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# Essays of Strategic Alliance Portfolio Configuration— Its Performance Properties, Strategic Antecedents and Consequential Effects on Multinational Firms' Continuing Foreign Expansion

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# ESSAYS ON ALLIANCE PORTFOLIO CONFIGURATION—ITS PERFORMANCE PROPERTIES, STRATEGIC ANTECEDENTS AND CONSEQUENTIAL EFFECTS ON MULTINATIONAL FIRMS' CONTINUING FOREIGN EXPANSION

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by

Wei He

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To: Dean Joyce Elam
College of Business Administration

This dissertation, written by Wei He, and entitled Essays of Strategic Alliance Portfolio Configuration— Its Performance Properties, Strategic Antecedents and Consequential Effects on Multinational Firms' Continuing Foreign Expansion, having been approved in respect to style and intellectual content, is referred to you for judgment.

We have read this dissertation and recommend that it be approved.

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William Schneper

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The dissertation of Wei He is approved.

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ABSTRACT OF THE DISSERTATION

ESSAYS ON ALLIANCE PORTFOLIO CONFIGURATION—ITS PERFORMANCE PROPERTIES, STRATEGIC ANTECEDENTS AND CONSEQUENTIAL EFFECTS ON MULTINATIONAL FIRMS' CONTINUING FOREIGN EXPANSION

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This dissertation focused on an increasingly prevalent phenomenon in today's global business environment—strategic alliance portfolio. Building on resource-based view, resource dependency theory and real options theory, this dissertation adopted a multi-dimensional perspective to examine the performance implications, strategic antecedents of alliance portfolio configuration, and its strategic effects on firms' decision-making on their continuing foreign expansion.

The dissertation consisted of three interrelated essays, each of which dealt with a specific research question. In the first essay I applied a two-dimensional construct that embraces both alliance relations' and alliance partners' attributes to illustrate alliance portfolio configuration. Based on this framework, a longitudinal study was conducted attempting to explore the performance properties of alliance portfolio configuration. The results revealed that alliance diversity and partner diversity have different relative contributions to firms' economic performance. The relationship between alliance

portfolio configuration and firm performance was shaped by degree of multinationality in a curvilinear pattern. The second essay attempted to identify the firm level driving forces of alliance portfolio configuration and how these forces interacting with firms' internationalization influence firms' strategic choices on alliance portfolio configuration. The empirical results indicated that past alliance experience, slack resource and firms' brand images are three critical determinants shaping alliance portfolios, but those shaping relationships are conditioned by firms' multinationality. The third essay primarily employed real options theory to build a conceptual framework, revealing how country-, alliance portfolio-, firm-, and industry level factors and their interactions influence firms' strategic decision-making on post-entry continuing expansion in foreign markets. The two empirical studies were resided in global hospitality and travel industries and use panel data to test the relevant theoretical models.

Overall, the dissertation advanced and enriched the theoretical domain of alliance portfolio. It particularly shed valuable insights on three fundamental questions in the domain of alliance portfolio research, namely "if and how alliance portfolios contribute to firms' economic performance"; "what determine the appearance of alliance portfolios; and "how alliance portfolios affect firms' strategic decision-making". This dissertation also extended the international business and strategic management research on service multinationals' foreign expansion and performance.

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Over the past three and half decades the incidence of international strategic alliance formation has accelerated in the context of economic globalization (Glaister & Buckley, 1999). Multinational firms have been increasingly able to see the opportunities offered by different types of international alliance to draw upon knowledge and capabilities that are not available within their home nations (Sirmon & Lane, 2004). Through formation and enforcement of international alliances, firms are able to achieve improved chances of new market entry (Glaister & Buckley, 1996), capability supplement (Lane, Salk, & Lyles, 2001) as well as knowledge and technology integration (Baughn, Stevens, Denekamp, & Osborn, 1997; Inkpen, 2008).

Strategic alliances can be viewed as voluntary cooperative agreements between firms for achieving competitive advantage for the allying partners (Das & Teng, 2000). Alliances allow the establishment of joint competitive advantages through connecting resources and activities of cooperating firms and thus link their development (Hoffmann, 2007). Strategic alliances in business practice may come in a variety of forms including joint ventures, minority equity alliances, buyer-supplier partnerships, joint production or service arrangements such as the code-sharing programs in the airline industry (Teng & Das, 2008). While forming alliance is hardly a novel competitive strategy and has been widely recognized as an important source of competitive advantage (Hoffmann, 2007), a relatively new phenomenon identified by contemporary literature is that multinational firms have been increasingly engaging in multiple alliance relationships at the same time to fit the changing environment, especially in today's global competitive market. In the context of global competition, instead of managing ad hoc alliances that merely serve

specific needs, multinational firms attempt to build up and maintain alliance networks that surround them and consist of increased number and extended scope of alliance ties with partners operating in different industries, counties and markets, thereby giving rise to the concept of alliance portfolio.

As a primary building-block of inter-firm relationship research, international alliance and strategic alliance have been extensively studied in the fields of international business, strategic management, organization theory and economics (Singh & Mitchell, 2005). While a large body of research has dealt with the three successively logic facets of alliance phenomenon, namely antecedents of alliance formation or partner selection (Glaister & Buckley, 1996; Doz, Olk, & Ring, 2000; Beckman, Haunschild, & Phillips, 2004; Lavie & Rosenkopf, 2006), management and governance of alliance (Hagedoorn & Narula, 1996; White, 2005; Dahlstrom, Haugland, Nygaard, & Rokkan, 2009) and strategic outcomes of alliance especially the performance implications (Park & Ungson, 2001; Heimeriks & Duysters, 2007; Lunnan & Haugland, 2008; Lin, Yang, & Arya, 2009), the majority of these studies have been analyzing the dyadic relationships or network structures of alliances rather than applying a firm-centric perspective (Lavie, 2006), and thus fail to reveal the drivers and outcomes of firms' alliance-related activities that involved both increased alliance numbers and alliance scope.

Whereas the traditional alliance literature focuses on the formation and management of dyadic alliances, and the network literature highlights relational and structural aspects of alliance networks, the studies of alliance portfolios adopt an ego-network perspective aiming to enhance the overall value generation of the firms' alliance portfolios. In contrast to the traditional dyadic approach that applies individual alliances

as the unit of analysis and holds the assumption of independent value creation between different alliances (Gulati, 1998; Koka & Prescott, 2002), the portfolio approach aggregates the unit of analysis at the firm level and investigates how design and management of resources and strategies across the entire portfolio of alliances can contribute to firm outcomes (Sarkar, Aulakh, & Madhok, 2009).

Most recent alliance portfolio literature has demonstrated three main research streams—the emergence and formation, configuration, and the management of alliance portfolios (Wassmer, 2010). Literature investigating the emergence of alliance portfolios focuses on firms' motivation to form alliance portfolios, which can be related to rationales going beyond motivations of why firms engage in single strategic alliance. Research has shown that firms maintain alliance portfolios to reduce the influence of potential risk and uncertainty (Hoffmann, 2007), to accelerate learning (Anand & Khanna, 2000) or to enhance resource stock (Lavie, 2006; Gulati, 2007). Research concerned with management of alliance portfolio mainly centers on two topics—creation of alliance capability at portfolio level (Sarkar, Aulakh, & Madhok, 2009) and tools and approaches that can support managers to take critical alliance portfolio decisions on exploiting synergies and reducing conflicts (Parise & Casher, 2003). In contrast to the above two research streams, which are still in lack of generalized theories based on large scale empirical studies (Wassmer, 2010), the configuration of alliance portfolio and its consequent strategic outcomes have drawn the extensive attention of scholars from different research fields. Recent empirical research has examined alliance portfolio configuration from different perspectives and a central issue is how the strategic outcomes can be predicted and improved by specific alliance portfolio configuration. The

strategic outcomes can be both performance-related (Bae & Gargiulo, 2004; Koka & Prescott, 2008; Lavie & Miller, 2008) or non-performance related such as R&D response (Soh, Mahmood, & Mitchell, 2004), innovation (Luo & Deng, 2009; Soh, 2010) and alliance portfolio capital (Sarkar, Aulakh, & Madhok, 2009).

Prior research on alliance portfolios has led to tremendous insights on the motivation of forming alliance portfolios, design and configuration of portfolios as well as maintaining and management of alliance portfolios. Nevertheless, a review of these studies indicates that several areas remain unclear or limited either in terms of theoretical framework development or in terms of research methodology design.

First, an ongoing issue that can be found in prior studies of alliance portfolio configuration appears to be the incomplete operationalization of key attribute construct of alliance portfolio and limited construction of portfolio mix (Wassmer, 2010). Researchers in most cases develop the key portfolio attribute measures and construct the overall portfolio mix based on a one-dimensional approach, which concerns either alliances or partners separately but not both at the same time such as the work by Ahuja (2000a), and Goerzen and Beamish (2005). The limited operationalization and defining of alliance portfolio attributes and the overall portfolio configuration can impose potential restriction on relevant research domain and result in deficient research design and outcomes.

Second, extant literature has not offered a clear rationale that explains the performance consequence of alliance portfolios. Although a variety of theoretical lens have been applied in this line of research, there was no consistent empirical results that indicate and provide support for the existence of an optimal alliance portfolio configuration, which is able to help firms maximize their economic performance through

effectively managing external collaborations. This is partially because of the incomplete defining and measurement of alliance portfolio configuration. In addition, the majority of existing studies examining the performance implications of alliance portfolios have either focused on the structural characteristics of alliance portfolios (Rowley, Behrens, & Krackhardt, 2000; Stuart, 2000; Bae & Gargiulo, 2004), or specific content attributes (Beckman & Haunschild, 2002; Koka & Prescott, 2002; Sampson, 2007) of alliance portfolios, while few studies have applied a comprehensive view that integrates different alliance portfolio attributes in one framework to uncover how the composition patterns of those attributes impact firms' economic performance. Furthermore, although several works (Goerzen, 2005; Lavie & Miller, 2008; Jiang, Tao, & Santoro, 2010) have treated firms' internationalization as one key attribute of alliance portfolio configuration to investigate alliance portfolio—economic performance relationship, no study has tested multinationality as a boundary condition that shapes this relationship, leaving an potential area for further theoretical contributions, especially in today's global-based business environment.

Third, while literature has emphasized that the formation of alliance portfolio is mainly driven by firm's requirement of enhancing strategic competitiveness (Wassmer, 2010), few studies have been able to conduct empirical research designs to explore both the driving forces that cause firms to form alliance portfolios and mechanisms that firms may employ to develop their alliance portfolios. In particular, little attention has been paid to investigating the antecedents that determine the specific mix and configurations of firms' alliance portfolios, especially in the context of global competition and accelerating process of multinational firms' internationalization, which leads to an unclearly defined

conceptual domain of alliance portfolio formation. This limitation also undermines the explanatory power of the rationales suggested by the concerned theoretical models for why firms develop alliance portfolios that go beyond the motivations of why firms engage in individual alliances, which has been extensively investigated by prior literature.

Fourth, whereas existing strategic management and international business literature have extensively examined alliance related issues, few studies have applied an integrative approach to look at the roles of alliance portfolios in the internationalization process of multinational corporations (MNCs). In particular, compared with intensive investigations of firms' initial choice of entry modes into new product markets conducted by strategic management researchers and studies of MNCs' entry mode into foreign markets, there has thus been little conceptual work in the literature explaining how MNCs' alliance portfolios influence their post-entry expansion decisions in today's global economy, leaving a theoretical gap to be filled. In contrast to an individual alliance, an alliance portfolio holds more diverse and complex attributes and compositions, and thus is more likely than a single alliance to be influenced by endogenous factors within the portfolios and exogenous factors existing in the portfolio contexts. Given the dynamic nature of alliance portfolio configuration (Ahuja, 2000a; Chung, Singh, & Lee, 2000; Makino, Chan, Isobe, & Beamish, 2007), the lack of large-scale empirical studies in this field limits scholars' understandings of how alliance portfolio configuration interacting with firm- and environmental factors have impacts on firms' critical decision-making in the process of international expansion .

Finally, empirical research in prior alliance portfolio studies are mainly set in manufacturing industries (Ravindranath, Koka, & Prescott, 1998; Rowley, Behrens, &

Krackhardt, 2000; Reuer & Ragozzino, 2006; Mcdermott & Corredoira, 2010), especially the technology intensive sector (Lavie & Miller, 2008; Luo & Deng, 2009; Ozcan & Eisenhardt, 2009). Comparatively little attention has been given to the research setting of the consumer service sector, which holds unique characteristics compared to manufacturing and high-Tech industries (Merchant & Gaur, 2008; Rugman & Verbeke, 2008). Since prior alliance portfolio related theoretical models have hardly taken into account the uniqueness of service industries, the generalizability of existing frameworks deserves further assessment.

This dissertation is initiated to address the above limitations existing in the current alliance portfolio literature. It aims at advancing the existing understandings of strategic alliance portfolio by integrating the theoretical lenses of strategic management and international business to provide a comprehensive view of alliance portfolio in the context of MNCs' global competition and internationalization. Specifically, this dissertation targets on three fundamental questions: what are the specific performance properties of alliance portfolio configuration strategies? What constitutes the key antecedents of firms' alliance portfolio configuration? How alliance portfolio configuration can have an impact on critical strategic decision-making in the context of internationalization? These questions are answered by three separated essays, which as a whole construct the entire dissertation.

Essay One of this dissertation aims at examining the performance implications of alliance portfolio configuration. While a series of academic studies (Powell, Koput, & Smith-Doerr, 1996; Bae & Gargiulo, 2004; Goerzen & Beamish, 2005; Sampson, 2007; Jiang, Tao, & Santoro, 2010) have noted that the mix or composition of alliance portfolio

have an important impact on firms' economic or technological performance, the majority of the studies mainly focused on one or several particular characteristics of partners as an explanation of alliance portfolio contribution to firm performance. Although very few studies such as Powell, Koput, & Smith-Doerr (1996) have looked at the composition of alliance ties, they exclusively examine the function mix and neglect the other attributes of alliance relations in an alliance portfolio.

As a whole, prior research on alliance portfolio configuration have tended to study one or the other of the two critical dimemsions of alliance portfolio configuration, while alliance relations and alliance partners have not been integrated at either conceputal or empircial level, resutling in incomplete definition and mixed findings (Wassmer, 2010). Furthermore, the exising lines of research in this field hardly tested the boundary conditions that shape the relationship between alliance portfolio configuraiton and firm performance, especially in today's global strategic environment.

To tackle the above issues, in Essay One I adopt the rationale contributed by Bruyaka (2009) and Wassmer (2010), who proposed that alliance relation and alliance partner are two distinct dimensions of an alliance portfolio. Based on Bruyaka's (2009) work I adopt a two-dimensional framework to examine how the diversity of these two alliance portfolio dimensions embracing multiple attributes have an impact on firms' financial performance, and how this relationship is shaped by firms' degree of multinationality. In particular, based on the two-dimensional typology, this essay suggests four potential alliance portfolio strategies and examines their performance properties.

The second essay aims at investigating the key determinants of alliance portfolio configuration when firms pursue in internationalization. While prior literature on strategic alliance portfolios has applied a variety of theoretical lenses such as learning perspective (Anand & Khanna, 2000), social embeddedness perspective (Gulati, 1995a; Goerzen, 2007), effects of environmental shaping (Lorenzoni & Lipparini, 1999) and entrepreneurial orientation (Ozcan & Eisenhardt, 2009) to examine the drivers of alliance portfolio formation, a salient research gap still exists in that these studies did not uncover how those concerned drivers can shape the eventual appearance of the alliance portfolios. Since it is the configuration rather than formation of alliance portfolio that can influence firms' strategic outcomes, it is paramount to fill the research gap and identify what the key determinants of alliance portfolio configuration are, and how they function as a whole in shaping a portfolio's configuration. This study takes the pioneer role to address the above issues. It employs the resource-based view and resource dependency theory as the main theoretical instruments to explore the firm level antecedents of alliance portfolio configuration. The theoretical model focuses on how a single firm's existing resource mix is associated with the pattern of the firm's alliance portfolio configuration. Research on strategic management of alliance portfolio has suggested the pivotal linkages between individual alliances' strategic objectives and the overall objectives of alliance portfolios (Hoffmann, 2007), suggesting that a focal firm's different levels of strategic actions and decision-making condition the patterns of its alliance portfolio configuration. Accordingly, this study particularly examines how a firm's internationalization strategy moderates the potential relationship between an individual firm's resource mix and its alliance portfolio configuration.

Essay Three is to investigate the strategic role played by a MNC's alliance portfolio in the process of firm internationalization. Prior entry mode related research has viewed strategic alliance as an important instrument for a firm to conduct foreign expansion (Glaister & Buckley, 1996; Camisón & Villar, 2009). An ongoing research gap lies in the fact that extant literature exclusively focuses on the effects of strategic alliance on firms' choice of initial entry into a foreign market, while how firms' critical strategic decision-making is initiated and influenced after the initial entry into foreign markets remains to be an area lacking of both theoretical explanation and empirical examinations.

Organizational ecology and institutional theory have indicated that strategic alliance activities are usually embedded in multilevel social context with different norms and routines (Luo & Deng, 2009), such that multiple levels of analysis are indispensable in providing a full understanding of the factors and their interactions that can result in certain strategic outcomes for strategic alliance partners (Parkhe, 1991). Apart from a few exceptions (Luo & Deng, 2009; Yang, Lin, & Lin, 2010), cross-level analysis has rarely been applied in the field of alliance portfolio research. Considering the increased scale and scope in terms of inter-firm diversity (Molnar & Rogers, 1979) in alliance portfolios comparing with individual dyad alliances, it is paramount that different profile factors as well as their potential interactions are examined through a well-defined framework that is built on different levels of analysis.

In response to the above issue, this study follows a real options perspective and applies the resource-based view to look at how multinational firms employ alliance portfolios as special mechanism to adjust the their investment choices when they are in pursuance of continuing foreign expansion. The study develops a framework that is based

on a real options perspective to incorporate country-, portfolio-, industry- and firm level factors that influence the focal MNC's strategic choice of post-entry expansion in a particular country. Attention is also paid to examining the boundary conditions of the concerned relationships, which are investigated by examining the interactions between factors at different levels, especially the interaction between alliance portfolio factors and factors from other levels of analysis.

The remainder of this dissertation is structured as follows. The two empirical studies that examine the performance implications and strategic antecedents of alliance portfolio configuration are discussed in Essay One and Essay Two respectively. Essay Three illustrates the conceptual framework that proposes the strategic consequence of alliance portfolio configuration on firms' decision-making in continuing international expansion. The three essays are sequentially presented in Chapter Two through Chapter Four in this dissertation. The research implications of the entire dissertation are discussed in Chapter Five.

# Chapter 2. Essay One: Strategic Alliance Portfolio Configuration and Firms' Financial Performance—A Two-Dimensional Analysis in the International Hospitality and Travel Industry

## 2.1 INTRODUCTION

One of the most important trends in international business organizations in the past three decades has been the growth of collaboration between independent companies (Grant & Baden-Fuller, 2004). In particular, firms have come to appreciate the benefits that arise from the use of strategic alliances, which are employed as a means for firms to enter new markets, spread cost of new product development, gain additional marketing shares, or improve service solutions to the customer (Heimeriks & Duysters, 2007). In today's global competitive environment, multinational firms have been increasingly relying on large amount of external collaborations with different strategic partners to direct attention to novel practices and facilitate the transmission of knowledge and information (Goerzen & Beamish, 2005). These external collaborating relationships and the collaborating partners as a whole constitute a particular firm's alliance portfolio. An alliance portfolio can be defined as "a firm's collection of direct alliances with partners" (Lavie, 2007, p. 1188). Alliance portfolios can be analogized to ego-centered networks encompassing the "focal company, a set of allying partners and their connecting ties" (Lavie, 2007, p. 1188), which correspond to the three key components in an ego-centered network from a social network perspective. According to social network theory, an ego-centered network or personal network is composed of three fundamental components—the focal actor (ego), alters having ties to ego, and "measurements on the ties among alters" (Wasserman & Faust, 1994, p. 42).

Wassmer (2010) notes three main research streams in alliance portfolio research—the emergence of alliance portfolios, the configuration of alliance portfolios and the management of alliance portfolios. Given the critical role of strategic alliance portfolio in shaping firms' competitive advantages (Dyer & Singh, 1998; Gulati, 1999) and driving the performance outcomes (Gulati, Nohria, & Zaheer, 2000), the configuration of alliance portfolio and its consequent strategic outcomes have drawn extensive attention of scholars from different research fields. Recent empirical research has examined alliance portfolio configuration from different perspectives but has centered on one question—how does this portfolio configuration influence the strategic outcomes? However, review of existing literature on alliance portfolio configuration and alliance portfolio diversity reveals a lack of comprehensive understanding and robust conceptualization of alliance portfolio and its configuration, which leads to mixed empirical results. The underlying implications of this issue can be explained in twofold. First, the incomplete defining and operationalization of alliance portfolio configuration is not able to reflect the essential portfolio scale, which is built upon both alliances and related partners. Second, the size of alliance portfolio as a singular construct of alliance portfolio configuration is not sufficient to reflect different attributes embedded in one alliance portfolio (Wassmer, 2010).

While the majority of strategic alliance studies attempt to answer this question by examining one characteristic, property or attribute of alliance diversity or partner diversity, this study extends the existing literature on alliance portfolio research through the introduction and application of a two-dimensional model to investigate the effects of alliance diversity, partner diversity and the general alliance portfolio diversity on firm

performance and the boundary condition in the context of firms' internationalization that shape the alliance portfolio diversity—performance relationships. It advances the research on strategic consequences of alliance portfolio by shedding insights on exploring the optimum configuration of alliance portfolio composition.

## 2.2 LITERATURE REVIEW

### 2.2.1 Defining Strategic Alliance Portfolio

The proliferation and increasingly diversified business relationships have driven companies to place themselves in a tangled web of interdependent alliances (Parise & Casher, 2003). Today's industrial practitioners and strategy researchers have put more emphasis on firms' multiple and simultaneous collaborating relationships. As alliance portfolio phenomenon has been investigated by researchers from a variety of organizational fields, the conceptualization of alliance portfolio has not reached a general agreement (Wassmer, 2010). To avoid confusion it is paramount to distinguish alliance portfolio from other terminologies that describe different alliance-related phenomena such as alliance network (Baum, Calabrese, & Silverman, 2000; Goerzen, 2007; Koka & Prescott, 2008), alliance constellations (Das & Teng, 2002; Lazzarini, 2007), and web of alliance (Lorenzoni & Baden-Fuller, 1995).

Social network researchers (Baum, Calabrese, & Silverman, 2000; Rowley, Behrens, & Krackhardt, 2000) usually use the term alliance network to describe a firm's direct allying relational ties with different partners, which is the most similar definition comparing to the definition of alliance portfolio in this research. In some special cases, scholars (Koza & Lewin, 1999; Goerzen, 2005) use alliance network to define alliances

that consist of multiple parties. These multi-party alliances are also referred by some scholars as alliance constellations (Gomes-Casseres, 1994; Das & Teng, 2002; Lazzarini, 2007), or alliance blocks (Vanhaverbeke, Duysters, & Noorderhaven, 2002). These alliance constellations or alliance blocks have more complicated structures than traditional dyad alliance ties due to the involvement of multiple parties, while they are not equal to alliance portfolios as they still consist of one alliance format or relationship per se. Lorenzoni and Baden-Fuller (1995) defined an alliance network with strategic guidance by a center firm as a web of alliances, which is used to describe a network consisting of different allying partners without identifying and highlighting the fundamental role of the "egocentric", thus does not have the same meaning of alliance portfolio defined in this study.

The existing ambiguity and inconsistency in the relevant conceptual domain requires specific clarification of alliance portfolios at the empirical level, especially for studies set in the context of globalized competitive environment. Two important issues in alliance portfolio research are level of analysis and temporality of alliances concerned in an alliance portfolio (Wassmer, 2010). Regarding the first issue, few of prior studies have clearly specify whether the alliance portfolio is situated at the business level, which means that the alliance portfolio only consists of alliances from a single business line, or the alliance portfolio includes alliances across diverse business lines. The second issue is concerned with the historical effects on alliance portfolio development and evolution. The primary argument is whether an alliance portfolio only includes active alliances or inactive past alliances, which may have significant contribution to the development of

alliance capability involved in a focal firm's alliance portfolio from a learning perspective (Simonin, 1997; Anand & Khanna, 2000; Hoang & Rothaermel, 2005).

Corresponding to the above issues that closely relates to the defining of alliance portfolio, in this study[1] an alliance portfolio is defined at corporate level given the highly diversified nature of alliance portfolios. Furthermore, it could result in serious information loss if only one single business line is concerned in setting the boundary of an alliance portfolio. To avoid biased results, only active alliances are included when defining alliance portfolios in this study, because the nature of alliance portfolios determines that an active alliance does not matter anymore since the focus of alliance portfolio research needs to always rely on the management of multiple current alliances simultaneously. Finally, although Wasserman and Faust (1994, p. 53) suggested that an ego-centered network consists of the ties between different alters, this study applies the same approch indicated by priro allaince portfolio research (Goerzen, 2005; Lavie, 2007; Jiang, Tao, & Santoro, 2010) and only include direct alliance realtionships and immediate partners in the defining and measurement of alliance portfolios.

### 2.2.2 Strategic Alliance Portfolio and Firm Performance

#### 2.2.2.1 Performance outcomes and alliance portfolio attributes

Gulati (1998) addressed five key questions of strategic alliance: 1) which firms enter alliances and whom do they choose as partners? 2) What types of contracts do firms use to formalize the alliance? 3) How do the alliance and the partners' participation evolve over time? 4) What factors influence the success of alliances? 5) What is the

[1] The study in essay two will also take these perspectives explained in this section to define and measure alliance portfolios.

effect of alliances on the performance of firms entering them? In summary, traditional alliance research centers on the formation, governance, dynamic evolution and performance of single alliances (Gulati, 1998). The same questions can be extended to the level of alliance portfolio, which has become a central direction of current and future research (Gulati, 2007). Among these questions, the performance implications of strategic alliance portfolio appear to be the most practically attractive one for both strategy scholars and business executives, especially in today's global competitive environment.

