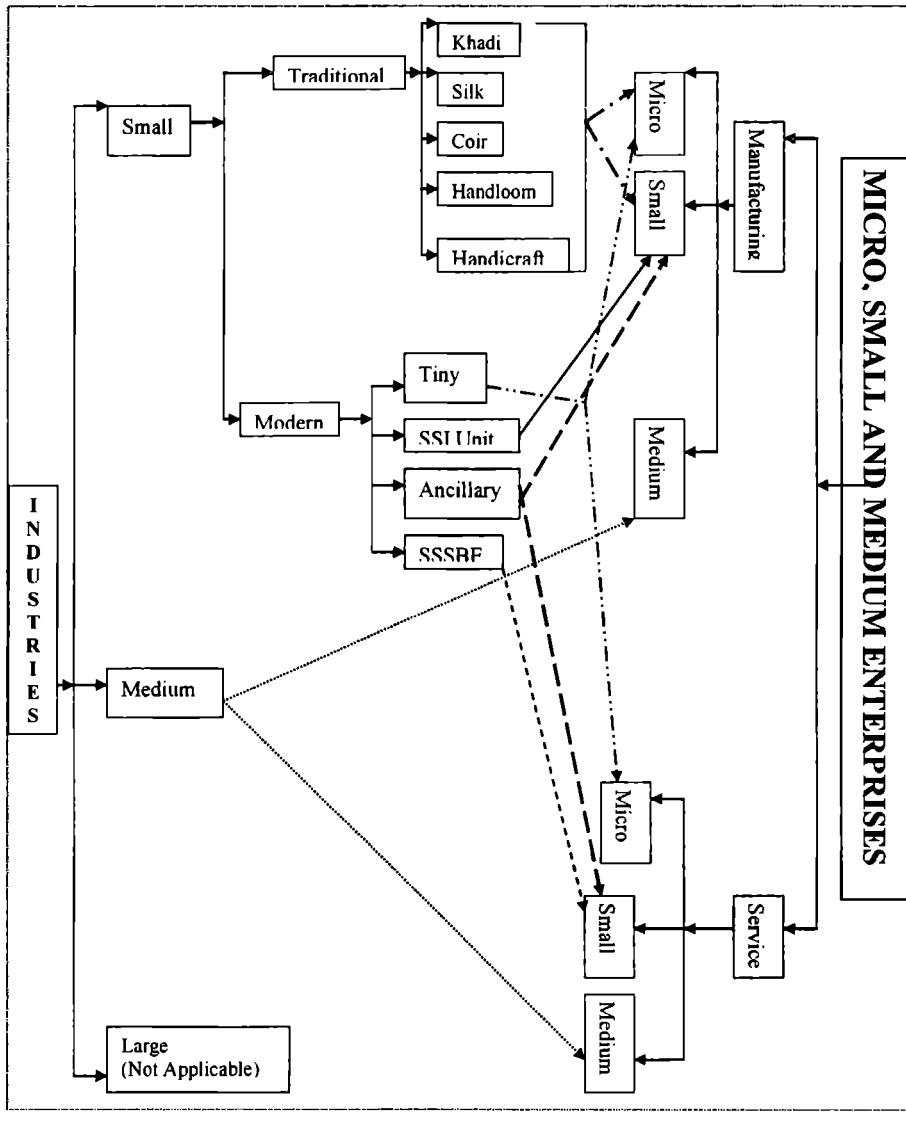
For the purpose of the Act, divisions of enterprise are redefined and sub-classified into three segments – *Micro*, *Small* and *Medium*—with specific recognition as *Rs.25 lakh, Rs.5 crore and Rs.10 crore investment* in *plant and machinery* respectively so far as the manufacturing

enterprise is concerned and *Rs.10 lakh*, *Rs.2 crore* and *Rs.5 crore investment in equipment* respectively in case of service enterprises. In this new Act, the *Medium Enterprise* gets its first statutory structure while the *Tiny Industry* is renamed as *Micro Enterprise*.

The structure of formation of Micro, Small and Medium Enterprises has been shown in Figure 1 and the investment requirement of the three sectors are shown in Figure 2.

Figure – 1

Formation of Micro, Small and Medium Enterprises from Small Scale and Medium Scale Industries

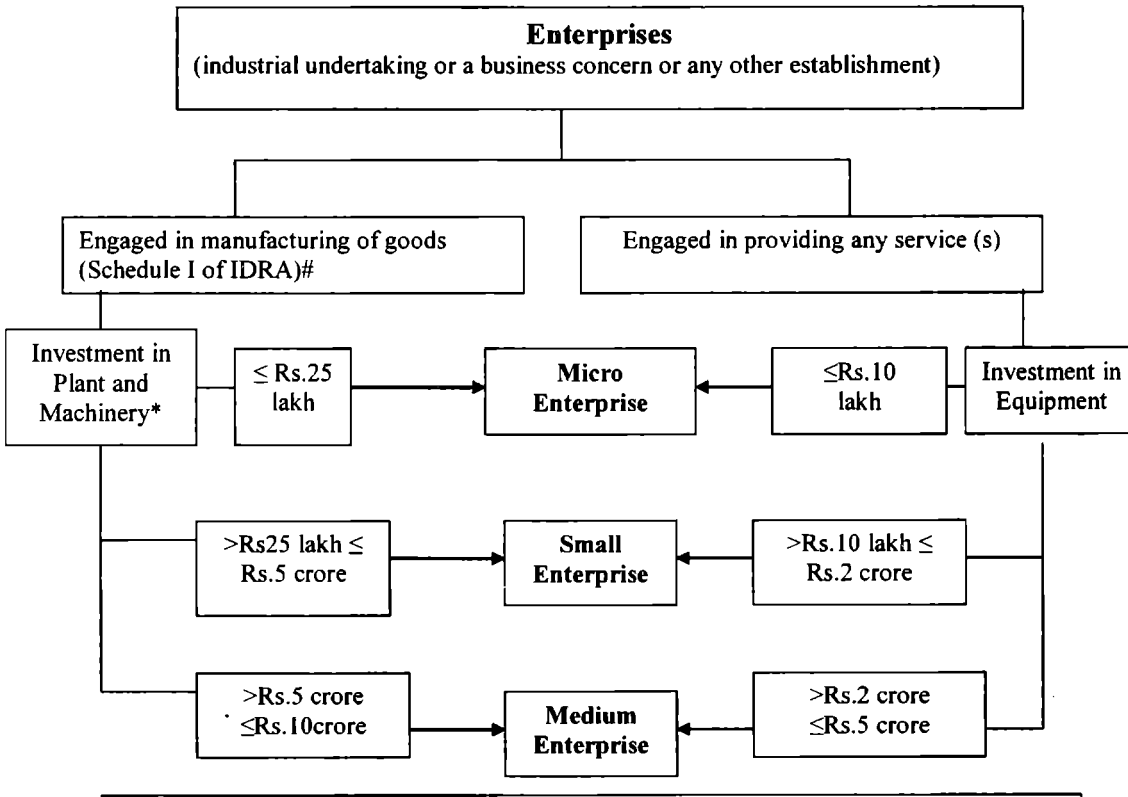


Line Indications:

- Traditional Small Scale Industries form to Micro and Small Manufacturing Enterprises
- Small Modern Tiny Industries form to Micro Manufacturing and Service Enterprises
- Small Modern Industrial Units form to Small Manufacturing Enterprises
- Small Modern Ancillary Industries form to Small Manufacturing and Service Enterprises
- Small Modern Service Industries form to Small Service Enterprises
- Medium Industries form to Medium Manufacturing and Service Enterprises

Figure – 2

Micro, Small and Medium Enterprises



#A Bridged text of schedule I of IDRA is given in Annexure I
* Excluding cost of pollution control, research and development, industrial safety devices and other notified items.

Changes in the Norms of Registration: Before the enactment of the MSMED Act, 2006, the District Industries Centre (DIC), the primary registering centre, used to grant *Provisional Registration* (granted at units' pre-investment period for enabling infrastructural facilities and valid upto 5 years) and *Permanent Registration* (granted to provisionally registered units' at the time of initiation of production in perpetuity). But clause 8 of MSMED Act, 2006, provides that any person who, before the commencement of this Act, established a Small Scale Industry, having investment in plant and machinery of more than one crore rupees but not exceeding ten crore rupees should file an Industrial Employers' Memorandum (EM) within 180 days from the commencement of this Act (S.O. 477(E) dated 25.07.1991). The clause also provides that the memorandum is optional for all except the manufacturing medium enterprises. With the permission of NBMSME, the entrepreneurs of concerned enterprise are able to file the memorandum for their units with respective DIC and can obtain the acknowledgement for the proposed set up in prescribed form *Part I EM*, valid for 2 years only within which the production must be commenced and *Part II* EM, claimed simultaneously with the initiation of production only.

Changes in the Mode of Delayed Payment: Chapter V (section 15 to section 24 of MSMED Act, 2006) is the most important chapter in the Act, which replaces the existing Delayed Payment Act. It is an excellent piece of legislative provision that is going to strut the great fall of the Micro and Small Enterprises that are chronically suffering from non-payment menace from their shylockian buyers. Under the new Act, the credit period allowed by the SSI sector to the large companies is in vogue for 45 days instead of 120 days as was prevailing earlier. To address this issue, the erstwhile "The Interest on Delayed Payments to Small Scale and Ancillary Industrial Undertakings Act, 1993" as amended in 1998 was further strengthened and subsumed in the Micro, Small & Medium Enterprises Development (MSMED) Act, 2006, which has since been implemented from 2nd October 2006. Two of the effective measures provided under the provisions of said Act are – (i) "Requirement to specify unpaid amount with interest in the annual statement of accounts" (under Section 22) and (ii) "Interest not to be allowed as deduction from income" under Income-Tax Act, 1961 (under Section 23). Under this new legislative, for default beyond the permissible credit period or in the absence of any credit agreement, from the date of delivery of goods, a penal interest at 3 times the bank rate notified by RBI, shall be payable at compound rate calculated on monthly rests (Sec 16)

Introduction of Procurement Policy and Facilitation Council: *Procurement Preference Policy* (Chapter IV section 11 of the MSMED Act, 2006) provides for the notification of preference policies by the Central or a State Government in respect of procurement of goods and services, produced and provided by the Micro and Small Enterprises (MSEs), by its Ministries and Departments to its aided institutions and Public Sector Company. There was no statutory provision in these regards earlier. Under this new act, the Central Government

Ministries, its departments, its aided Institutions and Public Sector Enterprises etc. shall procure *at least 20%* of the value of their total annual purchases from MSEs *(at least 10 percent* from the units owned by women) for the products or services produced and provided by such enterprises/suppliers.

