

Determinants of capital structure for Taiwan firms : a panel data analysis

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ABSTRACT

The study analyzes the firm characteristics which are determinants of the capital structure. Using panel data model techniques to analyze a relationship between the selected determinant factors and debt ration from 43 Information Technology companies in Taiwan, The data come from the TEJ database and cover a 12-year period, 1998-2009. The major findings as follows: 1. The relationship between effective tax rate and debt ration is a positive. 2. The relationship between size and debt ration is positive and statistically significant. 3. The relationship between rate of growth and debt ration is positive. 4. The relationship between non-debt tax shield and debt ration is positive. 5. The relationship between return on asset and debt ration is negative and statistically significant.

Keywords : Capital Structure、Panel Data Model、Information Technology companies

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REFERENCES

一、中文部分 王玉枝 (1988) , 資金成本、資本結構與股利政策之研究 , 私立中國文化大學企業管理研究所未出版碩士論文。王瑛璋 (1984) , 國內上市公司資本結構決定因素之研究 , 政治大學企業管理研究所未出版碩士論文。石孟國 (1995) , 主要影響資本結構的因素-台灣地區股票上市公司的實證研究 , 交通大學管理科學研究所未出版碩士論文。朱國光 (1995) , 臺灣地區上市公司資本結構影響因素之研究 , 政治大學國際貿易學系未出版碩士論文。朱博湧、吳壽山和邱淑芳 (1992) , 資本結構決定因素—台灣實証探討 , 管理科學學報 , 9 (2) , 159-177。江衍陞 (1999) , 兩稅合一對我國資訊電子業上市上櫃公司股利政策影響之實證研究 , 中央大學圖書館典藏。江莉莉 (2002) , 兩稅合一與動態均衡下的所得分配 , 淡江大學機構典藏 , NSC88-2415-H032-011。池耀宇 (2002) , 實證探討台灣高科技產業投資行為與資本結構 - 線性迴歸模式與類神經網路模式 , 國立交通大學管理科學研究所未出版碩士論文。汪瑞芝 (2006) , 兩稅合一制對公司資本投資影響之實證研究 , 中華管理評論國際學報。吳國山 (1889) , 臺灣地區股票上市公司資本結構及其決定因素之研究 , 中山大學企業管理研究所未出版碩士論文。吳景富 (1996) , 資本結構決定因素之實證研究—自我迴歸分配遞延模式之應用 , 東吳大學企業管理研究所未出版碩士論文。邱惠文 (1992) , 資本結構決定因素之探討—台灣地區製造業之實證 , 淡江大學管理科學研究所未出版碩士論文。邱維正 (1993) , 臺灣股票上市公司資本結構之再研究 , 國立中正大學財務金融學系未出版碩士論文。邱淑芳 (1992) , 以代理成本觀念探討資本結構決定因素 , 交通大學管理科學研究所未出版碩士論文。林京鴻 (2007) , 兩稅合一制度下股東可扣抵稅額對資本結構之影響 , 雲林科技大學圖書館藏。周保亨 (2001) , 兩稅合一對我國上市公司資本結構暨資金成本影響之研究 , 國立政治大學會計研究所碩士論文。林正寶 (1996) , 「負債的代理成本對企業負債決策的影響 - 臺灣的實證分析」, 臺灣經濟 , 233 , 1-8。林宜勉和陳瑞斌 (2000) , 「公司特性與股權結構對負債政策之影響」, 亞太管理評論 , 5 (2) , 199-219。林華德 (1986) , 資本結構 , 股利政策與資金成本 台灣上市公司的驗證分析 , 經濟論文叢刊 , 第14期。林瑞賢 (1984) , 臺灣地區上市公司產業間財務結構之比較研究 , 國立台灣大學商學研究所未出版碩士論文。林純瓊 (1994) , 股權結構、資本結構與經營績效 Jensen、Meckling與Fama理論之驗證 , 中國財務刊 , 1 (2) , pp. 1-20。徐俊明 (2005) , 財務管理 - 理論與實務 , 雙葉

