行政院國家科學委員會專題研究計畫 期末報告

競爭不確定性、創新、策略聯盟與動態競爭策略之研究(第2年)

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計 畫 主 持 人：黃國?

計畫參與人員：碩士班研究生-兼任助理人員：范高瑋
碩士班研究生-兼任助理人員：蘇寬
碩士班研究生-兼任助理人員：黃苡菱
碩士班研究生-兼任助理人員：張雅晴
碩士班研究生-兼任助理人員：蔡佩蓉
大專生-兼任助理人員：林玟婷
大專生-兼任助理人員：林佳蓁
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中 華 民 國 102 年 10 月 01 日

中 文 摘 要 ： 本研究從動態競爭策略的觀點出發，整合個體層次（廠商的競爭行為）與總體層次（群體廠商的競爭行為）的架構，藉由提出競爭環境不確定性(Competitive Uncertainty)之概念，包括群體競爭行為的異質性(Competitive Heterogeneity)與群體競爭行為的動態性(Competitive Turbulence)，以台灣商業銀行產業為例，來探討競爭環境不確定性對廠商競爭不一致性(Competitive Non-Conformity)與廠商績效的關係之影響。研究結果發現，不一致性與績效呈現正 U 型關係，群體競爭行為的異質性對廠商績效有正向的影響，而群體競爭行為的動態性對對廠商績效有負向的影響，最後本研究亦證實群體競爭行為的動態性會弱化廠商競爭不一致性行為與績效的關係。

中文關鍵詞： 競爭不一致性、競爭不確定性、競爭異質性、競爭變動性、動態競爭

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競爭不確定性、創新、策略聯盟與動態競爭策略之研究（2/2）

計畫類別：☑個別型計畫　□整合型計畫
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計畫主持人：黃國峯
共同主持人：
計畫參與人員：

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中　華　民　國 102 年 9 月 30 日

行政院國家科學委員會補助專題研究計畫期末成果報告

競爭不確定性、創新、策略聯盟與動態競爭策略之研究(2/2)

Competitive Uncertainty, Innovation, Strategic Alliance, and Competitive Dynamics

計畫編號：NSC 100-2410-H-004-189-MY2

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計畫主持人：黃國峯副教授 國立政治大學企業管理學系

競爭不確定性、創新、策略聯盟與動態競爭策略之研究(2/2)

黃國峯

國立政治大學 企業管理學系

Email: kfhuang@nccu.edu.tw

Tel: (02)29393091 #81238

Fax : (02) 29398005

Address : 116 台北市文山區指南路二段 64 號

*For correspondence

本篇文章為本年度國科會專題研究計劃中正在投稿期刊文章之摘錄文，欲引用請洽詢作者。

Competitive Nonconformity in Competitive Uncertainty

ABSTRACT

This paper, based on competitive dynamic theory, attempts to investigate how group competitive behaviors affect a firm's competitive behaviors. By introducing an exogenous concept of competitive uncertainty (group-level competitive behaviors), including competitive heterogeneity and competitive turbulence, we elaborate how this competitive uncertainty moderates the relationship between competitive nonconformity (CNC) at the firm level and firm performance. Using 7,391 competitive actions of Taiwan's commercial bank industry, our results show that instead of emphasizing strategic balance, firms should be strategically similar or strategically different in order to attain better performance (i.e. a U-shaped relationship between CNC and firm performance). More importantly, while both competitive heterogeneity and competitive turbulence have direct impacts on firm performance, competitive turbulence negatively moderates the relationship between CNC and firm performance.

Keywords: competitive nonconformity, competitive uncertainty, competitive heterogeneity, competitive turbulence, competitive dynamics, group competitive behavior

"*Everyone is filthy whereas I am pure; everyone is drunk whereas I am sober.*"
— Qu Yuan, Chinese Poet, 343 B.C. – 278 B.C.

INTRODUCTION

The query of how firms compete with each other in a fast-changing and competitive market has become an increasingly important issue in strategic management research. Should firms adopt a "conformity" strategy to follow the industrial paradigm or a "nonconformity" strategy to break through the industrial paradigm? Porac, Thomas, and Baden-Fuller (1989) and Deephouse (1999) suggest that strategists needed to balance on a competitive cusp between simultaneous pressures to conform and to differentiate. However, in what circumstance should firms take a "nonconformity" strategy to accommodate the competitive environment? How do group behaviors differently shape the competitive behavior of firms? In this research, based on the competitive dynamic theory, we attempt to answer the above questions by investigating the effect of "competitive heterogeneity" and "competitive turbulence" at group-level competitive behaviors on firm-level competitive behaviors.

Studies on group behavior can be referred to the concept of conformity, which has been an important issue to sociologists studying the emergence and diffusion of practices and norms in groups, networks, and markets (Burt, 1987; DiMaggio & Powell, 1983; Granovetter, 1985). In addition to sociologists, strategic management researchers either focus on a strategic group—a group of firms adopting a similar competitive strategy within an industry (Caves & Porter, 1977), explaining the influence of a firm's positioning on a firm's actions and group performance at a group level, or on competitive conformity or nonconformity, explaining whether firms have better performance as they deviate from the group norm at the firm level (Miller & Chen, 1996a). Competitive nonconformity (CNC) is very important to the field of competitive dynamic studies. Based on sociology's institutional theory, Miller and Chen (1996a) find that firms dispersing the group norm of the firms, which is defined as competitive non-conformity, are inclined to have worse financial performance. The findings imply that the group norm of the firms is accumulated via industrial wisdom for a long period of time. Firms can enhance their performance if they comply with the group norm. However, this assertion seems contradictory to the traditional view of the differentiation strategy raised by Porter (1980), who suggests that a differentiation strategy creates abnormal profits. Thus, Deephouse (1999) provides a strategy balance framework to integrate the institutional theory and differentiation concept by asserting that CNC is correlated to firm performance in an inverse U shape. This means that moderately differentiated firms have higher performance than either highly conforming or highly differentiated firms. In the follow-up studies, Martinez (2001) and Norman, Artz, and Martinez (2007) also find that there is an inverse U-shaped relationship between CNC and firm performance.

The above studies mainly focus on the question of whether the focal firm should be same or different, strategically. However, if all competitors adopt a similar strategy (i.e. being strategically similar or different), can the focal firm attain better performance by conforming to the same strategy? Or should the focal firm act differently? In other words, will the proverb, "*Everyone is filthy whereas I am pure; everyone is drunk whereas I am sober,*" sustain and lead to better outcomes in the current competition? Except for the studies of Smith, Grimm, Wally, and Young (1997) and Martinez (2001), most prior CNC-related studies mainly focus on firm-level competitive behaviors. The CNC research at the group level has not been fully investigated. Although some prior studies suggest that it can be distinguished into strategy similarity and strategy differentiation at the inter-group level (Dooley, Fowler, and Miller, 1996; Lawless and Tegarden, 1991) or even in the same industry (Nair and Filer, 2003), the interaction effect between firm-level and group-level competitor behaviors has not been fully investigated in competitive dynamic studies.

