

Inventory Control & Costing

In

Risk Assessment

In

Small Scale Industry

With Reference To Selected Units

**A Thesis submitted to
SARDAR PATEL UNIVERSITY
For the Degree of
DOCTOR OF PHILOSOPHY
in COMMERCE**

by

ASHOK ROY

**MA., LL.B., B.Com., FCS, AIB (England & Wales),
CAIIB, AIB (Malaysia)**

Under the guidance of

Manubhai M. Shah

**Professor & Head
Post-Graduate Department of Commerce
Sardar Patel University
Vallabh Vidyanagar - 388 120.**

September 1983

M E S S A G E S O F T H A N K S

It is said that it is ingratitude to thank hastily for the obligations received. I must, nevertheless, do it.

In completing this research, I owe much to a few individuals. Among them, I am very much indebted for invaluable advice, very helpful supervision, encouragement and guidance, at all stages of my research, to Professor Manubhai M. Shah, M.Com, M.Sc(Econ) London, Head of the Post-Graduate Department of Commerce and the Hon. Director of Shri Gordhanbhai Hathibhai Patel Post-Graduate Institute of Business Management, Sardar Patel University, who is well-known to the economics profession in India.

I am further indebted to my parents, Dr. K.B. Roy, MBBS, DPH, DIH (London University), DIH (S.A. England), FRIPHH (London), Indian Medical Service (Retd), who is well-known to the industrial medicine profession abroad for his discovery of the incidence in India of the fatal Pneumoconiosis and Mrs. L. Roy, for their tremendous intellectual and moral support throughout the research period. A special debt, both within and beyond words, is owed to them.

I N T R O D U C T I O N

I could have, undoubtedly, explored the subject matter of this thesis in an assortment of avenues and from different perspectives depending on one's disciplinary interests. I have, however, found it rewarding as well as realistic to study it from an integrative interdisciplinary point of view so as to confirm the thrust of my thesis and judgments.

GENESIS

A word, first, as to why the units studied belong to the Small Scale Industrial (SSI) Sector. The *raison d'etre* for this is not only their primacy in the economy but a variety of other reasons as well. To Dr. E.F. Schumacher, economist and the originator of the concept of Intermediate Technology, "Small is Beautiful". Professor Leopold Kohr of the University of Wales feels, "Small-scale operations, no matter how numerous, are always less likely to be harmful to the natural environment than large-scale ones", showing thereby its relevance to the economics of permanence. I fully concur with Prof. Paul Ehrlich's judgment that our entire economic system, based on Thorstein Veblen's conspicuous consumption, must be supplanted by the forethought what scale is appropriate. It depends on what we are trying to do. The question of scale is

extremely crucial in today's idolatry of giantism.

Even in highly industrialised countries where mass production is the rule, many small units exist and thrive as ancillaries to large units in sophisticated production lines.

In Britain, at the end of 1982, there were 1.3 million small firms, representing more than 95% of the total number of all businesses and providing employment for more than 30% of the working population and more than 20% of the GNP. Available statistics indicate that approximately 10,000 new small business start each month. The Bolton Committee regarded the two functions of this sector, "as a breeding ground of new industries and the source of dynamic competition," of crucial importance. The Wilson Committee too considered, in its brief, the financing of small firms and the Macmillan Gap. The small-firm sector in the U.K. is significantly smaller than in other advanced countries.

Japan has twice as many small companies as the U.S.A. has and nearly ten times as many as Britain. For the last three decades in particular, they have been the critical first stage of the economic rocket that has made Japan a by-word for industrial competition. In 1981 there were about 6.4 million small companies in Japan. Koji Omi, Director-General of the Ministry of International Trade, observes that in Japan small enterprises boast of

contributing 57% of the nation's output as against 47% in the U.S.A. and 15% in the U.K. In Japan the small sector employs 70% of the work force, while in the U.S.A. it is 65% and in the Federal Republic of Germany it is 27%. In Japan, the role of the SSI sector is clearly defined by market logic as sub-contractors and ancillaries to the parent large enterprise. As a direct result of this relationship, there is a lot of technology transfer, R & D facilities, benefits of managerial experience and technical specialisation by the small firm reducing, in other words, the penumbra zone between big and small industries. The industrial structure thus is pyramidal in form with a wide base of small enterprises and a small apex of large corporations like Hitachi, Toshiba, Fujitsu, Sumitomo, Toyota, Nissan and others. The pay scales are, however, naturally, lower on an average by about 30% in the SSI sector compared to the scales in big industry. Unionisation is quite low in the SSI sector, being below 25%. For these reasons, the cost of labour in the SSI product is low. The diffusion rate of mechatronic equipment (robots, machining centres and other such computer & microprocessor controlled equipment) is at present 19% (as against 70% for big enterprises) but it is predicted that about 60% of small businesses will introduce mechatronic equipment within the next three years or so.

