Original Article

The impact of brand value on firm valuation: The moderating influence of firm type

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ABSTRACT **The efficient markets hypothesis suggests that the stock price of a firm reflects investor perceptions of the current and future earnings potential of all of its assets, both tangible and intangible. Brand value can be viewed as an intangible firm asset and research suggests brand value impacts stock prices. However, the effect of branding on consumers differs from its effect on organizational buyers. In this study, brand valuation estimates are found to be significantly associated with share prices above and beyond book value and earnings information. However, this relationship is moderated by firm type, and, although the association of brand value and stock prices is significant for consumer firms, it is not significant for industrial firms. Brand valuation associations with stock prices are found to be significant both on a contemporaneous basis and on a 1-year time-lagged basis, suggesting brand value changes have a durable effect on firm valuation. The implications for industrial and consumer branding strategies and research are discussed.**

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OVERVIEW

A major challenge facing marketers is the question of how to measure the impact of their efforts on the success of a firm. On the one hand, many marketing expenditures, which can include diverse activities such as advertising, sales support, customer service, product-quality efforts, promotions, distribution channel development, market research and even new product development, may be viewed by marketing managers as long-term investments in a brand, and therefore in the firm's future. On the other hand, US GAAP for brands generally do not permit capitalizing firm expenditures in marketing (Barth *et al*, 1998). Thus, although the benefits of brand investment may not be realized for several years or even longer, the accounting impact of the expenditures is, by convention or regulation, felt immediately.

It is possible that if a more clear link between brand investments and financial return were in evidence, marketing managers would have an easier time trying to justify their marketing programs, as well as differentiating between those programs that might be viewed as longer-term brand equity investments and those that more clearly need to be justified on a short-term basis. Indeed, some finance researchers provide evidence that, over the long run, the stocks of firms with stronger brands have performed better than those with weaker brands (Siegel, 2005). Increasingly, traditional assumptions of marketing are making way for a new financial evaluation of marketing assets and more concrete assessment of the ability of marketing efforts to enhance shareholder returns (Srivastava *et al*, 1998). The purpose of this article is to examine whether the strength of brand valuation on stock prices holds equally for both consumer and industrial firms. Although empirical and theoretical research in accounting (Barth *et al*, 1998; Fehle *et al*, 2008), finance (Treynor, 1999; Siegel, 2005) and marketing (Kerin

and Sethuraman, 1998; Hupp and Powaga, 2004; Sjodin, 2007; Mizik and Jacobson, 2008; Shankar *et al*, 2008) supports the view that brand valuation is a firm asset that has value to investors that is not accounted for on the balance sheet, it is possible that this effect may be stronger for consumer firms than for industrial firms. Industrial brands are often synonymous with corporate brands (Webster and Keller, 2004), and thus brand elements may play a different role in the mind of the customer. Further, drivers of business-to-business (B2B) purchasing are significantly different than motivators of consumer purchasing.

The current study is the first to examine the possibility that the type of firm, whether consumer or industrial, moderates the effect of brand value on stock price. This study is significant both because it confirms the justification for a consumer firm's marketing investments in its brand, and it has implications for possible differences in approach between consumer and industrial firms.

BRAND EQUITY

Most marketing managers view the successful development of a brand as vital to the success of their firm. Brand equity is the term used by marketers to describe the value of a brand to its firm, with an understanding that different marketing actions can result in different outcomes or 'added value' for the brand (Keller, 2003). According to David Aaker (1992), brand equity is linked to the brand's name and symbol and provides value to both the customers and to the firm. It can both enhance and detract from the value of a product or service, and thus consists of both brand assets and liabilities. As evidenced by the balance sheet valuation of a brand when a firm is acquired, a brand has a value that can be measured (Bahadir *et al*, 2008). Further evidence of this value is supplied by recent examples of the substantive sale

price of a brand even after bankruptcy and liquidation of a firm's remaining assets (Zipkin, 2009).