書局，三版。洪秀美（1999），兩稅合一制對企業財務決策之影響，國防管理學院資源管理研究所碩士論文。洪盈斌（1999），兩稅合一事件對我國上市公司股價影響之研究，國立政治大學會計研究所碩士論文。俞海琴（1994），「內部人士持股比率與融資策略關係之實證研究」，管理評論，第13卷第2期，19-131。財政部（1998），兩稅合一方案。馬孝璿（1999），兩稅合一對上市上櫃公司股利政策影響之探討，國立中山大學財務管理研究所碩士論文。陳正明（2006），資本結構決定因素之實證研究—以台灣上市公司為例，私立東吳大學商學院企業管理學系碩士班未出版。陳帥文（2001），台灣地區上市公司最適資本結構之實證研究，中山大學企業管理學系碩士論文。陳隆麒（1993），現代財務管理—理論與應用，華泰書局，台北。陳隆麒、溫育芳（2002），國內上市公司資本結構決定因素之研究，臺灣銀行季刊53:1, 171-194。陳妙玲、黃小玲（2002），兩稅合一對企業資本結構的影響，財稅研究，5, 99-113。陳麗媛（2000），租稅負擔與公司資本結構，國立政治大學財政研究所碩士論文。陳正明（1996），資本結構決定因素之實證研究—以台灣上市公司為例，東吳大學企業管理研究所未出版碩士論文。孫克難（1997），「兩稅合一方案之檢討與改進」，兩稅合一研討會實錄，孫運璿學術基金會贊助，中華經濟研究院，55-16。孫明德（1998），兩稅合一對企業財務決策影響之探討，國立中興大學企業管理學系碩士論文。梁再添（1998），「兩稅合一制下各類投資公司及其股東之稅負比較表」，中國稅務旬刊，第1674期，頁43。辜儀芳（2001），台灣上市公司資本結構選擇之實證研究，國立中正大學財務金融學系未出版碩士論文。楊淑媛、廖四郎、黃瑞靜（2000），「從動態資本結構模型探討台灣產業最適資本結構」，亞太經濟管理評論，第三卷第二期，41-64。楊欣正（1993），股票上市公司資本結構決策因素之探討，國立中興大學企業管理研究所未出版碩士論文。黃小娟（1995），公司資本結構差異性和其非財務影響因素之研究，台灣工業技術學院企業管理研究所。趙戴州（2003），有效稅率與資本結構影響因素之探討—兩稅合一實施前後的比較，東華大學圖書館藏。劉明衢（2004, July），兩稅合一對公司資本結構決定因素之影響，國立政治大學會計學系碩士論文。廖宜洋，蘇君旋（1997），我國股票店頭市場之研究，中興大學企業管理研究所未出版碩士論文。廖宜洋（1999），企業上櫃前後資本結構之探討，中興大學企業管理研究所未出版碩士論文。葉銀華、邱顯比（1996），「資本結構、股權結構和公司價值關聯性之實證研究:代理成本理論」，臺大管理論叢，頁57-9n。蔡貴琴（2001），資本結構與獲利能力、資金成本關係之實證研究—以台灣股票上市公司為研究對象，國立成功大學企業研究所碩士論文。藍瑞卿（1999），台灣地區股票上櫃公司資本結構影響因素之探討，國立臺北大學企業管理研究所。賴瓊華（1998），股市景氣及產業別與公司資本結構相關性研究—台灣股票上市公司實證研究，國立交通大學經營管理研究所未出版碩士論文。謝劍平（1999），財務管理—新觀念與本土化，再版，台北:智勝，4-1。簡志昇（1998），台灣地區股票上市公司資本結構影響因素之研究，交通大學管理科學研究所未出版碩士論文。蘇土哲（2000），資本結構決定因素之研究—台灣資訊電子上市公司之實証，未出版碩士論文，中央大學企業管理研究所。蕭大正、鄭敏聰（2002），企業融資選擇決策之實證研究，證券櫃檯月刊，74, 88-98。

二、英文部分

Allen, D. E.(1991), " Financial Managers' Perspectives of the Factors Determining the Dividend Policies of Australian Companies," Occasional Paper, Department of Accounting and Finance , University of Western Australalia,1991.

Allen, D. E., and H. Mizuno(1989), " The Determinants of Corporate Capital Structure: Japanese Evidence," Applied Economics, 21 5, pp.569-585.

Amihud, Y.(1997), " Dividends, Taxes and Signaling: Evidence from Germany," The Journal of Finance, 521, pp.39.7-48.

Amoako-Adu, B.(1983), " Corporate Valuation and Personal Taxes: Extension And Application to Canada," The Financial Review, 18, November, pp.281-291.

Amoako-Adu, B., M. Rashid, M. Stebbins(1992), " Capital Gains Tax and Equity Values: Empirical Test of Stock Price Reaction to the Introduction and Reduction of Capital Gains Tax Exemption," Journal of Banking and Finance, 16,pp.275-287.

Barclay, M. J. C. W. Smith, & R. L.Watts(1995), " The Determinants of Corporate Leverage and Dividend Policies," Journal of Applied Corporate Finance, Winter, pp.4-19.

