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Doctoral Dissertation

Alliance Portfolio Diversity and Firm Performance

February 2015

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ABSTRACT

Alliance Portfolio Diversity and Firm Performance

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How does the alliance portfolio diversity impact firm performance? Prior work has suggested that knowledge heterogeneity within a network allows for performance benefits, whereas others have shown such diversity to be of detriment to firms. The SDC Platinum Database was used to identify alliance portfolios for the global textile and apparel industry. Based on performance data availability from Compustat, we were able to obtain a panel data set containing the firm’s global alliance portfolio

First study focuses specifically on the alliance portfolio internationalization in the textile and apparel industry. Using two-stage analysis for handling potential self-selection
bias of data collected from the textile and apparel industry, we have identified a three-stage relationship between the alliance portfolio internationalization and financial performance. At low levels of API, firm performance declines due to negative transfer effects, improves at moderate levels with alliance portfolio internationalization at which firms maintain a positive balance between value of network resources and efficiency of its relative absorptive capacity, and once again declines when excessive API results in differences too complex and difficult to coordinate. In second study, we explore the relationship between alliance portfolio diversity and performance in fashion retail firms. This study was driven by the lack of studies on alliance portfolio diversity in textile and apparel industry despite the importance of alliance as one of the primary sources of competitive advantage for retail firms. Furthermore, as manufacturing firms and retail firms are different in many respects, it could be expected that retail firms could pursue and emphasize different aspects of managing alliance portfolio than their manufacturing counterparts. Drawing on the alliance literature and grounding our work in large part with the resource-based views, we explore how firms’ global alliance portfolio diversity in terms of alliance partners’ industry, functions, and governance structures influences the change in retail firms’ performance.

**Keywords:** alliance portfolio, alliance portfolio internationalization, alliance portfolio diversity, firm performance

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Chapter I.

Introduction
Collaborations and Alliances have been the focus of much organizational research but there are still questions to be answered regarding the reasons why alliances form and the benefits member firms receive from these relationships. A less researched aspect of alliance activity is the direct effect of alliances on performance and competitiveness. It is not clear how alliances directly contribute to competitive advantage. From the perspective of the Resource-based View (RBV), alliances are a part of individual firm capabilities and should play a role in maximizing the benefits of firm resources. What are the mechanisms for converting that benefit into a competitive advantage? This question must be answered to determine whether there are real performance effects from alliances. Resource absorption from external environment is one of the most important processes for firms to enhance their competitive advantage. Alliances and other forms of collaboration between companies are recognized as facilitating the success of firm. While strategic alliances often carry positive implications for firm performance (Das et al., 1998; Schreiner et al., 2009), how and when such impact may manifest have not yet been systematically examined, in particular when a firm can have multiple alliances with different purposes (Lin et al., 2009). Under what conditions does a firm’s alliance portfolio lead to superior performance? According to the resource-based view, firm behaviors are resource-driven (Barney, 1991; Dierickx and Cool, 1989). Yet, such a traditional view tends to treat firms with closed boundaries within which resources reside. Meanwhile, more scholars have started to recognize the relational nature of a firm and the broad social and economic environment that a firm is embedded in. For example, Dyer and Singh (1998), Lavie (2006), and Arya and Lin (2007) have proposed an extended
resource-based view to bridge the traditional resource-based view and the relational perspective. In line with this direction, we build on the extended resource-based view, which expands firms’ boundaries to their inter-firm alliance relationships and the alignment with their external environment (Dyer and Singh, 1998; Lavie, 2006). From such a perspective, this study view firms’ alliance portfolio as their capabilities of accessing and deploying different resources in inter-firm relations, and further emphasize how important these capabilities need to fit with firm characteristics, strategic orientations, and industry conditions.

Strategic alliance implies collaboration between two or more firms on a medium or longer-term basis with the aim to derive synergetic and mutual benefit. Some debate exists as to what practically constitutes a strategic alliance because there is the abundance of collaborations (Borys and Jemison, 1989). Interpretations are informed often by the perspective of the author: the resource perspective considers alliances in terms of the tangible and intangible attributes exchanged by alliance partners (Das and Teng, 2000), while contract and financial perspectives consider alliances, respectively, in regard of the nature of agreements and flow of capital between partners. A plenty of purposes and motives for alliance are researched. One of the main reasons to form alliances is the desire to benefit from a partner’s knowledge and expertise in operating in new markets. Also important to note is that individual company’s motives for alliance may also vary according to the nature of their enterprise and the product, market, distribution, and promotional factors contingent to their success. Another approach indicates four generic
motives for a parent company forming an alliance: to defend, to catch up, to remain, and to restructure. These are defined in terms of the parent company’s market leadership and the importance of the specific business around which the alliance is created to the parent company’s core activities and overall strategy. Strategic purposes are identified as covering market and product-related issues. These include broadening market access, diversifying product lines and the development of new products (Varadarajan and Cunningham, 1995). The dispersal of risk and the generation of cost savings are among the financial motives for alliance. These may include the desire to spread investment in instances where one firm alone cannot risk excessive exposure without a partner (Glaister and Buckley, 1999). Thus, two or more firms may ally to jointly invest capital in a particular collaboration. Alliance may also reduce R&D costs (Koza and Balakrishnan, 1993) and stimulate efficiency savings. Finally, the formation of strategic alliances may enable faster payback on investment (Hennart and Reddy, 1997). The desire to benefit from other companies’ internal and technical resources is included in technological motives for alliance. Collaboration with an alliance partner allows one firm to benefit in technical fields where it has little expertise, thus gaining competitive advantage, hastening product development and innovation, and shortening production lead times. Strategic alliances may also facilitate the exchange of complimentary technology between partners.

Strategic alliances may bring partners mutual benefits including improved performance, enhanced competitiveness, higher growth and increased return on
investment. Successful alliances are usually characterized by commitment and coordination between partners, trust, appropriate partner selection, a capacity to learn and share knowledge and emotional and capital commitment. Selecting an appropriate partner is critical to the viability, ongoing success, and longevity of an alliance. Geringer and Hebert (1991) identified a number of task-related factors: specific expertise, patents and knowledge beneficial to the objective of the alliance and partner-related factors: compatibilities between partners’ management, culture, size, or structure. Predictably for establishing any relationship, the issue of trust is deemed important, enabling coordination, communication, and conflict resolution. Complementarity is another issue defined as important in selecting a partner, this dependent upon the balance of skills, resources, and goals existing between the partners; the partners of an alliance can have different strategic goals but these goals must be complementary. Summarizing the previous research, the selection of appropriate partners has to be based on four criteria: complementary skills, cooperative cultures, compatible goals, and commensurate levels of risk. Again, these may change according to the needs, circumstances, expediency and goals of each alliance and its constituent partners evolve over time.

The incentive for a firm to establish an alliance or collaborate lies in how the relationship enhances performance, reduces risk, or both. While the alliance offers legitimacy, efficient governance, and access to another firm's capabilities, a firm must be able to convert these into a competitive advantage with tangible benefits for the firm. This means improved financial performance and secure income sources. Ultimately the
firm must be able to retain some of the value created by the network by matching internal capabilities with resources available via the alliances and collaboration. Clearly, there are times that firms benefit from being part of an inter-firm network of alliances. The practical impact of network organization is that it allows individual firms to access information and resources that are outside of their boundaries (Dyer and Singh, 1998). Through this access, an individual firm can gain benefits without incurring the costs of having these resources within the firm. Benefits to network organization include allowing the firm to specialize in a particular function in a value chain thus gaining efficiency benefits while capitalizing on its core competencies. Other firms linked to that firm can also take advantage of this core competency by establishing and maintaining linkages to this firm. These linkages can take the form of a contractual joint venture or alliance, or a more relational link based on reciprocity and social ties. Whatever forms the links take, network organization has definite benefits for individual firms. However, these benefits have to be weighed against the costs of maintaining the network just as the cost of maintaining any kind of governance structure must be less than the benefit to the organization. The cost/benefit analysis of relational governance is complex given the various options for establishing linkages to organizations outside of the focal firm. Each of these links has its own costs and benefits. Therefore, the decisions regarding establishing and maintaining ties must be part of the strategic planning process because they do affect the efficiency and performance of the firm.
Chapter II.

A Three-stage Theory of

Alliance Portfolio Internationalization
1. INTRODUCTION

Interconnections made by alliances among cooperating firms provide for strategic direction and joint knowledge creation. Historically companies have allied under formal structures with the aim of benefiting from synergetic co-operation. In tandem with the emergent commercial significance of strategic alliances, so the topic has attracted continued academic research attention. As inter-firm alliances have gained popularity, scholars have researched their performance implications. Traditionally, they have paid less attention to the characteristic profile of firms’ partners. Recent research has begun to consider the characteristics of partners by studying how the foreignness of partners in a firm’s alliance portfolio affects the firm’s performance. Researchers have long argued that inter-organizational relationships may affect economic outcomes (Granovetter 1985). This notion has been applied to the study of inter-firm alliances, which are voluntary arrangements among independent firms that exchange or share resources and engage in the co-development or provision of products, services, or technologies (Gulati 1998).

Alliances serve various purposes and take different forms, such as joint ventures, research consortia, collaborative R&D. A firm’s collection of immediate alliance partners thus can be referred to as an alliance portfolio. Prior research on alliance portfolios has studied the impact of the overall structure and nature of alliance relationships on firm-level outcomes. For example, several studies revealed how the number of alliances, and properties such as network density and structural holes, affect a firm’s innovation output,
new product development, revenue growth, market value, and profitability (Ahuja 2000, Baum et al. 2000, Rothaermel 2001). Other studies demonstrated the performance implications of the evolving interfirm trust and strength of ties to partners (Granovetter 1985, Uzzi 1996). In addition to these structural and relational aspects, recent research has investigated the resources, capabilities, and reputation of partners (Gulati and Higgins 2003, Lavie 2007, Rothaermel 2001, Stuart 2000, Stuart et al. 1999), acknowledging that the qualities of partners in the alliance portfolio may influence firm performance. Within this research stream, however, the degree of foreignness of partners in a firm’s alliance portfolio has remained unexplored. Despite the surge in scholarly work on cross-border alliances with foreign partners (Barkema and Vermeulen 1997, Das et al. 1998, Steensma et al. 2005, Yan and Zeng 1999), scholars have neglected the overall level of internationalization of alliance portfolios, while focusing on the benefits and costs of individual alliances with foreign partners. For example, prior studies have demonstrated that cross-national alliances typically generate lower market returns than domestic ones. We claim, however, that the contribution of a cross-border alliance to firm performance cannot be examined independently of the overall level of internationalization, which adjusts the liabilities and benefits associated with these alliances. Furthermore, whereas the internationalization literature has identified alliances as a mode of entry that can alleviate some of the liabilities of foreignness entailed by subsidiary-based internationalization (Contractor and Lorange 1988), this study show that foreignness still creates unique challenges and opportunities for firms that internationalize their alliance portfolios.
The concept of alliance portfolio internationalization (API) to describe the degree of foreignness of partners in a firm’s alliance portfolio as defined by the cross-national differences between the firm’s home country and its partners’ countries of origin (Lavie and Miller, 2008). Such dissimilarities include, for instance, cultural differences, geographical distance, institutional differences, and dissimilarities in levels of economic development (Ghemawat 2001). Adopting this definition, we examine how the degree of foreignness of alliance portfolio influences the focal firm’s performance in textile and apparel industry and how the firm leverages their financial outcome by accumulated knowledge and governance structure. In addressing the above issues, we draw from the literature on absorptive capacity and organizational learning (Cohen and Levinthal 1990, Levitt and March 1988), which has been applied in the study of alliance management (Anand and Khanna 2000, Kale et al. 2002, Sampson 2005, Simonin 1997, Zollo et al. 2002) and internationalization (Barkema et al. 1996, Lane et al. 2001, Shenkar and Li 1999). We focus on the impact of national differences on the effectiveness of collaboration with foreign partners and study how firms learn to bridge national differences in their alliance portfolios.