In this line of research, scholars attempt to discover whether and how alliance portfolios variation contributes to explaining the differentials of firms' performance. The existing literature primarily focuses on effects of alliance portfolios on three types of performance outcomes—financial performance (Goerzen & Beamish, 2005; Lavie & Miller, 2008), entrepreneurial (Baum, Calabrese, & Silverman, 2000; Gulati & Higgins, 2003) outcomes, and technological performance (Luo & Deng, 2009). Overall, the empirical studies in this area generally agree that through configuring their alliance portfolios firms are able to gain better access than their counterparts to additional resources, knowledge and capabilities that embedded within the alliance networks surrounding them, so as to achieve better financial or innovational performance.

A review of existing literature suggests that the impacts of alliance portfolios on firms' performance represent various patterns. The complicated nature of alliance portfolio—firm performance relationships can be ascribed to the fact that an alliance portfolio often represents a mixed bag of individual alliances that as a whole fail to cohere into a consistent portfolio (Doz & Hamel, 1998; George, Zahra, Wheatley, &

Khan, 2001), since each member alliance in the portfolio has different characteristics and consists of different attributes. The composition of those characteristics and attributes eventually determine the effects of alliance portfolios on firms' strategic competitive advantages and performance (Soh, 2010).

A large body of prior studies have noted that specific attributes of an alliance portfolio usually have important impacts on firms' performance outcomes and pivotal decision-making. For example, Stuart (2000) showed that connection to high-quality alliance partners can enhance the focal firm's reputation, especially for young companies. Lazzarini (2007) noted that focal airline firms enjoy greater marketing capacity provided by the alliance portfolio to which they belong outperform their counterparts which do not have the marketing capacity from the relevant alliance portfolios. Lavie and Miller (2008) identified the important role of alliance multinationality in influencing firm performance and found that cross-national alliances can bring both benefits and liabilities to a firm as the national differences between the focal firm and its foreign partners do not only create opportunities for accessing unique network resources, but also impose barriers to efficient resource exchange. Some of the previous research has also identified the attributes of high-performing portfolios (Baum, Calabrese, & Silverman, 2000; Uzzi, 1997).

#### 2.2.2.2 Theoretical perspectives applied

Regarding the main theoretical lens strategic management scholars have applied to investigate alliance portfolio—firm performance relationship, resource-based view and network theory are the two primary theoretical lenses on which the prior studies drew for investigating the alliance portfolio—firm performance relationship. Powell, Koput and

Smith-Doerr (1996) offered some valuable insights on how learning within alliance networks and inter-firm connectivity help biotechnology firms achieve business growth. They revealed that a more diverse alliance portfolio leads to a more superior position for firms to access pivotal resources and information beyond firm boundaries. Rowley (2000) found that a firm's strong tie number is negatively associated with the economic performance, while this relationship appears to be positive between weak ties and performance. From a network perspective, Capaldo (2007) argued that an alliance portfolio of strong dyadic ties can both positively and negatively affect a firm's innovative capabilities. Zaheer and Bell (2005) posited that superior network structures enable firms to better exploit their internal capabilities and improve their performance, thus firms need to develop network-enabled capabilities, which can bridge structural holes.

Other scholars focus more on the content aspect of alliance portfolio, and tend to examine how the composition, diversity and features of alliance portfolio impact firm performance. Baum, Calabrese and Silverman (2000) stressed the importance of the diversity among a focal firm's alliance partners and show that a small set of alliances with diverse partners may yield more diverse resources, information, and capabilities for less cost than a large set of alliances with similar partners. George et al (2001) found that alliance portfolio characteristics such as structure and knowledge flows have impacts on a firm's performance, innovativeness, and absorptive capability. They further concluded that alliance portfolios that are able to offer firms stability and access to new knowledge lead to superior economic performance. Hoffmann's (2007) work developed a typology to describe alliance portfolio strategies from a dynamic perspective, and investigated how

the selected strategy affects the way an alliance portfolio is configured. The research identified the contingency factors influencing the choice of portfolio strategy and showed the effects of portfolio strategy on resource endowment and performance of focal business units. He offered a typology including three alliance strategies—shaping, adapting and stabilizing, complementary with exploitation and exploration. Longitudinal case studies were used to illustrate patterns in the evolution of alliance portfolios.

#### 2.2.2.3 Theoretical background of alliance portfolio diversity—firm performance relationship

In recent years, alliance portfolio diversity has become an increasingly growing research topic in the field of alliance portfolio—firm performance research. Integrating key attributes and dimensions that specify an alliance portfolio, the concept alliance portfolio diversity has been studied from several theoretical paradigms by strategy and entrepreneurship scholars. Specifically, transaction cost economics (TCE), resource based view, social network theory, and organizational learning are the most popular theories that have been usually integrated and applied in a significant number of studies to examine the underlying rationale that shape the alliance portfolio diversity—firm performance relationship. According to transaction cost theory (Williamson, 1985), an alliance is a more efficient organizational form than markets or organizational hierarchies. While a firm's diverse alliance network help it reduce uncertainty and exploit power between organizations (Burgers, Hill, & Kim, 1993), the increasing diversity of firms' activity may result in loss of corporate focus and subsequent higher costs (Williamson, 1985). Hence an appropriate configuration of alliance portfolio diversity is required. The

resource-based view (RBV) regards firms as bundles of heterogeneous resources and contends that firms possessing valuable, rare, inimitable and non-substitutable resources are able to gain competitive advantages and achieve superior performance (Barney, 1991). According to the resource-based view, strategic alliances provide an effective external exchange mechanism for the acquisition of strategically critical resources (Eisenhardt & Schoonhoven, 1996), which are not tradable and cannot be acquired in strategic factor markets (Dierickx & Cool, 1989).

The most significant progress in this line of research has extended the traditional RBV, which focuses on the key resources residing within firms' boundaries (Rumelt, 1984; Wernerfelt, 1984; Barney, 1991), to interconnected firms that participate in inter-firm relationships (Lavie, 2006; Lavie, 2007), based on the relational view introduced by Dyer and Singh (1998). Extending the traditional RBV and integrating it with social network theory and organizational learning, the relational view suggests that the structure of alliance portfolios has profound implications for economic rent generation (Gulati, 1998), which also relies on how the characteristics of the alliance portfolios affect the firm's ability to learn from its partners (Barkema, Bell, & Pennings, 1996), and how this learning process is affected by the partners' knowledge capabilities (Koza & Lewin, 1998; Simonin, 1999). Considering the comprehensive and consolidated nature of relational view, I applied it as the basic theoretical building-block for theory and hypotheses development in this study.

**Table 2-1: Summary of Selected Main Study on the Effects of Alliance Portfolio Diversity on Firm Performance**

| Study | Alliance portfolio Dimension/Attributes | Measurement/ Operationalization | Theoretical Lenses | Main Arguments and Findings |
|---|---|---|---|---|
| Baum, Calabrese & Silverman (2000) | Initial alliance portfolio size, efficiency, existence, scope advantage, and innovative capabilities of rival alliance | Hirschman-Herfindahl index | Network theory, entrepreneurship | Startup firms could enhance the initial performance by establishing alliances, configuring an efficient alliance network providing resource access, and allying with rivals for learning and rivalry reduction. |
| Beckman & Haunschild (2002) | Partner attributes—partners' premium distribution, industrial affiliation, partner size | Ratio of indirect to direct ties, entropy-based index | Network theory, | Firms allying with partners having heterogeneous prior premium experience enjoy higher acquisition performance. Firms having multiplex relationships with partners receive more benefit. |
| Goerzen & Beamish (2005) | Multiple attributes—geographic location, product, partner nation, region and industry | Questionnaire survey | TCE, social network theory | MNCs with more diverse alliance networks receive lower economic performance than those with less diverse alliance networks. |
| Lee (2007) | Partners' operational context | Blau Index | Network theory, RBV | Firms having access to high-quality, large-quantity and heterogeneous information enter new market more quickly. Network configuration lock-in and network costs counterbalance the benefits derived from network resources. |
| Lavie & Miller (2008) | Partner foreignness | Combined index embracing cultural distance, geographical distance, institutional distance and economic distance | Psychic distance, organizational learning | There is a sigmoid relationship between alliance portfolio internationalization and firm performance. Foreign partner experience and wholly owned subsidiaries in partner home nation help overcome liabilities due to portfolio internationalization. |
| Jiang, Tao & Santoro (2009) | Partner—industry, organization, nation Alliance—function, governance | Blau Index | RBV, dynamic capabilities-based view | Alliance portfolios with greater organizational and functional diversity and lower governance diversity enjoy greater performance. |

Table 2-1 summarizes the main studies since the new millennium that have been conducted to investigate the multiple facets of alliance portfolio diversity and their effects on firms' performance. In sum, a review of the existing literature on alliance portfolios' performance implications indicates that this relationship is still under-researched. While intensive attentions have been paid to the performance implications of strategic alliances, the majority of extant studies have been set up at dyad or alliance-tie level, and hence provides very limited insights on this issue. Although empirical research on this important issue has started to emerge, the existing research addressing this question has primarily relied on structural alliance portfolio features as well as their consequential performance influence to the parent firms (Baum, Calabrese, & Silverman, 2000; George, Zahra, Wheatley, & Khan, 2001; Bae & Gargiulo, 2004).

Other research focuses have been drawn on individual portfolio attributes' performance properties, or confound an attribute's diversity with the overall alliance portfolio diversity (Powell, Koput, & Smith-Doerr, 1996; Sarkar, Aulakh, & Madhok, 2009). A full and comprehensive defining and measuring of alliance portfolio in one study has not emerged in the extant literature. Little empirical evidence has been provided for the impacts of overall alliance portfolio configuration on firms' economic performance. Except scarce empirical attempts (Kale, Dyer, & Singh, 2002; Reuer & Ragozzino, 2006), very few studies have set up research design at the alliance portfolio level to solve this issue. Nor have scholars clearly defined and revealed what are the effective strategies of alliance portfolio configuration and what are the performance implications of those strategies.

### 2.2.3 One-Dimensional versus Two-Dimensional Framework of Alliance Portfolio Configuration

While the impact of alliance portfolio configuration—namely the content and arrangement of an alliance portfolio (Wassmer, 2010), on firms' economic performance has drawn intensive attentions from scholars, extant research have exclusively tackled the issue by acknowledging one dimension—alliance or partner, which fails to discover the whole mix of contents that are contained in an alliance portfolio. This suggests the necessity of a new approach that defines and operationalizes alliance portfolios using a two-dimensional construct that incorporates both alliance-attributes and partner-attributes, will be more fruitful, as it helps uncover the complexity of alliance portfolio configuration (Wassmer, 2010). Furthermore, alliance portfolio researchers (Wassmer, 2010, p. 163) also point out that the blend of certain alliance relations and partner types can be described by the "uniformity/diversity and homo-/heterogeneity" of a focal firm's alliance portfolio content. The above discussion suggests that a compound two-dimensional framework, specifying the magnitude of alliance portfolio diversity/heterogeneity on the two dimensions, can be used to define and measure alliance portfolio configuration.

However, a review of extant literature in this line of research indicates that studies that adopt multi-dimensional framework and define alliance portfolio diversity/heterogeneity based on integrating different attributes for each dimension are very scant. A most recent study contributed by Jiang et al. (2010) defined and operationalized alliance portfolio diversity through three separated diversity measures, namely partner, function and governance diversity. They further decomposed partner

diversity into industrial diversity, national diversity and organizational diversity based on the nature of partners. Although their definition covers key attributes of both alliance ties and partners involved in alliance portfolios, Jiang et al. (2010) did not explicitly identify and define the two-dimensional structure of alliance portfolios. Both of Jiang et al.' (2010) definition and their operationalization of alliance portfolio diversity focused on only the single attributes of either alliance ties or partners, thus still followed one-dimensional approach. Other strategic alliance researchers provided similar works in this field. However, they exclusively built their models either on single-attribute diversity (Lee G. K., 2007; Lavie & Miller, 2008) or on multiple-attribute diversity (Baum, Calabrese, & Silverman, 2000; Beckman & Haunschild, 2002; Goerzen & Beamish, 2005) of a single dimension of alliance portfolio.

A very useful recent work that addressed the above issue was provided by Bruyaka (2009, p. 9), who defined alliance portfolio as "the distribution of differences among attributes of both partners and alliance ties within a focal firm's group of alliance." Adopting a two-dimensional approach that incorporates multiple attributes of both alliance ties and partners, Bruyaka (2009) proposed a matrix-based typology to describe alliance portfolio diversity, which contains two types of portfolio diversity locating on two dimensions, namely partners' diversity and ties' diversity. In her two-dimensional typology, Bruyaka (2009) also proposed four types of alliance portfolio configuration. However, in each definition of these four alliance portfolio categories, the numbers of alliances/partners were highlighted, which is not consistent with the original definition of

alliance portfolio diversity[2]. In addition, Bruyaka's (2009) work also shed insights on alliance portfolio operationalization by noting the inappropriateness of using direct sum of dimensional portfolio diversity as the proxy of the overall alliance portfolio diversity. Although Bruyaka (2009) developed the compound two-dimensional framework to define alliance portfolio diversity, she did not operationalize the construct fully based on this framework at the empirical level. In her later empirical paper (Bruyaka, Caner, & Prescott, 2011), alliance diversity and partner diversity were measured respectively by single attribute diversities—namely alliance functional diversity and partner industrial diversity.

Another similar framework of two-dimensional alliance portfolio configuration was offered by Saebi (2011), who also proposed a matrix-based typology. However, in this framework the diversity of alliance dimension was defined as functional activity diversity, so that the overall model cannot be regarded as a full compound two-dimensional framework of alliance portfolio configuration per se.

In addition, the construct development of alliance portfolio configuration requires clear distinction between similar terminologies. Although both alliance portfolio diversity and alliance portfolio heterogeneity can be found in extant literature, prior alliance portfolio research such as Wassmer (2010) did not specify the conceptual difference between these two constructs. In his classical work, Blau (1977, p. 10) noted that "status diversity is the graduated-parameter equivalent of heterogeneity." Accordingly, this

[2] Due to this reason, the four names of alliance portfolio categories provided by Bruyaka (2009) are not applied in this dissertation.

study[3] applies the term alliance portfolio diversity, as heterogeneity appears to be a particular type of it (Bruyaka, 2009).

## 2.3 THEORY AND HYPOTHESES

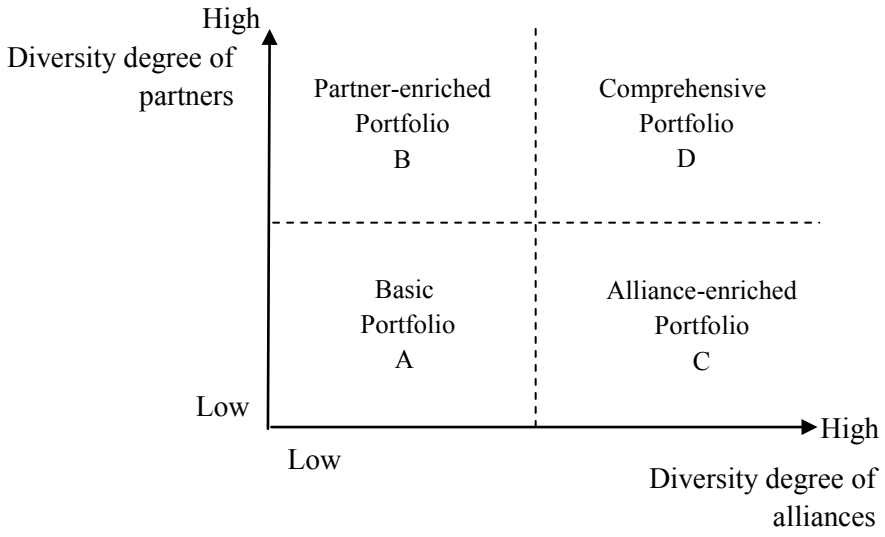
### 2.3.1 Illustration of Two-Dimensional Typology of Strategic Alliance Portfolio Configuration

The previous section suggests that a central issue that perplexes strategic alliance scholars is the defining and operationalization of alliance portfolio configuration. Based on the works of Bruyaka (2009), and Bruyaka, Caner, and Prescott (2010), a more comprehensive two-dimensional typology that integrates both alliance attributes and partner attributes can be used to demarcate the configuration of alliance portfolio. Accordingly, in this study an alliance portfolio is viewed as a composite system combining a variety of attributes that can be categorized into two clusters—alliance related attributes and partner related attributes. The former cluster consists of a series of attributes that altogether determine the configuration of alliance dimension in the portfolio. Drawn from existing literature, these attributes can be identified as governance mode (Gulati, 1995b), duration (Paruchuri, 2010), number of partners (Gomes-Casseres, 1994) and scope nature (e.g. function, horizontal vs. vertical, knowledge accessing vs. knowledge creation). Correspondingly, the attributes determining partner dimension in an alliance portfolio can be specified as industrial affiliation (Kotabe & Swan, 1995), degree of competition in the same market (Dussauge, Garrette, & Mitchell, 2000), business size (Kotabe & Swan, 1995), country of origin (Hagedoorn & Schakenraad, 1994) and

[3] This terminology is also applied in the other parts of the dissertation.

cooperation experience (Goerzen, 2007). These attributes are naturally located on the two dimensions of a portfolio, and the patterns of their combination determine the eventual appearance of the focal alliance portfolio.

**Figure 2-1: Alliance Portfolio Configuration Matrix**




To tackle the above issues and shed new light on alliance portfolio configuration, a two-by-two matrix was created by juxtaposing the degree of diversity of alliance mix with the degree of diversity of partner mix. The determination of related mix diversity relies on a systematic synthesis process taking into account all of the relevant dimensional attributes. As shown in Figure 2-1, the resulting typology consists of four types of portfolio configuration determined by different patterns of matching between partner diversity degree and alliance diversity degree. Namely, these four types of configuration are—basic portfolio, comprehensive portfolio, alliance-enriched portfolio and partner-enriched portfolio.

As shown in Figure 2-1, field A in the matrix is labeled "basic portfolio" and is the category in which alliance portfolios are composed of relatively uniform alliances and

partners. While the total number of alliances or partners included in a basic portfolio does not necessarily have to be low, both alliances and partners in this domain have identical attributes so that the degree of diversity in both alliance dimension and partner dimension appear to be lower than that of the other portfolio categories specified in the matrix. As the main attributes of both alliances and partners are identical, the configuration of basic portfolio is briefly structured following a unitary pattern. This type of alliance portfolio, to the largest extent, avoids the additional complexity added to the portfolio configuration and provides firms with straight support for the implementation of univocal strategic objectives.

Partner-enriched portfolio is demarcated by field B in the portfolio configuration matrix. In this portfolio category, firms enter into strategic alliances with business partners holding diversified attribute features. However, the pattern of strategic alliances themselves appears to be homogeneous across the entire partner mix. A typical example that falls into this domain is the alliance portfolio built by E-commerce companies such as eBay or Amazon, who develop large amounts of alliances with firms across a variety of business sectors, providing different products or services. On the other hand, the majority of the alliances are formed for the purpose of market sharing or extension as well as business image promotion. As indicated by Figure 2-1, the degree of partner diversity is much greater than the degree of alliance diversity in a partner-enriched portfolio. Firms particularly prefer this type of alliance portfolio as an instrument for achieving co-marketing related strategic objectives.

Field C in Figure 2-1 represents the alliance-enriched portfolio, which is in contrast to partner-enriched portfolio. In this category, firms enter into various alliances

with partners that hold relatively homogenous attributes. The most conventional case that matches this portfolio domain can be found at the corporate level. Large diversified corporations can enter into different alliances at the business level with other corporations especially when long-term trustful relationships have been developed among those corporations. In this case, although alliance attributes appear to be highly diversified, the features of strategic partners involved are likely to be highly identical.

Finally, as indicated in field D of the matrix, the portfolio domain that represents the highest diversity degree of both alliances and partners is labeled as "comprehensive portfolio". In this category, firms simultaneously maintain a collection of highly heterogeneous alliances in terms of a series of attributes with a variety of strategic partners holding different characteristics. The comprehensive alliance portfolio implies a mix of different business strategies deployed by the focal firm and thus represents the highest complexity in terms of portfolio configuration compared with the other three types of alliance portfolios. Multinational corporations have been prominently developing comprehensive portfolio as an important mechanism to achieve strategic competitiveness (Wassmer, 2010) associated with a number of strategic behaviors including new market entry (Glaister & Buckley, 1996), innovation development (Phelps, 2010; Soh, 2010), and knowledge integration (Inkpen, 2008).

The introduction and application of this two-dimensional typology, incorporating both alliance and partner attributes, allows researchers to investigate the antecedents of alliance portfolio configuration through a more comprehensive and consistent way in contrast to prior frameworks in the traditional alliance portfolio literature.

### 2.3.2 Dimensional Diversity and Firm Performance

The relational resource-based view provides an appropriate explanation on the effects of alliance diversity on a firm's performance. Burt (1992) noted that when firms are involved in inter-firm relations, they are able to enjoy several significant benefits—information from the network, which otherwise cannot be gained, as well as the first moving advantage due to the early receiving of this information, and the related referral benefits. Goerzen and Beamish (2005) suggested that non-redundant set of ties allow firms to establish reliable contacts enabling useful information to surface. Powell et al (1996) noted that diverse alliance relations provide firms pivotal and timely access to resources and knowledge that are otherwise unavailable. Apart from knowledge-accessing channels, improvement in knowledge application is another strategic benefit provided by diverse alliances in an alliance portfolio. Grant and Baden-Fuller (2004) argued that heterogeneous alliance-ties contribute to the efficiency of knowledge application through efficiently integrating knowledge into producing complex goods and service, and efficiently utilizing knowledge. Under the uncertainty of future knowledge requirement and environmental change, diverse inter-firm alliances allow the focal firms to spread investment risks and reap the option value of segmented investments in new areas of knowledge (Kogut, 1988; Sanchez, 1993).

From a value-creation's perspective, firms may enhance their value-creation outcomes by leveraging their diverse alliance relationships within their alliance portfolios to access a variety of resources, improve the efficiency in knowledge accessing and application, and meanwhile minimize the risks of knowledge investment. The alliance portfolio hence functions as an effective mechanism for the focal firms to meet external

pressures of knowledge integration and continuing innovation so as to achieve greater economic performance. Prior research has provided empirical proof, that as firms increase the degrees of their alliance function diversity, they achieve enhanced economic performance (Jiang, Tao, & Santoro, 2010) or more advantageous structural position in their alliance networks (Powell, Koput, & Smith-Doerr, 1996).

However, in this study it is proposed that the indefinite extension of alliance diversity in an alliance portfolio would not drive up the economic performance in a monotonic pattern. From the perspective of organizational learning, firms learn from experience in an iterative manner when they engage repeatedly in an activity through storing and retrieving the inferred learning for future engagements in the activity (Levitt & March, 1988). In the context of alliance portfolio management, when firms form new collaborate relations they need to transfer the learned knowledge into applicable knowledge through effective integration and encoding using a series of mechanisms such as tools, documents, metrics and dedicated personnel (Kale, Dyer, & Singh, 2002). Once firms have established relevant routines and policies to facilitate new knowledge application, they may be increasingly trapped by this competency they have just developed (Levitt & March, 1988) and attempt to avoid additional learning by continually focusing on existing alliance experience (Sampson, 2005). The existing management capability under this case may turn into a core rigidity and block the focal firm from further exploration through the alliance network (Leonard-Barton, 1992). Empirical evidence from prior studies has suggested that learning does taper off (Lieberman, 1984) and that knowledge accumulation by previous experience depreciates over time (Darr, Argote, & Epple, 1995). Strategic alliance researchers also found that

the effect of alliance experience on performance exhibits diminishing marginal returns, especially when intangible resources such as tacit knowledge develops the foundation of an alliance collaboration (Hoang & Rothaermel, 2005), which is particularly the case in the context of service industries.

The above discussion suggests that firms are likely to encounter a "bottleneck" in terms of learning during the process of alliance portfolio extension. Firms holding increasingly heterogeneous alliances face more difficulties than their counterparts in dealing with the paradox resulting from incompetent learning capacity and increased diversity and complexity in the alliance portfolios. Furthermore, the linear positive effects of alliance diversity on firm performance revealed by prior studies (Powell, Koput, & Smith-Doerr, 1996; Jiang, Tao, & Santoro, 2010) only tested alliance function diversity, while the increase of alliance diversity also means that other alliance attributes such as alliance status, industrial affiliation, governance formats and cross-border features become more heterogeneous. Under this condition, firms have to invest more resources and develop more sophisticated learning capabilities to effectively deal with possible conflicts that may arise in their alliance portfolios. Once these negative alliance portfolio effects outweigh the synergy value created by the alliance ties, subadditive interdependencies occur (Vassolo, Anand, & Folta, 2004), and the overall firm performance will be undermined.

The above analysis suggest that firms may benefit from increasingly heterogeneous alliance composition, but there exists a "ceiling point", beyond which the economic performance will decrease as continuing increase of alliance diversity. I hence

propose a curvilinear relationship between alliance diversity and firms' financial performance.

*H1: There is an inverted U-shaped relationship between firms' alliance diversity and firms' financial performance.*

Strategic alliance is an important mode through which firms update their capabilities (Eisenhardt & Martin, 2000). A diverse body of alliance partners enables MNCs to reduce uncertainty through balanced resource allocation and sharing among alliance allies, to exploit power between related firms, and to configure complex skills and resources that cannot be achieved by the individual firm (Baker, 1990; Burgers, Hill, & Kim, 1993). When the level of partner diversity is low, the focal firm is likely to achieve high performance, as it is relatively easy at this point to control the relevant coordination cost and meanwhile realize economic advantages offered by alliance partners, due to similar resource bases and strategic goals among relatively identical partners in the alliance portfolio.

