Title
Corporate brand value and cash holdings

Journal
Journal of Brand Management, 27(4)

ISSN
1350-231X

Authors
Bharadwaj, Neeraj
Hanssens, Dominique M
Rao, Ramesh KS

Publication Date
2020-07-01

DOI
10.1057/s41262-020-00188-5

Peer reviewed

Journal of Brand Management
https://doi.org/10.1057/s41262-020-00188-5

ORIGINAL ARTICLE

Corporate brand value and cash holdings

Neeraj Bharadwaj[1] · **Dominique M. Hanssens**[2] · **Ramesh K. S. Rao**[3]

Revised: 27 August 2019

Abstract
This research devotes theoretical and empirical attention to the understudied relationship between corporate brand value and cash holdings. We draw on existing firm valuation theorizing at the marketing–finance interface to propose that branding can alter the probability distribution of the firm's revenues, lower potential operating shortfalls (negative operating earnings), and thereby reduce the firm's cash holdings. The negative corporate brand value–cash holdings relationship is empirically tested using Brand Finance's brand valuation metric as the predictor. Based on a pooled cross-section time-series design of up to 115 firms across 10 years, we find: that (1) support for the predicted negative association between brand value and cash holdings and (2) that the long-term cash holdings elasticity of brand value is between −0.16 and −0.22. Interestingly, these results are not replicated when using a traditional consumer-based brand equity measure. This study informs the debate on whether and how brand assets can impact firm cash holdings, reaffirms that results are sensitive to the operationalization of brand assets, and recognizes a new role for brands—as a "downside risk" (not variance) management tool for the top management team. An overarching implication of this research is that brands should be viewed as a firm-wide strategic asset with a sphere of influence that transcends the marketing function.

Keywords Brand equity · Brand value · Cash holdings · Intangible assets · Marketing strategy

Introduction

A widespread belief espoused by executives and academics alike is that corporate brand assets are a pivotal determinant of firm financial performance (Hanssens and Pauwels 2016; Knowles 2008; Sinclair and Keller 2014). In business circles, it is not uncommon to see such assertions as the "brand is a company's most important asset" (Barron 2017, p. 3), and that brands contribute roughly 30 percent of the market valuation of firms in the S&P 500 (The Economist 2014). Similar sentiments also appear in academic research, where a comprehensive synthesis by one set of experts proclaims that "brands are one of the most valuable intangible assets that firms have" (Keller and Lehmann 2006, p. 740).

Although the association between corporate brand assets and firm performance is well-established (e.g., Aaker and Jacobson 1994; Johansson et al. 2012; Rahman et al. 2019), a topic that has received limited attention is the influence of corporate brand assets on firms' cash holdings. In the scant literature on this topic, there are two contrasting perspectives. On one side of the current debate are those who argue that branding *cannot* impact firms' cash holdings. The reason is that marketing events are not believed to influence non-operating assets (see, e.g., Skiera et al. 2017). On the other side are those who advocate a negative association. Larkin (2013), for instance, argues—in the finance literature—that brand stature (i.e., a latent construct consisting of brand knowledge and esteem) reduces the *variance* of the firm's cash flows and thereby its cash holdings. This contrasts with the prior literature in operations management (Rao and Gutierrez 2010) and corporate finance (Rao 2015) that provides theoretical arguments that imply that cash holdings depend not on the variance of cash flows but on the firm's potential for operating losses.

✉ Neeraj Bharadwaj
nbharadwaj@utk.edu

[1] Haslam College of Business, University of Tennessee, 333 Stokely Management Center, 916 Volunteer Boulevard, Knoxville, TN 37996-0530, USA

[2] Anderson School of Management, UCLA, 110 Westwood Plaza, Suite B-417, Los Angeles, CA 90095-1481, USA

[3] McCombs School of Business, University of Texas at Austin, 2110 Speedway B6000, Austin, TX 78705, USA

Published online: 02 March 2020

This current debate regarding the corporate brand assets–cash holdings relationship can be reconciled by drawing on research at the marketing–finance interface. Specifically, an earlier conceptual article by Rao and Bharadwaj (2008) traced the economic mechanisms via which marketing activity can influence firm performance and advanced that: (i) marketing can affect the firm's potential for operating losses and, in turn, its optimal cash requirement (i.e., corporate cash holdings) and (ii) the cash requirement, coupled with the firm's expected operating earnings determines the investors' expected cash flows and the stock price. The important point to note is that the link between a marketing initiative and the firm's cash holdings is *not* a variance-driven argument (as in Larkin 2013). It is, as we subsequently discuss, a "rightward shift" argument based on managing the "downside risk." Specifically, we argue that branding can induce a rightward shift in the probability distribution of a firm's cash flows, lower the potential for operating losses, and thereby minimize the firm's cash needs.

The article proceeds as follows. We first hypothesize that a firm with a stronger brand will need to maintain less cash (in relation to a less strong brand). We then detail the: financial-based (monetary) brand value metric from Brand Finance that is used for the empirical testing, consumer-based (perceptual) brand equity metric from Brand Asset Valuator (BAV) employed for replication, and financial variables.[1] Subsequently, we explain that the empirical estimations are carried out on a pooled cross-section time-series design of up to 115 firms across a range of industries between 2007 and 2016. In the penultimate section, we report that the results support the hypothesized negative association between brand value and cash holdings, and the long-term cash holdings elasticity of brand value is in the range −0.16 to −0.22. Lastly, we discuss the contributions to theory and practice. In brief, the results extend the literature in three main ways. First, this research informs the debate on whether and how brand assets can impact a firm's cash holdings. Skiera et al. (2017) argue that marketing *cannot* impact non-operating assets (which they define to include cash holdings). This view restricts the choice of the financial response variables in marketing impact studies and limits the scope of marketing as a value driver in organizations. Our results support a negative association between brand value and cash holdings reported—but not theoretically substantiated—in a prior study (Larkin 2013). Second, this study can reduce the potential for confusion on the unit of analysis when employing consumer-based brand equity measures to predict financial outcomes. Specifically, one can utilize monobrand firms to predict firm-level financial performance. When firms follow other branding strategies (e.g., mixed brands, house of brands); however, researchers often use a product-market level brand to predict enterprise-level financial outcomes. Earlier writings cautioned against this misalignment in the unit of analysis because the results can mask whether it is either an enterprise-level or a product-market level measure that is shaping the enterprise-level financial outcomes (Madden et al. 2006). Third, we underscore the importance of relying on a priori theorizing because the results in brand equity studies can be sensitive to the operational measure of brand assets. We find support for our hypothesis when using a monetary brand valuation to operationalize brand assets, that is not the case with the consumer-based brand asset metric. For managers, this research makes branding more salient to the strategic dialogue, which is needed because executives have yet to embrace "brand equity as a strategic asset" (Aaker 2008, p. 44) and often view marketing as "a tactical management function" (p. 53). The results reveal a new role for branding—as a risk management tool for managing downside risk (not variance) to reduce the firm's capital (cash) requirements that the CMO can introduce to the C-suite (i.e., such executives on the firm's top management team as the Chief Executive Officer, Chief Financial Officer, Chief Marketing Officer, and Chief Supply Chain Officer who make pivotal decisions about the strategic direction of the firm—see, e.g., Nath and Bharadwaj 2020). Considering the importance of cash management, an overarching implication is that brands should be viewed as a firm-wide strategic asset for managing working capital, with a sphere of influence that transcends the marketing function.