We argue that firm performance varies with the level of alliance portfolio internationalization (API), following a sigmoidal pattern. When a firm approaches proximate foreign partners, its performance is likely to decline with the degree of nationality because of unobserved national differences. Then, as API increases to a moderate level, the firm’s relative absorptive capacity and specialized inter-
organizational routines can support effective collaboration and resource exchange, which leads to a positive association between firm performance and API. However, at high levels of API, the alliance portfolio renders these collaborative routines ineffective, and thus undermines firm performance. Hence this study complements recent research on the sigmoid performance effects of internationalization through wholly owned subsidiaries (Contractor et al. 2003, Lu and Beamish 2004) by considering internationalization of alliance portfolios and shifting from a focus on the number or dispersion of subsidiaries to the role of cross-national differences in pursuing internationalization.

We explain the performance implications of API by following a learning perspective that highlights the role of collaborative routines for alliance management instead of resorting to explanations based on economies of scale and scope or coordination challenges associated with complexity and bounded rationality. Therefore, we offer a more fine-grained perspective that takes into account the characteristics of partners’ countries of origin instead of simply referring to the distribution of countries of operation. We suggest that besides the need to coordinate partnering activities across countries, a firm’s ability to learn how to bridge cross-national differences is essential for leveraging its cross-border alliance portfolio. This study advances alliance portfolio research by highlighting the degree of foreignness of partners in a firm’s alliance portfolio. These findings underscore the merits of identifying partners with desirable characteristics, and thus complement prior research that has emphasized structural and relational embeddedness in networks (Rowley et al. 2000). Unlike prior studies that examined the
independent characteristics of partners (Stuart 2000), we focus on dissimilarities between partners’ characteristics and those of the focal firm, and reveal a complex association between firm performance and API. This analysis of national differences extends the alliance management literature, which has previously concentrated on the inherent abilities of firms to manage their alliances (Kale et al. 2002). Learning from foreign expansion and partnering experience enhance the firm’s ability to bridge cross-national differences, and thus set boundary conditions for the API effect. Hence, this study advances our understanding of the desirable level of API and the means by which firms can cope with the challenges of managing international alliance portfolios. It integrates and extends frameworks of alliance portfolios and internationalization.

2. THEORY AND HYPOTHESES

Cross-border alliances have been considered an alternative mode of entry that can mitigate some of these liabilities (Contractor and Lorange 1988). Yet, little attention has been paid to the configuration of the alliance portfolio and the implications of its degree of foreignness. Although some firms ally mostly with domestic partners of the same national background, other firms seek foreign partners with whom they maintain substantial national differences. The implications of national differences have been primarily studied in the context of foreign direct investment, where it has been suggested
that multinational firms suffer from liabilities of foreignness when entering foreign countries, because of their unfamiliarity with the local business environment and their need to coordinate activities across spatial distance, as well as coping with cultural, institutional, and economic differences between their home countries and the foreign countries they enter (Buckley and Casson 1976, Eden and Miller 2004, Hymer 1976, Zaheer 1995). The notion of API refers to national differences between a firm’s home country and its partners’ countries of origin with respect to national culture, geographic location, institutional systems, and economic development. Therefore API embodies a dynamic learning process in which the firm gathers country-related information and interprets it to better understand its partners and facilitate collaboration. We proceed by reviewing the literature on types of benefits and liabilities associated with cross-border alliances, and then conjecturing that these implications vary with the level of API, so that there is a three stage between API and firm performance.

**Liabilities of Cross-border Alliances**

Implicit in the Uppsala’s internationalization theory hypothesis, that a firm initially seeks only familiar markets, is the little-explored notion of the liability of foreignness - the additional burden, or costs, that the internationally expanding firm must initially endure. Zaheer and Mosakowski (1997) couch this in terms of the initial costs of a
foreign firm establishing its legitimacy abroad. Johanson and Vahlne (1977) acknowledge the costs of acquiring foreign market knowledge, and virtually say that a company's foreign expansion will not occur before the costs of acquiring knowledge about the foreign market are first incurred. Early internationalizers have large learning costs because of unfamiliarity with foreign markets, cultures and environments. The role of knowledge acquisition costs, relating to foreign markets, is treated more explicitly in a follow-up work by Johanson and Vahlne (1990). For early internationalizers, as the initial scale of global operations is small, the up-front costs of creating an international operation are not yet recouped from the relatively few nations in which the firm operates (Hitt et al, 1997; Gongming, 1998). Going international entails a large minimum administrative overhead burden, which, if spread over just a handful of country markets, results in a high burden of overhead per nation burden.

Compared with domestic partners, collaboration with foreign partners requires greater investments in means of communication and transportation to support interaction. The firm’s R&D investments may also increase when foreign partners require customization of products and technologies in accordance with local preferences and standards. Furthermore, the risk of undesirable resource spillover and misappropriation of value by the foreign partner (Hamel 1991, Lavie 2006) increases with the disparity in levels of economic development and appropriability regimes in partners’ home countries. While cross-border alliances alleviate some of the liabilities of foreignness that wholly owned subsidiaries may face in foreign countries (Hymer 1976), they increase the firm’s
dependence on foreign partners (Lu and Beamish 2006) and make learning more challenging (Steensma and Lyles 2000). Additionally, differences in national culture between the focal firm and its partners limit the scope of shared values and goals that are needed to elicit positive attitudes, reduce coordination costs, and facilitate social exchange in alliances (Parkhe 1991). Specifically, when a firm establishes alliances with foreign partners, differences in national culture and institutional environments limit familiarity, and thus impair inter-firm trust (Gulati 1995).

Differences in value systems and behavioral tendencies of culturally distant partners may result in divergence in priorities and expectations, and eventually in lack of commitment and irresolvable conflicts (Lane and Beamish 1990). Thus, unlike domestic alliances, cross-border alliances suffer from double-layered acculturation, which entails adjustment both to a foreign country and to an alien corporate culture (Barkema et al. 1996). These acculturation challenges may inhibit the informal chemistry that is essential for coordination and ongoing conflict resolution in alliances (Kale et al. 2000). They also result in relational ambiguities and mistrust that impair learning (Parkhe 1991, Simonin 1999), because they impede communication channels (Szulanski 1996) and weaken the firm’s ability to absorb its partners’ resources (Lane et al. 2001). Overall, these liabilities reduce the effectiveness of collaboration with foreign partners (Barkema et al. 1996, Kumar and Nti 1998, Lane and Lubatkin 1998) and weaken the firm’s ability to effectively operate these alliances (Barkema et al. 1997, Pothukuchi et al. 2002), which can impair the firm’s financial performance.
Benefits of Cross-border Alliances

Vernon (1971) asserted a positive relationship between performance indicators such as return on investment (ROI) or return on sales (ROS) and the extent of multinationality of the firm. International expansion allows the firm to capture economies of scale, or geographic scope (Kogut, 1985). Dunning (1993) averred that less saturated foreign markets provide companies with the means to maintain and expand distribution and gain overall market share by exploiting their current stock of assets - that companies with valuable transaction-based ownership advantages can reap internalization benefits, circumvent market failure, and avoid trade barriers, moral hazards, and broken contracts. In mid-stage international expansion, further geographical scale makes possible efficiencies that improve performance indicators such as ROS, or overheads per nation. The fixed costs and overhead burden of headquarters operations and large R&D outlays can be increasingly spread over more nations (Kogut, 1985; Porter, 1985). The incremental benefits of further international expansion are now greater than the incremental costs of further second stage expansion. For both market-exploiting and resource-seeking MNEs, the greater the number of countries, the more the firm can engage in price discrimination, strategic cross-subsidization, and arbitrage (Contractor, 2002). The multinational firm exploits its ability to arbitrage national differences, and the larger its global scope, the greater is this ability (Rugman, 1981). Resource-seeking companies are better able to access low-cost inputs, including labor, and to tap into knowledge clusters (Daniels and Bracker, 1989; Annavarjula and Beldona, 2000). The
transfer of specialized learning from certain nations increases with increased multinationality. Similarly, market-seeking firms are better able to scan for market opportunities. Other benefits of second stage international expansion are the ability of some companies to exercise global market power (Grant, 1987) and to extend the product cycle (Vernon, 1966). Hence the commonly accepted hypothesis that, ceteris paribus, multinationality is positively associated with.

With mounting pressures for globalization, cross-border alliances extend the range of partnering benefits relative to alliances with domestic partners by bridging national boundaries and leveraging a firm’s competitive advantage in foreign markets. Thus, international alliance portfolios may provide greater flexibility, responsiveness, adaptability to global market conditions, and reduction of risk and uncertainty (Eisenhardt and Schoonhoven 1996, Hagedoorn 1993, Harrigan 1988, Kogut and Kulatilaka 1993, Powell et al. 1996, Teece 1992) compared to domestic alliance portfolios. In particular, downstream alliances with foreign partners extend the firm’s market reach to new product markets (Contractor and Lorange 1988). Upstream alliances with foreign partners offer new sources of attractive technologies and resources that are in short supply in the firm’s home country (Eisenhardt and Schoonhoven 1996, Hagedoorn 1993). Thus, foreign partners can offer unique opportunities that domestic partners may be unable to furnish. Therefore, API introduces unique partners to the alliance portfolio that provide access to network resources that may, in turn, spur innovation and organizational capabilities (Gulati 1999). For instance, scientific knowledge tends to be specialized, localized, and
spatially concentrated (Jaffe et al. 1993), while firms’ operations and practices are institutionalized by national business systems (Gertler 2001).

Hence, a firm that approaches partners in remote countries and is exposed to the needs of distinctive foreign markets can extend the scope of its accessible knowledge base. Network resources that foreign partners offer can dislodge a firm from its own competency traps and stimulate innovations, new solutions, and new skills (Levinthal and March 1993). The firm may learn more from foreign partners with dissimilar national backgrounds and cultures than from domestic partners that have emerged in the same national environment, and thus share national resources, values, beliefs, and social norms. Finally, collaboration with geographically distant partners relaxes proximity constraints, enabling the firm to coordinate activities and allocate them to qualified partners that enjoy comparative advantage in certain domains (Porter 1990), thus capitalizing on differential skills and asset costs. Furthermore, it enables the firm to distribute value-adding activities across different time zones, and thus enhance its responsiveness, shorten product development cycles, and operate more efficiently, especially in technology and service industries (Zaheer 2000). These benefits can enhance the firm’s financial performance.
A Three-stage of Alliance Portfolio Internationalization

The national differences between the focal firm and its foreign partners create opportunities for accessing unique network resources, but also impose barriers to efficient resource exchange. These ambivalent influences imply that the association between API and firm performance may vary with the level of API. At low levels of API, the benefits of internationalization are fairly limited because foreign partners, on average, are geographically and culturally proximate to the firm. Given the economic and institutional similarities in national environments, these partners’ resources and skills may not be fully differentiated from those of domestic partners, and thus such foreign partners offer marginal opportunities to the focal firm. The firm’s domestic partners can most likely offer access to similar resources and markets at reasonable premiums. Thus, API benefits are moderately accumulated at this stage. Moreover, although understanding of the national background of proximate foreign partners is considered straightforward, the firm may find it challenging to manage alliances with foreign partners, because unwarranted assumptions of isomorphism can prevent recognition of critical national differences. This notion is known as the psychic distance paradox (O’Grady and Lane 1996), according to which perceived similarities between the firm’s home country and proximate countries reduce managers’ uncertainty about the nature of the foreign environment, and thus lead them to believe that conducting business in these countries would be relatively easy (Kogut and Singh 1988). Consequently, managers pay limited attention to latent yet critical national differences, which hinders their ability to fully understand the foreign
countries from which their partners originate, resulting in underperforming cross-border alliances. This suboptimal outcome is a reflection of negative transfer (Novick 1988); that is, the misapplication of a behavior learned in a familiar situation to a superficially similar situation, which yields poor outcomes.