Other Legislative Changes: The soul of the Act, the Promotional Packages (section 9, 12, 13, 14 of the MSMED Act, 2006) had no statutory existence prior to the enactment of this Act. Moreover, section 25 of the MSMED Act 2006 for first ever announces that the Central Government may (within 1 year of the commencement of the Act) notify a scheme for facilitating closure of business by Micro, Small or Medium Enterprises.

4. Policies and Promotional Packages of MSMED Act, 2006

In terms of section 9-14 of the MSMED Act, Ministry of MSME, on 27.02.2007, announced a comprehensive *Package for the Promotion of Micro and Small Enterprises* for the purpose of facilitating the promotion and development and enhancing the competitiveness of Micro, Small and Medium Enterprises, by way of development of skill of the employees, management and entrepreneurs, provisioning for technological upgradation, marketing assistance or infrastructural facilities and cluster development of such enterprises. The *Policy and Promotional Packages* for MSME, announced by the Ministry of MSME are as follows.

Credit Support: Credit to the MSEs is part of the priority sector lending policy of the banks. For the public and private sector banks, 40 percent of the Net Bank Credit (NBC) is earmarked for the priority sector out of which 40 percent is provided to MSEs. For the foreign banks, however, 32 percent of the NBC is fixed for the priority sector, of which 10 percent is for the MSEs.

- *Emerging source of finance:* Emerging source of finance is a policy measure. MSMEs are beginning to move from bank credit to variety of other specialized financial services and options like primary/secondary securities market, venture capital, private equity, external commercial borrowing, etc. Here, efforts are on to put in place Limited Liability Partnership (LPP) Act as to provide a thrust to the MSMEs in their move towards corporatisation.
- *Performance and Credit Rating*: The performance and credit rating scheme for manufacturing MSEs was launched in April, 2005 as a policy measure with an objective of assisting the MSEs in obtaining financial support to improve performance and to access bank credit. Under the scheme (implemented by the National Small Industries Corporation in conjunction with reputed rating agencies), 75 percent of the fees charged by the rating agency is reimbursed by the Government subject to a maximum of Rs.40,000 ($ 1,000).
- *Credit Guarantee Fund Trust for Micro and Small Enterprises (CGTMSE):* CGTMSE, renamed since 2nd July, 2007, is both a policy measure and promotional package of

Ministry of MSME. The eligible loan limit under the *Credit Guarantee Fund Scheme* will be raised to Rs. 50 lakh from earlier Rs. 25 lakh. The credit guarantee cover will be raised from 75 per cent to 80 per cent for micro enterprises for loans up to Rs. 5 lakh. Accordingly, to strengthen the Credit Guarantee Fund, the corpus of the Fund will be raised from Rs.1189 crore as on 1st April 2006 to Rs. 2500 crore over a period of five years (with contribution by the Government and SIDBI in the existing ratio of 4:1).

- *Monitoring of implementation of Package for stepping up credit to SME:* In line with the Policy Package for stepping up credit to Small and Medium Enterprises (SMEs), the Reserve Bank of India (RBI) has already issued guidelines to the public sector banks to ensure 20 per cent year-on-year growth in credit to the SMEs. The RBI and the Government will closely monitor implementation of these measures.
- *Portfolio Risk Fund:* As per this Promotional Package, the Small Industries Development Bank of India (SIDBI) will scale up, strengthen its credit operations for micro enterprises, and cover 50 lakh additional beneficiaries over five years beginning from 2006-2007. Government will provide grant to SIDBI to augment SIDBI's Portfolio Risk Fund for this purpose. In connection therewith, SIDBI will expand its branch offices from 56 to 100.
- *Risk Capital Fund:* Government will provide grant to SIDBI to enable it to create a Risk Capital Fund (as a pilot promotional package in 2006-07) so as to provide, directly or through intermediaries, demand-based small loans to micro enterprises.

Fiscal Support: *General Excise Exemption (GEE)* is one of the promotional packages where the existing GEE limit of *one hundred lakh rupees* will be enhanced to *one hundred and fifty lakh rupees* from 1st April, 2007 [Notification No. 8/2007-Central Excise dated 1st March, 2007 of M/o Finance (Central Excise)]. The time limit for payment of excise duty by micro and small enterprises and the GEE benefits to small enterprises on their graduation to medium enterprises will be extended for a limited period.

Technological Support: For faster growth of MSME sector in the country, Government has set up ten state-of-the-art tool rooms and training centres. These tool rooms provide invaluable service to the Indian industry by way of precision tooling and providing well-trained craftsman in the area of tool and die making. The Ministry of MSME implements the following schemes and programmes for upgrading the MSMEs.

- *ISO 9000/14001 Scheme:* To enhance the competitive strength of the MSEs, the Government introduced a scheme, known as ISO 9000/14001 scheme, found in both policy and promotional package, during the 11th five year Plan.
- *Credit Link Capital Subsidy Scheme (CLCS):* This policy specifically aims at assisting individual MSEs to replace their existing machinery with more modern and efficient

ones, with State assistance of 15 percent of the bank credit required to finance the new purchase.

- *Industrial Infrastructural Development (IID)*: IID Scheme (1994) was launched for establishment of industrial unit and development of infrastructural facility. In this policy, a provision of 50 percent reservation should be maintained for rural areas and another 50 percent is for Micro Enterprises.
- *National Manufacturing Competitiveness Programme (NMCP):* The NMCP is aimed at addressing the technology, marketing and skill upgradation needs of the sector, mainly in the Public-Private Partnership mode. Components under this programme, both in policy and promotional packages are— (a) Application of Lean Manufacturing Technologies, (b) Design Intervention through Design Clinic model for SMEs.
- *Technology Mission:* The Ministry is in process of establishing a Technology Mission with the objectives of promoting new and appropriate technologies for MSMEs,
- *Micro and Small Enterprises Cluster Development Programme (MSECDP):* The policy and promotional package, Micro and Small Enterprises Cluster Development Programme (renamed with effect from 01.10.2007) is in fact, the flagship scheme of the Ministry. It attempts to cover and develop (in phases) all or most of the *Clusters of Micro and Small Enterprises*, scattered through out the country.
- *Quality Upgradation Support:* In this promotional package for development of MSMEs, four Training-cum-Product Development Centres for agro and food processing at Ludhiana, Kanpur, Indore and Mangalore are set up, the two existing Central Footwear Training Institutes at Chennai and Agra are strengthened and a Vertical Shaft Brick Kiln (VSBK) Technology is promoted for adoption by brick manufacturing MSMEs for being energy efficient and eco-friendly.

Marketing Support: Under the marketing support promotional package, Ministry of MSME has declared nine schemes—National Programme on Application of Lean Manufacturing, Promotion of ICT in Indian Manufacturing Sector, Mini-Tool Rooms, Technology and Quality Upgradation Support for SMEs, etc.

- *Preferential Procurement*: The policy Preferential Procurement of goods may be more effective in providing the much-needed marketing support that MSEs seek so desperately.
- *Export Promotion:* Ministry of MSME provides the following export promotional assistance, disclosed in its policy:

  (i) Least packaging standard, (ii) Exposure in International Exhibition, (iii) Support of MSE Marketing Development Association (MDA) Scheme, (iv) Sector specific market study by relevant authority, (v) Reimbursement of 75 percent of one time registration fee and annual fee, charged by GSI India.

Entrepreneurial Development Programme (EDP):

- *Skill Development Programme:* Under this programme, the MSME-DI, Regional Testing Centre, Tool Room, Central Footwear Training Institute, etc. assist the entrepreneurs of MSME to upgrade their skill. Here, 20 percent of the EDP is organized for SC/ST, woman (50 percent concession in fees since January, 2007) and physically challenged persons with a stipend Rs.500 per capita per month for the duration of the training. This programme also provides financial assistance to selected management school, technical institutions and 5 universities to run courses and club for entrepreneurs.

Empowerment of Woman Owned Enterprises: Under the Credit Guarantee Fund Scheme, 80 per cent guarantee cover will be provided to micro and small enterprises operated and/or owned by women. Since 1st October, 2007, financial assistance (SICDP/MSECDP) of up to 90 per cent of the cost, subject to ceiling of Rs. 9 crore, will be provided for clusters developed exclusively for micro and small enterprises operated and/or owned by women. The woman enterprises are also assisted in establishing exhibition centre under SICDP/MSEDP scheme.

Strengthening of Prime Minister Rojgar Yojana (PMRY): The Prime Minister's Rozgar Yojana (PMRY), introduced in 1993, generates self-employment opportunities for the educated youth by assisting them in setting up viable micro enterprises. The design parameters of the PMRY is improved with effect from 2007-08.

Strengthening of Data Base for MSME Sector: To strengthen the database for the MSME sector, statistics and information of MSMEs are collected. A Steering Committee under the chairmanship of Secretary (MSME) is set up to look into all the related aspects.

5. Developmental Schemes of Ministry of MSME

In 2006, the Ministry of MSME has introduced nine basic schemes for encouraging and upgrading the MSMEs in meeting global challenges. Out of these schemes, some are declared newly whereof others, introduced prior to the period, are modified or re-modified in this year.

Schemes for International Cooperation: Technology infusion and/or upgradation of Indian small-scale industries (SSIs)/small enterprises (SEs), their modernization and promotion of their exports are the principal objectives of assistance under the Scheme of International Cooperation.

Scheme of Survey Studies and Policy Research: The operation of the Scheme will be overseen by a Steering Committee headed by the Secretary, Ministry of Small Scale Industries (SSI) and Ministry of Agro and Rural Industries (ARI). The objectives are to collect relevant data on MSME, the constraints, challenges, opportunities in the context of globalization and to design policy support, based on the data for MSME upgradation.

Entrepreneurship Development: The scheme will be implemented by the Ministry of Small Scale Industries which has the responsibility of promoting and developing the SSI sector in the country through State Governments/Union Territories. The financial assistance will be for specific needs of each case for improvement in areas like building, training aids/equipment, and other support services and will be on matching basis say 50% of the cost restricted to Rs. 100 lakh in each case.

Prime Minister Rozgar Yojana (PMRY): Under this scheme, at least VIII pass candidates of 18-35 years [18-40 years for selected states (North-East States, Himachal Pradesh, Jammu and Kashmir, Utarakhand) and 18-45 years for minority class of society], with family income not exceeding Rs.1,00,000 p.a. and at least 3 years permanent residential status, can take the assistance. Besides, the candidates should not be bank defaulter. PMRY confirms collateral free loan of Rs. 2.00 lakh for business/service sector and Rs. 5 lakh for industry sector. Subsidy is limited to 15 percent of project cost subject to ceiling of Rs. 12,500 (Rs. 15000 for selected states). Banks are allowed to take margin money from the entrepreneur varying from 5 percent to 16.25 percent (12.5 percent for the selected states) of the project cost.