Situations will become complicated as the degree of partner diversity increases. Before a firm can continually reap the benefits arisen from complementary resourceful effects contributed by highly heterogeneous alliance relationships, the firm needs to face increasing uncertainties and conflicts, due to unfamiliar business practices and different operation protocols issued by partners across different industries and countries. The performance downsides appear immediately as firms start to increase the degree of partner diversity (Jiang, Tao, & Santoro, 2010). To a large extent, this is due to potential competitive conflicts within the same portfolio system, and lack of synergy with partners

from different industries. Increased complexity of alliance organizational modes can pose extra challenges for maintaining constant business performance due to communication and coordination difficulties resulting from different goals and decision-making process (Jiang, Tao, & Santoro, 2010). For example, a business organization allying with a not-for-profit organization, such as a university for research purposes, needs to understand and adapt to a different decision-making process and a unique outcome-evaluation system comparing to those applied in the business practices. In sum, when allying with multiple strategic partners having different operational, industrial or cultural backgrounds, firms immediately face increased operation and performance pressure caused by unmatched routines, culture distance and strategic goal discrepancies. The resulting increased coordinating cost and intra-portfolio conflicts may cause the focal firm to underperform.

As time goes by, firms may become more competent in dealing with those downside cost incurred due to partner diversity and complexity. Different types of partner organizations may provide different sources of strategic resources and capabilities (Harrison, Hitt, Hoskisson, & Ireland, 2001), enabling the focal firms to enjoy the economic benefits from enlarged market scope, extended distribution networks, enriched financial and managerial resources, and improved or supplementary research and development capabilities (Santoro & McGill, 2005). Hence, after a minimum degree of partner diversity effectiveness, the economic gains will outweigh the related cooperating cost and continue to increase along with the further increase of partner diversity. Consequently, the following hypothesis is proposed:

*H2: There is a U-shaped relationship between diversity of alliance partners and firms' financial performance.*

The two-dimensional typology of alliance portfolio configuration I previously discussed indicates that the general alliance portfolio diversity is an integration of both alliance diversity and partner diversity which can be depicted along two dimensions. As an integrative construct, the general alliance portfolio diversity represents a direction of balanced configuration of alliance portfolio that takes into account both alliance relations and partner composition in alliance portfolios. In particular, the underlining rationale of general alliance portfolio diversity highlights the importance of balanced configuration of resources and assets between alliance ties and allying partners. This balanced configuration enables the focal firms to create a platform for firms to develop the critical capabilities to incorporate exploitation- vis-à-vis exploration-, and core- vis-à-vis noncore-activities, which help to extend the scope of value-creation activities, increase system flexibility and improve the overall economic performance (Lavie, 2006; Jiang, Tao, & Santoro, 2010). This construct of general alliance portfolio diversity also provides a proxy of potentially optimized portfolio embracing both resource complement and avoidance of redundancy, which is also contributable to firms' economic performance. Based on the above discussion, the following hypothesis can be proposed:

*H3: Firms' general alliance portfolio diversity is positively associated with firms' financial performance.*

### 2.3.3 Effects of Alliance Portfolio Configuration Strategies on Firm Performance

My two-dimensional alliance portfolio typology lists four types of portfolio configuration strategies—basic portfolio, alliance-enriched portfolio, partner-enriched portfolio and comprehensive portfolio. The conceptual introduction of general alliance portfolio diversity suggests that both alliance-enriched and partner-enriched alliance portfolio are two types of unbalanced portfolio configuration, while basic portfolio and comprehensive portfolio are two types of balanced portfolio configuration. Unbalanced configuration might be able to increase the size of resource capacity for a firm in the short run, but at the meantime it also gives rise to potential redundancy in resource allocation, leading to decreased performance in the long run. Prior studies have noted that the unbalanced configuration of alliances and partners in a firm's alliance portfolio leads to unexpected economic performance. For example, Baum et al. (2000) showed how partner diversity impacts redundancy and portfolio configuration efficiency. They further contended that a small set of alliances consisting of diverse partners are able to create more diverse capabilities and knowledge with less cost than a relatively large set of alliance consisting of similar partners.

Furthermore, from resource dependence's perspective, firms maintain multiple alliances and maintain alliance networks to acquire resources that are necessary for them to survive and reduce uncertainty and interdependence (Pfeffer & Salancik, 1978; Harrigan & Newman, 1990). Through entering alliances with other partners, firms are able to gain power over their resource providers (Provan, Beyer, & Kruytbosch, 1980), who might originally retain the strategic control as the party that has more important resources (Yan & Gray, 2001). As dependence is a function of the degree of resource

criticality and the availability of alternative providers of these critical resources (Casciaro & Piskorski, 2005), firms are able to attenuate the adverse effects of power imbalance through developing and maintaining a pool of suppliers or providers of critical resource and knowledge. This requires that those pivotal resource providers to some degree operate in the same environment as the focal firm does, or have similar resource contents or organizational characteristics, so that the focal firm is able to have the choices of identifying and satisfying particular resource needs from multiple potentially available alliance relationships or allying partners.

Therefore, maintaining multiple less heterogeneous alliance ties and allying multiple relatively more similar partners, firms that have basic alliance portfolios will be able to more effectively lower resource-uncertainty and reduce external dependencies than their counterparts that maintain alliance-enriched or partner-enriched portfolios. Through improving relational flexibility and creating the alliance portfolios as the pools of critical resource providers, firms adopting basic alliance portfolios as their portfolio configuration strategies are more efficient than those who apply alliance- or partner-enriched portfolio strategies to utilize network capabilities and thus, are able to enjoy greater economic performance. The unbalanced configuration between alliance ties and partners composition for alliance-enriched and partner-enriched portfolios may further accentuate the negative effects of imbalanced power on a focal firm's performance. Based on the above explanation, I propose the following hypothesis:

*H4: Firms that have basic alliance portfolios have more superior performance than those firms that have alliance-enriched or partner-enriched alliance portfolios.*

On the other hand, it is reasonable to expect that although both comprehensive portfolio and basic portfolio are balanced alliance portfolio configuration strategies, the former is able to maximize the positive effects of portfolio diversity on firms' economic performance more than the latter, and thus leads to greater performance. The resource-based view and relational view (Dyer & Singh, 1998) suggest that firms achieve synergies through combination of complementary assets and internalization of alliance network capabilities, so as to generate economic rents (Lavie, 2006; Lavie, 2007). Comparing with basic alliance portfolios, comprehensive alliance portfolios are composed of more diverse alliance ties and collaborative partners in terms of information accessibilities, knowledge storage and types of complementary assets. Hence, they hold stronger potential and wider breadth of network capabilities that can be provided to and used by the focal firms for acquiring valuable external resources (Stuart, Hoang, & Hybels, 1999) to improve the economic performance.

Hoffmann (2001; 2007) identified the efficient alliance portfolio structure to be one that is characterized by a small overlap of individual alliances and at the meantime a high degree of structural autonomy, such that the higher the degree of alliance content overlap, the higher the total coordination requirements for the focal alliance portfolio. Baum et al. (2000) restated this argument and pointed out that the efficiency of alliance portfolio configuration is determined by the degree to which it provides the focal firm access to diverse information and capabilities, and produces desired benefits with minimum costs of conflict, redundancy and complexity. In this sense, the relatively similar or even identical features of alliance ties or collaborative partners in the basic portfolios can cause high possibility of redundancy and overlap in relation to alliance- or

partner-contents, and subsequently lead to internal competition and even conflicts (Parise & Casher, 2003; Wassmer, 2010). Those unwished within-portfolio competition and conflicts may prevent the focal firm from reaching scale efficiency and gaining sufficient financial returns to reinvest in performance growth (Gomes-Casseres, 1994).

I therefore posit that comprehensive alliance portfolios allow firms to gain greater performance advantages than basic alliance portfolios do, and propose the following hypotheses:

*H5: Firms that have comprehensive alliance portfolios have more superior performance than those firms that have basic alliance portfolios.*

### 2.3.4 Contextual Effects of Internationalization

Degree of internationalization (DoI) in this dissertation is defined as the extent to which a firm is extended beyond the boundaries of its domestic base into other countries' markets and geographic regions to undertake value-adding activities (Hitt, Bierman, Uhlenbruck, & Shimizu, 2006). This definition suggests that firms have a variety of choices to take for going abroad, but the core characteristics of internationalization is geographic extension of business operations and value-generation across geographic boundaries.

Internalization theory indicates that inefficient external markets— to a large extent for knowledge-based assets such as brand names, organization skills, or technology knowhow—encourage firms to exploit these critical assets through the use of internal market rather than external ones (Verbeke, Li, & Goerzen, 2009). This creates the primary benefit of firm multinationality as market imperfections provide

opportunities for internationally heterogeneous firms to gain competitive advantages for using their intangible assets on a cross-border basis (Kogut, 1985).

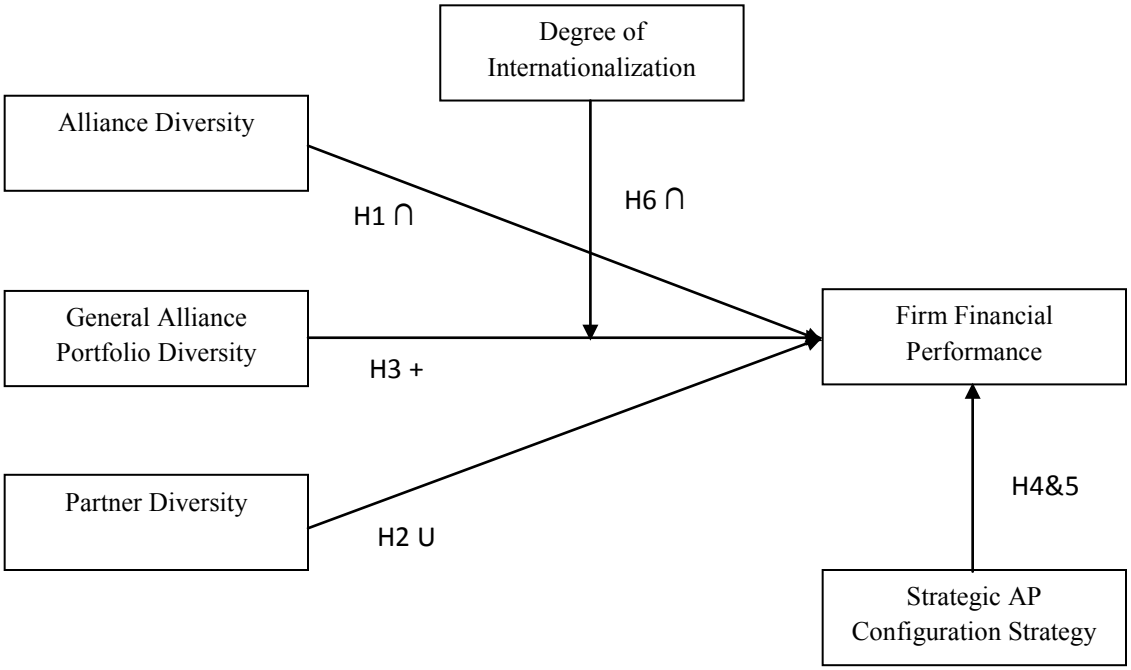
Kirca et al (2011) in their most recent work contended that multinationality provides focal firms an efficient governance structure for transferring firm-specific assets across national boundaries but still within the firm, which creates positive impacts on economic performance. The increasing degree of internationalization allows a firm to exchange and leverage their intangible assets among partners holding diverse backgrounds and thus offers the focal firms more opportunities to further enrich their alliance portfolios on a geographically extended basis to match their needs. As a focal firm increases the number of countries in which it operates, it is able to acquire business, institutional, and internationalization knowledge from those foreign markets (Eriksson, Johanson, Majkgard, & Sharma, 1997; 2000). This knowledge may enable firms to develop critical skills they need to maintain healthy and creative collaborating relationships with their partners, who come from a variety of business and institutional backgrounds. The valuable knowledge flow and utilization of knowledge flow that rises from multinationality may further substantiate the positive impact of their general alliance portfolio diversity on the economic performance.

However, diversity and complexity created from international diversification will eventually refrain the focal firm's boundary after the initial improvement in learning capability and new knowledge assimilation (Zahra, Ireland, & Hitt, 2000), as well as in reaping economic benefits (Hennart, 2007). As governance cost increases due to more diversified geographic regions involved in a firm's operations, it will become increasingly difficult for the focal firm to effectively maintain a highly heterogeneous

alliance portfolio, especially on an internationally diversified firm platform, on which firms would see decreased financial performance with a larger and more complicated alliance pool. Hence I suggest here a curvilinear moderating effect of multinationality on the relationship between general alliance portfolio diversity and firms' economic performance, namely:

> *H6: Degree of internationalization moderates the association between firms' portfolio diversity and their financial performance in an inverted U-shaped relationship. That is, the positive association between portfolio diversity and firms' financial performance will intensify as the degree of internationalization increases until a particular point, after which this association will be weakened.*

**Figure 2-2: Conceptual Research Framework**



## 2.4 RESEARCH METHODOLOGY

### 2.4.1 Research Setting and Sampling

In this study the sampling alliances include the formats of joint ventures and contractual alliance, as both of them are alternative forms of inter-organizational cooperation (Das, Sen, & Sengupta, 1998). The research hypotheses were tested in the context of international hospitality and travel industries. Specifically, the firms selected in this study operate in the industries of lodging (SIC codes 7011, 7021, 7041), restaurant (SIC codes 5812, 5813), airline transportation (SIC codes 4512, 4513, 4522), travel organization (SIC codes 4724, 4725) and amusement & recreation (SIC codes 7992, 7996, 7997, 7999). I set my research in these industries and sectors for several reasons. First, as service firms, the sample companies shared common characteristics such as high financial capital investment, management competence, marketing promotions and service standards (Sutton, 1996), so that the need to control complicated inter-industry heterogeneity can be eliminated. Second, the international lodging and travel industry have witnessed dramatic growth of strategic alliances and international firms in that these industries have been increasingly managing multiple alliances simultaneously. Third, firms in those industries intend to create complex alliance portfolios that span across different but interrelated sectors (Chathoth, 2004). The intensive, dynamic and various alliance formation in these interrelated sectors enhances the meaningfulness, reliability and variance of the variables (Lavie & Miller, 2008), based on which the overall validity of the current study can be enhanced.

### 2.4.2 Data Collection

I used the SDC Platinum Database to identify alliance portfolios for my sampling firms following a longitudinal research design based on the period from January 1999 to December 2009. As one of the most comprehensive source of commercial information on inter-firm collaboration, the SDC database has been intensively used by strategic management scholars (Anand & Khanna, 2000; Lavie, 2007; Jiang, Tao, & Santoro, 2010).

Given the fact that SDC Database rarely reports the specific time of alliance termination, from which the high likelihood of left- or right- censoring problems might result, I applied the same approaches as prior researchers (Gulati, 1995b; Stuart, 2000; Lavie & Miller, 2008), who assumed a five-year effective lifespan of a single alliance. Accordingly, each single firm in my research sample would have a varied alliance portfolio year to year, and the construction and variation of the portfolio relied on whether new alliances were formed in a given year or existing alliances reached the five-year expiration date.

To reveal and identify the alliance portfolios for the focal research period, I took a triangulating process for data restructuring and reconsolidation. I first extracted a total of 6195 alliance announcements that were associated with at least one international hospitality or travel firm, which was the ultimate parent company of one alliance participant from the SDC Database based on the SIC code listed in section 2.4.1. I then decomposed the alliance announcements and capture related information for the ultimate alliance participants at the corporate level, and consequently recreated a dataset based on 1935 independent firms during the 16-year period between 1994 and 2009. I consolidated

the alliance- and partner-information for each firm on an annual basis. Using the data of the initial five years (1994-1998) as the original information for firms' alliance portfolios and assuming that each alliance deal will remain active for five years, I was able to transform the alliance-level data into firm- (portfolio-) level data and use firm-year as the unit of analysis. The resulting dataset theoretically included a total of 30960 (1935 × 16) firm-year observations. Due to the existence of large amount of missing values, I complemented the dataset by researching the missing alliance-formation information for a particular firm-year case in the database of LexisNexis, leading to a refined dataset consisting of 12441 observations. Through removing the observations that contain significant missing values, especially in performance related variables, I eventually obtain a dataset consisting of 357 valid firms, out of which 232 were the US based and 125 were headquartered in other nations, and a total of 2993 firm-year observations covering the period between 1999 and 2009.

The economic performance data was obtained from Compustat North America Compustat Global database, and Mergent Online database. For the performance data that was missed in Compustat, I collected and validated the individual firms' financial report and other related financial documents from the company's websites or other public platforms such as Forbes, Hoover's etc. The financial data collected covered the period between 1999 and 2010 to match the lagged dependent variables of performance outcomes.

### 2.4.3 Variables and Measures

***Dependent Variable.*** Considering the unique nature of the research context in this study, I measure a firm's business performance using three different measures to improve the robustness of the study. Popularly considered as a traditional accounting measure, return on asset (ROA) was used as a primary proxy to indicate firm performance. Considering the complexity and ambiguity arisen from differential asset/ intangible asset valuation and capital structures due to different entry mode (Gao, Pan, Lu, & Tao, 2008), which is particularly pertinent to this study, I introduced another two performance measures—return on equity and return on sales, both of which have been used to assess the strategic diversification—firm performance relationship (Hoskisson, Hitt, & Hill, 1993; Hoskisson, Johnson, & Moesel, 1994; Markides & Williamson, 1996). Proxies in relation to stock market performance was not used in this study, as they are more useful to indicate a strategic alliance's performance rather than the performance of a participating firm (Park & Mezias, 2005). To reduce the potential positive skewness, I log transformed the three dependent variables.

***Independent Variables***.

Alliance Diversity and Partner Diversity—In contrast to prior studies (Baum, Calabrese, & Silverman, 2000; Beckman & Haunschild, 2002; Goerzen & Beamish, 2005) that define alliance/partner diversity based on one attribute or function of an alliance tie or partner composition, I operationalized alliance diversity and partner diversity by integrating the pivotal attributes embraced by these two dimensional concepts. For alliance diversity, I looked at the degree of diversity of five relevant attributes including alliance functional activities (marketing, R&D, manufacturing, distribution), the nations

in which an alliance operates, status of an alliance (e.g. signed, completed or terminated), number of alliance participants and industry affiliations. For partner diversity, the degree of diversity of five critical attributes were examined—partner's national affiliation, organizational mode (public/private), governance structure (ownership percentage), partners' primary industrial affiliation and relevant industrial affiliation.

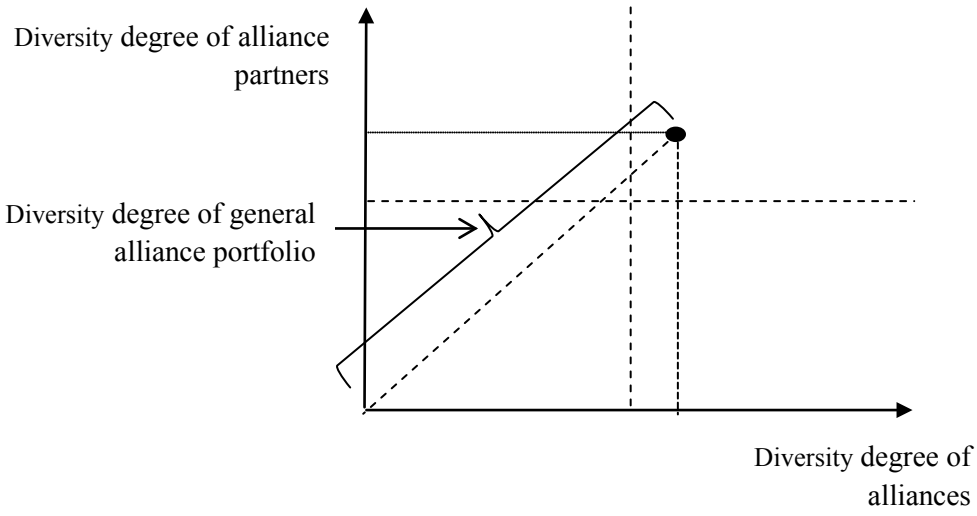
I employed Blau's (1977) Heterogeneity Index of Variability to calculate the level of diversity for each of the single dimensional attributes mentioned above, and then averaged the attributes' diversity scores for both alliance dimension and partner dimension to obtain the measures for alliance diversity and partner diversity respectively. The Blau Index has been widely applied in the group diversity related research to measure the degree of diversity for a given diversity variable. It has also been intensively applied in strategic alliance diversity and alliance network research (Jiang, Tao, & Santoro, 2010), and has been proved to be an effective and reliable instrument for measuring group heterogeneity. The Blau Index is calculated based on the equation—$D = 1 - \sum p_i^2$, where D represents diversity degree ranging from 0 (a perfectly homogeneous group) to 1 (a perfectly heterogeneous group), p represents the proportion of a specific category in the group and i tells the number of categories.

General alliance portfolio Diversity—Based on the conceptual typology previously discussed, I defined the general alliance portfolio diversity as the Euclidean distance from the origin to the point that represents a firm's portfolio configuration strategy on the two dimensional matrix, which is illustrated in Figure 3. I then used the following formula to mathematically obtain the measure of general alliance portfolio diversity:

General Alliance Portfolio Diversity =

$$\sqrt{alliance\ \text{diversity}^2 + partner\ \text{diversity}^2}$$

**Figure 2-3: Alliance Portfolio Diversity Measurement**




Strategic Choice of Alliance Portfolio Configuration—In this study, I defined four types of alliance portfolio configuration strategies—basic portfolio, alliance-enriched portfolio, partner-enriched portfolio and comprehensive portfolio. To identify the category membership for each observation, I created four dummy variables and attribute "0" or "1" for each variable by comparing a firm's dimensional Blau's index score with the median of those scores for all of the observations in my dataset. Specifically, a firm was referred to the category of basic portfolio/comprehensive portfolio when both of its alliance diversity score and partner diversity score were less/greater than the medians of the relevant sample scores. A firm would be referred to the category of alliance-enriched portfolio/partner-enriched portfolio when its alliance diversity score/partner diversity

score was greater than the relevant median, while its partner diversity score/alliance diversity score was less than the relevant median of the relevant scores of the total sample.

***Moderating Variables.*** The primary moderating variable in this study is international hospitality and travel companies' degree of internationalization (DoI). Consistent with Annavarjula and Beldona (2000) as well as Thomas and Eden (2004), DoI construct in this study was operationalized using both the depth and breadth of multinationality, in which depth of DoI refers to the extent to which firms commit resources to conduct value-creation activities, and breadth captures the spread of a firm's foreign operational activities. Give the specific research focus of this study I calculated the number of alliances headquartered in foreign counties other than the focal firms' home headquarters to capture the breadth component of DoI. I used foreign sales to total sales ratios to respond to the depth aspect of DoI. A general index number which was created by weighted averaging the resulting two ratios was then used as the proxy of DoI.

***Control Variables.*** I controlled for the size of sample firms by including the total number of employees in the empirical models. The traditional measures of firm size such as total asset was not used due to the fact that intangible asset could play significant roles in the service sectors. To correct for any alliance portfolio size effects in the statistical models I controlled for the total number of alliances and total number of partners in the alliance portfolio of a given firm in a particular year. Both of these two portfolio-size controls were logarithm transformed to satisfy the normalization requirement for repeated data (Larsen & Marx, 2005). To account for the effects of previous performance, I included a lagged performance variable measured by total $\text{revenue}_{t-1}$ in the statistical

models. I also created year dummies to control for the unobservable effects associated with a particular year. ANOVA tests were applied and showed no significant difference in financial performance due to the limited industry types concerned in this study, partially due to the facts that the general industrial level profit margin for the industries selected in this study are highly closed to each other. Hence, industry dummies were not included in the statistical models.

### 2.4.4 Data Analysis

The descriptive statistics of this study are reported in Table 2-2, which details the means, standard deviations, and pairwise correlations of the related variables. Both independent and moderator variables were mean-centered to reduce the potential problem of multicollinearity (Aiken & West, 1991). To test and control potential multicollinearity, I calculated variance inflation factors (VIFs), all of which were below 10, ruling out of the concerns of multicollinearity (Kutner, Neter, & Nachtsheim, 2004). Furthermore, the statistical assumptions of variance equality, error independence, and normality of error distribution were satisfied for all regression equations in this study.

Analysis of the unbalanced panel data was conducted using cross-section time-series regressions with fixed effects. Incorporating superior controls for time-invariant variables, fixed-effects models were preferred to random-effects models that can result in biased estimates (Mundlak, 1978). Specifically, the tested models took the form:

$$Y_{it} = \beta X_{i,t-1} + \alpha_i + \mu_{i,t-1}$$

In this equation, $Y_{it}$ is the performance outcome variable for firm i at time t; $\beta$ is the coefficient for the specific independent variable; $X_{i,t-1}$ represents firm level independent variable for firm i at time t-1; $\alpha_i$ is firm-specific intercepts; $\mu_{i,t-1}$ is the error term.

