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Does brand partnership create a happy marriage? The role of brand value on brand alliance outcomes of partners

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ABSTRACT

In this paper, we investigate an under-researched issue by examining the financial performances of both partner firms in a brand alliance. We find that a participating firm's brand value and other brand characteristics are associated with not only its own financial performance but also its partner's financial gains from the collaboration. Our results show that the participating firm gains higher stock returns when its partner's brand value is higher. However, brand value differential reduces the positive effect of brand value on the partner firm's financial performance. In addition, the primary partner's brand alliance experience helps increase the positive effect of primary partner's brand value on the stock returns of the secondary partner. The secondary partner's brand exploitation attenuates the positive effect of secondary partner's brand value on the stock returns of the primary brand firm.

1. Introduction

Brand alliance, the short-term or long-term association or combination of two or more individual brands (Rao & Rueckert, 1994), is becoming increasingly popular and has piqued the interest of marketing practitioners. For example, HP and Canon formed a brand alliance for printers (Lewis, 1999). Cisco and HP teamed up to deliver co-branded support services. Other well-known brand alliances include Taco Bell and Doritos's popular Doritos Locos Tacos, IBM and Microsoft (Bucklin & Sengupta, 1993), and Kellogg's Star Wars cereal. While these market observations reflect the thinking that "companies in building alliances achieve more than they can on their own" (Lewis, 1999), how and when two firms benefit from a brand alliance is not well understood or empirically examined.

Therefore, the objective of this research is to have a deeper understanding of what brand-related characteristics helps each partner firm financially gain from a brand alliance. To the best of our knowledge, our research is the first to study the stock market performances of both brand alliance partners with the consideration of each partner's brand value. We address the gap in the marketing literature from several aspects. First, most prior brand alliance research focuses solely on consumer responses to brand alliances (e.g., Simonin & Ruth, 1998; Walchli, 2007). For example, it has been found that co-branded ingredients can facilitate a consumer's acceptance of brand extension (Desai & Keller, 2002). Some analytical research modeled the impact of the revenue gain or loss for the branded component involved in a partnership (Geylani, Inman, & Ter Hofstede, 2008; Yan & Cao, 2017). However, consumer perception of brand alliances is not equal to financial performance and marketers need to know the financial accountability of marketing activities (Srivastava, Shervani, & Fahey, 1998). As indicated by previous research, marketers can no longer afford to rely on the traditional assumption that positive product-market results (e.g., product sales, firm profits) will translate automatically into good financial results (Srivastava et al., 1998). Stock market return (changes in the market's expectations of future cash flows) is a broader and forward-looking measure of firm performance - it not only captures the increased market value created by unmeasured intangible assets (Bharadwaj, Bharadwaj, & Knosynski, 1999), but also incorporates complex changes such as sales, cash flow, profit, and other information received by investors (Srivastava et al., 1998). Thus, the extant literature would benefit from examining the financial impact of brand alliance partnership on each brand partner's stock market performance.

Second, two participating firms have different resources and functions in a brand alliance, and thus may obtain different financial returns from the same brand alliance. Limited research studied the value of brand alliance for only one major participating firm or for professional team sports (Cao & Sorescu, 2013; Yang, Shi, & Goldfarb, 2009). Our research differs significantly in that we analyze the financial outcomes of the two participating firms and consider the strategic importance of brand value to each firm's financial performances. However, the extant

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literature did not address the relationships between the partners' brand characteristics and their stock market returns. Thus, in this study, we focus on the interplay of two brands that are typically independent before, but lend their names to a single physical product for the duration of the brand alliance. Specifically, we denote the brand that manufactures the brand alliance's product as the primary brand and the other partner brand in the partnership (e.g., ingredient provider, licensed brand) as the secondary brand respectively (Helmig, Huber, & Leeflang, 2007).

Third, from the resource-based view (RBV), firms differ in their resources and capabilities, which make them have different future cash flows from the same strategic assets (Barney, 1991). The marketing literature indicates that key resources for a brand alliance can be summarized as follows: (1) the partner's brand value, which is the most important intangible asset provided by brand partners and would generate future cash flows for the brand alliance (Aaker & Jacobson, 1994); (2) brand value differential, which reflects the brand value differences between the two partners. Prior studies have been attentive to partner asymmetries in alliances (e.g., Dussauge et al., 2004); each brand has a different potential for generating cash flows as a result of differences in brand equity (Srivastava et al., 1998). This brand-specific resource difference could lead to the dependence and conflict between partners, and thus influence firm performance (Gaski, 1984); (3) primary partner's brand alliance experience, which pertains to the primary partner's learned capability to efficiently manage brand alliance's operation and maximize the utility of partner's brand equities (Kalaignanam, Shankar, & Varadarajan, 2007). Alliance experience is considered to be the key factor that influences the success rate of technological alliances (Kalaignanam et al., 2007), but its role in the context of brand alliance is unknown; (4) secondary partner's brand exploitation reflects how the secondary partner's past activities affect its brand resource available for the current brand alliance. It is related to the extent to which the secondary partner previously introduces co-branded products for its other partnerships. Secondary partner's brand value is the key external resource for the primary partner, but the secondary partners' overexploitation in the process of prior collaboration can diminish this positive impact (Spiggle, Nguyen, & Caravella, 2012). Through the resource-based view (RBV), these four factors provide a rich picture of how brand-related capabilities and resources affect the financial performances of brand alliance partners.

Our research addresses a key question unexplored by previous research: how do a firm's brand-related resources affect its partner's and its own financial performance associated with the brand alliance? Specifically, we empirically investigate the relationships between the financial returns of both brand alliance partners and the brand-related characteristics including brand value of each partner, brand value differential, brand alliance experience and brand exploitation. In the following section, we develop theoretical arguments that link the variables of interest to the two partner firms' stock market returns from the brand alliance.