Insert Figure 1 about here

At low levels of API, perceived familiarity with partners’ national backgrounds may, in fact, hinder rather than facilitate learning by masking potential barriers to collaboration with foreign partners. Instead of identifying, understanding, and bridging subtle national differences by learning about partners’ countries of origin, the firm may tend to implement managerial practices used in its domestic alliances under the assumption that these practices would be applicable in its alliances with proximate foreign partners. Even though the firm and its partners are likely to operate in similar environments at low levels of API, insensitivity to marginal national differences will limit the firm’s attempts to identify and assimilate network resources emerging in its alliance portfolio (Lane et al. 2001). With inadequate understanding of national differences, the firm may avoid even minor modifications to its collaborative practices (Jensen and Szulanski 2004), which will hinder its capacity to effectively act on opportunities for resource exchange.
Hence, impediments to communication and resource sharing, the inability to adapt to the foreign context, and inappropriate application of collaborative routines will impair firm performance (Baum and Ingram 1998). Untreated cross-national dissonance and its consequent negative implications will intensify with the level of API until a threshold is reached beyond which the firm begins to acknowledge meaningful national differences in its alliance portfolio. Therefore, at low levels of API, there will be a negative association between API and firm performance. However, the costs and barriers of early stage of internationalization are not assumed that much burden, otherwise few firms would venture abroad. Hence, in the first stage, the slope is relatively shallow negative and shorter than the second stage.

At moderate levels of API, wherein national differences are perceptible but not excessive, the firm can overcome the psychic distance paradox and consciously manage its internationalization by recognizing and pursuing opportunities to leverage its ties to foreign partners. Once unfamiliarity with the foreign environment and national differences are acknowledged, the firm and its partners can develop co-specialized assets and collaborative routines to overcome noticeable barriers to collaboration (Dyer and Singh 1998, Zollo et al. 2002), and to boost performance by supplanting misapplied domestic routines employed at low levels of API. Additionally, at moderate levels of API, foreign partners provide access to network resources that are sufficiently distinctive yet related to the focal firm’s knowledge base. In the inter-organizational context, a firm operating at moderate levels of API is likely to both recognize the value of network
resources and rely on partial communalities with its partners’ national environments to facilitate collaboration and enhance the assimilation and use of external knowledge. The firm’s relative absorptive capacity is context specific, and thus depends not only on the firm’s own knowledge base but on the cultural compatibility with its foreign partners (Lane et al. 2001). Thus, at moderate levels of API, the firm and its foreign partners can still communicate and engage in effective collaboration, while identifying and bridging cognitive, normative, and regulatory institutional gaps that may impede resource exchange (Kostova and Zaheer 1999). This allows the firm to capitalize on valuable network resources (Gulati 1999, Lavie 2006) and realize the benefits of API. As API increases, the value of partners’ network resources appreciates, with partners extending the firm’s market scope and providing access to unique or low-cost assets, technologies, and products. Overall, these dynamics account for the positive association between firm performance and API at moderate levels of API.

There are a few reasons that the API - Performance slope again becomes negative. First, beyond a certain point, having expanded into the most lucrative markets, the firm is then left with minor or peripheral countries with a lower profit potential. Second, beyond an optimum number of nations, the growth of coordination and governance costs may exceed the benefits of further expansion, because of the complexity of global operations (Galbraith and Kazanjian, 1986). This is especially true as the number of different cultural environments that the firm has to deal with increases transaction and governance costs (Gomes and Ramaswamy, 1999). Grant (1987) suggests that ‘limits to the capacity
of managers to cope successfully with greater complexity' may inhibit the indefinite (that is, monotonic) realization of the net positive value of international expansion. Siddharthan and Lall (1982) also suggest that, while firms can achieve economies of scale, excessive multinationality may lead to increased managerial constraints due to legal barriers, and to physical, cultural, and linguistic distance. Hitt et al. (1990) describe this in terms of loss of strategic control in some overextended companies because of high information costs. Beyond some level of multinationality, the coordination required (for multiple transactions among many geographically diverse units) may cost more than the benefits derived from sharing resources and exploiting market opportunities (Hitt et al., 1997). As cross-national distance in the alliance portfolio, on average, becomes extensive, substantial national dissimilarities with partners limit the effectiveness of standard organizational routines for managing alliances with highly distant partners. A firm must invest more in coping with national differences and develop idiosyncratic procedures for working with a pool of cross-nationally distant partners. Consequently, the benefits of collaboration may be suppressed by the liabilities of API, especially if the firm had first sought partners in proximate countries (Contractor et al. 2003, Johanson and Vahlne 1977), and thus lacks relevant collaborative routines for managing alliances with nationally distant partners. Beyond a certain threshold, geographical, cultural, institutional, and economic differences between the firm and its foreign partners cause coordination costs to overshadow the marginal benefits of sharing resources and leveraging market opportunities with foreign partners (Hitt et al. 1997). The firm’s alliance portfolio may then be dominated by irresolvable conflict, mistrust, lack of
commitment, and ineffective interactions (Lane and Beamish 1990).

Even when nationally distant partners offer access to unique opportunities and novel network resources, these resources become less relevant because of insufficient overlap between the knowledge bases and national backgrounds of the firm and its foreign partners (Cohen and Levinthal 1990). The firm’s ability to absorb and use valuable network resources of peripheral partners is severely constrained owing to geographical, regulatory, and technical dissimilarities (Phene et al. 2006). Impediments to inter-organizational learning and collaboration become exorbitant as relative absorptive capacity diminishes with increases in the cross-national differences between the firm and its foreign partners in the course of internationalization (Lane et al. 2001). With weakened relative absorptive capacity and extensive national differences, the firm may be incapable of overcoming unfamiliarity, nurturing inter-organizational trust, and engaging in knowledge sharing, adaptation, and coordination of value-adding activities with its foreign partners. Therefore, at high levels of API, the liabilities of API outweigh the benefits and negatively influence firm performance. In sum, We suggest a three-stage of API. Firm performance is expected to decline at low levels of API because of negative transfer effects, improve at moderate levels of API in which the firm maintains a balance between the value of network resources and the efficiency of its relative absorptive capacity, and finally decline again at high levels of API when national differences become unbridgeable. ). Accordingly, the following hypothesis may be advanced:
Hypothesis. There is a three-stage of alliance portfolio internationalization, with performance first declining, then improving, and finally declining again with increases in alliance portfolio internationalization.

Figure 2 show the research model for this study.

Insert Figure 2 about here

Alliance in Textile and Apparel Industry

There is little literature directly addressing the motives, processes and outcomes of strategic alliances within fashion sector, despite the apparent profusion of alliances within the industry. This study investigates alliance portfolios in the textile and apparel industry in context of the existing strategic alliance literature. The textile and apparel industry is characterized by intense and dynamic competition, as a result of which participants are obliged to develop innovative structures and processes supporting market growth, maintaining competitive advantage and exploiting new product sectors and consumers.
Research has explored the corporate characteristics and competences contributing to the success of a fashion business, for example, corporate structure and financial management (Moore and Fernie, 1998; Djelic and Ainamo, 1999; Moore and Birtwistle, 2005; Hayes and Jones, 2006); product design and quality control policies (Robinson, 1958; Bloch, 1995; Dickerson and Hawley, 2005); supplier management and logistics (Bruce et al., 2004; Christopher et al., 2004); distribution channel management control and presentation (Quinn and Doherty, 2000; Brun and Castelli, 2008; Cheng et al., 2009); and marketing capabilities in respect of pricing, positioning, and branding (Newman and Patel, 2004; Fratto et al., 2006). It is clear that success in this market demands the development of both back-of-house and market-facing competences contributing to the management of relationships extending up the supply chain to designer, supplier and manufacturer and down to distributor, retailer, and consumer. The diversity and nature of these competences and relationships mean that by necessity they may be beyond the scope of one organization and hence fashion companies may wish to collaborate with other market participants in order to better realize emerging opportunities.

3. EMPIRICAL SETTING AND METHODS

3.1. Data
The increasing trend of alliance formation in textile and apparel industry enhances the meaningfulness, reliability, and variance of our research. In worldwide fashion industry, U.S. is the one of the important market therefore our study focuses on a leading national industry. We designed our study as a pooled time-series analysis of 268 U.S.-based firms having alliance experiences in fashion industry. In order to track changes in a firm’s alliance portfolio internationalization and its impact on a firm’s performance, we constructed a panel data for this study. In doing so, we collected data during the period from January 1991-December 2010. The SDC Platinum Database was used to identify alliance portfolios for the global fashion industry. We focused on parent firms’ primary SIC was manufacturing, wholesale and retail trade related with fashion sector.

After compiling from the SDC Platinum and then we extracted more information from alliance announcements and status reports in press releases, corporate websites. For each alliance, we coded the announcement date, termination date, number of participating partners, partners’ identities, public status, and countries of origin, and categories of agreements: R&D, manufacturing, original equipment manufacturing, marketing and service, licensing, royalties, or supply. A given alliance could involve more than one type of agreement. Firm-specific data, such as total assets, revenues, long-term debt, R&D expenses, and net income, were extracted on an annual basis from Compustat. Based on performance data availability from Compustat, we were able to obtain complete data sets containing the firm’s global alliance portfolio matched with their corporate level performance for 268 U.S. firms. For a highly consolidated and global industry, this data
set offers a sizeable number of alliances and firms to study the relationship between alliance portfolio internationalization and firm level performances. The firm-year was used as the unit of analysis, because the dependent variable was defined at the firm level. There are 2,187 observations corresponding to the years 1991–2010 by pooling the data for all alliances in a firm’s portfolio.

3.2. Measures

3.2.1. Model

There is no standard approach for measuring the degree of partners’ foreignness in alliance portfolio. For this study, we constructed a composite index for the degree of foreignness in alliance portfolio and used a cubic regression model,

\[ \text{PERF}_{it} = \beta_0 + \beta_1 \text{API}_{it} + \beta_2 (\text{API}_{it})^2 + \beta_3 (\text{API}_{it})^3 + \sum j \gamma_j \text{C}_{ij} + \epsilon_{it} \]

With first, second, and third order terms for API, the degree of foreignness in alliance portfolio.
3.2.2. Dependent Variables

**Firm Performance**

Following previous research on the performance implications of international operations (Contractor et al. 2003), we used profitability as our financial performance measure. This measure is consistent with our net benefit analysis of API. We measured profitability by computing the firm’s return on assets (ROA), which is a common measure used in financial performance studies. ROA was calculated as the ratio of net income to total assets in a given year and was updated annually for each focal firm.

3.2.3. Independent Variables

**API (Alliance Portfolio Internationalization)**

Lavie and Miller (2008) developed the concept of API. However, it is not widely accepted nor used as a standard to measure degree of internationalization. For this reason, we have implemented a measure of API that takes into account cultural, geographical, institutional, and economical differences between the focal firm and its partners (Ghemawat 2001). A partner’s country of origin was defined based on the national location of its corporate headquarters (Kogut and Singh 1988, Makino and Beamish 1998). Country of origin
information was extracted from Compustat for publicly traded partners and from multiple sources, including SDC and corporate websites.

Following the internationalization literature (Barkema et al. 1996, Johanson and Vahlne 1977), our first API indicator accounted for cross-country cultural differences in the alliance portfolio by incorporating information on the cultural distance between partners’ countries of origin and the United States. Cultural distance was computed using Kogut and Singh’s (1988) composite index of Hofstede’s (1980) culture dimensions of uncertainty avoidance, individuality, tolerance of power distance, and masculinity-femininity. These dimensions are associated with national differences in administrative procedures, incentive systems, and cognitive, regulatory, and normative environments (Jensen and Szulanski 2004). Despite its acknowledged limitations (Shenkar 2001), this measure has been employed extensively in internationalization studies (Tihanyi et al. 2005), and the internationalization literature has yet to offer a better proxy for cultural national differences. The cultural distance between country c and the United States was indicated by

$$\sum_{d=a}^{4} \frac{(I_{dc} - I_{du})^2}{4V_d}$$

where $I_{dc}$ is the value of the Hofstede Index for cultural dimension d of country c, u indicates the United States, and $V_d$ represents the intercountry variance of the Hofstede Index along dimension d. Accordingly, we computed the cultural distance of the alliance portfolio as the average cultural distance of firm i’s partners in year t.
Our second API indicator captured the institutional distance between the focal firm and its partners, assuming that differences in partners’ administrative and political national environments can impact the effectiveness of collaboration. Specifically, regulatory, cognitive, and normative institutional differences may impact firms’ legitimacy, resource transfer, organizational behavior, and investments across borders (Eden and Miller 2004, Henisz 2000, Jensen and Szulanski 2004, Kostova 1997, Kostova and Zaheer 1999, Xu and Shenkar 2002). We used World Bank data, which offered six aggregate country governance indicators: voice and accountability (VA), political stability and absence of violence (PV), government effectiveness (GE), regulatory quality (RQ), rule of law (RL), and control of corruption (CC) (Kaufmann et al. 2006). For each of these $k = 6$ indicators GI$_k$, we computed institutional distance measures using the formula

$$\sum_{j=1}^{n_{it}} \frac{|GI_{k_{cj}} - GI_{ku}|}{n_{it}}$$

where $c_j$ refers to partner $j$’s country of origin, $u$ indicates the United States, and $n_{it}$ is the number of partners in firm i’s portfolio in year $t$.