Conceptual background and hypotheses

Corporate brand value represents "a macro, financial-oriented view of brand equity" (Keller 2016, p. 3). This perspective maintains that the corporate brand can be viewed as an asset; that is, a resource that is expected to provide future economic benefits to the firm (Madden et al. 2006). Specifically, an asset's dollar value is determined by the magnitude and risk of the asset's cash flows. To understand the future economic benefits of branding, it is necessary to trace the link between branding and expected cash flows.

[1] Brand equity can be expressed as a monetary estimate or customer mindset metric. In writings adopting the financial-based perspective, the focal stakeholder is the firm and brand equity refers to the financial value accruing to the brand owner—that is, "the price it brings or could bring in the financial market…and this price reflects expectations about the discounted value of future cash flows" (Keller and Lehmann 2006, p. 745). In customer-based brand equity (CBBE) studies, brand equity is construed as a customer mindset metric that captures "the differential effect of brand knowledge on consumer response to the marketing of the brand" (Keller 1993, p. 2).

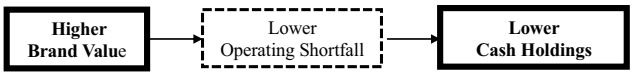

Fig. 1 Theorizing the path from brand value to cash holdings

Tracing the outcomes of brand assets

Earlier research at the marketing–finance interface explicates the link between marketing and firm value. We follow the conceptualization in Rao and Bharadwaj (2008)—which builds on the firm (stock) valuation theory in finance. Those authors note that unless marketers can accommodate the uncertainty associated with future outcomes, their use of discounted cash flow methods from finance is not entirely meaningful. We draw on that earlier thinking to explain the probability distribution of sales (not just the mean of future sales) associated with branding.

Rao and Bharadwaj's (2008) theorizing would suggest that the cash flow implications of branding stem from revenue streams under alternative scenarios. This requires specifying demand in each possible state of the world that may materialize the next period. For ease of illustration, we focus on two possible states: an upstate (good—positive operating income) and a downstate (bad—negative operating income).

Assume, for purposes of exposition that the upstate and downstate (firm-level concepts) are positively correlated with good and bad economic states (economy-wide concept). In good economic states, sellers are likely to benefit from the increased spending power available to consumers (Kamakura and Du 2012). Existing consumers may buy more from firms and new customers may be enticed to begin purchasing their offerings. Thus, it is plausible that a firm with a stronger brand will garner more demand and have greater operating earnings (net revenues less operating expenses like wages and energy) in the upstate relative to when it has achieved less branding success (Dekimpe and Deleersnyder 2017). In bad economic times, sellers are likely to see an adverse impact on sales due to the decreased spending power available to consumers. Earlier research suggests, however, that firms with stronger brands are insulated on the demand front because of the stronger loyalty and commitment of consumers (Rego et al. 2009). Thus, a firm with a stronger brand is also likely to generate higher net revenues in a downstate than when it is less strong. The revenues from the respective states serve as an input to calculate the probability distribution of sales for a given brand.[2]

The existing theory permits us to advance that brand assets can drive a "rightward shift" in the probability distribution of revenues. In other words, a firm with a stronger brand can generate higher revenues than a firm that has achieved less branding success, in both the upstate and the downstate. Thus, the firm with a stronger brand will have a lower operating loss in the downstate than one that is less strong, which means that a strong brand can help a firm to lower its downside risk, and as we describe next, can lower cash holdings (see Fig. 1).

Hypothesizing the brand assets–cash holdings linkage in firm valuation theory

The ensuing discussion hinges on the premise that a stronger brand enhances revenue (either through higher demand, or higher price premiums, or both) in both good and bad economic states. Thus, branding induces a rightward shift in the probability distribution of a firm's operating earnings. Branding has a favorable influence on the firm's cash requirements (i.e., corporate cash holdings). In a world with operating losses, it has been shown that firms will optimally hold cash on their balance sheets (Rao and Gutierrez 2010) in an amount that depends on its maximum potential shortfall (operating loss). The rightward shift (in the probability distribution of revenues) due to branding lowers the firm's potential losses in the bad state, thus also reducing the potential shortfall and hence the firm's cash needs. An implication is that, *ceteris paribus*, a firm with a stronger brand will need less cash than when its brand is less strong. This theorizing leads us to hypothesize that brand assets (which are operationalized as brand value) can impact the firm's cash holdings as follows:

H_1 Brand value lowers the firm's cash (working capital) needs.

It must be underscored that our theorizing is supportive of prior research showing that brand equity can increase the firm's value (e.g., Rahman et al. 2019). To see why, recognize that with cash, the firm's cash flows are not just its operating earnings (i.e., sales revenue less operating expense). It is the firm's operating earnings plus the balance sheet cash (and any interest earned). Assuming that the rightward shift is of sufficient magnitude, it follows that branding can

[2] The probability assigned to each firm-state (upstate and downstate) and sales revenues in each of these states yields the probability distribution of sales.

increase the firm's expected cash flows.[3,4] This, in turn, implies a higher firm value.[5]

Data

Description of the financial-based brand value predictor variable

Brand Finance[6] is a brand valuation agency that uses the *royalty relief* method, which isolates the brand name to determine the added value that accrues to the firm from possessing the brand. They assume that the focal firm does not currently own its brand, and brand value represents the amount that the focal firm would have to pay to another entity to license its own brand. Take, for instance, Apple. In 2016, Brand Finance estimated that Apple would have had to pay another firm $145.9 billion to acquire the rights to place the Apple name and logo on its offerings.