2. Theories and hypotheses

In most prior research, researchers have employed an experimental approach to measure consumer's perception of brand alliance and constituent partner brands (e.g., Rao, Lu, & Ruekert, 1999; Simonin & Ruth, 1998), while the financial performance of each partner in the brand alliance remains an open question. Prior studies suggest that marketing alliances show a positive effect on shareholder value in some studies (Swaminathan & Moorman, 2009) but an insignificant effect in other studies (Koh & Venkatraman, 1991), and marketing alliances could bring additional risks to firms (Das, Sen, & Sengupta, 1998). These divergent findings underscore the importance of studying brand alliance as a unique strategy. Brand alliances involve not only marketing cooperation but also developing and manufacturing co-branded products, and thus it could have a different impact from other types of marketing alliances.

The theoretical model is developed from resource-based view (RBV). The RBV literature suggests that firms differ in their resources and capabilities, and such differences make firms have different future cash flows through using the same strategic assets (Barney, 1991). Brands are viewed as important intangible market-based assets that generate future cash flows (Aaker & Jacobson, 1994) and reduce the volatility of future cash flows (Ambler, 2003). From the future cash flow perspective, financial market values the information about brand asset (Mizik & Jacobson, 2004), and brand information can explain changes in future cash flows. Therefore, we expect that, in brand alliances, the firms' financial returns vary with themselves' and their partners' brand values. Given the importance of brand value and the dearth of research on financial rewards to brand alliance partners, we link this brand alliance-related resources with the future cash flow expectations of the two partners.

In addition, from the perspective of RBV, firms' deployment-capability difference leads to different cash flow expectations (Makadok, 2001). The literature suggests that a firm's prior experiences and capabilities are important factors that could affect the expectations of its partner's returns from the alliance (Kalaignanam et al., 2007). In response to rapidly changing business conditions, dynamic capability has been linked to the resource-based view of the firm, as an important resource for competitive survival (Nelson & Winter, 1982). In this context, we focus on firms' brand alliance-specific capabilities that are gradually formed in the past. The primary partner's brand alliance experience captures the extent of dynamic capability the firms formed over time, determining the primary partner's ability to manage the partnership and maximize the brand's utility. The secondary partner's brand exploitation depletes the secondary partner's brand image which was supposed to be a unique resource to empower the primary partner, and thus it captures the secondary brand's remaining capability to contribute its brand resources to the current alliance after prior collaborations. We expect that, in a brand alliance setting, brand experience and brand exploitation would moderate the effects of firms' brand values on the firms' stock market returns from the brand alliance.

Furthermore, our focus on the brand alliance partner dyad enable us to study from not only an internal perspective of the firm's own resource, but also an external perspective of the valuable brand resources from the firm's partners. Through extending the resource based view, organizations' competitive advantage is also considered to come from obtaining valuable and rare resources from the external environment (Hillman, Withers, & Collins, 2009). As firms join forces to achieve mutually beneficial goals in brand alliance, they are dependent on each other's resources (Emerson, 1962). A key aspect of brand alliance is to understand the relative strength of the resource base of two partners and how they affect each other's financial returns. Given that the brand values of both partners are important assets for a brand alliance, the difference in brand value between the primary partner and the secondary partner is a key source of power balance. Organizations in power-balanced relationships would have less difficulty in reaching agreement and less risks of exploiting each other (Williamson, 1975). Thus, we study how brand value differential between partners moderates the positive impact of brand value on financial returns.

In general, the constructs in the model reflect how the brand alliance-related key resources and capabilities are associated with the future cash flow expectations of the two partners. The resource-based view, power-dependence and dynamic capabilities theories have complementary focus on resources—internal resources, external resources, resources formed over time, and resources difference between partners. Combining these theories together in this research can help us understand the relationships between the key resources from two partners and their financial gain associated with the brand alliance. We present a conceptual model in Fig. 1 to delineate the factors influencing the financial performances of two partner firms in brand alliances.

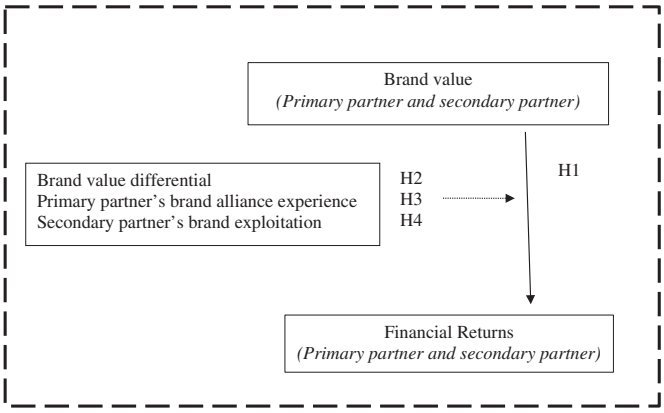

Fig. 1. Conceptual model and hypotheses.

2.1. Partner firm's brand value

Brand value has been defined as the outcomes that accrue to a product with its brand name compared with those that would accrue if the same product does not have the brand name (Ailawadi, Lehmann, & Neslin, 2003). While brand value is suggested to be positively associated with operating margin and market share (Aaker & Jacobson, 1994; Barth, Clement, Foster, & Kasznik, 1998), it is unclear in the literature how partner firms' brand values affect their financial returns from a brand alliance.

Cooperating with a high-value partner could enhance the focal firm's brand image and value perception (Washburn, Till, & Priluck, 2000). For instance, it has been found that an unknown brand can benefit from the "halo of affection" that belongs to the high equity brand (Rao & Ruekert, 1994). Low-value brand firms have more to gain when co-branding with a high-value brand firm, because the high-value brand firm brings a potential consumer base and consumer awareness to the low-brand value firm (Washburn et al., 2000). Rao et al. (1999) found that when little known ingredients are replaced by nationally-branded ingredients, the high-value brand can confer quality perceptions to its partner brand. Partnering with a high-value brand name may increase sales (Desai & Keller, 2002), and send a positive signal to stock market that would modify stock market investors' expectations about the participating firm's future cash flows (Elberse & Verleun, 2012). Hence, pairing with a high-value brand would increase the focal brand's stock market return from the brand alliance.