A third indicator measured the geographical distance in the alliance portfolio by calculating the average city-to-city distance in thousands of miles between the capital of the focal firm’s country of origin and the capitals of its partners’ countries in year $t$. Geographical distance often relates to transportation, communication, and other
transactional activities that a firm conducts when collaborating with partners (Eden and Miller 2004), and has implications for partner familiarity and the governance of alliances (Gulati and Singh 1998).

Finally, we incorporated information on economic distance, which refers to the relative economic development of partners’ countries in the alliance portfolio. The national level of economic development is associated with local demand patterns and the utility of national resources, as well as with the nature of institutional regimes (Bollen and Jackman 1985, Kanungo and Jaeger 1990). We used the World Bank’s World Development Indicators data on countries’ gross domestic product per capita (GDP). The fourth API indicator was then calculated using the following formula,

$$\log(1+\sum_{j=1}^{n_{it}} |GDP_{pcj} - GDP_{pcu}| / n_{it})$$

where $c_j$ refers to partner j’s country of origin, $u$ indicates the United States, and $n_{it}$ is the number of partners in firm i’s portfolio in year t. We constructed a composite API index based on the above nine indicators. The API measure was centered with the mean equal to 0 and standard deviation equal to 1. High values of this variable indicate a high degree of foreignness of partners.
3.2.4. Control Variables

We controlled firm- and portfolio-level variables. Firm-level controls included firm size as measured by the value of total assets, firm R&D intensity as measured by R&D investments divided by revenues, and firm solvency as measured by the log-transformed ratio of cash to long-term debt. Portfolio-level controls included the adjusted size of the alliance portfolio (Ahuja 2000a, Baum et al. 2000, Stuart et al. 1999), which was computed by taking the logarithm of the number of alliances divided by the firm’s total assets. To control for changes in the contributions of alliances as they mature, we measured the average age of alliances in the portfolio. We controlled for the complexity of alliances in the portfolio by including a measure of the proportion of different agreement types per alliance. We included a measure of the percentage of equity joint ventures in the alliance portfolio to control for the alliance governance structure. In addition, we controlled for the similarity between the firm and its partners’ businesses by calculating the proportion of alliances in which the partners operated in the same primary four-digit SIC as the focal firm. To further isolate the contribution of API to firm performance, we controlled for the firm’s tendency to ally with foreign partners by measuring the number of foreign partners in the focal firm’s alliance portfolio. Finally, we controlled for the diversity of partners’ countries of origin (Goerzen and Beamish 2005, Tallman and Li 1996) using an inversed Herfindahl Index. For each firm i in year t, we used the formula

\[ \text{Herfindahl Index} = \sum_i (\text{market share}_i)^2 \]
\[ 1 - \sum_{c=1}^{70} (n_{itc} - n_{it})^2 \]

where \( n_{itc} \) is the number of firm i’s partners that were headquartered in country c, and \( n_{it} \) is the total number of partners in firm i’s alliance portfolio in year t. High values of this measure suggest that the firm’s partners are dispersed across many countries.

### 3.3. Analytical Approach

To minimize autocorrelation and heteroskedasticity problems, we used two-stage analysis for handling potential self-selection bias in firms’ decisions to internationalize their alliance portfolios. Firms’ internationalization strategies derive from their attributes and industry conditions, and thus are self-selected (Shaver 1998). Models that fail to take such biases into account may lead to erroneous conclusions. Specifically, firms’ decisions to engage in alliances with foreign partners may vary by industry sector and depend on the availability of technological and financial resources. Whereas prior experience with foreign partners may encourage the use of alliances for pursuing internationalization, reliance on wholly owned subsidiaries as a mode of entry to foreign countries may attenuate this tendency. If firms self-select whether to engage in alliances with foreign partners, this self-selection may bias the estimates of API effects. The assumption of a generalized linear regression model in a two-stage generalized least squares regression
allows for non-constant variance and corrects for autocorrelation. Thus this research need
not make the restrictive assumption of equal variance among individual service company
data. Following Heckman (1979), we estimated two models. For the first stage, we used a
probit model that predicts whether or not the alliance portfolio of a firm is
internationalized. This choice variable was regressed on the firm’s industry sector (SIC
code), age, R&D intensity, and solvency, while accounting for the panel structure of the
data and controlling for year fixed effects. Then, we implemented our second-stage
models using cross-section time-series regressions with firm fixed effects.

4. RESULTS

Table 1 provides the correlations of variables and they were relatively low.

Insert Table 1 about here

Table 2 reports the results of the second-stage models. Model 1 indicates that financial
performance improves with the age of alliances ($\beta =0.043$, $p<0.05$), and the overall
propensity to form alliances as captured by the adjusted size of the alliance portfolio \( (\beta = 0.079, p < 0.001) \).

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**Insert Table 2 about here**

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Model 2 reveals no significant effect of the linear term of API on financial performance, but its negative effect becomes significant in Model 3 \( (\beta = -0.157, p < 0.01) \), which includes the quadratic and cubic terms of API. In this model, the quadratic effect is positive \( (\beta = 0.049, p < 0.001) \) and the cubic effect is negative \( (\beta = -0.004, p < 0.01) \), in support of Hypothesis 1 that suggested a three-stage of API. Additionally to examine whether there is a difference between manufacturing and retail firms even though they are included in the same fashion industry, we separated the sample. Model 4 and Model 5 reveal the inverted U-shape between API and firm performance. A positive \( (\beta = 0.072, p < 0.01) \) effect of API and its quadratic term is negative \( (\beta = -0.039, p < 0.05) \). Model 6 and Model 7 provide the result of retail firms that supports the main Hypothesis. There is also a sigmoid relationship between API and performance. In these models, the quadratic effect is positive \( (\beta = 0.068, p < 0.01) \) and the cubic effect is negative \( (\beta = -0.004, p < 0.05) \), in support of Hypothesis that suggested a three-stage of API.
5. CONCLUSION AND DISCUSSION

Our study advances alliance portfolio research by revealing the ramifications of cross-border alliances between the firm and partners in its alliance portfolio. Previous studies have either considered the benefits and drawbacks of independently forming dyadic alliances with foreign partners (Barkema and Vermeulen 1997, Das et al. 1998, Inkpen and Beamish 1997, Makino and Beamish 1998, Reuer and Leiblein 2000) or studied alliance portfolios with little attention to internationalization. With only a few exceptions of recent studies that examine the diversity of partners’ resources, lines of business, and identities (Baum et al. 2000, Goerzen and Beamish 2005, Lavie and miller 2008), researchers have paid little attention to how the composition of partners in alliance portfolios affects firm performance.

We focus on the foreignness of partners as an aspect of inter-organizational relationships that may affect economic outcomes. We suggest that national dissimilarities between a firm and its partners shape the contribution of the alliance portfolio to its performance. We demonstrate how a firm that collaborates with a pool of relatively proximate foreign partners may face declining performance as it increases its API. We ascribe this downturn to subtle yet critical national differences between the firm and its partners, which remain unnoticed and prevent successful adaptation of collaborative routines. When the firm’s API reaches moderate levels, the firm’s performance is likely to improve. We attribute these effects to the partial overlap in the national profiles of the
firm and its foreign partners, which enables the firm to leverage its relative absorptive capacity, understand these partners’ backgrounds, efficiently adjust its collaborative routines, and benefit from access to network resources and markets. However, at high levels of API, internationalization precludes successful adaptation to nationally distant partners, because the firm’s collaborative routines are ineffective in bridging geographical, cultural, institutional, and economic differences. We posit that these impediments account for the negative association between firm performance and over-internationalization.

This three-stage model (Contractor et al. 2003, Lu and Beamish 2004) cannot be bluntly applied in our study, because we consider national differences as the mode of internationalization and because cross-national alliances differ from wholly owned subsidiaries. Alliances depend not only on the motivations and abilities of the parties to engage in exchange, but also on similarities in their national backgrounds. Dissimilarities prevent a firm from effectively accessing and leveraging network resources even when it has an absorptive capacity (Cohen and Levinthal 1990), because failure to recognize subtle national differences leads to underutilized absorptive capacity, whereas extensive differences result in misapplication of collaborative routines. A firm can overcome these negative transfer effects by learning from its partnering experience how to detect relevant national dissimilarities, as well as develop and apply appropriate collaborative routines. It can also leverage the local absorptive capacity of its subsidiaries in its partners’ countries of origin to reduce its effective distance to them. The study of cross-national differences in alliance portfolios thus advances our understanding of the contribution of partner fit
Why would even a few firms overextend themselves into the sub-optimal stage 3? We can assume that it is difficult for a firm to assess when it is over-internationalized. But an academic cross-sectional exercise to reveal a firm's position in relation to its competitors, or to a sector, is not something that companies usually undertake. Hence many firms simply do not know when they are overextended. International expansion in firms is rarely the result of continuously monitored, paced growth, but is based on discrete choices. Another assumption is some firms may deliberately over-nationalize, for long-term strategy reasons such as market share, or for tapping into knowledge clusters. The long-run strategic value of such deliberate over-nationalization may arguably be reflected in improved stock market value, but only if we believe that stock prices are based on rationality and full information.

Future research may also address some of this study’s limitations. First, the shape of the sigmoid API effect may reflect the fact that the United States has a comparative advantage. Firms originating in countries with small home markets and a limited pool of domestic partners may benefit more from API. Hence, future research may examine whether comparative advantage of the focal firm’s home country augments the negative performance implications of API. Second, our focus on national differences highlights the depth aspect of API. Although we controlled for the number of foreign partners and dispersion of partners’ countries, future research may examine the diversification of

(Kale et al. 2000) for learning and collaboration in alliance portfolios.
foreign subsidiaries (Contractor et al. 2003, Hitt et al. 1997, Lu and Beamish 2004) and study the interplay between API and the diversity of foreign partners in alliance portfolios. Finally, to isolate the mechanisms that drive our results, future research may furnish evidence from case studies and surveys. By considering intermediate outcomes at the alliance level, researchers may gain new insights on the processes through which firms learn how to manage international alliance portfolios.

In conclusion, our study advances alliance portfolio research by analyzing the prospects of forming alliances with foreign partners. The outcomes of alliance-based internationalization depend not only on the number of foreign partners and their configuration in the alliance portfolio, but also on the physical and psychic distances to these partners. Firms that develop relational capabilities (Kale et al. 2002) that enable them to detect national differences, adjust collaborative routines, and properly apply them in cross-national alliances can better leverage their relative absorptive capacity and avoid competency traps. There is an optimal level of API that enables firms to leverage their absorptive capacity to bridge national differences and extract valuable network resources from moderately distant foreign partners. To reach this optimal level, firms can exploit their prior experience with foreign partners, as well as engage in experimentation as they fine tune their API.
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Significance Levels: *p<0.05; **p<0.01; ***p<0.001
### Table 2: Fixed Effects Models

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Significance Levels: *p<0.05; **p<0.01; ***p<0.001
[Figure 1] Three-stages of API

Firm Performance

Negative Slope
- Liability of Foreignness
- Initial Learning Cost
- Insufficient economies of Scale

Positive Slope
- Resource exploitation
- Internalization of TC
- Economies of Scale/Scope
- Extension of PLC
- Accessibility to lower cost of resources

Negative Slope
- Excessive Complexity
- Cultural distance
- Coordination cost

A: Low-level  B: Mid-level  C: High-level

API

[Figure 2] Research Model of Study 1

Alliance Portfolio Internationalization
- Cultural distance
- Institutional distance
- Geographic distance
- Economic distance

Firm Performance
Chapter III.