Schemes of Fund for Regeneration of Traditional Industries (SFURTI): With a view to making the traditional industries (an activity which produces marketable products, using locally available raw material and skills and indigenous technology) more productive, competitive, and facilitating their sustainable development, the Central Government announced the setting up of a fund for regeneration of traditional industries, with an initial allocation of Rs. 100 crore.

Product Development, Design Intervention and Packaging (PRODIP): The PRODIP scheme was launched in November 2002 with a view to improving the quality of khadi products and also to diversify into new products.

Rural Employment: On the basis of recommendations of the High Power Committee, submitted in May 1994, headed by the then Prime Minster of India, the KVIC launched Rural Employment Generation Programme (REGP) with effect from 1st April, 1995 with the objectives of generating employment in rural areas, developing entrepreneurial skill and attitude among rural unemployed youth, achieving the goal of rural industrialization and facilitating participation of financial institutions for higher credit flow to rural industries.

Khadi Karigar Janashree Bima Yojana for Khadi Artisans (JBY): A Group Insurance Scheme for khadi workers, namely, "Khadi Karigar Janashree Bima Yojana" was launched during X^{th} Five Year Plan through KVIC on 15th August 2003 by the Government of India (in the erstwhile Ministry of Small Scale Industries and Agro & Rural Industries), with LIC of India as insurers. The scheme provides only risk cover for death/disability and the worker is not entitled to get any returns on the premium paid by him or paid on his behalf by KVIC/ khadi institutions, if he survives the entire period of insurance.

Interest Subsidy Eligibility Certification (ISEC): ISEC Scheme, the major source of funding for the khadi programme, was introduced in May 1977 to mobilize funds from banking institutions to fill the gap in the actual fund requirement and its availability from budgetary sources.

6. Evaluation of MSMED Act, 2006

In Indian industrial scenario, the new MSMED Act 2006 and the policy package accompanying the Act have been initiated with an aim to invite a revolutionary enhancement in the competitiveness of Medium, Small and Micro Enterprises. Though the promotional activities of the Act are highly supported by Central government and other Indian industrial institutions, nevertheless, the renowned industrial institutions and personnel, connected with this aspect, criticize it from different viewpoints.

Positive review of this Act: Confederation of Indian Industry (CII) salutes the MSMED Act, 2006 and declares it as a turning point for the development of Indian industry as it can address and streamline, at the same time, key governance and operational issues, being faced by MSME in India. To this federation, the *steps to define Medium Enterprises*, structurally for the first time, is also a step in right direction in advancing the worldwide competitiveness as well as in inviting further investments (foreign and domestic) and funds for technological upgradation in SMEs. The *simplification process of promotion and the enhancement of modified rules of delayed payment* also exhibit due convergence in building up high-grade competitiveness in MSMEs. With the new Act, the intermediate period between permanent registration (EM II) and provisional registration (EM I) is reduced to 2 years from initial 5 years (clause 8 of MSMED Act) and whether the units are going to be permanently registered or not can be assured more quickly than ever before. Mr. Jawhar Sirkar, Additional Secretary, Ministry of SSI and ARI, Government of India (DCSSI), emphasized that the new Act is nonetheless an important legal instrument in framing the delayed payments (clause 15 of MSMED Act) to MSMEs more constructive than ever before. The reduction of credit period as well as the increase in the default interest will positively reduce the number of sick MSMEs. To CII, the new Act imposes a gigantic effort to provide a *hassle free environment to MSMEs* in the issues related to *inspector visits*, *labour laws* that interfere with daily operations. Mr. Sirkar also accepts that the MSMED Act, 2006 will free the respective enterprises from the *governing of multiple laws* and will make shelter of all relevant issues under the single Act, MSMED. In compliance with the Act, the *promotional package* (section 9 to section 14 of MSMED Act, 2006) and *policy framework* are introduced for the respective industries, statutorily for the first time. The modifications, proposed in *Credit Guarantee Fund Scheme for Micro, Small and Medium Enterprises, Micro, Small and Medium Enterprises Cluster Development, PMRY,* hopefully will enhance the competitiveness in this sector. A clear-cut *exit policy* (section 25 of MSMED Act, 2006) will facilitate the identification of sick units more frequently than ever before.

Survey Report of CII Regarding the Policies of MSMED Act: The CII Business outlook survey on Policy Impact and Future scenario for Micro, Small and Medium Enterprises during January-March 2008 reveals the following.

Repositioning of the Indian Small Industries: Majority of the respondents covered in the survey feels that the MSMED Act has led to *simplification of labour laws* (72 percent), *promoting innovations* (66 percent) and *regulatory changes* (65 percent). Therefore, these may be considered as the top three key enablers for repositioning of the Indian Small Industry in the changing global scenario.

Survey on Marketing Policy of MSMED Act: 81 percent of surveyed respondents support the development of the Procurement Preference Policy for MSEs. Only 13 percent of respondents are not sure about it.

Survey on Credit Policy and Package: 43 percent respondents of Small and Medium Industry foresee the dominant role of non-traditional source of finance substituting the traditional (banking) sources. Ten percent of the surveyed respondents of Small and Medium Industry are using capital markets for alternate source of finance, 12 percent of respondents are using credit guarantee scheme, 8 percent of respondents are using venture capital financing and factoring services for alternate source of finance.

Survey on Competitiveness of the Indian Small Industry: 66 percent of the respondents feel that promotion of SME cluster development programme is the key to enhance the competitiveness of the Indian Small Industry, 64 percent of the respondents feel that facilitating business development would enhance the competitiveness of the Indian Small Industry while 57 percent of the respondents expect promoting manufacturing innovation as a key to scale up demand.

Negative Review of the Act: Some Indian industrial institutions view the MSMED Act 2006 as full of promises, applicable on paper only. In practice, either these are hard to find or not compatible with the words in paper, and as a result SSIs continue to suffer from their traditional problems. The loopholes of the MSMED Act, 2006 are highlighted below:

Definition and Classification of Enterprise: The increase in the ceiling of investment in Plant and Machinery (from maximum Rs.1 crore to Rs. 5 crore) will in practice invite operational difficulties to SSIs as the industrial units, as they have to face higher internal competition with the technologically upgraded SSI Enterprises which were formerly known as Medium Scale Units. Moreover, Industrial units want to remain 'small' in paper even if their investments were more than Rs 1 crore (sometimes by dividing companies) so that they could avail of various exemptions and benefits accorded to the small-scale industry (SSI) sector.

Statutory Body: In the statutory consultative mechanism, with a wide range of advisory functions, at the national level, the 12.3 million MSEs providing employment to 29.5 million persons is grossly under represented with only four representatives from the industry side

nationally. In addition, it is still only on talks of effective and expeditious implementation of the MSMED Act 2006 in close collaboration with all stakeholders.

Credit Support to MSMEs: No provision has been made for augmenting SIDBI's Portfolio Risk Fund, though the package talks of covering an additional five million micro enterprises over five years beginning 2006-07. At the CSM (Centre for Social Market) 2005 consultation, on the one hand MSMEs complained that Banks were never willing to lend without having to provide collateral security in spite of the Credit Guarantee Fund Trust. Federation of Small and Medium Industries (FOSMI) president Mr. Pradeep Rawat, drew attention to the inadequate level of financial facilitation that the Act ensured, inspite of its legal strength. In addition, he commented that listing on stock exchanges enabled the bigger and even the medium company with a net worth of Rs.10 crore to take capital loan from banks at rates below Prime Lending Rate (PLR) where the Micro and SSIs cannot avail need based fund on their demand from banks as because they cannot enroll their names in the stock market. Adding to his views, Federation of Association of Cottage and Small Scale Industries (FACSI) general secretary, Mr. Sukhendu B Ghose, said, "....the problems about lending are often considered respectively at the senior level but at the branch level; loans face stiff resistance or even ignorance of the existence of Government schemes."

Marketing Support: The package talks of improvements made to the Credit Linked Capital Subsidy Scheme (CLCSS) for technology upgradation having led to more units benefiting from it, but has made no commitment to extending the scheme, which is scheduled to expire on March 31, 2007.

EDP and Woman Empowerment: The new scheme, formulated to provide financial assistance to the selected management/business schools and technical institutes, and the woman empowerment promotional package are still lying at their primary stage.

Registration: It was noted that although registration of Micro and SSI is voluntary, only registered enterprises are eligible to have benefit from Government promotional schemes. The non-registered status directly impacts the access and flow of institutional finance to MSMEs, thus diminishing their competitiveness.

Facilitation Council of MSMED Act: The MSMED Act talks of the composition of the Micro and Small Enterprises Facilitation Council but a number of such institutions, including Ministry of MSME, Small Industries Development Organisation (SIDO), NSIC, established over the years have failed to check recession and sickness in the SSI sector.

7. Conclusion and Suggestions

The foregoing review of the MSMED Act, 2006 shows that the new Act is full of promising principles and policies which are quite efficient in framing better global competitiveness of the MSMEs. Nevertheless, some of the issues, pertaining to the promotional packages and policies of the Act are not up to the mark and duly opposed by certain sections of the industry

circle. In order to help implement the new Act and get the benefits, the recommendations of some of the eminent personalities of the Indian industrial sector may be considered as very important. The President of CII, *Mr. R Seshasayee*, in his publication on CII Newsletter on May 23, 2006, suggested the formation of Centre-State Coordination Committee, for ensuring the implementation of the MSMED Act and reiterated its commitment to work in partnership with the Government to facilitate the application of the Act. *Mr. Bikky Khosla*, CEO, tradeindia.com, also agreed with this Coordination Committee and its performance towards making the Act a successful one in his publication on the newsletter of tradeindia.com on October 3, 2006. In CII Conference on 9th November, 2006, *Mr. C.V. Korthik Narayanan*, Past Chairman, CII, Southern Region and Chairman and Managing Director, UCAL Product Private Limited, urged for a mechanism to monitor the progress in implementation of the new Act. There should also be more upto date and better communication from the side of the Government and RBI to the Bank. Besides, the appropriate authority must invite and arrange related seminars, and conferences to spread adequate knowledge about the new Act among the entrepreneurs and other associated parties. Moreover, the applicability of the new Act at entrepreneurs' level must be tested accordingly through survey. A common communication cell must be introduced to redress the inconveniences and/or difficulties, as experienced practically, within reasonable time. MSMED Act, 2006, certainly will invite a phenomenal growth in Indian Micro, Small and Medium Enterprises and it is obvious that it will enhance its potentiality in this respect if it can overcome the detected loopholes in its policy and promotional packages. The years to come will show the future of the new legislative framework. Till then the entrepreneurs and the associated sectors are pleased to welcome the MSMED Act 2006.