Furthermore, a firm itself is likely to obtain higher stock market returns from a brand alliance when its own brand has a higher value. As consumers are more willing to pay premium prices for higher-value brands (Steenkamp, Batra, & Alden, 2003), cash flows accruing to the participating firm involved in the brand alliance would increase. Moreover, firm activities such as advertising and promotion are more cost-effective for higher-value brands (Keller & Lehmann, 2006); a higher-value brand is likely to have stronger capability to save on advertising and promotion costs, and efficiently generate cash flow from the brand alliance. As a result, a high brand value could signal higher future returns and thus enhance investors' confidences. Therefore, we posit the following hypotheses for the primary partner (manufacturer) and the secondary partner (the other firm that lends its brand) respectively.

H1. a: The brand value of the primary (secondary) partner is positively associated with the secondary (primary) partner's stock market returns obtained from the brand alliance.

b: The brand value of the primary (secondary) partner is positively associated with its own stock market returns obtained from the brand alliance.

In addition to the hypothesized main effect of brand value on a firm's stock returns, the impact of brand value on a firm's stock returns might be more or less salient, depending on the moderating effects of the contingent variables as follows.

2.2. Brand value differential between two partners

Combining two distinct brands into one brand is risky because the perceived difference between two brands can confuse consumers (Lukovitz, 2009). Brand image inconsistency of the two partner brands can negatively affect brand alliance evaluations (Simonin & Ruth, 1998). In other words, the mismatched brand value between two partner brands could affect the brand alliance performance. Considering the importance of understanding the financial impact of brand value (Ganesan, 2012) and the potential impact of partner differences, we examine the brand value differential's effects on the two brand alliance partners' gain from stock market. We consider brand value differential as the absolute value of the difference between the focal firm's brand value and its partner firm's brand value. When the focal firm's brand value is higher or lower than its partner firm's brand value, the value of the differential is larger than zero.

When the brand value differential is large, not only the lower-value brand brings down the quality perception of its higher value partner (Levin, Davis, & Levin, 1996), but also the lower-value brand itself is negatively affected by the mismatched partnership. For example, Lukovitz (2009) indicated that combining a high-end positioning with a low-end positioning in the same brand could erode the core values perceived by consumers. This collaboration sends out confusing signals about the brands' positioning and thus negatively changes consumers' attitudes toward the partner brands. In contrast, when brand value differential between the partner brands is small, the positive spillover effect between the partners could help enhance the positive influence of the two firms' brand values, and thus lead to higher cash flows for the focal brand firm. In addition, from the perspective of alliance costs, brand value differential may lead to resource imbalance between partners and thus increase the cost of forming and maintaining the alliance (Williamson, 1975).

Therefore, we expect that large brand value differential mitigates the positive effects of both the primary and the secondary partner firms' brand values on their own financial gains and their partners' financial gains.

H2. a: Brand value differential between two partners negatively moderates the relationship between the primary (secondary) partner's brand value and its own stock market returns obtained from the brand alliance.

b: Brand value differential between two partners negatively moderates the relationship between the primary (secondary) partner's brand value and the secondary (primary) partner's stock market returns obtained from the brand alliance.

2.3. Primary partner's brand alliance experience

A firm's financial outcomes may be affected by its own and its partner's alliance experiences (Sarkar, Echambadi, & Ford, 2003). We focus on the moderating effect of the primary partner's brand alliance experience on the secondary partner's stock market returns, while controlling the secondary partner's brand alliance experience. We consider the primary partner's brand alliance experience as the number of previous brand alliances the firm had in the past five years before forming the current brand alliance.

Firms learn to create value in alliances through experience (Johnson, Sohi, & Grewal, 2004). The primary partner, as the manufacturer of co-branded products, takes major responsibility for the success of the co-branded products (Cao & Sorescu, 2013). The accumulated knowledge and techniques it gained in the partnerships with other secondary brands can be transferred to new activity and thus help

improve the current alliance performance (Simonin, 2004). This positive signal provides investors with valuable information about the brand alliance's high efficiency in managing and using its brand equities, which would decrease the secondary partner's risk profile associated with the brand alliance. In other words, the primary partner's rich experience with brand alliance can boost the stock market confidence in how the primary partner's brand value will benefit the secondary partner. Therefore, the primary partner's brand alliance experience helps enhance the positive effect of the primary partner's brand value on the secondary partner's stock returns. We thus advance the hypothesis as follows.

H3. The brand alliance experience of the primary partner amplifies the positive effect of the primary partner's brand value on the secondary partner's stock market returns.

2.4. Secondary partner's brand exploitation

Marketing exploitation primarily involves extracting greater rent out of existing products and market presences to leverage short-term opportunities (Kyriakopoulos & Moorman, 2004). In brand alliance context, we consider the secondary partner's brand exploitation as the extent to which it introduced co-branded products for its previous brand partnerships. In the consumer packaged goods industry, a high percentage of brand alliances are the types in which the secondary brand is featured on the package of the primary brand product mainly for promotional purposes (Cao & Sorescu, 2013). As the secondary brand serves as the role of attracting consumers and promoting products, it is important for the secondary brand to preserve its brand name and avoid overexploitation. Marketing exploitation primarily involves extracting greater rent out of existing products and market presences to leverage short-term opportunities (Kyriakopoulos and Moorman, 2004). In brand alliance context, we consider the secondary partner's brand exploitation as the extent to which it introduced co-branded products for its previous brand partnerships. Brand exploitation may be desired by the firm due to profits, but actually it can conflict with the brand's quality, heritage, and essence over time (Spiggle et al., 2012). If the managers can be unwavering in the face of potentially attractive opportunities of exploiting the brand, less brand exploitation of the secondary partner can benefit the primary partner for several reasons.