From the perspective of the firm, if the firms of the rival group act strategically different or change their strategies all the time (i.e. unpredictable), how can a focal firm conform? On the other hand, if all rival firms act strategically similar or rarely change their strategies (i.e. predictable), can the focal firm conform similar or predictable strategic actions in order to attain better performance? To answer the above questions, our research starts with comparing two prior studies conducted by Miller and Chen (1996a) and Norman et al. (2007), which use the same sample industry (the airline industry) but at different periods of time. The results show that the standard errors of CNC in these two studies are different. This implies that different competitive environments in the two periods of time may lead to different impacts of a firm's CNC on firm performance. The sample firms in Miller and Chen's (1996a) study were at the beginning period of the deregulation of the airline industry, where firms had various competitive strategies and the industry had yet formed an institutional norm. However, in the study of Norman et al. (2007), sample firms in the airline industry had competed with each other for more than ten years and the industry had established a more explicit institutional norm, which allowed the firms to easily conform. As a result, the firms' competitive behaviors become more coherent. Thus, the explicitness of the institutional norm in the industry or the extent of the group conformity may affect a firm's strategic choice to conform or to differentiate.

The explicitness of the institutional norm in an industry or the extent of the group conformity is highly related to the competition environment. As the institutional norm of an industry becomes more explicit, the industry is in a lower extent of dynamism of the competition environment over periods of time. On the other hand, the higher extent of group conformity shows that the competitive strategy of the group of firms is highly homogeneous. Both the explicitness of the institutional norm and the group conformity help firms to be strategically similar more easily. However, will this be a good fate for firms to conform the industrial norm or group norm? Considering the case of iPhone's success, while a majority of phone makers, such as Nokia, Motorola, or Samsung, adopted the *multiple-product* strategy in the earlier period of global competition, Apple adopted a *one-product* strategy: apart from radio frequencies, just one device with minor tweaks to be sold around the world. As a result, we have witnessed the success of the iPhone since 2007. Having seen the iPhone's success, Samsung also has adopted the similar one-product strategy since 2010 by launching the Galaxy series, which thereafter became the best-selling mobile phone for Samsung. However, as Samsung changed its strategy, Apple also started to change their one-product strategy to the multiple-product strategy, allowing the co-existing of multiple products in the same period of time[1]. This extraordinary example reflects a fact that a firm acts strategically different as a majority of rivals act strategically similar, while the firm conforms to the group norm as the rivals start to act strategically different. In other words, the iPhone case intrigues our inquiry in what conditions (i.e. group competitive behaviors) a firm should be to conform or differentiate.

By introducing the concept of "competitive uncertainty," including "competitive heterogeneity" (i.e. similarity of rival firms' competitive actions or strategies) and "competitive turbulence" (i.e. predictability of rival firms' competitive actions or strategies), this paper investigates how group-level competitive uncertainty in an industry affects the impact of CNC on firm performance in Taiwan's commercial banking industry. More precisely, this research attempts to explore whether and how the rival group's competitive heterogeneity or competitive turbulence will influence the effect of a focal firm's CNC on firm performance.

THEORETICAL BACKGROUND AND HYPOTHESIS DEVELOPMENT

[1] Apple has adopted the one-product strategy by launching iPhone, iPhone 3G, iPhone 3GS, iPhone 4, iPhone 4S, and iPhone 5 in each period of time since 2007. In earlier 2013, Apple has planed to sell the low-end iPhone while simultaneously selling the high-end iPhone.

Competition Behavior and Competitive Dynamic Theory

Firm competition behavior research can be traced back to first mover advantage (Jacobson, 1992; Lieberman and Montgomery, 1988) and entry barriers (Porter, 1980) from the positioning school of industrial organizational economics. However, the neglect of the individual firm's actions and interactions with competitors reduces the explanatory power of the industrial organizational economics on firm-level competition behaviors. Although game theory does complement such a gap, the incapability of explicitly deriving hypotheses relating to characteristics of actions (Chen, Smith, and Grimm, 1992) also constrains the explanatory power of the game theory. Instead, competitive dynamic studies, using a dyadic relationship to observe competitive behaviors between the focal firm and the competitor, attempt to interpret competitive interactions from the social cognition view by addressing the elements of the stimulus-response model (i.e. awareness, motivation, and capability (Chen et al., 1992). Studies regarding competitive interactions have been extended to several streams (Ketchen, Snow, and Hoover, 2004), such as first mover (Lieberman and Montgomery, 1988) or late mover advantage (Shankar, Carpenter, and Krishnamurthi, 1998), mutual forbearance and multipoint competition (Gimeno and Woo, 1996, 1999; Haveman and Nonnemaker, 2000), co-opetition (Brandenburger and Nalebuff, 1996), and strategic groups (Smith et al., 1997). Earlier studies in competitive interactions mainly focus on the attributes of actions/responses, including attack intensity (Chen and MacMillan, 1992; Chen et al. 1992) or aggressiveness (Ferrier, Smith, and Grimm, 1999), implementation requirement (Chen et al., 1992), response speed (Chen et al., 1992; Ferrier, 2001; Smith, Grimm and Gannon, 1992), and response imitation, likelihood, lag and order (Chen et al., 1992; Smith, Grimm, Gannon, and Chen, 1991; Smith et al., 1992), while recent studies more strongly emphasize behavior itself; in other words, whether a firm should be strategically similar to or different than its rivals (Deephouse, 1999; Martinez, 2001; Miller and Chen, 1996a; Norman et al., 2007), which lead to a research stream of competitive nonconformity studies.

Competitive Nonconformity and Firm Performance

Earlier competitive nonconformity studies, departing from isomorphism, a concept of sociology, explain how the legitimacy in an industry (or a strategic group) influences the level of a firm's competitive nonconformity. If a firm chooses a strategy to differentiate from the industrial norm, then its legitimacy to acquire resources in this industry will be challenged by shareholders, suppliers, and clients (DiMaggio and Powell, 1983). However, if a firm conforms to the strategies adopted by many similar competitors, it avoids legitimacy challenges but faces intensified competition for the same customers and resources in the same targeted market segment (Baum and Singh, 1994), which in turn limits the firm's performance and increase its failure (Baum and Singh, 1994; Hannan et al., 1990; Henderson, 1981). Miller and Chen (1996a) confirm that pursing a nonconformity strategy helps larger firms to perform better due to possessing the breadth in competitive experiences and resources.

However, in the research of the US banking industry, Deephouse (1999) finds that strategic deviation is associated with performance in an inverse U-shaped way. This implies that firms with high strategic similarity may face intense (i.e., economically perfect) competition (Baum and Mezias, 1992; Hannan et al., 1990) and niche overlap density (Baum and Singh, 1994) that are more costly than the benefits derived from legitimacy by acquiring higher quality resources with more favorable terms from external exchange partners (Deephouse, 1999) due to alignment with the cognitive consensus or industry recipe (Porac et al., 1989). On the other hand, firms with high competitive nonconformity may face legitimacy challenges (Hirsch and Andrews, 1984), preventing them from acquiring resources from potential exchange partners such as customers, suppliers, and regulators (DiMaggio and Powell, 1983), that are more costly than the benefits derived from less competition

(Baum and Mezias, 1992; Baum and Singh, 1994; Hannan et al., 1990) or first mover advantage (Lieberman and Montgomery, 1988) by exploiting market opportunities and new niches to stay ahead of the competition (D'Aveni, 1994) and then to build imitation barriers (Reed and DeFillippi, 1990). Thus, firms should strive for strategic balance between strategic similarity and nonconformity in order to capture better economic returns (Deephouse, 1999). Martinez (2001) also confirms an inverse U-shaped relationship between competitive nonconformity and firm performance by investigating the US airline industry. Norman et al. (2007) extend this line of research and find that the cusp of the inverse U shape will move to the left if the government's restrictions or regulations increase the pressure of legitimacy, which leads to strategic similarity. This implies that the extent of tolerance for competitive nonconformity decreases, which leads to a punishment (i.e., diminishing performance) due to deviation from the institutional norms. Based on the above discussions, we also expect that firm performance will first increase with competitive nonconformity due to first mover advantage (Lieberman and Montgomery, 1988) and imitation barriers (Reed and DeFillippi, 1990), but then will start to decrease with competitive nonconformity after a certain point due to facing larger legitimacy challenges (Hirsch and Andrews, 1984). In other words, there is an inverse U-shaped relationship between competitive nonconformity and firm performance.

