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Strategic alliance and firm growth

熊道天

Tao-Tien, Hsiung

指導教授：康敏平博士

Advisor：Min-Ping, Kang, Ph.D.

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摘要

過去研究顯示合約型組織型態使企業獲得外部資源，幫助企業克服內部管理資源不足對於企業成長的限制。策略聯盟，是近年來最受歡迎的一種合約型組織型態。策略聯盟讓企業從聯盟夥伴中獲得互補性資源，並且可以在網絡關係中找到新的成長機會。因此，本研究認為企業可以透過策略聯盟的方式，克服內部管理資源不足的限制，進而成長的更快速。然而，過去研究也顯示並非每個策略聯盟都能成功，其成功的關鍵在於企業是否具備管理策略聯盟的能力。有能力管理策略聯盟，企業才能運用策略聯盟克服組織內部管理資源不足對企業成長的限制。本研究使用臺灣 178 家資訊科技製造業廠商，檢視策略聯盟以及聯盟和契約能力對企業成長的影響。

關鍵字：策略聯盟、企業成長、聯盟能力、契約能力

ABSTRACT

Prior research has demonstrated that contractual organizational forms allowing firms to gain access to resources external to the firms can help them overcome internal managerial limitations to firm growth. Strategic alliance, as one of the most popular contractual organizational forms in recent years, allows firms to obtain complementary resources from their partners as well as to find new opportunities in network relationships. We argue that firms may overcome the limitations of firm growth and grow faster through strategic alliances. However, prior research has also demonstrated that not every alliance succeeds. Firms with capabilities to manage the alliances are more likely overcome the limitations of firm growth. Using a sample of 178 manufacturers in Taiwan, this study examines the effects of strategic alliance and the alliance and contracting capabilities on the growth of a firm.

Key words: strategic alliance, firm growth, alliance capability, contracting capability

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1. INTRODUCTION

For decades, firm growth has been a core issue in the field of strategic management because the rate of growth has become a widely adopted performance indicator in current practice. There are many researches related to firm growth. Some research has used a set of independent variables to predict differences in growth rates across firms. And some research has examined the effects of growth on the different ages and different sizes of firms. However, most prior research has emphasized growth rates (i.e., *how much* a firm grows). There are few studies examining *how* a firm grows (Mckelvie & Wiklund, 2010). In particular, the effects of organization forms on firm growth have been under-explored. MacKelvie and Wiklund (2010) argued that we must grasp the "how" aspects of firm growth before turning our attention to the "how much" aspects. In other words, different firms may have different growth processes, and the boundary choices of resource allocation vary substantially. There are multiple actions and organization forms that may promote growth. In this study, we have divided these literatures into two basic areas, which are how much a firm grows and how firms grow. And we focus our interests on the "how" aspect instead of measuring the growth rates in this research.

1.1 Research Question

According to Penrose (1959), firms face two strategic options of their expansion. They are organic growth and growth through acquisition. Organic growth is a way of internal growth. According to Penrose (1959), firms have some idle resources, which can be further exploited. Firms are driven to grow internally while exploiting these unused resources more effectively. However, firms need more resources to support the expansion. Experienced managerial resources play an important role on allocating and integrating the resources internally and the resources required from external. These experienced managerial resources are firm-specific and are hard to be hired from the outside of the firms. Therefore, Penrose (1959) argued that a firm's growth is limited by the finite capacities and capabilities of a firm's internally experienced managers. The impact of managerial limitations on a firm's growth is called the Penrose effect (i.e. Shane, 1996; Thompson, 1994; Tan & Mahoney, 2005; Tan & Mahoney, 2007). The Penrose effect happens when a firm's internal managerial resources are not sufficient to handle more complicated organizational tasks associated with rapid expansions.

Another growth mode is growth through acquisition. This mode is a way of external growth. Penrose argues that growth through acquisition may be costly and the cost is called adjustment cost (Penrose, 1959; Slater, 1980). Adjustment cost may offset the effects of growth. Therefore, Penrose says little about growth through acquisition and suggests that this growth mode is more likely to be chosen in older and larger firms, and in mature industries. However, some scholars hold opposite view. Geroski (2005) argues that adjustment costs of firm growth are lower than predicted and have been overstated by Penrose. Also, some scholars have suggest that firms grow organically will become simple and inert resulting from the repeated exploitation of existing resources. (Vermeulen & Barkema, 2001). This may also decrease the rates of firm growth. Therefore, they suggested that firms should grow externally.

In order to understand how firms grow externally, we have examined contractual organizational relationships and their implications for firm growth. Contractual organizational relationships lie somewhere in between markets and hierarchies (Williamson, 1991). Therefore, firms grow though this way can be seen as an external growth. In particular, we test whether contractual organization forms may overcome the managerial limitations to firm growth. Firms have many ways to overcome managerial limitations on accelerating a growth rate or on maintaining a high one. Contractual organizational forms are also known as hybrid organizational form. In recent years, research has demonstrated that the hybrid organizational form is indeed a possible strategy by which firms can overcome limitations and maintain high growth rates (Shane, 1996). However, while emphasizing the effects that a few types of contractual forms have on the rate of firm growth (Lu & Beamish, 2006; Shane, 1996; Zahra, Ireland, & Hitt, 2000), current research has paid little attention to whether the mechanism of overcoming managerial limitation found in one type of contractual organizational forms, for example franchising, is also applicable to other types of contractual organizational forms, like licensing and strategic alliance (Shane, 1996).

In general, there are two common contractual organizational forms: franchising and alliances. Franchising is an organizational form based on a legal contract between franchisors and franchisees to sell a service or product using the franchisors' brand name (Child, 1987; Miller & Grossman, 1990). This kind of organizational form provides firms with external resources and a managerial capacity geared toward growth (Combs & Ketchen, 2003). Because the ownership and operations of a franchisee's outlet is independent of franchiser's control, the contributions of each franchisee to a particular outlet are easily identifiable. However, there are some cases in which firms need indivisible activities such as the sharing of complementary resources and knowledge. When firms base their growth on these activities, where the boundaries of ownership of resources are unclear and performance outcomes of shared resources cannot be cleanly divided, they must manage these activities by means of another contractual organizational form (e.g., a strategic alliance). Although strategic alliance is an important topic in strategic-management research, the field has yet to discuss the relationship between alliances and firm growth. In this study, we explore the mechanism underlying the effects that alliances can have on firm growth. In particular, we examine whether firms can accelerate their growth through the use of contractual organizational forms of alliance.

An alliance is a form in which two or more firms combine together in order to gain complementary resources and capabilities (Das & Teng, 2000). According to Penrose (1959: 43), there are two factors that drive firms to grow. One is the presence of unused productive services within the firm; the other is the growth opportunities outside the firm. Alliances help firms locate complementary resources that the firms can use in order to realize the value of their own unused productive services. When entering alliances with these aims, firms need neither invest in additional managerial resources nor devote time and other resources to the training of existing mangers. In short, firms can acquire complementary resources through alliances while avoiding adjustment costs associated with an expansion of managerial capacities (Slater, 1980). In addition, managers seeking to maximize the profits of an alliance should be able to recognize pursuable opportunities when they arise. Alliances also help firms recognize extra-firm opportunities (i.e., opportunities outside a firm). Accordingly, we argue that firms can maintain their growth rate or grow even faster through the arrangement of alliances.