First, if the secondary brand is highly exploited in previous partnerships, the secondary partner may already have stronger market appeal due to the prior promotion. The more salient or accessible a cue is, the more likely that people will access that cue and thus that stronger cue can attenuate the effectiveness of other signals on perceptions (Fazio, 1989). From this aspect, the primary brand may fail to compete for investors' attention. When the focus on the secondary brand directs investors away from the primary brand, the secondary partner's brand exploitation would reduce its brand's contribution to the primary partner.

Second, if the brand is highly exploited, the secondary partner has to disperse its brand-related capabilities and resources for many co-branded products generated from its other partnerships. The past collaboration routine would make the secondary partner less adaptable for the current primary partner (March, 1991). Thus, the secondary partner would have less incentives and resources to contribute in full capacity to help the primary partner, which would discount the value of its brand equity.

Third, as stock market reacts to new and unanticipated information (Mizik & Jacobson, 2004), the secondary brand with less prior introductions of co-branded products is more likely to ignite investors' interests in the current brand alliance. The battle to become a well-known brand to consumers is fierce and the secondary brand name (e.g., branded ingredients and character license) is a unique resource (Varadarajan & Cunningham, 1995). If the secondary partner has less brand exploitation, the primary partner can use this rare resource to make the co-branded products highly differentiable and obtain strategic advantage. In contrast, with previous overexposures in the process of exploitation, the secondary brand used for a co-branded product is less likely to be a surprise to the market and thus its positive impact on the primary partner's financial gains would be reduced.

H4. The brand exploitation of the secondary partner attenuates the positive effect of the secondary partner's brand value on the primary partner's stock market returns.

3. Data and sample

To test the hypotheses, we collect the sample of brand alliances from Datamonitor's Product Launch Analytics, which provides data about co-branded products in the consumer packaged goods industry, for the years between 2000 and 2010. Product Launch Analytics provides comprehensive and detailed information about consumer packaged goods introduced, including the product introduction date, the manufacturer, and the product tag such as “co-branded” or “double trademark”. Thus we are able to identify the manufacturers for all products. For products produced by publicly traded firms, we then identify the primary brands, which are the manufacturers' corporate brands or the brands under the firms' umbrella, and the secondary brands which are the other partner brands for co-branded products. For example, Budweiser cooperated with Clamato to launch a flavored malt beverage Chelada. In this brand alliance, Chelada is manufactured by Budweiser, the primary partner, and Clamato is the secondary partner showing on the product's package. Other examples of brand alliances include Diet Coke and Nutra-Sweet, and Pillsbury Brownies and Nestle Chocolate. To collect the announcement dates, we searched the primary and secondary brand names to identify the earliest news about the brand alliance between the two brand partners in Factiva and Lexis Nexis. The final sample includes 201 brand alliances that involve 50 publicly traded primary partners and 40 publicly traded secondary partners.

4. Variable measurement

In this section, we discuss the empirical measurements for the variables used in our study. These measures are summarized in Table 1.

4.1. Dependent variables: short-term abnormal returns

We use the Fama-French-Carhart four-factor model to estimate the short-term market reaction to brand alliance announcements (Brown & Warner, 1985). Short-term event study methodology is well established and has frequently been used to measure the stock market reaction to corporate announcements such as new product introductions (Chaney, Devinney, & Winer, 1991) and alliances (Swaminathan & Moorman, 2009). Thus, we estimate abnormal returns (AR) for the two partner firms in the brand alliance as follows:

$$AR_{it} = R_{it} - (\hat{a} + \hat{b}R_{mt} + \hat{g}SMB_t + \hat{d}HML_t + \hat{l}UMD_t) \quad (1)$$

where R_{it} is the return rate of stock i on day t, R_{mt} is the return rate on the stock market index on day t, and α and β are the parameters estimated from an ordinary least squares (OLS) regression of R_{it} on R_{mt} during the 100 trading days prior to the start of the event period of the co-branded product. The model includes three risk factors that have been used previously to calculate stock returns (Fama & French, 1993): SMB_t is the return differential between small and large market capitalization stocks portfolios, HML_t is the return differential between high and low book-to-market ratio stocks portfolios, and UMD_t is the momentum factor computed as the return differential between high-prior-return and low-prior-return stocks portfolios. We then cumulate the

Table 1
Variables and data sources.

Variable	Measure	Source
Abnormal return	Cumulative abnormal return over a five-day window computed using the Fama-French-Carhart four-factor model	CRSP
Brand value	Brand equity scores from 1 to 100	EquiTrend
Brand value differential	Absolute value of the difference in brand value scores between the focal brand and its partner	EquiTrend
Primary partner's brand alliance experience	Number of brand alliances entered by the primary partner over the past five years	Product launch analytics
Secondary partner's brand alliance experience	Number of brand alliances entered by the secondary partner over the past five years	Product launch analytics
Secondary partner's brand exploitation	Number of brand alliances' products branded by the secondary partner in past five years before the current brand alliance	Factiva
Firm size	Log value of total assets	COMPUSTAT
Investor relations	Dummy equal to one if the company used an Investor relation firm and zero otherwise	O'Dwyer's Directory
R & D expense	Log of R & D expenses	COMPUSTAT
SG & A expense	Log of sales, general, and administrative expenses	COMPUSTAT
Financial leverage	Ratio of long-term debt to assets	CRSP
ROA	Return on assets (Operating income divided by assets)	COMPUSTAT

daily abnormal returns over a time window (t_1, t_2) around the announcement day:

$$CAR_{(t1,t2)} = \sum_{t=t1}^{t2} AR_{it} \quad (2)$$

We compute cumulative abnormal returns for various event windows, beginning with two days before the announcement and ending two days after the announcement. We then select the event window with the most significant t-statistic of the CARs (Swaminathan & Moorman, 2009), which is generally the five-day event window from two days prior to the announcement to two days after the announcement $[t - 2, t + 2]$.