The use of Brand Finance's estimates to operationalize brand assets is justifiable for six main reasons. First, the independent agency's brand value metric maintains that a brand is an intangible asset. Specifically, it is consistent with the International Organization for Standardization (ISO) 10,668 definition of brand: "a marketing-related intangible asset including, but not limited to, names, terms, signs, symbols, logos, and designs, or a combination of these, creating distinctive images and associations in the minds of stakeholders, thereby generating economic benefits/value" (Brand Finance 2016). Second, the unit of analysis is the firm, which permits evaluating the association of brand equity with financial variables at the enterprise-level (Madden et al. 2006). This is in contrast to the approach taken in Larkin (2013), who either uses one brand or the average across only several brands to serve as a proxy for the entire firm's brand value when the firm pursues a "house of brands" or "mixed brands" strategy. She then links that product-market level brand value metric to the firm's financial metrics. Third, brand value is expressed in a single number in a brand valuation league table, which allows for a comparison of the effectiveness of a given firm's portfolio of marketing policies in relation to other firms and based on the rank ordering of brands (Simon and Sullivan 1993). Fourth, the valuation is a broader assessment that takes into consideration not only customer mindset and behavioral metrics (captured via a survey), but also legal analysis (trademark and intellectual property review) and financial analysis (valuation modeling and opinion) (Haigh 2012). This is desirable because brand value measures should be able to capture brand extendibility (Ailawadi et al. 2003). Fifth, it is not part and parcel of the focal outcome studied (i.e., cash holdings); rather, it is a distinct measure of how much a firm would have to pay to another entity to license the brand. This makes it exogenous from the response variables in this study. Lastly, the brand value agency's league table includes brands owned by a large number of firms across a range of categories, providing a broad sample for generalizability. The Brand Finance brand values in our database average $11.1 billion, with a median of $6 billion and standard deviation of $13.4 billion.[7]

Description of a consumer-based brand perception predictor variable and financial outcomes

To also carry out the empirical testing with a pure consumer-based perceptual measure, we follow Larkin (2013) who studies the association between brand stature and a firm's cash holdings. To operationalize her independent variable, she uses a latent construct consisting of two components of Young and Rubicam's Brand Asset Valuator (BAV) model: knowledge (i.e., a single item that taps into how familiar

[3] The cash flows in any state are net revenue less operating expenses plus the recapture of the balance sheet cash with interest. Since the firm has no shortfalls in the good state, all of the available cash flow accrues to the investors. However, in the downstate they get zero. The reason is that the firm, irrespective of whether it has a strong, recognized brand or an unknown brand, will hold just enough cash to cover the shortfall. That is, the branded firm's cash flows are higher than the unbranded firm's cash flows in the upstate but in the downstate the firm's cash flows are zero irrespective of whether the firm is branded or not.

[4] Branding building does not always require additional spending. It can, for instance, result from earned media (e.g., user-generated social media posts) or an updated messaging strategy. Our empirical evidence reported later supports the view that brand value is not associated with increased spending.

[5] A rightward shift can change the firm's beta and hence the discount rate for valuing the cash flows. However, this does not happen in the binomial analysis employed herein. In the two-state setting in this paper, the stock's systematic risk does not change since the upstate cash flows increase with branding and the downstate cash flows remain at zero (see previous footnote). For a proof of why the firm's beta is unaffected, see Rao and Stevens (2007, last result on page 69). In a multi-state world the systematic risk and hence the discount rate can change and additional parametric restriction will be necessary to obtain easily interpretable results.

[6] We are indebted to Jonathan Knowles for making the brand valuation data available. A detailed description of the seven-step Brand Finance approach to monetary brand valuation may be found in "Appendix 1".

[7] We note that authors investigating financial-based brand equity often use Interbrand data (e.g., Barth et al. 1998; Madden et al. 2006; Rahman et al. 2019), which is based on the "incremental cash flow" method. The "incremental cash flow" approach tends to yield higher brand valuations than the "royalty relief method" as the former takes future earnings into consideration. For instance, in 2016 Apple received a 22% higher brand valuation from *Interbrand* ($178.1 billion) than from *Brand Finance* ($145.9 billion).

Table 1 Univariate statistics

Variable	Description	Mean	Median	Max	Min	SD
Brand value[a]	Brand value is the value a company would be willing to pay to license its brand if it did not own it. This figure is obtained from Brand Finance data (please "Appendix 1" for details)	11,150	6008	145,918	1372	13,405
Brand stature	Brand stature is the product of two brand pillars: knowledge (level of familiarity that consumers have with the brand) and esteem (perception of the brand's quality and respect). The metric is standardized for ease of interpretation. This construct is used by Larkin (2013), and is from BAV	3.039	2.654	9.674	0.168	1.966
Cash[a]	Total cash (COMPUSTAT Abbreviation CHE) includes, but is not limited to, cash in escrow (unless legally restricted), good faith and clearing house deposits for brokerage firms, government and other marketable securities, letters of credit, margin deposits on commodity futures contracts, time, demand and certificates of deposit, the total of a bank's currency and coin plus its reserves with the Federal Reserve Bank and balances with other banks, and restricted cash	7107	2841	113,240	2	12,880
Sales growth	The growth in a firm's sales revenues (COMPUSTAT Abbreviation SALE) is measured as (firm sales in year t minus sales in year $t-1$)/(sales in year $t-1$)	0.050	0.038	1.98	− 1	0.187
Total assets[a]	Total assets represent the firm's total assets (COMPUSTAT Abbreviation AT)	55,985	31,518	797,769	721	84,283
Capital expenditures	Capital expenditures (COMPUSTAT Abbreviation CAPX) are the funds used for additions to property, plant, and equipment, excluding amounts arising from acquisitions (for example, fixed assets of purchased companies). This is a scaled measure calculated as CAPX/AT	0.047	0.036	0.620	0	0.055
Market capitalization[a]	Market "cap" is common shares outstanding (COMPUSTAT Abbreviation CSHO) multiplied by stock price (at end of fiscal year) (COMPUSTAT Abbreviation PRCC_F)	60,192	29,495	626,550	0.00	81,970
Debt[a]	Debt (COMPUSTAT Abbreviation LT) is the sum of current liabilities, deferred taxes and investment tax credit, other liabilities, and long-term debt	35,653	18,596	684,157	87	62,794
Market-to-book	This is calculated as Market cap/Book value of equity	1.470	1.159	10.776	0.000002	1.190
Leverage	This is calculated as Debt/(Debt + Equity)	0.628	0.612	1.590	0.089	0.212

[a]$ millions

consumers are with the brand) and esteem (i.e., four items that assess how consumers regard the brand).

To operationalize cash, we use COMPUSTAT data to capture the firm's total cash. This item represents cash and all securities readily transferable to cash as listed in the Current Assets section. As shown in Table 1, the mean cash holdings of the firms in our dataset are approximately $7 billion, with a median of $2.8 billion and a standard deviation of $13 billion.

Methodology

Sample

The initial sample included all US public, non-utility firms with brand valuations between 2007 and 2016. Consistent with prior research (e.g., Bharadwaj et al. 2011; Mizik and Jacobson 2008; Shankar et al. 2008), we include only "monobrand" firms (i.e., firms with a single prominent brand) as the unit of analysis is the firm. We removed privately held companies as the secondary financial data for our analysis are not available. Also, we removed utilities, financial institutions, and insurance companies as those firms operate in highly regulated markets, making their capital and risk requirements atypical. This left 115 firms available for analysis, for a maximum sample size of 1150 observations. The firms and their Brand Finance brand value-to-firm-value ratios, which average 26%, appear in Table 2. We also obtain the well-known consumer-based brand stature data from BAV for this set of firms. There are 107 firms in common when matching the datasets.