ANNEXURE: I

List of Industries covered under First Schedule to IDRA

- Metallurgical Industries
- Fuel
- Boilers and Steam Generating Plants
- Prime Movers (other than Electrical Generators)
- Electrical Equipment
- Telecommunication
- Transportation
- Industrial Machinery
- Machine Tools
- Agricultural Machinery
- Earth Moving Machinery
- Miscellaneous Mechanical and Engineering Industries

- Commercial, Office and Household Equipment
- Medical and Surgical Appliances
- Industrial Instruments
- Scientific Instruments
- Mathematical, Surveying and Drawing Instruments
- Photographic Raw Film and Paper
- Dye-stuffs
- Drugs and Pharmaceuticals
- Textiles (including those dyed, printed or otherwise processed)
- Paper and Pulp including Paper Products
- Miscellaneous Industries namely Cigarettes, Linoleums, Zip Fasteners, Oil Stoves, Printing including Litho Printing Industry.
- Sugar
- Fermentation Industries
- Food Processing Industries
- Vegetable Oils and Vanaspati
- Soaps, Cosmetics and Toilet Preparations.
- Rubber Goods
- Leather, Leather Goods and Pickers
- Glue and Gelatin
- Glass
- Ceramics
- Cement and Gypsum Products
- Timber Products
- Defence Industries

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The Apex Bank's Leadership Role to the Co-operative and Commercial Banks in India

Aminul Islam
Senior Lecturer, Dept. of Commerce,
Jangipur College, Jangipur, Murshidabad.

Abstract
The NABARD is an apex level institution. Setting up of the NABARD was in fact warranted by the embarrassing gaps, which palpably persisted in the rural credit structure, still towards the close of the 1970s- a time when expansion of the commercial banks' branches in the rural areas already made a significant headway. It is now high time to ponder and see how far the NABARD has played its leadership role in growth and development to the Co-operative and Commercial Banks in India and to identify the lines along which it can play its part in effecting the much desired institutional changes of the Co-operative and Commercial Banks.

This study will make a revaluation of the catalyst role of the Apex Bank in respect of growth and development to the Co-operative and Commercial Banks and also to suggest the qualitative dimensions of its possible new role in bringing about the desired institutional reforms and structural changes of the Co-operative and Commercial Banks.

Key-words: Apex Bank; Client Banks; Refinance; Non-solvent; Near Non-solvent; "weak" co-operative banks; State Action Plans; Kishan Credit Card; Research and Development (R&D) Fund; Monitoring.

1. Introduction

The National Bank for Agricultural and Rural Development (NABARD) came into being in July1982 as an apex level bank. The primary aim of the NABARD was to provide an exclusive attention to the credit needs of the rural sector.

The NABARD is performing all the functions performed by the Reserve Bank of India with regard to agricultural credit. Various promotional efforts have been made by the NABARD for development of the Co-operative and Commercial Banks. The National Bank has been providing financial assistance to the Co-operative Banks and the RRBs from its Research and Development (R&D) Fund for establishment of and strengthening their Technical, Monitoring and Evaluation (TME) cells. During the post-NABARD period in India growth rate of the Co-operative and Commercial Banks are impressive as compare to the pre-NABRD period. But various types of pitfalls were found in the working of the NABARD.

The solution to the problem of rural credit, of institutional financing that had the type we have experienced in India, but in a wide-ranging set of reforms oriented to structural change of the banking sector, which can truly remove the economic, social and political weaknesses of the vast population of the underprivileged peoples. This study will also help for economic development of India.

As an apex body at the national level for rural development, the NABARD was meant to discharge its functions by way of extending refinance assistance as also providing short and medium-term credit to the various District Co-operative Banks (DCBs), the Regional Rural Banks (RRBs), the Commercial Banks (CBs) and the different State Governments for a variety of approved purposes under different schemes of agricultural financing and of rural infrastructure development. In the same way, the NABARD plays a positive leadership role in growth and development of the Co-operative and Commercial Banks in India. The objective of this paper is to make a critical appraisal of the role played by the NABARD in providing leadership to the banks and the Co-operatives in India.

The leadership role of the NABARD comprises the following four major functions:

a) providing refinance to lending institutions in the rural areas.

b) strengthening the institutional credit system.

c) playing a direct role in the promotion of rural development.

d) evaluating, monitoring and inspecting the client banks.

The paper attempts to discuss each of them in four separate sections with a concluding remark at the end.

2. NABARD'S Operations : Refinance

NABARD provides assistance by way of refinance or otherwise, at concessional rates of interests to the client banks viz. the CBs, the State Land Development Banks (SLDBs), the State Co-operative Banks (SCBs) and the RRBs. While refinance for term investment credit is available to all the client banks, short-term credit for production and marketing and medium-term credit for investment and for conversion of short-term loans are confined to the SCBs and the RRBs. The NABARD's refinance functions can conveniently be divided, for the purposes of analysis, into two broad categories–medium-term investment finance and short-term production and marketing finance. Since its inception, the medium-term (investment) credit disbursed through the client banks has recorded a steadily rising trend as shown in Table 1.

TABLE-1

Long–term and Medium-term Refinance Disbursements in India (Rs. in Crores)

Year	Co-operatives	RRBs	CBs	Total
1988-89	809	197	672	1778
1991-92	1102	360	785	2267
1994-95	1332	462	815	2609
1997-98	1731	502	841	2664

Year	Co-operatives	RRBs	CBs	Total
1999-00	2800	805	703	4308
2002-03	4512	1203	905	5679.3
2003-04	9121	1820	1205	12148
2005-06	18025	1730	1645	21400

Sources: Annual Reports of NABARD, 1986-87, 1997-98, 2001-02, 2005-06 and 2007-08

(i) Table 1 show that the total disbursement in India had increased steadily from Rs. 1778.00 crore in 1988-89 to Rs. 21400 crore in 2005-06.

(ii) However, the disbursement to the RRBs by the NABARD had increased from Rs. 197 crore in 1988-89 to Rs. 1730 crore in 2005-06.

(iii) At the same time total disbursement by the NABARD to the CBs had increased from Rs. 672 crore 1988-89 to 1645 crore in 2005-06.

NABARD's refinance for short-term production and marketing is confined to the SCBs and the RRBs for which purpose these banks are sanctioned annual credit limits from out of the General Line of Credit of the RBI. The most important type of refinance is meant for seasonal agricultural operations or what is popularly known as crop loans issued by the Co-operative Credit Societies and the RRBs. Short-term credit refinance had increased steadily over the years. In India it has increased from Rs 703 crore in 1988-89 to Rs 5679.30 crore in 2005-06.

3. NABARD'S Operations: Institutional Development

Critical Review

The NABARD Act, 1981, requires the NABARD to undertake the responsibility of institutional development. The Act requires that the NABARD's lever of refinance should be effectively used as an instrument to enforce institutional development. A major reason of formation of the NABARD was that the Agricultural Refinance and Development Corporation (ARDC) was unable to expand its developmental role towards institution building. The NABARD has accepted its responsibility of institution building. Development of the rural credit system cannot be achieved solely through regulation. The NABARD, as an apex body, is well placed to develop a positive climate for institutional development on a collaborative basis with the support of the Government of India, the Reserve Bank and the State Governments.

Different Steps for Developmental Initiatives

The various steps taken by the National Bank can be broadly classified as developmental initiatives and rehabilitation measures.

(1) Developmental Initiatives

The role of the NABARD in creating and strengthening the necessary institutional infrastructure has widened over the years since its formation. Many States had no apex co-operative bank. The development initiatives taken by the NABARD included establishment of the National Agriculture Credit Funds, supervision and inspection of banks, annual discussions with the State Governments, systematisation of the crop loan operations and training of personnel of the co-operative banks.

Current Policy Initiatives by the National Bank

The NABARD has introduced a number of other action plans for institutional development. The major ones are highlighted in what follows:

(a) Development Action Plans (DAPs)

The basic philosophy of the DAPs is to prepare institution-specific action plans, taking into account their strengths and weaknesses, diagnosing the past and looking into the future, anticipating the course of events and preparing the strategies of coping, the implementation of which would improve their viability. In order to assess the viability status of the institutions, a thorough analysis of the various aspects such as financial, organizational, systems and procedures and human resource development having a bearing on viability of the credit institutions is envisaged. On the basis of such an analysis, the factors that affect the viability of the banks are identified and specific remedial measures are chalked out. A distinctive feature of the preparation of the DAPs is the break even analysis of the credit institutions carried out for projecting the year-wise growth in loans and advances and level of recovery to be achieved, besides other performance obligations which would enable the banks to attain viability within the specific time frame.

(b) State Action Plans

As the different tiers of the co-operative institutions have a high degree of inter-dependence and mutual interest, it was considered appropriate for the apex institutions such as the SCBs and the SLDBs to prepare a State Action Plan incorporating therein the action points emanating from the DAPs of the affiliated Co-operative units at the lower tiers.

(c) Memorandum of Understanding (MOU)

The performance obligations on the part of the co-operative credit institutions and the State Governments arising out of the DAPs/SAPs of the short-term and long-term credit structures would form the basis of the MOU to be entered into by the apex level Co-operative Banks (SCBs/SLDBs) and the State Governments with the National Bank. In view of the involvement of many agencies and their interdependence, it would be necessary for each agency to fulfil its commitment adhering to the time frame to make the action plans effective. The Memorandum of Understanding seeks to ensure such commitment. Separate MOUs are

also required to be entered into between the SCB and each of the affiliated DCCBs as well as between the SLDBs and each of the affiliated PLDBs in the States where federal co-operative credit structure exists.

(2) Rehabilitation Measures

A programme of rehabilitation of the "weak" co-operative banks, as referred to earlier, has been under implementation since early seventies by the RBI and later by the NABARD, but this has not met with significant success. For instance, as at the end of June 30, 1986, 173 DCCBs were under the programme, of which 58 had been under the programme for over 10 years and 43 between 5 and 10 years continuously. Further, several banks apparently revived under the programme, were found to have relapsed, one or two years later, only to go back into rehabilitation. The NABARD itself recognised that the programme had not been successful and as such, developed and launched new programmes, namely the 10-point programme for the LDBs in 1985 and the 12 point programme for the DCCBs in 1987. In course of their visits to the client banks, the Agriculture Credit Review Committee identified the following reasons for the failure of the previous programmes.

(a) While rightly concentrating upon loan recovery, the programmes do not provide for an expansion component and development of new opportunities for lending and other services once recoveries are improved, so that banks can become more viable business units;

(b) Lack of adequate initiative, involvement and effort on the part of the "weak" banks itself in implementing the programmes, in several cases;

(c) Frequent management changes in the "weak" units;

(d) Inadequate direct supervision, monitoring and evaluation of progress by the Apex bank, co-ordinating committees.