Aaker originally maintained that five key brand equity assets provide the source of value for a firm: brand loyalty, brand-name awareness, brand quality, brand associations and other proprietary brand assets, such as specialized distribution channels, trademarks or copyrights (Aaker, 1992). Aaker's brand equity definition has been expanded and extended in many ways to include considerations such as behavioral loyalty (for example, purchasing more) and attitudinal loyalty (for example, attitudes toward the values a brand represents; Arjun and Morris, 2001), the difference between brand awareness (simply recognizing a brand) and brand salience (a knowledge that a consumer perceives as personally relevant; Mizik and Jacobson, 2008), the significance of brand relevance (Aker, 2004) and a newer concept of brand energy, defined by its perception of being innovative and dynamic (Mizik and Jacobson, 2008). Given the potential importance of being able to measure the impact of brand equity, both from the standpoint of marketers and managers, as well as from an accurate firm accounting and financial valuation standpoint, many researchers have attempted to identify vehicles to measure brand equity. In general, these attempts seem to fall into three broad categories (Ailawadi *et al*, 2003): Customer Mindset, or attempts to measure brand equity from the consumer's point of view, including measures such as awareness, attitudes, associations and so on (for example, Hupp and Powaga, 2004); Product-Market Outcomes, such as a measure of price premium, or the difference in price commanded by a brand-name product versus a generic product (Ailawadi *et al*, 2003); and Financial-Market Outcomes, such as an association between brand equity changes and stock returns (Barth *et al*, 1998; Wang *et al*, 2009;

Kapareliotis and Panopoulos, 2010). Of these, a financial-market outcome is arguably the most concrete indicator of the success of brand equity investments, and certainly one that is most likely to be understood by a firm's financial personnel. If a research contribution can be made toward accurate valuation of brand equity as an off-balance sheet asset, and an understanding of the types of firms for which this valuation might have the greatest impact, the management will be able to make better decisions regarding brand equity-enhancing marketing programs as a longer-term investment rather than as a current period expense, regardless of the accounting treatment required.

THE EFFECT OF BRAND EQUITY ON FIRM VALUATION

The efficient markets hypothesis (Fama, 1970, 1991) forms a fundamental theoretical underpinning for understanding firm valuations in financial markets, and is a cornerstone of finance theory. Simply stated, it means that a firm's stock price, or firm valuation, always reflects all information currently available to investors and potential investors (Fama, 1991). In other words, the stock price of a firm reflects investor perceptions of the current and future earnings potential of all its assets, both tangible and intangible. Tangible assets include property, plant and equipment, current assets such as inventories, and investments, and are typically measured by the replacement cost of the asset (Simon and Sullivan, 1993). On the other hand, intangible assets include any other assets that might enable a firm to earn excess returns beyond that earned from its tangible assets. Intangible assets can include factors such as patents and trademarks, investments in research and development, goodwill and, as presented here, brand equity (Simon and Sullivan, 1993).

According to Simon and Sullivan (1993, p. 31), the financial markets view brand

equity as 'the capitalized value of the profits that result from associating that brand's name with particular products or services.' Thus, anything that might change investor perceptions of brand equity, for positive or for negative, should affect the firm's stock price due to perceptions of impact on future earnings. For example, if a firm undertakes a significant new promotional campaign, and investors perceive the campaign will be effective, they will likely bid up the price of the stock, commensurate with the difference between the cost of the campaign and potential increases in earnings.

It should be noted that the accounting effect of such a promotional campaign will be felt during the year in which the campaign is run. However, the impact on the brand could be felt for many years after, thus potentially affecting the earnings for multiple years to come. In the same way, an adverse event, such as, the issues of brake failure experienced by Toyota in 2010 and sudden acceleration by Audi in the 1980s, can have a substantial negative impact on a firm's stock price due to perceptions of a long-term negative impact on a brand, above and beyond the immediate impact on sales.

