

國科會專題研究計畫研究成果報告
以實質選擇權法探討購併的決定因素

Determinants of Mergers and Acquisitions: A Real Options Approach

計畫編號：NSC 89-2416-H-002-051

執行期限：民國 88 年 8 月 1 日～民國 89 年 7 月 31 日

主持人姓名：周治邦

執行機構：國立台灣大學國家發展研究所

Email: jbjou@ccms.ntu.edu.tw

摘要

企業購併牽涉到資本設備的整批移轉。惟因檸檬車和資產專屬性等問題，而出現資本財再售出價格會低於其購買價格的現象。本計畫因而視企業購併為不可逆轉投資，並將企業購併分為水平購併、垂直購併、及多角化購併三類，而分別探討此三類購併活動的決定因素。本計畫發現購併較易發生情況如下：(1)不確定性程度較輕微；(2)營運綜效效果大；(3)購併後市場壟斷力增加；及(4)延後擴張成本較高。此外，購併貼水並不影響購併誘因。

Abstract

Mergers and Acquisitions (M&A) involve wholesale transfer of capital assets. However, the resale price of capital is usually lower than its purchase price because of the "lemons" problem and asset specificity. Accordingly, this project will treat M&A as irreversible investments and will classify M&A into three types: horizontal M&A, vertical M&A, and diversification M&A. This article then investigates the determinants for each type M&A. This article discovers that M&A activities are more likely to happen if (i) uncertainty is smaller; (ii)

operating synergies are more significant; (iii) mergers strengthen market power; and (iv) the costs to later expand capacity are higher. In addition, takeover premiums are irrelevant to M&A incentives.

緣由與目的

既有文獻指出，企業購併的原因如下 (Berkotich and Narayanan, 1993; Grinblatt and Titman, 1998; Trautwein, 1990)：(1)稅負優惠；(2)營運綜效；(3)財務綜效；(4)增加壟斷力；(5)主併廠商經理人握有內線消息；(6)主併廠商經理人犧牲股東權益來追逐自身利益；(7)主併廠商經理人過度樂觀估計購併成效；(8)主併廠商經理人掠奪目標廠商股東之權益及；(9)總體經濟干擾影響主併廠商經理人對未來之預期，從而影響其購併誘因。然而，絕大多數文獻並未建構嚴謹模型來討論購併行為的決定因素，反而是將焦點集中在購併行為所造成的影響。本計畫擬視購併活動為一種具沉沒成本性質的投資。在購併沉沒成本與購併利益不確定的交互作用下，主併廠商會獲得一個延後購併的選擇權價值，從而影響其購併行為。

企業購併可區分為水平購併、垂直購併、及多角化購併三種。水平購併的好處為規模經濟及增加壟斷力，垂直購併的好

處為避免市場高交易成本，而多角化購併的好處為彈性使用資源設備及避免風險集中。本計畫建構三個不同模型，依序來討論這三種併購活動的決定因素。

結果與討論

以產業組織角度研究企業購併的文獻著重分析垂直或水平購併活動對價格、產出或消費者福利的長、短期影響。Scherer and Ross (1990, chap. 5)對此一途徑有很好的回顧整理。在此類文獻中又以 Berry and Pakes (1993)、Gowrisankaran (1995)、Nilssen and Sjørgard (1998)及 Pesendorfer (1998)和本計畫相關性較強。其中，前三文建立動態模型，並考慮調整產出需耗費成本，而和本計畫視購併為一不可逆轉投資 (Brennan and Schwartz, 1984; McDonald and Siegel, 1986; Dixit, 1989)有相似之處。Pesendorfer 則以產業均衡模型，討論水平購併下廠商的投資決策，不過卻忽略購併所產生的沉沒成本。上述四文皆考慮併購過程廠商間的互動性。相對地，本計畫假設主併廠商有專屬權利來購併目標廠商，因而忽略廠商間之互動性。和過去文獻相比較，本計畫假設雖較嚴格，但卻提供了較多有關購併決定因素的假說。

Colangelo (1995) 曾討論廠商若能在水平購併及垂直購併中擇一，但不能同時從事兩種購併，則廠商會先從事垂直購併，再進行水平購併。本計畫並不考慮此種可能性，而係採分別處理水平、垂直、及多角化購併的決定因素。

Grossman and Hart (1986) 及 Hart and Tirole (1990) 討論水平或垂直購併所可能產生的主人監督及代理人誘因不足的問題。上述問題本計畫並未觸及。

Smith and Triantis (1995) 以許多案例

來說明購併活動會產生「成長選擇權價值」(growth option values)、「彈性選擇權價值」(flexible option values)、及「出清資產的選擇權價值」(divestiture option values)。其中，成長選擇權多發生在水平及垂直購併，而彈性選擇權價值則多發生在多角化購併。不過，Smith and Triantis 並未討論這些選擇權價值如何影響主併企業的購併決策。本計畫則觸及此被忽視的主題。