4.2. Independent variables

4.2.1. Brand value

We use the brand equity ratings from Harris Interactive's *EquiTrend* database to proxy the brand value of partner brands. Consumers' perceived brand value represents a brand's overall excellence rather than individual elements of quality (Zeithaml, 1988), and *EquiTrend* brand equity would be a good measure of brand value as it indicates three dimensions of brand perceptions and experiences that include brand familiarity, perceived quality, and perceived distinctiveness. Since 1990, Harris Interactive collects annual data on consumers' brand evaluations from > 20,000 U.S. consumers of > 1000 large brands. We first aggregate the brand equity ratings attributable to each brand to the firm level for our research, and then match the brand value data with the publicly traded firms in our brand alliances sample, which allows us to link stock market performances of both partners with their brand equity scores.

4.2.2. Brand value differential

This is calculated as the absolute value of the difference in brand value scores between the two brand alliance partners. If the value of brand value differential is close to 0, it suggests the brand values of two partners are similar. If the brand value differential is large, it suggests a significant difference between the firm's brand value and its partner's brand value.

4.2.3. Primary partner's brand alliance experience

We measure the primary partners' brand alliance experiences by searching for evidence of their previous partnerships in Factiva and LexisNexis during the five-year period before the announcement of the current brand alliance. Therefore, the brand alliance experience is counted as the number of brand alliance agreements that the brand has been involved in previously. For example, the firm's brand alliance experience is coded as zero if it did not have prior brand alliance experience until it teams up with the current brand alliance partner.

4.2.4. Secondary partner's brand exploitation

We measure the secondary partner's brand exploitation based on the number of previous co-branded products branded with the secondary partner during the five-year period before the announcement of the current brand alliance. Brand exploitation mainly occurs when the overuse of the brand in the same product category harms brand quality and essence. Thus, we measure the secondary partner's brand exploitation based on the product information in the consumer packaged goods industry collected from Product Launch Analytics.

4.3. Control variables

4.3.1. Firm size

The firm sizes of both partner firms are measured as the log of firm assets. Because larger firms typically have smaller percentage changes in the stock prices after corporate announcements, firm size may affect the participating firm's abnormal returns associated with the brand alliance.

4.3.2. Investor relations (IR)

We include investor relations to rule out the possibility that strong investor promotion interferes with the stock market reaction to brand alliance activities. We use companies' use of investor relations (IR) firms as a proxy of investor promotion (Solomon, 2012), which is measured as a dummy variable equal to one if the company involved in the brand alliance used an IR firm in the sample year and zero otherwise. Because IR firms deal with a company's communications with investors, shareholders, and the media, a company's use of IR firms would be associated with investor promotion about the brand alliance. We collect the IR firm data from O'Dwyer's Directory of Public Relations Firms by matching the IR firms' clients to the brand alliance partners' company names in our sample.

4.3.3. R & D and sales, general, and administrative expenses

We control for Research and Development expense (R & D) and Sales, General, and Administrative expense (SG & A). A higher investment in R & D, advertising and sales promotions made by the firm may affect its financial returns obtained from the brand alliance.

4.3.4. Financial leverage and return on assets

We control for financial leverage and return on assets (ROA) that may affect the firms' financial performances associated with brand alliances. We measure financial leverage as the ratio of long-term debt to total assets. Companies with higher financial leverage use a large amount of debt to finance their assets, which can reduce their ability to generate greater cash flow and thus may affect their financial performances. Return on assets (ROA) is measured by the firm's operating income divided by total assets.

4.3.5. Secondary partner's brand alliance experience

As the measurement for the primary partner, the secondary partners' brand alliance experience is also measured as the number of brand alliance agreements that the secondary brand has been involved in during the five-year period before the current brand alliance.

5. Model

Since one firm may have multiple brand alliances in our sample, we use a hierarchical model to control for unobserved heterogeneity across firms (e.g., Kreft and De Leeuw, 1998). Our model estimates two equations for each brand alliance partner as follows:

The primary partner:

$$\begin{aligned} CAR1_{ij} = {} & \alpha_1 + \beta_{11}\text{Primary brand value}_{ij} + \beta_{12}\,\text{Secondary brand value}_{ij} \\ & + \beta_{13}\,\text{Brand value differential}_{ij} \\ & + \beta_{14}\,\text{Brand value differential}^{*}\,\text{Primary brand value}_{ij} \\ & + \beta_{15}\,\text{Brand value differential}^{*}\,\text{Secondary brand value}_{ij} \\ & + \beta_{16}\,\text{Primary brand alliance experience}_{ij} \\ & + \beta_{17}\,\text{Secondary brand alliance experience}_{ij} \\ & + \beta_{18}\text{Secondary partner's brand exploitation} \\ & + \beta_{19}\,\text{Secondary partner's} \\ & \text{brand exploitation}^{*}\,\text{Secondary partner's brand value} + \beta_{20}\,Z1_{ij} \\ & + \beta_{21}\,\text{Size2}_{ij} + \mu_{1j} + \varepsilon_{1ij} \end{aligned} \quad (3)$$

The secondary partner:

$$\begin{aligned} CAR2_{ij} = {} & \alpha_2 + \lambda_{21}\text{Primary brand value}_{ij} + \lambda_{22}\text{Secondary brand value}_{ij} \\ & + \lambda_{23}\text{Brand value differential}_{ij} \\ & + \lambda_{24}\,\text{Brand value differential}^{*}\,\text{Primary brand value}_{ij} \\ & + \lambda_{25}\,\text{Brand value differential}^{*}\,\text{Secondary brand value}_{ij} \\ & + \lambda_{26}\text{Primary brand alliance experience}_{ij} \\ & + \lambda_{27}\text{Secondary brand alliance experience}_{ij} \\ & + \lambda_{28}\,\text{Primary brand alliance experience}^{*}\,\text{Primary brand value}_{ij} \\ & + \beta_{29}\text{Secondary partner's brand exploitation} + \lambda_{30}\,Z2_{ij} \\ & + \lambda_{31}\,\text{Size1}_{ij} + \mu_{2j} + \varepsilon_{2ij} \end{aligned} \quad (4)$$

where j refers to firm and i refers to brand alliance announcement, CAR1 denotes the short-term stock market returns associated with the brand alliance announcement for the primary brand's parent firm, CAR2 denotes the short-term stock market returns associated with the brand alliance announcement for the secondary brand's parent firm, Z1 denotes the control variables (firm size, investor relations, R & D expenses, SG & A expenses, financial leverage and return on assets) for the primary partner and Z2 denotes the control variables for the secondary partner, Size1 and Size2 denote firm sizes of the primary partner and the secondary partner, μ is the firm-level error term, ε is the announcement-level error term, and the remaining variables are as previously defined.