However, prior research has established the not-so-surprising fact that not every alliance is a sterling success (Bleeke & Ernst, 1993; Kogut, 1988; *Alliance Analyst*, 1996). The research shows, in particular, that alliances' success is generally attributable to the alliances' overall capability (Anand & Khanna, 2000; Kale, Dyer, & Singh, 2002). This overall capability to manage alliances can be divided into two streams, alliance capability and contracting capability. Alliance capability comes from previous alliance experiences and the processes of alliance learning. This kind of capability may generate managerial routine by accumulating experiences and learning from previous alignments. Firms with managerial routine may reduce searching costs, coordinating costs, adjustment costs, and contracting costs (Anand & Khanna, 2000). Therefore, firms may grow faster or maintain its growth rates.

Another capability is contracting capability. Alliance is an incomplete contractual relationship. Therefore, it is important for aligned firms to sign contracts. To sign a contract more completely while costless is difficult and depends on firms contracting capability. Prior researches suggest that firms may develop contracting design capabilities through learning (Argyres & Mayer, 2004). Firms with stronger contracting capability may help managers and firms to sign a more complete contract over time. Also, it sensitizes managers to potential disturbances in the future. Furthermore, having contracting capability reduces the highly costs of a complete contract and makes firms perform better. Therefore, contracting capability is a key factor affects the outcome of alliance on firm growth.

The current paper complements the extant research by focusing on the process of firm growth. Specifically, we examine the effects of contractual organization forms on firm growth. We assert that the use of contractual organizational forms is diverse across firms and that managerial limitations imposed on growth are thus heterogeneous. Firms are less likely to undergo the Penrose effect and are more likely to grow rapidly when they can rely on organizational forms' choice and governance than when they cannot. Furthermore, we emphasize that the research on firm growth should be joined with research on capabilities underlying firms' use of organizational forms. That is, capabilities of managing alliances may help firms not only overcome the limitations of firm growth but grow faster in the next time period, as well.

The paper is organized as follows. The next section summarizes the literature on firm growth and develops several hypotheses concerning (1) the conditions under which firms are more likely to overcome limitations on growth and (2) how firms can grow faster. Then, we describe the data and measures that we used to test our theory, and we report the empirical results. The final section discusses the results and presents contributions of this study.

2. LITERATURE REVIEW AND HYPOTHESES

In this chapter, we are going to review the literatures and build the hypotheses. In the first section, we divided firm growth into internal growth and external growth. In the second section, we than discuss contractual organizational forms, which lie between organic and acquisitional growth, and its implications to firm growth. Next, we further discuss whether strategic alliance, as one kind of contractual organizational forms, can help firms to overcome the managerial limitations to growth or not in the third section. Finally, the fourth section focuses on the capabilities. In the final section, capabilities are divided into alliance capability and contracting capability. We examine the effects of the two capabilities on firm growth respectively.

2.1 Firm growth

For the past several decades, firm growth has been one of the most widely discussed issues in the strategic-management literature. Previous literatures have demonstrated that there are heterogeneities in firm growth (Delmar, Davidsson & Gartner, 2003). Indeed, there are so many studies related to firm growth that can be divided the literatures into two basic areas of interest. One area is how much a firm grows. The studies herein treat growth as a dependent variable and use a set of independent variables to explain the variance of growth outcomes such as growth rates and increments of growth (Phelps, Adams, & Bessant, 2007). However, researchers working in this area of interest have been unable to isolate variables whose effects on growth across studies are consistent. The researchers have found that this limitation occurs because the status and the intentions of a firm may change over time. The choices that firms make are not stable either. Moreover, few firms can engage in consistent, linear growth over time. Studies may ignore the ups and downs that occur within a given timeframe. Most important of all, the willingness to grow varies across firms (Mckelvie & Wiklund, 2010).

Another area is how firms grow. According to the previous literatures, there are many factors may influence the rates of firm growth including age, size, industry and etc. Firms have various limitations to resource and face different opportunities of growth. Therefore, the outcomes of literatures on the area of how much a firm growth make a lot of variances between each other. In other words, firms vary in growth rates while facing different conditions. Also, the way of firm growth should not be the same. As the result, researchers have argued that we should explain *how* firms grow before explaining *how much* a firm grows (McKelvie & Wiklund, 2010). However, little research has dealt with this issue of growth processes. According to Penrose (1959), managers face two different strategic options of firm growth, which are organic growth and growth through acquisition.

2.1.1 Organic growth and Penrose Effect

According to Penrose (1959: 24), firms are not only administrative units but also organizations that integrate resources. Firms that inherit resources internally and acquire resources externally need to arrange them rationally and use them effectively. Penrose (1959: 26) argued that the optimum plan for expansion is to use resources in ways that maximize advantage. Managerial services play an important role in resource allocation. In addition to routine work, managerial services are responsible for planning growth. Managerial resources must have firm-specific knowledge and experience to handle daily official business, and also must be able to choose, distribute, and integrate resources. Only when managerial resources have a surplus can firms plan for the next period's growth. However, firms often cannot get satisfaction from hiring the services of extra-firm managerial resources (Penrose, 1959: 46-47) because externally recruited new managerial resources often have no firm-specific knowledge and experience. It takes time for such resources to accumulate experience and to grow familiar with a given firm's operations. The costs that firms incur when coordinating extra-firm resources with intra-firm objectives are known as adjustment costs (Slater, 1980), which are prohibitive for many firms seeking to absorb new recruitments in a timely fashion. Also, many new managerial recruits cannot meet their firms' growth plan by the identified deadlines. In the literature, the Penrose effect (Penrose, 1959: 48-49) occurs when a high-growth firm cannot maintain its high rates of growth in successive time periods and, in subsequent time periods, experiences slowed growth due to the managerial limitations. Thus, we propose the following:

Hypothesis 1. Fast-growing firms will fail to maintain the high rates of growth and slow down the growth in the subsequent time period.

2.1.2 Growth through acquisition

Another strategic option faced by managers is growth through acquisition. Acquisition is a kind of external growth, and may provide an attractive alternative to organic growth because it enables managers to acquire resources beyond the boundaries (Barney, 1986; Rumelt, 1987). Many resources are difficult to trade individually since they are tacit, non-standard, complex, and are firm specific(Lockett, Wiklund, Davidsson & Sourafel, 2011). As the result, firms need to grow externally instead of organically. However, Penrose says little about growth through acquisition in her seminal work. She thinks growth through acquisition may generate adjustment cost that would cut down the effect of growth. She suggests that growth through acquisition is more likely to be chosen in older and larger firms, and in mature industries.