Hypothesis 1: Competitive nonconformity is correlated to firm performance in an inverse U shape.

Competitive Uncertainty

However, will the competitive pressure among existing rivals alter if the environment changes? For instance, due to the rise of radical mobile technology, the competitive pressure among mobile phone makers has shifted from the greatest threat by Nokia in the earlier 2000s to the threat by Apple and Samsung since the late 2000s. Thus, uncertain environments, where market structure and the rules of the game are unstable or erratic (D'Aveni, 1994), may affect competitive behaviors, such as conformity or nonconformity, among the existing rivals, which leads to an urgent call for further investigation. Although prior studies have identified some environmental attributes, such as market diversity (Miller and Chen, 1994), market uncertainty and growth (Miller and Chen, 1996a, 1996b), as well as group rivalry (Martinez, 2001), which may affect the relationship between nonconformity and performance, these studies pay little attention on how environmental uncertainty characterized by group competitive behaviors (i.e. group norm) affects a firm's competitive actions (i.e. conformity or nonconformity). The attributes of group norms in terms of competitive actions/strategies should be also taken into account in studying a firm's competitive nonconformity, since competitors' choices of strategies, such as resources or capabilities deployment (Makadok and Barney, 2002), are also determinants for a focal firm's strategic decisions (Zajac and Bazerman, 1991), such as the entry strategy (Teece, Pisano, and Shuen, 1997) or capacity expansion (Porter, 1980). Particularly, due to the complexity or unpredictability, which "stems from the need for accurate expectations with respect to future demand and competitors' reactions" (Zajac and Bazerman, 1991, p. 44), the uncertainty of perceiving competitors' strategies may increase the difficulty of formulating strategies, which leads to inaccurate competitive actions or responses for the focal firms. Thus, this study attempts to explore how the extent of diversity and variation of competitors' strategies in a group (or industry) level may influence a focal firm's competitive nonconformity and then its performance. Since environmental uncertainty can be defined by complexity and dynamism (Daft, Sormunen, and Parks, 1988; Duncan, 1972) or heterogeneity/homogeneity and stability/dynamism (Thompson, 1967), we incorporate these concepts to further elaborate our "competitive uncertainty" with two components: "competitive heterogeneity" for complexity or heterogeneity/homogeneity in a period and "competitive turbulence" for unpredictability or stability/dynamism across the periods for competitors' strategies or actions at a group level.

(1) Competitive Heterogeneity

From the resource-based view, competitive heterogeneity refers to "enduring and systematic performance differences among relatively close rivals" (Hoopes, Madsen, and Walker, 2003, p. 890), and such competitive heterogeneity may be the consequence of imitation barriers (Barney, 1991; Hoopes et al., 2003) resulted by uncertain imitability (Lippman and Rumelt, 1982; Rumelt, Schendel, and Teece, 1994), causal ambiguity (Teece, 1987; Reed and DeFillippi, 1990), unique historical conditions (Dierickx and Cool, 1989; Reed and DeFillippi, 1990), beliefs and preferences (Rumelt et al., 1994), and dynamic capability (Teece et al., 1997), or industry structure (Hoopes et al., 2003) and market positions (Rumelt et al., 1994). However, competitive heterogeneity, proposed by the RBV scholars, is the consequence of a firm's resource or capability configuration at the firm level, which rarely captures competitive behaviors such as actions or strategies adopted by rivals. Thus, incorporating the concept of "strategic heterogeneity" suggested by strategic group concept[2] (Mehra and Floyd, 1998), we define competitive heterogeneity as the diversity of competitors' strategies or actions (except the focal firm) in a market (or an industry) during a period of time. In other words, competitive heterogeneity is the extent of competitive nonconformity of all other competitors, excluding the focal firm (see Figure 1a). If all firms adopt the same strategic repertoire, then we regard this industry (or group) as a lower level of competitive heterogeneity.

Figure 1a and 1b here

At the group level, lower competitive heterogeneity (i.e. the pursuit of similar strategies) increases the probability that members of a group make similar resource investments (Barney, 1986). The resource configurations of firms with similar strategies are likely to be more comparable than those of firms pursuing different strategies (Mehra and Floyd, 1998). Thus, rival firms with similar strategies are forced to offer similar products to overlapping customer groups, which leads to the intense direct competition among firms and thus to a worse performance for everyone in the group (Baum and Singh, 1994; Chen and Miller, 1994; Hannan et al., 1990). In contrast, a higher competitive heterogeneity may lead to a better performance for all firms (Miles, Snow and Sharfman, 1993), because each of them targets a niche market by possessing the needed unique resources or capabilities, making them unlikely to be able to face stiff competition (Yap and Souder, 1994). As a result, firms pursuing different actions or strategies are better off due to less competing for similar resources and customers. Moreover, higher competitive heterogeneity in an industry implies that each firm will receive less attention from the other firms, which leads to the less response from competitors and then a better performance for every firm in the industry (Chen and Miller, 1994). Thus, we expect:

Hypothesis 2: Competitive heterogeneity is positively correlated to a firm's performance.

(2) Competitive Turbulence

D'Aveni (1994) suggests that turbulence creates competitive environments characterized by distinct patterns and frequency of disruption, mainly resulting from destructive innovation (Schumpeter, 1934). In our study, by incorporating the concept of turbulence into competitive dynamics, competitive turbulence is defined as the change of competitors' strategy (except the focal firm) in a market (or an industry) across two periods of time[3] (see Figure 1b). Competitive intensity varies from time to time (e.g., there will be more intense

[2] The number of strategic groups is a function of industry heterogeneity (i.e., the variety of product market strategies pursued). As the differences among firms in the relevant dimensions of competitive strategy decrease, the strategic distance between groups diminishes. In other word, if all firms adopt the same strategy, the number of strategic groups within the industry would be one (Porter, 1980: 129), and the extent of industry heterogeneity would be low.

[3] The term of "competitive turbulence" has been introduced by marketing research and refers to a stage preceding the maturity

competition in the later stage of product life cycle due to the growth of population) (Lambkin and Day, 1989). Miller and Chen (1996a) point out that as the time evolves, firms will imitate each other's competitive strategy, which leads to an industrial norm. Thus, the lower level of competitive turbulence means that firms in a stable environment do not have to respond to changes (Sharfman and Dean, 1991) and it easily induce great conformity in strategy and structure, which in turn increases the probability of forming the industrial norm (Miller and Toulouse, 1986), making the focal firm be likely to recognize and imitate superior strategies or actions, and enjoy the benefits of the superior industrial norm. On the contrary, a higher level of competitive turbulence indicates that the competitive positions of dominant firms constantly change and have yet been established (Sharfman and Dean, 1991); this implies a lower path dependency on following or imitating the old-fashion strategy, which makes it difficult for firms to be able to sense or seize the opportunities or treats (Teece, 2007), to predict competitors' strategies or actions, or to map their competitive environment (March and Olsen, 1975). As a result, the focal firm is less likely to be aware of or to respond the changing competitive actions or strategies accurately in an industry (Chen, 1996; Chen, Su, Tsai, 2007; Smith, Ferrier, and Ndofor, 2001), and then has a worse performance when facing such high turbulence. Hence, we propose the following hypothesis:

Hypothesis 3: Competitive turbulence is negatively correlated to a firm's performance.