本計畫模型大致如下：一個廠商有專屬權利來從事水平、多角化、或垂直購併。在水平購併情況下，主併及目標廠商面對同樣的不確定性因素。在後兩者情況下，主併及目標廠商面對不同的不確定性因素。然而，卻可以使用一個綜合因素來涵蓋此兩種不確定因素。購併後產生營運綜效及壟斷力增加的好處，但卻必須付出風險貼水給目標廠商，且購併行為係一種完全不可逆轉的投資。儘管本計畫的三個模型略有差異，但獲得的結論卻頗類似。首先，不確定性情況較輕微、營運綜效效果大、購併產生壟斷力提高、或延後擴張成本高皆有助於購併產生。其次，購併貼水並不影響購併誘因。

計畫結果自評

本計畫為少數將實質選擇權應用在購併行為的研究，並曾在國內、外會議發表過。相信本計畫近期內能衍生相關文章刊登在國內或國際期刊上。

參考文獻

- [1] BAR-ILAN, A. AND STRANGE W. C. (1998). A model of sequential investment, *Journal of Economic*

- Dynamics and Control* **22**, 437-463.
- [2] BERKOVITCH, E. AND NARAYANA M. P. (1993). Motives for Takeovers: An Empirical Investigation, *Journal of Financial and Quantitative Analysis* **28(3)**, 347-362.
- [3] BERRY, S. AND PAKES A. (1993). Some applications and limitations of recent advances in empirical i.o.: merger analysis, *American Economic Review* **83**, *Papers and Proceedings*, 247-252.
- [4] BERTOLA, G. AND CABALLERO R. (1994). Irreversibility and aggregate investment, *Review of Economic Studies* **61**, 223-246.
- [5] BRADLEY, M., DESAI A. AND HAN KIM E. (1983). Synergistic gains from corporate acquisitions and their division between the stockholders of target and acquiring firm, *Journal of Financial Economics* **37**, 67-87.
- [6] BRENNAN, M. J. AND SCHWARTZ E. S. (1984). "Valuation of Corporate," *Journal of Finance* **39**, 593-607.
- [7] CHILDS, P. D., Ott S. H. AND TRIANTIS A. J. (1998). Capital budgeting for interrelated projects, *Journal of Financial and Quantitative Analysis* **33**, 305-334.
- [8] COLANGELO, G. (1995). Vertical vs. horizontal integration: Pre-emptive merging. *Journal of Industrial Economics* **43**, 323-337.
- [9] DIXIT, A. K. (1989). "Entry and Exit Decisions under Uncertainty," *Journal of Political Economy* **97**, 620-638.
- [10] DIXIT, A. K. AND PINDYCK R. S. (1994). "INVESTMENT UNDER UNCERTAINTY," New Jersey: Princeton University Press.
- [11] DUTZ, M. A. (1989). Horizontal mergers in declining industries, *International Journal of Industrial Organization* **7**, 11-33.
- [12] ECKBO, B. E. (1983). Horizontal mergers, collusion, and stockholder wealth, *Journal of Financial Economics* **11**, 241-273.
- [13] GOWRISANKARAN, G. (1999). "A dynamic model of endogenous horizontal mergers," *Rand Journal of Economics* **30(1)**, 56-83.
- [14] GRENADIER, S. (1996). Strategic exercise of options: development cascade and overbuilding in real estate markets, *Journal of Finance* **51**, 1653-1679.
- [15] GRINBLATT, M. AND TITMAN S. (1998). "FINANCIAL MARKETS AND CORPORATE STRATEGY," McGraw-Hill Companies.
- [16] GROSSMAN, S. J. AND OLIVER D. H. (1986). "The Costs and Benefit of Ownership: A Theory of Vertical and Lateral Integration," *Journal of Political Economy* **94**, 691-719.
- [17] HART, O. AND TIROLE J. (1990). Vertical integration and market foreclosure. *Brooking Papers on Economic Activity: Microeconomics*, 205-276.
- [18] JARRELL, G. A., BRICKLEY J. AND NETTER J. (1988). The market for corporate control: the empirical evidence since 1980, *Journal of Economic Perspectives* **2**, 49-68.

- [19] MCDONALD, R. AND SIEGEL D. (1986). The Value of Waiting to Invest, *Quarterly Journal of Economics* **101(4)**, 707-727.
- [20] MUELLER, D. C. (1995). Mergers: theory and evidence, in "MERGERS, MARKETS AND PUBLIC POLICY" (G. Mussati, Ed.): Kluwer, 9-43.
- [21] NILSSEN, T. AND SØRGARD L. (1998). Sequential horizontal mergers, *European Economic Review* **45**, 1683-1702.
- [22] PESENDORFER, M. (1998). Horizontal mergers in paper industry, *NBER Working Paper No. 6751*.
- [23] PINDYCK, R. S. (1988). Irreversible investment, capacity choice, and the value of the firm, *American Economic Review* **78**, 969-985.
- [24] SCHERER, F. M. AND ROSS D. (1990). "INDUSTRIAL MARKET STRUCTURE AND ECONOMIC PERFORMANCE," Third Edition, Boston: Houghton Mifflin Company.
- [25] SIOWER, M. L. (1997). "THE SYNERGY TRAP," New York: The Free Press.
- [26] SMITH, K. W. AND TRIANTIS A. J. (1995). The Value of options in strategic acquisitions, in "REAL OPTIONS IN CAPITAL INVESTMENT" (Lenos Trigeorgis, Ed.), Westport, Connecticut: Praeger.
- [27] WILLIAMS, J. T. (1993). Equilibrium and options on assets, *Review of Financial Studies* **6**, 825-850.