Institutional Strengthening Programme

The Agriculture Credit Review Committee (ACRC) (1989) which had reviewed the rural financial system in the country and evaluated the major problems and issues affecting the agricultural credit system had suggested that the National Bank should formulate a programme to strengthen and revitalise the rural credit institutions, especially the co-operatives. Accordingly, in 1991 the National Bank formulated the Institutional Strengthening Programme covering "non-solvent" and "near non-solvent" banks. The programme was to be completed within a specified time frame of 3 to 5 years with a provison that in case the concerned banks fails to turn the comer within the time frame, the concerned State Governments would make alternative arrangements for credit dispensation in the areas of operation of such banks. The programme was, however, a non-starter since it did not find favour with the State Governments mainly due to their inability to fund their share as envisaged under the programme.

Strengthening of Rural Financial Institutions

(A) Co-operatives

In order to improve the long-term viability of the co-operative credit institutions, the National Bank has initiated the process for drawing up the DAPs for the district level co-operative credit institutions. Similarly, the State Action Plans (SAPs) incorporating the action points emanating from the DAPs, are also being prepared. These plans are intended to be implemented through the mechanism of the MOU to be entered into by respective State level banks and the State Governments with the National Bank. Separate MOUs are envisaged for the short-term and the long-term co-operative credit structure.

Financial Package for Co-operative Banks

The DAPs prepared by the co-operative banks has shown that many of the banks would not be in a position to attain sustainable viability because of heavy accumulated losses and other loss assets. The quantum of resources required to cleanse the balance sheets of the co-operative credit institutions, both under short-term and long-term structure, have been tentatively estimated to be of the order of Rs. 2800 crore. While this estimate needs to be reassessed precisely, after a thorough analysis of balance sheets of the co-operative credit institutions as at the end of March 1995, a suitable mechanism for mobilisation of resources required for the purpose from within and outside the systems needs to be evolved urgently. As a sequel to the recommendations of the Parliamentary Committee on Agriculture (1992), the National Bank has established the 'Co-operative Development Fund' during the year 1992-93.

(B) Regional Rural Banks

Organization Development Intervention (ODI) in RRBs

The NABARD commissioned (1997-98) the Organisation Development Intervention (ODI) programmes in the 49 selected RRBs through its staff college and the Bankers Institute of Rural Development (BIRD), Lucknow to ensure implementation of the Development Action Plans. A mid-term review of selected banks covered under the ODI indicated perceptible improvements in all spheres, viz., business levels, productivity, recovery, profit margins, staff motivation/initiative and commitment besides innovations in systems and procedures. The positive changes are the combined result of several initiatives taken by the National Bank in the revamping programmes including those such as the Organization Development Intervention (ODI).

4. Promotion of Rural Development

(a) Kishan Credit Card Scheme (KCC):

The Hon'ble Union Finance Minister in his Budget speech for the year 1998-99 had announced the introduction of a Kihsan Credit Card Scheme and desired that the banks should

issue the Kihsan Credit Cards to the farmers on the basis of their land holdings so that farmers may use them to readily purchase agricultural inputs such as seeds, fertilisers, pesticides etc. and draw cash for their production needs. Against this, the NABARD was supposed to prepare model scheme for uniform adoption by the banks.

b) Bankers Institute of Rural Development (BIRD):

The National Bank independently set up the Bankers Institute of Rural Development (BIRD) at the National level and two Regional Training Centres with an attention to the training of a large number of rural bankers in general and the RRB personnel in particular. The exclusive attention for training of the RRB personnel continued till 1992 in the training establishments of the National Bank. At the same time, the National Bank continued its support both academically and financially for training the personnel of the Land Development Banks (LDBs) in their Junior Level Training Centre (JLTCs). Thus, training as a part of the institutional development has been supported in the BIRD, the Regional Training Centres (RTCs), the CAB of the RBI and the JLTCs of the SLDBs with financial back up and other support from the National Bank.

(c) Agriculture Co-operative Staff Training Institutes (ACSTIs):

The National Bank also encourages the SCBs and the District Central Co-operative Banks (DCCBs) to develop their human resources by extending support for conduct of training programmes in the Agricultural Co-operative Staff Training Institutes (ACSTIs) since 1994. The Bank is also supporting the initiatives for formulating HRD/ manpower plan along with the business development plan as a part of the Development\Planning exercise both for short-term and long-term co-operative credit institutions.

5. Monitoring And Evaluation

The purpose of monitoring is to measure and oversee the progress towards predetermined targets and identify reasons for poor performance, while evaluation takes into account all factors affecting the performance in order that the reasons for the degree of achievement can be determined. In fact, monitoring and evaluation by the NABARD together play a vital role in measuring, both the performance of its programmes and effectiveness of its strategies for the development of the credit system.

This paper identifies the pitfalls of the Apex Bank's leadership role and suggests a framework of the probable new areas of its active involvement in bringing about the desired institutional changes and structural reforms of the Co- operative and Commercial Banks. Pitfalls that on notice in this respect are outlined below:

1. There is lack of co-ordination amongst its various activities.
2. There is no effective integration of the farm and the non-farm credit planning, nor of the short and medium-term refinancing.

3. The responsibilities of the Rural Financial Institutions are limited, especially in the areas of formulating investment guidelines and performance monitoring of refinance.
4. The Apex Bank's has no power to grant or withdraw licenses. It only makes recommendations to the Reserve Bank for licenses to the banks inspected.
5. The Apex Bank's inspection reports typically highlight defects (about which the bank's management is well aware), without providing any analysis of there causes and *recommendations* for their solution.
6. There are very limited links between inspection and other functions of the NABARD. Institutional development and inspections do not make any positive contribution to the Institution building process.

6. Recommendations

1. Creation of Recovery Climate

Many of the farmers are financially weak. The Governmental agencies are not able to provide adequate marketing facilities or remunerative prices to their product. While the prices of industrial products are fixed by taking into account their cost of production, the prices of agricultural products are fixed arbitrarily or from the consumers' point of view. The main beneficiaries are the middlemen and the industrialists who purchased them and also who supplied the inputs and equipments. It is therefore said that in the absence of remunerative prices for their products, they are neither in a position to repay the principal nor the interest.

2. Proper Utilization of Research and Development (R&D) Fund

There is need to use the NABARD's Research and Development (R&D) Fund more imaginatively and aggressively to identify, evaluate, develop and promote new initiatives in rural development.

3. Monitoring and Evaluation

Monitoring and Evaluation is one of the clues to the smooth functioning and rapid expansion of the client banks. At any time it is the source for its preparedness to respond swiftly and effectively to the needs of the poor. Intense attention is paid by it to the performance of individual staff members; inefficiencies are nipped in the bud and merit is quickly rewarded. Extensive records are continuously updated. Monitoring and evaluation thus is valued for its present and potential contribution to future management and organizational development beyond the function of keeping an eye on the operations.

4. Co-ordination in between Different Banks

There is an urgent need for co-ordination between the different banks and agencies providing credit to agriculturists. This co-ordination should be at three levels; **(i)** the co-ordination between

financial institutions themselves; **(ii)** the co-ordination between the financial institutions and the non-institutional sources of agricultural credit; and **(iii)** the co-ordination among the financial institutions, the non-institutional sources and the Governmental departments dealing with the matters relating to the agricultural sector.

A permanent body for the agricultural development and distribution and recovery of agricultural credit should be constituted at the district as well as block level. These bodies should look after the credit-needs of rural households, the functioning of different sources of credit, the preparation of credit plans for the development of block and district, the preparation of plan for agricultural development and the day-to-day functioning of the Co-operative Societies.

7. Follow-up Measures

Personal contacts and continuous touch with the borrowers would go a long way in reducing overdue. It is, therefore, necessary to introduce suitable measures in order to ensure continuous touch with the borrowers of the banks until the loan is repaid fully.

In order to make the credit effective, the banks should not only see that it is properly utilized but also "ensure supply of production credit and agricultural requirements like seeds and fertilizers to their borrowers as also assistance by way of technical guidance from the extension staff or the staff in the technical departments in order to enable them to adopt the proposed cropping pattern and to improve their repaying capacity"

8. Conclusion

Form the present study it may be concluded that the NABARD has a dual role to play as an apex level institution and as a refinancing institution. It has inherited its apex role from the Reserve Bank of India. In other words, it is performing all the functions performed by the Reserve Bank of India with regard to Development of Co-operative Banks and Commercial Banks. Various promotional efforts have been made by the NABARD for development of Co-operative Banks and Commercial banks. But various types of pitfalls were found in the contribution of the NABARD and the present paper suggests a framework of the probable new areas of its active involvement in bringing about the desired institutional changes and structural reforms of the Co-operative and Commercial Banks.

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Managerial Issues for the Small and Medium Enterprises in India

Prallad Debnath
Reader, Department of Commerce
Tripura University

Abstract

This paper addresses the various managerial issues as well as the policies in regard to management of small and medium enterprises in India. To this propose it presents the theory of management and policy thereby based on principles. This is followed by an analysis of major management functions for SMEs which create more jobs than large firms and have a distinctive role to play in innovation from sector to sector. The study has been focused on the careful analysis of the management in the SMEs through the specific categories of managerial issues in the context of Indian environment. In this regard, the Small and Medium Enterprises have been playing a significant role during the last three decades in shaping the industrial economy of the country. The needs of successful management of Small and Medium Enterprises required changes capability as it is an on going process which should always be ready leaving the door open to innovation and opportunities in future in any exigency. The conceptual framework presented in this paper provides a foundation from which learning as well as development can be provided. The only thing is to make those enterprises into profitable enterprises is of the management of small and medium enterprises.

Key-words: Economic prosperity, Industrial economy, Degree of sophistication, Employee morale, Market segment, Production cycle, Collateral value, Delegation, Human capital, Wealth- maximization. Strategic management.