The Relationship between Alliance Portfolio Diversity and Performance in Fashion Retail Firms
1. INTRODUCTION

Natural scientists have studied biodiversity as a variety of species. Sociologists and organizational behavior scholars have investigated many kinds of diversity as differences in attributes of individuals and groups. In business research, the concept of diversity has been studied at the population level as organizational forms’ heterogeneity, and at the firm level as diversification. Research on global strategic alliances has proliferated in line with a corresponding increase in the use of alliances by firms as a way to create and sustain competitive advantage (Ireland, Hitt, Camp & Sexton, 2001). In today’s competitive business environment, firms have increasingly turned to strategic alliances as an important organizational form to gain competitive advantage. Research has shown that alliances provide an easy way to access new markets, build and accumulate knowledge, develop new technologies, and spread the risks and costs of highly uncertain investments (Kale et al., 2002; Lavie and Miller, 2008; Lavie, 2007). Thus, as these networks have become vital to realize their strategic goals, today many firms get involved into multiple ongoing alliances and face the challenge of managing these relationships simultaneously (Hoffman, 2005). The majority of the strategic alliance literature can be categorized into two main groups. One large body of work focuses on the alliance as the unit of analysis, examining the factors that determine the formation, governance, management, and performance of an alliance. The second large body of work adopts the network perspective, exploring outcome implications of a firm’s position in a network of cooperative relationships. Both bodies of work have significantly increased our
understanding of strategic alliances. However, few researchers have assumed the perspective of the firm by looking at the firm’s alliances as a portfolio. We argue that a cooperative strategy can be an important part of a firm’s corporate global strategy when firms exploit resources and explore new opportunities by skillfully managing a portfolio of alliances. Previous literature on alliances traditionally adopted a dyadic view while analyzing the formation, implementation and performance of individual alliances (Kale et al. 2002). However, due to the existence of synergies and interdependencies between ongoing relationships with different partners, managing a portfolio of alliances goes beyond the mere realization of each alliance’s individual goals, and calls for more integrated management of the network in which the firm is embedded (Hoffman, 2005). In this vein, scholars have shifted the focus to a higher level of analysis and pointed out the importance of studying the structural properties of alliance portfolios and their performance implications (Hoffman 2005; Lavie and Miller, 2008; Jiang et al. 2010; Mouri et al. 2011). In this vein, this stream of literature proposes alliance portfolio diversity as one of the most important aspects to consider.

This paper seeks to fill an important gap in the current literature by examining the firm’s portfolio of alliances, and in particular the relationship between the change in the firm’s global alliance portfolio diversity and the corresponding change in the firm’s performance improvement. Since firms form their alliance portfolios over time we focus our attention in this study on the change in portfolio diversity and change in firm performance improvement over time. In pursuing our line of inquiry, we adopt the
resource-based view of the firm where the firm is considered a bundle of heterogeneous resources. We also subscribe to the dynamic capabilities framework contending that competitive advantages come from the firm’s ability to exploit as well as develop (including combining and re-combining) over time resources that are valuable, rare, and hard to imitate and substitute (Barney, 1991; Teece, et al., 1997). Firms often rely on a combination of internal operations (i.e., the make), external acquisitions (i.e., the buy), and alliances to create value. Our focus here is on alliances and in particular, a firm’s portfolio of alliances with diverse partners. An increasing use of alliances suggests that firms are adopting cooperative strategies as an indispensable part of their overall corporate strategies. The high rate of alliance failure, on the other hand, testifies to the difficulty in managing cooperative relationships. We suspect the lack of portfolio thinking in alliance management might be one reason why so many individual alliances fail, as certain individual alliances may not contribute to the overall corporate strategic goal for various reasons; alliances could have been established with the wrong partners, for the wrong reasons, and managed in the wrong manner.

Our research will contribute to the literature both theoretically and empirically in several ways. Most of the prior research has taken the perspective of either a specific alliance or an overall network of alliances. Here, we assume the perspective of the firm and look at all the firm’s alliances as a portfolio of the firm’s alliance activity and, therefore, an indicator of the firm’s overall cooperative strategy. This perspective allows us to examine the overall use of alliances and any effect this overall cooperative strategy
may have on firm-level performance, regardless of the performance of the individual alliances that make up the firm’s global alliance portfolio. While a firm’s position in a network of cooperative relationships is a result of the combined actions of all involved parties, a firm can actively manage its portfolio of alliances to suit its strategic purposes. As such, the firm’s global alliance portfolio is also an important part of managing the firm’s overall bundle of resources and competencies. We also contribute to research by developing the notion as well as the measures of alliance portfolio diversity. By looking at the evolution of a firm’s alliance portfolio, we will be able to better establish causality among the portfolio diversity variables and firm performance. Our main overarching treatise is the diversity of a firm’s global alliance portfolio rather than the size or the absolute number of alliances in which a firm participates is the significant feature that impacts firm performance. While a few studies have looked at alliance network heterogeneity, previous studies have focused only on the diversity of partners (Beckman and Haunschild, 2002; Goerzen and Beamish, 2005).

We define alliance portfolio diversity as a much more encompassing multidimensional construct, including partner diversity, functional diversity and governance diversity and develop hypotheses about the impact of the various alliance portfolio diversities change on a firm’s performance change. We then draw from the group diversity literature and develop measures for the various diversity variables, and empirically test the relationships between our global alliance portfolio diversity constructs and firm performance change. Prior studies examining the international
diversification-performance relationship were based largely on samples of manufacturing firms. Thus it is likely that the form of the relationship between international diversification and performance observed in manufacturing firms might not apply similarly to firms in service industries. By 'form', we refer to the relationship between international diversification and performance in terms of how the performance of service firms will change within an observed range of international diversification. The service sector has been explored to a limited extent so far, although service firms have contributed to the majority of the job growth in the industrialized nations. Service firms are expanding internationally for the same reasons as the manufacturing firms: labor costs, market access, and resources, among others (Guile, 1988). Despite these similarities, there are also some differences between manufacturing and service firms. First of all, the nature of service businesses is mostly intangible. Second, the production and consumption of many services occur simultaneously owing to the impossibility of inventory in services. Thus we have limited understanding as to what the form of the international diversification-performance relationship is for service firms. We argue that the earlier theoretical rationale used to explain the relationship between multi-nationality and performance in manufacturing firms needs to be somewhat modified to account for the differences inherent to service firms. In this paper, we fill this important gap in the literature by providing an argument that the form of the relationship between alliance portfolio diversity and performance is different for service firms, and consequently provide an empirical test of our argument.
Much has been written about alliance portfolio in manufacturing industries, providing a basis for the development of theories on alliance. With the growth of service industries, the need to uncover sources of competitive advantage, including alliance portfolio management, in these sectors has increasingly drawn the attention of researchers. However, literature has revealed that alliance studies in service firms are still in their infancy. One of the primary causes is the perception that services are different from manufacturing, particularly with respect to the intangibility of service outputs, making it difficult to identify the invisible performance. Furthermore, while this does not necessarily mean that service firms lag behind manufacturing firms in making profit, it could be expected that the impact of strategy like alliance on organizational performance in services would be different than that in manufacturing sectors. This paper seeks to examine two major issues in this area. First, how does the alliance portfolio diversity impact firms’ performance? Second, does the impact of alliance portfolio diversity have a different impact on business performance between manufacturing and service firms?

Finally, our investigation is also highly relevant for management practitioners. That is, by teasing out the relationship between alliance portfolio characteristics and firm performance, we offer ways in which alliances can provide the most benefits to a firm, and hence certain key principles of cooperative strategies at the corporate level can be established. Moreover, while the current alliance-level literature is focused on helping management practice with specific alliances, corporate managers must maximize the possible competence- and value- enhancing benefits of an overall cooperative strategy.
that includes actively managing a portfolio of global alliances (Hoffman, 2005). In the following sections of this paper, we first define and describe the concept of global alliance portfolio diversity, then in critically reviewing the current alliance literature we theoretically develop hypotheses on the relationship between global alliance portfolio diversity and firm performance. That is followed by a presentation of our research design, statistical models, and empirical results. We conclude with a discussion of our results and their implications for theory, research and practice.

2. THEORY AND HYPOTHESES

Firms enter into alliances for various reasons. Some alliances are established to pool complementary resources from partners (Henderson and Cockburn, 1994; Eisenhardt and Schoonhoven, 1996), while some alliances are established so the partners can share the costs and the risk of undertaking expensive and highly uncertain projects (Hegedoorn, 1993; Kogut, 1988). Alliances are also established to gain strategic flexibility (Kogut, 1988), or to preempt and dominate competition (Pfeffer and Nowak, 1976). Recently, alliances have been used as an effective means to learn by gaining access and/or acquiring resources and capabilities that reside outside the firm (Hamel, 1991; Hegedoorn, 1993; Powell, Koput & Smith-Doerr, 1996). Prior studies suggest that alliances often have a positive impact on different measures of corporate performance. For example, a
firm’s external cooperative relationships have been found to be positively associated with firm survival (Baum and Oliver, 1991; Mitchell and Singh, 1996), higher firm growth rates (Powell et al., 1996), and innovation (Hagedoorn and Schakenraad, 1994). Stuart (2000:791), however, introduced the notion of an alliance portfolio and argued that the advantage of a portfolio of alliances is determined not so much by the portfolio’s size, but by the characteristics of the firms that a focal organization is connected to.

We extend this notion and argue that with respect to a firm’s portfolio of alliances, the size of a firm’s alliance portfolio is not as significant a factor for firm performance as the diversity of the portfolio; not just in its partners, but also in its functional purposes and governance structures. Firms enter alliances for many reasons, such as to pool complementary resources (Eisenhardt and Schoonhoven, 1996), share costs and risks of undertaking expensive and highly uncertain projects (Hagedoorn, 1993), and access or acquire needed resources, capabilities, or knowledge. Studies found that greater alliance intensity is positively associated with firm survival (Baum and Oliver, 1991), higher firm growth rates (Powell et al., 1996), and higher levels of innovation (Hagedoorn and Schakenraad, 1994). However, Hagedoorn and Schakenraad (1994) found no effect of technology alliances on profitability, and Stuart’s (2000) work shows not all alliances positively impact firm performance. We go beyond recent work on network partner attributes to examine the diversity of alliance portfolio composition and its relationship to firm performance.
Alliance Portfolio Diversity

The notion of diversity refers to the degree of variance in the characteristics of a firm’s alliance partners (Jiang et al., 2010). On the one hand, a more diverse portfolio is certainly beneficial, as it provides the firm with access to non-redundant information and a wider array of complementary resources and capabilities. On the other hand, greater diversity has also drawbacks, because it increases managerial costs by making coordination of production activities more difficult. Accordingly, extant research investigated the performance consequences of diversity and found a non-monotonic relationship between alliance portfolio partner diversity and firm financial performance (Goerzen and Beamish, 2005; Jiang et al. 2010; Lavie and Miller, 2008). Nonetheless, some important aspects of partner diversity still remain unaddressed.

In entering into a strategic alliance, a firm has to consider a number of issues. The first question is about partner selection; with who should the firm ally (Hitt, Ireland & Santoro, 2004; Hoffman, 2005). Along these lines, the firm has to choose whether to enter into an alliance with partners similar to themselves or with partners that are dissimilar. More specifically, the firm can choose partners that are similar in industry background and knowledge base so that it might be easier to reach a level of understanding and familiarity that will facilitate collaboration. On the other hand, the firm can also choose to cooperate with a wide variety of partners coming from different industries, different knowledge bases, and operating with different routines, in order to
broaden its exposure to different pools of resources and capabilities and hence develop new and different competencies. In this case the firm will have a high degree of partner diversity in its alliance portfolio. Our alliance portfolio partner diversity concept is similar to the alliance network diversity construct developed by Goerzen and Beamish (2005), which refers to the degree of variance in partners’ resources, capabilities, and industrial backgrounds in a firm’s alliance portfolio.