**Table 2-2: Descriptive Statistics and Correlations for Essay One**

| | Mean | S.D. | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1. Log ROA | -5.54667 | 3.5905 | | | | | | | | | | | | | | | | | | |
| 2. Log ROE | -7.98693 | 9.1119 | .739** | | | | | | | | | | | | | | | | | |
| 3. Log ROS | -5.53746 | 3.9768 | .9072** | .7907** | | | | | | | | | | | | | | | | |
| 4. Firm size | 1.35756 | 2.0692 | .279** | .213** | .1447** | | | | | | | | | | | | | | | |
| 5. Alliance number | -0.06218 | 0.7976 | 0.0127 | 0.0188 | -0.0042 | .332** | | | | | | | | | | | | | | |
| 6. Partner number | -0.11406 | 0.7411 | 0.0079 | 0.0144 | -0.0164 | .333** | .590** | | | | | | | | | | | | | |
| 7. Revenue(t-1) | 2991435 | 7E+07 | -0.0191 | 0.0022 | 0.0176 | 0.0221 | 0.0168 | 0.0204 | | | | | | | | | | | | |
| 8. Alliance diversity | 0.18244 | 0.2213 | 0.0336 | 0.0348 | 0.0339 | .374** | .838** | .842** | 0.024 | | | | | | | | | | | |
| 9. Partner diversity | 0.25714 | 0.237 | .047* | .052** | .0503** | .303** | .915** | .905** | 0.021 | .839** | | | | | | | | | | |
| 10. Alliance diversity square | 0.08225 | 0.1248 | .038* | 0.0329 | 0.0329 | .420** | .777** | .775** | 0.019 | .960** | .769** | | | | | | | | | |
| 11. Partner diversity square | 0.12229 | 0.1462 | .066** | .066** | .0663** | .352** | .824** | .804** | 0.011 | .836** | .950** | .815** | | | | | | | | |
| 12. Overall diversity | 0.32717 | 0.3123 | .041* | .043* | .0427* | .341** | .930** | .924** | 0.024 | .927** | .680** | .870** | .938** | | | | | | | |
| 13. Alliance-enriched portfolio | 0.0735 | 0.261 | -.050** | -.058** | -0.052** | -.087** | .050** | .073** | -0.01 | -0.002 | -.075** | -.098** | -.156** | -.050** | | | | | | |
| 14. Partner-enriched portfolio | 0.07885 | 0.2696 | -0.0161 | -0.034 | -0.0226 | -.131** | .072** | .065** | -0.01 | -.241** | .100** | -.193** | -0.002 | 0.0101 | -.082** | | | | | |
| 15. Comprehensive portfolio | 0.42566 | 0.4945 | .051** | .065** | .0592** | .266** | .764** | .765** | 0.023 | .836** | .828** | .720** | .770** | .852** | -.242** | -.252** | | | | |
| 16. Degree of Internationalization (DoI) | 0.33791 | 0.4306 | .052** | .055** | .0615** | .250** | .580** | .563** | .062** | .454** | .663** | .392** | .602** | .616** | 0.0013 | .142** | .507** | | | |
| 17. DoI × DoI | 0.29955 | 0.4578 | .039* | .043* | .0502** | .160** | .441** | .423** | .062** | .292** | .519** | .225** | .457** | .459** | 0.035 | .158** | .374** | .943** | | |
| 18. DoI × general diversity | 0.19342 | 0.2594 | .062** | .063** | .0658** | .352** | .703** | .676** | .050** | .694** | .815** | .671** | .841** | .800** | -.115** | 0.0259 | .655** | .880** | .782** | |
| 19. DoI square × general diversity | 0.16365 | 0.2507 | .054** | .056** | .060** | .262** | .576** | .545** | .056** | .524** | .691** | .482** | .707** | .653** | -.080** | .062** | .536** | .885** | .887** | .947** |

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed)

**Table 2-3**: **Baseline Models with Control Variables**

| | Model1<br>Log Return on Assets<br>(1 Year Lagged) | Model2<br>Log Return on Equity<br>(1 Year Lagged) | Model3<br>Log Return on Sales<br>(1 Year Lagged) |
|---|---|---|---|
| Year 1999 | .0652 (.2794) | .0036 (.7996) | .2423 (.3225) |
| Year 2000 | -.2097 (.2828) | -.4619 (.8126) | -.0423 (.3272) |
| Year 2001 | -.9332 ** (.2872) | -.2.1751** (.8252) | -1.018** (.3332) |
| Year 2002 | -.7821** (.2874) | -1.7251* (.8249) | -.8444* (.3344) |
| Year 2003 | -.7995** (.2865) | -1.4921† (.8212) | -.7451* (.3335) |
| Year 2004 | -.8993** (.2910) | -1.3894† (.8351) | -.8409* (.3400) |
| Year 2005 | -.3646 (.3035) | .0711 (.8725) | -.2128 (.3537) |
| Year 2006 | .0028 (.3023) | -.0039 (.8682) | .1699 (.3528) |
| Year 2007 | .2575 (.3071) | .3230 (.8853) | .4760 (.3563) |
| Year 2008 | -1.6289*** (.3150) | -3.7583*** (.9048) | -1.773*** (.3660) |
| Year 2009 | -1.3830*** (.3207) | -3.0832** (.9208) | -1.383*** (.3727) |
| Firm Size | .0049<br>(.0059) | .4653<br>(.3525) | .0058<br>(.0068) |
| No of Alliance | -.0103<br>(.0461) | -2.1354<br>(2.5716) | -.0048†<br>(.0530) |
| No of Partners | -.0003<br>(.0251) | 1.5456<br>(2.4254) | -.0023<br>(.0289) |
| Revenue t-1 | -1.77E-9*<br>(8.80E-10) | -9.00E-10<br>(2.52E-9) | 6.52E-10<br>(1.01E-9) |
| No of Observations | 2243 | 2234 | 2178 |
| No of Firms | 324 | 324 | 320 |
| Adjusted $R^2$ | 0.4379 | 0.2841 | 0.3998 |
| Model F value | 6.16*** | 3.77*** | 3.09*** |
| Hausman Test ($Chi^2$) | *** | *** | *** |

†p<0.1 *p<0.05; **p<0.01; ***p<0.001, standard errors in parentheses.

## 2.5 FINDINGS

The results of the statistical analysis are reported in Tables 2-3 through 2-6. Table 2-3 reports the impacts of the control variables on sample firms' financial performance in terms of return on assets, return on equity and return on sales.

As shown in Table 2-3, firm size in terms of the total number of full time employees did not appear to be significant in Model 1 through Model 3, where the logarithm of ROA, ROE and ROS were used as the dependent variables. Firms' previous financial performance measured by the total revenue of the previous financial year had significant effects on ROA ($\beta$= -1.77E-09, $p<.05$), suggesting that the effect of previous revenue achievement on firms' return on asset ratio is negative. No significant effects were captured when ROE or ROS were used as the dependent variables. The baseline models did not provide sufficient support for the effects of portfolio's size on firms' financial performance across the three performance measures. Except a marginally significant effect of alliance number on ROS ($\beta$=-.0048, $p<.1$) shown in Model 3, none of the other five coefficients were significant in Model 1 through Model 3.

All of the three models suggest that fixed year effects play important roles in predicting the sample firms' financial performance. According to Model 1 and Model 2, sample firms encountered continual financial loss in terms of decreased ROA, ROE and ROS between the year 2002 and 2005. The pattern of this financial loss appeared again in 2009 and 2010. During this period financial returns in terms of ROA, ROE and ROS experienced extraordinary loss, indicating decreased efficiency of sample firms' general financial performance.

**Table 2-4: Effects of Dimensional Alliance Portfolio Diversity on Firm Performance**

| | Model 4 (H1) | Model 5 (H1) | Model 6 (H1) | Model7 (H2) | Model 8 (H2) | Model 9 (H2) | Model 10 (H1&2) | Model 11 (H1&2) | Model 12 (H1&2) |
|---|---|---|---|---|---|---|---|---|---|
| | Log ROA | Log ROE | Log ROS | Log ROA | Log ROE | Log ROS | Log ROA | Log ROE | Log ROS |
| Alliance Diversity | 4.1014* | 10.1497* | 3.5007† | | | | 3.4053* | 6.9146 | 3.1284 |
| | (1.7182) | (4.8983) | (1.9722) | | | | (1.7703) | (5.1923) | (2.0331) |
| Alliance Diversity² | -4.7401† | -13.2604 | -3.2578 | | | | -5.1601† | -15.4489† | -3.8510 |
| | (2.8612) | (8.1538) | (3.2967) | | | | (3.0368) | (9.0350) | (3.4875) |
| Partner Diversity | | | | -2.8266** | -5.8529† | -2.8119* | -4.1330*** | -8.8990* | -3.8563** |
| | | | | (1.0708) | (3.0778) | (1.2458) | (1.2524) | (3.5497) | (1.4287) |
| Partner Diversity² | | | | 4.3260* | 11.5845* | 4.5592* | 5.2955* | 16.1988** | 4.8211* |
| | | | | (1.9326) | (5.5475) | (2.2327) | (2.1404) | (6.2107) | (2.4369) |
| Firm Size | .1904 | .3445 | .0059 | .0041 | .0265 | .0051 | .0020 | .0221 | .0058 |
| | (.1221) | (.3484) | (.0068) | (.0059) | (.0170) | (.0068) | (.0060) | (.0169) | (.0068) |
| No of Alliance | -1.388 | -4.0553 | -1.2115 | .0089 | .0078 | .0104 | .0084 | -.0839 | .0012 |
| | (.9426) | (2.6822) | (1.0785) | (.0471) | (.0724) | (.0541) | (.0481) | (.1370) | (.0545) |
| No of Partners | .6260 | 2.4794 | .5333 | -.0090 | -.0782 | -.0101 | -.0063 | .0324 | -.0047 |
| | (.8627) | (2.4545) | (.9910) | (.0253) | (.1349) | (.0291) | (.0256) | (.0732) | (.0292) |
| Financial Performance t-1 | -1.90E-9* | -1.03E-9 | 6.75E-10 | -1.69E-9† | -5.76E-10 | 7.43E-10 | -1.83E-9* | -7.55E-10 | 7.45E-10 |
| | (8.91E-10) | (2.54E-9) | (1.00E-9) | (8.81E-10) | (2.52E-9) | (1.01E-9) | (8.96E-10) | (2.54E-9) | (1.01E-9) |
| Year Effects (1999-2009) | included | included | included | included | included | Included | included | included | included |
| No of Observations | 2243 | 2234 | 2178 | 2243 | 2234 | 2178 | 2243 | 2234 | 2178 |
| No of Firms | 324 | 324 | 320 | 324 | 324 | 320 | 324 | 324 | 320 |
| Adjusted $R^2$ | 0.4401 | 0.2847 | 0.4020 | 0.4395 | 0.2849 | 0.4008 | 0.4403 | 0.2844 | 0.4011 |
| Model F value | 6.16*** | 3.54*** | 5.79*** | 5.88*** | 3.57*** | 5.57*** | 5.52*** | 3.24*** | 5.13*** |
| Hausman test (Chi²) | *** | *** | ** | *** | *** | *** | *** | *** | *** |

†p<0.1 *p<0.05; **p<0.01; ***p<0.001, standard errors in parentheses.

Table 2-4 reports the testing results of Model 4 through Model 12, which examine the relationship between dimensional alliance portfolio diversity and firms' financial performance. Model 4 to Model 12 tested how firms' alliance diversity, partner diversity have impacts on their ROA, ROE, and ROS.

The conceptual framework of this study hypothesized that curvilinear relationships exist between firms' dimensional alliance portfolio diversity and their financial performance. Quadratic terms were added in each of the models in Table 2-4 to test this relationship. Hypothesis 1 predicted that there is an inverted U-shaped relationship between alliance diversity and firms' performance. To prove this hypothesis, the coefficient sign of alliance diversity is expected to be positive while the sign of the quadratic term of alliance diversity is expected to be negative. Model 4 – Model 6 provided partial support for this hypothesis. As shown in Model 4, 5 and 6, the degree of alliance diversity is positively associated with ROA ($\beta$=4.10, $p<.05$), ROE ($\beta$=10.15, $p<.05$), and ROS ($\beta$=3.50, $p< 0.1$). The quadratic term of alliance diversity is marginally and negatively associated with ROA ($\beta$= -4.74, $p< 0.1$), suggesting an inverted U-shaped relationship between alliance diversity and firms' return on asset ratios. This curvilinear effect persisted in the full Model that uses ROA as the dependent variable. However, although the signs of all relevant terms are consistent with the hypothesis (positive sign of alliance diversity and negative sign of quadratic alliance diversity), the quadratic terms of alliance diversity were not found to be significant in Model 5, 6 and 12, in which ROE and ROS were used as the dependent variables respectively. Thereby, the statistical evidence partially supported my hypothesis that firms' financial performance increases as their alliance ties become more heterogeneous until a particular point, after which firms'

financial performance will decrease with further increase of the degree of alliance diversity.

Hypothesis 2 was tested from Model 7 through Model 9. The results indicated the existence of a U-shaped relationship between the degree of partner diversity and firms' ROA ($\beta$= -2.83, $p<.01$ for linear term; $\beta$=4.33, $p<.05$ for quadratic term respectively), ROE ($\beta$= -5.85, $p<.1$ for linear term; $\beta$=11.58, $p<.05$ for quadratic term respectively), and ROS ($\beta$= -2.81, $p<.05$ for linear term; $\beta$=4.56, $p<.05$ for quadratic term respectively). In Model 7, Model 8 and Model 9, the signs of linear partner diversity were negative while the signs of quadratic partner diversity were positive, supporting the curvilinear relationships predicted in the original hypothesis. These effects persisted in the full models. As shown in Model 10, partner diversity was negatively associated with ROA ($\beta$= -4.13, $p<.001$), while partner diversity square was positively associated with ROA ($\beta$=5.30, $p<.05$). Model 11 offered consistent results, suggesting a U-shaped relationship between the degree of partner diversity and ROE ($\beta$= -8.90, $p<.05$ for linear term; $\beta$=16.20, $p<.05$ for quadratic term respectively). In Model 12, ROS appeared to be positively predicted by partner diversity ($\beta$= -3.85, $p<.01$), but negatively predicted by the quadratic term of partner diversity ($\beta$= 4.82, $p<.05$). Overall, the pattern of the results suggested that as the degree of partner diversity increases, firms' financial performance decreases up to a particular point, after which firms' financial performance starts to increase.

Table 2-5 reports the findings of strategic choice of alliance portfolio configuration on firms' financial performance. Model 13-15 were used to test the effects of general portfolio diversity on firm performance. Table 2-5 summarizes the

performance differences resulted from the four alliance portfolio configuration strategies employed by firms. As suggested by Model 13 to Model 15, Hypothesis 3 gained support in a consistent pattern across the three financial performance measures. The sample firms gained higher levels of ROA (β=1.41, p<.05), ROE (β=4.16, p<.05) and ROS (β=1.30, p< .1) as the degree of alliance portfolios' general diversity increases.

**Table 2-5: Performance Properties of General portfolio Diversity and Strategic Alliance Portfolio Configuration**

| | Model 13 (H3) | Model 14 (H3) | Model 15 (H3) | Model 16 (H4&H5) | Model 17 (H4&H5) | Model 18 (H4&H5) |
|---|---|---|---|---|---|---|
| | Log ROA | Log ROE | Log ROS | Log ROA | Log ROE | Log ROS |
| General portfolio Diversity | 1.4100* | 4.1552* | 1.3014† | | | |
| | (.7246) | (2.0790) | (.8348) | | | |
| Partner-Enriched Portfolio | | | | -.2946 | -1.3486 | -.1985 |
| | | | | (.3979) | (1.1416) | (.4601) |
| Alliance-Enriched Portfolio | | | | -.0638 | -.2858 | -.1445 |
| | | | | (.3786) | (1.0903) | (.4393) |
| Comprehensive Portfolio | | | | .7696* | 2.4551* | .8495* |
| | | | | (.3650) | (1.0478) | (.4235) |
| Firm Size | .2716* | .5082 | .0053 | .2676* | .4949 | .0052 |
| | (.1225) | (.3528) | (.0068) | (.1227) | (.3535) | (.0068) |
| No of Alliance | -.8264 | -2.4507 | -.7196 | -1.0303 | -3.0676 | -1.0424 |
| | (.8969) | (2.5745) | (1.0407) | (.9335) | (2.6782) | (1.0812) |
| No of Partners | .0051 | .4281 | .0058 | .3102 | 1.1970 | .3575 |
| | (.8668) | (2.4871) | (1.0060) | (.8570) | (2.4579) | (.9925) |
| Performance t-1 | -1.75E-9* | -7.50E-10 | 6.76E-10 | -1.75E-9* | -7.65E-10 | 6.84E-10 |
| | (8.77E-10) | (2.52E-9) | (1.01E-9) | (8.77E-10) | (2.51E-9) | (1.00E-9) |
| Year Effects (1999-2009) | Included | Included | Included | Included | Included | Included |
| No of Observations | 2243 | 2234 | 2178 | 2243 | 2234 | 2178 |
| No of Firms | 324 | 324 | 320 | 324 | 324 | 320 |
| Adjusted $R^2$ | 0.4415 | 0.2852 | 0.4012 | 0.4419 | 02860 | 0.4019 |
| Model F value | 6.64*** | 3.79*** | 5.94*** | 6.10*** | 3.60*** | 5.50*** |
| Hausman Test ($Chi^2$) | *** | *** | *** | *** | *** | *** |

†p<0.1 *p<0.05; **p<0.01; ***p<0.001, standard errors in parentheses.

Unlike the consistent positive effects of general alliance diversity on performance, strategic choices of alliance portfolio configuration impact firm performance following different patterns. Hypothesis 4 predicted that firms preferring to employ basic portfolio strategy to configure their alliance portfolios are able to enjoy higher financial benefits than those that apply alliance- or partner- enriched alliance portfolio strategies. However, the regression results in Model 16 through Model 18 did not provide support for this hypothesis. Although all of the six relevant coefficients in the three models appear to be negative, which is consistent with Hypothesis 4, the coefficients were not significant across the three performance measures.

On the other hand, the testing results persistently supported Hypothesis 5, which predicted that firms that adopt comprehensive portfolio strategy are able to achieve more superior financial performance than firms that only maintain basic alliance portfolios. As shown in Model 16-18, comparing the reference group of basic alliance portfolio, the group identity of comprehensive-portfolio was positively associated with ROA ($\beta$=.77, $p<.05$), ROE ($\beta$=2.46, $p<.05$) and ROS ($\beta$=.85, $p<.05$). Since comprehensive alliance portfolio represents a balanced portfolio configuration strategy that embrace heterogeneous alliances and partners at the same time in the process of portfolio configuration, firms preferring to adopt this type of alliance portfolio configuration strategy are able to maintain higher levels of general alliance portfolio diversity. From this perspective, the empirical results that support Hypothesis 5 provides further proof for Hypothesis 3 following a consistent rationale.

Hypothesis 6 predicted that the positive relationship between firms' general alliance portfolio diversity and their financial performance will be moderated by firms'

degree of internationalization in a curvilinear pattern following an inverted U-shape relationship.

**Table 2-6: Moderating Effects of Multinationality on Portfolio Diversity--Financial Performance Relationship**

| | Model 19 (H6) Log ROA | Model 20 (H6) Log ROE | Model 21 (H6) Log ROS |
|---|---|---|---|
| General portfolio Diversity | .7440* | 2.8113† | .0382† |
| | (.5655) | (3.2405) | (.6898) |
| Degree of Internationalization (DoI) | -2.4306† | -1.7631 | -2.9331† |
| | (1.3828) | (4.2301) | (1.6921) |
| DoI × DoI | 1.3258 | .4233 | 2.2258 |
| | (1.3102) | (3.8623) | (1.6067) |
| General portfolio Diversity × DoI | 5.4569† | 3.5478 | 5.7682† |
| | (3.1125) | (9.8056) | (3.6896) |
| General portfolio Diversity × DoI × DoI | -3.4593 | -.9200 | -5.2134† |
| | (2.9057) | (8.6643) | (3.4261) |
| Firm Size | .0047 | .5216 | .0040 |
| | (.0059) | (.3574) | (.0067) |
| No of Alliance | .0040 | -2.0450 | -.0123 |
| | (.0474) | (2.6759) | (.0538) |
| No of Partners | -.0074 | .4474 | -.0045 |
| | (.0254) | (2.5088) | (.0290) |
| Performance t-1 | -1.67E-9* | -6.03E-10 | 7.22E-10 |
| | (8.81E-10) | (2.52E-9) | (9.83E-10) |
| Year Effects (1999-2009) | Included | Included | Included |
| No of Observations | 2243 | 2234 | 2178 |
| No of Firms | 324 | 324 | 320 |
| Adjusted $R^2$ | 0.4394 | 0.2841 | 0.4109 |
| Model F value | 5.12*** | 3.07*** | 5.56*** |
| Hausman Test ($Chi^2$) | *** | *** | *** |

†p<0.1 *p<0.05; **p<0.01; ***p<0.001, standard errors in parentheses.

Specifically, the positive relationship between general alliance portfolio diversity and firm performance will become stronger as firms go for more internationalized. But after a particular point, further increase of degree of internationalization will weaken this positive relationship between general portfolio diversity and financial performance. Table 2-6 summarizes the testing results of the three full models that include general portfolio diversity, degree of internationalization as a moderator, the interaction term between DoI and general portfolio diversity, square term of DoI, as well as the three-way interaction between general alliance portfolio diversity and quadratic term of DoI. The inverted U-shaped moderating effect can be identified if a positive linear interaction and a negative quadratic interaction are presented in the regression models. However, based on the results listed in Table 2-6, Hypothesis 6 only received weak and partial support. Although the three linear interaction terms were positive, and the three quadratic interaction terms were negative, only three of them were marginally significant. The linear interaction term is positively associated with ROA ($\beta$=5.46) and return on sales ($\beta$=5.77) at 0.1 level, while only one quadratic interaction was found to be negatively associated with firms' ROS ($\beta$= -5.21, $p< 0.1$).

Together, the above findings highlight the principal performance implications of alliance portfolio configuration based on a two-dimensional framework. The results also indicate variation across financial performance measures. A review of the total 21 analysis models suggests that ROA appeared to be more effective in capturing the performance effects of alliance portfolio configuration than ROE and ROS. A particular explanation in the context of current study might relate to the wide variety of liability structures and revenue-generation systems used in the international hospitality and travel

industry, leading to increased complexity in shaping the determinants of firms' ROE and ROS.

Overall, the explanatory power of the research models ranged from around 28 percent to 44 percent, varying across financial performance measures. A further comparison between full models and relevant baseline models revealed that alliance portfolio variables improved the entire explanatory power of the full models by 0.03percent to around 0.4 percent, a limited but relatively modest improvement in goodness of fit for longitudinal research design, which could be attributed to the introduction of year fixed effects in the baseline models and lagged dependent variables.

## 2.6 DISCUSSION AND IMPLICATIONS

Aiming at investigating how a combined framework of alliance portfolio configuration can be applied to predict multinational firms' performance, this study offers firsthand empirical evidence on the performance properties of dimensional portfolio diversity. Through the introduction and application of a two-dimensional framework combining both alliance diversity and partner diversity, the study results reveal the different roles played by alliances and partners in a firm's alliance portfolio in shaping the performance outcomes.

Specifically, my findings from this study suggest that the effects of alliance relationships or partners involved in a firm's alliance portfolio on the firm's performance is much more complicated than the monotonic pattern identified by some of the previous researchers (Baum, Calabrese, & Silverman, 2000; Stuart, 2000; Beckman & Haunschild, 2002). Although extant strategy scholars (Goerzen & Beamish, 2005; Lavie & Miller,

2008) identified the non-linear influences of alliance portfolio diversity on firm performance, they exclusively relied their research instruments on a single or multiple separated portfolio attribute(s). accordingly, they failed to capture the full impacts of dimensional portfolio configuration on firm performance.

In contrast to the incomplete alliance portfolio conceptualization from existing literature, the two-dimensional typology applied in this study adopts a comprehensive perspective and takes into account multiple key attributes from both alliance dimension and partner dimension, leading to more effective capturing of alliance portfolios' dimensional contribution to performance outcomes. The findings of this study highlight the curvilinear effects of portfolio dimensional diversity on firm performance, which have been suggested by previous literature (Goerzen & Beamish, 2005; Luo & Deng, 2009; Jiang, Tao, & Santoro, 2010). The results indicate that alliance diversity and partner diversity have an impact on firms' financial performance in opposite patterns. While the relationship between alliance diversity and firm performance presented inverted U-shape, the partner diversity-performance relationship appeared to be U-shape. As the degree of alliance diversity increases, firms' performance will increase first and then decrease. On the other hand, when firms make their alliance partners become more heterogeneous, their performance decrease first and then increases.

The apposite influential pattern of portfolio dimensional configuration on firm's economic performance suggests that although firms developing heterogeneous strategic alliances may achieve better performance outcomes than those that only maintain homogenous alliances, the alliance relationships and allying partners have a unique relative contribution to firm performance. Consistent with the results of prior research by

Jiang et al. (2010), the findings of this study follow the relational view (Dyer & Singh, 1998; Lavie, 2006) and support the positive effects of heterogeneous alliance ties on firm performance due to enhanced value creation and core competency exploitation (Prahalad & Hamel, 1990) ascribed to the alliance diversity. However, in contrast to the linear positive effects of alliance tie (Bruyaka, Caner, & Prescott, Relative contribution of alliance ties and partners' diversity to firm performance, 2011) and alliance attribute (Jiang, Tao, & Santoro, 2010) on firm performance, my findings advance prior literature by highlighting the turnaround point of the alliance diversity—economic performance relationship. The empirical results show that the potential for increase in economic benefits arisen from value creation due to heterogeneous alliance ties contain in a firm's alliance portfolio does have a limit, beyond which further increase in alliance diversity will not able to generate extra value due to increased redundancy, risk and reduction in resource allocation and application.

The results of this study reveal the curvilinear U-shaped relationship between partner diversity and firm performance, which is similar to Bruyaka et al.'s (2011) findings in their study of biopharmaceutical firms, and complements the study by Jiang et al (2010) that focuses on the diversity of partner attributes separately. The results suggest that before firms are able to reap economic benefits when they manage increasingly heterogeneous partners, they have to suffer performance decrease, which might result from increased coordination cost, more complicated value appropriation, structural-change expense and other extra cost for developing and strengthening the trustful relationship among different partners. Once they successfully overcome a particular "threshold" in terms of partner-diversity magnitude, firms will start to receive economic

benefits from continuing increase in partner diversity, reflecting that value arisen from effective transfer of resource among different partners outweigh the extensive cost incurred due to complicated partner composition in the focal alliance portfolio.

In this study, I conceptually developed the construct of general alliance portfolio diversity and empirically tested its performance property. The findings provide consistent support for the positive effects of general portfolio diversity on firms' financial performance across the three performance measures. As an integrated construct reflecting both alliance diversity and partner diversity, the general portfolio diversity appears to be a linear and positive predictor of firm performance. Considering the opposite curvilinear effects of dimensional portfolio diversity on firm performance, the linear relationship between general portfolio diversity and firm performance suggests the existence of a positive "offsetting-leftover" effect on firm performance exerted by alliance diversity and partner diversity. This means that as the level of general alliance portfolio diversity increases, the positive effects on performance can always outweigh the negative effects. Specifically, for firms managing increasingly heterogeneous alliance portfolios, when the level of partner diversity is low and moderate, the positive effect of general portfolio diversity on performance is mainly driven by alliance diversity. On the other hand, when the level of alliance diversity is moderate and high, the positive effect of general portfolio diversity on performance is primarily driven by partner diversity. The performance property of alliance portfolio indicates that a balanced configuration taking into account both alliance relationships and partners are most likely to result in superior performance for the focal firm. This configuration rationale that highlights balanced design and composition has been reflected by prior research (Lavie, 2006).

