

How Is Manifest Branding Strategy Related to the Intangible Value of a Corporation?

Firms exhibit or “manifest” three types of branding strategies: corporate branding, house of brands, or mixed branding. These strategies differ in their essential structure and in their potential costs and benefits to the firm. Prior research has failed to understand how these branding strategies are related to the intangible value of the firm. The authors investigate this relationship using five-year data for a sample of 113 U.S. firms. They find that corporate branding strategy is associated with higher values of Tobin’s q , and mixed branding strategy is associated with lower values of Tobin’s q , after controlling for the effects of several important and relevant factors. The relationships of the control variables are consistent with prior expectations. In addition, most of the firms would have been able to improve their Tobin’s q had they adopted a branding strategy different from the one their brand portfolios revealed. The authors also discuss implications and future research directions.

Over the past decade, there has been significant interest among academics and practitioners in understanding the importance of brand equity. Highly competitive markets make powerful brands essential to accomplishing growth. According to Aaker (1991), firms create brand equity by delivering quality products and by creating strong brand associations through appropriate communication and advertising strategies.¹ Brands have been widely acknowledged as having a financial value because they are able to generate future cash flows (Aaker and Jacobson 1994). The enhanced cash flows are based on, among other things, customer loyalty, high margins, brand extension and licensing opportunities, and increased mar-

keting efficiency of strong brands (Keller 2002, p. 46). In recognition of the long-term financial contribution of brand equity, financial markets seem to consider brands in their stock valuations (Barth et al. 1998; Simon and Sullivan 1993). Extensive research has been conducted on the estimation of brands’ financial value and measurement techniques, as well as on brand extensions (Haigh 1998; Keller and Aaker 1992; Murphy 1989; Reddy, Holak, and Bhat 1994). An intense discussion about the admission of brands in financial accounts is ongoing in the accounting community (Barth et al. 1998; Kallapur and Kwan 2004; Lev and Sougiannis 1996). However, there is no debate that brands are intangible assets of a firm (Lev 2001).

Firms can follow several branding strategies to manage their brands. In general, most firms begin with a single product and become multiproduct firms over time. In such cases, there is a brand name for the first product that most likely is related to the name of the corporation, which marketers refer to as corporate branding. As new products are added, the managers of the firm have the option to use the firm identification in the brand name and to continue the corporate branding strategy. If the initial brand name did not use the firm name and if the firm chooses different names for each new product (without the firm name), this is known as a “house-of-brands” strategy. However, if a firm acquires another firm (or a division of another firm), the products of the acquired firm will have brand names in place; in this situation, the branding strategy of the new entity is a mixed branding strategy. Mixed branding also occurs if a firm uses corporate names for some of its products and individual names for others. In general, the type of branding strategy can be inferred from examination of all the brand names of a firm’s products; we refer to this as “manifest” branding strategy and only occasionally use that adjective herein. More important, the manifest strategy is a result not necessarily of deliberate brand decision making but of other decisions that the firm may have made.

¹Firms frequently use the equity of their current brands to introduce brand extensions. These brand extensions are successful when the parent brand is viewed as having favorable associations and when there is a perceptual fit between the parent brand and the extension product (Keller 1998, p. 473). In efforts to understand the creation and effective use of brand equity, several techniques to measure brand equity have been suggested by consulting, advertising, and investment firms, as well as by the academic community (Agarwal and Rao 1996; Kamakura and Russell 1993; Simon and Sullivan 1993; Swait et al. 1993).

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Whenever a firm is about to launch a new product or acquire a firm, it needs to make a strategic decision as to which type of branding strategy (corporate, house of brands, or mixed) it should adopt to maximize its intangible value. The intangible value it creates will affect how the financial market will view the firm. Despite extensive research on branding in the marketing literature, there is no available guidance for firms' management because of a lack of systematic research on the financial effects of types of branding strategies. This article is an attempt to fill this gap in the literature. Our work addresses the issue of how a firm's products are branded and how branding strategy is related to the firm's intangible value.

The three branding strategies can be plotted on a continuum: At one end is corporate branding, which entails strategies that use solely the corporate name on products. At the other end is house of brands, which describes strategies that use individual brand names (with no corporate identification). The stock markets presumably value firms differently and impute different brand equity potential for each particular type of branding strategy. For example, corporate branding may be viewed as having higher equity because the firm can build and leverage its overall reputation, whereas a house-of-brands strategy, by definition, requires a firm to build the reputation of each of its individual brands.

In general, advertising expenditures affect the financial markets (Chauvin and Hirschey 1993; Cheng and Chen 1997). The advertising expenditures depend on the branding strategy that the firms follow; corporate branding usually requires fewer expenditures than the house-of-brands strategy. Although a change in advertising expenditures is related to a change in the stock price (Cheng and Chen 1997), is the impact of a change different for different branding strategies? This is an unanswered question.

Despite extensive research on branding in the marketing literature, examination of the relationship between branding strategies and firm value is nonexistent. This article is an attempt to fill this gap. For our research, we classify companies' manifest branding strategies and combine the data with financial data to investigate the relationship between manifest branding strategies and firm financial performance. Our overall objective is to assess the effectiveness of the three main branding strategies on the intangible value of a firm. We believe that our results may also provide guidance for firms in choosing their branding strategies, if they have the opportunity to do so, and in formulating their merger and acquisition decisions.

Against this background, our study seeks to answer two questions: (1) How are different manifest branding strategies related to the intangible value of a firm? and (2) Do advertising expenditures interact with the relationship between the intangible value of a firm and the type of its manifest branding strategy?

The remainder of this article is organized into five sections. The next section provides a review of the literature that pertains to branding strategies and the relevant financial and accounting research on the financial valuation of a firm. The subsequent section describes our model, which relates intangible assets to other descriptors of the firm, including

branding strategy and our method of estimating the model. It also describes ways to measure the intangible value of a firm and other commonly used correlates of the intangible part of firm value. The next section describes the data collection method and provides a description of our data. We then describe and interpret our results, and we conclude by offering some directions for further research.

Literature Review

Branding Strategies

The literature contains several taxonomies for classifying branding strategies; the most important are those of Olins (1989), Murphy (1987, 1989), and Laforet and Saunders (1994). Olins uses a three-category scheme of corporate identities only, corporate name with a subsidiary name, and branded identities. Murphy suggests four categories of corporate-dominant, brand-dominant, balanced systems, and mixed systems. Finally, on the basis of a comprehensive content analysis of brands of major U.S. and European grocery products, Laforet and Saunders propose three categories of brands (all based on the use of the corporation's name in products' brand names). Their categories are as follows: (1) The name of the corporation or its subsidiary is prominent in the brand names of the products or services (e.g., FedEx), (2) the corporation's name is combined with another name (e.g., Kellogg's Corn Flakes), and (3) the corporation's name is not used at all to mark products or services (e.g., Pampers).

We adopt a three-category taxonomy based on Laforet and Saunders's (1994) scheme—corporate branding, house of brands, and mixed branding—which we subsequently describe. We provide examples in Table 1.

Corporate branding: With the corporate branding strategy, the corporate name is dominant in endorsing all or part of the firm's product and service brands. At the least, the corporate name is an element of the product brand names. This holds throughout all its subsidiaries and at all company levels. Examples of companies that employ this strategy are Hewlett-Packard, McDonald's, and FedEx.

Mixed branding: In a mixed branding strategy, firms typically employ a set of house or family brands, such as subsidiary names, in their brand portfolio, in addition to using the corporate name for certain products. Brands with names other than the firm's name are typically strong and significant to the firm. For example, apart from Pepsi's flagship brand, it operates with the Mountain Dew and Aquafina brands, and its subsidiaries Tropicana and Frito-Lay use individual brands at the product level (e.g., Doritos, Ruffles).

House of brands: In the house-of-brands strategy, the firm does not use its corporate name or the name of its subsidiaries for branding its products. Instead, it uses individual brand names to market its products. Companies such as Unilever, ConAgra, and Diageo keep their corporate name in the background and use individual brands for their product lines. Examples are brands such as Dove and Lipton marketed by Unilever and Pampers and Crest marketed by Procter & Gamble.