Barnea, A., R. A. Haugen and L. W. Senbet(1985), " A Rationale for Debt Maturity Structure and Call Provision in the Agency Theoretical Framework," Journal of Finance, December, pp.1223-1234.

Baskin, J.(1989), " An Empirical Investigation of the Pecking Order Hypothesis," Financial Management, 181, Spring, pp.26-35.

Baxter, N.(1967), " Leverage, Risk of Ruin and the Cost of Capital," Journal of Finance, September, pp.395-4n3.

Bowen, R. M., L. Daley, and C. Huber(1982), " Evidence on the Existence and Determinants of Inter-Industry Differences in Leverage," Finance Management, 114, Winter, pp.1-2.

Boyle, P. P.(1977), " Options: A Monte Carlo Approach," Journal of Financial Economics, 4, pp.323-338.

Bradly, M., G. Jarrell, and E. H. Kim(1984), " On the Existence of ptimal apital Structure: Theory and Evidence," Journal of Finance, 93, July, pp.857-878.

Brealey, R. and S. Myers(1984), Principles of Corporate Finance, New York: McGraw-Hill.

Brennan, M. and E. Schwartz(1978), " Corporate Income Taxes, Valuation, and the Problem of Optimal Capital Structure," Journal of Business, 51, pp.13-114.

Burgman, T. A. (1996), " Empirical Examination of Multinational Corporate Capital structure," Journal of International Business Studies, pp.553-570.

Campell, T. S. and W. A. Kracaw(1999), " Corporate Risk Management and the Incentive Effect of Debt," Journal of Finance, 45, pp.1673-1684.

Christie W. G. and V. Nanda(1994), " Free Cash Flow, Shareholder Value, and the Undistributed Profits Tax of 1936 and 1937," Journal of Finance, 495, pp.1727-1754.

Chung, Kee H.(1993), " Asset Characteristic and Corporate Debt Policy: An Empirical Test ", Journal of Business Finance and Accounting, 21, pp.83-98.

Crutchley, C. E. and R. S. Hansen(1989), " A Test of the Agency Theory of Managerial Ownership, Corporate Leverage and Corporate Dividends ", Financial Management, 184, Winter, pp.36-46.

David Durand. (1952), " Costs of Debt Equity Funds for Business: Trends and Problems of Measurement," Conference on Research in Business Finance,National Bureau of Economic Research, New York, pp.215-247

David F. Scott, Jr, " Bankruptcy, Secured Debt and Optimal Structure," The Journal of Finance ,March 1977, pp.11-20

DeAngelo, H. and R. W. Masulis(1989), " Optimal Capital Structure under Corporate and Personal Taxation," Journal of Financial Economics, 81, pp.3-81.

Demsetz, H. and K. Lehn (1985), " The Structure of Corporate Ownership: Causes and Consequences," Journal of Political Economy, 93, pp.1155-1177.

Diamond, D. (1989), " Reputation Acquisition in Debt Markets," Journal of Political Economy, 88, pp.288-317.

Donaldson, G, (1961), " Corporate Debt Capacity," Division of Research, Graduate School of Business Administration, Harvard University.