The two-dimensional conceptual typology introduced in this study suggests four strategic choices of alliance portfolio configuration. The statistical results indicate different performance implications for those four alliance portfolio configuration strategies. The empirical evidence in this study provides persistent support for comprehensive portfolios to be viewed as a more effective type of portfolio configuration than basic portfolios in terms of economic performance outcomes. This study also provides partial support for the hypothesis that firms applying basic portfolio configuration strategy outperform those that choose alliance-enriched or partner-enriched alliance portfolios as their primary alliance portfolio configuration strategy. International lodging and travel companies that maintain relatively simple alliance portfolios appear to have greater performance than their counterparts that have more relatively heterogeneous alliances or more relatively heterogeneous partners in the portfolio composition. The findings imply an underlying ranking of alliance portfolio configuration strategies in terms of their performance implications, namely that comprehensive portfolios contribute to firm performance greater than basic portfolios, which outperform alliance- or partner-enriched portfolios. This ranking of portfolio configuration effects on economic performance does not fully conform with prior research findings (Beckman & Haunschild, 2002; Rodan & Galunic, 2004; Goerzen & Beamish, 2005) that noted a monotonic portfolio (attributes) diversity-economic performance relationship, nor does it simply reaffirm the curvilinear relationship depicted by scholars such as Lavie and Miller (2008) and Jiang et al (2010).

A fundamental explanation for this study's particular findings regarding portfolio diversity—economic performance relationship lies in the fact that this study applies a

combined construct of alliance portfolio in the conceptual framework development and empirical study design, allowing the discovery of more implicit performance implications, which were not able to be revealed by traditional alliance portfolio research focusing only on alliances (alliance attributes), or partners (partner attributes). The results highlights the superior performance effects of balanced alliance portfolio configuration, as international hospitality firms holding basic alliance portfolios are able to outperform their counterparts even though the latter firms have more heterogeneous portfolio composition for either alliance relationships or alliance partners. This is consistent with prior research that stress the importance of balance between the resource values derived from alliance network resource and portfolio efficiency in terms of absorptive capacity held by the focal firms (Lavie, 2006; Lavie, 2007; Lavie & Miller, 2008).

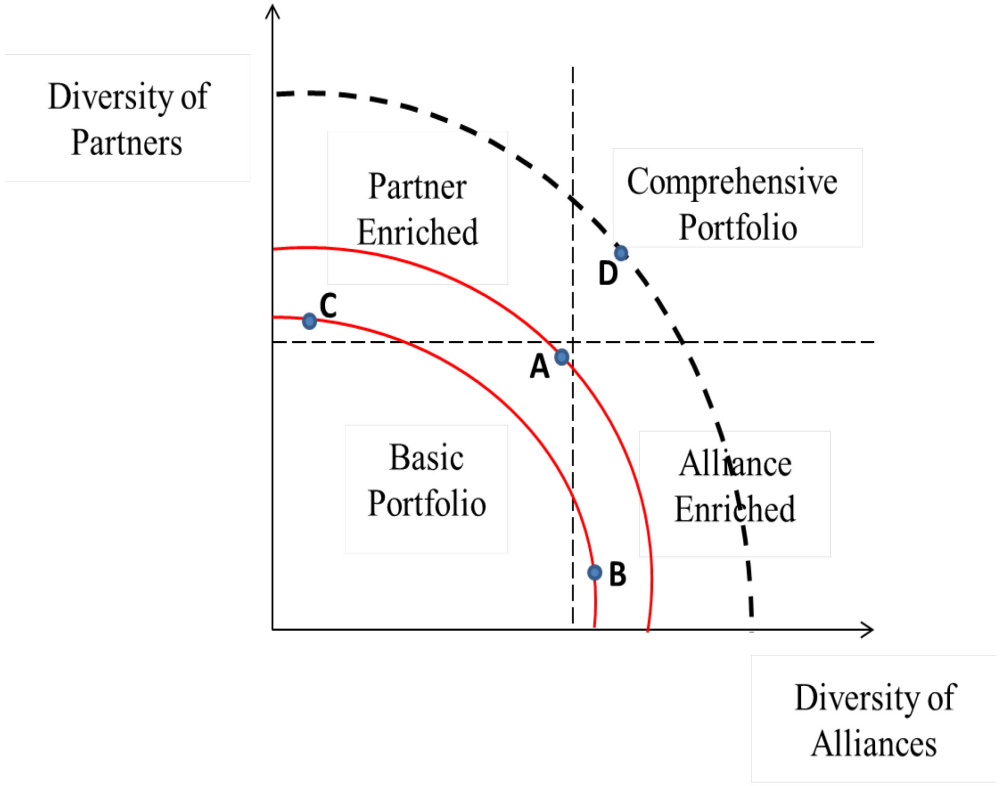
On the other hand, from an integrative perspective, the findings of this study suggest that international hospitality firms maintaining relatively more heterogeneous alliance ties and alliance partners simultaneously have greater performance than those that only purse in relatively simple but balanced extent of portfolio diversity in their alliance portfolios. Although firms adopting partner-enriched and alliance-enriched configuration strategies in most cases have greater magnitude in general portfolio diversity than firms only maintain basic alliance portfolios, the former firms do not achieve more superior economic performance than the latter firms. A possible explanation for this seemingly controversial result can be illustrated by Figure 2-4. The findings imply that in this study international hospitality firms adopting basic alliance portfolios can be dominantly located within a region centering on point “A”, while the majority of those sample firms holding partner- and alliance-enriched portfolios mainly

locate in the regions centering on point "B' and point "C". Consequently, comparing the distance between the referent points on the two-dimensional matrix and the origin may reveal that firms neighboring to "A" have more superior economic performance than those firms neighboring to "B" and "C", but more inferior performance than firms neighboring to "D", since the distance between "A" and the origin is greater than those between "B" and the origin or between "C" and the origin, but shorter than the distance between "D" and the origin. Given the fact that general alliance portfolio diversity is demarcated by the distance between the referral point and the origin point, the performance ranking of the four alliance portfolio configuration strategies still follows the radical rationale that highlights the importance of balanced configuration and meanwhile makes outstanding those alliance portfolios with higher degree of general portfolio diversity. This also suggests the consistency between Hypothesis 3 and Hypothesis 5.

A particular contribution of this study is to shed lights on the boundary condition that shapes the effects of alliance portfolio configuration on firms' economic performance in today's global business environment. The results in this study suggest that international hospitality firms' general alliance portfolio diversity affects their economic performance, but this effect is conditioned by extent to which firms' business operations are internationalized. Except few studies (Altintas, Vrontis, Kaufmann, & Alon, 2011), degree of internationalization has not been fully tested as an important boundary factor in the context of global competitive environment, and has rarely been included in alliance portfolio research. The results of this study suggest that degree of internationalization have sophisticated impacts on shaping the relationship between

general alliance portfolio diversity and firm performance. While internationally diversified hospitality firms may reap higher performance from their heterogeneous alliance portfolio configuration, this relationship can only sustain within a limited boundary. As hospitality firms' operations are beyond a particular point in terms of geographic scope, the further increase in alliance portfolio diversity would result in extra burden for those firms and eventually lead to reduced economic performance.

**Figure 2-4: Performance Implication of Strategic Alliance Portfolio Configuration Choice**




Interestingly, the results of this study suggest that the size of alliance portfolio in terms of the number of alliances and the number of partners that constitute a firm's alliance portfolio do not have direct impact on a focal firm's financial performance. A review of the 21 models listed from Table 2-3 to Table 2-6 shows that only one

coefficient of alliance portfolio size in terms of the number of alliances was marginally significant to predict firms' ROS. The relative low predictability of alliance portfolio size on firm performance revealed in this study does not match the findings of prior studies (Ahuja, 2000b; Baum, Calabrese, & Silverman, 2000; Phelps, 2010), which indicated a close connection between size of alliance portfolios and performance outcomes. These findings show further empirical evidence for one of the most prominent debate in previous literature concerning the relationship between alliance portfolio configuration and firm performance, and once again provide support for the argument that the relationship between alliance portfolio size and the resulting firm performance is complex and alliance portfolio size alone does not constitute a sufficient predictor for firms' performance, as potential curvilinear effect (Deeds & Hill, 1996), or moderating effects (Ahuja, 2000b) may exist depending on specific research context and outcome variables applied.

## 2.7 CONCLUSION

In this study I develop a combined two-dimensional typology that incorporates both alliance attributes and partner attributes to define alliance portfolio configuration, which was suggested and conceptually explored by strategic alliance researchers such as Bruyaka (Bruyaka, 2009) and Wassmer (2010), but has not been empirically applied in the field of strategic alliance research in the context of international service sectors. My approach enhances the current understanding of the strategic consequences of alliance portfolio from more diverse angles than prior research that only applied one dimension models. The empirical results indicate the importance of pursuing balanced portfolio

configuration strategies incorporating both alliance attributes and partner attributes based on specific firm resource capacity and conditions, especially for the firms that operate in multinational markets. Future studies are suggested to conduct other research designs based on random effects models. In this study I make the initial empirical efforts to employ a comprehensive view that embraces both alliance relation and alliance partners involved in an alliance portfolio to conceptually describe and empirically test the configuration of alliance portfolio, which provides me a fundamental platform to explore the antecedents and drivers of particular patterns of alliance portfolio configuration. This is discussed in the second research essay in the next chapter.

# Chapter 3. Essay Two: Strategic Antecedents of Alliance Portfolio Configuration—An Empirical Study Based on A Two-Dimensional Based Approach

## 3.1 INTRODUCTION

In Chapter Two I introduced a two-dimensional typology of alliance portfolio configuration based on the work of Bruyaka (2009) and Wassmer (2010), and examined the performance properties of this construct using a longitudinal research in the context of international hospitality and travel industry. While the previous chapter reveals the strategic consequences of alliance portfolio configuration on firm performance, this chapter aims at exploring the strategic antecedents of alliance portfolio configuration, which is still illustrated by the two-dimensional framework.

From an egocentric perspective, a firm's alliance portfolio can be viewed as an alliance system owned by the focal firm, to which different allying partners connect through direct ties. Regarding this alliance system, three main research streams have been identified (Wassmer, 2010) —the emergence of alliance portfolios, the configuration of alliance portfolios and the management of alliance portfolios. In contrast to the other two research streams that have been examined by scholars from different research fields (Koka & Prescott, 2008; Lavie & Miller, 2008; Luo & Deng, 2009; Soh, 2010), the emergence and formation of alliance portfolios has only drawn little research attentions except sparse works contributed by Gulati (1995a), Anand and Khanna (2000), and Goerzen (2007). Few empirical studies have been conducted to explore the driving forces that cause firms to form particular alliance portfolios, and mechanisms firms employ to develop their alliance portfolios remain to be unidentified. While a bulk of prior studies (Anderson & Gatignon, 1986; Burgers, Hill, & Kim, 1993; Gulati & Westphal, 1999;

Chung, Singh, & Lee, 2000) have focused on why firms develop external collaborations and enter into individual alliance relations, extant research on alliance portfolio emergence provide limited insights on firms' extinct motivations for maintaining multiple alliances simultaneously. No empirical evidence has been provided for the existence of a particular pattern of alliance portfolio configuration. In other words, we do not know why a focal firm's alliance portfolio has a particular appearance, and how this specific appearance is influenced by critical boundary conditions, such as firm multinationality.

Furthermore, a pivotal premise for fully understanding the strategic antecedents of alliance portfolio is to build up a framework that is able to completely reflect and describe an alliance portfolio's composition. The traditional one-dimensional approach used by extant alliance portfolio research is incompetent to demarcate the configuration of alliance portfolios as this approach is only able to capture incomplete alliance portfolio configuration with respect to either the alliance dimension or the partner dimension, which might lead to biased research design and unreliable empirical results.

To address the above research issues this essay aims at investigating the key determinants that shape alliance portfolio configuration. Primarily drawing on the resource based view and resource dependence theory, I develop a conceptual framework that take the initiative efforts to examine the key firm-level factors that determines the appearance of alliance portfolio configuration, which is demonstrated by the two-dimensional typology introduced and explained in the last chapter. I particularly extend the research framework by incorporating multinationality as a boundary condition in this study.

## 3.2 LITERATURE REVIEW

### 3.2.1 Emergence and Formation of Alliances

A review of alliance literature over the past three decades indicates that the formation of strategic alliance appear to be an important research issue, and have drawn attention from scholars using different theoretical lenses.

Transaction cost theorists posited that whenever legal or economic constraints prevent a firm from taking hierarchy or whole ownership as a solution, the firm may opt to enter into a strategic alliance to counteract particular market forces that threaten its well-being (Anderson & Gatignon, 1986; Hennart, 1991; Burgers, Hill, & Kim, 1993). The uncertainty involved in transactions play important roles in the process of supplying upstream product or service and transfer information to downstream firms (Sheth & Parvatiyar, 1992). Because of the uncontrollable nature of uncertainty (Williamson, 1985), firms need to choose an effective institutional form such as alliance to reduce those uncertainties.

Agency theory focuses on the optimal incentive structure that can help firms avoid efficiency loss due to the conflicting interests between principals and agents in the firm (Fama, 1980). Although the agency theory proposes the conflicts of interests between interacting parties, it only demarcates a potential context, in which an alliance may or may not exist (Sheth & Parvatiyar, 1992) except specific forms of strategic alliance such as joint ventures (Dursun & Kilic, 2008).

According to the resource dependence perspective, firms are the primary social actors and the inter-organizational relations can be viewed as a product of inter-organizational dependence and constraint (Pfeffer, 1987). Trust in this case plays

important roles in determining the form of external interdependence since concerns for internalization of interdependencies will be minimized if trust exists between firms (Sheth & Parvatiyar, 1992).

Resource dependence theorists have examined the formation of inter-organizational connections such as strategic alliances as a result of underlying resource dependence (Pfeffer & Nowak, 1976). Several studies in the 1960s and 1970s showed that an important reason for ties between human service agencies was the strategic interdependence they perceived with each other (Oliver, 1990). This strategic interdependence suggests a situation in which one organization possesses resources or capabilities that another organization needs but does not have to create benefits for itself (Aiken & Hage, 1968).

Although concerns of interdependence provide insights into the linking formation between firms, social network theorist such as Gulati (1995a) argued that this kind of interdependence does not adequately account for alliance formation, because the interdependency only provides potential opportunities for alliance formation but not all possible opportunities for sharing interdependence across firms eventually end with strategic alliances. Extending the interdependence view, Gulati (1995a) examined how firms learn about new alliance opportunities and overcome the difficulties and uncertainties associated with those partnerships from a social structure's perspective. Comparing to the interdependence view assuming an atomistic system characterized by freely available equally accessible information to all firms, the social structure perspective notes that the relational and structural factors function as critical conduits of information flow, provide firms with confidence they need, and create the context of

action to form new alliances. Following this perspective, empirical studies (Gulati, 1995a; Gulati & Westphal, 1999) have reported that the existing linkages, experience and channels between firms drive the formation of strategic alliances.

Other researchers also posit different ideas and perspectives as the explanation of alliance formation phenomenon. Mitsuhashi and Greve (2009) decomposed multimember alliances into dyads and proposed that market complementarity and resource compatibility are observable matching criteria in alliance formation. They further contended that the relevant effects differ for networked vis-à-vis isolate firms. Lin, Yang and Arya (2009) identified sample from four US industries and found that what matters in alliances rests on not only resource considerations, but also institutional explanations.

Hagedoorn and Sedaitis (1998) found that during alliance formation, international alliances that have intensive research obligations are more likely to take the contractual form, while a manufacturing orientation leads to an equity joint venture. They also posited that where technology sharing is unilateral, a greater propensity towards joint venture equity form can be identified. Hamel, Doz and Prahalad (1989) suggested that the possibility of mutual gain given partners can complement each other's weakness through alliance. Gulati (1995a) found that firms occupying complementary niches have higher chances of alliance formation. Hwang and Park (2007) investigate the determinant of strategic alliances according to an organizational life cycle framework. Doz, Olk and Ring (2000) as well as Ahuja (2000a) suggested that the propensity of firms to form linkages can be explained by simultaneously examining both inducement and opportunity factors.

Overall, although prior research has provided profound insights into the issue of alliance formation and emergence in terms of alliance formation patterns (Gulati, 1995a), new alliance formation (Gulati & Westphal, 1999), partner selection (Chung, Singh, & Lee, 2000), and formats of alliance formation (Hagedoorn & Sedaitis, 1998; Steensma, Marino, Weaver, & Dickson, 2000), the dyad-based analysis provide limited explanations to the formation of a system consisting of multiple alliances that surround and influence a focal firm simultaneously.

### 3.2.2 Emergence and Antecedents of Alliance Portfolio

Research on the emergence and formation of alliance portfolios focuses on two fundamental questions—why do firms develop their alliance portfolios, and how do firms build their alliance portfolios (Wassmer, 2010).

Regarding the motivation of entering into alliance portfolios, a critical theoretical highlight centers on why firms develop and maintain alliance portfolios that go far beyond the motivations of entering into individual strategic alliances. Studies in this line of research suggest that through maintaining networks of multiple alliances firms are able to receive greater benefits or value that they otherwise would not be able to receive by only engaging in a single alliance relationship. Specifically, pursuing multiple strategic goals through a portfolio of alliances allows firms to spread risks and overcome potential uncertainties (George, Zahra, Wheatley, & Khan, 2001; Hoffmann, 2007). The relational view (Dyer & Singh, 1998) and organization learning perspective also suggest that maintaining an alliance portfolio provides a focal firm with benefits beyond the level of single alliance relationship, since the variety of alliances and collaborating partners can support firms to create experience more efficiently and expedite the learning process of

alliance management (Anand & Khanna, 2000). From a resource-based perspective, the diversified mix of alliance ties and partners in the alliance portfolios enables firms to establish a more effective means than single alliance to enhance resource stock and improve the capacity to earn relational rents (Ahuja, 2000a; Lavie, 2006; Gulati, 2007). The social network theory also suggests that firms possessing effective alliance portfolios may have greater opportunities than those who do not to leverage structure holes existing in the alliance networks and to increase their stock of social capital (Walker, Kogut, & Shan, 1997).

The findings of the prior alliance portfolio literature suggest that the rationale of firms' motivation for building alliance portfolios can be explained from two different angles. First, firms develop alliance portfolios primarily for strategic purpose, especially to enhance their strategic competitiveness. Hence, alliance portfolios can be considered as the outcome of strategic rationality (Wassmer, 2010). Literature also offers explanation of alliance portfolio emergence from individual managers' perspective. This line of research suggests the agency hazards involved during the process of alliance portfolio development (Reuer & Ragozzino, 2006), and views alliance portfolio as the mechanism for managers to maximize their own functions and power (Wassmer, 2010).

Scholars studying the formation of alliance portfolios have primarily drawn on social network theory, the resource-based view, as well as organizational learning perspective (Ahuja, 2000a; Stuart, 2000; Gulati, 1999). Others applied the resource dependence and social embeddedness theories, which offer a deterministic explanation of alliance portfolio formation (Ozcan & Eisenhardt, 2009). Portfolio formation begins with

ties between interdependent firms and then evolves through the accumulation of ties between firms that are not only interdependent, but also increasingly embedded in a network (Ozcan & Eisenhardt, 2009). From a structural embeddedness perspective, Gulati and Gargiulo (1999) found that firms are more likely to enlarge their alliance portfolios through engaging in new alliance ties with partners with whom they had prior indirect alliance relationships. Furthermore, the formation and modification of alliance portfolios can also result from the industry-level competitive dynamics in which alliance portfolios are built over time by firms allying with both offensive and defensive alliances (Gimeno, 2004). Powell et. al (1996) found that a focal firm becomes more centrally connected in its alliance network as the increase of portfolio diveristy, suggesting that diversified alliance portfolio contents contribute to the formation of a more symmetric alliance portfolio. Using a game-theoretic framework, Hwang and Burgers (1997) found that the games played by multiple parties as in alliance constellations are fundamentally different from the games played by two parties as in dyadic alliances thus follow different patterns of alliance system maintenance. Observing that firms' decisions of alliance investments are sensitive to the presence or absence of agency hazards, Reuer and Ragozzino (2006) tested how agency problems are brought about by the separation of ownership and control stimulate the development of firms' joint venture portfolios.

In sum, the existing literature on alliance portfolio still centers on examining the issues using the perspectives that are fully conformed to those that have been used to study the dyadic relationship involved in alliance formation and partner selection. A review of studies in this research domain indicates that there is almost no study focusing

on the factors that are able to shape the appearance of particular alliance portfolios. A basic reason for this research gap can be related to the lack of appropriate conceptual description and effective empirical tool to identify the configuration of alliance portfolio from a comprehensive perspective. The two-dimensional framework of alliance portfolio configuration developed and tested in Essay One particularly provides opportunities to fill this research gap.

## 3.3 THEORY AND HYPOTHESES

Incorporating Hoffmann's (2007) idea that alliance portfolio can be viewed as a firm's adaptive behavior to match firm strategy and resource endowment as well as dynamic environmental conditions, I particularly investigate how three firm-level resources—alliance management experience, brand image, and slack resource interact with firm multinationality to affect alliance portfolio configuration. These three types of resources are chosen because all of them are important in specifying the uniqueness of a particular firm and in facilitating the external relationships with others. Barney (1991) contended that experiences give rise to routines and superior management capabilities constituting the most important intangible resources that are more likely to be the source of performance improvements in future alliance. Both marketing (Keller, 1993; Shocker, Srivastava, & Ruekert, 1994) and strategy (Amit & Schoemaker, 1993) scholars contended that brands can represent valuable firm resources. Organizational slack has been regarded as critical resource that shape firms' external and environmental strategies.

### 3.3.1 Alliance Management Experience and Alliance Portfolio Configuration.

Strategic researchers note that learning effects enable firms to develop special relational capability (Dyer & Singh, 1998; Kale, Dyer, & Singh, 2002; Gulati & Sytch, 2007) which can be critical for form to manage organization form such as strategic alliance. While significant differentials in basic knowledge and skills between alliance partners can impede learning (Baughn, Stevens, Denekamp, & Osborn, 1997), greater prior experience in alliance management allow firms to conduct learning-by-doing process through repeated engagements in the focal activity so as to retrieve the inferred learning for future engagements (Levitt & March, 1988). From a practical perspective, alliance experience is linked with firms' capabilities of effective alliance management associated with partner selection, conflict management etc. (Simonin, 1997). As firms gain alliance management experience, they become more efficient in applying strategic alliances as learning opportunities because of the learning curve associated with learning diffusion in the firm (Westney, 1988).

Furthermore, alliance experience can generate trust between partnering firms (Gulati, 1995b), which is on one hand able to reduce transaction costs and uncertainties involved in information sharing and transfer among partners (McEvily, Perrone, & Zaheer, 2003; Beckman, Haunschild, & Phillips, 2004), and on the other hand necessary for parties to make efforts toward mutual goals achievements and to avoid taking unilateral advantage of each other (Sabel, 1993) so as to strengthen the structure of business network connections by enhancing tie density and stability (McEvily, Perrone, & Zaheer, 2003). Research indicates that firms with greater alliance experience are able to extract more benefits than firms with less alliance experience (Sampson, 2005).

Moreover, empirical studies generally agree that prior alliance experience is positively associated with alliance outcomes as well as firm performance (Anand & Khanna, 2000; Kale, Dyer, & Singh, 2002; Hoang & Rothaermel, 2005).

Previous studies have suggested the rigid connection between firms' previous alliance experience and their social capital development. In particular, the information richness of social capital relies on the overall alliance experience of the focal firm (Koka & Prescott, 2002) since firms develop their social capital through a history dependent process of participating in collaborations with external partners (Chung, Singh, & Lee, 2000). Firms' previous alliance experience plays important roles in shaping the effects of alliance portfolio configuration and firms' performance outcomes. For example, Lavie and Miller (2008) found that partner experience moderates the relationship between alliance portfolio internationalization and firms' performance.

Firms that want to develop their social capital through alliance formation also regard a potential partner's prior alliance experience as important indicator of trustworthy and reliability (Hitt, Ahlstrom, Dacin, Levitas, & Svobodina, 2004). From a resource-based perspective while firms' social capital resources can increase their attractiveness to potential partners and create chances for them to enter into alliances (Gulati, 1998), the focal firm's prior alliance experience can substantiate the visibility and reliability of this attractiveness since it is a proxy for temporally unobservable factors that determine alliance formation (Gulati, 1999).

Existing research (Gulati, 1999; Ahuja, 2000a; Chung, Singh, & Lee, 2000; Yeniyurt, Townsend, Cavusgil, & Ghauri, 2009) generally agrees that there is a positive

relationship between firms' prior alliance management experience and new alliance formation. In line with these research findings, I further conjecture that prior alliance experience is able to shape the appearance of a firm's alliance portfolio that contains multiple alliance relationships among different partners. Managing complex interdependencies across multiple partners in an alliance portfolio requires firms to engage effective routines to coordinate knowledge flows, business strategies and partner activities (Gomes-Casseres, 1996), which necessitates the development of key alliance management capability. The above discussion suggests that firms are able to accumulate knowledge about alliance management through past alliance experience (Hagedoorn & Duysters, 2002) due to a learning-by-doing process and relevant knowledge escalation. Furthermore, as alliance experience increases, firms are able to reap benefits from the existing trust relationships and social capital that have been developed along with the accumulation of past alliance experience, both of which are pivotal for future strategic alliance development and performance (Gulati, 1998; Krishnan, Martin, & Noorderhaven, 2006). Once firms have gained greater alliance experience, they are more interested in taking advantage of their enhanced collaborative know-how by developing additional alliances (Teng & Das, 2008) so as to continually enrich their original alliance portfolios. The resulting increase in alliance portfolio diversity may lead to greater capabilities with alliance formation (Gulati, 1999). The focal firm can also adapt and recombine new partners' know-how to generate collaborative synergies and greater value for the alliance portfolio (Parise & Casher, 2003), which enhance its confidence and increase its propensity to extend the scope of the alliance portfolio in both of the alliance dimension and the partner dimension, eventually generating a positive dynamic cycle that delineates

a comprehensive portfolio. Based on the above discussion, I have the following hypothesis.