6. Results

We present the descriptive statistics of brand alliances and of the partner firms in Table 2.

The final sample includes 201 brand alliances that involve 50 publicly traded primary partners and 40 publicly traded secondary partners. We find that the average brand value score of the primary partners and the secondary partners are 56.3 and 57.6, respectively. The brand value differential between two partners ranges from 0 to 20.75, with an average of 4.96. Approximately 70% of the primary partners have prior brand alliance experience, and 76% of the secondary partners have prior brand alliance experience. Table 2 also presents the descriptive statistics of the dependent variables (abnormal returns) and the control variables. On average the primary partners' abnormal return is 0.76% and the secondary partner's abnormal return is 0.12%. We present the correlation matrix of main variables in Table 3.

Table 2
Descriptive statistics of variables.

Variables	Mean	SD	Min	Max
Abnormal return of the primary partner	0.0076	0.0297	− 0.0467	0.1655
Abnormal return of the secondary partner	0.0012	0.0117	− 0.0532	0.0406
Primary partner's brand value	56.3812	15.9795	18.7450	82.0736
Secondary partner's brand value	57.6582	16.7155	19.6260	80.0984
Brand value differential	4.9648	7.0846	0	20.7500
Primary partner's brand alliance experience	1.0347	0.8426	0	5
Secondary partner's brand alliance experience	1.8258	1.3801	0	4
Secondary partner's brand exploitation	44.6562	36.5187	1	175
Primary partner's firm size	9.3245	1.4825	3.6522	12.0477
Secondary partner's firm size	9.4113	1.6423	2.8702	13.8273
Investor relations	0.1623	0.3689	0	1
R & D expense	4.7834	1.6528	2.3621	10.2354
SG & A expense	3.3920	1.9370	1.5600	9.2510
Financial leverage	0.4730	0.2910	0.0510	2.4450
ROA	− 0.0160	0.2240	− 1.2830	0.7250

Note: 50 publicly traded firms are primary partners of the brand alliances. 40 publicly traded firms are secondary partners of the brand alliances.

To test the hypotheses, we estimate the models presented in Eqs. (1)-(4). Results of regression analysis are summarized in Table 4. The Wald chi-square statistics (54.75 for the primary partner equation and 105.72 for the secondary partner equation) suggest that the models are significant above the 5% level. The variance inflation factors (VIF) across all the models are < 4, alleviating concerns about multicollinearity between independent variables.

H1a is supported. We found that the firm's stock market returns are affected by its partner firm's brand value, in both the cases of the primary partner and of the secondary partner. When their partners have higher brand value, the firms are more likely to obtain higher financial returns from the brand alliances. H1b is partially supported. The results show that the secondary partner's brand value affects its own financial performance associated with the brand alliance, but there is no significant effect of the primary partner's brand value on its own financial returns associated with the brand alliance. The insignificance may due to the fact that the primary partner, as the manufacturer of the co-branded products, already widely used its brand name for other single-branded products in similar product categories. Because its brand value could be well anticipated by investors and has already been incorporated into stock prices, its brand value may not significantly change its future cash flows associated with the brand alliance.

We find partial support for H2a and full support for H2b. While brand value differential also negatively moderates the positive impact of the secondary partner's brand value on its own financial returns, the results don't show the same significant moderating effect of primary partner's brand value on its own financial performance. For both the primary and secondary partners, brand value differential negatively moderates the positive impact of a firm's brand value on its partner firm's financial returns.

We find support for H3 about the moderating effect of primary partner's brand alliance experience. The primary partner's prior brand alliance experience significantly enhances the positive effect of the primary brand value on the secondary partner's stock market returns.

Table 3
Matrix for correlation coefficients.

	Abnormal return (primary partner)	Abnormal return (secondary partner)	Primary partner's brand value	Secondary partner's brand value	Brand value differential	Primary partner's brand alliance experience	Secondary partner's brand alliance experience	Secondary partner's brand exploitation
Abnormal return (primary partner)	1							
Abnormal return (secondary partner)	− 0.0629	1						
Primary partner's brand value	0.0902	0.1604*	1					
Secondary partner's brand value	0.1698*	− 0.1004	− 0.0814	1				
Brand value differential	− 0.1175*	0.0479	− 0.5449*	− 0.6137*	1			
Primary partner's brand alliance experience	0.0724	0.1828*	0.2099*	− 0.2109*	0.1084	1		
Secondary partner's brand alliance experience	0.0534	0.2513*	0.0614*	− 0.0823*	0.1348	0.0624	1	
Secondary partner's brand exploitation	− 0.0033	0.1828	0.2291	− 0.1936	0.0932	0.0523	0.0815	1

* $p < 0.05$.

The results show support for H4. The secondary partner's brand exploitation in previous brand alliance activities reduces the positive effect of the secondary partner's brand value on the primary partner's financial returns. The secondary brand's high degree of exploitation through its previous co-branded products can hurt the primary partner's performance in the current brand alliance. The collective findings are summarized in Table 5.

7. Robustness tests

7.1. Alternative metric of abnormal returns

To test the robustness of the results, we estimate the models using an alternative metric of abnormal returns. Besides using the Fama-French-Carhart model (Carhart, 1997), we use a market model (Brown & Warner, 1985) to calculate the short-term returns. Market model is a widely accepted measurement for short-term returns in event studies. The difference between the two models is that the market model imposes a different restriction on the variance of the error term. To make the event window consistent, we calculate abnormal returns using the market model in the same five-day window from two days prior to the announcement to two days after the announcement. As expected, the results we obtain from the market model are almost the same to the results obtained from the Fama-French-Carhart model and reported in Table 4, supporting our hypotheses.