Table 2 Ratio of a firm's *Brand Finance* brand value measure to firm's market capitalization

Parent company	Mean (%)	Parent company	Mean (%)
3M	13.3	Dollar General	19.1
Abbott Labs	4.5	eBay	20.7
Activision Blizzard	19.5	Electronic Arts	28.2
Adobe	13.2	Eli Lilly	5.8
Aetna	18.9	EMC	10.7
Amazon	22.3	Emerson Electric	10.2
American Airlines	141.0	Estee Lauder	29.0
Apple	15.0	Exxon Mobil	3.9
AT&T	17.1	Facebook	8.2
AutoZone	20.6	FedEx	32.5
Avon	112.6	Ford	56.4
Bed Bath & Beyond	24.6	Gap	31.7
Best Buy	48.7	General Dynamics	10.0
Black and Decker	40.8	General Electric	15.8
Boeing	14.9	Goodyear	63.5
C. H. Robinson	24.3	Google	19.6
Campbell	18.5	Harley Davidson	43.6
Caterpillar	15.5	Heinz	32.1
CBS	33.2	Hershey	18.1
CenturyLink	31.4	Hilton	28.3
Chevron	7.4	Home Depot	25.8
Cigna	24.1	Honeywell	11.7
Cisco	12.1	HP	42.0
Coca-Cola	23.3	IBM	22.1
Comcast	16.7	Intel	17.0
ConocoPhillips	6.6	John Deere	13.6
Costco	19.7	Johnson & Johnson	4.1
CSX Corporation	11.4	Johnson Controls	17.4
CVS	18.6	Kellogg's	39.0
Dell	58.1	Kimberly-Clark	13.4
Delta	21.9	Kohl's	34.1
DirecTV	20.0	Kraft	8.4
Dish Network	19.0	Kroger	28.2
Disney	24.2	Lockheed Martin	8.5
Lowe's	24.3	Starbucks	26.0
Macy's	57.3	Symantec	16.5
Marriott	25.4	Sysco	22.8
MasterCard	7.8	Target	40.4
McDonald's	31.2	Texas Instruments	10.5
McKesson	12.3	Tiffany & Co.	46.30
Medtronic	8.2	Time Warner	25.6
Merck	3.9	Time Warner Cable	23.8
Microsoft	17.0	Twitter	23.1
Nike	39.6	Union Pacific	8.8
Nordstrom	53.0	United Airlines	55.9
Oracle	10.7	UnitedHealth	13.8
PayPal	19.8	UPS	21.4
Pepsi	16.6	Valero	13.0
Pfizer	2.6	Verizon	24.0
Priceline	7.2	VISA	7.2
Qualcomm	3.6	Walgreens	27.2
QVC	55.8	Walmart	20.1
Ralph Lauren	36.4	Wellpoint	16.8
Raytheon	16.1	Whirlpool	55.1
Safeway	63.4	Whole Foods	26.7
Sears	63.2	Xerox	36.6
Sprint	39.5	Yahoo!	21.8
Staples	33.1		

Research design and model formulation

The respective datasets allow for the testing of our research hypotheses using a dynamic panel design, i.e., time-series observations for a relatively large cross section of firms. This design allows us to test the over-time impact of changes in brand valuation on working capital (cash). The cross-sectional nature of the database makes it important to control for firm-specific factors that are known to impact the dependent variables, in particular firm size and firm demographics. Specifically, we estimate the following test equation, in which the variables are expressed in logarithms:[8]

$$\text{Cash}_{it}/\text{Total Assets}_{it} = c_{i1} + \gamma_1 \text{BrandValue}_{i,t} + \Sigma_j \delta_j \text{Controls}_{i,t} + u_{it}/(1 - \lambda L)$$

here L is the lag operator and λ is a first-order residual correlation coefficient that captures any remaining temporal dependence in the dependent variable. The model is estimated by panel least squares, allowing unique cross-section intercepts c_{i1} that capture firm-specific effects. The model residuals u_{it} are white noise with a normal distribution.

Firm size effects are incorporated through the Total Assets variables, which is used as a normalizing variable in the cash equation. Additional firm-specific effects on working capital that are not already captured by the intercepts (i.e., time-varying effects) are included through several control variables that have been tested in prior literature (see, e.g., Ghaly et al. 2017; Harford et al. 2014; Kulchania and Thomas 2017). These control variables, along with the expected direction of their impact on cash holdings include:

- The ratio of capital expenditures to total assets (anticipated negative effect).

[8] Some of the control variables in the working capital equation could not meaningfully be transformed to logarithms as they contain many negative values. These were measured in levels in the model.

Table 3 Econometric estimates (panel least squares)

Variable	Brand finance model	BAV model	Combined model
C	− 2.00	− 2.07	− 1.61
	(− 2.83)***	(− 10.47)***	(− 2.22)**
Brand value	− 0.130		− 0.14
	(− 2.23)**		(− 2.33)**
Brand stature		− 0.02	− 0.19
		(− 0.16)	(− 1.19)
Capital expenditures (lag)	− 0.24	− 0.20	− 0.23
	(− 2.54)**	(− 2.55)**	(− 2.39)**
Sales growth	− 0.25	− 0.11	− 0.18
	(− 1.49)**	(− 1.02)	(− 1.25)
Leverage	− 0.28	− 0.41	− 0.28
	(− 2.25)**	(− 3.59)***	(− 1.95)*
AR(1)	0.17	0.24	0.19
	(2.84)***	(6.96)***	(4.64)***
Firms in sample	115	107	103
R^2	.88	.87	.88
F	35.18	40.77	34.01

*$p < .10$; **$p < .05$; ***$p < .01$

All variables measured in logarithms, except sales growth

Fixed-effects estimates are not reported

- The company's leverage ratio (anticipated negative effect)
- Sales growth: measured as the percent change in sales from year $(t-1)$ to year t (anticipated negative effect).

A few other controls reported in previous literature were initially included, but proved not to add meaningful explanatory power to the model and were dropped from the reported results. These include: dividend payments, net security issuance, the ratio of acquisitions to total assets, relative research and development spending, industry growth and firm and industry cash flow volatility.

As shown in "Appendix 1", one of the components of the Brand Finance metric is anticipated revenue due to the brand (Steps 5 and 6). This component could possibly induce an endogeneity problem in the cash equation. For example, if the firm is fortunate to operate in an economic sector that is experiencing growth, its revenues could increase, along with its cash position (and vice versa for a deteriorating economic outlook for the sector). We can eliminate such possible endogeneity by regressing brand value against current and past firm revenues and using the residuals as an alternative metric. Doing so did not change our results' interpretation. Various additional econometric tests were performed to ensure the stability of our results.[9]

The dynamic effects in the model are limited to 1-year-lagged relationships. This was verified by conducting higher-order dynamic tests and concluding that no lagged effects past year one are significant.[10] In addition, the brand value effect was replicated using a lagged brand value metric (BV($t-1$)) in the cash equation, which avoids a potential endogeneity problem. The test results were nearly identical to the reported findings. All models were estimated and tested with a Marquardt nonlinear least-squares algorithm, using the Eviews version 10+ econometric software package.