However, Geroski (2005) argues that adjustment costs of firm growth may be lower than predicted and may have been overstated by Penrose. In highly competitive environments, there is an increasing acceptance that it is difficult for a single firm to try and possess all the resources required to compete effectively(Child & Faulkner, 1998; Dyer & Singh, 1998; Pfeffer & Salancik, 1978). Also, some scholars have suggest that firms grow organically will become simple and inert due to the repeated exploitation of existing resources(Vermeulen & Barkema, 2001). This may also decrease the rates of firm growth. Therefore, it is suggested that firms should grow externally.

According to Penrose (1959), firms face internal limitations to growth. However, recent research has examined hybrid organizational forms and suggested that firms may use the hybrid organizational forms to overcome managerial limitations to firm growth (Norton, 1988; Shane, 1996; Teece, 1986). Hybrid organizational forms are also known as contractual organizational forms. These forms lie somewhere in between markets using price system and firms base on authority or combines elements of each (Williamson, 1991). Therefore, firms grow through the arrangement of contractual organizational forms can be seen as a kind of external growth. We suggest that contractual organizational forms can greatly clarify the process of firm growth. Hybrid modes consist of contractual relationships between organizations that bind external actors to firms while the firms maintain a certain amount of ownership and the power to control over the level of assets used (McKelvie & Wiklund, 2010).

2.2 Contractual organizational forms

One fundamental research question in the field of strategy is the decisions on the governance mode of firms. In other words, strategy scholars are interesting in whether a firm organizing its activities internally (within a firm or hierarchically) or externally (using the market). According to transaction cost theory, firms will do the trade off between mitigating the threat of opportunistic behavior and the governance cost when choosing the governance mode. And the main determinant of governance mode decision is contractual hazard. Markets and hierarchies are polar modes. The perspective of transaction cost theory is that firms should internalize transactions when contractual hazard are high. Conversely, when contractual hazards are low or absent, firms should choose the market forms (Williamson, 1975, 1985).

However, there must be risks while contracting. On the other hand, it is nearly impossible for enterprises to organize activities internally. Therefore, Williamson (1991) proposed a compromised approach, hybrid mode. Hybrid mode is characterized by semi-strong incentives, an intermediate degree of administrative apparatus, displays semi-strong adaptations of both kinds, and works out of a semi-legalistic contract law regime (Williamson, 1991). Compared to the market form, hybrid organizational form doesn’t need to sign the contract that complete, and therefore, is less costly and is more flexible.

In practical, there are many kinds of hybrid organizational forms. Based on whether there is equity exchange or not, hybrid organizational forms can be roughly divided into joint venture and contractual forms. Joint venture involves the exchange of equity between the two companies. Therefore, the two companies can mutually control of each other through the equity exchange. As to the contractual forms, these forms do not involve equity exchange. They develop and maintain inter-firm relationships through contracts. In this study, the main objects we are discussing are the forms of contractual organizations, which do not involve any equity exchange.

In general, there are two common contractual organizational forms: the franchise and the alliance. In a franchise, the franchiser retains a degree of ownership and authority (Castrogiovanni & Justis, 2002) over the trade name, the operating procedures, the outlet locations, and contracts with franchisees (i.e., independent entrepreneurs) whose job is to operate the outlets (Child, 1987). The practice of franchising involves a franchisee, who enters a contractual relationship with a franchiser in exchange for the right to use the franchiser's intellectual property. The franchiser receives compensation for using this asset from franchisees; generally a lump-sum payment and a royalty fee based on an agreed-upon set of conditions (Miller & Grossman, 1990). This organizational arrangement provides some benefits for growth. For example, (1) franchisers do not need to invest further managerial resources into new outlets because franchisee must hire and train new employee to undertake activities in their outlets and (2) franchisers save time by avoiding the efforts to monitoring additional employee. Through the use of franchising-based growth, franchisers may also reduce agency problems resulting from moral hazard and goal inconsistency, and may decrease monitoring costs (Shane, 1996; Combs & Ketchen, 2003).

However, there are some drawbacks to franchising. Franchising requires that the franchiser surrender a degree of control over the firm (McKelvie & Wiklund, 2010) and that the franchiser bear higher transfer costs if assets and knowledge of franchisers are firm-specific (Darr, Argote, & Epple, 1995). In particular, franchising does not work when the growth of firm is based on indivisible activities such as finding complementary resources and joint R&D. Firms requires a more cooperative organizational form to deal with these activities so that firms may leverage contractual relationships to grow faster.

Alliances are another common contractual organizational form. It provides more joint actions and more collaborative decision-making than franchising. This organizational form combines two or more firms that either pursue a set of agreed-upon goals or leverage each other's resources while remaining independent organizations. The main purpose of alliances is to provide firms with complementary resources and capabilities that firms do not need to develop on their own (Das & Teng, 2000). Alliances provide firms and their partner firms an opportunity to share with each other not only resources but risk, as well. Therefore, alliances are a less risky and less costly (Pearce & Hatfield, 2002) method for achieving firm growth than internal investment. However, the two main themes addressed in the extant literature on alliances concern the gains that firms derive from alliances and the reasons underlying the success of alliances (Gulati, 1998). There is little literature exploring the causal relationship between strategic use of alliances and its impact on firm growth.

2.3 Strategic Alliance

Gulati (1998) defined strategic alliance as a voluntary agreement between firms that involves exchange, sharing, or codevelopment of products, technologies, or services. As the result of a wide range of motives and goals, strategic alliance takes a variety of firms and can occu across vertical and horizontal boundaries. In other words, the forms of strategic alliance varied with its goals and strategic choices.

The interests on previous literatures of alliance are focus on some issues. First, studies have focused on the inducements likely to lead firms to form an alliance. Some scholars have demonstrated that when the benefits exceed the costs, firms may enter the alliance (Harrigan, 1985; Contractor and Lorange, 1988). Other scholars take firms' attributes such as size, age, competitive position, product diversity, and financial resources, as important factors to predict their propensities to enter or to form strategic alliances with each other (Shan, 1990; Barley, Freeman, & Hybels, 1992; Powell & Brantley, 1992; Shan, Walker, & Kogut, 1994). Still other scholars suggested that firms could strategic aligned with others when expansion (Kogut, 1991).

The second question associated with alliance is whether firms really benefit from alliances or not. Researches have demonstrated that alliance is not always successful. On the contrary, studies show that the success rates of alliances are persistently low and suggest that many firms fail to realize the potential gains from partnering activity (Gulati, Sytch, & Mehrotra, 2008; Harrigan, 1985; Kale, Dyer, & Singh, 2002; Kalmbach & Roussel, 1999; Kogut, 1989). Therefore, some scholars also put lots of effort discussing how firms could benefits from alliance more. In recent years, the research of how capabilities impact governance mode decisions has begun to emerge (e.g., Argyres, 1996; Foss, 1996; Kogut & Zander, 1992). In addition to the capability, the type of firms' partner is also popular.

The third question related to alliance behavior of firms has to do with the question of with whom firms partner. According to resource dependence theory, it is suggested that organizations perceive critical strategic interdependence with other organizations, they should form into a partnership (e.g., Levine & White, 1961; Aiken & Hage, 1968). Richardson (1972) also suggested that in order to manage such strategic interdependencies, firms should attempt to seek out ties with partners who could help them manage such strategic interdependencies. Gulati (1998) argues that firms would choose their partner depending on the network location of the partner. The greater the partner's network location is, the more it can share its interdependence.