Moderating Effect of Competitive Uncertainty

In addition to direct effects, competitive uncertainty at a group level may also affect the impact of a focal firm's competitive nonconformity on firm performance. High competitive heterogeneity at the group level implies less pressure from mimetic isomorphism (DiMaggio and Powell, 1983) since each firm focuses on its niche market, creating less possibility of tacit collusion. However, in high competitive heterogeneity, since all of the firms have been exploring the new niche markets or strategic actions, which leaves fewer new niche markets and strategic actions, it is more difficult or costly for firms to be strategically different from other competitors in highly competitive heterogeneity. On the contrary, low competitive heterogeneity implies that all other firms, except the focal firm, adopt similar strategies or target the same markets. If the focal firm conforms to the industry or group norm (i.e. adopting similar strategies or actions or targeting the same markets), it might face less legitimacy pressure from various stakeholders (DiMaggio and Powell, 1983; Miller and Chen, 1996a) but much more competitive pressure from the competitors (Hannan and Freeman, 1989). Thus, a novel and nonconformity strategy or action in low competitive heterogeneity may enhance the focal firm's performance due to first mover advantage (Jacobson, 1992; Lieberman and Montgomery, 1988). As a result, the contribution of a firm's nonconformity strategy to firm performance is more prominent in low competitive heterogeneity than one in high competitive heterogeneity. Thus, the inverse U-shaped relationship between competitive nonconformity and firm performance (Deephouse, 1999; Martinez, 2001) will less strongly exist in a higher level of competitive heterogeneity. A novel strategy will have much higher impact on the firm performance in the low competitive heterogeneity industry than that in the higher competitive heterogeneity industry, since the highly competitive heterogeneity with lower normative institution makes such the novel strategy become less distinguishable. Thus, we propose the following hypothesis:

Hypothesis 4: Competitive heterogeneity will negatively moderate the relationship between competitive non-conformity and firm performance.

Since turbulence refers to unpredictability of the environmental interconnection (Aldrich, 1979), a higher level of competitive turbulence implies that the competitive environment sets new contingencies and makes it

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stage of product life cycle (Wasson, 1978).

more difficult for firms to predict the modes of competition or unpredictable rivals (Miller and Chen, 1996b) from time to time. From the institutional theory perspective, as the competitive actions become more dynamic, the industry becomes less normative (DiMaggio and Powell, 1983), which makes it more difficult for firms to conform to the industrial norm. Even though they can conform to the industrial norm at this moment, competitive actions or strategies that are targeted in this year will almost become outdated in the next year in such a constantly changing environment (Miller and Chen, 1996b). Thus, compared to a stable competitive environment, if firms adopt conformity strategies, firm performance will be more damaged during unpredictable intervals than during more placid intervals (Miller and Chen, 1996b), since firms may neglect some key contingencies (Stacey, 1992). On the other hand, from the organization theory perspective, when faced with a more dynamic competitive environment, firms should adopt different actions in order to increase their sensitivity for responding to the changing environment, in order to sustain their competitive advantage (Peters and Waterman, 1982; Teece et al., 1997). However, this means that firms have to pay the additional costs to possess such sensitivity capabilities to respond the turbulent change, which in turn consumes scarce resources and then gains slimmer profit margins (Miller and Friesen, 1983). Tan and Litschert (1994) also note that as the environment becomes more dynamic, complex, or hostile, firms are more likely to adopt defensive strategies and avoid innovative and risk-taking strategies. As a result, firms adopting novel or nonconformity strategies are expected to have worse performance in highly competitive turbulence. In contrast, in a stable competitive environment, the stronger consensus of group members will lessen the sensitivity and response toward a new strategy or competitive action (Abrahamson and Fombrun, 1994). Thus, a novel and nonconformity action will be hardly sensed and responded to by their rivals, which leads to first mover advantage (Jacobson, 1992; Lieberman and Montgomery, 1988) and then a better performance. Hence, highly competitive turbulence between intervals will lessen the relationship between competitive nonconformity and firm performance.

Hypothesis 5: Competitive turbulence will negatively moderate the relationship between competitive non-conformity and firm performance.

METHODS

Research Scope—The Banking Industry in Taiwan

Banks in a single market offer similar products to similar customers, and therefore compete for similar production factors (Ranger-Moore, Banaszak-Holl, and Hannan, 1990), which provides an ideal setting for our research. Moreover, banks are also in a structured organizational field and thus face strong institutional forces from many sources (Scott and Meyer, 1991). Because of their crucial roles in a national economy, banks are highly regulated (Spong, 1990). This regulation consists of not only rules of limiting loans to insiders but also idiosyncratic supervision on each bank's strategies, practices, and financial reports (Deephouse, 1999). On studying the US banking industry, DeYoung and Rice (2004) suggest that the choices of strategic actions increase as the restriction are deregulated. Thus, the banking industry provides an ideal research setting for our research purpose, i.e., investigating the uncertainty of competitive environment after deregulation.

Since banks in Taiwan had been state-owned and highly regulated by the government, the banking industry was highly oligopolized during the regulated period from 1945. By 1990, in order to accelerate internationalization of capital, Taiwan's government deregulated the restrictions on establishing new banks and related businesses, which led to an increased total number of banks from 23 in 1990 to 45 in 2005. However, entering the banking industry is a high-risk decision, because it requires a huge capital investment and commitment. As a result, the new banks in Taiwan were mostly founded by business groups (Chung,

2006). Like Japan's *keiretsu*, banks in Taiwan provide an important source of capital for their business group members, making new banks have equal power to the incumbent banks in terms of firm size. Since the banking industry becomes highly competitive after deregulation, following prior studies on the banking industry (Barreto and Baden-Fuller, 2006; Deephouse, 1996, 1999; Más-Ruiz, Nicolau-Gonzálbez and Ruiz-Moreno, 2005), we are interested in exploring a bank's competitive nonconformity after the period of the deregulation in Taiwan.

Sample Selection, Data collection, and Coding

Sample banks were selected on the basis of the commercial banking business, since it is the most competitive sector in Taiwan's banking industry. We chose the first 15 largest banks in terms of market shares in order to exclude some local banks or those who focus only on niche markets. While Miller and Chen (1996a) used actions as measurement, Deephouse (1999) used resource allocation as a proxy for measuring competitive strategy in the banking industry. However, in our study, we employed Miller and Chen's method since competitive actions can better explain competitive behaviors at the both firm and group levels, which meets our study's purpose.

The data was coded through structured content analysis suggested by Miller and Friesen (1977). First, we reviewed keywords regarding our 15 sample banks between 1999 and 2008 from the news and articles in the UDN database, the largest news database in Taiwan, including business reports and articles since 1959. Second, we coded the actions related to our sample banks based on the coding list (shown in Table 1) and calculated the number of each type of actions for each bank. The coding list was developed via in-depth interviews with eight senior bank managers. Thus, a total number of 7,391 actions were coded between 1999 and 2008, which leads to 140 observations (firm-year).