A firm also has the possibility to apply its cooperative strategy for different functional purposes. The firm can get involved in exploitative alliances like marketing or manufacturing collaborations, in which firms come together so that they can possibly generate greater levels of returns from their respective existing resources (March, 1991). Firms can also enhance or broaden its technological and development capabilities by combining force with partners through R & D alliances, otherwise known as exploratory alliances (March, 1991). Or, the firm can focus on lowering costs and increasing efficiency throughout its value-chain activities by entering into manufacturing or sourcing agreements. In this case, the firm has a higher level of functional diversity in its alliance portfolio.

And a firm also has choices in organizing and managing its alliances by assuming different governance structures, where, for example, cooperative relationships are established and structured as non-equity or equity-based. In equity-based joint ventures, a firm can choose to be a minor equity, equal share, or major equity partner. Different
governance structures have different implications regarding the level of commitment, degree of integration, as well as the learning effectiveness for different types of knowledge (Kogut, 1988). A firm’s alliance portfolio has a high or low level of governance diversity depending on whether the firm tends to vary or converge on the type of governance structures used for their various alliances.

The alliance literature is fairly rich with studies that deal with these questions individually. However, from an alliance portfolio perspective, the firm has to consider all three of these aspects in concert. Combining these notions we define a firm’s alliance portfolio diversity as the degree to which the firm’s global alliances portfolio differ with respect to the three dimensions of partner diversity, functional diversity, and governance diversity. Since a firm’s cooperative strategy is a key component of the firm’s overall corporate strategy we examine the extent to which a change in a firm’s global alliance portfolio diversity affects a change in its corporate performance. We discuss each of the three components of a firm’s global alliance portfolio diversity, i.e., partner diversity, functional diversity, and governance diversity, and their linkage to firm performance in the following sections.

We define alliance portfolio diversity as the degree of variance in partners, functional purposes, and governance structures of the alliances. Prior studies have focused on partner diversity at the dyad (Parkhe, 1991) or network level (Goerzen and Beamish, 2005). We contend that alliance portfolio diversity must also consider variance in the
functional scope and governance structure of alliances. Thus, three key issues in alliance formation can be addressed. The first issue is partner selection; with whom the firm allies. Our notion of alliance portfolio partner diversity is industry diversity and refers to the degree of variance in partners’ resources, capabilities, knowledge, and technological bases. The second issue is the functional purpose of an alliance; what value chain activities the firm performs in its alliances. The third is governance structure; how the firm organizes and manages. Alliance portfolios vary in diversity along these three dimensions and despite a large alliance literature, there is a lack of studies examining all three of these alliance diversity aspects in concert. In this study, we explore these three key dimensions of portfolio diversity and their relationship to firm performance.

**Alliances between Retail Firms**

The establishment of alliance portfolio between firms during recent times has led to increased attention among researchers to examining the various aspects of the alliance portfolio. It must be said, however, that despite the increased use of global strategies by multinational firms, research on the establishment of alliance portfolio for service firms is rather at an evolutionary stage. Previous studies on services in an international context examined the determinants of foreign direct investment in service industries (Weinstein, 1977; Terpstra and Yu, 1988; Li and Guisinger, 1992) and foreign market entry modes
for service companies (Erramilli, 1990; Erramilli and Rao, 1990, 1993), and sourcing strategies of multinational service firms (Murray and Kotabe, 1999), but have not examined the effect of alliance portfolio diversity on performance in service industry. It has been argued that theories developed to explain the behavior of multinational manufacturing firms could be applied to multinational service firms (Boddewyn et al., 1986). As service firms are expanding internationally for the same reasons as manufacturing firms (labor costs, market access, resources, etc.), the underlying theoretical rationale should be the same (Boddewyn et al., 1986; Dunning, 1989; Li and Guisinger, 1992).

As service firms assume greater prominence in international business (U.S. Congress 1986; Cateora 1990), researchers are beginning to ask how service firms effect entry into foreign markets and whether they differ from manufacturers in this respect (Carman and Langeard 1980; Cowell 1983; Sharma and Johanson 1987; Erramilli 1990). Most of researchers studied manufacturing industry, though services are also important. The phenomenal growth of service multinationals in the past decade in wholesale/retail trade, accountancy, advertising, banking, consultancy, hotels, insurance, legal, telecommunications, and other service sectors is not yet reflected in academic studies. Although services are important, there is little research on the growth and internationalization of service firms. Moreover, services are fundamentally different from manufacture, in terms of relative intangibility, perishability, simultaneity of production and consumption, and customization (Boddewyn et al., 1986). Not that all service sectors
are homogeneous. As we shall see later in the paper, there are substantial differences among different types of services in terms of capital intensity and knowledge intensity, which produce different results in terms of the link between performance and multinationality. All subsectors are not the same, either in manufacturing or in services. Boddewyn et al. (1986) recognized that, within the rubric of services, there can be substantial differences in attributes such as intangibility, perishability, and simultaneity. Retail firms’ position in textile and fashion industry is more important than any other time, so it is important to know how to manage alliances between retail firms. Figure 3 provides the change of pipeline in fashion industry.

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**Insert Figure 3 about here**

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2.1. **Partner industry diversity and firm performance**

Partner selection is an important decision for firms entering into cooperative relationships (Hitt, et al., 2004). This is especially so in the current competitive environment where accessing and learning new skills from partner(s) have become a
prevalent rationale for allying (Hamel, 1991; Hagedoorn, 1993; Hagedoorn and Schakenraad, 1994; Powell et al., 1996). The increasing emphasis on learning and capability-access has resulted since most firms increasingly compete in a global and technologically fast-paced environment. As a result, resources and capabilities such as technological, marketing and managerial know-how are critical for obtaining and maintaining competitive advantages (Barney, 1991; Henderson and Cockburn, 1994; Eisenhardt and Martin, 2000). Since partners in cooperative relationships are potential sources of these new skills or needed resources, firms must choose the right partners (Hitt, et al., 2004).

Prior studies have focused on how partner characteristics affect the management and performance of a specific alliance. Parkhe (1991), for instance, proposed two types of inter-firm diversity and argued for their different effects on the longevity and dynamics of an alliance. Stuart (2000), on the other hand, studied how the attributes of a firm’s partners may affect what the firm can gain from its portfolio of technology alliances. Stuart (2000) found that when a firm’s alliance partners are larger and possess more technological resources, the focal firm tends to enjoy improved innovation and growth rates. Along the same lines, Hagedoorn and Schakenraad (1994) found the characteristics of alliance partners are more important for a firm’s performance than the absolute number of alliances the firm participates in. Beckman and Haunschild (2002) linked a focal firm’s network (through boards of directors) partners’ diversity in acquisition experience and industry backgrounds to the premium it pays for its own acquisitions and Goerzen and
Beamish (2005) found that diversity in Japanese firms’ foreign subsidiary networks has a mostly negative effect on corporate performance.

From an alliance portfolio perspective, the question arises as to whether a firm should select a more homogeneous group of firms as potential partners or venture into alliances with a diverse variety of firms. From a capability development perspective, access to a diverse pool of resources, capabilities and routines will reduce the firm’s risk of developing core rigidities and will help with the renewal and reconfiguration of the firms’ portfolio of competences (Kogut and Zander, 1992; Teece et al, 1997; Stuart, 2000). Diverse portfolio partners mean more breadth in firms’ search for new opportunities and solutions. Higher variation provides multiple options and is more likely to yield superior choices (Kattila and Ahuja, 2002). Diverse partners also bring more unique and non-redundant information and resources (Beckman and Haunschild, 2002). While these examples suggest alliances with diverse partners bring benefits, Goerzen and Beamish’s (2005) recent study found that higher partner diversity in Japanese MNCs’ international network reduces firm performance except for a few very large firms. Thus, controversy exists as to whether partner diversity has a positive or negative influence on firm performance. We agree with Parkhe (1991) in arguing that there are two types of partner diversity. Type I diversity really forms the underlying strategic motivations for entering into alliances, in that the differences are actually the complementary resources that will facilitate the formulation, development, and collaborative effectiveness of global strategic alliances (Parkhe, 1991:580). At the portfolio level, diversity in partners’
knowledge bases and resource pools might be desirable because they enrich the information and learning experience of the focal firm. Type II diversity, on the other hand, are differences in partner characteristics that might hurt communication, hinder knowledge transfer, and severely increase coordination difficulty.

Partner selection is important since accessing or learning new skills from partners is a prevalent rationale for creating an alliance (Doz and Hamel, 1998; Hagedoorn, 1993). Prior studies examined the relationship between partner characteristics and various firm performance measures. For instance, Hagedoorn and Schakenraad (1994) found characteristics of alliance partners are more important than the absolute number of alliances. Stuart (2000) found firms achieve higher innovation and growth rates when the alliance partners are larger and possess more technological resources, while Goerzen and Beamish (2005) found that diversity in Japanese firms’ foreign subsidiary networks in terms of industry and country background had a U-shaped relationship with corporate performance. Parkhe (1991) distinguished between two types of partner diversity in his discussion of interfirn diversity. Type I diversity forms ‘the underlying strategic motivations for entering into alliances’ in that partner differences can be complementary resources that ‘facilitate the formulation, development, and collaborative effectiveness’ of strategic alliances. ‘Type II diversity refers to the differences in partner characteristics’ that might impede communication, encumber knowledge transfer, and increase coordination difficulty (Parkhe, 1991: 580). Over time, Type II diversities go down and Type I diversity benefits increase (Parke, 1991). At the portfolio level, firms can reap net
gain benefits from increasing partner diversity when the benefits from Type I diversity outsize the costs resulting from managing Type II diversity. Firms face trade-offs as they increase the diversity of their alliance portfolio. On the one hand, a highly diversified portfolio provides broadened search options, access to enriched resource pools, and, hence, added value creation and capability development opportunities. On the other hand, increased diversity can bring more complexity, the potential for more conflicts, and, hence, increased coordination and managerial costs. Thus, the arguments for and against portfolio diversity are often equally compelling. Following studies that consider curvilinear relationships to reconcile two compelling contrary arguments (see, for example, Golden and Zajac, 2001) we punctuate these opposing arguments and explore the notion of nonlinear relationships between our three partner diversity dimensions and firm performance.

Alliances with firms from different industries can bring a host of benefits and costs. Partners from the same industry are often competitors who may bring the greatest learning through imitation and greater absorptive capacity due to an overlap in backgrounds, experiences, knowledge, and technological bases (Cohen and Levinthal, 1990). On the other hand, conflicts of interest exist and learning races (Doz and Hamel, 1998) can happen, increasing monitoring and safeguarding costs. Partnering in upstream or downstream activities can offer complementary resources and/or improve value chain coordination, while partners in unrelated industries can facilitate entry into new markets (Kogut, 1988) or stimulate technological innovations. However, such alliances are prone
to resource misfits and/or lack of synergies, causing alliances to underperform. Partners from different industries may also have very different routines and processes that can make collaboration difficult. Thus, while greater partner industry diversity may provide learning and resource access benefits, firms have to first overcome two hurdles. First, different partners often bring myriad Type II diversities that can impede alliance value creation (e.g., conflicts with competitors, lack of synergy with partners in unrelated industries). Second, increased diversity increases alliance management complexity. These downsides appear immediately as firms start increasing the degree of partner diversity. However, as firms become more adept at dealing with such costs and as learning and resource benefits accumulate, they may reach a minimum degree of diversity effectiveness and can expect net gains surpassing this threshold. Goerzen and Beamish’s (2005) work, for instance, shows a U-shaped relationship between partner diversity (measured by industry and national background) and firm performance. Following this reasoning, we therefore propose:

**Hypothesis 1. Greater alliance portfolio partner industry diversity is associated with firm performance that first decreases and then increases forming a U-shape.**