In general, studies of alliance discuss alliance issue based on three different kinds of theories and perspectives. They are resource-based perspective, transaction cost theory and social network theory. From the resource-based perspective, firms ally with others in order to acquire complementary resources. While alliance, the cost such as searching cost, coordinating cost, adjustment cost and contracting cost will be generated. Also, behavioral uncertainty, opportunistic behavior and contracting hazards may be resulted from the alliance. Transaction cost theory has suggested that firms should sign a complete contract to deal with those problems. However, to sign a complete contract is costly and nearly impossible. A view from social network theorists is that where there is trust, the concerns of contractual hazards are likely to be mitigated, and organizations do not need to rely on such detailed contracts to ensure predictability (Gulati, 1998). Gulati (1995) found that firms select contractual organizational forms for their alliance not only on the basis of the activities they include and the related appropriation concerns they anticipate at the outset, but also the existence of the social network of prior alliances in which the partners may be embedded.

As discussions above, no matter what theories they have used, most of prior researches on alliance have discussed more on ex ante behaviors of alliance, such as partner selection. However, to make the alliance successful, in addition to control ex ante selections of partners, more important concern is how to manage the alliances. Prior researches rarely discussed ex post alliances management, in particular the capability associated with managing the process of alliance. Besides, prior researches have confirmed relationships between network resources and firm performance (i.e. innovation), however little efforts have made on the connection of alliance to firm growth. Therefore, the current study is to examine whether alliance can help firms to overcome the limitations to growth and make firms grow faster or not.

2.3.1 Alliances as a mechanism of firm growth

Penrose (1959) proposes that within a firm, entrepreneurship and unused productive resources are key drivers to a firm's growth. On the other hand, Penrose (1959: 43) specifies three factors that might impede a firm's growth: managerial capacity, product or factor market, and uncertainty and risk.

The first driver of firm growth is the level of unused productive resources within firms. Firms face internal obstacles in the form of inefficiently distributed resources. According to Penrose (1959: 65), every firm has its own internal resources but cannot always fully exploit them because these resources are firm-specific and are less valuable if sold to other firms. Some firms pursue growth as a way to strengthen the degree to which they efficiently exploit these unused resources. As they grow, firms need more resources, especially complementary resources, to support the growth. As a result, firms seek and use various methods to achieve this end. In other words, growth is a cyclical process wherein firms try to find complementary external resources and try to balance them with internal resources.

Some firms acquire complementary resources through vertical integration. However, the process of vertical integration incurs costs. It requires additional investments of such capital as equipment and land. Also, vertical integration typically requires additional investments of human capital: in particular, new managers. Firms that fail to hire new managers have to spend time and money on familiarizing existing mangers with a new business technique or a new capital acquisition. These additional costs result from the process of internalizing external complementary resources and from training new managers to be effectively used by the firm (Slater, 1980).

In this paper, we suggest that alliances can give firms access to complementary resources without forcing the firms to incur significant adjustment costs. That is, firms can avoid investing in capital outlays by acquiring complementary resources from alliance-based partners. Because allied firms by acquiring complementary resources through alliances can avoid the costs associated with investments in additional managerial resources, the firms can devote any excess managerial capacity they might have to the next period's planned growth.

The second driver of firm growth is productive opportunity outside firms. According to Penrose (1959: 31), growth is limited by a firm's productive opportunity. The success with which a firm finds opportunities for growth depends mainly on the firm's entrepreneurial capabilities. Penrose identified several entrepreneurial services: entrepreneurial versatility, fund-raising ingenuity, entrepreneurial ambition, and entrepreneurial judgment (Penrose, 1959: 35-41). In the process of growing, firms must be able not only to raise funds, but more important to identify and perceive opportunities for growth. Social network theory (Granovetter, 1973) posits that firms can use networking to acquire opportunity-recognition skills. Granovetter (1973) first introduced the concept of tie strength, and suggested that strong ties and weak ties differ from each other regarding their function in the transmission of information. Strong ties involve larger time commitments than weak ties. If strongly tied to each other, two individuals can trust each other and engage in significant reciprocity regarding the transmission of information and other resources. By contrast, a relationship whose members are weakly tied to each other would tend to engage less in mutually beneficial exchanges than would members of "tight" relationships. However, because members of weak-tie relationships are more heterogeneous than members of strong-tie relationships (Burt, 1992), weak-tie relationships are more effective than strong-tie relationships at providing their respective members with large stores of novel information and of information-collection strategies. As a result, firms are inclined to use weak ties for the diffusion of novel information (Nelson, 1989). Novel information in turn enables firms to identify more opportunities for expansion (Singh, Hills, Lumpkin, & Hybels, 1999). Therefore, weak ties seem to facilitate firms' opportunity recognition by providing them with novel information (Singh et al., 1999; Elfring & Hulsink, 2003).

Through alliances, firms can acquire resources without incurring any significant managerial expenses. The allied firm could leverage partner's complementary resources without using their own managerial resources, which could help the allied firms plan a future growth project. Also, alliances, by giving firms access to novel information, help them strengthen their opportunity-recognition skills. Thus, we propose the following:

Hypothesis 2. Through alliances, firms are more likely to maintain high growth rates in successive time periods.

2.4 Capabilities of managing alliances

In decades, alliances have become a popular organizational form by which firms can gain access to resources and can share risks. However, not every firm benefits from alliances. Alliances fail sometimes. Previous literature on alliances examined their outcomes, particularly regarding their degree of success. Most research shows that alliances are difficult to manage. Therefore, not every alliance is a sterling success (Bleeke & Ernst, 1993; Kogut, 1988; *Alliance Analyst*, 1996). As the result, it is important for firms to manage the alliances properly. From the perspective of transaction cost theory, alliance can be viewed as an incomplete contract between firms. The advantages of incomplete contract are flexibility and less cost. However, it is more risky and is likely to be difficult to manage. While other scholars, from the perspective of social network theory, suggested that where there is trust, the concerns of contractual hazards are likely to be mitigated, and organizations do not need to rely on detailed contracts to ensure predictability (Gulati, 1998).

In recent years, the research of how capabilities impact governance mode decisions has begun to emerge (e.g., Argyres, 1996; Foss, 1996; Kogut & Zander, 1992). These researches argue that transaction cost theory neglects the importance of governance capabilities of firms while focusing on contractual hazards when discussing about governance mode decisions (Mayer & Salomon, 2006). Firms have many kinds of capabilities that may facilitate the alliance success and furthermore, help firms to grow. Gulati (1998) argued that an important concern of firms entering alliances has to do with appropriation and relates to the predictability of their partners' behavior. Trust is one of mechanism for making behavior predictable, and another is a detailed contract. Therefore, this study divides capabilities in managing alliances into alliance capability and contracting capability. The discussion of each is as following.