A number of researchers have tried to pinpoint the specific elements of brand equity most likely to impact a firm's stock performance. Brand equity constructs measured to date whose changes appear to impact firm valuations include customer satisfaction (Fornell et al, 2006), perceived quality (Aaker and Jacobson, 1994), new product introductions (Pauwels et al, 2004) and brand attitude (Aaker and Jacobson, 2001). Brand orientation has also been shown to be associated with firm profitability (Gromark and Melina, 2011) and advertising expenditures positively impact the intangible value of a firm (Sahay and Pillai, 2009). Perhaps most comprehensively, Mizik and Jacobson (2008)

demonstrate a measurable impact of changes in perceived brand relevance and energy, as well as a time-lagged impact of brand differentiation on stock returns.

It should be noted that while marketers have generally tended to use the terms 'brand equity' and 'brand value' inter-changeably (cf., Simon and Sullivan, 1993; Keller, 2003), Raggio and Leone (2007, 2008) propose that the two terms actually represent distinct constructs. They suggest that brand equity be defined as an intrapersonal perceptual construct referring to the ability of a brand to meet its promise of benefits, sometimes termed brand strength (Raggio and Leone, 2007), while their conceptualization of brand value as the 'sale or replacement price of a brand' (Raggio and Leone, 2008, p. 249) is more consistent with a financial market view of brand equity as the net present value of future earnings of a brand (Simon and Sullivan, 1993). Interbrand's measure of brand value, used extensively by researchers (Barth et al, 1998; Kerin and Sethuraman, 1998; Madden et al, 2006; Fehle et al, 2008), forecasts the net present value of brand earnings based in part on estimates of a brand strength multiplier (Interbrand Corporation, 2011), which is also consistent with the more refined definitions of Raggio and Leone (2007, 2008).

Most of the research to date regarding the financial impact of brand equity metrics has been limited to large multinational consumer firms where a single brand or a limited number of brands make up the majority of the firm's sales. An additional area that should be further explored is whether similar results are found with industrial firms. Some studies suggest that even in industrial firms, strong brand equity can result in the ability to charge a price premium (Hutton, 1997; Bendixen et al, 2004). However, in their examination of branding in industrial markets, Webster and Keller (2004) explain that, although

effective brand management in industrial firms is vital, a brand plays a different role among organizational buyers than among consumers. Profit-motivated and budget-constrained, industrial buyers are generally focused on economically-based decision factors such as pricing, product suitability, service and support (Bendixen *et al*, 2004; Webster and Keller, 2004) rather than the more emotion-laden considerations associated with a consumer brand (Webster and Keller, 2004). Indeed, Kuhn *et al*'s (2008) qualitative study of branding in industrial contexts suggests that organizational buyers tend to focus more on the credibility of the selling organization than on individual brand associations. This difference between the effect of consumer brands and industrial brands on customer decision making suggests that the effect of brand value on stock price should be stronger for consumer firms than for industrial firms. Therefore, we propose the following:

Hypothesis 1: The type of firm (i.e. industrial or consumer) will moderate the association between brand value and stock price, with the association being stronger for consumer firms than for industrial firms.

Some aspects of brand equity, such as brand differentiation, are shown to have a lagged effect on stock prices (Mizik and Jacobson, 2008). That is, consumers may perceive a change in brand differentiation, but the marketplace does not incorporate the change into firm valuations immediately, possibly because brand differentiation is not always necessarily positive and market participants wait to assess results before making stock purchase decisions. Therefore, we propose:

Hypothesis 2: Brand value is associated with time-lagged stock prices.

DATA AND TESTS

Following scholars in this area (Barth *et al*, 1998; Kerin and Sethuraman, 1998; Madden *et al*, 2006; Fehle *et al*, 2008), brand value was measured using brand valuation estimates provided by InterBrand (Interbrand Corporation, 2011), commonly viewed as the provider of the most well-known and widely used brand valuation method (Madden *et al*, 2006). InterBrand is a London-based consulting firm, whose brand valuations have been used heavily by FinancialWorld (Barth *et al*, 1998; Madden *et al*, 2006). InterBrand's valuation methodology involves estimating earnings for a non-branded version of a firm's product in order to estimate a brand's profit premium. These profit-related earnings are then augmented by a brand strength multiplier including seven components: Leadership, Stability, Market, Internationality, Trend, Support and Protection.