TABLE 1
Examples of Manifest Branding Strategies

Branding Strategy 1 (Corporate Branding)	Branding Strategy 2 (Mixed Branding)		Branding Strategy 3 (House of Brands)	
Company and Brand	Company	Selected Brands	Company	Selected Brands
Nike	Gillette	Gillette, Oral-B, Duracell, Braun, Waterman	Procter & Gamble	Pampers, Crest, Ariel, Tide, Bounty, Always, Febreze
AT&T	The Gap	The Gap, Banana Republic, Old Navy	Darden Restaurants	Red Lobster, Olive Garden, Bahama Breeze
Dell Computer	3M	3M, Scotch, Thinsulate, Scotchgard	Bristol-Myers Squibb	Clairol, Aussie, Herbal Essences, Viactiv, Boost

Notes: The examples are based on information from the companies as of April 2000.

The three branding strategies are associated with different benefits and shortcomings, which arise from both the supply and the demand sides (for our summary, see Table 2). In general, enhanced cash flows and lower risks are positively associated with the advantages and negatively associated with the disadvantages of the branding strategies.

For the corporate branding strategy, the major advantages are economies of scale in marketing and efficiency in creating brand equity, which can help lower per-item promotion costs. Although this strategy can help brand extensions, there is a risk of dilution or loss of brand identity if a firm overstretches a brand name to product categories that do not match the brand's established associations; therefore, it may limit a firm's ability to expand into some unrelated categories. Under this strategy, the total marketing budget

across the portfolio of all products can be lower because of the spillover effects among the products with the same brand name and because consumers are likely to transfer their loyalty between products that carry the same brand name. A corporate brand name is an efficient means to communicate with a firm's stakeholders other than customers (e.g., shareholders, retailers, employees) to build public relations and investor relations.

In contrast, the house-of-brands strategy offers significant possibilities for creating distinctly positioned brands that convey the personality of a firm's products by means of physical or perceptual benefits. Furthermore, each brand creates its own brand equity. By using multiple brands rather than one corporate brand to market different products, a firm can usually command more total shelf space

TABLE 2
Supply- and Demand-Side Advantages and Disadvantages of Different Branding Strategies

Branding Strategy	Supply-Side Advantages (+) and Disadvantages (-)	Demand-Side Advantages (+) and Disadvantages (-)
Corporate branding	Economies of scale in marketing (+) Total costs of advertising/promotion can be lower (+) Lower costs of creating brand equity (+) Lower costs of new product introductions (+)	Easier extension of brands (+) Limits on firm's ability to expand into some categories (-) Higher cannibalization among firm's brands likely (-) Efficient means to communicate to various stakeholders (+)
House of brands	No identifiable economies of scale in marketing (-) Higher costs of advertising (-) Can command larger retail shelf space (+) Significantly higher costs of new product introductions (-)	Distinctly customized brands can be offered (+) Lower cannibalization (+)
Mixed branding	Combination of advantages and disadvantages of corporate branding and house of brands	Combination of advantages and disadvantages of corporate branding and house of brands

with retailers, which leaves less shelf space for competitors. However, this strategy is quite costly for the firm in building brands and in introducing new products.

The mixed branding strategy can provide both the benefits of the corporate brand strategy and the possibility to create separate product-class associations for various brands of the firm. Both the mixed branding and the house-of-brands strategies can help prevent cannibalization if a firm wants to operate with more than one brand in the same market. Multiple brands enable the firm to serve different market segments better by customizing offers more precisely to the target segment's needs. Therefore, multiple brands are useful if a firm markets products targeted at different segments.

Brands and Financial Value of a Firm

Some studies in finance and accounting examine the connections between brand values and a firm's financial performance. For example, using two cross-sectional regression models, Barth and colleagues (1998) find that brand value estimates of *Financial World's* annual brand evaluation survey are significantly and positively related to stock prices and returns and that brand value estimates represent valuation-relevant information beyond advertising expenses, operating margin, market share, and earnings forecasts.

Kallapur and Kwan (2004) also show the value relevance of brand assets; they estimate a regression model for the market value of equity on cross-sectional data, using the book value of nonbrand assets, net income, and brand assets (as disclosed in the firms' financial statements) as explanatory variables. The highly significant coefficient of the brand asset variable indicates that brand asset values constitute valuation-relevant information for the stock markets.

There is some related research in the marketing area that relates firms' security prices and returns to brand attributes as predictor variables. For example, Simon and Sullivan (1993) report superior brand equity estimates for industries and firms with well-known brand names. Aaker and Jacobson (1994) use stock returns as a response variable to examine the impact of perceived quality measures. Their models include a quality measure (using the EquiTrend Survey by the Total Research Corporation) and an array of other control variables, such as return on investment, brand awareness, advertising expenditure, and time. Their analysis indicates that stock returns are positively associated with perceived brand quality.

Security price reactions also are examined in two event studies that incorporate news on major decisions on brand strategy as events. Horsky and Swyngedouw (1987) find that company name changes have a positive impact with respect to a firm's return on assets. Likewise, Lane and Jacobson (1995) find that the stock market returns to brand extension announcements depend interactively on brand attitude and brand familiarity.

Complementing the academic research on the recognition of brands' financial value in security prices are the large premiums paid in mergers and acquisitions, representing goodwill, which are largely subscribed to the transferred brands (Buchan and Brown 1989).

In summary, the extant research indicates that brands have a financial value. In addition, brand values are not fully accounted for in the book values of the firm. However, there is no research on the ways different branding strategies are related to the financial value of a corporation.

A Framework and Model to Evaluate the Effects of Branding Strategy

Conceptual Framework

The value of a firm, which consists of both tangible and intangible assets, represents the collective future cash flows to the firm's equity investors and bondholders, discounted at an appropriate rate. These cash flows are generated by the firm's investment, financing, and dividend decisions (Damodaran 2001). The cash flows and their risk are affected in part by the management of market-based assets, such as customer and partner relationships (Srivastava, Shervani, and Fahey 1998). Brands and brand equity represent the relationship between the firm and its customers and can affect firm value by accelerating and enhancing cash flows or by reducing risk. For example, corporate brands make it easier for a firm to introduce brand extensions and can enhance cash flows as a result of lower costs of promotions and cobranding. Strong brands can also reduce a firm's vulnerability to competition and, in turn, reduce the risk of the future cash flows. Thus, the branding strategies of a firm create long-term brand equity through the customer responses they engender.² In general, this value is not measured in the tangible assets of the firm; it becomes part of the intangible assets of a firm.

The intangible assets of the firm are affected by several firm-specific factors in addition to branding strategy. Some factors reflect the previous operations of the firm, and others reflect future growth opportunities; investors can use both types of factors to assess future cash flows and their risk. Variables such as age of firm, operating margin, leverage, advertising expenditures, and focus all reflect the firm's previous operations. Similarly, factors that affect future growth include research and development (R&D) expenditures, acquisitions, industry characteristics, and competition. Our analysis controls for these other variables while determining the relationship of branding strategy and intangible value. In the next section, we describe their operationalization and linkage to the intangible value of a firm.

We use Tobin's q ratio to measure the intangible assets. Tobin's q is the ratio of the market value of the firm to the replacement cost of the firm's assets. It is a forward-looking measure, providing market-based views of investor expectations of the firm's future profit potential. The long-term

²In a conceptual piece, Ambler and colleagues (2002) posit a brand value chain, which connects a firm's activities by marketing management to shareholder value. Their framework consists of several multipliers to marketing program investment to yield the shareholder value (including intangible assets). Such a detailed analysis requires a significant amount of data for operationalization. Our interest is to analyze the effect of one aspect of the marketing program (branding strategy) at a much-aggregated level.

equilibrium market value of a firm must be equal to the replacement value of the firm. A q-value of greater than 1.0 reflects an unmeasured source of value attributed to the intangible assets. Beginning with the work of Lindenberg and Ross (1981), the empirical finance literature has used Tobin's q to study many phenomena (e.g., barriers and concentration [Chen, Hite, and Cheng 1989], equity ownership [McConnell and Servaes 1990], managerial performance [Lang, Stulz, and Walking 1989], dividend announcements [Lang and Litzenger 1989]). In marketing studies, Simon and Sullivan (1993) use Tobin's q to measure brand equity, and Day and Fahey (1988) recommend it to measure the value of marketing strategies. Bharadwaj, Bharadwaj, and Konsynski (1999) use Tobin's q to analyze the effects of information technology on a firm's performance.