2.4.1 Alliance capability

Alliance behavioral capability is a kind of capability to manage the portfolio of aligned firms. The alliance literature shows that some firms consistently have greater success than other firms in terms of managing alliances or creating value from alliances (Anand & Khanna, 2000). Scholars suggest that these successful firms have superior organizational capabilities to manage alliances than other firms. In other words, successful firms possess alliance capability (Anand & Khanna, 2000).

When it comes to how to manage alliances, social network theorists believe that trust is a key in dealing with alliance relationships. Trust between firms refers to the confidence that a partner will not exploit each other's vulnerabilities (Barney & Hansen, 1994). There are two kinds of trust, knowledge-based trust and deterrence-based trust. Knowledge-based trust is resulting from mutual awareness and equity norms. Deterrence-based trust is arising from reputational concerns. In an exchange relationship, both trusts create 'self-enforcing' safeguards and can be the substitution of contractual safeguards (Bardach & Eccles, 1989; Powell, 1990). Gulati (1998) suggested that trust indeed generated from familiarity between organizations through prior alliances. Trust enables firms to organize new alliances with less hierarchical structres. As the result, previous alliance experiences are important for developing trust, and also for developing behavioral alliance capability.

Other scholars have also suggested that firms can develop capability by having greater experience in managing such relationships and by implementing alliance-learning process. Scholars have suggested that firm with more experience in managing alliance-oriented relationships, are more likely to develope the alliance capabilities (Simonin, 1997; Anand & Khanna, 2000; Zollo, Reuer, & Singh, 2002; Hoang & Rothaermel, 2005). Previous experience of alliances may help firms accumulate the experience of finding appropriate alliance partners, signing complete contracts, and may be able to set up an appropriate firm-level mechanism to monitor various alliances which help firms reduce the risks and costs such as searching cost, contracting cost and monitoring cost (Hoffman, 2007).

Another way to develop alliance capability is implementing alliance-learning process. Through carefully capturing, codifying, sharing, and internalizing relevant alliance know-how, firm may accumulate alliance management skills and best practices (Kale & Singh, 2007). From the process of inter-firm learning, firms may systematically generate and modify its operating inter-firm routines. Once inter-firm routines are built, firms may systematicalize its working process and run the similar activities repeatedly (Nelson & Winter, 1982; Amburgey, Kelly, & Barnett, 1993). Inter-firm routines simplify working process and shorten decision procedure, thus can save managers' time and efforts to planning future growth. Thus, we propose the following:

Hypothesis 3. Firms with alliance experiences are more likely to maintain high growth rates in successive time periods.

2.4.2 Contracting capability

While social network theorists have focused on trust, which can be seen as an informal guard of relationships, contract designing has been neglected. From the views of transaction cost theory, as we have discussed previously, firms do the markets-hierarchy trade offs are mainly subjected to the contractual hazards. The way to decrease the contractual hazards is to sign contracts completely. Therefore, the more complete the contract is, the more possible for firms to create value from the contractual relation, and for such relations to success. As the result, it is important to sign a complete contract for aligned firms. However, contracts are nearly impossible to be complete because it is very difficult to foresee all the possible future contingencies under the emergence of contractual hazard (Grossman & Hart, 1990; Williamson, 1996). And a complete contract may be very costly. Firms need to deal with the highly cost of complete contracts and attempt to balance the contractual costs and hazards. According to Argyres and Mayer (2007), it is important for firms to develop contract design capability to solve this problem. Firms with strong contracting capability may better align expectations to avoid misunderstandings, specify milestones to facilitate monitoring, and reduce the possibility of opportunistic renegotiation (Mayer & Salomon, 2006). Firms that lack contracting capability are more likely to seek to integrate a transaction vertically. Conversely, firms with better contracting capabilities are more likely to choose the contractual forms as governance mode and outsource such transactions (Argyres & Mayer, 2007).

According to Argyres and Mayer (2005), the key aspect of building a contract design capability involves learning how to balance the trade-offs between customized vs. template contract – as well as between more and less detailed contracts more generally- for a given transaction. They provide five dimensions of contract design capabilities, which are (1) assignment of roles and responsibilities to the parties; (2) allocation of control and decision rights to the parties; (3) dispute resolution; (4) contingency planning; and (5) communication process. Among these dimensions, lawyers, managers and engineers play different roles. Argyres and Mayer (2005) argue that managers and engineers, not lawyers, will be the primary repositories of a firm's contract design capabilities with regard to the assignment of roles and responsibilities to the parties; allocation of control and decision rights to the parties and communication process. Because these dimension of contract design capabilities are more complex and need more firm-specific knowledge that lawyers may not have. On the contrary, lawyers often play a key role in dispute resolution and contingency planning. Because their training is to resolve the conflict and look ahead and plan for what might go wrong in general terms. Finally, scholars make a proposition that firms that accord managers and engineers a predominant role in designing contract terms related to roles and responsibilities, communication, and project-specific contingency planning while lawyers are more prominently utilized in the dimensions of designing terms related to dispute resolution, assigning of decision and control right, and generic contingencies contract planning are more likely to develop superior contract design capabilities than firms that do not (Argyres & Mayer, 2005). In shorts, the way firms allocate managers, engineers and lawyers on contract design, is a key factor that influences the level of contracting capabilities of a firm.

After understanding the importance of contracting capabilities, we would like to know how these capabilities come from. According to the previous literatures, these contract design capabilities are difficult to measure. However, prior researches have suggested that firms may develop contracting design capabilities through learning. According to Argyres and Mayer (2005), acquiring contract design capabilities is not a trivial exercise, or simply a matter of hiring the appropriate lawyer, either internally or through third parties of outside counsel. It involved in crafting certain kinds of contractual provisions in several key dimensions include technical knowledge that lawyers may not have, and is often firm-specific or even transaction-specific. Therefore, firms can develop these capabilities by learning over time, as they remedied early inadequacies in contract detail when writing later contracts. Child (2001) also argues the importance of learning and the contracting experience. Managers and organizations may be sensitized by contracting experience to potential disputes to contractual relationships about with they did not aware previously. Also, contracting experience enable managers to better foresee contingencies in future contractual relationships. Moreover, such experience not only helps managers and firms to use contracts more effectively to facilitate adaptation to disturbances, or how to craft agreements that better safeguard vulnerable assets, but also enhance the performance of contractual relationships (Mayer & Argyres, 2004).

Firms develop stronger contracting capability though learning from previous contract experiences may help managers and firms to sign a more complete contract over time. Also, it sensitizes managers to potential disturbances in the future. Furthermore, having contracting capability reduces the highly costs of a complete contract and makes firms perform better. Therefore, firms with better contracting capabilities are more likely to outsource such transactions and choose the contractual forms as the governance mode (Argyres & Mayer, 2007). However, such contracting capability comes from the previous contract experiences. Thus, we propose the following:

> *Hypothesis 4. Firms with contractual experiences are more likely to maintain high growth rates in successive time periods.*

3. METHODOLOGY

We drew this study's data from the Taiwan Economic Journal (TEJ) Database, a widely used data source for listed firms in Taiwan. Our focus is on Taiwanese firms in the information-technology industry because it is both highly aligned and highly developed in the island-economy. Our sample consists of 178 Taiwanese firms: 83 firms that had formed strategic alliances in 2004 and 95 firms that do not form any strategic alliance.

