PREDICTION OF BANKRUPTCY FOR LISTED INDUSTRIAL

COMPANIES IN MALAYSIA

CLOSED STACKS

BY

NUHA KASSAMA

Bachelor of Engineering with Honours in Electrical Engineering

Fourah Bay College

The University of Sierra Leone

Freetown

1990

Submitted to the Faculty of
Economics and Administration
University of Malaya
in partial fulfillment of the requirements for the Degree of
MASTER OF BUSINESS ADMINISTRATION
March, 1996

Perpustakaan Universiti Malaya

ABSTRACT

This study aims to develop an empirical model (discriminant function) which can predict bankruptcy for Malaysian Industrial companies listed on the Kuala Lumpur Stock Exchange (KLSE) over the period 1984 - 1992, both inclusive. This will be a linear composite of the predictor variables (i.e. financial ratios) that enables the separation of the groups by maximizing among-groups relative to within-groups variation. The predictive accuracy of the model as the years to bankruptcy become more and more remote is also determined.

Seven financial ratios combined to form the model and they are: (1) Current ratio;

(2) Return on stock holders equity; (3) Net profit margin; (4) Total asset turnover; (5) Long term debt To equity; (6) Earnings before interest and tax To total assets; and (7)

Market value of common and preferred stock To book value of debt.

ACKNOWLEDGEMENT

One of the most pleasant parts of writing a dessertation is the opportunity to thank those who have contributed to it. Unfortunately, the list of expression of thanks, no matter how extensive is always incomplete and inadequate. These acknowledgements are no exception.

My first thanks must go to my supervisor, Dr Mansor Md. Isa for his invaluable guidance and support during the course of this project. I also wish to thank Mr Fred Lew, for his assistance and encouragement and Mr. Lim in FEA Computer laboratory for his advice on the use of the SPSSPC statistical package.

My profound appreciation goes to my wife, Fatou who stood firmly by my side, demonstrating a lot of patience and understanding throughout the tenure of our stay in Malaysia. My appreciation goes to my brother Edi, Oumie and family, for taking care of my son Al-hassan while I am away from home.

This piece of work is dedicated to my mother Fatounding and my late father Alhagi Bully, whose memory is deeply enshrined in me.

TABLE OF CONTENTS

ABSTRACT	Γ	PAGE i
ACKNOWI	LEDGEMENTS	ii
LIST OF A	BBREVIATIONS	V
LIST OF TA	ABLES	VI
CHAPTER		
I	INTRODUCTION	
	Financial distress	1 1 2 3 5
II	LITERATURE REVIEW	
	Introduction Malaysian bankruptcy law - ACT 360. Beaver study Altman study Deakin study Blum study Altman, Baidya, and Ribeiro-Dias study Takahashi, Kurokawa, and Watse study Sandro study Bernard study Izan study	12 15 . 16 17 18 20 21
III	RESEARCH DATA AND METHODOLOGY The data and sample used	. 2

IV RESULTS OF THE STUDY

	Introduction	35
	Results of the statistical analysis The discriminant function	35 38 42 46
V	SUMMARY AND CONCLUSIONS	
	Review of the study	47 48 50 51
APPENDI	CES	52
BIBLIOGI	RAPHY	59

LIST OF ABBREVIATIONS

Current assets CACurrent liabilities CL Net working capital **NWC** == Total assets -TA Net income after taxes, before extraordinary items NI Share holder funds SHF Turn over TO Sales S Long term debt LTD Earnings before interest and tax **EBIT** Market value of common and prefered stock **MVCP** Book value of debt **BVD** Price earning ratio PER Market price per share **MPS** Earning per share **EPS** Retained earnings RE -Total assets TA Replacement cost of assets R _ Replacement cost of fixed assets RP = Book value of fixed assets BP Replacement cost of inventories RΙ == Book value of inventories ΒI Book value of deferred tax DT = Critical cutting score value for equal group size Zce == Centroid for group A Za ---Centroid for group B ZbDiscriminant Z score for the nth individual Zn = Critical cutting score value

Zct

LIST OF TABLES

Table		Page
3 - 1	Financial ratios used in this study	29
4 - 1	Standardized and unstandardized discriminant function coefficients	37
4 - 2	Correlation matrix	40
4 - 3	Relative contribution tests and ranks of variables in the failure model	41
4 - 4	Classification efficiency	44
4 - 5	Classification accuracy (Years 1,2,3,4, and 5 prior results	45

LIST OF APPENDICES

Appendix		Page
2 - A	Summary of past studies	52
3 - A	List of financial ratios	53
4 - A	List of companies in the study	57