Hypotheses on the Effects of Branding Strategies

Our prior discussion on the three branding strategies (see Table 2) leads us to three hypotheses.

H₁: The corporate branding strategy is associated with higher values of Tobin's q.

Given that Tobin's q is based on the reaction of the financial market, H₁ is justified because of the supply-side advantages of a corporate branding strategy (e.g., lower costs of advertising, new product introduction, economies of production to enhance future cash flows). Furthermore, the demand-side advantages also reinforce this justification. The disadvantages, if any, are not dominant enough to make this effect negative.

H₂: The house-of-brands strategy is associated with lower values of Tobin's q.

H₂ is essentially the converse of H₁. According to H₂, a firm incurs much higher costs of advertising its portfolio of brands and incurs enormous costs for introducing new products. Furthermore, we conjecture that financial markets pay limited attention to the demand-side advantages of unique positioning and minimal cannibalization. The market finds it difficult to keep track of the idiosyncratic strategies of individual brands and tends to value the firm less because of the lower perceived future cash flows.

H₃: Advertising expenditure interacts with the relationship between branding strategy and Tobin's q.

A specific expenditure on advertising is more effective under the corporate branding strategy than the house-of-brands strategy because of the scale economies obtained under the former. Furthermore, any announcement of such expenditure by a firm that follows the corporate branding strategy becomes much more visible to the financial market. Thus, there is a much greater effect, leading to an interaction effect.

The calculations for Tobin's q used by Lindenberg and Ross (1981) are quite cumbersome. To make the estimation of Tobin's q easier, Chung and Pruitt (1994) suggest a simpler formula.³ They then compare their measure with that of

³Chung and Pruitt's (1994) formula differs from that of Lindenberg and Ross (1981) in that it assumes that the replacement values of a firm's plant, equipment, and inventories are equal to its book value. There is also a slight difference in the way the market

Lindenberg and Ross and show that the fit between the two measures over ten years of cross-sectional data is extremely high, with an R² that ranges between .97 and .99. We use the following simpler formula:

$$(1) \quad \text{Tobin's } q = (\text{MVE} + \text{PS} + \text{DEBT})/\text{TA},$$

where

$$\begin{aligned} \text{MVE} &= (\text{share price}) \times (\text{number of common stock} \\ &\quad \text{outstanding}), \\ \text{PS} &= \text{liquidating value of the firm's preferred stock,} \\ \text{DEBT} &= (\text{short-term liabilities} - \text{short-term assets}) + \\ &\quad \text{book value of long-term debt, and} \\ \text{TA} &= \text{book value of total assets.} \end{aligned}$$

The numerator in Equation 1 represents the total value of the firm and the collective cash flows to the firm's equity investors and bondholders. The denominator is the replacement cost of the assets, which is assumed to equal the book value. The higher the Tobin's q, the higher is the value of the intangible assets of the firm. We use the year-end data taken directly from the annual COMPUSTAT files to compute Tobin's q. Our model for the relationship of branding strategy and Tobin's q is

$$(2) \quad \text{Tobin's } q = f(\text{branding strategy, control variables}).$$

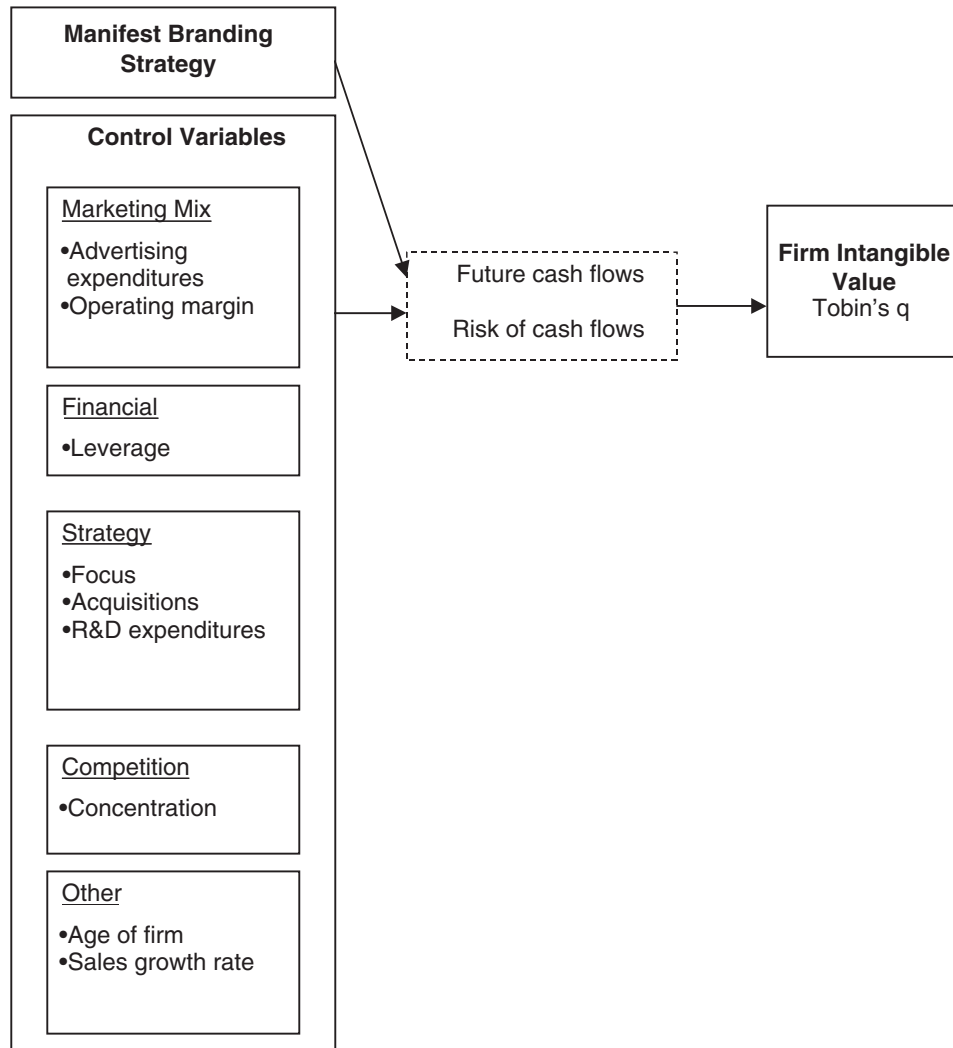
Control Variables

We include the following control variables in our model to estimate the net effects of branding strategy on Tobin's q: (1) focus, (2) concentration index, (3) operating margin, (4) leverage of the firm, (5) R&D expenditures, (6) advertising expenditures, (7) age of firm, (8) number of acquisitions, and (9) growth rate.⁴ Our selection is based on the discussion in the previous section and on the existing empirical evidence of these variables' relationship to firms' intangible assets (e.g., Chauvin and Hirschey 1993; Hirschey and Weygandt 1985; Lustgarten and Thomadakis 1987; Simon and Sullivan 1993). A subset of these variables (e.g., advertising expenditures, R&D expenditures, concentration) also appears as a determinant of profitability in extensive meta-analyses studies (Capon, Farley, and Hoening 1990; Szymanski, Bharadwaj, and Varadarajan 1993). The selection of these variables is also partly influenced by the availability of data. A framework for our analysis described in Figure 1 shows the variables we used as controls before teasing out the relationship between branding strategies and Tobin's q. All variables reflect previous operations, and some (e.g., R&D expenditures) are more directly linked with the growth potential of future cash flows and their risk. We fur-

value of the firm's long-term debt is calculated. Both methods assume that market and book values for short-term debt are identical.

