

An Empirical Study of Financial Prediction Model of American Stock Listed Company

江宜蓁、林福來

E-mail: 9707900@mail.dyu.edu.tw

ABSTRACT

The traditional financial study was major in financial ratio build warning model to forecast companys' financial crisis. In past study a few study to add intellectual capital in forecast model. Therefore, this study to utilize Logit and Probit model building financial crisis model, moreover, financial ratio variable and intellectual capital index variables as explanatory variable. Hence, this study was divided into five dimensions that financial structure, cash flow, debt-paying ability, makes a profit the ability and intellectual capital. The sample was choose from American listed company and the period was from 2000 to 2005. The empirical study indicated that the most suitable to measure financial crisis is financial structure, next is cash flow and intellectual capital. at the same time, the year before financial crisis happened is the best time to measure. In other words, the time away from financial crisis happened the forecast ability is decrease. Finally, this study to add intellectual capital can help company effective to forecast financial crisis.

Keywords : financial warning model ; financial ratio ; intellectual capital ; logit model ; probit model

Table of Contents

內容目錄 中文摘要	iii	英文摘要	
iv 誌謝辭		v 內容目錄	
vi 表目錄		vii 第一章 緒論	
1 第二章 文獻回顧	5	第一節 財務危機定義	
5 第二節 企業財務危機之預警指標	7	第二節 財務危機模型	
與驗證方法	18	第三章 研究方法	23
模型	24	第一節 Logit	
實證結果分析	29	第二節 Probit模型	26
29 第二節 研究樣本	31	第四章 變數選取與說明	
比較	32	第三節 Logit模型與Probit模型之實證結果與	
第四節 Logit模型與Probit模型預測率之比較	39	第五章 結論	
44 參考文獻	47	附錄A 財務危機公司產業分類表	
53 附錄B 財務正常公司產業分類表	54	附錄C 財務正常公司產業	
分類表	55	附錄D 財務正常公司產業分類表	56
表目錄 表 2- 1 財務結構	8	表 2- 2 現金流量分析	9
分析	10	表 2- 3 償債	10
能力分析	10	表 2- 4 獲利能力(報酬率)分析	10
2- 5 智慧資本衡量指標項目表	14	表 2- 6 智慧資本衡量指標	
16 表 4- 1 財務比率變數	30	表 4- 2 智慧資本變數	
31 表 4- 3 危機發生前一年Logit、Probit模型預警模式彙整表	35	表 4- 4 危機發生前二年Logit、Probit模型預	
警模式彙整表	37	表 4- 5 危機發生前三年Logit、Probit模型預警模式彙整表	38
表 4- 6 財務比率、智慧資本變數建	40	表 4- 7 財務比率、智慧資本變數建	
構Logit、Probit模型正確率彙整表	41	表 4- 8 財務比率、智慧資本變數建	
構Logit、Probit模型正確率彙整表	41	表 4- 8 財務比率、智慧資本變數建	
構Logit、Probit模型正確率彙整表	42		

REFERENCES

參考文獻 一、中文部份 王濟川, 郭志剛(2003), Logistic歸模型 - 方法及應用, 台北:五南書局。 吳嘉勳, 陳進雄(1997), 會計學(3版), 台北:華泰書局。 林師模, 陳苑欽(2003), 多變量分析 - 管理上的應用, 台北:雙葉書廊。 李天行, 唐筱菁(2004), 整合財務比率與智慧資本於企業危機診斷模式之建構 - 類神經網路與多元適應性雲形迴歸之應用, 資訊管理學報, 11(2), 161-189。 張大成, 周麗娟, 黃筱雯(2004), 經營效率與企業危機相關性研究, 信用資訊月刊[線上資料], 來源: http://www.jcic.org.tw/news_letter.htm#0402 [2004, February] 張大成, 林郁翎, 黃繼寬(2006), 產業差異與企業財務危機模型, 台灣金融財務季刊, 7(4), 1-28。 游啟聰(1998), 知識經濟時代的會計趨勢, 今日會計, 76, 16-21。 黃勁彥, 李超雄, 洪光宏, 吳東憲(2006), 以經營效率觀點建立台灣資訊電子業財務危機預警模型, 交大商管學報, 11(2), 1-20。 黃博怡, 張大成(2006), 考慮總體經濟因素之企業危機預警模型, 金融風險管理季刊, 2(2), 75-89。

林金賢(2005), 美國聯邦政府破產法第十一章之意涵[線上資料], 來源: <http://beaver.dlc.ncnu.edu.tw/projects/emag/article/200511/美國聯邦政府破產法第11章之意涵.pdf> [2005, January 1].