Following Barth *et al* (1998), stock price data was obtained from the CRSP database, and book value per share, earnings per share and number of shares outstanding from COMPUSTAT, with years 2001–2008 chosen for analysis. Brand value per share was calculated by dividing the brand value by the number of shares outstanding.

Of the 100 Interbrand firms, following Mizik and Jacobson (2008), companies were chosen that were based in the United States and whose revenue was derived primarily from a single brand ('monobrand' firms). The resulting list was further divided into consumer companies and industrial companies based on a majority of their business (>75 per cent). Firms that did not meet the criteria for being either primarily consumer or primarily industrial were excluded, resulting in a sample of 11 consumer and 8 industrial firms, listed in Table 1. A dummy variable was added for firm type: industrial or consumer. In an effort to create temporal consistency, accounting data for firms whose fiscal year

Table 1: Companies in sample

Consumer companies	Industrial companies
Annheuser-Busch	Accenture
Coca-Cola Co.	Caterpillar
Colgate-Palmolive	Cisco Systems
Disney	General Electric
GAP	Goldman Sachs
Heinz	IBM
McDonalds	Oracle
Nike	Xerox
Pepsi	
Starbucks	
Tiffany	

ended in January–May was matched with brand valuation figures for the prior year. The data was pooled, resulting in a total of 131 observations across 19 companies and 7 years.

Following Barth *et al* (1998), a regression model is established to examine the association between the market value of firms and brand value estimates in order to validate previous research (for example, Barth *et al*, 1998; Fehle *et al*, 2008). The following cross–sectional regression is used:

$$MV_{it} = \sum_{Y=2001}^{2008} \alpha_0 YR_{Yit} + \alpha_1 BV_{it} + \alpha_2 NI_{it} + \alpha_3 BRAND_{it} + \varepsilon_{it},$$

(1)

where MV is the share price at fiscal yearend; BV is the book value of equity per share; NI is the earnings per share from continuing operations; $BRAND$ is the firm's InterBrand value estimate, deflated by the number of shares outstanding; and YR is an indicator variable that equals 1 if the observation is from fiscal year Y and 0 otherwise. We test for fixed period and fixed company effects, permitting the regression intercept to vary across years and firms to control for calendar time-specific effects and company-specific effects, as well as for random effects.

To test the moderating effect of firm type (consumer versus industrial) on the

association between brand values and stock prices (Hypothesis 1), we use the following cross–sectional regression:

$$MV_{it} = \sum_{Y=2001}^{2008} \alpha_0 YR_{Yit} + \alpha_1 BV_{it} + \alpha_2 NI_{it} + \alpha_3 BRAND_{it} + \alpha_4 TYPE_{it} + \alpha_5 (TYPE \star BRAND)_{it} + \varepsilon_{it},$$

(2)

where MV is the share price at fiscal year end; BV is the book value of equity per share; NI is the earnings per share from continuing operations; $BRAND$ is the firm's InterBrand value estimate, deflated by the number of shares outstanding; $TYPE$ is a dummy variable for firm type (consumer or industrial); and YR is an indicator variable that equals 1 if the observation is from fiscal year Y and 0 otherwise. We test for fixed period and company effects, permitting the regression intercept to vary across years and firms to control for calendar time-specific and company effects. We also test for random effects.

Finally, we test the potential lagged impact of brand valuation changes on stock prices (Hypothesis 2) by using the following cross–sectional regression models:

$$MV_{it} = \sum_{Y=2001}^{2008} \alpha_0 YR_{Yit} + \alpha_1 BV_{it} + \alpha_2 NI_{it} + \alpha_3 BRAND(-1)_{it} + \varepsilon_{it}$$

(3)

$$MV_{it} = \sum_{Y=2001}^{2008} \alpha_0 YR_{Yit} + \alpha_1 NI_{it} + \alpha_2 BRAND(-1)_{it} + \alpha_3 TYPE_{it} + \alpha_4 (TYPE \star BRAND(-1))_{it} + \varepsilon_{it},$$

(4)

where $BRAND(-1)$ represents the brand value in the year Y_{t-1}.