⁴A company's reputation has been acknowledged to affect its performance (*Fortune* 2000). Using an annual survey among 10,000 executives, directors, and analysts, *Fortune* measures the reputation of the largest U.S. companies on a ten-point scale that uses the criteria of quality of management, quality of products/services, innovativeness, long-term investment value, financial soundness, employee talent, social responsibility, and use of corporate assets. We could not use these data because they were not available for the study period for all the companies in our sample.

Figure 1
A Framework for Our Analysis



ther categorize the variables into ones related to the marketing mix, finances, strategy, competition, and other aspects.

Operating margin. In general, a higher operating margin triggers expectations among investors of higher cash flow potential and drives intangible value. Furthermore, there is evidence that higher brand values are significantly associated with higher operating margins and advertising expenses (Barth et al. 1998). Thus, we expect that Tobin's q is positively affected by the firm's operating margins. The relevant data are from COMPUSTAT. We calculate operating margin as the ratio of net income before depreciation to sales.

Leverage. Leverage has been used in several corporate finance studies (Berger and Ofek 1995; Denis and Kruse 2000). We use the ratio of long-term debt to total assets of the firm as a measure of leverage. Firms with higher leverage can enjoy a tax benefit because they can deduct the interest costs, which results in greater cash flow and thus a positive relationship with Tobin's q. McConnell and Servaes (1990) find such a positive relationship. However,

Smith and Watts (1992) expect that firms with higher growth opportunities (and thus a higher q-value) have lower leverage. Thus, we do not have any a priori expectation of the sign of the leverage coefficient.

Focus of the firm. We measure firm focus by the number of industry segments in which the firm operates, on the basis of information provided by COMPUSTAT. Comment and Jarrel (1995) find that at more diversified firms (or firms with lower focus), the asset turnover is higher, and thus asset values are closer to market value, which results in a lower q-value and a positive coefficient. In previous studies, this coefficient has been found to have a positive effect in some and a negative effect in others (Lustgarten and Thomadakis 1987); thus, we have no a priori expectation of the sign.

Concentration index. To capture some effects of competition, we use an index to measure the concentration of the primary industry business in which the firm operates, on the basis of its four-digit North American Industry Classification System codes. For this purpose, we compute the

Herfindahl index as a measure of concentration. The actual measure is $\sum_{i=1}^{I_c(r)} m_i^2$, where m_i is the revenue share of the i th company in the primary industry of the r th firm with $I_c(r)$ competitors. Because higher concentration can provide more market power, it can lead to a higher q -value (Domowitz, Hubbard, and Peterson 1986). Others contend that a higher q -value reflects better efficiency rather than market power (Smirlock, Gilligan, and Marshall 1984). On the basis of recent empirical support, we expect that the effect of the concentration index on Tobin's q is negative (Bharadwaj, Bharadwaj, and Konsynski 1999; Montgomery and Wernerfelt 1988).

R&D expenditures. Several studies support the premise that R&D expenditures affect a company's market valuation (e.g., Chauvin and Hirschey 1993; Chen, Hite, and Cheng 1989; Kim and Lyn 1990). Lev and Sougiannis (1996) show that investors take R&D information into account when making investment decisions. We expect that R&D expenditures have a positive impact on the firm's intangible value, thereby reflecting better prospects for the firm to generate cash flows. The R&D data we employ are from the COMPUSTAT file. Because companies are not legally obligated to disclose R&D data, much data are missing. This lack of data is a reason we ended up with a small sample. Our operational measure of R&D expenditures is the ratio of R&D expenditures to total assets of the firm.

Advertising expenditures. Advertising expenditures are commonly expected to have a positive impact on a company's performance. Several studies have supported this notion (e.g., Chauvin and Hirschey 1993; Chen, Hite, and Cheng 1989; Klock and Megna 2000). A part of the ample literature on the effectiveness and efficiency of advertising scrutinizes this relationship from a performance viewpoint (for the relationship between brand equity and advertising, see Aaker 1993). In addition, because the advertising expenditures are typically written off in the period they are spent but have a long-term effect on brand equity, they are valued as part of the firm's intangible assets. Some studies uncover that higher advertising expenditures are associated with better corporate performance. We accordingly expect that the advertising variable has a positive impact on Tobin's q .

We collected the advertising data from the publications by Competitive Media Reporting (2001) for the years 1996–2000. Operationally, we use the ratio of advertising expenditures to total assets in our models.

Age of firm. When a firm has been in business for an extended period, investors have extensive information about the firm and thus value firms closer to their true potential. Despite the more accurate evaluation, the intangible value can still be high; with age, the intangible value of brands is actually likely to grow because of advertising, awareness, and loyalty, all of which result in a positive coefficient. However, 1996 to 2000 was characterized by a large speculative element for the newer Internet-based firms, which resulted in a high value of Tobin's q . Thus, we expect that the age of the firm has a negative impact on Tobin's q . We obtained data on how long a firm has been in business from the electronic source Gale Group Business and Company Resource Center (Gale Group 2000).

Acquisitions. The financial market is influenced by a firm's acquisitions, which reflect greater growth opportunities in the future. We simply counted the number of acquisitions during the preceding year. In most cases, this variable is either one or zero. If acquisitions are priced at book value, Tobin's q should not be affected. However, the stock market typically evaluates acquisitions negatively, in part because of the difficulty of efficiently merging operations. Andrade, Mitchell, and Stafford (2001) show that of 3688 mergers between 1973 and 1998, the target firm gained 23.8% in the window beginning 20 days before acquisition announcement and ending on the close, and the acquiring firms lost 3.8% over the same interval. On the basis of this evidence, we expect that acquisitions have a negative impact on Tobin's q .

Growth rate. A higher previous growth rate indicates higher future growth prospects and thus results in a higher value of Tobin's q . Our measure of growth is the compounded annual sales growth rate over the previous three years (e.g., Barth et al. 1998). We expect that this variable has a positive impact on Tobin's q .

The relationship between our hypotheses and the control variables of our model are summarized in Table 3.

Estimating Branding Strategy Effects

We estimate the relationship of branding strategy with the firm value (as measured by Tobin's q) while controlling for advertising expenses and other variables noted previously. We employ two variants of a regression-like model. Our first model, M1, is a standard ordinary least squares (OLS) model, which assumes that the regression coefficients are the same for all firms and industries. Our second model, M2, allows for different firm-specific regression coefficients; we estimated this model using hierarchical Bayesian regression methods.

Aggregate Estimates

Our basic model at the aggregate level (M1) is

$$(3) \quad Y_{rt} = \text{Tobin's } q \text{ for firm } r \text{ at time } t = \beta_0 + \beta_1 \text{Operating margin}_{rt} + \beta_2 \text{Leverage}_{rt} + \beta_3 \text{Focus}_{rt} + \beta_4 \text{Concentration index}_{rt} + \beta_5 \text{R\&D expenditure}_{rt} + \beta_6 \text{Advertising expenditure}_{rt} + \beta_7 \text{Age of firm}_{rt} + \beta_8 \text{Acquisitions}_{rt} + \beta_9 \text{Growth rate}_{rt} + \gamma_{cb} \text{Corporate branding dummy}_{rt} + \gamma_{hb} \text{House-of-brands dummy}_{rt} + \epsilon_{rt},$$

where $r = 1, \dots, R$ (firms), and $t = 1, \dots, T$ (years). Here, the β s and γ s are parameters to be estimated, and we assume that the error term ϵ_{rt} is normally and independently distributed with common variance. The β coefficients measure the effects of the control variables. The coefficients (γ_{cb} and γ_{hb}) measure the average impacts of branding strategy on firm value for the subset of companies that employ the same branding strategy after accounting for the effects of several control variables, which are shown in Figure 1. According to our hypotheses, we expect that γ_{cb} is positive and γ_{hb} is negative. We estimate a second specification of M1 with

TABLE 3
Hypotheses on Control Variables Used in the Model

Variable	Measure Used	Expected Relationship to Tobin's q	Support for Expectation
Operating margin	Ratio of net income before depreciation to sales	Positive (+)	Triggers expectations of future income potential
Leverage	Ratio of long-term debt to total assets	Not clear-cut	Literature shows both types of relationships
Firm's focus	Number of industry segments in which the firm operates	Not clear-cut	Literature shows both types of relationships
Concentration index	Herfindahl index using four-digit North American Industry Classification system codes	Negative (-)	Recent empirical evidence
R&D expenditures	R&D expenditures/total assets	Positive (+)	Future implied income due to R&D (previous research)
Advertising expenditures	Advertising expenditures/total assets	Positive (+)	Literature shows that advertising affects market evaluation
Age of firm	How long a firm has been in business	Negative (-)	Investors have more information on older firms
Acquisitions	Number of acquisitions in the preceding year	Negative (-)	Recent empirical evidence
Growth rate of sales	Compounded annual growth rate in sales for a three-year period	Positive (+)	Due to the forward-looking nature of Tobin's q

interaction terms between advertising expenditures and branding strategies. This variant enables us to examine whether there is a differential impact of advertising expenditures with different branding strategies.