二、英文部分 Altman, E. I. (1968). Financial ratios, discriminate analysis and the prediction of corporate bankruptcy. *Journal of Finance*, 23(4), 589-609. Altman, E. I., Haldeman, R. G., & Narayanan, P. (1977). Zeta analysis: a new model to identify bankruptcy risk of corporations. *Journal of Banking & Finance*, 1(1), 29-51. Atiya, A. F. (2001). Bankruptcy prediction for credit risk using neural networks: A survey and new results. *IEEE Transactions on Neural Networks*, 12(4), 929-935. Beaver, W. H. (1966). Financial ratios as predictors of failure. *Journal of Accounting Research*, 4, 71-111. Blum, M. (1974). Failing company discriminant analysis. *Journal of Accounting Research*, 12(1), 1-25. Brookings, A. (1996). Intellectual capital: core asset for the third millennium enterprise. London: International Thomson Press. Casey, C., & Bartczak, N. (1985). Using operating cash flow data to predict financial distress: Some extensions. *Journal of Accounting Research*, 23(1), 384-401. Collins, R. A., & Green, R. D. (1982). Statistical method for bankruptcy forecast. *Journal of Economics and Business*, 34(4), 349-354. Deakin, E. B. (1972). A discriminate analysis of predictors of business failure. *Journal of Accounting Research*, 10(1), 167-179. Dimitras, A. I., Zanakis, S. H., & Zopounidis, C. (1996). A survey of business failures with an emphasis on prediction methods and industrial applications. *European Journal of Operational Research*, 90(3), 487-513. Edvinsson, L., & Malone, M. S. (1997). Intellectual capital: realizing your company's true value by finding its hidden roots. New York: HarperCollins Publishers, Inc. Flagg, J. C., Giroux, G. A., & Wiggins, C. E. (1991). Predicting corporate bankruptcy using failing firms. *Review of financial economics*, 1(1), 67-68. Galbraith, J. K. (1967). The new industrial state. U.S.A.: Princeton University Press. Hsu, K. H., Li, J. F., & Fan, H. J. (2006). An application of intellectual capital on financial distress models by using neural network. Paper presented at the kaohsiung proceedings of the Joint conference of information sciences. Laitinen, E. K. (1991). Financial ratios and different failure processes. *Journal of Business Finance and Accounting*, 18(5), 649-673. Lau, A. Hing-Ling. (1987). A five-state financial distress prediction model. *Journal of Accounting Research*, 25(1), 127-138. Lawrence, E. C., & Arshadi, N. (1995). A multinomial logit analysis of problem loan resolution choices in banking. *Journal of Money, Credit and Banking*, 27(1), 202-216. Martin, D. (1977). Early warning of banking failure: a logit regression approach. *Journal of Banking and Finance*, 1(3), 249-276. Mason, E. (2006). Are you misusing your firm's intellectual capital? *Accounting Today*, 8-9. Masoulas, V. (1998). Organizational requirement definition for intellectual capital management. *International Journal of Technology Management*, 16(1/2/3), 126-143. Nasir, M. L., John, R. I., Bennett, S. C., & Russell, D. M. (2000). Predicting corporate bankruptcy using modular neural networks. *IEEE/IAFE/INFORMS 2000 Conference*, 86-91, New York. Ohlson, J. A. (1980). Financial ratios and the probabilistic prediction of bankruptcy. *Journal of Accounting Research*, 18(1), 109-131. Pastena, V., & Rulaud, W. (1986). The merger/bankruptcy alternative. *The Accounting Review*, 61(2), 288-301. Smith, R. F., & Winakor, A. H. (1935). Changes in the financial structure of unsuccessful corporations. *The Accounting Review*, 11(1), 87-88. Stewart, T. A. (1997). Intellectual capital: the new wealth of organizations. New York: Bantam doubleday dell publishing group, Inc., Sveiby, K. E. (1997). The intangible assets monitor. *Journal of Human Resource Costing and Accounting*, 2(1), 73-97. Walters, J. E. (1957). Determination of technical solvency. *Journal of Business*, 30(1), 30-43. Wang, Y. J., & Lee, H. S. (2007). A clustering method to identify representative financial ratios. *Information sciences*, 1087-1097. Zmijewski, M. E. (1984). Methodological issues related to the estimation of financial distress prediction models. *Journal of Accounting Research*, 22, 59-82.