Results

The econometric results are summarized in Table 3, with the exception of the firm-specific intercepts. While these intercepts explain the bulk of the variance in the dependent variable, they have no bearing on our research hypotheses. Overall, the results with the Brand Finance measure support

[9] We are grateful to both reviewers for making several useful recommendations in this regard, and the suggestion that our econometric result in and of itself does not imply causation, just association.

[10] Note that, since the model includes a first-order autoregressive disturbance term, the implied dynamic effect is longer than 1 year. The autoregressive parameter λ may be interpreted as the fraction of the short-term impact that carries over in subsequent years.

our hypothesis around the negative association of brand value and cash holdings. This effect (statistically significant at $p < .01$) implies that the long-term brand value–cash holdings elasticity is between −0.16 [= −.13/(1–.17)] and −0.22 [= −.178/(1–.175)]. That is, a 10% improvement in brand value results in a 2% reduction in cash holdings. Considering that the monetary brand valuations—as reported by Brand Finance—can change significantly over a time span of a few years, our estimates imply that their impact on our financial metrics is tangible. For example, Boeing's brand valuation rose by about 65 percent between 2011 and 2015 (from $9.2B to $15.2B), while that of Hewlett-Packard (HP) dropped by about 32% over the same time period (from $26.8B to $18.1B).

A few highly notable case studies in our database illustrate our econometric results. For example, after several years of stable brand valuations, Nike experienced a sharp increase in brand value in the 2-year period 2014–2015 relative to the two prior years (from $16.8B to $22.5B). Its cash ratios decreased from 31 to 26% over the same time span. Similarly, Starbucks' brand value more than doubled in the 2-year period 2015–2016 relative to the two prior years (from $9.3B to $21.5B), and its cash ratios fell from 23 to 14% over the same time span.

Since not all 115 firms have continuously available brand value data for 10 years, we conducted *robustness tests* on the reported findings by eliminating firms with fewer than 5 and 8 time-series observations, respectively. This resulted in models with 102 and 69 firms in the sample, respectively. The short-run estimates of brand value impact on cash ratios were not meaningfully affected, while retaining their statistical significance levels. We conclude that our results are generalizable to different temporal and cross-sectional samples.

Discussion

The primary objective of this research is to devote theoretical and empirical attention to the understudied relationship between corporate brand value and cash holdings. To this end, we draw on existing firm valuation theory to develop that branding is a means by which a firm can alter the probability distribution of the firm's revenues, reduce its operating shortfall (negative operating earnings) risk in the downstate, and increase the firm's expected cash flows. The resulting hypothesized linkage between brand value and cash holdings is tested first using Brand Finance's brand valuation metric as the predictor, and then the analysis is replicated using a traditional consumer-based brand equity measure. We describe the three main theoretical contributions in turn, and subsequently identify implications for managers and future research.

Theoretical contributions

The first contribution of this research is that it informs the debate on whether and how branding can impact a firm's cash holdings. The received view in empirical research at the marketing–finance interface is that marketing affects only the operating part of the business "but not non-operating assets and debt" (operating assets include cash in Skiera et al. 2017, p. 16). In contrast, a study in the finance literature (Larkin 2013) proposes a negative relation (but does not fully detail the mechanism via which her consumer-based brand stature measure (from BAV) influences cash holdings. Our study draws on Rao and Bharadwaj's (2008) theorizing to provide justification for the impact of brand value on the firm's cash holdings. The mechanism can be described as follows: a stronger brand enhances revenue (either through higher demand, or higher price premiums, or both). Branding, by increasing the firm's net revenues in the worst-possible outcome (downstate), reduces the risk of a financial shortfall and, therefore, lowers the firm's cash requirements. Some of this cash can be expected to be recouped next period (in states where the firms net operating earnings are nonnegative).[11] To the extent that branding improves revenues significantly, it can also improve the firm's expected cash flows (earnings plus any unused cash). Thus, the empirical results help dispel the prevailing view that stronger brands cannot lower their firm's working capital requirements. Furthermore, the theorizing that is grounded in firm valuation sheds deeper insight into the mechanism for why this result should be expected.

The second contribution of this research is that it provides important insight regarding the unit of analysis when using a consumer-based brand equity measure to predict a firm-level financial outcome. The potential for confusion can be explained in the context of our hypothesis. Whereas Larkin (2013) reports a significant negative association between brand value and cash holding, we do not find a significant effect when using BAV's brand stature measure as the predictor (see the results in Table 3). Our explanation for the nonsignificant finding is that Larkin claims that corporate brands represent only a small portion of her total sample; thus, we believe that the results from firms following other branding strategies (e.g., mixed brands, house of brands) are likely concealing the results stemming from only the mono-brand firms in her study. Earlier researchers had cautioned against this misalignment in the unit of analysis because

[11] Our additional econometric analysis evaluating the link between marketing costs (operationalized as SG&A) and brand value supports that a stronger brand does *not* necessitate higher marketing spending. We thank an anonymous reviewer for suggesting that we elaborate on marketing expenses.

the results can mask whether it is either the enterprise-level brand or a product-market level brand that is shaping the enterprise-level financial outcomes (Madden et al. 2006). We thereby recommend that future studies utilizing a product-market, consumer-based brand asset to predict firm-level financial outcomes include a more detailed explanation of the unit of analysis.

The third contribution is that it reaffirms that the results from brand equity studies can be sensitive to the operationalization of brand assets (Johansson et al. 2012). The cash model in Table 3 run with the Brand Finance data supports our significant, negative prediction, yet the BAV model fails to demonstrate a significant effect. These results also hold when estimating a combined model shown in the last column in Table 3.

We attribute the different results obtained in our study to the domain of the respective measures. The CBBE metric focuses on the front end of the customer purchase decision journey (i.e., brand stature is a latent construct consisting of two components of the BAV model: knowledge and esteem). This perceptual measure takes into account the brand's level of awareness and the regard with which it is held by consumers. The Brand Finance metric, on the other hand, is a more comprehensive measure that incorporates not only consumer perceptions, but also market and risk criteria that capture the differential responses from customers (e.g., purchasing greater quantities, paying price premiums) resulting from the associations that they possess about the brand. Thus, we follow Ailawadi et al. (2003) who advocate going beyond a single perceptual measure (which may or may not shape customers' purchasing behavior and/or willingness to pay more) to utilize a broader metric that can reflect the culmination of the various mechanisms by which brand knowledge and esteem translate into customers' preferences for the brand. One such option is the corporate-level, monetary brand value assigned by Brand Finance, which has also been used in other studies to operationalize the financial worth of brand assets (for further discussion, see, e.g., Bick 2009; Davidson 1998; Nguyen and Oyotode 2015; Salinas and Ambler 2009).