7.2. Endogeneity test using the Hausman-Wu test

We consider the possibility that brand value might be endogenous with firms' financial returns. Despite our best efforts to retrieve previously documented drivers of financial returns, there may be other determinants for which we have not accounted. To alleviate such concerns, we employ the Hausman-Wu test to test whether brand values are endogenous with financial returns. Lags of variables that are related to the potentially endogenous variable have been used as instruments in marketing literature (e.g., Nader, Sorescu & Chandy, 2014). Thus, as prior studies did, we use the industry average brand value lagged by one year as instrument (Jindal & McAlister, 2015; Tuli, Mukherjee & Dekimpe, 2012; Sriram, Balachander & Kalwani, 2007). Specifically, the lagged industry average brand value should be correlated with the firm's contemporary brand value, but does not affect the firm's contemporary financial performance. We find that the Hausman–Wu test statistic is not significant ($c2 = 1.74$, $p > 0.10$), indicating that brand value is not endogenous in the financial return model.

7.3. System generalized method of moments (GMM) method

Although the Hausman test indicates that endogeneity should not be a concern, we check the sensitivity of our results to the use of instrumental variables. We use Arellano & Bover's (1995) system GMM approach to address endogeneity concerns (e.g., Rego, Morgan, & Fornell, 2013; Xiong & Bharadwaj, 2014). System GMM eliminates firm-specific fixed effects by first-differencing and it alleviates concerns of endogeneity by employing lagged values of regressors as instrument variables (Roodman, 2009). We treat year dummies as exogenous variables, and treat the independent variables as endogenous variables. We find that the hypothesized effects are consistent with our original findings, in terms of both sign and significance.

7.4. Post Hoc test for interactions

Six post hoc interaction terms are tested individually as a robustness check for the regression findings. That includes three terms for the primary partner's performance equation (Brand value differential * Primary partner's brand value, Brand value

Table 4
Determinants of cumulative abnormal returns to primary partners and secondary partners.

	CAR of primary partner		CAR of secondary partner	
Variable	Coefficient	SE	Coefficient	SE
Primary partner's brand value	0.0007	0.0016	0.0020**	0.0014
Secondary partner's brand value	0.0045**	0.0023	0.0056***	0.0014
Brand value differential	0.0002	0.0014	0.0002	0.0017
Primary partner's brand alliance experience	0.0003**	5.72e-05	8.78e-05***	2.86e-05
Secondary partner's brand alliance experience	− 0.0144***	0.0056	− 0.0035	0.0029
Secondary partner's brand exploitation	− 0.0978**	0.0023	− 0.0739	0.0056
Brand value differential * Primary partner's brand value	− 0.0013	0.0025	− 0.0038*	0.0058
Brand value differential * Secondary partner's brand value	− 0.0037**	0.0068	− 0.0044**	0.0046
Primary partner's alliance experience * Primary partner's brand value			0.0004***	0.0001
Secondary partner's brand exploitation * Secondary partner's brand value	− 0.0066**	0.0079		
Primary partner's firm size	− 0.0036	0.0013	− 0.0008	0.0007
Secondary partner's firm size	− 0.0023*	0.0013	− 0.0009	0.0008
Investor relations	− 0.0014	0.0025	0.0085	0.0047
SG & A expense	− 0.0533**	0.0208	0.0025*	0.0016
R & D expense	0.0024	0.0059	0.0079	0.0043
Financial leverage	− 0.0109	0.0210	0.0155	0.0737
ROA	0.0731	0.1132	0.0892	0.0905

* $p < 0.10$.
** $p < 0.05$.
*** $p < 0.001$.

Table 5
Results of the hypothesized relationships.

Hypothesis	Findings
H1a	The primary partner's brand value has a positive impact on financial returns of secondary partner
	The secondary partner's brand value has a positive impact on financial returns of primary partner
H1b	The primary partner's brand value has no impact on financial returns of primary partner
	The secondary partner's brand value has a positive impact on financial returns of secondary partner
H2a	The brand value differential does not influence the effect of primary partner's brand value on its own financial returns
	The brand value differential negatively influences the effect of secondary partner's brand value on its own financial returns
H2b	The brand value differential negatively influences the effect of primary partner's brand value on the secondary partner's financial returns
	The brand value differential negatively influences the effect of secondary partner's brand value on the primary partner's financial returns
H3	The primary partner's alliance experience positively influences the effect of primary partner's brand value on the secondary partner's financial returns
H4	The secondary partner's brand exploitation negatively influences the effect of secondary partner's brand value on the primary partner's financial returns

differential * Secondary partner's brand value, and Secondary partner's brand exploitation * Secondary partner's brand value) and three terms for the secondary partner's performance equation (Brand value differential * Primary partner's brand value, Brand value differential * Secondary partner's brand value, and Primary partner's alliance experience * Primary partner's brand value). We decompose the brand value differential, primary partner's alliance experience, and secondary partner's brand exploitation into high and low levels based on their means respectively. The post-hoc interaction contrasts analysis shows that the only interaction term that didn't reach significance is the interaction effect between brand value differential and primary partner's brand value on the primary partner's performance. The confidence intervals for all other comparisons exclude zero, indicating interaction effects ($P < 0.05$). Specifically, when brand value differential is low compared to high brand value differential, the effects of secondary partner's brand value on both the primary and secondary partners' performances are greater (contrast values = 2.13% and 1.78%), the effect of the primary partner's brand value on the secondary partner' performance is greater (contrast value = 1.02%). When primary partner's brand alliance experience is high compared to low experience, the effect of the primary partner's brand value on the secondary partner' performance is greater (contrast = 3.57%). When secondary partner's brand exploitation is low compared to high exploitation, the effect of secondary partner's brand value on the primary partner' performance is greater (contrasts value = 2.54%).