All equations were tested for fixed effects, permitting the intercept value to vary to

accommodate temporal and firm-specific effects, as well as for random effects. Results were tested for heteroskedasticity using White's test.

RESULTS

Summary statistics for the variables price per share, book value per share, earnings per share and brand value per share are presented in Table 2. Table 3 presents the results of estimating equation (1) and provides evidence that brand value estimates are relevant to the valuation of a firm. The coefficient for BRAND is positive at a 5 per cent level of significance and is incremental to the book value of equity and net income. As expected, the coefficient for earnings per share is also positive at a 5 per cent level of significance. The coefficient for book value per share is insignificant.

Table 4 presents the results of estimating equation (2) (Hypothesis 1) and indicates that whether a firm's business is primarily consumer or industrial plays a role in the impact of brand valuation on stock prices. The coefficient for the cross product of TYPE and BRAND is positive at a 5 per cent level of significance. As would be expected, the coefficient for TYPE alone

is not significant. Of note is that in both equations (1) and (2), the brand valuation coefficient is more significant than that of the book value per share.

As anticipated, no company fixed or random effects were found. No period fixed or random effects of significance were found, although this might be expected to change if measurements were taken during a more tumultuous economic period.

Finally, results for estimations of equations (3) and (4) are shown in Tables 5 and 6. Consistent with expectations, brand valuation estimations from the previous year are positively associated with stock prices at a 99 per cent level of significance. The cross-product impact of 1-year lagged brand valuations and company type is significant at an 8 per cent level of significance, likely reflecting weakening correlation over time.

DISCUSSION

This study makes a significant contribution to branding research by demonstrating that whether a firm's primary business is industrial or consumer plays a role in determining the level of importance brand equity plays in investors' valuation of a firm. Applying

Table 2: Summary statistics

	$ Price per share	$ Book value per share	$ Earnings per share	$ Brand value per share
Mean	40.87344	10.85154	2.51	14.67633
Median	37.77000	6.752700	1.89	12.24323
Maximum	120.9600	101.6172	26.34	41.21325
Minimum	4.820000	0.685400	−0.17	2.080849
Standard deviation	23.96938	13.67198	3.20	9.949913
Skewness	0.890784	4.018524	4.92	0.630284
Kurtosis	3.349927	22.52763	33.00	2.358580
Jarque-Bera	17.99304	2433.994	5443.1	10.91914
Probability	0.000124	0.000000	0.000000	0.004255
Sum	5354.420	1421.552	329.22	1922.599
Sum square standard deviation	74689.08	24300.01	1334.51	12870.10
# Observations	131	131	131	131

Table 3: Estimation results of equation (1): Share price regressed on book value per share, earnings per share and brand value per share

Independent variable	OLS	P-value	Year fixed effects	P-value	Year random effects	P-value	Company fixed effects	P-value	Company random effects	P-value
Book Value Per Share	0.5569	0.0869	0.5895	0.0823	−0.5569	0.0930	0.4075	0.6346	0.0061	0.9859
Earnings Per Share	4.0403	0.0041	4.2181	0.0049	4.0403	0.0049	−1.9134	0.3973	0.5671	0.6589
Brand Value Per Share	0.9012	0.0000	0.8969	0.0000	0.9012	0.0000	0.2143	0.7809	0.8866	0.0003
Adjusted R^2	0.2651	—	0.2366	—	0.2650	—	0.6042	—	0.0918	—
Fixed effects – Companies	No	—	No	—	No	—	No	—	No	—
Random effects – Companies	No	—	No	—	No	—	No	—	No	—
Fixed effects – Year	No	—	No	—	No	—	No	—	No	—
Random effects – Year	No	—	No	—	No	—	No	—	No	—

Table 4: Estimation results of equation (2): Price regressed on book value per share, earnings per share, brand value per share, company type, and the cross product of company type and brand value per share