We tested the hypotheses by using regression models. To examine our hypotheses, which predict the effects of alliances and alliance capabilities on firm growth, we entered the independent variables one by one in the regression model. The definitions of the variables are as follows:

3.1 Definitions of variables

3.1.1 Dependent variable

To examine the limitations to firm growth, we adopted Tan and Mahoney's (2005, 2007) approaches. For each firm, we analyze its growth (referred to herein as GROWTH) from the 2001-2004 period and from the 2005-2007 period. Our study uses the employee growth rate of the 2005-2007 period as the dependent variable. There are several approaches to calculating a firm's growth, such as the revenue-based, the employee-based, and the asset-based approaches (Tan & Mahoney, 2005). Employee growth can bring with it complex management problems and generate the Penrose effect. Thus, the employee-based approach is more in line with this study's context and underlying questions, and we chose the approach to measure firm growth.

3.1.2 Independent variables

This study uses three independent variables to examine our second, third and fourth hypotheses. Our second hypothesis proposed that firms could both overcome managerial limitations and maintain or improve on growth rates through alliances. To test the second hypothesis, we used the total number of strategic alliances (i.e., NUMALLY) as the measurement. The alliance information was coded from news releases of the firms in TEJ database. Then, we accumulated the total number of firms that had formed strategic alliances in 2004.

The third hypothesis proposed that firms' possession of alliance behavioral capabilities can help the firms overcome limitations to firm growth and can accelerate firms' growth in the next time period. As we have discussed previously, firm's alliance capability comes mainly from the previous alliance experiences (Simonin, 1997; Anand & Khanna, 2000; Zollo, Reuer, & Singh, 2002; Hoang & Rothaermel, 2005). Therefore, to test our third hypothesis, we used the total number of strategic alliances in the previous time period (i.e., PREALLY) as the measurement. The alliance information was coded from news releases of the firms in TEJ database. Then, we accumulated the total number of firms that had formed strategic alliances from 2001 to 2003.

We measure the third independent variable, contracting capability, using the total number of litigations (i.e., NUMLIT). As we have discussed, firms' alliance capabilities derive from the firms' previous contracting experiences and the firms' acquisition of learning processes. The allied firms may face conflicts due to incomplete alliance-related contracts (Williamson, 1985). Litigation is the most direct and explicit type of conflict between firms. In the process of litigation, firms may gain and accumulate experience and abilities related to the management of alliances. The more experiences and capabilities a firm brings to bear when drafting a contract for an alliance, the more likely the alliance will be to succeed, and also, the more likely the allied firms will be to create value in, and extract value from, the alliance. Therefore, we propose that the more litigation a firm had in the previous time period, the more contracting capability a firm will have to manage the alliance in the next time period. We captured litigation-related news dating back to the period between 2001 and 2004 from TEJ database. Then, we accumulated the total number of litigations a given firm had encountered, and we used the number as our independent variable to examine our third hypothesis.

3.1.3 Control variables

Like other growth literatures, we included in this study several control variables that may have influenced the growth of a firm: (1) AGE, which we defined as the number of years between a firm's start up and the year 2004; (2) SCALE, which we defined as the natural logarithm of firms' total assets; (3) SLACK, which we defined as firms' retained earnings; and (4) BONUS, which we defined as the percentage of the firm's total net profit that would constitute employee bonuses.

4. RESULTS & DISCUSSIONS

In this chapter, there are three sections. In the first section, the statistical results will be explained. In the second section, we will discuss the four hypotheses respectively according to the empirical results. Finally, the limitations to this study are in the third section.

4.1 Results

Concerning descriptive statistics, Table 1 presents the correlation coefficient matrix sampling information such as the average value of individual variables and standard deviation. Because the correlation coefficient matrix indicates that correlations between some variables are greater than .50, suggesting a correlation that is higher than usual, we used VIF to test multicollinearity in the analysis process. Although a number of variables are correlated with other variables at the 0.05 level, the largest variance inflation factor (VIF) in the model (2.178) is far below 10, and the mean VIF value (1.426) is close to 1, suggesting that multicollinearity does not threaten the validity of our coefficient estimate.

Table 2 presents the empirical results. The dependent variable is the growth rate of employees in the second time period (2005-2007). The key explanatory variable (PREGROW) is the growth rate of the employee in the preceding time period (2001-2004). The hypothesis 1 predicts that the Penrose effect would present itself. As shown in Model 2, the coefficient of PREGROW is negative and statistically significant. This finding provides empirical support for hypothesis 1 that a fast growing firm might not maintain its high rate of growth and might experience a deceleration of growth in the subsequent time period.

Hypothesis 2 purposed that through alliances, firms could overcome the managerial limitations and maintain or improve on growth rates. As for the study’s findings on the allied firm's ability to overcome the Penrose effect, we did not find any empirical evidence supporting the assertion that firm can overcome the Penrose effect through alliances. The coefficient of NUMALLY in Model 3 is positive but not statistically significant, suggesting that the number of alliance formed by firms cannot predict the growth rate of the allied firms in the subsequent periods. Therefore, hypothesis 2 is not supported. We speculate that the benefits of having more alliance partners cannot offset the costs associated with alliance management.

The above results confirm the importance of capabilities to the allied firms suggested by hypothesis 3 and hypothesis 4. Alliances are not always successful. Prior research demonstrated that firms with capabilities are more likely to succeed and create value from an alliance than are firms lacking these capabilities. Hypothesis 3 and hypothesis 4 asserted the alliance capability and contracting capability separately.

Hypothesis 3 discussed about alliance capability and asserted that the more previous alliance experiences a firm has, the more a firm can overcome the managerial limitations to firm growth through alliance. We used the total number of previous alliances in the previous time period as measurement. The coefficient of PREALLY in Model 3 is positive but not statistically significant, suggesting that the number of alliance formed by firms in the previous time period cannot predict the growth rate of the allied firms in the subsequent periods. Therefore, hypothesis 3 is not supported. We speculate that in dealing with inter-firm relationship, having only trust cannot help firms to overcome the managerial limitations and maintain or improve on growth rate.

Hypothesis 4 discussed about contracting capability and purposed that firms with stronger contracting capability could grow faster. Contracting capability comes from previous contracting experiences. We use the total number of litigations in the previous time period as measurement. As shown in Model 3, the empirical results indicate that the coefficient of NUMLIT is positive and statistically significant at the, providing empirical support for the assertion of firms with contracting capability can help firms to overcome the managerial limitation and grow faster in the subsequent time period. Therefore, the hypothesis 4 is empirically supported.