2.2. Functional diversity and firm performance

Alliances can serve different functional purposes as firms employ marketing,
manufacturing, and distribution alliances to broaden their market reach, enhance value creation, and further exploit core competencies (Prahalad and Hamel, 1990). Corresponding to the various rationales for entering into collaborative relationships, alliances can be categorized into different types based on the functional purposes they serve. R & D alliances are especially prevalent as the technological advances pick up speed and both the costs and the risk of R & D projects increase considerably since the 1990s (Doz and Hamel, 1998; Hagedoorn, 1993). Firms are also using cooperative strategies for marketing efforts, manufacturing tasks, and distribution channels, as they continue to focus more on fewer areas of their core competences. In many instances, alliances are being used for all activities in firms’ value chains beginning with supplier networks to marketing and distribution partnerships. These initiatives are consistent with the increasing understanding that firms have finite resources and should therefore focus more on its core competencies and not get distracted by non-core activities (Santoro & Chakrabarti, 2002). Among alliances established for different functional purposes, some alliances are more in the way of dealing with exploration activities (such as R & D alliances used to create new products or technologies) whereas some alliances are more in the way of dealing with exploitation activities (such as manufacturing agreements used to gain economies of scale). As March (1991) pointed out, it is important for a firm to maintain a good balance between both exploration and exploitation activities. Exploitation activities guarantee a firm’s current viability while exploration may critically influence a firm’s future viability. When a firm engages in both types of alliances, thus showing a higher degree of diversity in its alliance portfolio’s functional purposes, this
indicates a more balanced use of alliance for both exploration and exploitation, thus enhancing the firm’s competences (Stuart and Podolny, 1996). Having a variety of alliances serving different functional purposes also provides a firm with opportunities to develop new capabilities, as each different type of functional alliances will involve different inputs from partners, thus further increases the firm’s breadth in search and deter the firm from developing core-rigidity. Following this reasoning, we therefore propose:

**Hypothesis 2. Greater alliance portfolio functional diversity is positively associated with firm performance.**

2.3. Governance diversity and firm performance

Alliances can be structured as non-equity or various equity-ownership arrangements where different governance structures have different implications on level of commitment, degree of integration, and learning (Kogut, 1988). Matching structure with the characteristics of each cooperative venture is important to balance value creation and value appropriation (Lavie, 2007) and to reduce transaction costs (Santoro and McGill, 2005). However, it takes time and repeated iterations to understand how to set up and manage a particular governance form since each governance structure requires unique resource commitments, managerial attention, and relationship-building routines. Sampson
(2005) found that repeated experience with a specific governance structure can help the firm accumulate and institutionalize knowledge and skills about a particular governance form. Once institutionalized, this knowledge protocols that can be readily applied to future alliances, thereby reducing managerial costs. While attempting to match governance structures to the variety of relationships in the portfolio can be thought of as a way to deal with transaction cost issues, firms will be better served with a focused set of familiar structures rather than trying a new governance form with each new alliance. Excessive experimenting with different governance structures can significantly increase managerial complexity and create lost opportunities for institutional learning while providing minimal additional reduction in transaction cost hazards. Following this reasoning, we therefore propose:

*Hypothesis 3. Greater alliance portfolio governance diversity is negatively associated with firm performance.*

Figure 4 show the research model for this study.

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Insert Figure 4 about here

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3. EMPIRICAL SETTING AND METHODS

3.1. Data

The increasing trend of alliance formation in textile and apparel industry enhances the meaningfulness, reliability, and variance of our research. In worldwide fashion industry, U.S. is the one of the important market therefore our study focuses on a leading national industry. In order to track changes in a firm’s alliance portfolio diversity and its impact on a firm’s performance, we constructed a panel data for this study. We designed our study as a pooled time-series analysis of U.S.-based retail firms having alliance experiences in fashion industry. In order to track changes in a firm’s alliance portfolio diversity and its impact on a firm’s performance, we constructed a panel data for this study. In doing so, we collected data during the period from January 1991-December 2010. The SDC Platinum Database was used to identify alliance portfolios for the global fashion industry. We focused on parent firms’ primary SIC was retail trade related with fashion sector.

After compiling from the SDC Platinum and then we extracted more information from alliance announcements and status reports in press releases, corporate websites. For each alliance, we coded the announcement date, termination date, number of participating partners, partners’ identities, public status, and countries of origin, and categories of agreements: R&D, manufacturing, original equipment manufacturing, marketing and
service, licensing, royalties, or supply. A given alliance could involve more than one type of agreement. Firm-specific data, such as total assets, revenues, long-term debt, R&D expenses, and net income, were extracted on an annual basis from Compustat. Based on performance data availability from Compustat, we were able to obtain complete data sets containing the firm’s global alliance portfolio matched with their corporate level performance for 109 U.S. firms. For a highly consolidated and global industry, this data set offers a sizeable number of alliances and firms to study the relationship between alliance portfolio internationalization and firm level performances. The firm-year was used as the unit of analysis, because the dependent variable was defined at the firm level. There are 950 observations corresponding to the years 1991–2010 by pooling the data for all alliances in a firm’s portfolio.

3.2. Measures

3.2.1. Dependent Variables

Firm Performance

Following previous research on the performance implications of international operations (Contractor et al. 2003), we used profitability as our financial performance measure. We measured profitability by computing the firm’s return on assets (ROA),
which is a common measure used in financial performance studies. ROA was calculated as the ratio of net income to total assets in a given year and was updated annually for each focal firm.

3.2.2. Independent Variables

We defined Alliance Portfolio Diversity as a multi-dimensional construct, including partner diversity, functional diversity, and governance diversity. For alliance partner diversity, we defined industry diversity for partners’ different industry backgrounds. For functional diversity, we classified alliance activities into 4 categories, marketing, manufacturing, R&D and other services. To measure governance diversity, we used the focal firm’s equity ownership in the strategic alliances, ranging from zero to one hundred percent. We describe each of these measures more fully in the sections below.

We first coded each alliance into different categories. For instance, industry diversity has four categories. If an alliance is formed with a partner in the same 4-digit SIC code, it was coded “4”; if the partner is in the same 3-digit SIC code, it was coded “3”; same 2-digit SIC code, “2”; same 1-digit SIC code, “1”, and finally if the partner shared no SIC code, it was coded “0”. This categorization captures whether alliances are formed with competitors (within same 4-digit SIC code), cooperators (same 2- or 3-digit SIC code), or unrelated industry player (1- or 0 same SIC digit). Based on this coded information, we then composed the portfolio level industry diversity by using the Blau Index of Variability (Blau, 1977). The Blau Index has been used widely in the group
diversity literature to measure variability of categorical variables. Hambrick et al. (1996) referred to this index as the Herfindal-Hirschman index of heterogeneity.

For any given diversity variable:

\[ D = 1 - \sum p_i^2 \]

where \( D \) represents degree of diversity or heterogeneity, and \( p \) represents the proportion belonging to a given category, \( i \) is the number of different categories. As diversity is maximized, values of proportions belonging to any given category are low and \( p_i^2 \) is minimized. We used the Blau index since it allowed us to measure the level of diversity present among a portfolio of alliances where a perfectly homogeneous group would receive a score of 0, while a perfectly heterogeneous group (with members spread evenly among an infinitesimal number of categories) would receive a score of 1. To draw an example from this study, if all of the alliances in a given firm’s portfolio were from the same SIC code, the Blau index would be 0, indicating perfect homogeneity. If 25% of the alliances were from the same 4 digits, 25% were from the same first 3 digits, 25% were from the same first 2 digits, and 25% were from only the same first digit, then the Blau index would be 0.75, indicating the highest level of heterogeneity achievable in a situation with four categories. As the number of categories increases, the highest possible Blau score increases.

We were also able to use this method to code our two other portfolio diversity variables: Functional diversity and Governance diversity that we describe below. With
respect to Functional diversity we first classified alliance activities into 4 categories, marketing, manufacturing, R&D and other services, and then aggregated them into a portfolio level diversity measure using Blau Index. With respect to Governance diversity we focused on a firm’s level of equity holding in an alliance. In doing so, we coded each alliance into one of the following categories: “1”= non-equity, “2”= minor equity up to 20%, “3”= substantial share 21-49%, “4”=equal share 50%, “5”= major share 51-79% and “6”=dominant share 80% and above. Portfolio governance diversity is calculated using Blau index.

3.2.3. Control Variables

We controlled firm size as measured by the value of total assets, firm R&D intensity as measured by R&D investments divided by revenues, and firm solvency as measured by the log-transformed ratio of cash to long-term debt. The adjusted size of the alliance portfolio (Ahuja 2000a, Baum et al. 2000, Stuart et al. 1999), which was computed by taking the logarithm of the number of alliances divided by the firm’s total assets. To control for changes in the contributions of alliances as they mature, we measured the average age of alliances in the portfolio. Finally, we controlled for the diversity of partners’ countries of origin (Goerzen and Beamish 2005, Tallman and Li 1996) using an inversed Herfindahl Index. For each firm i in year t, we used the formula
\[ 1 - \sum_{c=1}^{0} (n_{itc} - n_{it})^2 \]

where \( n_{itc} \) is the number of firm i’s partners that were headquartered in country c, and \( n_{it} \) is the total number of partners in firm i’s alliance portfolio in year t. High values of this measure suggest that the firm’s partners are dispersed across many countries.

### 3.3. Analytical Approach

We used random-effects generalized least squares (GLS) regression analysis for hypotheses testing. Random-effects GLS is considered more efficient and appropriate than fixed-effects modeling if the data can pass the Hausman test. A Hausman test showed the coefficient estimates provided by the random-effects estimator were not significantly different to those offered by the fixed-effects model, thus the more efficient random-effects model was used.

### 4. RESULTS

Table 3 lists correlations of the key variables that we wanted to observe in the time period. Table 4 provides regression results for the test.
In the multivariate tests of our hypotheses, we began with a baseline model including just our control variables (Model 1). Model 2 added all our portfolio diversity variables, and Model 3 the quadratic terms for partner diversity. Comparisons in the model fit between our baseline model and the fully specified model provides an indication of the overall explanatory power of our hypotheses. Overall, the results shown in Table 4, particularly given the dramatic increase of the explanatory power from model 1 to model 3, suggests the relevance and importance of alliance portfolio diversity on firm performance.

Model 3 shows the root term for industry diversity is significant and negative ($\beta = -0.137$, $p<0.05$), while the squared term is significant and positive ($\beta = 0.158$, $p<0.01$) indicating
a U-shaped relationship thereby providing support for Hypothesis 1. However, functional diversity has significant result, but negatively related to firm performance ($\beta = -0.366$, $p<0.05$). This is the opposite result as we expected from prior research. Hypothesis 2 argued that an alliance portfolio’s functional diversity increase will lead to firm performance improvement. The results provided in both Model 2 and Model 3 do not provide support for this hypothesis, thus hypothesis 2 is not supported. Finally, Model 3 shows that an increase in alliance governance diversity is significantly related to a decrease in firm performance change. Governance diversity is negatively related to firm performance ($\beta = -0.177$, $p<0.05$) offering support for Hypotheses 3.

5. CONCLUSION AND DISCUSSION

Research on strategic alliances has greatly increased our understanding of the role of cooperative strategy within the context of a firm’s overall corporate strategy. While the role of alliance portfolio and firm characteristics on firm performance is attracting increasing attention, there has been limited effort in viewing a firm’s alliance activities from a portfolio perspective (Hoffman, 2005; Reuer and Ragozzino, 2006). Equally important, there has been no prior study that examined the change in a firm’s alliance portfolio and its relationship to firm performance over time. This current study reported on in this paper addresses these two needs in the literature. As a result of this study we
found that firms can benefit from actively managing a portfolio of alliances by establishing relationships with a variety of industries, engaging in both exploitation and exploration collaborations, and by accumulating alliance management skills using a more focused governance structuring strategy.

In this study, we defined alliance portfolio diversity as a multi-dimensional construct that moved beyond just partner characteristics (Beckman and Haunschild, 2002; Goerzen and Beamish, 2005) to include also diversity in functional activity and governance structure. Our more comprehensive construct of portfolio diversity encom...
learn different skills, update its routines, and possibly make inroads into unexplored areas. The negative sign for governance diversity shows the importance of learning and accumulating experience by organizing collaborations using a focused set of governance structures.