Independent variable	OLS	P-value	Year fixed effects	P-value	Year random effects	P-value
Book Value Per Share	−0.4914	0.1351	−0.5030	0.1434	−0.4914	0.1430
Earnings Per Share	3.1830	0.0280	3.2555	0.0366	3.1831	0.0313
Brand Value Per Share	0.6083	0.0265	0.6040	0.0319	0.6082	0.0296
Type	−8.4836	0.2059	−8.4746	0.2178	−8.4836	0.2151
Type*Brand Value	0.8202	0.0452	0.8111	0.0560	0.8202	0.0497
Adjusted R^2	0.2786	—	0.2487	—	0.2786	—
Fixed effects – Companies	No	—	No	—	No	—
Random effects – Companies	No	—	No	—	No	—
Fixed effects – Year	No	—	No	—	No	—
Random effects – Year	No	—	No	—	No	—

Table 5: Estimation results for equation (3): Stock price regressed on book value per share, earnings per share and 1-year lagged brand value per share

Independent variable	OLS	P-value	Year fixed effects	P-value	Year random effects	P-value
Book Value Per Share	−0.7063	0.0457	−0.7220	0.0513	−0.7063	0.0507
Earnings per Share	4.4546	0.0031	4.5469	0.0046	4.4546	0.0038
Lagged Brand Value Per Share	0.8844	0.0000	0.8918	0.0001	0.8844	0.0001
Adjusted R^2	0.2513	—	0.2163	—	0.2513	—
Fixed effects – Companies	No	—	No	—	No	—
Random effects – Companies	No	—	No	—	No	—
Fixed effects – Year	No	—	No	—	No	—
Random effects – Year	No	—	No	—	No	—

Table 6: Estimation results for equation (4): Stock price regressed on earnings per share, 1-year lagged brand value per share, company type, and the cross product of company type and lagged brand value

Independent variable	OLS	P-value	Year fixed effects	P-value	Year random effects	P-value
Book Value Per Share	−0.6171	0.0846	−0.6117	0.1041	−0.6171	0.0921
Earnings Per Share	3.7363	0.0157	3.7185	0.0255	3.7363	0.0183
Lagged Brand Value Per Share	0.5719	0.0500	0.5780	0.0542	0.5719	0.0555
Type	−9.8333	0.1699	−9.8726	0.1804	−9.8334	0.1800
Type*Lagged Brand Value	0.7698	0.0840	0.7771	0.0960	0.7698	0.0914
Adjusted R^2	0.2585	—	0.2226	—	0.2585	—
Fixed effects – Companies	No	—	No	—	No	—
Random effects – Companies	No	—	No	—	No	—
Fixed effects – Year	No	—	No	—	No	—
Random effects – Year	No	—	No	—	No	—

the efficient markets hypothesis (Fama, 1970, 1991) helps to understand this result. Brand equity is 'rooted in the hearts and minds of consumers' and attitudes and feelings toward brands formed by marketers' branding efforts are key drivers of consumers' responses (Stahl *et al*, 2012, p. 44). The stock price of a firm reflects both the tangible and intangible assets of a company. Although brand equity is not accounted for on firms' balance sheets as an asset, investors recognize the critical role that brand equity plays in consumer firms' ability to attract and retain customers. As a result, as investors' perceptions of a firm's brand strength increase or decrease, the market reacts accordingly, adjusting the financial valuation of the firm by adjusting the stock price.

However, industrial buyers are generally less influenced by some of the perceptual aspects of brand equity (Aaker, 1992) important to consumers, focusing instead on more economically based factors such as pricing, product suitability, service and support (Bendixen *et al*, 2004; Webster and Keller, 2004). Research suggests that in industrial markets, the corporate brand image is more important to organizational buyers than an individual product brand (van Riel *et al*, 2005; Kuhn *et al*, 2008) and qualitative research suggests that the credibility of a firm and its sales organizations may be paramount to industrial buyers (Kuhn *et al*, 2008). Investors recognize this, and thus react differently to changes in perceptions of industrial firms' brand equity. Rather than responding to perceived changes in a brand's perceptual attributes, such as those affecting consumers' 'thoughts, feelings, perceptions, beliefs, attitudes, and behaviours' (Webster and Keller, 2004, p. 389), they understand that industrial buyers are more likely to be economically driven. Investors are thus more likely to be driven by perceived changes in an industrial firm's ability to service customers, price aggressively, or provide suitable products than the less tangible perceptual aspects of a brand's ability to connect with consumers.