Table 1 here

Variable Measurement

Number of Competitive Actions

The classification of competitive actions has been done in many prior competitive dynamic studies, but few of them focus on the banking industry, except for the study regarding competitive action and response (Más-Ruiz et al., 2005). Since there is no highly-related reference for the actions classification in the banking industry, we first followed the classification by Ferrier et al. (1999), which includes six types of actions in 41 industries, and incorporated the classification in the airline industry by Miller and Chen (1996a). Moreover, in order to reflect the nature of Taiwan's bank industry, we used the above classification as a template to ask eight experts in Taiwan's banks, including one general manager, three branch managers, one senior expertise specialist, and three associate managers. To examine the reproducibility of the classification, we randomly picked up 20 articles and tested whether 20 types of competitive actions were accurate. Overall, the coders' assignment of the classification agreed with us 78.5% of the time. The agreement coefficient, indicating "percent agreement above chance," was 0.76, which was acceptable (Krippendorff, 2004). Finally, we obtained 20 types of competitive actions for this study.

Competitive Nonconformity (CNC)

We used the Miller and Chen's (1996a) method to measure competitive nonconformity (CNC) in this research. The measure of CNC reflects a firm's deviation from the annual industry norm in its repertoire of actions. This index, computed for each of the j= 1, ... , 15 banks, for each of the t= 1, … , 10 years, was based on the number of each of the i-1, ... , 20 types of actions that a firm conducted compared to the sample

average for that year. Some kinds of actions (e.g., merge) are much less common than others (e.g., promotion). Thus, in order to avoid underweighting the former vis-à-vis the latter, we computed standardized values (M=0, SD=1) for each type of decision across all firms. We took the absolute value of the standard scores to represent deviations from that year's industry average for each type of actions. These absolute values were then summed across all 20 types of actions to yield an unadjusted cumulative index of deviation from the industry norm. The natural log of this sum was taken to normalize the coefficient. This unadjusted index is yet purely a measure of deviation since it tends to increase with the number of actions taken by a firm, which is also affected by size, diversity, and age. Thus, it was necessary to remove this effect by conducting the regression of this unadjusted index of deviation. The final adjusted index of competitive deviation was composed of the residuals obtained from the above regression and reflects pure CNC.

Competitive Heterogeneity (CH)

Since competitive heterogeneity (CH) is defined as the diversity of competitors' strategy (except the focal firm) in a market during a period of time, we measured CH by calculating variance of the number of competitive actions for all competitors except for the focal firms. We standardized the variance for each type of actions and summed all of them together. Thus, we derived a deviation index for each firm in each year as our measure for CH. This measure implies that each firm will face different levels of CH, which is consistent with Chen's (1996) concept of competitive asymmetry. Different firms shall face different level of CH in a market in the same period of time[4].

Competitive Turbulence (CT)

Since competitive turbulence (CT) is defined as the change of competitors' strategy (except the focal firm) in a market (or an industry) across two periods, we measured CT by calculating the number of each of the i-1, … , 20 types of actions that all firms conducted, except the focal firm, compared to the sample average for that year. Some kinds of actions (e.g., merge) are much less common than others (e.g., promotion). Thus, in order to avoid underweighting the former vis-à-vis the latter, we computed standardized values for each type of actions across all firms. Thus, each firm has its unique environmental vector (X1, X2, X3, … , X20) in each year. We then used the concept of strategic consistency introduced by Lamberg, Tikkanen, Nokelainen and Surr-Inkeroinen (2009) to compute CT across two years. The higher index means the more turbulence of total competitive actions across two periods. The method used by Lamberg et al. (2009, p. 54) is listed as follows:

$$C = \frac{1}{1 + \alpha\, d} \qquad (0 < C \leq 1)$$

where

$$\alpha = \arccos\left(\frac{\langle \Delta\overline{x}_t, \Delta\overline{x}_{t+1} \rangle}{||\overline{x}_t|| ||\overline{x}_{t+1}||}\right)$$

$$(\text{in radians},\ 0 \leq \alpha \leq \pi)$$

[4] There may be a concern regarding the endogeneity between CNC and CH. One may doubt that if there is less heterogeneity, we should then observe more conformity as more firms are bound to use the same strategies. The above statement is correct but our calculation of CH has alleviated the possible endogeneity between CNC and CH. Since we measured CH by calculating variance of the number of competitive actions for all competitors, *except for the focal firm*, at the group level, it should not have the endogenous issue between CH at a group level and CNC at a firm level.

$$d = ||\Delta \bar{x}_{t+1}|| \qquad (0 \le d)$$

and

$$\langle a, b \rangle = \sum_{i=1}^{n} a_i b_i \qquad \text{(where } i \text{ denotes the vector elements)}$$

and

$$||a|| = \sqrt{\langle a, a \rangle}.$$

Firm Performance

Miller and Chen (1996b) assert that using ROA or ROE as measures of performance is possibly influenced by the interest rate, tax, or depreciation policies. Particularly in the banking industry, banks sometime offset a large amount of debt, which may hugely affect ROA or ROE. Thus, instead of ROA or ROE, we used a year's lagged market share (annual revenues as a percentage of total revenues of the industry) as the measure for firm performance, which can better reflect the outcome of competitive actions such as interest incomes or commission incomes.

Control Variables

Since prior studies suggest that firm size and the government's intervention will affect the relationship between competitive nonconformity and firm performance (Chen, 1996; Martinez, 2001), we controlled firm size and ownership type in our research. We used a firm's total asset in each year as the proxy for *firm size*. Moreover, we used the *ownership type* by using a categorical variable, 0 for private banks, and 1 for state-owned banks, to control the government's intervention of the state-owned banks. Since prior year financial performance reflects the ability to conduct a strategy or an action in the current year, we also controlled *prior year financial performance* by using returns on assets (ROA) in a prior year. Since the number of actions or responses may also affect firm performance (Chen and Miller, 1994), we also controlled this effect of *total number of competitive actions* on a firm's market share in our regression model. Finally, since incumbent firms may have some existing advantages in a deregulated industry, we also controlled the *new bank* by using a categorical variable: 0 for incumbent banks before 1990 and 1 for new banks established after 1990.

Estimation Procedure

When proxying firm performance by market share, we estimated the regression models using ordinary least squares (OLS) in Models 1–6. After centering our independent variables (Aiken and West, 1991), we introduced them into hierarchical regression models to examine the developed hypotheses. There were one base model and five additional models in our multiple regression method. The purpose of the base model was to establish a baseline against which the added contribution of the variables could be estimated. We used the first base model to examine the relationship between control variables and firm performance while we used the second model to examine whether CNC has an impact on firm performance. We then used the third model to examine the direct effect of competitive uncertainty, including CH and CT, on firm performance. The fourth model was used to test whether CH and CT would moderate the linear relationship between CNC and firm performance. To test whether CH and CT would moderate the curvilinear relation between CNC and firm performance, we used the interaction term in Model 5 ($CNC^2 \times CH$) and in Model 6 ($CNC^2 \times CT$).

RESULTS

Table 2 shows the descriptive statistics and correlations among variables. Since it shows a moderate correlation among variables, we further used Variance Inflation Factor (VIF) to examine this multicollinearity problem. In this research, the VIF scores for all independent variables are less than 2, which is lower than 10, suggesting that this study has no serious multicollinearity problem among independent variables (Bowerman

and O'Connell, 1990).