Firm-Level Estimates

We employ a hierarchical model (M2) with random coefficients to estimate firm-level effects of branding strategy on Tobin's q. This approach, which allows for parameter variations across firms (Hildreth and Houk 1968; Swamy 1974), has become popular in the marketing literature to represent heterogeneity in parameters (Allenby and Ginter 1995; Bradlow and Rao 2000; Lenk et al. 1996). Accordingly, we posit a hierarchical Bayesian model in which we estimate the firm-level branding coefficients for each firm, assuming that they are randomly distributed around a common mean. Our model at the firm level is as follows:

$$\begin{aligned}
 (4) \quad Y_{rt} = & \text{Tobin's } q \text{ for firm } r \text{ at time } t = \beta_0 \\
 & + \beta_1 \text{Operating margin}_{rt} + \beta_2 \text{Leverage}_{rt} + \beta_3 \text{Focus}_{rt} \\
 & + \beta_4 \text{Concentration index}_{rt} + \beta_5 \text{R\&D expenditure}_{rt} \\
 & + \beta_6 \text{Advertising expenditure}_{rt} + \beta_7 \text{Age of firm}_{rt} \\
 & + \beta_8 \text{Acquisitions}_{rt} + \beta_9 \text{Growth rate}_{rt} \\
 & + \gamma_{cb(r)} \text{Corporate branding dummy}_{rt} \\
 & + \gamma_{hb(r)} \text{House-of-brands dummy}_{rt} + \epsilon_{rt},
 \end{aligned}$$

where $r = 1, \dots, R$ (firms), and $t = 1, \dots, T$ (years). As we did previously, we assume that the errors ϵ_{rt} are normally and independently distributed with common variance and that $\gamma_{cb(r)}$ and $\gamma_{hb(r)}$ are firm-specific coefficients

We also compare the results from Bayesian regression with those obtained from OLS regressions using a fixed-effects model. In addition, we test the predictive validity of the two methods. For this purpose, we withhold approximately one-fifth of the observations, reestimate the model, and compare the predictions from the model with the actual values for the withheld observations.

Data Collection and Measures

Data Collection

Sample of firms. We sought relevant financial and advertising data for companies in the Standard & Poor's index of the top 500 companies (S&P 500) for five consecutive years as of December 2000 (i.e., 1996–2000).⁵ However, because there was a lack of data on several variables, our final sample consisted of 113 firms (23% of S&P 500 firms), whose total market value was approximately 38% of that of all

⁵We use mainly two data sources: the 2000 CD-ROM "COMPUSTAT North America Data for Standard & Poor's Research Insight" for financial data and the *Competitive Media Reporting* annual books for advertising expenses.

S&P 500 firms combined. The average market value of our firms is approximately twice that of S&P 500 firms not in the sample. Nevertheless, our sample compares quite favorably with the S&P 500 firms on four variables (Tobin's q ; operating margin; leverage; and focus, as measured by the number of industry groups in which the firms operates) on the basis of multivariate T-tests for each year of the sample. The values of Hotelling's T^2 values range from .0525 (degrees of freedom [d.f.] = 189.5) for 1996 to 3.10 (d.f. = 185.5) for 2000, and none are significant.

Branding strategy codes. We assigned one of the three branding strategy codes (corporate branding, mixed branding, and house of brands) to each firm on the basis of a review of the firm's Web site, an analysis of the firm's structure, the firm's brands listed in the 2000 *Competitive Media Reporting* report, and the most recent annual reports. We also consulted revenue data to uncover the significance of a firm's business units and to identify the brands marketed by the business units. Revenue analysis was especially relevant in cases in which it was unclear which code to assign to the branding strategy of the firm. For example, an ambivalent case occurred if a firm predominantly used the corporate brand for its products and services but also owned a minor brand. In such a case, we categorized the firm as having a corporate branding strategy.

Two graduate students assigned the codes. There was a high degree of consistency, and coder reliability, as measured by percentage agreement, was .867. In case of a divergence, one researcher evaluated the information and assigned a branding strategy code. Overall, the classification was fairly straightforward and unambiguous. Operationally, we used two dummy variables for the branding strategies of the firms, with effects coding as (1, 0) for corporate branding, (0, 1) for house of brands, and (-1, -1) for mixed branding.

Normalization of the variables. Many studies with diverse research objectives show that the affiliation with a particular industry explains part of the cross-sectional variation of the respective response variable. To account for any systematic differences between industry groups and to make the measures comparable, we first calculated industry medians for the variables for groups based on two-digit North American Industry Classification System codes, and we normalized each firm's data relative to the respective industry medians. We analyzed more than 20,000 cases for each year to obtain the year-specific medians for 30 industry groups. We median-adjusted Tobin's q , focus, operating margin, leverage, and R&D expenditures variables, which was possible because we had data at the industry group-level from the COMPUSTAT files. We performed no such normalization for the remaining variables because we lacked data.

Results and Interpretation

Descriptive Statistics

Table 4 shows the descriptive statistics and correlations. Considerable variation occurs in this response measure (the median-adjusted Tobin's q), but the mean across all firms is 1.38. The firms in our sample operate in a wide range of

industry segments (the median-adjusted value is 3.00; see the "Focus" row of Table 4). Similar variation occurs in other predictors as well. This variation suggests that our sample is probably skewed toward better-performing firms than toward the population of firms included in the COMPUSTAT data set. Most of the correlations are statistically significant from zero, and the multicollinearity among the variables is low.

Before we analyze the results, recall that the dependent variable is Tobin's q , which represents the market's assessment of the future prospects for the firm compared with its book value. Thus, the coefficients of the regression models signal prospects for future cash flows to the financial community. We assess the results only from this market signal perspective, not from any normative view of the optimum strategy for the firm.

Estimates of Effects at the Aggregate Level

Fit. We first describe the analyses from Model M1, which provides estimates of the effects of branding strategy at the aggregate level. We estimated this model with and without interactions of advertising and branding strategy dummies. In each model, we used the core set of nine control variables (i.e., focus, concentration index, operating margin, leverage, R&D expenditure, advertising expenditure, age of firm, number of acquisitions, and growth rate). The results of fit are shown in Table 5. The fits are all significant. The inclusion of interactions between advertising and branding strategy dummy variables shows a small change (a slight decrease for M1A and a small increase for M1B) in the fit.

Predictive testing. The correlation between the predicted values and the actual values for the subset of randomly withheld 20% of observations is .621 for the models with and without interactions. This is quite similar to the fit of the model to the data; therefore, it shows a good degree of predictive validity.

Branding strategy coefficients. The coefficients of the branding strategies in our measurement model of Tobin's q (normalized) after correcting for the control variables are shown in Table 5 for Models M1A and M1B. In both specifications, we consistently find that the corporate branding coefficient is the largest and is positive, whereas the other two strategy coefficients (i.e., house of brands and mixed branding) are negative. Furthermore, the mixed branding strategy coefficient is the most negative.⁶ The relationships of branding strategy and Tobin's q are less pronounced when we include the interactions between the advertising variable and branding strategy dummy variables.