4.2 Discussions

There are many studies examine how much a firm grows. However, the growth literature rarely discussed how firms grow. To focus on this issue, there are three main purposes of this study. The first one is to examine contractual organizational forms, especially strategic alliance, and its implications for firm growth. Instead of measuring the growth rate, we focus our interests on "how" aspect of firm growth. Also, this study divided capabilities into alliance capability and contracting capability, and then examined the importance of each capabilities and their impact on firm growth. The last purpose in this research is to emphasize on the contracting capability and its implications to firm growth.

According to Penrose (1959), firms either organically or acquisitionally grow. Yet, there is adjustment cost when firms grow though merger and acquisition. Therefore, Penrose suggested firms should grow organically. However, firms face managerial limitations to organic growth. In order to overcome the managerial limitations and grow faster, firms may use contractual organizational forms to grow (Norton, 1998; Shane, 1996; Teece, 1986). This study goes on with growth literature, and responses to the "how" issue instead of "how much" issue. We examine whether contractual organizational form, especially strategic alliance, can help firms overcome the managerial limitations and can facilitate the growth rates or not. However, prior researches haven't examined the relationship between alliance and firm growth. We suggest this type of (contractual) organizational form will provide the resources needed for firm growth while undertaking less adjustment costs of recruiting new employee and/or agency costs of monitoring staffs. Alliances provide firms a way to find resources and to recognize opportunities. Through alliances, firms may gain complementary resources without incurring costs related to further managerial investment. Alliances also help firms recognize opportunities through interflows of novel information. This form of assistance saves managers both time and energy searching for and identifying complementary resources. Thus, the allied firms can leverage their existing managers' capacity to plan a subsequent growth program.

However, our empirical result is positive but not statistically significant, suggesting that the number of alliance formed by firms cannot predict the growth rate of the allied firms in the subsequent periods. We speculate that there may be several reasons lead to this result. First, from the perspective of transaction cost theory, strategic alliance is sometimes risky due to contractual hazards (Williamson, 1975; 1985). Previous research also shows that firms generally fail with half the alliances they had formed because alliances are difficult to manage (Blaeeke & Ernst, 1993; Kogut, 1988; *AllianceAnalyst*, 1996). According to Wittmann (2007), alliances are more likely to fail when: (1) firms choose to form alliances based on modeling competitor’s actions; (2) firms do not systematically prioritize alliances and allocate resources in line with strategic needs. However, there are few discussions about adjustment cost in strategic alliance literatures. Therefore, this study assumes that firms can grow through the use of strategic alliance because there is no adjustment cost. Yet, this study finds out that there is still some costs while firms using contractual organizational forms to grow. We suspect that strategic alliance will lead to the change of process and routine within organization due to interfirm learning and imitation. Therefore, strategic alliance might produce adjustment cost if the allied firms invest in partner-specific resources and/or adopt partners' practices. However, some change will enhance the capacity for innovation and growth, while some will produce more conflicts. Therefore, we purpose that firms should choose the form of strategic alliance carefully and cultivate the capability to deal with the adjustment cost while using strategic alliance as growth strategy.

Secondly, prior researches have demonstrated the difficulty in managing alliances and the failure of alliances. This study further suggests that there is adjustment cost while using strategic alliances as growth method. Therefore, the benefits of having more alliance partners cannot offset the costs associated with alliance management. We then use regression method to examine the effect of squared number of alliance. The result shows that squared number of alliance and growth are negatively (-2.726; p=.010) related. Therefore, we argue that there may be an optimal scale of alliances and that the relationship between the number of alliances and firm growth may form an inverted-U shape. This result indicates that since alliances are difficult to manage, the more alliances a firm concludes, the more costs and complex problems the firm may face. Therefore, it is important for firms and managers to manage the alliances portfolio properly.

Thirdly, prior literatures on strategic alliance have demonstrated that strategic alliance brings resources and growth opportunity into organization. Therefore, this study combines strategic alliance and firm growth, and suggests that strategic alliance can help firms grow. However, the empirical result in this study does not statistically support our theory. In addition to the prior speculations, another important reason is that what strategic alliances bring into organization is not the number of employee, but the managerial capability. If firms have more opportunities to form strategic alliances, their experiences might be internalized as managerial routine and capability. Therefore, firms with alliance experiences tend to leverage alliance capability to access to external resources thus streamline the size of the firm, in particular the size of employee.

Firms need to develop capabilities in managing alliances. We identify two kinds of capability that facilitate firm growth, including alliance capability and contracting capability.

However, the nature of capability differs in its implications on the growth of the firm. Alliance capability is a kind of behavioral capability which is based on trust among partners. On the contrary, contracting capability is firm-specific capability that is based on firms' knowledge about legal contracts. Both alliance capability and contracting capability can be developed by previous alliance experiences. The empirical results in this research shows that the impact of alliance capability on firm growth is negative, while the impact of contracting capability on firm growth is significantly positive. Therefore, we speculate that there may be some substitute relation between those two capabilities. Bardach and Eccles (1989) and Powell (1990) have stated the substitute relationship between trust and contractual guards. Our study confirms this relationship and suggests that development of formal governance has positive impacts on firm growth.

There may be some reasons that trust in alliances cannot facilitate firm growth. First, interfirm trust is a kind of specific, especially partner-specific asset. Trust that is attached on one particular partner is less likely to generate a spillover effect that promotes firm growth. Trust can work under the circumstance that two companies have had aligned with each other before. However, this kind of relationship cannot be transfer from one partner to another partner. Therefore, when firms need to enter new alliance and find new partner, trust accumulated in previous alliances doesn't work. As a result, firms cannot facilitate its growth rates by having this alliance capability based on interfirm trust.

On the other hand, contracting capability is firm-specific but less partner-specific capability. It can be redeployed and be easily transferred from partners to partners. Having contracting capability, firms may apply this general capability into new alliances. Thus, the more contracting capability a firm has, the more it can help firms to grow faster. The empirical result in this study also supports this perspective.

As to the contracting capability, this study uses the total number of litigation as variable to measure contracting capability. And the empirical result shows that firms with more litigation experiences are more likely to maintain high growth rates in successive time period. However, this result doesn't suggest that firms should produce as much conflicts as they can in order to maintain high growth rates. There are more or less conflicts and disputes in the alliance partnerships between firms. One of the functions of contracts is to lessen and to resolve the disputes. However, contract incompleteness only arose after conflicts and disputes. Sometimes conflicts and disputes can be solved internally. While sometimes, arbitrations or litigations are necessary. Only after actually experiencing litigation did the firms learn the contract incompleteness and attempt to make adjustment in the later contracts. In order to solve such disputes, or to prevent similar disputes in the future, firms make adjustment or add clauses in the later contract. Argyres and Mayer (2004) found that the uses of arbitration clauses were increasing over time. This study also suggests that in the process of litigation, firms may find the lacks of contract and learn how to sign a more complete contract in the future. Therefore, firms that experienced more litigation would have accumulated more contracting capability and are more likely to maintain high growth rates in successive time period.