Durand, David. (1952), " Cost of Debt and Equity Funds for

Business: Trends and Problems of Measurement," Conference on Research in Business Finance,National Bureau of Economic Research, New York, pp.215-247. Ferri, M. G., and W. H. Jones (1979), " Determinants of Financial Structure:A New Methodological Approach, " Journal of Finance, 343, July, pp.631-651. Fischer, E., R. Heinkel, and J. Zechner . (1989), " Dynamic Capital Structure Choice: Theory and Tests, " Journal of Finance, 44, pp.19-40. Friend, I. and L. Lang (1988), " An Empirical Test of the Impact of Managerial Self-interest on Corporate Capital Structure, " Journal of Finance, 43, pp.271-281. Givoly, D. and C. Hayn (1992), " The Valuation of the Deferred Tax Liability: Evidence from the Stock Market, " The Accounting Review, 672, pp.394-411. Goldstein, R., N. Ju and H. Leland (1999), " An EBIT-based Model of Dynamic Capital Structure, " Working paper, Ohio State University. Gourevitch, H. G. (1977), " Corporate Tax Integration: The European Experience, " The Tax LawyeFama, E., " Agency Problems and the Theory of the Firm, " Journal of Finance, May 1978, pp.383-393. Grossman, S. J. and O. D. Hart (1982), " Corporate Financial Structure and Managerial Incentives, " University of Chicago press,, pp.107-137. Homaifar , G. and J. Zietz and O. Benkato, " An Empirical Model of Capital Structure: Some New Evidence, " Journal of Finance & Accounting, Jan. 1994, pp.1-14. Hirshleifer, D. and A. V. Thakor (1992), " Managerial Conservatism Project Choice and Debt, " Review of Financial Studies, 5, pp.437-470. Hsu, Hsinan (1996), " The Valuation of CBOT Mortgage-Backed Options, " Journal of Financial Studies, 41. Jensen, M. C.and W. H. Meckling. (1976), " Theory of the Firm: Managerial Behavior, Agency Cost and Ownership Structure, " The Journal of Financial Economics, 3, pp.305-360. Jensen, G. R., T. S. Solberg and T. S. Zorn (1992), " Simultaneous Determination of Insider Ownership, Debt, and Dividend Policies, " Journal of Financial and Quantitative Analysis, 272, pp.247-263. Jensen, M. C. and W. H. Kane, A. A. J Marcus and R. L. McDonald (1984), " How Big is the Tax Advantage to Debt? / Discussion, " Journal of Finance, 393, pp.841-855. Kane, A. A. Marcus and R. L. McDonald (1985), " Debt Policy and the Rate of Return Premium to Leverage, " Journal of Financial and Quantitative Analysis, 204, pp.479-499. Kester, C. W. (1986), " Capital and Ownership Structure: A Comparison of United States and Japanese Manufacturing Corporations, " Financial Management, 151, pp.5-16. Kigeja, S. (1989), " Agency Theory Problems and Their Catalytic Impact on the Formulation of an Organization ' s F inancial Management Financing Policies ", U-M-I. Kim E. H. (1978), " A Mean-Variance Theory of Optimal Capital Structure and Corporate Debt Capacity, " Journal of Finance, 331, pp.45-64. Kim, W. S. and E. H. Sorenson (1986), " Evidence on the Impact of the Agency Cost of Debt on Corporate Debt Policy, " Journal of Financial and Quantitative Analysis, 212, June, pp.131-144. King, M. (1974), " Dividend Behavior and Theory of the Firm, " Economica, 41, February, pp.25-34. Kraus, A. and R. H. Litzenberger (1973), " A State Preference Model of Optimal Financial Leverage, " Journal of Finance, 284, September, pp.911-922. Kuo, H. C., L. H. Wang and S. S. Wu (2001), " The Determinants of Capital Structure for Small and Medium Enterprises in Taiwan, " Advances in Pacific Basin Business, Economics, and Finance, 4, pp.23-36. Lang M. H., and D. A. Shackelford (1990), " Capitalization of Capital Gains Taxes:Evidence from Stock Price Reactions to 1997 Rate Reduction, " NBER Working Paper No.6885. Leland, H. (1994), " Corporate Debt Value, Bond Covenants and Optimal Capital Structure, " Journal of Finance,494, pp.1213-1252. Leland, H, (1998), " Agency Costs, Risk Management, and Capital Structure, " Journal of Finance, 534, pp.1212-1243. Leland, H. and K. Toft (1996), " Optimal Capital Structure, Endogenous Bankruptcy, and the Term Structure of Credit Spreads, " Journal of Finance, 513, pp.987-1019. Long, M. and I. Malitz (1985), " The Investment-financing Nexus: Some Empirical Evidence, " Midland Corporate Finance Journal, 3,pp.53-59. Meckling (1976), " Theory of the Firm: Managerial Behavior, Agency Cost and Capital Structure , " Journal of Financial Economics, Vol.3, No.4, pp.305-360. Jordan,J. and J. Lowe and P. Taylor (1998), " Strategy and Financial Policy in UN Small Firms, " Journal of Business & Accounting, January-,pp.1-27. Kim and Sorenson (1986), " Emidence on the Impact of the Agency Cost Debt on Corporeate Debt Policy, " Journal of Finance and Quantitative Analysis, pp.131-144 Kim, E. H. (1978), " A Mean-Variance Theory of Optimal Capital Structure and Corporate Debt Capacity, " Journal of Finance, March, pp.45-63. Marsh (1982) , P., " The Choice Between Equity and Debt: An Empirical Study, " Journal of Finance,Vol.37, pp.121-144. Micheal, G. F., and Wesley, H. J. (1979) , " determinants of Financial Structure: A new methodolgical Approach " , Journal of Finance, Vol.34, pp.631-644. Miller, M. H. (1977) , " Debt and Taxes, " Journal of Finance, Vol.32, No.2, pp.261-275. Modigliani, F. and M. H. Miller (1958) , " The Cost of Capital, Corporate Finance and the Theory of Investment, " American Economics Review, Vol.48, pp.261-297. Myers, S. C. and N. S. Majluf (1984) , " Corporate Financing and Investment Decisions When Firms Have Information That Investors Do Not Have, " Journal of Financial Economics, Vol.13, No.2, pp.187-221. Myers, S. C. " Determinants of Corporate Borrowing, " Journal of Financial Economics, " Nov.1977, pp.147-175. The Capital Structure Puzzle " , Journal of Financial, Vol.39, No.3, July 1984, pp.575-592. Ross, S. A., " The Determination of Financial Structure: The Incentive Signalling Approach, " Bell Journal of Economical, Spring 1977, pp.23-40. Titman, S. and R. Wessels , " The Determinants of Capital Structure Choice, " Journal of Finance, Vol.43, No.1, Mar.1988, pp.1-19. Mackie-Mason J. K. 199nj, " Do Tax Affect Corporate Financing Decision? " The Journal of Finance, 455, December, pp.1471-1493. Marsh, P.(1982), " The Choice Between Equity and Debt:An Empirical Study, " Journal of Finance, 371j, March, pp.121-144. Miller, M. H.(1977), " Debt and Taxes, " Journal of Finance, 332, pp.261-275. Modigliani, F.and M. Miller(1958), " The Cost of Capital, Corporation Finance and the Theory of Investment, " American. Modigliani, F. and M. Miller(1961), " Dividend Policy, Growth and the Valuation of Shares, " Journal of Business, 34, pp.411-433. Modigliani, F. and M. Miller(1963), " The Taxes and the Cost of Capital, " American Economic Review, 53, pp.433-443. Myers, S. C.(1977), " Determinants of Corporate Borrowing, " Journal of Financial Economics, 5, pp.147-175. Myers, S. C. and N. S. Majluf(1984), " Corporate Financing and Investment Decisions when Firms have Information that Investors do not have, " Journal of Financial Economics, 132, pp.187-221. Naranjo, A., M. Nimalendran, and M. Ryngaert (1998), " Stock Return, Dividend Yields, and Taxes, " The Journal of Finance, 536, pp.2n29-2n57. Poterba, J. M. and L. H. Summers(1984), "