The estimated coefficients of the branding strategy variables (measured in the normalized Tobin's q values) in the model without interactions (M1A) are .32 for corporate branding, -.09 for house of brands, and -.41 for mixed

⁶In an analysis with a different sample of 75 firms, for which we use the COMPUSTAT data for advertising expenses, we find that the corporate branding strategy has the most positive effect on Tobin's q , and the order of the effects for the other two strategies is reversed. Thus, it seems that our result on corporate branding strategy is quite robust.

TABLE 4
Correlation Matrix for the Variables in Model M1

Means (Standard Deviation)	Variable	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1.38 (2.33)	1. Tobin's q*	1													
.11 (.12)	2. Operating margin*	.387 (.00)	1												
.029 (.14)	3. Leverage*	-.257 (.00)	.232 (.00)	1											
3 (3.85)	4. Focus*	-.056 (.20)	.146 (.00)	.194 (.00)	1										
.29 (.21)	5. Concentration index	-.215 (.00)	-.21 (.00)	.046 (.00)	.144 (.00)	1									
-.018 (.05)	6. R&D expenses/total assets*	.121 (.01)	-.4 (.00)	-.435 (.00)	-.08 (.07)	-.03 (.53)	1								
.014 (.02)	7. Advertising expenses/total assets	.095 (.03)	-.04 (.32)	-.016 (.72)	-.06 (.21)	.029 (.50)	.029 (.51)	1							
67.18 (43.79)	8. Age of firm	-.232 (.00)	.052 (.23)	.2 (.00)	.258 (.00)	.1 (.02)	-.31 (.00)	.14 (.00)	1						
1.69 (2.78)	9. Number of acquisitions	.195 (.00)	-.04 (.03)	.308 (.00)	.001 (.97)	-.09 (.03)	.035 (.43)	-.17 (.00)	-.13 (.00)	1					
.15 (.31)	10. Three-year compounded annual growth rate	.37 (.00)	-.08 (.06)	.182 (.00)	-.16 (.00)	-.16 (.00)	.031 (.47)	-.09 (.05)	-.38 (.00)	.098 (.02)	1				
-.096 (.94)	11. Corporate branding dummy	.254 (.00)	.095 (.03)	-.129 (.00)	-.11 (.01)	-.07 (.10)	.191 (.00)	-.2 (.00)	-.37 (.00)	-.13 (.00)	.224 (.00)	1			
-.38 (.67)	12. House-of-brands dummy	.23 (.00)	.181 (.00)	-.142 (.00)	.011 (.80)	.001 (.97)	.094 (.03)	-.03 (.54)	-.19 (.00)	.123 (.00)	.114 (.01)	.73 (.00)	1		
-.0055 (.02)	13. Corporate branding dummy × advertising/total assets	.03 (.49)	.009 (.83)	-.168 (.00)	-.02 (.67)	.004 (.97)	.038 (.39)	-.72 (.00)	-.27 (.00)	.127 (.00)	.175 (.00)	.51 (.00)	.42 (.00)	1	
-.0058 (.02)	14. House-of-brands dummy × advertising/total assets	.001 (.97)	.074 (.09)	-.131 (.00)	.048 (.27)	.085 (.05)	-.02 (.70)	-.55 (.00)	-.13 (.00)	.093 (.03)	.077 (.08)	.35 (.00)	.55 (.00)	.84 (.00)	1

*Indicates median-adjusted.

Notes: Two-tailed significance levels are shown in parentheses for correlations.

TABLE 5
Estimates for the Two Specifications of the Aggregate Model M1

	Conjecture on the Sign of the Coefficient	Model 1A: No Interactions		Model 1B: With Interactions	
Constant		.52	(2.04)	.60	(2.29)
Operating margin*	+	8.26	(10.23)	8.21	(10.07)
Leverage*	? (+/-)	-4.44	(-6.64)	-4.54	(-6.61)
Focus*	? (+/-)	.013	(.60)	.01	(.57)
Industry concentration	-	-.70	(-1.76)	-.64	(-1.58)
R&D expenditures/assets*	+	6.05	(3.09)	5.84	(2.94)
Advertising/assets	+	17.63	(4.57)	13.28	(2.20)
Age of firm	-	-.003	(-1.37)	-.003	(-1.41)
Number of acquisitions	-	.01	(.36)	.01	(.32)
Three-year compounded annual growth rate	+	1.69	(5.87)	1.69	(5.87)
Corporate branding dummy	+	.32	(2.36)	.26	(1.47)
House-of-brands dummy	-	-.09	(-.51)	.11	(.44)
Advertising × corporate branding dummy interaction		—		1.12	(.11)
Advertising × house-of-brands dummy interaction		—		-7.79	(-.92)
Number of firms		113		113	
Sample size		531		531	
Adjusted R ²		.393		.393	
F-ratio; d.f.; p-value		32.35; 11, 520; .000		27.40; 13, 518; .000	

*Indicates that variables are median-adjusted.
Notes: t-values are in parentheses.

branding.⁷ The coefficient of corporate branding is statistically significant, in support of H₁. However, the coefficient of house of brands, though negative, is not significant, which is not in support of H₂. However, when corrected for the sample selection bias with Heckman's (1979) two-step model, with the first step the selection of 113 companies, the revised estimates for the branding strategy dummy variables in Model M1A are somewhat lower but highly significant; the corrected values are .181 and -.052, with respective t-values of 5.12 and -4.23. Thus, we conclude that the data support H₁ and H₂.

When we introduced interactions between advertising and branding strategy variables in Model M1B, the estimates of the two branding strategy coefficients and interactions were not significant (even after we corrected for the selection bias). The data do not support H₃. However, the magnitudes of the interactions suggest that if a firm follows a corporate branding strategy, an increase in advertising expenditures increases Tobin's q, but that change is negative if it follows a house-of-brands strategy. A potential reason for this is that investors regard higher advertising expenditures under corporate branding as beneficial for a portfolio of brands with a common brand name; investors may consider such an increase under a house-of-brands strategy harmful (in our sample, a company that adopts the house-of-brands strategy spends an average of \$285 million on advertising, compared with an average of \$74 million for a company that adopts a corporate branding strategy).

⁷Our analysis assumes that the aggregate effects of the branding strategy are fixed because the strategies do not vary in the period of the data. We applied the Hausman-Taylor (1981) instrument variable method, which allows for a consistent estimate of the time-fixed strategy variables using the cross-sectional time-series nature of the data. Corporate brand coefficients were still the highest, and mixed branding coefficients the lowest.

Coefficients of control variables. The coefficients of most of the control variables (also shown in Table 5) are in the expected direction for both M1A and M1B of Model M1. All control variables are significant except for focus, industry concentration, age of firm, and number of acquisitions. It seems that the concentration of a firm on a small number of businesses has no influence on the firm's intangible value.

As might be expected, the growth rate coefficient is positive and significant, which reaffirms the forward-looking nature of the response variable (Tobin's q). In a similar manner, the coefficients of operating margin, advertising, and R&D expenditures are all positive and significant, as we expected.

The leverage variable has a negative coefficient and seems to be consistent with the ambiguity of its effect in the literature. McConnell and Servaes (1990), who analyzed data for 1976 and 1986, show a positive effect. Our analysis period (1996-2000) is characterized by much higher price-to-earnings ratios in the stock market. Thus, an explanation for our significant, negative finding is that the market values firms with a high Tobin's q more as a result of their high perceived future cash flows. The current cash flow for such firms is usually limited, and thus they cannot take on much debt, which results in lower leverage. This might explain the strong, negative correlation of leverage and Tobin's q. In addition, Smith and Watts (1992) find that firms with higher growth options have lower leverage, in support of our argument.

Firm-Specific Estimates

We now turn to Model M2, in which we allowed all specified regression coefficients to vary randomly around a mean value. Furthermore, we specified the two branding strategy parameters to be different for each firm. We estimated this

random-coefficient⁸ hierarchical Bayesian model using Markov chain Monte Carlo methods.⁹ We estimated a total of 261 parameters in this analysis; 90% of them passed Heideberger and Welch's (1983) stationarity test.¹⁰ The results shown in Table 6 are for the subset of iterations after convergence has been reached.