This study supports research suggesting that brand values as a measure of brand equity provide relevant information about firm valuation beyond the book value of equity per share and earnings per share (Barth *et al*, 1998; Madden *et al*, 2006; Mizik and Jacobson, 2008). This is important not only because a more complete view of brand equity can contribute to a better understanding of the proper valuation of a firm, but, more importantly from a marketing manager's viewpoint, this finding suggests that investments in creating brand equity, especially for consumer firms,

have a concrete and measurable impact on return to investors.

Finally, lending support for previous findings that some brand equity components may take longer than others to impact the market (Mizik and Jacobson, 2008), changes in brand equity were also found to have a 1-year lagged association with stock prices. Marketers' investments in branding efforts are typically taken as accounting expenses in the year they are incurred. However, although some advertising campaigns or sales promotions, for example, may induce an immediate bump in a firm's revenues, other brand investments such as changes in packaging or positioning advertising may require months or years to bear fruit or even to determine whether they will be effective at all. Nonetheless, once they do bear fruit, the effects may last long after the marketing expenses have been accounted away. Investors recognize this, explaining why changes in investor perceptions about the equity in a brand enhance or detract from a firm's stock price well after such changes may first be noticed.

At the same time, the differential effects of brand equity changes between consumer and industrial firms also appear to have a lagged association with stock prices, although at a marginal level of significance because the correlation likely decreases over time. Once again, this finding provides evidence that investors expect changes in brand equity in consumer firms to have a long-run impact on firms' financial outcomes, but that industrial firms will be more impacted by other, less perceptual factors.

MANAGERIAL IMPLICATIONS

The purpose of this study was to examine the relationship between brand value and stock prices at the aggregate level of analysis, and more specifically to examine whether this relationship differs depending on the primary nature of the firm's business

as industrial or consumer. First of all, the study's findings yield further confirmation that marketing strategies focusing on brand valuation have significant tangible impact on a firm's worth as indicated by its stock prices. As brand equity elements can be influenced by controllable factors such as advertising, sales management, customer service, product innovations, promotions and distribution management, to name a few, this finding has tremendous practical implications for managers.

Much of a brand's value offering is controllable by the marketer. For instance, in order to fulfill consumers' desires for meaningful, positive, superior experiences with brands, marketers must invest resources in creating and delivering high-quality brands that induce strong attitudinal commitment in addition to behavioral loyalty (Chaudhuri and Holbrook, 2001). It has been well established in literature that loyalty is an essential component of customer retention because existing customers are known to purchase more than new customers (Rose, 1990) and their maintenance costs are approximately 80 per cent less than the costs of acquiring new customers (Peters, 1988). In order to achieve strong brand loyalty, a brand manager has to create perceptions of value in the minds of consumers through programs supporting brand image and reputation (advertising, promotions, public relations and so on), pricing strategies, improvements and innovations, and merchandise-quality perceptions.

However, the finding that the relationship between brand value and stock prices is moderated by firm type – industrial or consumer – also has important managerial implications. Our results suggest that whereas brand value can be a principal component in firm valuation for consumer firms, its impact on stock prices for industrial firms is not significant. The literature regarding a growing view of marketing as customer relationship management,

especially among industrial firms, is significant (Webster, 1992; Webster and Keller, 2004), possibly helping to explain the findings of this study. Whereas brand equity measures such as brand loyalty, brand awareness and brand quality are relevant and effective metrics for consumer firms, it is possible that customer relationship metrics such as customer lifetime value (Gupta and Zeithaml, 2006; Stahl *et al*, 2012) are more suited as measures of financial value for industrial firms. It is also possible that the financial value of a corporate brand versus a house of brands differs between consumer and industrial firms (Webster and Keller, 2004; van Riel *et al*, 2005; Kuhn *et al*, 2008). The results of this study suggest that industrial marketing managers should examine their branding strategy carefully to ensure it meets the needs of organizational buyers, which are significantly different from those of consumers (Webster and Keller, 2004).