1. Introduction

A successful enterprise is a focal point behind the economic prosperity of any state as well as the country as a whole either it is in Small or Medium Scale sector. The Small and Medium Enterprises account for a considerable majority of industrial units and highest proportion of employment of most developing as well as developed countries. They produce about 25% of Organization for Economic Cooperation and Development (OECD) exports and 35% of Asia's exports (OECD, 1997). But in the current era of globalization, those SMEs that are internationally competitive are able to grow as well as survive better in the domestic markets. For that, the SMEs must be market oriented and offer product and services of international quality too. Small producers face a variety of challenges- some related to markets and others related to capabilities. Inability to develop technological capabilities has often restricted small as well as medium enterprises from growing large. Though the Small and Medium Enterprises

have been playing a significant role during the last three decades in shaping the industrial economy of the country. However, there is as yet no proper or complete census of the number, product range, output and financial results of enterprises that are classified under the umbrella of small scale industry. But the industrial policy Statement of 1980 stressed on the balanced and harmonious development of all sectors of business enterprises in the states as well as in the district level, especially in the industrially backward areas to generate as many ancillary and small and cottage units as possible. Now it is redefined to include all those manufacturing and repairing units. The upper limit on investment to facilitate modernization and speedy growth, the upper ceiling on investment, plant and machinery, has been raised in respect of small scale units from Rs.20 lakhs to Rs.35 lakhs and in the case of ancillary units from Rs.25 lakhs to Rs.45 lakhs. It is true that often the fruit of entrepreneurial activity is the founding of a small business. After the entrepreneur has determined what business has to be in and has developed a strategic plan of entry he or, she is otherwise stated, must focus on the operational aspect of running a small or medium business enterprise. All the activities of Industrial Finance Corporation of India (IFCI) are developmental and promotional in character since the beginning. But they were confined to medium and large scale industrial concerns operating in corporate and cooperative sectors. Thereafter it was decided in the Silver Jubilee Year of IFCI to make necessary amendment in IFCI Act, 1948 so as to encourage the promotion of small and medium scale enterprises in consonance with Industrial and planning policies of India. Thus the BRF and IDFs were originated in pursuance of amendment to IFCI Act, 1948 in December 1972. Benevolent Reserve Fund (BRF) is financed out of profits earned by the IFCI. Likewise, Interest Differential Funds (IDFs) is financed out of money received from India. As such the funds of both the resources are creatively utilized for the purpose of the promotion of Small and Medium Enterprises in India. As such, the details of running the business are important and the entrepreneur must be a generalist, doing a little of everything. So the management of Small and Medium Enterprises (SMEs) is very important where in entrepreneurship rests mostly with the owner or the owner-manager. It has been observed that the small and medium enterprises have been playing a pivotal role for the development of urban as well as rural areas. As such this has to propose distinctive determinants of a collaborative model for engaging SMEs in technological innovation over a period of time. It was found that almost 49% of the 2006 enterprises were engaged in technological innovations mostly informally. These innovations are primarily incremental in nature and product oriented. Self-efforts are the major source of innovation and the role of external agencies, particularly Government agencies, was found to be minimum. External factors, particularly competition and customer needs, were the major motivating factors for small and medium enterprises to engage in motivations to achieve the objectives of enhancement of competitiveness through quality improvement, cost reduction and meeting market needs. However, there is hardly any management literature, which comparatively analyzed the innovations of enterprises with references to any particular industry in India as well as abroad. The role of government promoted

institutions was not significantly visible as well as responding, this is only supplementary, to say the least. In this globally competitive environment, there will be greater pressure on large enterprises to improve there competitiveness through quality improvement and cost reduction. This is in turn, will pressurize small enterprises who are vendors to large enterprises, to innovate for quality improvement and cost reduction, on their own or with customer support. Given this, it is likely to more small and medium enterprises will become or will continue to remain in India. What is important to the managers in the SMEs are: focus of the enterprise, interactive producers, processing and product manufacturing, innovation investment, markets, market makers and regulatory support.

In view of the afore–mentioned observation, the present study aims—

1. To ascertain the scenario of various managerial issues for Small and Medium Enterprises in India;
2. To ascertain the causes of basic problems in Small and Medium Enterprises in India;
3. To make an in-depth study of the efforts made in the direction of various managerial issues for Small and Medium Enterprises in India and what lacunae have crept therein;
4. To ascertain the future prospect of Small and Medium Enterprises in India.
5. What suggestions can be offered to make India a developed industrial country in Small and Medium Enterprises?

2. Survey of Related Literature

A Number of publications germane to managerial issues and its various facets have appeared during recent years. Propose to discuss here very briefly, some of the very useful and significant publications and their main points as follows:

The illustrious writers, Andrew and Richard have deflty presented the scenario world-wide of SMEs as "International evidence from OECD countries also points to the major impact of the growth in small businesses." They also narrated that "it is noticeable that the more successful organizations have been much more self–critical of their planning."

An outstanding author on the management of finance, Banerjee, Bhabatosh has advocated very eloquently that "Current assets are considered as working capital as all of it helps to earn profits; and the management is more concerned with the total current assets as they constitute the total funds available for operational purposes. For determination the rate of return on investments in current assets like fixed assets, the gross working capital concept is more useful."

One distinguished author, Chandra, Prasanna has very nicely presented that "the production plan is geared to meet the requirements of sales. Goods flow from the production line largely in conformity with the needs of sales. There may however, be significance divergence between the pattern of sales and the pattern of production. This happens under two conditions :

(i) there is a pronounced seasonal variation in sales where as production is planned in a stable manner; (ii) production necessarily has to be carried out during a certain period of the year, where as sales occurs round the year though there may be some seasonal variations".

In the case of Small and Medium Enterprises the steps involved in preparing the production budget as "1. assess the productive capacity of the firm, 2. specify the finished goods inventory policy of the firm. 3. Estimate the total quantity of each product to be manufactured during the budget period on the basis of sales forecast and finished goods inventory policy. 4. Schedule the production during the budget period, taking into account the pattern of sales, the finished goods inventory policy, and the productive capacity".

In an outstanding article, Chandra and Sastry have beautifully illustrated capabilities building of the entrepreneurs in India.

The definition of small business in India has frequently changed over the years. A retrospective picture of this changing definition is as follows:

Small and Medium Enterprises in India, employments and earnings, examined some long term treads in output, earnings in manufacturing. It documents and explains the building of capabilities and integration with global markets of small scale firms.

One illustrious writer, Charanthimath has beautifully discussed the various issues in Small Business Enterprises in India and their development as well in removing bottlenecks as "India has an extraordinary talent pool with virtually limitless potential for entrepreneurship. India must, however, commit to creating the right environment to develop successful business builders: To do this, India must focus on four areas: Create the right environment for success, Ensure that entrepreneur have access to the right skill: Ensure that entrepreneurs have access to "smart" capital: Enable networking and exchange."

Dollinger Marc J. has rightly observed that "Qualitative objectives are more concerned with the effectiveness of the new venture. Effectiveness is the extent to which the firm is able to maintain and expand its position in the competitive environment".

Halt, David H. has judiciously observed as "Borrowers also must have appropriate collateral as security; the Small Business Administration does not accept unsecured applications. Collateral includes assets normally considered as security by lenders, including real estate, machinery, inventory, equipment, personal property, and receivables."

So far the frequent changed definitions of small business over the years were witnessed in India; a survey was made in this regard taking into account the merits of changing definitions of Small Business in India.

Various scholarly editors have also merited attention regarding the different levels of management in Small and Medium Enterprises in India.

Noted Scholars, Mitra, R, & Pingali, V. of the time have categorically narrated Small and Medium Enterprises in India as "Small and medium-sized enterprises (SMEs) play a key role

in generating employment, promoting innovation, en Small and Medium Enterprises in India gendering competition, and creating economic wealth (Sengenberger, Loveman, and Priore 1990)". They also very logically presented the need for re-thinking SMEs in India. As pointed "the long tradition of promoting small-scale enterprise in India is being re-examined in light of its success in creating a sector with the potential of performing all the above roles".

Peter F. Drucker, in his valuable contribution in management has said as "Many middle-sized and small businesses will have to become active in the world economy. To maintain leadership in one developed market, a company increasingly has to have a strong presence in such markets world wide."

In a study of the pre-1990s period, Sandesara (1988) concludes that "small firms experienced a decline relative to large-scale industries in terms of five important parameters —number of factories, fixed capital, and number of employees, output, and value added. In the post-liberalization era, this issue has assumed renewed importance".

Again they narrated that the small and medium scale sectors in India have now been identified by the government as "one that can assist in generating additional employment, indigenizing technology, and leveraging cheap labor and flexibility of operations to create competitive advantage for Indian industry".

As a result, the government recently raised the asset size limit used to define small firms for government aid eligibility to include what had been defined as the medium-size sector. Thus small firms can now openly pursue a growth objective without running the risk of losing their small firm status and all the accompanying promotional subsidies.

In an investigation into the reasons why some SMEs grow and others don't, Hay concludes that "over the long term it is internal rather than external barriers to growth that exerts the decisive influence upon SMEs' rate of growth".

In the Report presented by the World Association for Small and Medium Enterprise (WASME), (1980), New Delhi, India, elaborate discussions were made in regard to various facets of micro, small and medium enterprises of the 112 countries including India.

Ron Adner has beautifully proposed that "successful innovation requires tracking your partners and potential adopters as closely as you track your own development process."

David A. Garvin and Lynce C. Levesque has very nicely observed as " For large companies creating new business is the challenge of the day. After years of down sizing and cost cutting corporations have realised that they cannot shrink their way to success. They have also found that they cannot grow rapidly by tweaking existing offerings, taking over revivals, or moving into developing countries."

Rosabeth Moss Kanter has also beautifully written that "Innovation is back at the top of the corporate agenda. Never a fad, but always in or out of fashion, innovation gets rediscovered as a growth enabler every half-dozen years (about the length of a managerial generation).

John S. Hammond, Ralph L. Keeney & Howard Raiffa have very nicely presented as "In making decisions you may be at the mercy of your mind's stranger workings. Here is how to catch thinking traps before you become judgement disaster".

The Three distinguish authority on Management, Stoner, Freeman, Gilbert, Jr., have very articulately presented the importance of Small and Medium Business as "Small business plays a central role in our lives because we conduct much of our own personal economic activity with people running small business. Whenever you have your bicycle repaired, get your hair cut, or visit your dentist, you are part of the small business economy."

3. Concepts of Small Business

To run the business requires the attention to the various functional activities of an enterprise, such as accounting and legal, personnel, finance, marketing, manufacturing and engineering (operational areas), maintenance, and security. In medium enterprise, of course, each of these functions is executed by a departmental team of managers and employees. But, in case of small business, often the entrepreneur has only a manager or two to help him coordinate the entire operation of the enterprise and sometimes, he himself is the self-styled owner-manager. Indian Government's recent definition:

Small Company—Those companies which have 1 crore as total capital in plant and machinery.

Medium Company—Those companies which have 1 crore as total capital in plant and machinery.

A European definition has a complex formula considering the revenue, No of employees etc., this definition considers a company which employs about 250 people as a Medium Enterprise and 50 People as Small Enterprise.