Fit. Using the average of the residual sum of squares across iterations, we computed a pseudo R² to examine the degree of fit. This pseudo R² is .655, which shows an excellent fit of the Bayesian model to the data. A comparison with the R² of .393 for Model M1A indicates that the aggregate-level Model M1 did not account for a considerable degree of heterogeneity among the sample firms.

Predictive validity. We reestimated the hierarchical Bayesian regression model for a sample of 418 (80%) observations, after we randomly deleted one observation for every firm. The estimates converged, and the results are comparable to those from the full model. We used the firm-level results to predict the value of the (median-adjusted) Tobin's q for the prediction set. The Pearson's correlation between the actual and predicted values is quite high ($r = .805, p = .01$). This analysis shows high predictive value of our firm-specific results.

Effects of branding strategies. The summary statistics of the effects of the branding strategies across the 113 firms, as estimated by Model M2, are shown in Table 7. Similar to the results in Model M1, the coefficient of corporate brand-

ing is the largest and is positive, followed by those of house of brands (second) and mixed branding (third and negative).

Figure 2 shows the means and the 2.5%–97.5% intervals for the 113 firm-specific estimates of the three branding strategy effects. Figure 2 attests to the existence of considerable variation among the sample of firms used in this study.

Effects of other variables. In Table 6, we show the overall parameter estimates and the standard errors of the posterior distributions for the control variables for Model M2. In general, the estimates correspond quite well with the Model M1 results for the control variables.

A way to visualize the impact of branding strategy on Tobin's q value is to calculate the predicted Tobin's q for a typical firm under the assumption that it follows each of the three branding strategies. For Model M2, the predicted average across the strategies is 1.34, which compares quite well with the actual average of 1.38 (shown in Table 4). However, these predictions vary by the type of branding strategy: 1.82 for corporate branding, 1.15 for house of brands, and 1.05 for mixed branding. Compared with the corporate branding strategy, the house-of-brands and mixed branding strategies show reductions in Tobin's q of 37% and 42%, respectively. It seems that investors indeed prefer the corporate branding strategy for a firm.

Inferred best strategies. We performed a similar analysis for all 113 firms and determined the best strategy for the firm to follow if its objective is to maximize the impact of its intangible value (Tobin's q). In Table 8, we compare the best strategies, based on Model M2, with the branding strategies manifest by the firms.

It seems that firms might be better off adopting either a corporate branding or a mixed branding strategy rather than a house-of-brands strategy if their objective is to increase intangible value. This analysis indicates that 39 (20 + 2 + 17) firms (or 35%) manifest the "best" branding strategy that maximizes Tobin's q (or the market value criterion). Furthermore, 50% (56 of 113) of firms might be better off using the corporate branding strategy if their objective is to maximize Tobin's q values.

Estimates for selected firms. Examining detailed estimates for various firms, we find that EMC Corporation, Dell Computers, and Microsoft have the highest corporate branding strategy coefficients; note that all three firms manifest a corporate branding strategy. In addition, the three firms have the most negative estimates for the mixed branding strategy, which seems to suggest that they are following an optimum strategy from the financial market perspective.

⁸We compared the OLS model (M1) with fixed effects with a model in which the brand strategy coefficients were random, and we found that the model with random coefficients provides a better fit (the chi-square value for the model comparison is 112, with 2 d.f.). This analysis provides some support for use of a random-coefficients Bayesian model to determine firm-specific effects.

⁹We use WinBugs (Spiegelhalter, Thomas, and Best 1999) for the estimation. We assumed diffuse and noninformative prior distributions for the parameters so that the data primarily determine the posterior distributions.

¹⁰In the Markov chain Monte Carlo iterations, we burned in 11,000 iterations and used the next 5000 iterations, thinned by 10, to test for convergence using Bayesian output analysis (Smith n.d.). We used the last 1000 iterations to report the results.

TABLE 6
Model M2 Results for Control Variables

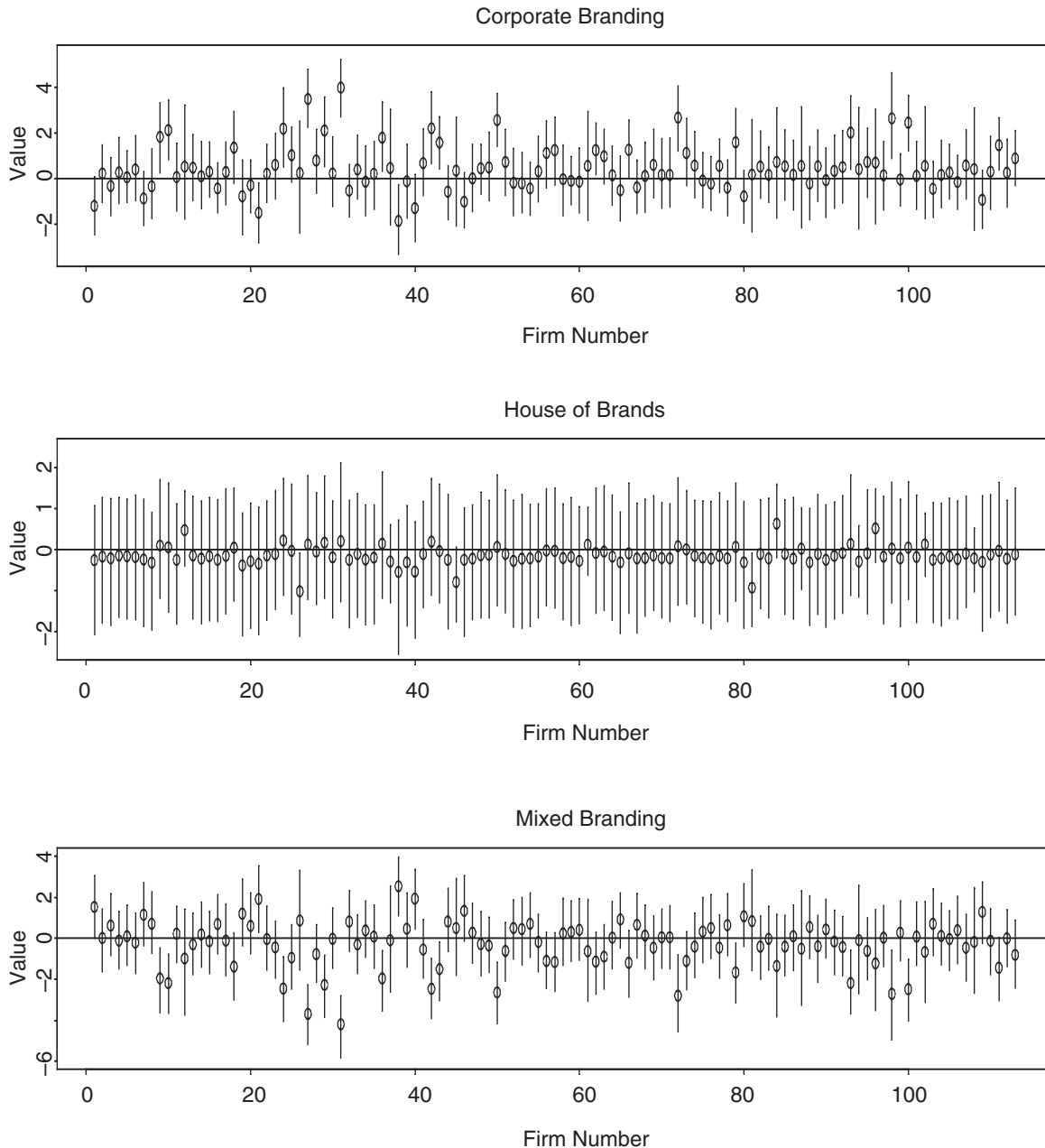
Variable	Mean	Pseudo t-Values
Operating margin*	7.840	(7.62)
Leverage*	-4.447	(-5.33)
Focus*	.037	(1.78)
Industry concentration	-.902	(-1.60)
R&D expenditures/assets*	.265	(.11)
Advertising/assets	19.920	(3.89)
Age of firm	-.006	(-1.76)
Number of acquisitions	.013	(.38)
Three-year compounded annual growth rate	.660	(1.70)

*Indicates that variables are median-adjusted.