*H7: Firms possessing greater alliance management experience are more likely to form comprehensive alliance portfolios than firms possessing less alliance management experience*.

### 3.3.2 Brand Image and Alliance Portfolio Configuration.

Brand image refers to the perceptions of a brand that reflect consumer associations of the brand in memory and is an integral component of a brand's value in consumers' minds (Keller, 1993). Through transmitting a clearly defined brand image, firms are able to let consumers recognize the needs satisfied by the brand and at the meantime differentiate themselves from their competitors so as to achieve product success (Roth, 1995).

Compared to physical and financial resources, brand image as a key marketing resource is more intangible and more difficult to allocate and separate between strategic alliances' partners (Teng & Das, 2008). To a large extent, this is due to the fact that brand image is determined not only by one product's physical characteristics, but also by other non-physical factors such as pricing, packaging, advertising and schemas of the typical user (Sirgy, 1982). In particular, recent research has indicated that brand image in a global context is determined by interactive multi-level factors. For example, Kim and Chung (1997) argue that a multinational firm's global brand image is associated with brand popularity and country image, while the former of which is determined by prior

user behaviors and brand superiority, the latter is determined by shared brand perceptions from a given country and FDI associated image.

The special features of brand image can have certain impacts on a focal firm's alliance portfolio configuration. The manifold composition of alliance portfolio to the greatest extent increases the likelihood that two or more brands are jointly presented or in the domain of one another, so that brands' evaluations can be drawn in addition to certain stored brand-specific associations (Broniarczyk & Alba, 1994). Under this circumstance, if multiple brand images associating with multiple allying parties involved in one portfolio are not consistent customers might be confused and undesirable beliefs and the judgments regarding the overall brand image of a focal firm can be triggered (Simonin & Ruth, 1998). Firms possessing strong brand images in this case would have greater propensity to avoid this inconsistency and substantiate their original brand image by building branding fit and cohesiveness when they develop their alliance portfolio. Correspondingly a relatively simple portfolio that is not highly heterogeneous in terms of alliance and partner composition will be preferred.

On the other hand, the resource-based perspective suggests that brand equity can be regarded as a unique strategic resource and bring competitive advantages for the firm. Although brand image as a valuable resource is difficult to be transferred or traded (Hart, 1995), a wide-scoped alliance portfolio involving multi-dimensional interactions between alliances and partners can increase the potential chance that the unique brand image be distributed and attenuated within one or even across different industries. In this sense, firms holding strong brand images are very likely to feel reluctant to develop a highly

heterogeneous and complex alliance portfolio. Accordingly, I propose the following hypothesis.

*H8: Ceteris paribus, firms that possess stronger brand image are more likely to form basic alliance portfolios than firms that do not.*

### 3.3.3 Slack Resource and Alliance Portfolio Configuration.

Organizational slack is viewed as a cushion of resources allowing firm to adapt to external or internal pressures and to initiate strategic changes in response to environment (Bourgeois, 1981). It is the resources that are in excess of the minimum necessary to produce a certain level of organizational output (Nohria & Gulati, 1996). Theorists from different theoretical disciplines have extensively examined the relationship between organizational slack and firm performance outcomes (Bromiley, 1991; Miller & Leiblein, 1996; Tan & Peng, 2003) as well as strategic behaviors (Bromiley, 1991; Tseng, Tansuhaj, Hallagan, & McCullough, 2007), or the moderating effects of organization slack on shaping the relationships between key strategic factors (Love & Nohria, 2005; Wan & Yiu, 2007). While organizational slack is regarded as beneficial to firms as it is able to buffer a firm's technical core from environmental turbulence (Cyert & March, 1963) and stimulate a firm to pursue in risky strategies (Hambrick & D'Aveni, 1988), a significant body of literature suggests that the existence of slack is due to managerial incompetence and may lead to inferior performance (Goerzen & Beamish, 2007). In spite of the lack of consensus on the strategic effects of organizational slack, prior literature indicates the existence of an optimal level of slack for a focal firm (Sharfman,

Wolf, Chase, & Tansik, 1988; Nohria & Gulati, 1996; Tseng, Tansuhaj, Hallagan, & McCullough, 2007).

The optimal slack level implied by prior studies and the underlying curvilinear relationship between organizational slack and performance outcomes indicate that a status of equilibrium exists between organizational slack and potentially related strategic behaviors. Drawn on resource based perspective, the dominant view of alliance formation suggests that firms entering into strategic alliance are induced by the need of resources (Li & Atuahene-Gima, 2002). In this sense, firms possessing greater slack resources occupy advantageous strategic positions thus are less inclined to pursue in cooperation with other firms, while firms holding small amount of slack resources are in vulnerable positions and are more likely to conduct proactive cooperation with others. On the other hand, resource dependency theory indicates that lacking of slack gives rise to conservative behavior conducted by the focal firm, while excessive organizational slack leads to aggressive strategic actions due to less external dependency (Pfeffer & Salancik, 1978). Integrating both of the two views, I suggest that firms possessing moderate amount of organizational slack are less likely than those possessing extreme level of slack to pursue far aggressive or far conservative development of alliance portfolios. Consequently, firms holding moderate level of slack resources are more likely than their counterparts to avoid building either too complex or purely identical alliance portfolios that hold homogeneous features. Bring the above points together, I hypothesize the following:

*H9: Firms possessing moderate level of organizational slack are more likely to form alliance-enriched or partner-enriched alliance portfolios than firms that possess low or high level of organizational slack resulting in an inverted U-shape.*

### 3.3.4 Moderating effect of Internationalization on Alliance Portfolio Configuration.

Given the increasing importance of foreign expansion to firm growth (Hitt, Hoskisson, & Kim, 1997; Tan & Mahoney, 2005), degree of internationalization (DoI) has become both a critical factor that can have impacts on firm's strategic behaviors and a context in which strategic behaviors take place. As far as firms' alliance portfolio is concerned, international diversification plays important roles in shaping the relationship between resource factors and portfolio configuration.

As the degree of internationalization increases, firms are forced to assimilate various experience, knowledge and skills they obtained from different host nations so as to overcome liability of foreignness (Mezias, 2002). This process substantiates the learning opportunities for the focal firm and enables the firm to further extend its existing pool of alliance management experience and improve the focal firm's capability of managing complex alliance portfolio. However, international business research (Rugman & Verbeke, 2003) also indicates that some key alliance management experiences are location bound and only valid within a certain geographic boundary. Thus, irreversibility effects will become increasingly salient as MNCs' geographic scope continues to expand.

On the other hand, when firms become more internationally diversified, they are inevitably faced with increased competition, environmental uncertainty and complexity, which necessitate a more sharpening brand image and social position. Firms in this case

are more likely to develop and maintain a relatively less complicated alliance portfolio so as to retain the original brand image in a broader competitive domain. However, increased external dependency and greater resource inputs requirement incurred by increased degree of internationalization necessitate proactive strategic response to environmental change and raise the difficulty in maintaining strategic consistency and alliance portfolio stability. Under this circumstance, the conflict between maintaining a moderate pool of slack resource and a stable alliance portfolio will become increasingly salient. Given the fact that alliance-enriched and partner-enriched alliance portfolios are two types of intermediate portfolio configuration strategies, both of them are unstable per se, especially under the condition of the focal firm's increased internationalization. Bringing the above points together, I propose the following hypothesis:

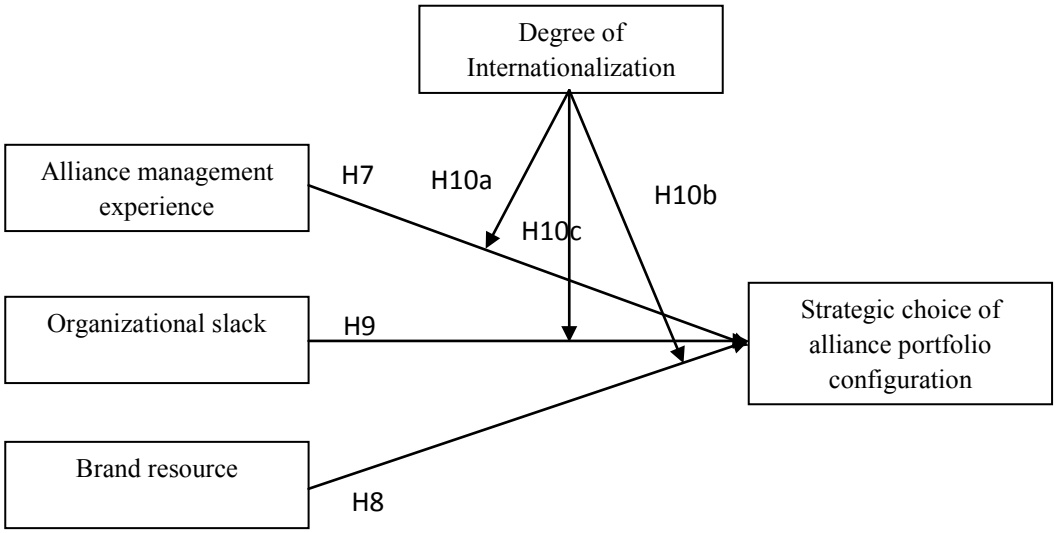
*H10a: The relationship proposed in H7 is negatively moderated by firms' degree of internationalization, such that the positive relationship between alliance management experience and the likelihood of forming comprehensive alliance portfolio will be weaker for firms with high degree of internationalization.*

*H10b: The relationship proposed in H8 is positively moderated by firms' degree of internationalization, such that the positive relationship between brand image strength and the likelihood of forming basic alliance portfolio will be stronger for firms with high degree of internationalization.*

*H10c: The relationship proposed in H9 is moderated by firms' degree of internationalization, such that the proposed curvilinear relationship between slack resource and the likelihood of forming alliance-enriched or partner-enriched alliance portfolios is stronger when firms' DoI is low than when firms' DoI is high.*

Figure 3-1 listed below illustrates the entire research framework of Essay Two.

**Figure 3-1: Conceptual Framework of Essay Two**




## 3.4 METHODOLOGY

### 3.4.1 Research Setting and Sampling

I tested the hypotheses in the context of global hospitality and travel industry. Specifically, I selected international firms operating in the industries of lodging, restaurant, airline transportation, and amusement & recreation (SICs 4512, 4513, 4522, 4724, 4725, 5812, 5813, 7011, 7021, 7041, 7992, 7996, 7997, 7999). The international lodging and travel industry have witnessed dramatic growth of strategic alliances and

international firms in these industries have been increasingly managing multiple alliances simultaneously. Firms in those industries intend to create complex alliance portfolios that span across different but interrelated sectors (Chathoth, 2004). The intensive, dynamic and various alliance formation in these interrelated sectors enhances the meaningfulness, reliability and variance of the variables (Lavie & Miller, 2008), leading to the enhancement of the overall validity of the current study.

### 3.4.2 Data Collection

I used the SDC Platinum Database to identify alliance portfolios for the sampling firms following a longitudinal research design based on the period from January 1999 to December 2009. Business performance data was obtained from Compustat North America and Compustat Global database. Given the fact that SDC Database rarely reports the specific time of alliance termination and high likelihood of left- or right-censoring problems might be resulted, I applied the same approaches as prior researchers (Gulati, 1995b; Stuart, 2000; Lavie & Miller, 2008) and assumed a five-year effective lifespan of a single alliance. Hence, each single firm in the research sample would have a varied alliance portfolio year to year, and the construction and variation of the portfolio relied on whether new alliances were formed in a given year or existing alliances reached the five-year limit of expiration.

To reveal the alliance portfolios for the focal research period, I first identified 6195 alliance deals that were associated with at least one international hospitality firm matching the research context of the study from the SDC Database. I then decompose the alliance announcements and capture related information for the ultimate alliance participants at the corporate level, and thus recreated a dataset for 1935 firms during the

period from 1994 to 2009. Using the data of the initial five years as the original information for firms' alliance portfolios, I was able to transform the alliance-level data into firm- (portfolio-) level data and use firm-year as the unit of analysis. Deleting the observations that contain significant missing values, I eventually obtain a dataset consisting of 348 firms, out of which 223 were the US based and 125 were headquartered in other nations, and 2993 firm-year observations.

### 3.4.3 Variables and Measures

*Dependent Variable.* In this study, I followed a two-step approach to define the dependent variable—the membership of alliance portfolio group. Relying on the conceptual model previously developed, I first calculated scores representing alliance diversity degree and partner diversity degree respectively. Afterwards, I categorized each of the sample firms based on their alliance/partner diversity scores into the four strategic groups, each of which responds to a specific portfolio configuration strategy.

*Strategic Choice of Alliance Portfolio Configuration*— before identifying the strategic choice of alliance portfolio configuration applied by the sample firms, I first calculated the alliance diversity degree and partner diversity degree. In contrast to prior studies (Baum, Calabrese, & Silverman, 2000; Beckman & Haunschild, 2002; Goerzen & Beamish, 2005) that define alliance/partner diversity based on one attribute or function of an alliance tie or partner composition, I operationalized alliance diversity and partner diversity by integrating the pivotal attributes embraced by these two dimensional alliance portfolio constructs. For alliance diversity, I looked at the diversity degree of six relevant attributes including alliance functional activities, whether or not the alliance conducted cross-border business operations, nation(s) to which an alliance is affiliated, status of an

alliance (e.g. signed, completed or terminated), number of participants and industry affiliation(s). The degree of partner diversity was calculated based on five critical attributes —partner's national affiliation, organizational mode (public/private), governance structure (ownership percentage), partners' primary industrial affiliation and relevant industrial affiliation.

I employed Blau's (1977) Heterogeneity Index of Variability to calculate the level of diversity for each of the single dimensional attributes mentioned above, and then average the attributes' diversity scores for both alliance dimension and partner dimension to obtain the measures for alliance diversity and partner diversity respectively. The Blau Index has been widely applied in the group diversity related research to measure the degree of diversity for a given diversity variable based on the equation—D = 1- $\sum p_i^2$, where D represents diversity degree ranging from 0 (a perfectly homogeneous group) to 1 (a perfectly heterogeneous group), p represents the proportion of a specific category in the group and i tells the number of categories.

Similar with the study in Essay One, the current study also identifies four types of alliance portfolio configuration strategies—basic portfolio, alliance-enriched portfolio, partner-enriched portfolio and comprehensive portfolio. To identify the alliance portfolio category for each observation, I created four dummy variables and attribute "0" or "1" for each variable by comparing a firm's dimensional Blau's index score with the median of those scores for all of the observations in my dataset. Specifically, a firm was referred to the category of basic portfolio when both of its alliance diversity score and partner diversity score were less than the medians of the relevant sample scores. If the focal firm's alliance diversity score and partner diversity score were both greater than the

medians, it was referred as a firm pursuing comprehensive portfolio strategy. A firm would be referred to the category of alliance-enriched portfolio/partner-enriched portfolio when its alliance diversity score/partner diversity score was greater than the relevant median, while its partner diversity score/alliance diversity score was less than the relevant median of the relevant scores of the total sample. Complying with the specific research questions of the current study, I created a general dummy variable that represents the membership for both alliance-enriched and partner-enriched portfolios.

*Independent Variables*. To measure a firm's alliance management experience, I tracked a focal firm's alliance formation history during the entire research period and calculated the accumulated years weighted by the number of alliances that remain active in the focal firm's alliance portfolio for each single year. This measure is able to reflect the nature of additive increase of alliance management experience over time. Furthermore, comparing to the alliance experience measurements of past studies (Simonin, 1997; Reuer, Park, & Zollo, 2002) that focus merely on the accumulation of alliance experience over time, the operationalization of alliance management experience in this study attempted to tackle the issue of simultaneously managing multiple alliances with different partners and remove the effects of those alliances that did not matter anymore due to inaction[4].

Considering the lack of a consistent brand ranking system existing in the general research domain for this study, I employed firms' goodwill value as the measure of brand resource, as suggested by most recent international marketing research such as Shamma & Hassan (2011). Drawing on previous studies (Lee & Grewal, 2004; Tseng, Tansuhaj,

[4] Again, an assumption of five-year active period for each alliance was made here.

Hallagan, & McCullough, 2007) in strategic and marketing research, I measured organizational slack using a firm's annual retained earnings that particularly indicate the uncommitted nature of the resources (Tan & Peng, 2003), which exactly reflected the theoretical concentration of this study.

*Moderating Variable.* The primary moderating variable in this study is international hospitality and travel companies' degree of internationalization (DoI). Consistent with Annavarjula and Beldona (2000) as well as Thomas and Eden (2004), DoI construct in this study was operationalized using both the depth and breadth of multinationality, in which depth of DoI refers to the extent to which firms commit resources to conduct value-creation activities, and breadth captures the spread of a firm's foreign operational activities. Given the specific research focus of this study, I calculated the number of foreign counties in which a focal firm's alliances headquartered other than its home headquarter to capture the breadth component of DoI. I used foreign sales to total sales ratios to respond to the depth aspect of DoI. A combined index number which was created by weighted averaging the resulting two ratios was then used as the proxy of DoI.

*Control Variables.* I controlled for the size of sample firms by including the total number of full-time employees in the empirical models. The traditional measures of firm size such as total asset was not used due to the fact that intangible asset could play significant roles in the service sectors. To correct for any alliance portfolio size effects in the statistical models, I controlled for the total number of alliances and total number of

partners in the alliance portfolio of a given firm in a particular year. To account for the effects of previous performance, I included a lagged performance variable measured by total revenue$_{t-1}$ in the statistical models. I also created year dummies to control for the unobservable effects associated with a particular period of year.

### 3.4.4 Data Analysis

To fit the nature of unbalanced panel data for this study, I first attempted to employ a random effects model to control for the group effect due to multiple observations for each single firm. However, the results of Hausman tests ($p<0.01$ for eight research models) indicated that the unique errors are correlated with the regressors and hence the null hypothesis of Hausman test was rejected. Furthermore, as fixed effect models incorporate superior controls for time-invariant variables (Mundlak, 1978), which particularly matches the requirements of this research, which aims at targeting on the roles of internal firm-level time-variant characteristics on alliance portfolio configuration. The Breusch-Pagan Lagrange Multiplier tests further rejected the existence of random effects ($p>0.05$ for all regression models).

**Table 3-1: Correlations and Descriptive Statistics for Essay Two**

| | Mean | S.D. | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1. Comprehensive portfolio | 0.4257 | 0.4945 | | | | | | | | | | | | | | | |
| 2. Basic portfolio | 0.4220 | 0.4940 | -.736** | | | | | | | | | | | | | | |
| 3. Alliance/Partner enriched portfolio | 0.1524 | 0.3594 | -.365** | -.362** | | | | | | | | | | | | | |
| 4. Alliance experience | 5.11 | 11.75 | .374** | -.289** | -.118** | | | | | | | | | | | | |
| 5. Brand image | 625.25 | 5635.48 | 0.0117 | 0.0136 | -0.0351 | .096** | | | | | | | | | | | |
| 6. Slack resource | -425288.63 | 17433872.92 | -0.0283 | 0.0208 | 0.0105 | 0.0025 | 0.0032 | | | | | | | | | | |
| 7. Slack resource square | 2.9985E+14 | 1.5647E+16 | 0.0223 | -0.0164 | -0.0081 | -0.0018 | -0.0022 | -0.913** | | | | | | | | | |
| 8. DoI | 0.338 | 0.431 | .507** | -.586** | .107** | .232** | -0.0016 | -.038* | 0.0295 | | | | | | | | |
| 9. DoI× Alliance experience | 2.898 | 8.050 | .378** | -.297** | -.111** | .834** | .070** | -0.0031 | 0.0026 | .363** | | | | | | | |
| 10. DoI× Brand image | 200.755 | 1388.077 | .146** | -.121** | -0.0341 | .234** | .315** | 0.0040 | -0.0028 | .150** | .224** | | | | | | |
| 11. DoI× Slack resource | -421505.12 | 17314020.80 | -0.0283 | 0.0208 | 0.0104 | 0.0024 | 0.0029 | 0.882** | -0.913** | -.037* | -0.0032 | 0.0039 | | | | | |
| 12. DoI× Slack resource square | 2.9985E+14 | 1.5647E+16 | 0.0223 | -0.0164 | -0.0081 | -0.0018 | -0.0022 | -0.883 | 0.865** | 0.0295 | 0.0026 | -0.0028 | -0.913** | | | | |
| 13. Firm size | 19.91 | 44.71 | .233** | -.148** | -.119** | .471** | .132** | 0.0060 | -0.0047 | .156** | .424** | .256** | 0.0060 | -0.0047 | | | |
| 14. Alliance number | 2.77 | 6.16 | .445** | -.362** | -.114** | .820** | .058** | 0.0030 | -0.0024 | .265** | .770** | .185** | 0.0029 | -0.0024 | .429** | | |
| 15. Partner number | 4.09 | 10.35 | .406** | -.323** | -.114** | .755** | .054** | 0.0050 | -0.0039 | .277** | .751** | .192** | 0.0049 | -0.0039 | .373** | .743** | |
| 16. Previous performance | 2991434.70 | 73155257.59 | 0.0226 | -0.0100 | -0.0174 | -0.0035 | -0.0034 | -.664** | .588** | .062** | 0.0061 | -0.0031 | -.664** | .588** | -0.0095 | -0.0057 | -0.0079 |

**. Correlation is significant at the 0.01 level (2-tailed).
*. Correlation is significant at the 0.05 level (2-tailed).

**Table 3-2: Baseline Models and Control Variables**

| | **Model 22** Basic AP | **Model 23** Alliance-/Partner-enriched AP | **Model 24** Comprehensive AP |
|---|---|---|---|
| Year 1998 | 47.45 (1.47)*** | -.338 (.357) | -.707 (.98) |
| Year 1999 | 47.07 (0.01) | .265 (.343) | .280 (.94) |
| Year 2000 | 20.20 (2125) | .381 (.352) | .285 (1.03) |
| Year 2001 | .805 (1.85) | .388 (.359) | .572 (.98) |
| Year 2002 | .296 (2.22) | .262 (.361) | 1.324 (1.07) |
| Year 2003 | 1.101 (1.77) | -.082 (.373) | .546 (.98) |
| Year 2004 | -.634 (1.45) | .079 (.382) | 1.964 (1.00) |
| Year 2005 | -1.246 (1.39) | .171 (.387) | 2.178 (.96) |
| Year 2006 | -1.951 (1.72) | .410 (.398) | 1.162 (1.05) |
| Year 2007 | -2.107 (2.04) | .783 (.396)* | .407 (1.21) |
| Year 2008 | -2.237 (2.19) | .735 (.411) † | .401 (1.12) |
| Firm Size | -.0089 | -.0459* | .0660* |
| | (.038) | (.020) | (.029) |
| No of Alliance | -51.58*** | .2011 | 5.715*** |
| | (4.256) | (.179) | (.821) |
| No of Partners | -2.108 | -.0749 | .1914 |
| | (3.888) | (.132) | (.329) |
| Revenue t-1 | 1.93E-8 | -.0001** | 5.15E-10 |
| | (1.42E-7) | (.00004) | (4.08E-9) |
| No of Observations | 1416 | 906 | 1107 |
| No of Firms | 170 | 111 | 134 |
| LR Chi2 | 1232.86 | 39.15 | 878.72 |
| Model significance | *** | *** | *** |

†p<0.1 *p<0.05; **p<0.01; ***p<0.001, standard errors in parentheses.

I hence employed fixed effects models fitting with panel data to test the hypotheses using Stata 12. Logit regression was applied for model estimating due to the dichotomous nature of dependent variables and the command xtlogit was used. All dependent variables were set one-year lagged to prevent potential autocorrelation and improve the predicting power of the models.

**Table 3-3: Results of Logit Regressions**

| Dependent Variable | **Model25 (H7)** CP | **Model26 (H8)** BP | **Model27 (H9)** AEP/PEP | **Model28 (H10a)** CP | **Model29 (H10b)** BP | **Model30 (H10c)** AEP/PEP |
|---|---|---|---|---|---|---|
| Alliance management experience | 1.694 (.527)** | -2.632(.934)** | .032 (.093) | 1.750 (.553)** | -1.457 (10.765)** | .023 (.101) |
| Brand image | .0007 (.0005) | .007 (.003)* | -.8.27E-06 (.00007) | .00068 (.0004) | .00027 (.0348) ŧ | -.00031 (.0004) |
| Organizational slack | -9.94E-08 (1.17E-06) | .0017 (.0007) * | 7.56E-05 (7.22E-05)* | -9.86E-08 (7.85E-07) | -6.62E-08 (1.28E-05) | .00009 (.00008)* |
| Organizational slack square | | | -2.06E-10 (3.29E-10) ŧ | | | -3.15E-10 (6.76E-10)ŧ |
| Degree of internationalization (DoI) | | | | 2.724 (.948)** | -14.136 (7.57)* | 2.318 (.332)*** |
| DoI × Alliance management experience | | | | -.537(.132)*** | | |
| DoI × Brand resource | | | | | .013 (.018)** | |
| DoI × Organizational slack | | | | | | 1.61E-06 (.00001) |
| DoI × Organizational slack² | | | | | | -.1.50E-07 (.000002) |
| Firm Size | .064 (.029)* | .012 (.041) | -.048 (.021)* | .063 (.023)** | .705 (1.96) | -.046 (.021)* |
| No of Alliance | 4.633 (.847)*** | -28.275 (1101.07) | .173 (.206) | 4.538 (.811)*** | -74.41 (103.65) | .234 (.226) |
| No of Partners | .373 (.322) | -16.99 (1101.14) | -.075 (.140) | .141 (.316) | -17.129 (112.61) | -.256 (.165) |
| Performance t-1 | -5.34E-10 (6.01E-08) | 2.84E-07 (.00013) | -.00011 (.00004)** | -6.17E-10 (4.40E-08) | -3.35E-08 (1.15E-06) | -.00012 (.00004)** |
| Year Effects | Included | Included | Included | Included | Included | Included |
| No of Observations | 1030 | 1320 | 833 | 1030 | 1320 | 833 |
| No of Firms | 127 | 160 | 106 | 127 | 160 | 106 |
| LR $\chi^2$ | 825.53*** | 1153.61*** | 39.97*** | 835.41*** | 1162.08*** | 97.67*** |
| Log Likelihood | -43.61 | -4.28 | -319.98 | -38.68 | -.043 | -291.13 |

ŧp<0.1 *p<0.05; **p<0.01; ***p<0.001 Standard errors in parentheses.