New Evidence That Taxes Affect the Valuation of Dividends, " The Journal of Finance, 395j, December, pp.1397-1415. Poterba, J. M. (1986) , " The Market Valuation of Cash Dividends:The Citizens Utilities Case Reconsidered, " Journal of Financial Economics, 153, pp.395-4n5. Pozdena, R. J. (1987) , " Tax Policy and Corporate Capital Structure, " Economic Review-Federal Reserve Bank of San Francisco, 4, pp.37-5n. Schulman, C. T, D. W. Thomas, K. F. Sellers, & D. B. Kennedy (1996) , " Effects of Tax Integration and Capital Gains Tax on Corporate Leverage, " National Tax Journal, 49, March, pp.31-54. Schwartz, E. and J. R. Aronson (1967) , " Some Surrogate Evidence in Support of the Concept of Optimal Financial Structure, " Journal of Finance, March, pp.1n-18. Scott, D. F. (1972) , " Evidence on the Importance of Financial Structure, " Financial Management, Summer, pp.45-5n. Scott, D. F. and J. D. Martin (1975) , " Industry Influence on Financial Structure, " Financial Management, 41, p.67. Smith, C. W. (1977) , " Alternative Methods For Raising Capital Rights Versus Underwritten Offerings, " Journal of Financial and Economics, May, pp.273-3n7. Smith, C. W. and J. B. Warner (1979) , " On Financial Contracting: An Analysis of Bond Covenants, " Journal of Financial Economics, 72, pp.117-161. Stiglitz, J. E. (1972) , " Some Aspects of the Pure Theory of Corporate Finance: Bankruptcies and Takeovers, " The Bell Journal of Economics and Management Science, 32, pp.458-482 Stulz, R.1988) , " Managerial control of Voting Rights: Financing Policies and then Market for Corporate Control, " Journal of Financial Economics, 2n, pp.25-54. Titman S. (1984) , " The Effect of Capital Structure on a Firm ' s Liquidation Decision, " Journal of Financial Economics, 13, pp.137-151. Titman, S. and R. Wessels (1988) , " The Determinants of Capital Structure Choice, " Journal of Finance, 431, pp.1-19. Warner, J. B. (1977) , " Bankruptcy Costs: Some Evidence, " Journal of Finance, 322, May, pp.337-376.