Managerial implications

Proclamations abound in practice that brands are a pivotal determinant of firm financial performance. It is not uncommon to hear such assertions as the "brand is a company's most important asset" (Barron 2017, p. 3), and that brands contribute roughly 30 percent of the market valuation of firms in the S&P 500 (The Economist 2014). It therefore comes as no surprise that chief marketing officers (CMOs) consider brand building a foremost strategic responsibility (Moorman 2018), and the view among chief marketing practitioners is that CMOs must "own the metrics area about overall brand health" (Nath and Mahajan 2008, p. 68).

The standard justification is that strong, differentiated brands can stimulate: greater demand from current customers as well as new ones, customers' willingness to pay higher prices, trade cooperation and support, and licensing and brand extension opportunities (Keller 1993, 2001; Keller and Lehmann 2006). Furthermore, they can attract employees (Tavassoli et al. 2014) and investors (Brand Finance 2017). Thus, firms put forth significant investments to stimulate awareness and create strong, favorable, and unique associations about the enterprise. Spending on media (e.g., television, digital) and marketing (e.g., direct, sponsorships), for example, is forecasted to reach over $1.6 trillion worldwide in 2020 (Advertising Age 2019).[12]

Marketing leaders such as CMOs, however, face a key challenge: How do they convince the other members of the top management team (TMT) that a strong (enterprise) brand can be a source of economic benefits that are expected to flow to their firm? This is a pressing question because—as Aaker (2008) has observed—executives: (i) too often view marketing as "a tactical management function" (p. 53), and (ii) have yet to embrace "brand equity as a strategic asset and the brand portfolio as a strategy enabler" (p. 44). Brands are therefore noticeably absent from conversations that transpire in C-suites and boardrooms (Barron 2017).

This paper provides the foundations to make branding more salient to the TMT. First, it draws on earlier theorizing at the marketing–finance interface to develop the relationship between branding and the firm's cash flows. Absent a link between branding and the firm's cash flows, it is difficult for CMOs to argue convincingly that branding adds to firm value. CMOs can trace how branding impacts the probability distribution of revenues and firm value. Specifically, branding provides the well-documented benefits for the marketing function (i.e., impact on customer mindset metrics and purchase behavior) *and* lowers the firm's cash requirements.

Second, this research is responsive to the need to demonstrate that marketing can play a defensive role in protecting the firm's cash flows from external threats (Moorman and Day 2016). We advance that branding has the potential to alter the (operating) shortfall of the firm, which creates a risk management opportunity for the firm. Firms have historically relied on traditional risk management techniques at the disposal of the chief financial officer (CFO). These include the use of financial derivatives such as options, futures and forward contracts as a means of hedging. This research adds

[12] Although the entire marketing program contributes to consumers' understanding of the brand, it is acknowledged that some spending (e.g., on sales promotions) may end up as brand destroying and not brand building (Keller 2001; Pauwels et al. 2004).

a new, previously unrecognized role for strong brands—as a risk management tool for managing downside risk (not variance) to reduce the firm's capital (cash) requirements. The implementation of marketing activities to build strong brands can alter the probability distribution of the firm's net revenues and hence of the firm's cash flows. Considering the importance of cash management, our analysis, thus imputes significance to branding in financial decision-making and provides evidence that the CMO, for whom branding is a paramount strategic concern, ought to be raised to the ranks of the CFO and CEO for whom shareholders' wealth is a critical consideration (see, e.g., Lehmann's 2004 discussion of executive domains along the marketing productivity chain).

In light of the recognition that "brands are one of the most valuable intangible assets that firms have" (Keller and Lehmann 2006, p. 740) and branding is a more strategic, firm-wide asset than has been argued to date, we advocate for the presence of a CMO in the C-suite to serve as the brand steward. The CMO can provide the "top-down brand leadership" that has been championed at leading firms (Bedbury 2002). With an outside-in purview that ensures the firm is in sync with customers and the marketplace (Day and Moorman 2010), they can aid their firms transcend beyond "silo" decision-making and lead coordinated brand building strategies and programs that can serve as the basis for competitive advantage (Aaker 2008). Given that the majority of firms do not employ a CMO (Germann et al. 2015), this research provides substantiation for increasing the presence and influence of the CMO in the TMT. Furthermore, this research makes branding more salient to the strategic dialogue, and suggests that brands should be viewed as a firm-wide strategic asset with a sphere of influence that transcends the marketing function.

Limitations and future research directions

Our study is subject to some limitations, mainly with respect to the data analyzed. First, we investigate the firm-level financial implications of enterprise-level brands. Rao et al. (2004), who empirically demonstrate that corporate branding strategy impacts Tobin's q, suggest assessing mixed branding and house of brands strategies as well. This yields an opportunity to more clearly study the respective brand strategies in which there is an alignment in the unit of analysis, and to potentially develop additional measures of brand value (see, e.g., Simon and Sullivan 1993). Second, Brand Finance's royalty relief approach takes into consideration: (i) customer mindset and behavioral metrics, (ii) legal analysis (trademark and intellectual property review), and (iii) financial analysis (valuation modeling and opinion). We echo brand researchers (e.g., Mizik and Jacobson 2008; Schmitt 2003; Stahl et al. 2012) who suggest taking a more granular approach to evaluate how each dimension can influence financial outcomes. Third, there is a recognized need to study the antecedents of brand equity (Katsikeas et al. 2016; Moorman and Day 2016). Such studies can inform what activities contribute to brand building, especially in the new media environment in which consumers can view and create marketing content on multiple screens (Bharadwaj et al. 2020). Fourth, brand equity studies tend to focus customers and/or employees. It would be fruitful to examine the impact of brand equity on other constituencies like investors, suppliers, and channel intermediaries. Lastly, our study focused on US firms. It would be meaningful to investigate the brand equity–cash holdings relationship in emerging markets and firms following a house of brands or mixed branding strategy.

Acknowledgements We are grateful to Jonathan Knowles for providing Brand Finance data for the empirical testing as well as to the BAV Group for granting access to the CBBE brand data for additional testing.

Compliance with ethical standards

Conflict of interest On behalf of all authors, the corresponding author states that there is no conflict of interest.