The fact that this is a single-industry study limits our ability to generalize our findings. However, cooperative strategy is of critical importance for the global fashion industry and our sample does represent a major part of the global fashion industry. To extend this current research we presented here, we suggest future studies investigate this phenomenon with firms from different industrial sectors that also rely heavily on alliances. In this way, more insights can be gained on whether and the extent to which our findings are applicable in those settings as well. Another possible avenue for future research and an interesting extension to this current study for instance, is the possible interactive effect between partner, functional diversity and governance diversity. Governance diversity change is negatively associated with performance change in our study. Therefore, when a company enters into cooperative arrangements with a variety of organizations each with different motives, it might follow that the company ought to use different governance structures accordingly. This may imply interaction effects between a variety of partner, functional, and governance diversity. While intriguing, this aspect was beyond the scope of this current study.
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<tr>
<td>8 Partner Diversity</td>
<td></td>
<td>0.028</td>
<td>0.085**</td>
<td>0.251</td>
<td>-0.021</td>
<td>0.011**</td>
<td>-0.174</td>
<td>0.054**</td>
<td></td>
</tr>
<tr>
<td>9 Functional Diversity</td>
<td></td>
<td>-0.108</td>
<td>0.214*</td>
<td>0.185</td>
<td>0.025</td>
<td>0.597*</td>
<td>0.014*</td>
<td>0.246</td>
<td>0.238***</td>
</tr>
<tr>
<td>10 Governance Diversity</td>
<td></td>
<td>-0.005</td>
<td>-0.055</td>
<td>0.051</td>
<td>0.013*</td>
<td>0.019**</td>
<td>0.023**</td>
<td>0.052*</td>
<td>0.058</td>
</tr>
</tbody>
</table>

Significance Levels: *p<0.05; **p<0.01; ***p<0.001
### Table 4: Random-effects GLS regression model

<table>
<thead>
<tr>
<th>Independent Variables</th>
<th>Model 1</th>
<th>Model 2</th>
<th>Model 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Firm size</td>
<td>0.023</td>
<td>0.015</td>
<td>0.029</td>
</tr>
<tr>
<td>Firm R&amp;D intensity</td>
<td>-0.062</td>
<td>0.036</td>
<td>0.053</td>
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<tr>
<td>Firm solvency</td>
<td>0.008</td>
<td>0.015</td>
<td>0.009</td>
</tr>
<tr>
<td>Size of alliance portfolio</td>
<td>-0.05</td>
<td>-0.03</td>
<td>0.02</td>
</tr>
<tr>
<td>Alliance age</td>
<td>0.021</td>
<td>0.018</td>
<td>0.037</td>
</tr>
<tr>
<td>Partner country diversity</td>
<td>0.135</td>
<td>0.062</td>
<td>-0.114</td>
</tr>
<tr>
<td>Partner Diversity</td>
<td>-0.121*</td>
<td>-0.137*</td>
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</tr>
<tr>
<td>Partner Diversity²</td>
<td></td>
<td></td>
<td>0.158**</td>
</tr>
<tr>
<td>Functional Diversity</td>
<td>-0.15*</td>
<td>-0.366*</td>
<td></td>
</tr>
<tr>
<td>Governance Diversity</td>
<td>-0.296*</td>
<td>-0.177*</td>
<td></td>
</tr>
<tr>
<td>Model F</td>
<td>5.39*</td>
<td>46.28**</td>
<td>79.25**</td>
</tr>
<tr>
<td>$R^2$</td>
<td>0.05</td>
<td>0.12</td>
<td>0.24</td>
</tr>
</tbody>
</table>

Significance Levels: *p<0.05; **p<0.01; ***p<0.001
[Figure 3] From the Central Manufacturer to the Central Retailer in the Textile and Clothing Pipeline

(T: Textiles manufacturer, A: Apparel manufacturer, R: Retailer)

[Figure 4] Research Model of Study 2

Partner Industry Diversity

Functional Diversity

Governance Diversity

H1

H2

H3

Firm Performance
Chapter IV.

Conclusion
The relationship between alliance portfolio diversity and firm performance has been an important topic for researchers in strategic management and international business. The importance of alliance portfolio diversity comes from the fact that it represents a growth strategy that has major potential impact on firm performance. Despite the numerous studies that have examined the association between alliance portfolio diversity and performance, these efforts have provided evidence of conflicting results. Following this finding, a more recent stream of research has focused on potential methodological and theoretical causes that might explain the lack of consistent findings. In this study, we examined the trade-offs firms face which engage in managing alliance portfolio. Through the empirical analysis using a data of textile and apparel industry firms during the period 1991-2010, we found various factors of alliance portfolio management influence in firms’ performance. Our study has value because we reveal the textile and apparel firms not high tech industry firms like most of previous research. The fashion industry is characterized by intense and dynamic competition, as a result of which participants are obliged to develop innovative structures and processes supporting market growth, maintaining competitive advantage and exploiting new product sectors and consumers. Hence, to examine alliances in dynamic fashion industry can provide many perspectives for researchers and practitioners.

In study 1, we focuses specifically on the alliance portfolio internationalization in the textile and apparel industry. Using two-stage analysis for handling potential self-selection bias of data collected from the textile and apparel industry, we have identified a three-
stage relationship between the alliance portfolio internationalization and financial performance. At low levels of API, firm performance declines due to negative transfer effects, improves at moderate levels with alliance portfolio internationalization at which firms maintain a positive balance between value of network resources and efficiency of its relative absorptive capacity, and once again declines when excessive API results in differences too complex and difficult to coordinate. In second study, we explore the relationship between alliance portfolio diversity and performance in fashion retail firms. This study was driven by the lack of studies on alliance portfolio diversity in textile and apparel industry despite the importance of alliance as one of the primary sources of competitive advantage for retail firms. Furthermore, as manufacturing firms and retail firms are different in many respects, it could be expected that retail firms could pursue and emphasize different aspects of managing alliance portfolio than their manufacturing counterparts. Drawing on the alliance literature and grounding our work in large part with the resource-based views, we explore how firms’ global alliance portfolio diversity in terms of alliance partners’ industry, functions, and governance structures influences the change in retail firms’ performance.

Our results from this study also provide empirical support to the claim that a firm’s alliance portfolio influences its competitiveness and financial performance (Hoffman, 2005). Through effective cooperative strategy, firms can exploit and develop their bundles of resources by allying with diverse group of partners for various functional purposes. Firms that understand the strategic importance of cooperative strategy, develop
an effective alliance portfolio management system, and actively manage their portfolio will be able to gain dynamic capabilities that are valuable for success (Teece et al., 1997). Therefore, alliance portfolio management should become a key responsibility of corporate-level strategic management. For practicing managers, it is important for them to have a portfolio perspective in alliance management, and develop a portfolio management system (Hoffman, 2005). They should seek collaborations with firms coming from different kinds of industry background, getting access and exposure to a diverse pools of resources. Furthermore, managers are cautioned not to try out a new governance structure every time they set up an alliance. Our results suggest that managers can better accumulate alliance management skills by controlling the interaction between many factors in alliance portfolio. We examined appropriate measures for diversity variables by borrowing from the much fully developed group diversity literature. Future research can be done to test the applicability of our measures in other empirical settings.
References


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국문초록

제휴 포트폴리오의 다양성과 성과

소 정 연

서울대학교 대학원

경영학과 국제경영/경영전략 전공

기업간 전략적 제휴는 빠르게 변화하는 경영환경 속에서 협력을 통해 효율성을 극대화 시킬 수 있는 기업의 전략으로 주목 받고 있다. 특히 최근 기업의 제휴 포트폴리오 (alliance portfolio) 관리의 중요성이 증대되면서, 제휴 포트폴리오의 다양성이 성과에 어떠한 영향을 미치는가에 대한 실증연구가 이뤄지고 있으나 아직 미흡한 실정이다. 특히 제휴와 관련한 연구들이 대부분 기술관련 산업의 연구개발 제휴 측면에 치우쳐 다른 산업에서 제휴가 성과에 어떤 영향이 있는가에 대한 연구의 필요성이 높다. 이에 본 연구는 기업이 제휴 포트폴리오를 관리함에 있어 포트폴리오의 다양성 측면에 주목하여 두 개의 심층적인 실증연구를 진행하였다. 첫 번째 연구에서는 제휴포트폴리오 내에서 파트너의 국적 다양성 부분에 집중하였다. 최근 국경을 넘어선 제휴가 증가하면서 국적이 다른 회사들간의 제휴 역시 관심의 대상이 되었다. 하지만
많은 연구에서는 국적이 조직학습이론 및 거래비용경제학에 근거하여 다수의 제휴 파트너를 포함한 포트폴리오를 운영하는 기업이 비용과 이익 부분에 상충관계가 있음을 근거하여 가설을 설정하였다. 다수의 제휴를 동시에받적으로 맺고 있는 기업의 제휴 포트폴리오에서 다른 국적의 제휴 파트너는 지리적, 문화적 이질성이라는 측면에서 거래비용을 유발하기도 하지만 새로운 지식창출이라는 탐색활동의 측면에서 기업의 성과를 높여주기 때문이다. 본 연구에서는 앞서 설명한 두 단계를 넘어, 포트폴리오 내의 지리적 다양성에 따른 기업의 성과가 세 단계에 걸쳐 S곡선을 보일 것이라 예측했는데 이는 지나치게 많은 국적의 파트너와 협력해야 할 경우 조정비용이 발생하기 때문이다. 두 번째 연구에서는 제휴 포트폴리오의 다양성에 대해 지금까지 선행연구들이 부분적으로 다른 결정요인들을 포괄적으로 살펴보고 이를 실증연구로 진행하였다. 파트너의 산업 다양성, 제휴 기능의 다양성, 지배구조 다양성이라는 세가지 측면을 살펴보았는데 특히 패션산업 내 유통 서비스 부분을 강조함으로써, 같은 산업에 속해 있지만 가치사슬의 어느 부분에 포함되어 있으나에 따라 포트폴리오의 다양성이 성과에 미치는 영향이 다르게 나타날을 검증하였다.

전략적 제휴에 관한 선행연구들이 지식습득 측면에 치중하여 특히 출원이 중시되는 기술관련 산업에만 국한되어 있었다면, 본 연구에서는 혁신적인 소재개발을 위한 R&D 제휴부터 유통채널과 마케팅 부분의 확장을 위한 제휴까지 확장하게 제휴가 형성되고 있는 패션산업을 대상으로 연구를 진행하였다. 첫 번째 연구결과는 제휴 porta폴리오 국제화의 정도에 있어 처음에는 거래비용 측면에서 경영성과가 악화되다가, 다양성에 대한 시너지를
통해 성과가 향상되지만 지나치게 다양한 국적의 파트너들이 섞여있을 경우 높은 조정비용의 압력으로 결국 기업의 성과는 다시 멀어짐을 보여준다. 두 번째 연구는 제휴 포트폴리오 내의 파트너의 산업간 다양성이 존재할 경우 산업특이성을 인해 처음에는 성과가 악화되지만 자원공유의 시너기가 발생하는 시점부터 성과가 개선되는 것을 알 수 있었다. 또한 지배구조의 다양성이 높을수록 조정에 관련한 비용이 발생하므로 성과에는 부정적인 영향을 미친다. 이는 기존 연구에서 논의된 부분과 일치한다. 하지만 제휴기능 부분에서는 일반적으로 제조업에서는 탐색과 활용의 균형을 이룰 수 있도록 기능의 다양성과 성과가 비례하는 결과를 나타냈다지만 연구에서 살펴본 서비스 산업의 유통채널 제휴 포트폴리오 내에서는 탐색적 측면에 집중한 경우, 즉 제휴 기능의 다양성이 높은 경우 높은 성과로 이어지는 차이점을 발견 할 수 있었다.

두 실증 연구 결과를 통해 기업은 단순히 전략적 제휴를 체결하는데 그치는 것이 아니라 제휴포트폴리오 내 다양성의 수준, 파트너의 속성을 잘 고려해야 함을 알 수 있다. 기업은 높은 성과를 내기 위해 다수의 제휴 파트너들과 관계를 유지하지만 지식의 다양성에서 오는 이익과 경영활동을 조정하는데 필요한 비용의 상충되는 부분의 균형을 유지하기 위해서는 이에 대한 고려가 필요하다. 다시 말해, 다양한 지식을 습득하고 이를 높은 기업성과로 연결하기 위해서는 파트너, 제휴기능, 지배구조의 다양성 측면을 균형 있게 잘 유지하고 관리하는 것이 더욱 중요하다는 함의를 도출하였다.
주제어: 제휴 포트폴리오, 제휴 파트너, 다양성, 패션산업 제휴, 기업 성과

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