TABLE 7
Summary Statistics of Branding Strategies

	Corporate Branding	House of Brands	Mixed Branding
Mean	.472	-.195	-.277
Standard deviation	.965	.242	1.14
Range	(-1.80, 3.96)	(-1.09, .63)	(-4.20, 2.53)

Figure 2
Firm-Level Estimates of Effects of Branding Strategy



Computer Associates, which follows a corporate strategy, has an estimated coefficient among the lowest for corporate branding but among the highest for mixed branding, which implies that investors may evaluate the firm more highly if it can implement a change in its branding strategy. We hasten to add that such a conjecture is speculative.

Most of the house-of-brands coefficients are not significant, except for PPG Industries and Darden Restaurants. Both firms currently follow the house-of-brands strategy, but the estimates for this strategy are the most negative for them, which implies that they might benefit from the investor perspective if they have the option of following a different strategy. The highest estimates for a mixed brand-

ing strategy are for The Gap and Gillette, both of which have the same manifest strategy.

Implications and Future Research Directions

Summary

This article reports the results of an empirical analysis to determine the relationship between a firm's branding strategy and its intangible value, as measured by Tobin's q . We controlled for nine predictors (i.e., focus, concentration index, operating margin, leverage, R&D expenditures, advertising expenditures, age of firm, acquisitions, and

TABLE 8
Inferred Best Strategies

Manifest Branding Strategy	Best Strategy for Improving Tobin's q (Inferred)			Total
	Corporate Branding	House of Brands	Mixed Branding	
Corporate branding	20	7	18	45
House of brands	6	2	4	12
Mixed branding	30	9	17	56
Total	56	18	39	113

growth rate) and industry grouping variables while estimating the impact of branding strategies on Tobin's q. To account for the interfirm variation in the measures we used in the study, we normalized five variables (i.e., Tobin's q, operating margin, leverage, focus, and R&D expenditures) by subtracting the median values of the firms' corresponding industry groups. We formulated two sets of models in this work and estimated one set by simple regression methods and the other by hierarchical Bayesian methods. The Bayesian methods enabled us to determine the impact of branding strategies at the firm level. In general, the results we obtained are consistent. Furthermore, the predictive validity of our second model is quite high.

In general, our results on the impact of the control variables are in line with what has been reported in the literature. This finding gives us confidence in interpreting the effects of branding strategies on the financial value of a firm.

The coefficient of the corporate branding strategy measured in normalized Tobin's q values is highest, followed by the house-of-brands strategy; the mixed branding coefficient is lowest. We find considerable stability in the order of effects of the three branding strategies. The effects of branding strategies become more pronounced when we include interactions between the type of branding strategy and advertising expenditures in the model. We also find that approximately 65% of the firms in our sample do not manifest the best strategy possible if their objective is to improve Tobin's q.

Discussion

Our primary result, that corporate branding is more positively related to the intangible firm value than are house of brands and mixed branding, may appear to be inconsistent with the concept of market segmentation, which should support implementation of a house-of-brands or mixed branding strategy. However, we recall that our dependent measure is an assessment by the financial community, specifically investors, of a firm's value. Although investors have increasingly come to acknowledge the financial value of brands, it can be presumed that they are not familiar with which brands constitute firms' brand portfolios. It is reasonable to assume that the financial community is more aware of corporate brands than of the individual brands of a firm that follows a house-of-brands strategy. Moreover, financial experts might not value house-of-brands strategies appropriately and might underestimate the potential benefits of a

differentiated branding approach for diverse target segments and products. In addition, from a risk management perspective, the investment community might underappreciate that a multitude of brands (i.e., a house-of-brands strategy) distributes risk over more brands, thus improving firms' financial risk profile. This effect does not seem to be reflected in the financial evaluation of a firm that pursues a house-of-brands strategy. The finding that financial valuations are not based solely on purely rational criteria is in line with Frieder and Subrahmanyam's (2002) finding about investors' stock decisions. They find that the perceived quality of brands has an influence on stock holding decisions. In addition, they point out that familiarity with brands influences investment decisions, and they observe a "home bias" (i.e., preference for domestic stocks).

We classified the 113 firms into three broad groups: 40 business-to-consumer (B2C) (mainly consumer goods companies), 33 business-to-business (B2B) (mainly industrial goods companies), and 30 mixed. We estimated Model M1 for the subgroups to determine whether there were any systematic differences among them. In general, a B2B firm has a few organizations as its customers. Furthermore, a B2B firm tends to build customer relationships at an organizational level. Accordingly, we conjectured that a B2B firm's customers depend on the name of the firm more than on a specific brand name as a guide in making purchase decisions. In a similar manner, a B2C firm devotes its resources (e.g., advertising) to create distinct positions for its brands under the house-of-brands strategy and attempts to differentiate its offering in a product category for the end users (consumers). Thus, we were interested in examining any differences across the broad categories. The effect of a corporate branding strategy was significant for B2C and B2B firms, and the coefficient was higher for B2B firms. Furthermore, the house-of-brands strategy effect was not significant for B2B firms, though it was significant and negative for B2C firms.

A firm's manifest branding strategy largely depends on various corporate decisions, such as mergers and acquisitions, global expansion, and the selection of which business fields to compete in (Laforet and Saunders 1999). Therefore, general recommendations to firms about the type of branding strategy cannot be derived from this research. Nevertheless, our study shows how different branding strategies are associated with different effects on the intangible firm value. Moreover, our analysis can assist analysts in computing the level of expenditures on advertising necessary to obtain a desired financial value for a firm with a given branding strategy.

Further Research

The Bayesian regression model we used in this study is quite versatile and is useful in estimating individual-level parameter estimates. Our approach can be applied to various marketing situations, particularly ones that estimate aggregate-level effects with replicated data on a sample of individual units. We show that it is possible to estimate effects (of marketing variables) at the individual unit level.

A related work by Hogan and colleagues (2002) suggests linking customer assets to a firm's financial perfor-

mance through the basic customer lifetime value model. In principle, branding strategies should increase the value of a firm's customer assets. However, no research has explored how different branding strategies affect customer assets. It can be conjectured that corporate branding strategy adds more value to customer assets because of its higher effectiveness in cross-selling.

We point out that our analysis is not free of limitations. For example, our sample of firms ($n = 113$) is not truly representative of the population of firms in the economy; however, as we have showed, it is a good subsample of the largest 500 firms. In some industries, there are only a few firms in our sample. Our analysis examines the level of the firm as a whole, whereas a firm may adopt detailed branding strategies for each of its business units and products. Furthermore, our coding of branding strategies is not as refined as we would have liked. A more refined brand strategy coding may involve multiple categories for mixed branding.

Our analysis considers competition effects only indirectly through the use of the concentration index. However, we do not account for the direct effects of competition. As a firm's competitor expands into other products and categories with a particular branding strategy, the firm almost necessarily adapts its own branding strategy to address any harmful effects on its own growth. This issue may have had a formative effect on the manifest branding strategies of

firms such as Procter & Gamble (versus Unilever) and Coke (versus Pepsi). Although we cannot address the issue of competitive effects in our analysis because we lack appropriate data, we believe that it is important for further research.¹¹

Our empirical work is necessarily correlational because the branding strategy codes did not change over the period of analysis. A topic for further research is to examine the interdependence of the branding strategy and firm's intangible value; this would require a much longer time series of data and appropriate econometric methods (Granger 1969).

A natural extension of this work is to analyze the effect of a branding strategy with data at the business unit level. Although the current accounting systems do not allow for such an analysis, we expect that future systems will be more disaggregate.

Finally, it is critical to replicate this analysis and test whether our results hold for other samples of U.S. and international firms. Our analysis can be extended to include other descriptors of firms and for longer periods. Furthermore, an examination of the financial impact of branding strategies at the level of individual brands or strategic business units, at least for a few companies, would be beneficial; however, we realize that such an exercise is quite difficult because of the paucity of financial data at those levels.

¹¹We thank an anonymous reviewer for pointing out this issue.

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