The impact of brand value on lagged stock prices also provides marketers with both an opportunity and a challenge. On the one hand, investments in brand equity can in many cases take time to impact both customers and financial markets, making it difficult to make a financial assessment of the result. On the other hand, this study provides concrete evidence for marketers to present to financial managers that the outcome may be worth the wait. Both short-term as well as long-term investments in brand equity are imperative for a firm's longevity and success.

LIMITATIONS AND IMPLICATIONS FOR FUTURE RESEARCH

This article is limited in scope and the sample size is small, representing a limited subsample of Interbrand's 100 selected firms. As such, it should be considered exploratory. Nonetheless, a total of 131 observations across 19 companies and 7 years were included in the analysis, providing sufficient statistical power for the tests required.

It would be also preferable to conduct this study with brands that are both strong and weak, not simply the 100 'best' brands that make up the Interbrand list. Interbrand's data also specifically does not include firms whose brands are purely industrial; one of their criteria for selection is that the brand must be 'market-facing' (Interbrand Corporation, 2011). This may have contributed to the fact that a disproportionate number of industrial firms in this study's sample are technology firms, possibly impacting the validity of the results. It would be valuable to repeat the study with a broader selection of brands, specifically including those who are purely B2B in a broad range of industries. Further, a larger data set would offer the opportunity to further refine the analysis, possibly breaking down the data by sector or industry, such as luxury goods or durable goods for consumer companies or industry type for industrial firms.

Mizik and Jacobson (2008) identify the effects of brand assets on market valuation of small firms as a potential area for future study. Success in branding is vital to smaller and more entrepreneurial enterprises, where brand management research is in its infancy (Krake, 2005). Further, proper valuation of entrepreneurial brand equity could impact an entrepreneur's firm valuation, and thus be important to assist in obtaining equity or lender funding for a small firm. As discussed earlier, given that brand equity metrics are not reflected in accounting data published by large firms, changes in brand equity metrics are likely not reflected in stock prices for small firms either.

In addition, as the global marketplace becomes more integrated and as the Internet plays a larger role, it is possible that brand equity will play an increasing role in industrial firms. Research suggests that with the advent of purchasing on the Internet and

the commoditization of many products as a result, branding in an industrial products context is gaining importance (van Riel *et al*, 2005). For an industrial buyer, although pricing through the Internet may be advantageous, the anonymity of the Internet increases the uncertainty of an assessment of other pertinent issues such as those specified above, making a recognized brand more valuable. Using financial metrics to gauge the impact of the value of a brand may be able to help evaluate the role brand equity may play in the Internet marketing of industrial products.

Given suggestions of the differing roles of corporate versus product brands on decision making of industrial buyers (Webster and Keller, 2004; van Riel *et al*, 2005; Kuhn *et al*, 2008), it would also be interesting to investigate the interaction between firm type (industrial versus consumer) and branding strategy (corporate versus house of brands) in a financial valuation context. Rao *et al* (2004) find that a firm's manifest branding strategy (corporate brand, house of brands or mixed) affects financial performance of firms, but their study does not examine whether these findings differ between industrial and consumer firms. Sahay and Pillai's (2009) finding that advertising expenditures impact intangible firm valuation is moderated by whether the firm follows a corporate or house of brands branding strategy. However, the authors note their sample consisted primarily of B2B firms.

Further, exploratory research by Juntunen *et al* (2011) suggests that traditional brand equity measures may need to be re-evaluated for B2B markets. The results of this study support their finding, further suggesting a need for re-examination of brand equity metrics in organizational buying contexts. It may be that customer value metrics (Venkatesan and Kumar, 2004; Gupta and Zeithaml, 2006) may also serve as better determinants of financial value in industrial contexts.

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