Appendix 1: The seven-step *Brand Finance* approach to brand value estimation

Brand Finance follows a seven-step approach to calculate the values of the firms' brands appearing in their league tables (see, e.g., Brand Finance 2016; Haigh 2012):

1. *Determine the Brand Strength Index (BSI)* The Brand Finance valuation agency first analyzes a brand's marketing investments, consumers' connection with the brand, employees' connection with the brand, strategic partners' connection with the brand, sustainability and other proprietary measures, and links those to business performance. Following this analysis, each brand is assigned a BSI between 0 and 100. Based on the BSI, each brand is assigned a rating between AAA+ (i.e., a very strong brand) and D (i.e., a failing brand).
2. *Determine the Royalty Rate Range* The firm uses a "royalty relief approach" methodology to arrive at the brand valuation. Assuming the company did not own its current brand, the brand value represents the amount the company would have to pay to another entity to license its own brand. This involves estimating the likely future sales attributable to a given brand and calculating a royalty rate that the current owner of the brand would have to pay assuming it did not already own the brand. To determine the upper and lower limits of the royalty rate,

the valuation agency relies on its extensive dataset of comparable licensing arrangements to analyze margins and value drivers. This generates an acceptable range for the royalty rate for the respective brand sectors.

3. *Calculate Royalty Rate* The BSI score (from Step 1) is applied to the appropriate royalty rate (from Step 2) to arrive at a royalty rate for a given brand. For example, if a brand registers a BSI of 80 and the royalty rate range in the brand's sector spans from 0 to 5%, then the appropriate royalty rate in this instance is 4%.
4. *Determine proportion of parent company revenues attributable to branding* This step assesses the importance of branding to the firm. For reference, brands accounted for (on average) 18% of all quoted enterprise value across the brands appearing in the 2016 Global 500 report.
5. *Forecast revenues* Based on an analysis of historic revenues, market growth estimates, competitive forces, economic growth rates, equity analyst projections and company forecasts, determine future firm revenues over a given five-year period.
6. *Derive brand revenues* Apply royalty rate to the forecast revenues to derive brand revenues.
7. *Calculate Brand Value* After arriving at the brand specific revenues (net Tax), the post-tax revenues are discounted to a net present value (NPV), which equals the brand value.

Appendix 2: Endogeneity test on the brand value metric

We instrument the Brand Finance brand value metric by regressing it against its past and current and past revenue. The residuals are used in a second equations that tests the robustness of our model. The results interpretation remains the same.

Brand value instrument equation

Variable	Brand value
C	− 1858
	(−4.41)***
Brand value (lag)	0.914
	(41.8)***
Revenue	0.038
	(4.43)***
Revenue (lag)	− 0.029
	(2.87)***
Firms in sample	135
R^2	.95
F	107.93

*$p < .10$; **$p < .05$; ***$p < .01$

Fixed-effects estimates are not reported

Cash ratio equation with instrumental variable

Variable	Cash ratio
C	− 3.268
	(−2.26)**
Brand value residuals	− 0.178
	(−2.34)**
Leverage	− 0.259
	(−1.85)*
Capital expenditures (lag)	− 0.27
	(−2.82)**
Sales growth	− 0.256
	(−1.83)*
AR(1)	0.175
	(4.33)***
Firms in sample	113
R^2	.89
F	33.53

*$p < .10$; **$p < .05$; ***$p < .01$

All variables measured in logarithms, except sales growth

Fixed-effects estimates are not reported

References

Aaker, D.A. 2008. *Spanning silos: The new CMO imperative*. Boston: Harvard Business Press.

Aaker, D.A., and R. Jacobson. 1994. The financial information content of brand quality. *Journal of Marketing Research* 31(2): 191–201.

Advertising Age. 2019. *Marketing fact pack: Annual guide to marketers, media and agencies* (2020 edition). December 16.

Ailawadi, K., D.R. Lehmann, and S.A. Neslin. 2003. Revenue premium as an outcome measure of brand equity. *Journal of Marketing* 67(4): 1–17.

Barth, M.E., M.B. Clement, G. Foster, and R. Kasznik. 1998. Brand values and capital market valuation. *Review of Accounting Studies* 3(1–2): 41–68.

Barron, J. (2017) Bringing "Brand" into the boardroom. https://themasb.org/wpcontent/uploads/2017/08/G.-Keynote_Bringing-Brand-into-the-Boardroom-Barron-8.17R.pdf. Accessed 20 Dec 2017.

Bedbury, S. 2002. *A new brand world*. New York: Viking Press.

Bharadwaj, N., M. Ballings, and P.A. Naik. 2020. Cross-media consumption: Insights from super bowl advertising. *Journal of Interactive Marketing* 50(2): 17–31.

Bharadwaj, S.G., K. Tuli, and A. Bonfrer. 2011. The impact of brand quality on shareholder wealth. *Journal of Marketing* 75(5): 88–104.

Bick, G.N.C. 2009. Increasing shareholder value through building customer and brand equity. *Journal of Marketing Management* 25(1–2): 117–141.

Brand Finance. 2016. Global 500 report on the world's most valuable brands. February. https://brandfinance.com/knowledge-centre/reports/brand-finance-global-500-2016/.

Brand Finance. 2017. Global intangible financial tracker (GIFT). June. https://brandfinance.com/knowledge-centre/reports/global-intangible-finance-tracker-gift-2017/.