In India, SME companies account for a 45% of Industrial employment and produce 50% of the industrial output. The definition of small business in India has frequently changed over the years. A retrospective picture of this changing definition is as follows:

Table-1

Year-wise Changing Definitions of Small Business in India

Year	Defining Authority	Defined As
1. 1950	Fiscal Commission	A unit operating mainly with hired labour Usually10 to 15 hands
2. 1955	Small Scale Industries Board	A unit employing less then 50 persons if using power and with a capital investment not exceeding Rs.5 lakhs

Year	Defining Authority	Defined As
3. 1966	Ministry of Industry	An undertaking having a capital investment in plant and machinery and not more than Rs. 7.5 lakhs irrespective of the number of persons employed
4. 1975	Government of India	An undertaking having a capital investment in plant and machinery of not more than Rs. 10 lakhs and Rs. 15 lakhs in case of ancillary units
5. 1980	Government of India.	An undertaking having an investment in plant and machinery and not more than Rs. 25 lakhs and more than Rs. 20 lakhs in case of ancillary unit
6. 1985	Government of India	An undertaking having an investment in plant and machinery of not more than Rs. 35 lakhs and not more than Rs. 45 lakhs in case of ancillary units
7. 1991	Government of India	An undertaking having an investment in plant and machinery of not more than Rs. 60 lakh and not more than Rs. 75 lakhs in case of ancillary units
8. 1996	Ministry of Industry	An industrial unit with a capital investment in plant and machinery and not more than Rs.75 lakhs irrespective of the number of persons employed
9. 2001	Government of India	An undertaking in which the investment in fixed assets, in plant and machinery, whether held ownership terms or on lease or by hire purchase, does not exceed Rs.100 lakh and in case of ancillary unit ,does not exceed Rs.1crore. as on March 31,2001

There is a frequent change in the investment ceiling that small has become big in course of time. The investment ceiling in plant and machinery was Rs.5 lakhs in the fifties, Rs. 7.5 lakhs in the sixties, Rs.15 lakhs in the seventies, and Rs.35 lakhs in considering the proposal to raise it to Rs. 3 crore thereafter. A picture in regard to changes in the investment ceiling of SSI and Ancillary Units (AU) is furnished below:

Table: 2

Year	Investment (Rs.)	
	SSI	AU
1955	5 lakhs	—
1966	7.5	—
1975	10	15
1980	25	20
1985	35	45
1991	60	75
1996	75	85
2001	100 lakh	Rs.1crore

4. Major Management Challenges for SMEs

The producers of Small and medium enterprises, especially in emerging economies, face a challenge of becoming part of a capability driven economy. While large enterprises internalize many of the costs associated with developing capabilities to meet the requirements of the markets, small and medium producers do not possess the scale needed to drive such activities internally. Most simply, they do not have access to complementary resources needed to run their business effectively. Scarcity of working Capital also means that many investments required increasing the product quality, lead times and productivity is not available to them easily. Moreover, the overwhelming power of high channel forces these producers have to sell at razor thin margins. This may be exaggerated when the market for the products produced by SMEs is not located in the vicinity of production unit. One of the important features of modern manufacturing in India has been the dilemma of strategic positioning of SMEs. The SMEs wishes to become ancillary producers of large plants whereby they can create stable demand but where the economics of production favours a large supplier. Often managers in the SMEs need to identify areas of innovation that have commercial value than that of job shop only. Many of these challenges drive the enterprise towards survival rather then growths driven strategies and these disabling efforts take these firms away from becoming leaders in the industry in India. However, the hope for better future to lead the country is still awaited.

The key areas of management relating to SMEs for over all development are:

(a) Financial resources including liquidity and borrowing power;

(b) Personal resources, relating to numbers, depth, and quality of people, particularly at the management and staff levels;

(c) System resources, in terms of the degree of sophistication of both information and planning and control system;

(d) Business resources, including relations, market share, suppliers relations, manufacturing and distribution processes, and technology and reputation, all of which give the company in the industry and market;

(e) Managerial ability of the owner- manager and manager and willingness to delegate responsibility and to manage the activities of others;

(f) Strategic ability of the manager for looking beyond the present and aligning the strengths and weaknesses with his or her goals and so on.

In all the above cases, there are some styles of management in the Small and medium enterprises in regard to its functional areas such as finance, marketing, production, purchases, sales and human resource management. Small enterprise-small investment and medium enterprise- medium investment, but the peculiarities are not so small so far the shift in time and relationships that we have been seen through out the organizational world in its direct-activity and indirect-activity environments. There is also a changed environment in regard to financial activities, marketing activities, production activities in the day to day's operational periphery of the management of Small and Medium Enterprises. It is obvious that all these activities need a suitable managerial style to administer and manage those enterprises for the benefits, profitability, of course, of the organization in the long run to sustain in the risk-return trade-off which is the ultimate goal of an enterprise along with maximization of value too.

So a comprehensive study of the important areas of management of Small and Medium Enterprises categorically is very important to identify the special problems and challenges of this important economic sector. In this context, an emphasis has to be given on the following major management areas:

- Financial Management
- Production Management
- Marketing Management
- Human Resource Management

It is thus the study of all those managerial functions for the Small and Medium Enterprises assumes importance.

Considering the above essential areas of the management in Small and Medium Enterprises, an elaborate explanation of the enterprises is essential in regard to their positions in the respective patterns as follows:

Financial Management

Financial management is the conscious effort to formulate long term policies with regard to major aspects of financing, investment and dividend decisions with a view to fulfilling the objectives of the firm. It is the operational activity of a business that is responsible for obtaining and effectively utilizing funds necessary for efficient operations of both small and medium enterprises. In that case, it has been observed that the entrepreneur must be the enterprise's chief financial officer (CFO) during the initial capital formation phase and often remains the CFO for the enterprise in case of small business operations. The officer, in the simplest terms, the fully responsible for managing the balance between the sources and uses of these funds. Though there is a conflict over maximization of profit and maximization of wealth, the enterprises with wealth maximization objective will ultimately sustain in the long run for earning profit on its business. The objective of the financial management of small and medium enterprises is to see that adequate cash is in hand to meet the required current and fixed expenses in such a manner so that the profit of the enterprises is magnified in all circumstances. In India, the growth of small and medium scale enterprises (SMEs) has been placed as one of the most important features in the development of industrial economy. It has recorded a significant increase in the number of small and medium scale units, value of production, value of exports, employment and investment. The small and medium scale sectors contribute about more than 50% of the manufacturing sector's gross value of output and value added in India. A brief review of financing sources of Small and Medium enterprises in India is as follows:

Table: 3

Sources of finance	Financing scheme	Form of Financial Assistance
1. Commercial banks	Normal lending Priority sector lending Differential interest rate scheme	Working capital loans and term loans
2. Cooperative banks	Lending to SSI units organized on cooperative basis	Working capital loans
3. Regional Rural Banks	Extending lending to Tiny, SMEs	Working capital loans
4. RBI/DICGC	Credit guarantee scheme/small loans guarantee scheme	Guarantee of loans
5. IDBI	Refinance Rediscounting of machinery bills Special capital assistance for SMEs	Term loans Rediscounting (loan) Soft loans

In Backward Areas

	Seed capital **National equity fund**	**Equity / loan** **Equity**
6. IFCI	Risk capital	Bridge loans
7. SFCs	Term lending Special capital scheme	Term loans Equity and soft loans
8. SIDBI	Refinancing	Term loans
9. NSIC/SIDCs	Hire purchase facilities	Hire purchase

India has integrated structure of financial institutions known as All India Financial Intuitions (AIFIS) that provide term finance and other assistance to Small and Medium Enterprises, which have been developed since independence. These include banks and special financial institutions such as IDBI, IFCI, SFCS, SIDCS and recently constituted SIDBI. The assistance includes lending for investment of acquisition of capital- working capital and equity participation. Generally, banks are the chief suppliers of loans to the SMEs, but the percentage of share has been declined for SMEs in the credit made to the priority sector. In addition to this, there are other special financing schemes for seed capital, rediscounting bills, and so on. Until 1981, the RBI had been supporting lending to SMEs through a Credit Guarantee Scheme. A similar guarantee scheme for sanction of loans to SMEs is being operated by the Deposit Insurance and Credit Guarantee Schemes which is a fully owned subsidiary of RBI. However, for the Indian situation, what will be more appropriate is the definition of retail loan given under the February 2005 guidelines of RBI for large and medium enterprises, which also covers the small enterprises. There are four criteria in these guidelines in regard to claims that meet all the criteria may be included in a regulatory retailed portfolio and assigned a risk-weight of 75%. These are (OPGL):

1. Orientation criterion—This relates to individual person or persons or to a small business; small business is one where the total annual turn over is less than Rs. 50 crore.
2. Product criterion—The exposure takes the form of any of the following:

   Line of credit—an arrangement specifying the maximum amount of unsecured credit the bank will permit to owe at any one time. Usually, credit lines are established for a one-year period and are subject to one-year renewals and other is revolving credit agreement (including credit cards and overdraft) by a bank to extend credit up to a maximum amount under a commitment. While the commitment is in force, the bank must extend credit whenever the borrower wishes to borrow, provided the total borrowings do not exceed the maximum amount specified.

3. Granularity criterion—In that case the bank must ensure that the regulatory retail portfolio is sufficiently diversified to a degree that reduces the risks in the portfolio, warranting the 75% risk weights.
4. Low value of individual exposure—This relates to the limit which the maximum agreed retail exposure to one counterpart should be the threshold limit of Rs. one crore to five crores depending on the total capital of the bank. Moreover, under the current Basel Capital Accord, loans to small business (i.e.SMEs), the strategic decisions about the different finance functions regarding small & medium enterprises are going far beyond the traditional concept of the procurement of funds and their uses. As per the RBI guideline in adopting the Basel Committee Suggestion by 31st March, 2007 banks can use standardized approach for credit risk. This may affect negatively on small and medium enterprises because loan sanction to SMEs whose credit ratings are not good, require 150% risk weight. But according to RBI regulation about retail portfolio (February 2005),banks can classify the sanction of loans to SMEs as retail loan and can assign risk weight of 75% provided a prescribed criteria is fulfilled. In regard to advanced approach to credit risk offered by Basel II also gives the concession of 25% risk weight for sanction of loans to small enterprises but not to medium enterprises. In spite of elaborate institutional system of financing for small or new entrepreneurs they have to meet a substantial part of their financial needs from their personal savings as well as support from their friends and relatives, whereas financing in medium scale enterprises must have to depend on the banks and financial institutions to a great extent.