Table 2 here

To test the developed theoretical hypotheses, we applied the hierarchical moderation regression. Moderation regression is a relatively conventional approach for examining interaction effects, since the interaction terms are tested for significance after all lower-order effects, such as CNC, CH, and CT, have been entered into the regression equation (Jaccard, Wan, Turrisi, 1990). Moderation effects are supported only if the model containing the interaction term represents a statistically significant improvement over the model containing the direct effect (Baron and Kenny 1986). This is indeed the case for Model 6 when predicting firm performance ($p < 0.05$). As shown in Table 3, Model 6 explains 80.4% variance of firm performance (Adjusted R-Square= 0.804) and is significantly increased by 3.7% of variance compared to Model 1, suggesting that Model 6 is the better model.

Table 3 here

All models show that no linear relationship was found between CNC and firm performance, while Models 2 and 6 shows a U-shaped relationship between CNC and firm performance (CNC^2, $\beta= 0.099$, $p < 0.05$ and CNC^2, $\beta= 0.283$, $p < 0.05$). This result is inconsistent with our Hypothesis 1. Figure 2 suggests that both high conformity and nonconformity can enhance a firm's market share in Taiwan's banking industry. Model 3 investigates the direct effect of CH and CT on firm performance. The results show that while CH is positively associated with firm performance ($\beta= 0.103$, $p < 0.1$), CT is negatively associated with firm performance ($\beta= -0.199$, $p < 0.001$). Thus, Hypothesis 2 is marginally supported and Hypothesis 3 is supported.

Figure 2 here

As for the moderating effect, Model 4 shows that both CH and CT have no moderating effect on the liner relationship between CNC and firm performance ($\beta= -0.058$, $p > 0.1$ and $\beta= 0.065$, $p > 0.1$). Model 5 shows that CH has no moderating effect on the curve relationship between CNC and firm performance ($\beta= -0.103$, $p > 0.1$) whereas CT negatively moderates the curve relationship between CNC and firm performance ($\beta= -0.229$, $p < 0.05$). The results do not support our Hypothesis 4 but support Hypothesis 5. The finding shows that the increased competitive turbulence will negatively moderate the U-shaped relationship between competitive nonconformity and firm performance. We further divided competitive turbulence into two groups and compared them in Figure 3. As can be seen, at the same level of competitive nonconformity, firms facing higher competitive turbulence have poorer market shares than the firms facing lower competitive turbulence. More importantly, the slopes of decreasing/increasing parts of CNC curve in the lower competitive turbulence group are larger than ones in the higher competitive turbulence group. This means that compared to higher competitive turbulence, firms can more effectively improve their market shares by conducting the most conforming or nonconforming strategy in lower competitive turbulence.

Figure 3 here

DISCUSSIONS

A U-shaped Relationship between Competitive Nonconformity and Firm Performance

Our findings on the U-shaped relationship between competitive nonconformity and firm performance are neither consistent with Deephouse's (1999) and Martinez's (2001) inverse U-shaped findings, nor support the argument for cusp existence for performance (Norman et al., 2007). The U-shaped relationship implies that there are two possible choices for improving firm performance: highly competitive conformity and highly competitive nonconformity. The multiple choices partially reflect the game theory that with the increase of players in a market, the players' decisions will interact more with each other, which results in multiple equilibria (Dixit and Skeath, 2004).

We further provide the following rationales for the U-shaped relationship between competitive nonconformity and performance. If a firm's competitive strategy is very similar to the group norm (i.e., low competitive nonconformity), the firm can enjoy the benefit of tacit collusion (Dooley et al., 1996; Miller and Chen, 1996a). Firms with high similarity of competitive strategy are less likely to compete to each other (Peteraf, 1993) and therefore derive a better performance. However, Dooley et al. (1996) assert that this tacit collusion is easily broken and the benefit from it will diminish when some of the firms start to deviate from this competitive conformity. Miller and Chen (1996a) also claim that firms will be punished and lose the benefits derived from the tacit collusion when they deviate from the legitimacy of the group. Thus, a firm may try to deviate from the group norm but the performance decreases with the increase of competitive nonconformity. Although a novel strategy of successful entrepreneurs may be imitated by the followers (Schumpeter, 1934; Grimm, Lee, and Smith, 2005), the firms can sustain a competitive advantage by continually pursuing nonconformity strategies to establish imitation barriers (Reed and DeFillippi, 1990). From the competitive dynamics perspective, if a focal firm is to purse a strategy very differently from other rivals, its complication and mystery make competitors difficult or unwilling to respond (Chen and Miller, 1994). Thus, when a firm continues to increase its extent of competitive nonconformity, the imitation barrier increases and the possibility of direct competition from rivals will decrease. Consequently, the decreasing performance will start to grow again as the competitive nonconformity continuously increases.

This is particularly true after the period of deregulation. During the period of control and regulation, banks are highly regulated to pursue the limited strategies at the limited market segments (Smith and Grimm, 1987). This high regulation forms the industrial norm that benefits banks that conform to it. After the deregulation, since banks are not familiar with new institutional environments, conforming the existing understandings of effective and efficient structures, strategies or behaviors (i.e. industrial norm) (Park and Luo, 2001) may better help these banks to capitalize the existing strengths and mitigate the legitimacy challenges by the stakeholders (DiMaggio and Powell, 1983; Miller and Chen, 1996a). On the contrary, some banks may adopt nonconformity strategies and benefit from them due to possessing the deregulation experience in their home countries (such as foreign banks) (Sturm and Williams, 2004), or facing less institutional pressure from stakeholders (Karlsson and Honig, 2009) and possessing more flexibility of decision-making patterns and organizational culture (such as new banks) (Ensley and Pearson, 2005). Thus, after deregulation, banks may attain better performance either acting very similarly or very differently. However, if the banks with the existing organizational culture and competitive behaviors attempt to adopt a nonconformity strategy, the inertia of the existing decision making patterns (Fredrickson and Iaquinto, 1989) or the pressure from deviating from the industrial norm (Miller and Chen, 1996a) may jeopardize the effect of pursuing a novel or nonconformity strategies, making the banks stuck in the middle (Porter, 1985) between conformity and nonconformity, which worsens firm performance.

A U-shaped relationship between competitive nonconformity and firm performance implies that firms acting very similarly or very differently can gain better performance because of tacit collusion in highly competitive similarity or specialization in highly competitive nonconformity. Firms stuck in the middle should either shift to the group norm by benefiting tacit collusion or to highly strategic differentiation by creating imitation barriers. More importantly, as Figure 2 shows, given the same effort (standard deviation), conforming can achieve higher performance than non-conforming does, suggesting that deregulation remains unforeseen risks for banks to act differently.

Competitive Uncertainty and Firm Performance

While prior research mainly focuses on the effect of competitive nonconformity on firm performance at the firm level, it pays little attention to competitive behaviors in the group or industry level. Our research provides an important investigation regarding how a group-level competitive uncertainty affects the impact of a firm-level competitive nonconformity on firm performance. Shown in Table 3, as we added two variables of competitive uncertainty (competitive heterogeneity and competitive turbulence) into Model 3, the impact of competitive nonconformity on firm performance becomes insignificant ($p > 0.05$) whereas the effects of competitive heterogeneity and competitive turbulence on performance are significant. While prior research emphasizes the effect of the firm-level competitive nonconformity on firm performance, it may neglect the influence of the group-level competitive uncertainty on firm performance. Our research suggests that the group's diversified competitive actions or the change of the group norm from time to time may have a more influential impact on firm performance than a firm's conformity/nonconformity actions do.