In the U.S.A., small business constitutes 90% of all business and 9% of the manufacturing sector. In an illuminating study by Catherine Armington and Marjorie Odle in The Brookings Review (Winter 1982), it has been pointed out that the contribution of small business sector to net job growth is about proportional to its share of the American labour force.

In the Republic of Korea, the small industry constitutes 75% of the manufacturing sector and provides 50% of manufacturing employment. Korea also boasts of a Small and Medium Industry Bank which is the main financier of small industries.

After this global tour de force, we come inexorably to India. In India, at the end of 1982, the SSI sector provided employment to 70 lac persons, recording 21 persons employed on an average for an investment of Rs.1 lac. It is nearly four times the corresponding employment for the same level of investment in Medium or Large Scale sectors. The number of registered SSI units at the end of 1982 was around 6 lacs with an investment of Rs.1,900 crores and an output of Rs.20,930 crores constituting 40% of total industrial output of the country. Its exports amounted to 25% of the total exports (the Pearson Report considers the expansion of exports the main criterion of success for developing countries). The number of items to be exclusively purchased from the SSI sector by the Government is 401 and its share

in Government purchases works out to 45.6%.* The volume of bank finance to this sector is in the region of Rs.3,000 crores.

The advantages which radiate from the SSI sector are creation of larger employment opportunities; promotion of decentralisation of activity; wider dispersal of industries; better distribution of income; improvement in the skills of artisans; providing consumer goods without a long gestation period and contribution to the structural flexibility in an economy.

We see, therefore, that the role of the SSI sector in national development and in the comprehensive concept of "steady growth equilibrium" called the Optimum Golden Age (which combines the elements of the Von Neumann Path, the natural rate of growth defined by Sir Roy Harrod and the Golden Age analysed by Prof. Joan Robinson) is by no means small.

Shortage of funds for Working Capital has been possibly the biggest cause of business failures in recent years. Two of the most celebrated victims of Working Capital shortages, Rolls-Royce and Upper Clyde Shipbuilders, illustrate the seriousness of the management problem and the need for priority action. In spite of an international reputation for technological excellence, the best brand name in the world and a continuing history of reported profitability, Rolls-Royce could not survive when the money ran out. The Upper Clyde Shipbuilders failure demonstrated that Working Capital was a more pressing priority than full order books and notable

* David Trippier, Mrs. M. Thatcher's minister in charge of Small Business in the U.K., supports public sector purchase from small firms.

advances in productivity and industrial relations. The experience of these world-famous companies has been mirrored by all too many medium and small sized firms.

And it was against the background of these that the subject matter of my thesis was culled.

Surveys usually involve the collection of relatively large amounts of information. The correlational data yielded by survey research contribute to the identification of the factors. One problem of surveys involves the adequacy of samples. Good tests should have a reliability coefficient of atleast 0.7, which represents 49% agreement (square the coefficient and convert into percentage). It is impossible or impractical to survey all the SSI units, so ten samples which are representative have been selected, going by the Law of Statistical Regularity, on the basis of Purposive Stratified Random Sampling from the 44,136 SSI units at the end of December 1982 in the State of Tamilnadu. Over 110 units were contacted and surveyed for the purpose of this study. To avoid duplication of study and findings, these ten units were purposely delinked for this research. It may be noted here that few of the concepts change when applied to the larger firm, although they usually become more sophisticated in design and more complicated to administer. The regression results of the in-depth study of these

ten units, from the clinical point of view, generally confirm the validity of this neoliberal thesis. The names of the units, of course, have been altered to preserve anonymity.

Today, the persistent sickness of industrial units is one of the overriding problems confronting our industrial sector. This is not a new phenomenon, but has assumed quantum jumps in recent years. The resultant effect is loss of production and displacement of labour from the macro angle and the jeopardy of the Bank's advances. To Indian Institute of Management faculty Prof. S.K. Chakraborty, "an unit would be sick if cash losses were suffered by it for more than or equal to 50% of the duration of the business cycle for that industry for two successive cycles". The number of sick SSI units at the end of December 1981 were 23,975 and the outstanding bank credit stuck Rs.500 crores. While according to official estimates 20% of SSI units are sick, my study revealed, that the actual percentage varies between 40% and 50%, if we consider an unit as sick when it works at 20% or below of its capacity.

I have, therefore, dwelt on an Empirical Model to predict corporate failure in my study and also assigned a successful Nursing Programme in the ten empirical cases given.

OBJECTIVES

1. To investigate the polychromatic aspects of Inventory Control & Costing in Risk Assessment by Banks especially in the SSI sector.
2. To evaluate the techniques and aspects above.
3. To recommend emphatic peremptory measures, including an explicitly dynamic, multi-sector intertemporally consistent empirical Model paradigm , for better multitherapeutic /Risk Assessment and control by Banks in the SSI sector.