Despite all the sources of financing to finance in Small and Medium Enterprises in India, they are not free from drawbacks. The norms in regard to financing by the Govt. sponsored/controlled institutions act as the constraints in case of quick financing requirement to operate in the risky industries in the terrain of equity capital, risk venture, project evaluation and so on. Consequently, the traditional industrial finance in India is not of much help to SMEs specially, in case of new and emerging enterprises. So far the collateral is a concern, they are unable to offer collateral in teams of fixed assets, and rather it is contained in technical know-how and new idea. In other cases, it also can not maintain a balance between negative cash flow and positive cash flow for unavailability of financing during the entire period of operation. Also, the new enterprise would require development finance to enable them to pass from the pre start-up to start-up phase to the expansion phase. Thus, the venture capital is the financing mechanism befitting the requirements of the small and medium enterprises in India. What is necessary is to give a big push from policy makers for a sustained and large scale development of the enterprises in India as a whole.

Production Management

Production is the combined output of the efforts of the five big agents namely, land, labour, capital, enterprise and management. Once the production schedule has been established, estimates can be made of the needs in materials, labour and additional fixed assets. As with receivables, there is a lag between the time a purchase is made and the time of actual cash payment. If suppliers give average terms of net 30, and the firm's policy is to pay its bill at the end of this period, there is approximately a one month lag between a purchase and the payment. So the Production Cycle is very carefully taken into account in this crucial period. The cycle should positively be influenced the growth of the enterprises, only when the managerial skills on the part of production manager may be restored.

The operations manager is in charge of producing items or services that the marketing department can sell to he or she must handle a vast amount of information from other department, and must plan and control the internal operations. Production planning and control is often performed by a separate functional department and serves as the nervous system for the production department. The controlling of production activities in the small enterprise assumes special significance at least in the early stages of the venture as much as almost each and every aspect of the business and its operation is new. This is simply because of inadvertent errors and limited resources, it is thus quite essential to detect and correct problems as quickly as possible for smooth function of the enterprise. In most small business ensuing that funds are in hand to pay immediate expenses is a particularly troublesome task in case of small enterprises. But this does not happen in case of medium enterprises, where the diversification of product is the order of the day. The medium enterprises manufacture not only one product but a host of product and question of immediate, therefore, is not as severe as in case of small enterprises. Production relates to the different kinds of products in the operation cycle of production. Classical studies conducted by Joan Woodward and her colleagues in a manufacturing firm in regard to small production, medium production and also mass production. Small production refers to products made in small quantities in separate stages and later assembled. Medium or mass production refers to the manufacture of large quantities of products, sometimes on an assembly line. But all those come across production cycle either in part or in toto. It is so complex in case of medium scale in comparison to small scale in the total round of the circle of the enterprises. The production cycle from material ordering to finished goods. This starts with the arrival of stock, and ends when the cash is received. The production manager affects the length of operating cycle by managing and controlling manufacturing cycle, which is a part of operating cycle and influences directly in case of medium enterprises . Longer the manufacturing cycle, longer will be the operating cycle and higher will be the enterprises' working capital requirement. To come out of this poor situation the following important points may strictly be taken care of:

1. Proper planning and coordination of all levels of the activities.

2. Proper maintenance of machinery, plant and other infrastructural facilities of the Enterprises.
3. Up-gradation of manufacturing system and technological change if requires.
4. Finding of shortest operating cycle out of the various alternatives to achieve maximum gain out of business operations.

Marketing Management

A progressive enterprise in the pattern of variation in marketing over the years to come through the actual marketing strategy of the enterprises running under small and medium scale is very important in the present competitive world. This strategy must be consistent with the goals of the enterprises. In case of small enterprise there're local or limited markets where as regional or the national market in case of medium enterprises. To exploit resource base of the enterprises for creating total marketing focus is essential to connect the customers for the success of the enterprise in marketing. The internet and entrepreneurship have grown together and have resulted in new concepts such as on line marketing, digital market place, and virtual organizations. To cover the fullest extent of the strategy in marketing, these focal indicators are to consider along with P-M-T as:

i. Competitors
ii. Product's strengths
iii. Competitors weakness
iv. Market research and particular segment
v. Appeal to this segment
vii. Image of the product and its consistency with the product
viii. Proper packaging, branding and labeling of the product to market
ix. Advertisement and campaigns along with promotional activities and combination of techniques and media for message to the customer,
x. Cost of the use of mediums and so on.

Once these were settled, the pricing strategy of the products will emerge in comparing with those of the competition. This must follow the image and value for the customers along with the profit margin either in the short run and long run operations. The credit policy of the enterprise, purchasing pattern, after sales services and on going relationship with the customers for enhancing business activities in the long run depending upon the nature of the business enterprises. The marketing manager has to apply all these strategies to achieve the ultimate goal of the enterprises.

Now, the question of distribution of the products in using the various distribution channels which is profitable to enterprises so as the product is to reach the market. Under the situations

discussed here the sales forecasts will differ in case of small as well as medium enterprises. A very concept is of the buyers' location as well as the nature of purchasing decisions of the firm for the products: local, regional and national as well. But all enterprises must engage in marketing as a principle. The motto of marketing is to reach the buyers as much as possible in increasing the sales of products of the enterprises. The sales forecast on the part of enterprises is done in such a manner so that the ultimate objective is achieved. That is definitely not common in all type of enterprises. What is common in sales forecast is to earn profit over costs incurred on the products. The marketing concept is of strategic significance of any enterprise. It thus expresses the observation as "the consumer is the king". Specifically, the consumer is seen as the "fulcrum, the pivotal point on which the enterprises move in operating for the balanced best interests of all concerned". Enterprise of all seizes, small, medium or large, try to establish as the market research. Researching product is usually more difficult because inventors are unlikely to disclose the ideas until they are ready to go to the market. Excellent cooperation with expert planning systems rare understands what will take place in distant future. The typical marketing- research report will contain a summery of the key findings on which the marketing manager must look in to consider the strategy to proceed further for a successful profitable enterprise.

Human Resource Management

The challenge of human resource management of today is people - their development, their well-being and satisfaction. Management is usually a human process. It is something more than expert knowledge in systems and procedures. It is thus, the manager is oriented to solving problems with techniques, tailored to situations, must develop, a uniform framework of thought that encompasses the total and integrated aspects of the entire enterprises, small and medium. Of course, HRD manager must learn the art of management. They must learn to build organization and its people. It is rightly said that the best executive is one who has sense enough to pick good men to-do what he wants done, and self – restrain enough to keep from meddling with them while they do it. The 1980s were pivotal, for both academics and practitioners, in the coupling of the strategy concept to the human resource management function. This coupling of the concept to the functions itself very much linked to the development of the personnel function and pressures to "professionalize" and elevate the status of the personnel / human resource management department. The traditional concept was linked with the personnel management which was commonly associated with the functions such as hiring, firing, and record maintenance, while human resource management associated with more sophisticated management of human relations within and beyond the enterprises. Porter in 1985 advocated the HRM as the integral part of the value chain at firm level. The term HRM originated in the USA in the non-union companies and developed initially in the large scale industry like Texas Instrument, Hewlett Packard, and IBM and later extended to other firms which had traditional system. The commonly used definition in the UK is that set out by Guest in 1987

as "comprises a set of policies designed to maximize organizational integration, employee commitment, flexibility and quality of work". He itemized four essential goals that are implicit within human resource management in regard to: (i) Integration, (ii) Employee commitment in the enterprise, (iii) Flexibility and Adaptability on the part of the rigidity, hierarchical, bureaucratic structure, and (iv) Quality in regard to maintenance of high standard in the enterprises.

To provide a comprehensive frame work and methods for the development of human resources in the small and medium enterprises for generation of systematic information about the management of human resources for the purpose of man power planning, right placement, increasing capabilities, motivating talented employees, and creating environment so that the human being in the enterprises can be utilized to the fullest extent.

The large or medium-sized enterprises require a separate HRM to assist the top management for doing a good deed of human relations. But a small scale concern can neither afford nor does it need a separate department to carry out this HRM function. However, the necessity for sound human resources policy and practices in building good employee morale is just as essential in the small enterprise as in the medium or large one. In small scale enterprise, with a smaller number of human resources, it is easier to build an intimate relationship between employees at all levels, and to make them into a good working team of the enterprise. The owner- manager in a small enterprise, often, has more men to manage than has his counterpart in medium or large enterprise, and less help from staff specialists, and therefore, has less time to devote to the individual problems of each worker. In developed countries, many small enterprises are often assisted in there human resource management problems by management experts in the lines.

5. Conclusion

Given the strong role of managers for management of small and medium enterprises is required a high degree of sophistication in all the areas wherein the success of the SMEs lie. To look in to this matter for the management of the SMEs over a period of time along with the competition and technological improvements, we must pay equal attention to all four aspects of important management functions in regard to its implementations in managing SMEs. And at the same time, the increased complexity in the links between financial management, production management, marketing management and human resource management may be avoided if issues are properly adhered to. The enterprises' efficiency mostly depend on the proper assimilation of these various management patterns along with other criteria like Performance budgeting, cost accounting, work study, consumer research, creation of employment opportunities, productivity, minimization of various costs, etc. Almost each of these factors involves technical and special expertise for the smooth and uninterrupted run of the Small and Medium Enterprises. The needs of successful management of Small and

Medium Enterprises required changes capability as it is an on going process which should always be ready leaving the door open to innovation and opportunities in future in any exigency. In fine, Innovative concept is the only shield to protect from any untoward incidence in the management of Small and Medium Enterprises. It is thus; need of the hour that the sustenance of small and medium enterprises in this competitive world after L.P.G, management of those has been emerged. As the competition intensifies one may see stronger linkages between all major functions of management. It must be mentioned that enterprises have also not been pro-active in seeking out these linkages to advance their research capabilities. Increased competition in recent year seems to have led to a large number of alliances. Finally, at a broader level, these linkages in India need to be analyzed in the context of a few larger issues. SMEs 'continue to suffer from certain inherent weakness and handicaps largely because of their inability to furnish suitable security for obtaining adequate credit, inability to hire the services of skilled and technically qualified personnel for management, marketing, etc. WASME is continuously engaged in identification of such constraints and finding appropriate solutions.Till recently, the small and medium enterprises was not very research oriented partly because of lack of competitive pressures and bulk of the research was done in large industry. SMEs producers have an inherent advantage in performing innovative activities within the enterprises. Though, they also face coordination failures on account of variety of reasons. To overcome these drawbacks, enterprises need to design ways and means of coordination, especially on those issues that reasons market and capabilities failure. So a mechanism of coordination between small and medium producers should be developed so that capability and demand may restore as well. The much larger challenge, however, is to design appropriate work environment so that the SMEs can be done somewhat better than others in Indian business environment. To make those enterprises into vibrant and profitable enterprises is the management of small and medium enterprises to pick in a big way so as to cater to all requirements to make solid impact. The key to success of SMEs is the extent of trust and reliability within the members of the enterprise's network. It also reduces the market related search of cost for SMEs. Finally, this study opens doors for a broad range of research work on the part of Small and Medium Enterprises in India to make India a better India in the field of small and medium enterprises.

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