8. Discussion

Brand alliance is theoretically interesting in the literature and economically important in the business world. No prior research ever addressed brand alliance by empirically analyzing both partners' financial returns and how the participating firms' brand values affect each other's financial performances. By linking the resource-based view (RBV) with the future cash flow perspective, our study offers insights about the resource dependencies among partners in brand alliances and what characteristics of the two brand alliance partners can be positive signals to the stock market. Our empirical research contributes to the brand alliance literature by revealing how brand value, brand value differential, brand alliance experience, and brand exploitation affect partner firms' stock market returns from the brand alliance. Our findings provide valuable managerial implications for business managers to develop and manage brand alliances effectively in order to improve their financial returns.

8.1. Brand value and brand value differential of two partners

The literature examined how brand values of two partners affected consumers' attitude toward the partner brands and the co-branded products (e.g. Rao & Ruekert, 1994). We offer new insights to the literature by showing that from the perspective of financial returns obtained, partnering with a high-value brand to form a brand alliance is a positive signal that will change investors' evaluations of the participating firms. Specifically, for the primary and secondary partners, forming a brand alliance with a high-brand value partner can

significantly improve their financial returns. For example, home furnishing store Pottery Barn and paint company Benjamin Moore partnered together and created a line of paints that helped customers select paint colors to complement their furniture choices. By cooperating with a high brand value partner, they were able to meet the needs and increase revenue. However, the stock market may not always assess the brand values of the primary and secondary partners in the same way. For instance, while the secondary partner's brand value is positively associated with its own financial performance, we did not find a significant effect of the primary partner's brand value on its own financial returns from the alliance.

In addition, our findings extend the literature by showing that a large brand value differential weakens the positive impact of a participating firm's brand value on its partner's financial performance. Previous research discussed the impact of combining a high-value brand with a low-value brand on consumer behaviors (e.g., Levin et al., 1996), but did not study the association between brand value differential and financial returns. Thus, it was not clear how each partner's performance can be affected respectively. In this research, we find that brand value differential between two partners is an important factor to be evaluated regarding whether a partner can obtain higher stock market returns from the brand alliance. On the one hand, a lower brand-value company could get overshadowed by its higher brand-value partner. For example, Intel's Pentium Processor campaign has been so successful that the component's brand can eclipse the computer manufacturer's brand; computer buyers pay less attention to the manufacturer's brand. On the other hand, a higher brand-value company may be hurt by a negative association with its lower brand-value partner. For example, the reputation of Ford dropped due to the negative effect of the lower brand value of its partner, Firestone, after the $3 billion recall of Firestone's SUV tires (Connelly, 2001). Firms may be lured to find the highest brand value partner, but managers should be cautious of the risks caused by brand value differential. The mismatch between two partners can confuse consumers and reduce the gains from partnering with a high-value brand. Hence, both the primary and secondary partners need to collaborate with a brand that has a similar brand value, thus they can improve their stock market performances in a brand alliance.

8.1.1. Primary partner's brand alliance experience

We find a positive moderating effect of prior brand alliance experience: for the secondary partner, the primary partner's alliance experience amplifies the impact of the primary partner's brand value on the secondary partner's stock market returns. In other words, the more experiences the primary partner has in brand alliance activities, the more likely the secondary brand can financially benefit from the high value of its partner's brand. Different from prior research on technological alliances (Kalaignanam et al., 2007), our study focuses on non-technological brand alliances and offers the new insight that a firm's prior brand alliance experience exerts positive influences on the stock market returns of its partner. The primary brand's prior experience makes its brand value more valuable for the secondary brand, because the accumulation of the primary partner's manufacturing knowledge and alliance management skills strengthens the positive signal of the primary partner's brand value and helps reduce the performance uncertainty. In other words, the stock market shows more confidence that the high brand values from the primary brands can effectively build a successful brand alliance, especially when the primary brands are more experienced. The secondary brands thus need to pay close attention to previous brand alliance experience when selecting partners to form brand alliances.

8.1.2. Secondary partner's brand exploitation

The secondary partner's brand endorses the brand alliances and attracts new customers to the co-branded products. Its degree of exploitation is another important factor to evaluate the potential success of brand alliances. We find that the brand exploitation of the secondary brand weakens the positive impact of secondary partner's brand value on the primary partner's financial gains from the brand alliance. An overexploited secondary brand could divert the market's attention away from the primary partner, lack incentives and resources to support the current alliance, or fail to offer a unique and fresh image that is much needed for igniting the market interest in the brand alliance. In order to achieve the long-term success for brand alliance activities, the secondary partner should avoid overexploit the brand in its pursuit of brand alliance opportunities. The primary brand is likely to gain more by partnering with a high-value secondary brand that introduced less co-branded products for its past brand alliances.

9. Limitation and future research

This research has some limitations that could potentially serve as avenues for future research.

First, the dataset contains limited information about the revenue model behind brand alliance agreements. In cases where a licensing fee is paid, this fee is typically not reported in the announcement of the brand partnership, yet this fee could be an additional determinant of the stock market's reaction to co-branded product introductions. Second, additional factors may moderate the relationship between brand value and stock returns gained by partner firms. Examples include competitors' reactions to the formation of brand alliances and the level of competition intensity in the different product categories. Third, the use of stock return metrics limits the co-branding sample to publicly traded firms. The sample could be extended to privately held corporations by using accounting measures of performance such as brand alliance's sales or returns on investment. Future empirical studies with access to alliance-level sales data could explore how product characteristics and brand alliance characteristics affect the product sales of each brand partner.

Finally, if the alliance partners are in more codependent product categories, the sales performance of the partners may be more likely to affect the brand alliance performance. However, when the alliance partners have less clear codependency, the brand value of partners may play a larger role in determining the success of a brand alliance. Future research that examines the codependence of brand alliance partners across product categories can untangle whether the power of the brand or the assurance of future sales potential that drives the partner brand's performance. In addition, when the appropriate data is available, future research can focus on the managers' motivation by examining whether the reduced risk of sales volatility and the assurance of future sales potential motivate the secondary partner to form a brand alliance with the primary partner.

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