METHODOLOGY

- a. Primary and Secondary data were gleaned from published and submitted data by the units in the normal course of administration.
- b. Direct observation: This involved the observation of the units with a minimum of interference from the observer. Observation is an important method and, without doubt, it is the most important step in strategies of scientific enquiry. Observations suggest hypotheses and are also used to test hypotheses.

While there is some variation, the main steps in scientific enquiry are: (i) observation and assessment; (ii) the categorisation and

- classification of observations; (iii) the formulation of hypotheses, models or theories to link observations (the Linkage Thesis) and explain them and (iv) the derivation of objectively testable predictions in order to validate or test hypotheses, models and theories. Baseline surveys were conducted.
- c. Clinical interviews with Government officials concerned with the SSI sector; entrepreneurs; bank officials and officials of the units were conducted. In all, 250 respondents were interviewed.
 - d. Reports: These were based on observations or informal conversations. They were usually incomplete and biased, but in certain cases useful. "Beware of documents", counselled Clemenceau rightly.
 - e. The postal questionnaire system was found to be unsatisfactory producing hardly any replies.
 - f. Asking questions by telephone did not prove a good method because I found a biased sample.
 - g. Specific case studies were undertaken for detailed enquiry. The enormous mass of data thus collected, which proved my labour of Sisyphus, was then edited; tabulated; comparison of averages done; tested for accuracy against errors; and then analysed to get interpretations.

CHAPTERISATION SCHEME

The dissertation has been divided into 3 parts and 7 chapters as follows:

Part I consisting of 5 chapters, deals with important aspects against the backdrop of SSI financing. Chapters 1 and 2 wrap:

1. Definitions and
2. Synoptical overview of financing of SSI units.

Then chapters 3 and 4 set out the prismatic theoretical dimensions of Inventory Control and Costing relevant to Bank financing.

And finally, chapter 5 jells the dichromatic committees set up by the Government of India from time to time and the determination of "norms" for "size" of inventories.

Part II (Chapter 6) includes ten empirical case studies from the angle of the subject of the thesis and includes a Nursing Programme, viz., Boston Pharmas. Recommendations and findings in respect of each unit are given at the end of each respectively.

Part III (Chapter 7) reviews the major findings and assigns a number of peremptory recommendations.

To provide a catalytic step on the long journey, I have tried to present a codified and simplified vision

of the uniqueness of SSI financing behaviour, against a canvas of enormous range of facts and swift modulations. However, it cannot be too strongly emphasised that no two banking propositions are alike and each has to be dealt with on its merits. To concoct the financing panorama further, the figures supplied to a banker, like Nabokov's prose, conceal more than they reveal. But, then, this is a Rashomon Phenomenon where everyone sees things from one's own angle only. Any attempt to grasp bank financing realities through statistics alone, as Dyer, Clemens and Pitcher would acquiesce, is like wrestling with ectoplasm. You have to know the people behind the show. For, in the words of Sir Anthony Tuke of Barclays Bank, "at the end of the day a banker is concerned about people". And, contemplate the juxtaposition of two or more consummate possibilities realising fully, as the Chinese sage Chuang Tzu said, "the blended harmony of the Yin and Yang".

The paradoxical nature of Pascal and Neumann's Law of Probability is shared by bank-lending propositions in that you can predict with uncanny precision the overall result of a larger number of individual cases, but each of them is in itself unpredictable. So, we are, as Prof. Harry Johnson of London School of Economics puts it, "Still confused, but at a much higher level of understanding". We must, nonetheless, in the words of

C O N T E N T S

Chapter	Title	Page
	Messages of thanks	i
	Introduction	iii
P A R T O N E		
DYNAMICS OF SMALL INDUSTRY FINANCING - THE GLOBAL BACKDROP		
1	Definitional Aspects	1
2	Financing of Small Scale Industries: A Profile	4
3.	Mise en Scene	11
4.	Fragments from the Inventory Management Kaleidoscope - Concepts, Percepts and Precepts -	33
5.	The Dahejia, Tandon & Chore Committees and Working Capital finance	64
P A R T T W O		
EMPIRICAL STUDIES		
(Alongwith statistical Annex & Appendices)		
6.	Jeya Murugan Industries	81
	Small Tools Services	128
	Coimbatore Machine Tools (P) Ltd	164
	Lanward Industries	221
	Tools Engineering	247
	Sree Saila Engineering Enterprise	293
	Southern Ancillaries (P) Ltd	332
	Sabari Industries	361
	Eharat Tyre and Rubber Products	409
	Boston Pharmas (a Nursing Programme)	456
... contd.		

CONTENTS ... contd.

Chapter	Title	Page
	PART THREE	
	MAJOR FINDINGS AND RECOMMENDATIONS	
7.	Major Findings & Recommendations - Overtures to a new prospective -	493
	Select Bibliography	571

@@@*@@*
 #88#88#88#