## 3.5 FINDINGS

Table 3-1 presents the descriptive statistics and the correlation matrix. The data reveals strong diversity across firms in my dataset, especially in terms of business performance and slack resources. As shown in Table 3-1, the majority of correlations are at a moderate level with some exceptions of square terms and interaction terms. Both independent and moderator variables were mean-centered to reduce the potential problem of multicollinearity (Aiken & West, 1991). To further assess the potential multicollinearity problems I tested the variance inflation factor for a pooled regression. All VIF scores were below 10, indicating that the multicollinearity was not biasing the research results (Kutner, Neter, & Nachtsheim, 2004).

Table 3-2 gives the description of baseline models that only include control variables and fixed year effects. As shown in Table 3-2, apart from several exceptions, sample firms' choices of alliance portfolio configuration strategies were not significantly associated with year dummies, suggesting that environmental influence during the study period did not play important roles in predicting firms' alliance portfolio strategies. The results in Table 3-2 also indicate that existing alliance number were significantly associated with the likelihood of forming basic or comprehensive alliance portfolios. As far as firms' size is concerned, large firms appeared to be more interested in forming comprehensive alliance portfolios while small firms preferred partner- or alliance-enriched portfolios. Firms that achieved better previous financial performance were more likely than those that did not to form basic or comprehensive alliance portfolios.

Table 3-3 shows the results for the fixed effects logistic regression models. Model 25 was used to test Hypothesis 7, which proposed that a positive relationship exists

between a firm's alliance management experience and the likelihood for the focal firm to develop and maintain a comprehensive alliance portfolio. As shown in Table 3-3, the results in Model 25 (dependent variable: membership of comprehensive alliance portfolios—CP) provide support for Hypothesis 7 ($\beta$=1.694, $p<.01$). Firms that have greater alliance management experiences are more likely than those that do not to develop comprehensive alliance portfolios. The results of model 25 also indicate that larger firms ($\beta$= .064, $p<.001$) or firms having greater number of alliance ties in their alliance portfolios ($\beta$=4.633, $p<.001$) are more likely to configure their alliance portfolios as comprehensive.

Hypothesis 8 predicted that a firm's brand image strength is positively associated with the likelihood that the firm maintains a basic alliance portfolio. As indicated by the results of Model 26 (dependent variable: membership of basic alliance portfolios—BP), the hypothesis received moderate support ($\beta$=.007, $p<.05$). Hospitality firms that hold strong brand images prefer to develop basic alliance portfolios. Interestingly, the results of Model 26 also indicate that firms' intention to develop basic alliance portfolio decrease as their alliance management experience increase ($\beta$= -2.632, $p<.001$), while this intention increase if the focal firm own extra slack resources ($\beta$= .0017, $p<.05$).

Hypothesis 9 received marginal support from the results of Model 27 (dependent variable: membership of alliance/partner-enriched portfolios—AEP/PEP). As shown in Model 27, the positive sign ($\beta$=7.56E-05, $p<.05$) of organizational slack indicates that the focal firm's attention to maintain alliance/partner-enriched portfolio increases as their slack resource increase. However, after a particular point the firms' further intention to maintain the alliance/partner-enriched portfolios would decrease, as suggested by the

significant negative sign (β= -2.06E-10, p<0.1) of the squared term of slack. This indicates an inverted U-shape between organizational slack and the likelihood of firms' formation and maintenance of alliance-/partner-enriched portfolios.

In Model 28, 29 and 30 (dependent variables are membership of comprehensive, basic and alliance/partner-enriched portfolio respectively), I attempted to test the moderating effects of firms' degree of internationalization on the relationships proposed in Hypothesis 7-9. The results of Model 28 showed strong support for Hypothesis 10a (β = -.537, p< .001), which proposes that DoI negatively moderates the positive relationship between alliance management experience and likelihood of forming comprehensive alliance portfolio. As indicated in Model 29, H10b also received full support (β = .013) at .001 level. Firms holding stronger brand image are particularly more likely to maintain basic portfolio when their degree of internationalization is high. However, Model 30 suggested that the moderating effect of degree of internationalization is not significant for shaping the relationship between square term of organizational slack and firms' intention to form alliance/partner-enriched portfolios. Hence, H10c was not supported.

## 3.6 DISCUSSION

The model I propose in this essay aims at examining how the firm level resource mix impacts the patterns of alliance portfolio configuration. Deriving from a resource-based view and resource dependence perspective, this study particularly focuses on three pivotal internal assets of firm—past alliance experience, brand image and organizational slack. The empirical results show that each of these three types of resources has important effects on shaping the appearance of firms' alliance portfolios.

While prior studies (Gulati, 1995a; Reuer, Park, & Zollo, 2002) have shown the important roles of alliance experience in determining the formation of alliance and alliance performance, this study reveals that previous alliance management experience conditions the pattern of the two balanced alliance portfolio configuration. The results in Table 3-3 provides consistent support across four statistical models, showing that alliance management experience is a positive predictor of comprehensive alliance portfolio and a negative predictor of basic alliance portfolio. Firms accumulate information, knowledge and skills from past alliance management experience and use those learning outcomes (Reuer, Park, & Zollo, 2002) to purse more complicated and heterogeneous alliance portfolio configuration. For those firms who do not possess sufficient alliance management experience, they prefer to maintain a relatively simple alliance portfolio. Robust check was conducted and the results of the fixed effect model also support a significant positive relationship between alliance management experience and the degree of general alliance portfolio diversity ($\beta = .022$, $p<.001$, $F=30.84$), which logically match the results in the previous section.

The empirical results of this study suggest that firms possessing superior brand asset attempt to avoid building up a heterogeneous and complicated alliance portfolios. Instead, they prefer to form relatively simple alliance networks to surround them. This reflects the degree to which brand assets are viewed by firms as rare and critical resources for gaining sustainable competitive advantage (Capron & Hulland, 1999). Firms attempt to protect this core advantage by collaborating homogeneous business partners and prevent the brand assets from being exposed to or leveraged by potential competitors.

This study investigated the roles of organizational slack in influence firms' collaboration strategies. The results indicate that a non-monotonic relationship between firms' slack resources and firms' strategic choice of developing unbalanced alliance portfolios. The empirical results provide consistent support for the hypothesis that firms possessing moderate level of slack resources are more likely than their counterparts to pursue alliance-enriched or partner-enriched alliance portfolio configuration strategy. As implied by prior studies (Boyd, 1990; Finkelstein, 1997; Song, 1995), the findings of this study restate the critical effects of resource dependency on shaping the firms' strategies of managing external collaborations. Firms that do not rely on external dependency for resource acquisition take more aggressive behaviors in shaping their external collaborating relationships. While firms rely largely on external environment to obtain resource, they prefer more conservative strategies for alliance portfolio configuration. The rest of firms holding moderate level of buffering resources in this case are more likely to select moderate configuration strategies to maintain their alliance portfolios.

Finally, this study examines firms' strategic choices on alliance portfolio configuration in the context of firms' internationalization. Firm multinationality in this study appears to be an important boundary condition that shapes the relationship between firms' internal resource mix and their strategic choice on alliance portfolio configuration. Degree of internationalization moderates the relationship between alliance management experience, brand assets and firms' alliance portfolio configuration strategies. A robust test was conducted and the results show negative moderating effect of DoI (interaction term $\beta = -.0048$, $p<0.01$; $\beta_{alliance\_experience} = 0.01$, $p<0.001$, $F= 46.08$) on the relationship between alliance management experience and the degree of general alliance portfolio

diversity, which is consistent with the results of the model testing DoI's moderating effect on the relationship between alliance experience and likelihood of forming comprehensive alliance portfolio presented in the previous section.

Multinationality allows firms to conduct resource exchange and facilitate knowledge and information flows on a larger platform, thereby creating both opportunities and challenges for maintaining an effective collaboration strategy. Under the condition of internationalization, the effectiveness of strategic collaborations with partner firms are particularly related to learning from more diversified experience at international level, efficient leverage of brand assets to make core competency sustainably maintained, and balance between the utilization and accumulation of slack resource. This study did not find the significant moderating effect of DoI on slack resource—alliance portfolio configuration, a possible explanation could be the incomplete measurement of slack, which suggested by prior literature has multi-dimensional features (Tan & Peng, 2003).

## 3.7 CONCLUSION

In this chapter, I attempt to investigate the key determinants of alliance portfolio configuration when firms pursue increasing internationalization. While prior literature on alliance portfolio has applied a variety of theoretical lenses (Lorenzoni & Lipparini, 1999; Anand & Khanna, 2000; Goerzen, 2007; Ozcan & Eisenhardt, 2009), a salient research gap is that these studies do not reveal how strategic drivers function and interact with each other to shape the eventual appearance of the alliance portfolio configuration. Because the specific patterns of alliance portfolio configuration also represent the

strategic choices made by the focal firms to manage their alliance portfolios, identifying antecedents of alliance portfolio configuration may help reveal important rationale firms apply for supporting their decision-making.

Literature applying traditional resource-based view suggests that alliance formation is driven by resource complementarity, which allows firms to create synergy and generate rent through combing complementary resources (Eisenhardt & Schoonhoven, 1996; Mitsuhashi & Greve, 2009). However, this rationale does not provide sufficient explanation for the determinants of alliance portfolio configuration, which by nature is beyond the scope of individual dyad alliance and involve multiple dimensions and attributes. The issue of the overall resource complementarity at the portfolio level has not been addressed by existing literature. On the other hand, firms building up alliance portfolios aim at improve their strategic competiveness (Wassmer, 2010), which requires that the composition of alliance portfolio match their existing resource endowments. Drawing on this perspective, I develop a framework to investigate how critical firm-level resources influence their strategic choices of alliance portfolio configuration, and how those effects are shaped by firm multinationality.

The results of this study indicate that firms holding rich alliance management experience are more likely than others to form comprehensive alliance portfolios, while firms having strong brand image attempt to develop basic alliance portfolios. As far as the slack resources are concerned, firms possessing moderate level of organizational slack are more likely to maintain alliance-enriched or partner-enriched alliance portfolios. Furthermore, a firm's internationalization strategy moderates the potential relationship between an individual firm's resource mix and its alliance portfolio configuration.

This study contributes to alliance portfolio research and fills the theoretical gap by addressing the determinants of alliance portfolio configuration when they pursue in increased degree of internationalization, which is treated as a boundary condition of the research. In particular, I employ the two-dimensional typology that incorporates both alliance and partner attributes to demarcate the boundary of alliance portfolio configuration, which effectively enhanced the current understanding of alliance portfolio emergence from more diverse angles than prior research that only applied one dimension models. Overall, this study sheds initial light on how alliance portfolio configuration can be defined and predicted, which may serve as cornerstone for future research on the relationship between alliance portfolio and firm's strategic decision-making as well as performance outcomes.

# Chapter 4. Essay Three: Alliance Portfolio Configuration and Multinational Firms' Continuing Foreign Expansion—A Real Options Perspective

## 4.1 INTRODUCTION

Multinational enterprises (MNCs) pursuing in international expansion have been meeting increasing challenges under high level of uncertainty. Despite a large body of literature on foreign direct investment and subsidiary development strategies, research attention has been intensively paid to operation modes that firms adopt to initially enter into a new market. Although a firm's core competence is a guide to market entry (Prahalad & Hamel, 1990; Goddard, 1997), multinational firms' strategic behavior appear to be influenced by more complicated internal and external forces. With the exception of the traditional gradual pattern of internationalization contributed by authors from University of Uppsala (Johanson & Vahlne, 1977), the main-stream research in this field does not distinguish between initial foreign expansion and continuing foreign expansion. Little is known about the underlying mechanism of MNCs' continuing international expansion after they complete the first entries into a foreign market. Especially extant literature does not clarify the key drivers that shape MNCs' foreign expansion strategies in both countries which they have entered and new countries they never enter after their initial international expansion.

To fill the above research gap, I apply a real options approach to investigate the important factors that drive MNCs' continuing foreign expansion. Instead of concentrating on the specific approaches or patterns that are employed by MNCs to achieve increased degree of internationalization, I attempt to identify the key antecedents that determine MNCs' strategic decision-making regarding their post-entry expansion

overseas. Real options are viewed as a useful analytical device for the understanding of the dynamics of multinationalization (Buckley, Casson, & Gulamhussen, 2002). Adopting the fundamental rationale of real options theory, I develop a cross-level framework consisting of related propositions that illustrate the dynamics of MNCs' continuing foreign expansion from a two-directional perspective.

## 4.2 CONCEPTUAL BACKGROUND

### 4.2.1 Post-Entry Continuing Foreign Expansion

International expansion, according to Hitt, Hoskisson and Kim (1997), is cross-border expansion across regions and countries, into different geographic locations or markets. This geographic expansion indicates that a firm's willingness to take risks together with the speed of international development has been associated with entrepreneurial strategic posture (Thoumrungroje & Tansuhaj, 2005). Vernon (1977) suggested that international diversity requires firms to deal with additional transportation, communication and coordination. Due to increased demands in information-processing, trade barriers and cultural differences, firms pursuing internationalization face more complex management issues (Hitt, Hoskisson, & Kim, 1997). On the other side, firms attempting to enter new markets rely on their prior experience and accumulated assets (Penrose, 1959). To tackle the issues that arise from internationalization, firms need to spare their resource capacities, or otherwise have to stretch their existing resources and meanwhile suffer reduced effectiveness, which is referred as liability of expansion (Cuervo-Cazurra, Maloney, & Manrakhan, 2007).

The adjustment and stretching of existing resources to adapt to the requirements of MNCs' international expansion indicate that foreign expansion is an incremental and continuing process. The most significant work that demarcates this process was contributed by Johanson and Vahlne (1977), who presented a framework to reveal how MNCs develop incrementally increasing commitment to foreign markets through gradual acquisition, integration and use of knowledge. In their (2009) paper, Johanson and Vahlne further extended the 1977 framework by looking at the business environment as a web of relations and highlight the roles of trust-building and relationship knolwedge development.

Another line of research in this field concentrates on investigating the resource and capability aspects that condition firms' continuing expansion and growth. Knudsen and Madsen (2002) proposed that continuity in the international market is the demonstration of the dynamic capability of the firm, as the firm accumulate knowledge, develop strategy and deploy resources depending on its stock of knowledge. Henderson and Cockburn (1994) suggested that firms' business growth relies on two types of key competence—component competence and architectural competence. Component competence is the local abilities and knowledge that are fundamental for the day-to-day problem solving. Architectural competence is the ability to use the component competencies and turn them into a fresh set of capability by integrating them effectively. Rhee (2005) proposed that the effect of the Internet on international expansion is contingent on the absorptive capacity at host country-, industry-, firm-, and employee level.

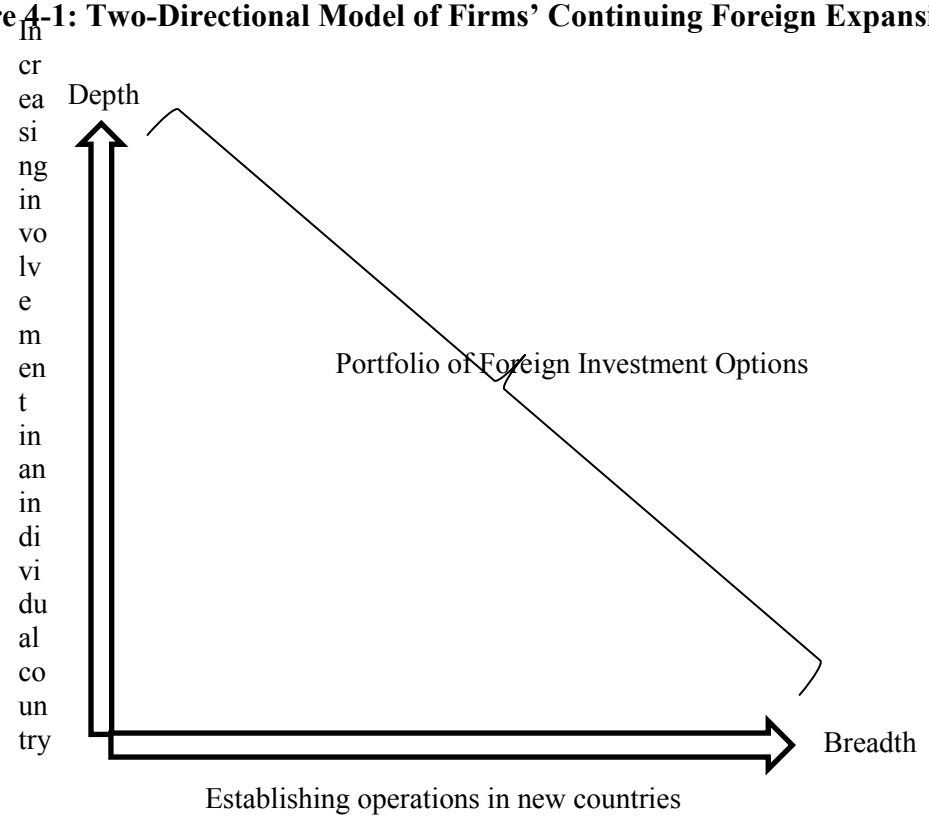
Other strategy scholars focus on the mechanisms and approach multinational firms adopt to achieve continuing foreign expansion and growth. A common approach to globalizing in emergent industries is through the use of strategic alliances that can be especially useful for lowering risk, governance costs and commitments (Helfat, et al., 2007). Glaister and Buckley (1996) concluded that more than 50 percent of strategic alliances are set-up to pursue international expansion. On the other side, scholars such as Camisón and Villar (2009) contended that involvement in and inclination toward cooperative internationalization may or may not correlate, indicating that an active history of international growth based on cooperation does not necessarily mean that the focal firm's managers will follow this strategy in the future. In contrast, internationally active firms that lack cooperation experience may choose to cooperate if managers perceive that entering international alliances will present them with good opportunities (Camisón & Villar, 2009).

In summary, compared with investigations into firms' initial choice of entry modes, there has been little conceptual work on multinational firms' post-entry choices of strategic investments. Little attention from the international business school has been paid to the dynamics of post-entry internationalization, which refers to the continuing international expansion after a focal firm's first international sale is achieved. Internationalization is seen as a dynamic process, individual to each firm, and characterized by an arrangement of business modes into a range of counties that may be adjusted over different time periods, and occurring with varying levels of speed (Jones & Coviello, 2005). Furthermore, continuing internationalization has two directions—increasing involvement of the focal firm in an individual foreign country, and successive

establishment of operations in new countries (Johanson & Vahlne, 1977). As show in Figure 4-1, while the first direction indicates the depth of continuing foreign expansion, the second direction demarcates the breadth of the expansion. The strategic choices associating with the two-directional expansion constitute a portfolio of foreign investment options in the process of continuing foreign expansion.

Prior research primarily focuses on the first direction in terms of strategic outcomes of initial entry modes (Sharma, 1998), subsidiary growth and development (Uhlenbruck, 2004; Tan D. , 2009), and subsidiary collaboration in host countries (Lu & Beamish, 2006), few prior studies have looked at continuing foreign expansion from this two-dimensional perspective, leaving a potential research gap to be filled.

**Figure 4-1: Two-Directional Model of Firms' Continuing Foreign Expansion**



Firms' strategic decisions involve both company policies and the resource investment necessary for implementing the policies and treating the perceived future benefits as expected returns on the investments (Todeva & Knoke, 2005). A multinational firm's strategic decisions such as continuing foreign expansion overseas are driven not only by evaluations of present circumstances, but also by expectations about future outcomes. Following this logic, I adopt a real options' perspective, which takes into account both current investment and further potential outcomes, as the fundamental theoretical platform to examine the determinants of firms' decision-making on their continuing foreign expansion.

### 4.2.2 Real Options Theory

Real options theory originated from the analogy between real options and financial options that offer holders with the right, but not the obligation, to purchase or sell the underlying asset at a future time (Bowman & Hurry, 1993; Kogut & Kulatilaka, 2001). From a real option's perspective, firms' discretionary investment opportunities can be regarded as a call option on real assets, in a very similar way as a financial call option provides investors decision rights on financial assets (Myers, 1977).

Real options theory holds unique views and suggests valuable means to deal with uncertainty, which remains a constant feature (Tong & Li, 2008) and is likely to be magnified (Kedia & Bhagat, 1988) in the context of international strategy research, and thus provides a valuable approach for understanding international expansion (Jiang, Aulakh, & Pan, 2009). Real options possessed by firms represent initial strategic investments that can lead to different outcomes and actions such as growth, deferments,

switching or abandonment (Trigeorgis, 1996). The specific option value of an international investment rests on firms' strategic flexibility in adjusting commitments to the resolution of uncertainty (Kogut, 1991; Reuer & Leiblein, 2000). Real options can reduce risk for a focal firm by giving decision-makers flexibility to respond to new information as it becomes available, which requires the manager to be able to identify information, foresee change, and establish a system that transfers information from its immediate recipients to the key decision-makers (Buckley, Casson, & Gulamhussen, 2002). Examining and modeling foreign investment option structures can help explain the irrationality of resource allocation and caution of incremental investment in foreign markets (Buckley & Casson, 2009). Brother et al. (2008) suggested that real options perspective is more superior than other theories such as transaction cost economics, in that it does not only focus on the traditional uncertainties firms making investment may encounter, but also deals with opportunity costs associated with not making an investment.

Previous literature (Kogut & Kulatilaka, 2001; Li J. , 2007; Tong & Li, 2008) has suggested three pivotal drivers that can shape option value for multinational firms conducting international expansion—uncertainty, irreversibility and managerial discretion. I draw on insights from this toehold to develop the theoretical model and relevant propositions for the key factors across different levels of analysis that influence MNCs' strategic decision-making on their continuing internationalization in terms of the two-directional business expansion in foreign countries.

## 4.3 THEORY AND PROPOSITIONS

Real options theory suggests that a multinational firm can be viewed as a collection of valuable options that permit the strategic choice of moving activities from one nation to another (Kogut & Kulatilaka, 1994). The options are valuable because they reduce risks by providing strategic decision makers flexibility in response to new information available in endogenous and exogenous environments (Buckley & Casson, 2009). This flexibility originates from the transnational network of operations built by MNCs that covers a wide range of geographic area and consists of multiple choices of real option. This surpassing strategic flexibility enables multinational firms to derive significant advantages over their domestic counterparts (Pantzalis, 2001).

### 4.3.1 Exogenous Uncertainty and Continuing Foreign Expansion

Real options theory differentiates itself from other theoretical perspectives by highlighting the distinct role of uncertainty, which also implies strategic opportunities MNCs can take advantage of since real option value increases under conditions of uncertainty (Bowman & Hurry, 1993). Strategic researchers (Tong & Li, 2008) insist that both the level and the nature of uncertainty may have impacts on real option value. MNCs pursuing in strategic international expansion usually face two types of interrelated uncertainties—exogenous and endogenous uncertainties (Bowman & Hurry, 1993; Folta, 1998).

Exogenous uncertainty is to a great extent associated with the velocity of changes taking place in the environment (Folta, 1998). To a great extent it is unaffected by firms' actions and can only be revealed over time (Tong & Li, 2008). A typical example of

exogenous uncertainty is currency exchange rates related uncertainty, which is determined in atomistic markets that cannot be precisely predicted or manipulated (Campa, 1994). One of the most primary sources of exogenous uncertainty is environmental munificence, which refers to the relative level of resources that is available in an environment (Boyd, 1990). Previous studies have reported that the level of environmental munificence has effects on mode of corporate governance (Boyd, 1990) and multinational firms' expansion strategies (Mezias & Park, 2008).

A large body of recent studies (Brouthers, Brouthers, & Werner, 2008; Chari & Chang, 2009; Cuypers & Xavier, 2010) has addressed the issue of MNCs foreign entry decisions under exogenous uncertainty employing a real option perspective. They suggest that an appropriate strategy in response to exogenous uncertainty inside a host country is "wait and see", through which MNCs minimize current investments but secure a potentially future option of investment (Brouthers, Brouthers, & Werner, 2008). While most of the research focuses on strategic arrangements for dealing with environmental uncertainties in host countries, I contend that environmental changes can also be identified in MNCs' home countries under the condition of globalization. When the home country environmental munificence becomes unstable, in order to tackle the potential risks that arise from and maintain the original performance, firms may start to conduct an initial commitment that is able to provide them with option rights in the future. As MNCs that have established affiliates overseas have greater degrees of strategic flexibility than their domestic counterparts (Dunning & Rugman, 1985), they face increased uncertainty in home countries and may choose to create their option rights by enriching the existing networks of foreign subsidiaries. Under this condition, firms have greater incentives to go

beyond the existing scope of foreign country investments by investing in new markets, which are perceived to be safe for future business expansion. In this case, firms attempt to reduce the potential uncertainty perceived through enlarging the scope of investment in terms of geographic regions. However, if the focal multinational firm possesses an alliance portfolio consisting of highly heterogeneous collaborating partners, firms may use the alliance portfolio as a kind of special resource buffer and access to critical resources provided by allying partners (Chung, Singh, & Lee, 2000; Das & Teng, 2000). Highly heterogeneous partner-composition in this case holds greater potential and capabilities than relative homogeneous partner-composition to provide the focal firms resources they urgently need. Hence, the propensity of the focal firm to invest in new countries for resource acquisition will be attenuated. Based on the above discussion, I propose that:

> P1: Ceteris paribus, the instability of home country environmental munificence is positively associated with MNCs' propensity of continuing foreign expansion in countries where they did not have previous investments, and this relationship is negatively moderated by the focal firms' partner diversity in their alliance portfolios, such that multinational firms with heterogeneous partner composition in their alliance portfolios have lower propensity to pursue the above continuing foreign expansion .