4.3 Limitations

There may be some limitations to this study. First, its sample size might have distorted the statistical results. If this study amplifies the sample size, the effects that the number of alliances can have on firm growth may be empirically significant. Second, the measurements of alliance and alliance capability are the total number of alliances in 2004 and the total number of alliances in the previous time period (2001-2003). All of the data collected in this study are from the news released by the firms in TEJ database. The news only posted the significant events. There may be some alliances between firms were unreleased in the news. Therefore, the total number of alliances may be underestimated. Third, the measurement of contracting capability is the total number of litigations in the previous time period (2001-2003). Since contracts are secrets to firms, it cannot be revealed or easily read publicly. Therefore, this research uses the number of litigation as the measurement to measure contracting capability. Only when there is litigation, the problems of contracts can be revealed. The same limitation with the third, all of the data collected in this study are from the news released of the firms in TEJ database. The news only posted the significant issue. Therefore, the real total number of litigations may also be underestimated.

As to Penrose effect, although our empirical results indicate that firms' possession of alliance capabilities may help the firms improve their growth rate in the next time period, the results do not constitute statistically compelling evidence that using alliances and possessing alliance capabilities can reduce the Penrose effect. We suggest that future research examine, on the basis of this empirical study, whether or not an optimal scale and a curve relationship exist. Also, because (1) this study may have other limitations such as routine inconsistency and resource heterogeneity, (2) the Penrose effect is complicated, and (3) the mechanism for lessening the Penrose effect varies across firms and industries, we suggest that future research might broaden the governance and capability-based view by considering multiple forms of contractual organization that concern the relationships between markets and hierarchies.

5. CONCLUTIONS AND IMPLICATIONS

There are some managerial implications and contributions in this study. First, this study discussed how firms grow instead of how much a firm grows. Differ from the previous literatures, this study take alliance as a mechanism, which can facilitate the growth rates of firms. There are few discussions about the combinations between alliance and firm growth in the previous literatures. Although the empirical result in this study does not statistically support the hypothesis that firms may overcome the limitations to firm growth through alliance. The result still shows the two variables are positive related. As the result, this study has opened up a new issue of the growth areas. Studies of firm growth in the future can further discuss the impact of alliances to the firm growth. On the other hand, this research could provide managers with deeper understanding of alliances and how this mechanism effect on firm growth. Firms that have visions to grow may take alliances as consideration. However, the empirical results have demonstrated that under some circumstances, firms may use alliance to help its growth. This leads to the second and third implications and contributions in this study.

The second implication and contribution in this study is to emphasize the importance of capabilities on alliance and firm growth. Compared to the growth literatures and alliance literatures, there are few researches discussed about capabilities, especially the capabilities to manage alliances. There are fewer researches examine the relationships of capabilities and firm growth. This research opened up another issue of growth literatures. One of the main purpose in this study is to examine the impact of capabilities of manage alliances on firm growth. Since alliances are difficult to manage and failed sometimes, it is important to the managers and firms to know how to manage alliances. In order to manage alliances properly, capabilities are definitely important. Having greater capabilities helps managers to manage the alliance well and thus, firms may grow faster through alliance. The empirical results in this study indicate that capabilities indeed affect the impacts of alliance on firm growth. The more capabilities, which come from prior experiences a firm has, the more it can grow though alliance. However, not ever kinds of capability will have this effect. This is the third implication and contribution in this study.

The third implication and contribution is to differentiate the impacts of capability according to the nature of resource specificity. This research has divided capabilities of managing alliances into alliance capability and contracting capability. However, the empirical result shows that alliance capability from the previous alliance experiences based on the development of trust cannot improve the growth rates. On the other hand, contracting capability is significantly support the hypothesis. This result implies that the substitute relation between informal relationship of trusts and formal relationship of contracts. We argue that interfirm trust is a kind of partner-specific asset or resource that cannot be transferred to other partners without losing its value. On the contrary, contracting capability is a general capability that can be redeployed and applied to different partners. Therefore, we suggest that contracting capabilities is important especially when a firm wants to grow through contractual organization forms.

The fourth implication and contribution in this study is to provide a new point of view to define growth outcomes. In Penrose's era, firms grow either organically, or merger with acquisition. The growth outcomes generally reflect directly on the size of firms. However, the degree of growth in scale somehow implies the more complex managerial problems. The integration problems such as coordination within the organization, also rise. Thus, firms tend to bypass the traditional path of internal growth and to adopt hybrid organizational forms in recent years, such as conglomerate, cross-shareholdings, joint venture, and spin-offs Firms may grow without expand its scale and size through the use of these kinds of organizational forms. The outcomes of external growth may reflect on other aspects such as the degree of internationalization, the number of subsidiary, and foreign investment ratio and so on. As the result, this study suggests that the indicators to measure growth outcome should be changed according to the multiple growth methods. It is also suggested that future researches can discuss about modern growth paths and attempt to find the new indicators to measure growth outcome.

In summary, the current study contributes to the extant research literature in the field of strategic management by examining the relationships between contractual organization forms and firm growth. Importantly, this research study is likely to be generative of further empirical inquiries. Finally, this research offers a mechanism for overcome managerial limitations on the firm growth in which strategic alliances can, in some business circumstances, be a growth strategy.

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Table1. Correlation, Means, and Standard Deviations

Variable	Mean	SD	1	2	3	4	5	6	7	8	**9**
1. AGE	17.528	8.456	1								
2. SCALE	6.700	0.617	0.201 **	1							
3. SLACK	2613905.247	8751162.826	0.058	0.561 ***	1						
4. BONUS	13.192	14.808	-0.114	0.299 ***	0.262 ***	1					
5.PREGROW	0.583	0.982	-0.246 ***	0.148 *	0.105	0.178 **	1				
6. NUMALLY	0.910	2.332	0.075	0.416 ***	0.431 ***	0.129 *	0.082	1			
7. PRENUM	1.629	3.587	0.010	0.556 ***	0.512 ***	0.064	0.051	0.353 ***	1		
8. NUMLIT	0.185	0.650	-0.050	0.435 ***	0.539 ***	0.179 **	0.092	0.186 **	0.303 ***	1	
9. GROWTH	0.244	0.510	-0.169 *	0.018	0.054	0.158 *	-0.098	0.079	0.006	0.022 *	1

*** p<0.05; ** p<0.01; *** p<0.001 (2-tailed)**

Table 2. Regression Results

Item/ Model	Model 1		Model 2		Model 3	
AGE	-0.146	(-1.890)	-0.196*	(-2.469)	-0.179*	(-2.265)
SCALE	-0.013	(-0.141)	0.019	(0.200)	-0.039	(-0.366)
SLACK	0.035	(0.387)	0.034	(0.384)	-0.094	(-0.913)
BONUS	0.139	(1.742)	0.155	(1.957)	0.148	(1.880)
PREGROW			-0.179*	(-2.299)	-0.184*	(-2.424)
NUMALLY					0.120	(1.457)
PREALLY					-0.071	(-0.765)
NUMLIT					0.270**	(3.067)
N	178		178		178	
F	2.185		2.849		3.339	
R-squared	0.048		0.077		0.137	
Adj R-squared	0.026		0.050		0.096	

* p<0.05; ** p<0.01 (2-tailed)
Dependent variable: employee growth rate in 2005-2007 time period