Our findings suggest that while highly competitive heterogeneity is positively related to firm performance, highly competitive turbulence is negatively related to firm performance. When group competitive behaviors are highly heterogeneous, each bank pursues competitive strategies or actions in its own niche segments and avoids crowded competition (Yap and Souder, 1994), which in turn lifts its performance. On the other hand, in the highly competitive turbulence, banks are difficult to predict the change of rivals' strategies and to explicitly derive hypotheses relating to competitive actions (Chen et al., 1992), and thus may not respond accurately, which leads to worse performance. In other words, the path-dependency benefit (David, 1993) may disappear as the group competitive behaviors are highly turbulent from time to time. Thus, our study contributes to understanding about how group-level competitive behaviors (i.e. competitive heterogeneity and competitive turbulence) affect firm performance, which has not been fully examined in prior competitive dynamics research.

The Moderating Effect of Competitive Uncertainty

While prior competitive nonconformity research focuses on its effect on firm performance at the firm level, it rarely investigates whether group-level competitive behaviors have an impact on the relationship between firm-level competitive nonconformity and firm performance. Our results complement this research gap. As shown in Figure 3, in both lower and higher competitive turbulence, banks should act strategically similar to or different than the group to achieve better performance. However, since banks are particularly unable to predict the other firms' competitive actions in higher competitive turbulence, the group of firms facing higher competitive turbulence has a worse performance than one facing lower competitive turbulence, which makes the curve of the U shape more flattened. This result implies that in a highly competitive turbulence, firms need to make more efforts to act strategically similar or different in order to increase their performance.

When facing the fast-changing environment, Mintzberg, Lampel, and Ahlstrand (1998) suggest that firms need to adopt an emergent strategy instead of deliberate strategy to respond to it. Miles et al. (1993) also assert that firms have to conduct more experiments to develop strategies in a turbulent environment. Thus, as

in the highly competitive turbulence, firms have to make efforts, such as developing strategy emergently or experimentally, to sustain their competitive advantage. However, our research provides a different interpretation. As in highly competitive turbulence, both developing different competitive strategies and conforming rivals' strategies may enhance firm performance. More importantly, as shown in Figure 3, to the same extent of efforts (same standard deviation), conformity strategies may attain better performance than nonconformity strategies do in lower competitive turbulence, whereas nonconformity strategies may attain better performance than conformity ones do in higher competitive turbulence. This implies that in the higher predictability of group competitive behaviors, firms should pursue conformity strategies, while in lower predictability of group competitive behaviors, firms are suggested to pursue nonconformity strategies to attain better performance. Our study complements our understanding regarding how group-level competitive behaviors affect a firm's nonconformity strategies.

CONCLUSION

The main contribution of this study is theoretically to extend our understanding about how firm-level competitive behaviors (competitive nonconformity) affect firm performance under the group competitive behavior scenario. By introducing competitive heterogeneity and competitive turbulence, our study incorporates group-level competitive behavior into firm-level studies, such as competitive nonconformity (Miller and Chen, 1996a) and strategic consistency (Lamberg et al., 2009). While Miller and Chen (1996b) suggest the market diversity and uncertainty will moderate the relationship between competitive simplicity and firm performance, our research further complements their research by using competitive heterogeneity and competitive turbulence to capture the group behaviors in the competition context. Unlike market diversity or uncertainty, which characterizes the environmental conditions in consumer needs or technological development, competitive heterogeneity and competitive turbulence more strongly emphasize and characterize competitive behaviors within the group, which allow us to specifically investigate the influence of the group competitive behaviors on a firm's competitive behaviors. This competition-context-only interaction between group and firm competitive behaviors enriches the existing competitive dynamics studies.

Another contribution to the existing literature is our U-shaped relationship between nonconformity and firm performance, rather than an inverse U shape suggested by prior studies (Deephouse, 1999; Martinez, 2001; Norman et al., 2007). After the deregulation, Taiwan's banks were better off either by pursuing conformity strategies or nonconformity strategies. Banks stuck in the middle were found having worse performance. This provides an opportunity for proponents of strategic balance or combined strategies to re-investigate in what circumstances firms can better capitalize the benefits of strategic balance or combined strategies. More importantly, in line with the contingency theory, firm may face different levels of competitive uncertainty and should adopt the different competitive actions or strategies accordingly. For instance, Taiwan's banks can gain better performance in lower competitive turbulence than in higher competitive turbulence. In lower competitive turbulence, though both conformity and nonconformity can enhance performance, firms with conformity strategies can attain even better performance than ones with nonconformity strategies do with the same efforts. In contrast, in higher competitive turbulence, though both conformity and nonconformity can enhance performance, firms with nonconformity strategies can attain even better performance than firms with conformity strategies do, given the same effort. Thus, competitive uncertainty (competitive heterogeneity and competitive turbulence), characterized by the group competitive actions, should receive more attention by competitive dynamics scholars, because it complements the nature of competitive behaviors in addition to the firm-level competitive actions.

Figure 4 here

For business practitioners, Figure 4 provides an analytical framework for formulating competitive strategies by integrating the concepts of competitive nonconformity and competitive turbulence. When both competitive turbulence and competitive nonconformity are low, firms shall adopt a follower strategy since competitive similarity brings tacit collusion and it will not change easily. When competitive turbulence is low but competitive nonconformity is high, firms need to differentiate their strategies all the time since differentiation helps firms to establish imitation barriers, and a predictable environment (lower risk) helps firms to differentiate continually. When competitive turbulence is high but competitive nonconformity is low, firms can adopt a leapfrogging development strategy. The turbulent environment is difficult for firms to predict. However, once institutional norm changes, the firms can jump to the next era and compete with a more advanced strategy. Finally, when both competitive turbulence and competitive nonconformity are high, firms should adopt first mover strategy. Since each firm's strategy varies and is highly unpredictable, firms should attempt to establish industrial standard in a specific niche market by first moving in to sustain superior economic rents.

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FIGURES AND TABLES ARE PROVIDED WITH REQUESTS

國科會補助專題研究計畫出席國際學術會議心得報告

日期：102年 4 月15日

計畫編號	NSC 100－2410－H－004－189－MY2		
計畫名稱	競爭不確定性、創新、策略聯盟與動態競爭策略之研究		
出國人員 姓名	黃國峯	服務機構 及職稱	國立政治大學 企業管理學系 副教授
會議時間	102 年 4 月 5 日至 102 年 4 月 5 日	會議地點	美國 華盛頓
會議名稱	(中文) GMU「競爭在中國」研討會-JBR 特刊研討會 (英文) GMU's "Competing in China" Conference: JBR special issue conference		
發表題目	1. (中文) 不同所有權結構之競爭導向對水平聯盟之影響 (英文) The Effect of Competitor Orientation on Horizontal Alliances within Different Ownership Types 2. (中文) 制度資產在不同制度環境下對廠商突破性創新之影響：制度基礎之資源基礎觀點 (英文) The Impact of Institutional Capital on Firm Radical Innovation in Multi-Level Institutional Environments: An Institutional-Based RBV perspective		

一、參加會議經過

GMU's "Competing in China" Conference 是為了 Journal of Business Research (JBR)特刊所舉辦之研討會，JBR 是 SSCI 期刊，因此在此研討會發表的論文，將有機會發表在 JBR 的期刊上。

這是個人第一次參加 JBR 特刊研討會會，此次發表兩篇論文 "The Effect of Competitor Orientation on

Horizontal Alliances within Different Ownership Types”與“The Impact of Institutional Capital on Firm Radical Innovation in Multi-Level Institutional Environments: An Institutional-Based RBV perspective”。在個人發表論文之場次中，本人得到許多其他學者的建設性 feedbacks，讓本人與其他學者的研究有機會充分的討論與整合，產生許多腦力的激蕩與火花，對於這篇論文之修改與日後投稿期刊的修正有極大的幫助。本次與會另一個目的，是希望多認識相關領域的學者，以及瞭解最新的研究方向與趨勢。