In a contrasting scenario, based on the real options perspective, to deal with the increased uncertainty and protect the existing investments in a host country environment, a MNC would be motivated to maintain the value of existing investment options in that

host country and take defensive action to cease further investment project. This requires MNCs to avoid a complicated investment portfolio and improve the efficiency of their international investments by eliminating duplication and redundancy in their investment options in the focal host country that is experiencing unstable environmental munificence. However, a highly heterogeneous alliance portfolio may provide the focal MNC access to pivotal information, knowledge and resources that match the particular backgrounds of the host country and allows the focal MNC take offensive rather than defense actions to purse in more investment opportunities in the host country for acquiring options that offer flexibility in the future. Accordingly, I propose that:

> P2: Ceteris paribus, the instability of host country environmental munificence is negatively associated with a focal MNC's propensity of continuing expansion in that country, and this relationship is attenuated by the focal firm's partner diversity in its alliance portfolio, such that multinational firms with heterogeneous partner composition in their alliance portfolios have less propensity to avoid the above continuing expansion in the host country that is experiencing environmental munificence instability.

### 4.3.2 Endogenous uncertainty and firms' continuing foreign expansion

Endogenous uncertainty is associated with firms' learning and managerial capabilities to undertake option opportunities (Jiang, Aulakh, & Pan, 2009). In contrast to exogenous uncertainty which is beyond firms' controllability, endogenous uncertainty can be reduced through a firm's initiative investment (Tong & Li, 2008), especially the investment in relation to learning (Fisch, 2008). From a real options perspective, firms

need to develop dynamic capabilities to manage a variety of real option investments in different business environments. For example, previous literature (Fisch, 2008) has noted that endogenous uncertainty caused by the disability in controlling foreign subsidiaries can retard the foreign investment rate, but this type of uncertainty decays as the increase of learning effects. MNCs holding superb coordinate and learning capabilities thus are able to adjust their resource allocation and adapt their management routines to coping with changing markets in terms of extended geographic boundary and requirements for exercising different real options when they make their strategic investments in countries to which they have not invested and countries which they have entered.

On the other hand, MNCs' alliance portfolios have been widely accepted by strategic researchers (Powell, Koput, & Smith-Doerr, 1996; Anand & Khanna, 2000; George, Zahra, Wheatley, & Khan, 2001; Reuer, Park, & Zollo, 2002; Hoang & Rothaermel, 2005) as an effective repository of experience and a dynamic vehicle for learning. Highly heterogeneous alliance ties and allying partners allow multinational firms to accumulate different alliance experience and management knowledge based through different learning styles that stem from the relationships with the multiple partners. Heterogeneous alliance portfolios usually involve variety of knowledge flows across the entire portfolios (George, Zahra, Wheatley, & Khan, 2001), allowing the focal MNC to improve the absorptive capacity (Cohen & Levinthal, 1990). Strategic management scholars (Parkhe, 1991) believe that partner diversity existing in international strategic alliance can facilitate double loop learning, which leads to knowledge creation and capability enhancement (Phan & Peridis, 2000). The transfer of knowledge and learning styles from multiple partners through diversified alliance ties

enable MNCs to improve both capability and confidence for managing option rights in different foreign markets where they may or may not have previous investment. Thereby, I propose that:

> P3: Ceteris paribus, MNCs' coordination and learning capability are positively associated with their propensity of continuing foreign expansion in both the countries they have entered and the countries they have not entered.

> P4: Ceteris paribus, the above relationship is positively moderated by MNCs' general alliance portfolio diversity, such that MNCs having greater alliance portfolios diversity will have stronger propensity to leverage their learning capability and to invest in both the countries they have entered and the countries in which they have no operations, resulting in the increased scope of continuing foreign expansion in terms of both expansion depth and expansion breadth.

### 4.3.3 Irreversibility and Firms' Continuing Foreign Expansion

Real option theory suggests that investment decisions are in many cases not reversible (or only partly reversible), implying greater downside risk potential of investments than that assumed by traditional models (Brouthers, Brouthers, & Werner, 2008). Specifically, irreversibility is associated with the risk of difficult or costly redeployment of future investment, which may even be sold at a discount (Kogut & Kulatilaka, 2001). In practice, the feature of irreversibility associating with an investment is analogous to an exit barrier (Rivoli & Salorio, 1996). Research in both economics and

organization theory emphasizes that tangible asset-investment components of irreversibility as capacity and capital cost make a competitive move more irreversible than other moves (Chen & MacMillan, 1992). Social, political and organizational factors may be as important as economic reasons in determining the degree to which an entrant may consider entry as irreversible (Sharma, 1998).

MNCs have been increasingly managing their foreign affiliates as a network of interdependent facilities (Kogut, 1985). Most recent international business literature views MNCs' business environment as a network of relationship and the liability of outsidership radically leads to uncertainty (Johanson & Vahlne, 2009). In this sense, multiple strategic alliances simultaneously developed and maintained by MNCs play remarkable roles in the process of their internationalization since no individual firms possess all the resources required to exploit larger and intensely volatile markets (Contractor & Lorange, 2002). In this study, I take the initiative efforts to investigate how the general alliance portfolio diversity is logically linked with irreversibility following the real options logic and affect MNC's continuing foreign expansion.

Strategic management scholars have paid extensive attention to the issue of alliance portfolio configuration and its consequent strategic outcomes. The empirical findings suggest that strategic alliance portfolio is able to play important roles in shaping firms' competitive advantages (Dyer & Singh, 1998; Gulati, 1999) and driving the performance outcomes (Gulati, Nohria, & Zaheer, 2000). An alliance portfolio can be viewed as a composite system integrating a variety of attributes that can be categorized into two clusters—alliance related attributes and partner related attributes. As illustrated

in Chapter Two and Chapter Three, the general diversity of an alliance portfolio is determined by variant composition of those two clusters of dimensional attributes.

According to a real options view, irreversibility reflects the extent to which the resale value of an asset decreases versus the purchase price (Dixit & Pindyck, 1994). Ideally, when international investments can be fully recouped or redeployed without incurring extra cost in an industry, MNCs can always choose a committed strategy to ensure the capture of any upside potential or competitive advantage, and choose to disinvest should market conditions turn worse than anticipated (Rivoli & Salorio, 1996). However, as those international investments become more irreversible, there is a higher opportunity cost associated with entering. Thus, higher irreversibility should be associated with more valuable deferment options, making entry or continuing international expansion less likely (Folta & O'Brien, 2004).

On the other hand, real options perspective views firms' alliances as option-like investments that provide contingent claims on future performance outcomes without requiring the type of irreversible setup, administrative, and dissolution cost that are typically associated with other organizational modes such as merger or acquisition (McGill & Santoro, 2009). Because strategic alliances may serve as a mediate stage of a series of incremental international expansion to establish the knowledge base regarding foreign markets (Johanson & Vahlne, 2009), they requires less resource commitment comparing with other organizational modes such as wholly owned subsidiaries. Existing literature (Glaister & Buckley, 1996; Zahra, Ireland, & Hitt, 2000; Camisón & Villar, 2009) suggests the highly effective use of strategic alliance by MNCs pursuing in international expansion.

The above discussion indicates that in the context of MNCs' international expansion, strategic alliances and alliance portfolios themselves hold salient capability allowing MNCs to capture value when upside potential is highly variable and to minimize irreversible setup costs (McGill & Santoro, 2009), thus providing MNCs a powerful mechanism to tackle investment irreversibility when they attempt to continue their international expansion in foreign markets. The increased diversity of partners and alliances may offer MNCs more opportunity to enable the redeployment of future investment by increasing the potential demand of and complementarity between highly diversified assets owned by different partnering firms.

Strategic alliance is an important mode through which firms update their capabilities (Eisenhardt & Martin, 2000). A highly diverse body of alliance relationship enables MNCs to reduce uncertainty through balanced resource allocation and sharing among ally partners, to exploit power between related firms, and to configure complex skills and resources that cannot be achieved by an individual firm (Baker, 1990; Burgers, Hill, & Kim, 1993). Particularly, alliance diversity allows MNCs to leverage the inter-firm relationships through developing fungible assets that enables MNCs to reap benefits from new endeavors achieved through redeploying existing capabilities so as to create super-additive real option value (Vassolo, Anand, & Folta, 2004). This enhanced fungibility improves the MNCs' flexibility to manage and extend scope of continuing foreign expansion.

Furthermore, given the fact that real option irreversibility is path dependent per se and development of capabilities cost both resource and time (Kogut & Kulatilaka, 2001), learning plays a pivotal role in influencing managers' perceptions of

environmental uncertainty and investment irreversibility. The previous discussions have suggested the significant effects of general alliance portfolio diversity on facilitating learning between firms. Overall, MNCs maintaining heterogeneous partner and alliance composition in their alliance portfolios thus are less likely to be constrained by investment irreversibility and more likely to hold stronger propensity and capability to continually enlarge their geographic scope of foreign expansion, which include both the countries they have entered and the countries they have not. Accordingly, I propose that:

> P5: Ceteris paribus, greater general alliance portfolio diversity is positively associated with MNC's propensity of continuing foreign expansion in the countries they have business operations and the countries they have not entered.

### 4.3.4 Managerial Discretion and Continuing Foreign Expansion

Managerial discretion from real options perspective refers to the degree of selection freedom owned by a firm to exercise, defer or abandon an option (Kogut & Kulatilaka, 1994). According to real options view, the most pivotal factor that affects the freedom of selective decision-making at the industrial level is the extent to which the deployment of resource is constrained by pressure of industrial competition.

Real options theory suggests that the more exclusive an owner firm's right to exercise a growth option, the more valuable the option is to this owner firm. While competition is able to dramatically reduce the exclusiveness of firm's right to exercise the relevant growth option, it can reduce the value of the option to the firm (Trigeorgis, 1996; Rivoli & Salorio, 1996). MNCs would encounter more challenges to create growth

options in industries with intense competition, since many incumbents share the same growth option, and shared options are less valuable opportunities (Li & Li, 2010). When future new market demand turns favorable, even though the focal MNCs entering the new market can exercise its growth option by strategic behaviors such as increasing the investment level or equity share, many incumbent competitors are able to take similar actions, lowering the value of growth option owned by the focal MNC (Li & Li, 2010). Hence, a focal MNC in a highly competitive industry will be less concerned about leveraging their network resources derived from their alliance portfolios to obtain future growth opportunities in new markets which they have never entered. In contrast, if a MNC has already established business operations in particular counties, it may use the information and knowledge accumulated by its local subsidiaries or local relational entities to tackle environmental uncertainties and competition in the host market. Relying on this existing knowledge, the focal MNCs can even modify the industrial competition in the potential host country market through their existing alliance network. A heterogeneous alliance portfolio will provide a firm with enhanced opportunities to complete this task, since in this case the focal MNC may have the chance to use direct or indirect ties in its alliance network to form new relationships with local competitors in the host market.

Based on the above discussion, I propose that:

P6: Ceteris paribus, the positive association between general alliance portfolio diversity and MNCs' propensity of continuing foreign expansion is negatively moderated by the degree of industrial competition; however, this negative moderating effect is attenuated for continuing expansion in the counties which the

focal MNCs have entered than for new markets the focal MNCs have no operations.

### 4.4 Conclusion

In this essay I propose a conceptual model that illustrates the antecedents of MNCs' continuing foreign expansion. Applying a real options approach, I derive the model based on the three key drivers of real option value—uncertainty, irreversibility and managerial discretion. The six propositions developed in the paper essentially identifies the key antecedents from country-, industry-, network- as well as firm levels that drive MNCs' continuing foreign expansion. The underlying rationale of the framework developed in this study is concerned with the choice between flexibility and commitment under uncertainty (Dixit & Pindyck, 1994) for international investments.The overall model highlights the moderating effects of alliance portfolio diversity, which function as a key factor that attenuate the investment irreversibility involved in continuing foreign expansion. This is consistent with prior research (Folta & O'Brien, 2004; Jiang, Aulakh, & Pan, 2009), which has provided the empirical evidence of irreversibility as key moderating factor for the relationship between uncertainty and strategic foreign investment decision-making.

This conceptual study contributes to the existing international business research by extending the prior knowledge domain of firm's internationalization process using a real options perspective. It bridges real option perspective with other theoretical lens, especially resource-based view and organizational learning, which have been applied to

explore MNCs' internationalization and to investigate how the critical features of pivotal relational resource match the key elements of real option rationale in a dynamic context.

This research indicates that MNCs applying a real options perspective should understand the importance of selecting particularly valuable markets to expand their investment. These may include either foreign markets which MNCs have entered, or completely new markets in which the focal MNCs never have operations. Furthermore, this study suggests that building and leverage network resources in the business environment, maintaining an effective subsidiary network meanwhile effectively responding to industrial competition are all paramount conditions for successful continuing foreign expansion.

## Chapter 5. Concluding Remarks

### 5.1 SUMMARY OF KEY FINDINGS

**Table 5-1: Summaries of Empirical Research Results**

| | Hypotheses | Results |
|---|---|---|
| H1 | Inverted U-shaped relationship between alliance diversity and firm performance. | Partially[5] Support |
| H2 | U-shaped relationship between partner diversity and firm performance. | Support |
| H3 | Positive relationship between general alliance portfolio diversity and firm performance. | Support |
| H4 | Basic alliance portfolios have more superior performance outcomes than alliance-enriched or partner-enriched alliance portfolios. | Not Support |
| H5 | Comprehensive alliance portfolios have more superior performance outcomes than basic alliance portfolios | Support |
| H6 | Degree of internationalization moderates the association between firms' portfolio diversity and their financial performance in an inverted U-shaped relationship | Partially Support |
| H7 | Alliance management experience→ comprehensive alliance portfolio | Support |
| H8 | Brand image strength→ basic alliance portfolio | Support |
| H9 | Moderate level of slack resource→alliance-enriched/partner-enriched alliance portfolio | Support |
| H10a | The positive relationship between alliance management experience and the likelihood of forming comprehensive alliance portfolio will be weaker for firms with high degree of internationalization. | Support |
| H10b | The positive relationship between brand image strength and the likelihood of forming basic alliance portfolio will be stronger for firms with high degree of internationalization. | Support |
| H10c | The curvilinear relationship between slack and the likelihood of alliance-enriched/partner-enriched portfolio is stronger when firms' DoI is low than when firms' DoI is high. | Not Support |

The two empirical studies of this dissertation respectively focus on the performance implications of alliance portfolio configuration in terms of dimensional and general diversity, and strategic antecedents at firm level of alliance portfolio configuration.

Table 5-1 lists the main arguments and summarizes the empirical results.

[5] This means that at least one out of the three tests was significant.

## 5.2 THEORETICAL CONTRIBUTIONS

This dissertation contributes to the emerging research on alliance portfolios and alliance networks in several key facets.

First, Essay One advances the extant literature that focuses on alliance portfolio—firm performance relationship by revealing the separated performance contributions from dimensional alliance portfolio configuration, namely alliance diversity configuration and partner diversity configuration. The statistical results uncover the complexity of dimensional diversity's curvilinear effects on firms' economic performance, and imply the existence of optimal configuration in terms of alliance/partner diversity. Deriving from the two-dimensional framework contributed by Bruyaka (2009) and suggested by Wassmer (2010), four strategic choices of alliance portfolio configuration are suggested in Essay One. The findings of this study show that superior performance outcomes are more likely to be achieved through alliance portfolio strategies that highlight the importance of configuration balance between alliance diversity and partner diversity. Through testing the moderating effects of multinationality on the relationship between general alliance diversity and firm performance, my findings shed insights on how to identify the optimal alliance portfolio configuration for firms that pursue international expansion.

Second, Essay Two fills the gap in the existing literature on alliance portfolio emergence by investigating the determinants of alliance portfolio configuration when firm pursue in internationalization, which is treated as a boundary condition of the study. While the traditional resource-based view provides explanation on how firms' heterogeneous bundles of resources enable them to achieve and maintain competitive

advantages (Wernerfelt, 1984; Barney, 1991; Amit & Schoemaker, 1993), the findings of this study suggest that firms follow a strategic rationale to select their alliance portfolio configuration strategies. Firms attempt to establish and maintain particular types of strategic alliance portfolios that match their resource mix and assist them to further consolidate their resource endowments, or to reduce their dependencies on external environment and prevent their advantageous strategic positions in the competitive environment from being progressively weakened. Firm multinationality plays important roles in shaping the effects of firms' internal resource mix on their strategic choices of alliance portfolio configuration. Because internationalization provides both benefits and costs to firms (Oh & Contractor, 2012), they attempt to leverage the advantages and minimize the disadvantages that arise from international expansion through matching their internal resource endowments with their degree of internationalization and make their strategic choices on alliance portfolio configuration accordingly.

In the third essay of this dissertation, I propose a conceptual model to explain the determinants of multinational firms' strategic choices of continuing foreign expansion. This conceptual work advances the extant literature on the process of internationalization by bridging two lines of research—firms' external collaboration and firms' internationalization using a real options approach. Through the application of a real option perspective, the conceptual framework in this study identify some key exploratory factors across firm-, industry-, country- levels on multinational firms' propensities of continuing foreign expansion. In particular, this study investigates the two-directional continuing internationalization, which takes into account both the depth and breadth dimension of foreign expansion comparing to prior studies that mainly focuses on one-

directional subsidiary growth or new-country entry. This study especially highlights the strategic roles of existing alliance portfolio configuration in influencing a firm's strategic decision-making. By examining how firms' propensities of continuing foreign expansion are influenced by existing alliance portfolio configuration, this study advances the current international business and strategic management research by bridging the research gap between determinants of initial entry mode and driving forces of continuing expansion in the foreign counties. A valuable insight from this study is that alliance portfolios can serve as special agents that collect useful resource through collaborating with partners operating across different geographic regions. Multinational firms pursuing continuing international expansion may adjust the scope of their alliance portfolios by including local partners from the counties where they attempt to expand their original operations, so as to acquire skills and knowledge that are necessary for further expansion. Thereby, an alliance portfolio can be viewed as a special "resource agent", which has both direct and indirect impact on a firm' propensity of continuing foreign expansion. Following this logic, the conceptual framework developed in this study suggests that multinational firms may use alliance portfolios as a special mechanism to reduce the irreversibility of potential foreign investment options. The propositions developed in this study emphasize the effects of interaction between alliance portfolio configuration and other strategic drivers on firms' decision-making regarding international expansion, which is in line with prior real-option based research such as the work contributed by Jiang et al. (2009), who suggested the moderating effects of irreversibility on firms' strategic decision-making.

Overall, building on different theoretical lenses, this dissertation adopts a comprehensive and strategic view to investigate the performance properties of alliance portfolio configuration, how the patterns of alliance portfolio configuration are predicted by firms' resource mix, and how alliance portfolio configuration influence firms' strategic decision-making in terms of continuing foreign expansion. It is hoped that the full picture of interconnected firms in the form of alliance portfolios delineated in this dissertation can bring benefits for international business and strategic management researchers, and help them move a step forward in their understanding of this increasingly prevalent phenomenon in the global competitive environment. Parise and Casher (2003) argued that in addition to measurements for each individual alliance, there should be measures developed for the performance of the entire alliance portfolios, since performance at the level of individual relationship and the level of the whole network do not necessarily always match. The establishment of the two-dimensional typology of alliance portfolio configuration lays a foundation to further extend the research on the above issues from multiple directions following the logic and reasoning contributed by this dissertation.

## 5.3 EMPIRCIAL CONTRIBUTIONS

The empirical findings of this dissertation provide a relatively modest magnitude of contribution to the interested entity predicted in terms of change in variation. However, the contribution is substantial given the insignificant effects found in relevant prior studies and the remoteness of corporate-level performance from the operations of most alliances, the majority of which may take place at business level.

To address the issue of incomplete operationalization of alliance portfolio configuration in the prior literature, this study introduces and applies a matrix-based two dimensional typology that takes into account both alliance attributes and partner attributes simultaneously to operationalize the configuration of alliance portfolio. Developed from a resource-based view, the matrix typology is able to categorize different alliance portfolio configurations based on the degree of diversity of both alliance mix and partner mix. The determination of mix diversity relies on a series of attributes extracted from previous literature. Based on prior research (Hagedoorn & Schakenraad, 1994; Gulati, 1995b; Kotabe & Swan, 1995; Goerzen, 2007), attributes of alliance taken into account in this dissertation include alliance functional activities, whether or not the alliance conducted cross-border business operations, alliance affiliation nation, status of an alliance, and number of participants and industry affiliations. The partner dimension attributes include partner's national affiliation, organizational mode, governance structure, partners' primary industrial affiliation and relevant industrial affiliation. The resulting typology consists of four types of portfolio configuration depending on the different two-dimensional combination of partner diversity and alliance diversity. The establishment of this two-dimensional typology incorporating both alliance and partner attributes allow researchers to investigate the antecedents of alliance portfolio configuration through a more comprehensive and consistency way in contrast to prior frameworks in the existing literature.

Furthermore, the special setting of this dissertation, international hospitality and travel industry so far has not been examined by extant literature on alliance portfolio research. The involvement of unique characteristics (e.g. labor and capital intensiveness,

location bound business, emphasis of agreement based entry mode, marketing-driven external collaborations etc.) in the interrelated service sectors suggest that they may follow different patterns of alliance portfolio development and continuing foreign expansion. This dissertation provides empirical evidence for the performance implications and strategic antecedents of strategic alliance portfolios that are associated with international service firms, which may advance our understandings on how service MNCs apply external collaborations to drive up performance and to achieve strategic goals when pursuing foreign expansion, and thus contribute to the establishment and improvement of a holistic theory of service MNC.

## 5.4 MANAGERIAL IMPLICATIONS

Strategic alliance portfolio has increasingly become a managerial practice for multinational firms across different counties and industries. Rather than read though complicated theories provided by strategic researchers, business practitioners would prefer to think about two fundamental questions before they create and maintain multiple alliances simultaneously. These two questions are: 1) what kind of alliance is needed by my company? 2) what companies should my organization partner with? This dissertation is able to provide answers to some extent regarding these two questions, given the fact that academic research in strategy so far has only offered inconsistencies, which are hardly comparable and of low utility for business practitioners across different managerial domains.

In this dissertation, I suggest different alliance portfolio strategies and identified critical driving forces determining the configuration of alliance portfolios under a

complicated and internationally diversified context. Managers, especially executives of service multinationals are able to apply the strategies after a critical review of the key resources they have before they modify their existing alliance pools so as to achieve higher economic performance, and create effective international strategic decision-making.

The conceptual study of the dissertation suggests a framework that allows executives to account for current and future options and meanwhile create the most appropriate strategies at low cost for achieving successful international expansion. The framework highlights the importance of inter-firm relationship development in overcoming the challenges that arise from environmental uncertainty, investment irreversibility and industrial competition during the process of international expansion. It is suggested that management executives adopt this comprehensive view and carry on valuable international expansion through developing remarkable relational advantages and efficiently creating future strategic options.

## 5.5 LIMITATIONS AND FUTURE RESEARCH

Several research limitations in this dissertation are worth further research attention. First, due to the specific research context and data availability issues some traditional alliance formats (e.g. licensing) are not included in the research domain and deserve future investigation. Second, the theoretical models in this dissertation are mainly grounded on RBV, resource dependency theory and real options theory, while other mainstream theories such as social network perspective and relevant structural characteristics were not included in the conceptual framework development, leaving

room for future research. Third, regarding Essay One and Essay Two, due to the limited data source availability international service firms' initial entry modes are not included in the empirical analysis, which deserve further arrangements and improvements by future studies. Finally, the empirical studies in Essay One and Essay Two rely largely on fixed effects models without emphasizing the potential effects of time-invariant characteristics on firm performance and decision-making. However, due to the fact that fixed effects estimates use only within-individual differences while discard between differences, it can be imprecise if predictor variables vary greatly across individuals, but vary little between individuals over time (Köhler & Kreuter, 2009). Thus it is suggested that future research include environmental factors at industry or country levels or time-invariant factors (such as firms' corporate culture, industry affiliation or unchanged organizational features etc.) in the research models so as to enable random effects models to be applied.

A natural and useful future research direction is about the dynamic nature of alliance portfolio and how the evolution of alliance portfolio configuration can have impacts on firms' performance. A key difference between an alliance portfolio and singular alliance is the former's increasingly dynamic nature. The change of alliance portfolio composition can be driven by a number of rationales such as pursuance of new market opportunities, natural end of existing partnerships or relationship alteration due to change of market or company conditions (Parise & Casher, 2003). Researchers have maintained the dynamic nature of alliance and alliance portfolio through different theoretical perspectives. From a learning perspective, Doz (1996) noted that alliances always go through transitions following a cycle of learning, reevaluation and readjustment, in which initial conditions play a key role of starting the evolutionary

process. Building on a co-evolutionary perspective Hoffmann (2007) contended that a firm's adaptation to match firm strategy with resource endowment and with environmental uncertainty shape the pattern of alliance portfolio evolution.

While alliance research applying social embeddedness perspective (Harrigan, 1986; Gulati, 1998) maintained that evolutionary paths followed by alliance and alliance networks have an important impact on alliance performance, Hoffmann (2007) integrated contingency theory with co-evolutionary perspective and contends that the patterns of alliance portfolio evolution can have significant influence on the focal firm's performance.

Prior strategic alliance research generally agrees that firms developing and maintaining strategic alliances do not only gain benefits but also suffer costs (Parkhe, 1991; Madhok & Tallman, 1998; Park & Zhou, 2005; White & Lui, 2005), as both positive synergies and negative conflicts between different members constituting the alliance portfolios have consequential effects on the focal firm's performance (Sarkar, Aulakh, & Madhok, 2009). A potential future study direction may target at the question that when alliance portfolio configuration changes over time, how the pattern of this change bring about extra strategic rewards and liabilities. A further question that needs to be answered is how those benefits and liabilities function as a whole to break the original equilibrium of the benefit-cost structure embedded in an alliance portfolio, so as to affect the ultimate firm performance.

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**PUBLICATIONS**

Zhao, J. & He, W. (2008) Competitive methods of multinational hotel companies in the new millennium, in Olsen, M & Zhao, J. (eds) *Handbook of Hospitality Strategic Management*. Butterworth-Heinemann, Oxford.

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