二、與會心得

本人所發表的論文，得到許多與會學者的討論，並於會後與幾位學者交換意見，得到許多寶貴的意見，對於本文未來之發展，著實有莫大的助益。近年來國內學者參與國際學術研討會的風氣亦盛，但由於經費與距離關係，可能參與規模較小但較聚焦之研討會的意願比較低，如此可能有礙台灣的管理學術研究與國際接軌，無法讓國際學者們有機會接觸並瞭解台灣的研究現況，實為可惜。尤其近年來中國大陸學者在美國任教與傑出的研究，大大提昇其在國際學術地位的發言權，透過此次研討會，也認識了許多傑出的中國大陸學者，對於未來合作以及比較台灣與中國大陸的研究建立初步的溝通管道，希望未來有機會共同發表兩岸比較之研究。

三、發表論文全文或摘要

1. Competitor Orientation in Horizontal Alliances within Different Ownership Types

ABSTRACT

This paper discusses how a firm’s competitive nature affects performance in horizontal alliances. The results show that the three-way interaction of competitor orientation, horizontal alliances and different types of ownership, including State-owned enterprises (SOEs), private firms, and foreign-owned firms, may have different impacts on a firm’s performance. By using Chinese 270 firms, the results show that private firms have a better firm performance in horizontal alliances than SOEs and foreign-owned firms do in China whereas foreign-owned firms will obtain more benefits from horizontal alliance than SOEs and private firms do if they are more competitor-oriented. The results contribute to knowledge on the resource dependency theory and the strategic importance of horizontal alliances.

Keywords: Competitor Orientation, Horizontal Alliances, Ownership

2. How Does Institutional Capital Matter for Radical Innovation in China? The Multi-level Context Investigation

Abstract

This study provides an institutional framework to interpret firms’ resource management in the emerging market. We identify the two possible channels, the formal and informal institutional capital, for firms to

acquire external resources in the emerging market, and their distinctive impact on firms' radical innovation. We address how firms' utilization of the formal and informal institutional capital would be influenced by their multi-level contexts (background, market, and organizational contexts). Using a survey data from 280 Chinese high-technology firms, we find that firms' informal institutional capital has higher positive impact on firms' radical innovation than the formal institutional capital does. The effects of firms' formal institutional capital on radical innovation would be higher in the complex market, and for the state owned enterprises, whereas the effect of firms' informal institutional capital on radical innovation would be higher in the developed provinces but lower in the complex market.

Keywords: formal institutional capital, informal institutional capital, radical innovation, market complexity, institutional development level, ownership

四、建議

國科會的補助計畫對個人在研究上一直有重要幫助，在此特別感謝國科會的補助。藉由此次與會，認識許多其他不同國家的學者，經由彼此經驗的交流，瞭解國外的學術研究機構與學校對研討會的重視程度，尤其像這類的大型國際學術研討會之重視程度，不論從對發表論文學者的補助，或是對發表文章的獎勵，都是國內學術環境仍須努力的方向，而個人也因為榮獲 貴會部份經費的補助，得以成行，所以特別感謝國科會提供國內學者這樣的獎勵補助，對於國內學術成就的國際化應有很大助益。

五、攜回資料名稱及內容

1. 大會議程一份。

六、其他

無

國科會補助計畫衍生研發成果推廣資料表

日期:2013/09/24

國科會補助計畫	計畫名稱: 競爭不確定性、創新、策略聯盟與動態競爭策略之研究
	計畫主持人: 黃國?
	計畫編號: 100-2410-H-004-189-MY2　　學門領域: 策略管理

無研發成果推廣資料

100 年度專題研究計畫研究成果彙整表

計畫主持人：黃國?	計畫編號：100-2410-H-004-189-MY2
計畫名稱：競爭不確定性、創新、策略聯盟與動態競爭策略之研究	

成果項目			量化			單位	備註（質化說明：如數個計畫共同成果、成果列為該期刊之封面故事...等）
			實際已達成數（被接受或已發表）	預期總達成數(含實際已達成數)	本計畫實際貢獻百分比		
國內	論文著作	期刊論文	0	0	100%	篇	
		研究報告/技術報告	0	0	100%		
		研討會論文	0	0	100%		
		專書	0	0	100%		
	專利	申請中件數	0	0	100%	件	
		已獲得件數	0	0	100%		
	技術移轉	件數	0	0	100%	件	
		權利金	0	0	100%	千元	
	參與計畫人力（本國籍）	碩士生	0	0	100%	人次	
		博士生	0	0	100%		
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		專任助理	0	0	100%		
國外	論文著作	期刊論文	0	0	100%	篇	
		研究報告/技術報告	0	0	100%		
		研討會論文	2	2	100%		已發表在GMU’’’’Competiting in China’’’’-JBR (SSCI) Special Issue Conference, 其中一篇已在R&R階段
		專書	0	0	100%	章/本	
	專利	申請中件數	0	0	100%	件	
		已獲得件數	0	0	100%		
	技術移轉	件數	0	0	100%	件	
		權利金	0	0	100%	千元	
	參與計畫人力（外國籍）	碩士生	0	0	100%	人次	
		博士生	0	0	100%		
		博士後研究員	1	1	100%		一位博士後研究, 聘期為102年1月至102年7月
		專任助理	0	0	100%		

其他成果 (無法以量化表達之成果如辦理學術活動、獲得獎項、重要國際合作、研究成果國際影響力及其他協助產業技術發展之具體效益事項等，請以文字敘述填列。)	無

	成果項目	量化	名稱或內容性質簡述
科教處計畫加填項目	測驗工具(含質性與量性)	0	
	課程/模組	0	
	電腦及網路系統或工具	0	
	教材	0	
	舉辦之活動/競賽	0	
	研討會/工作坊	0	
	電子報、網站	0	
	計畫成果推廣之參與（閱聽）人數	0	

國科會補助專題研究計畫成果報告自評表

請就研究內容與原計畫相符程度、達成預期目標情況、研究成果之學術或應用價值（簡要敘述成果所代表之意義、價值、影響或進一步發展之可能性）、是否適合在學術期刊發表或申請專利、主要發現或其他有關價值等，作一綜合評估。

1. 請就研究內容與原計畫相符程度、達成預期目標情況作一綜合評估

■達成目標

□未達成目標（請說明，以 100 字為限）

□實驗失敗

□因故實驗中斷

□其他原因

說明：

2. 研究成果在學術期刊發表或申請專利等情形：

論文：□已發表 ■未發表之文稿 □撰寫中 □無

專利：□已獲得 □申請中 ■無

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3. 請依學術成就、技術創新、社會影響等方面，評估研究成果之學術或應用價值（簡要敘述成果所代表之意義、價值、影響或進一步發展之可能性）(以 500 字為限)

本文章已投稿至 Strategic Management Journal 並獲得 R&R 的機會,雖然後來仍被拒絕,但主編與審稿者皆肯定此文的發展性,目前正在進一步修改中,希望針對所提之問題逐一修正,然後改投 SEJ 或 AMJ,本論文主要論述競爭不一致性在團體競爭行為下對廠商績效之影響,此研究延續動態競爭理論之主軸,探討群題競爭行為對個體競爭行為之影響,此在動態競爭理論中,屬於先探之研究,未來對學術之影響有一定程度之貢獻