Davidson, H. 1998. The next generation of brand measurement. *Journal of Brand Management* 5(6): 430–439.
Day, G.S., and C. Moorman. 2010. *Strategy from the outside-in: Profiting from customer value*. New York: McGraw-Hill.
Dekimpe, M.G., and B. Deleersnyder. 2017. Business cycle research in marketing: A review and research agenda. *Journal of the Academy of Marketing Science* 46(1): 31–58.
Germann, F., P. Ebbes, and R. Grewal. 2015. The chief marketing officer matters! *Journal of Marketing* 79(3): 1–22.
Ghaly, M., V.A. Dang, and K. Stathopoulos. 2017. Cash holdings and labor heterogeneity: The role of skilled labor. *The Review of Financial Studies* 30(10): 3636–3668.
Haigh, D. 2012. Measuring the financial value of brands. In *Paper presented at the next generation conference: University of North Carolina* (Chapel Hill, NC), April 13.
Hanssens, D.M., and K.H. Pauwels. 2016. Demonstrating the value of marketing. *Journal of Marketing* 80(6): 173–190.
Harford, J., S. Klasa, and W.F. Maxwell. 2014. Refinancing risk and cash holdings. *The Journal of Finance* 69(3): 975–1012.
Johansson, J.K., C.V. Dimofte, and S.K. Mazvancheryl. 2012. The performance of global brands in the 2008 financial crisis: A test of two brand value measures. *International Journal of Research in Marketing* 29(3): 235–245.
Kamakura, W.A., and R. Yuxing Du. 2012. How economic contractions and expansions affect expenditure patterns. *Journal of Consumer Research* 39(2): 229–247.
Katsikeas, C.S., N.A. Morgan, L.C. Leonidou, and G.T.M. Hult. 2016. Assessing performance outcomes in marketing. *Journal of Marketing* 80(2): 1–20.
Keller, K.L. 1993. Conceptualizing, measuring, and managing customer-based brand equity. *Journal of Marketing* 57(1): 1–22.
Keller, K.L. 2001. Building customer-based brand equity. *Marketing Management* 10: 15–19.
Keller, K.L. 2016. Reflections on customer-based brand equity: Perspectives, progress, and priorities. *AMS Review* 6(1): 1–16.
Keller, K.L., and D.R. Lehmann. 2006. Brands and branding: Research findings and future priorities. *Marketing Science* 25(6): 740–759.
Knowles, J. 2008. Varying perspectives on brand equity. *Marketing Management* 17(4): 20–26.
Kulchania, M., and S. Thomas. 2017. Cash reserves as a hedge against supply-chain risk. *Journal of Financial and Quantitative Analysis* 52(5): 1951–1988.
Larkin, Y. 2013. Brand perception, cash flow volatility, and financial policy. *Journal of Financial Economics* 110(1): 232–253.
Lehmann, D.R. 2004. Metrics for making marketing matter. *Journal of Marketing* 68(4): 73–75.
Madden, T.J., F. Fehle, and S. Fournier. 2006. Brands matter: An empirical demonstration of the creation of shareholder value through branding. *Journal of the Academy of Marketing Science* 34(2): 224–235.
Mizik, N., and R. Jacobson. 2008. The financial value impact of perceptual brand attributes. *Journal of Marketing Research* 45(1): 15–32.
Moorman, C. 2018. The CMO survey—February 2018, https://cmosurvey.org/results/. Accessed 1 Nov 2018.
Moorman, C., and G.S. Day. 2016. Organizing for marketing excellence. *Journal of Marketing* 80(6): 6–35.
Nath, P., and V. Mahajan. 2008. Chief marketing officers: A study of their presence in firms' top management teams. *Journal of Marketing* 72(1): 65–81.
Nath, P., and N. Bharadwaj. 2020. Chief marketing officer presence and firm performance: Assessing conditions under which the presence of other C-level functional executives matters. *Journal of the Academy of Marketing Science*. https://doi.org/10.1007/s11747-019-00714-1.
Nguyen, C.N., and R. Oyotode. 2015. The moderating effect of marketing capabilities on the relationship between changes in CSR perceptions and changes in brand equity. *International Management Review* 11(1): 17–25.
Pauwels, K., J. Silva-Risso, S. Srinivasan, and D.M. Hanssens. 2004. New products, sales promotions, and firm value: The case of the automobile industry. *Journal of Marketing* 68(4): 142–156.
Rahman, M., M.A. Rodríguez-Serrano, and M. Lambkin. 2019. Brand equity and firm performance: The complementary role of corporate social responsibility. *Journal of Brand Management* 26(6): 691–704.
Rao, R.K.S. 2015. The public corporation as an intermediary between "Main Street" and "Wall Street". *Journal of Corporate Finance* 34: 64–82.
Rao, R.K.S., and N. Bharadwaj. 2008. Marketing initiatives, expected cash flows, and shareholders' wealth. *Journal of Marketing* 72(1): 16–26.
Rao, R.K.S., and G.J. Gutierrez. 2010. Shareholders' wealth-maximizing operating decisions and risk management practices in a mixed contracts economy. *Production and Operations Management* 19(4): 418–433.
Rao, R.K.S., and E.C. Stevens. 2007. *A theory of the firm's cost of capital: How debt affects the firm's risk, value, tax rate and the government's tax claim*. Singapore: World Scientific.
Rao, V.R., M.K. Agarwal, and D. Dahloff. 2004. How is manifest branding strategy related to the intangible value of a corporation? *Journal of Marketing* 68(4): 126–141.
Rego, L.L., M.T. Billett, and N.A. Morgan. 2009. Consumer-based brand equity and firm risk. *Journal of Marketing* 73(6): 47–60.
Salinas, G., and T. Ambler. 2009. A taxonomy of brand valuation practice: Methodologies and purposes. *Journal of Brand Management* 17(1): 39–61.
Schmitt, B.H. 2003. *Customer experience management: A revolutionary approach to connecting with your customers*. New York: Wiley.
Shankar, V., P. Azar, and M. Fuller. 2008. BRAN*EQT: A multicategory brand equity model and its application at Allstate. *Marketing Science* 27(4): 567–584.
Simon, C.J., and M.W. Sullivan. 1993. The measurement and determinants of brand equity: A financial approach. *Marketing Science* 12(1): 28–52.
Sinclair, R.N., and K.L. Keller. 2014. A case for brands and assets: Acquired and internally developed. *Journal of Brand Management* 21(4): 286–302.
Skiera, B., E. Bayer, and L. Scholer. 2017. What should be the dependent variable in marketing-related event studies? *International Journal of Research in Marketing* 34(3): 641–659.
Stahl, F., M. Heitmann, D.R. Lehmann, and S.A. Neslin. 2012. The impact of brand equity on customer acquisition, retention, and profit margin. *Journal of Marketing* 76(4): 44–63.
Tavassoli, N.T., A. Sorescu, and R. Chandy. 2014. Employee-based brand equity: Why firms with strong brands pay their executives less. *Journal of Marketing Research* 51(6): 676–690.
The Economist. 2014. What are brands for? August 30, https://www.economist.com/news/business/21614150-brands-are-most-valuable-assets-many-companies-possess-no-one-agrees-how-much-they. Accessed 3 Nov 2018.

Neeraj Bharadwaj is an associate professor of marketing at the Haslam College of Business at the University of Tennessee. His research in marketing strategy is focused on: demonstrating the value relevance

of marketing, coupling branding and sustainability to drive competitive advantage, and harnessing structured and unstructured Big Data to enhance innovation practice. His articles appear in such leading journals as *Journal of Marketing*, *Journal of the Academy of Marketing Science, International Journal of Research in Marketing, Journal of Product Innovation Management*, *Journal of Retailing*, and *Marketing Letters*.

Dominique M. Hanssens is Distinguished Research Professor of Marketing at the UCLA Anderson School of Management. He served as Executive Director of the *Marketing Science Institute* (2005–2007) and as President of the INFORMS Society for Marketing Science (2015–2017). A Purdue University Ph.D. graduate, Professor Hanssens's research focuses on strategic marketing problems, in particular marketing productivity, to which he applies his expertise in data-analytic methods such as econometrics and time-series analysis. He is a Fellow and winner of the Buck Weaver award of the INFORMS Society for Marketing Science, and a recipient of the Churchill and Mahajan awards from the American Marketing Association. He is a founding partner of MarketShare, a global marketing analytics firm headquartered in Los Angeles.

Ramesh K. S. Rao is the Eugene and Margaret McDermott professor of finance at the McCombs College of Business at the University of Texas. His research is focused on: asset pricing, informational asymmetry, and the interface between finance and marketing/operations. His business expertise is in the areas of bankruptcy, corporate litigation damages, corporate restructuring, and corporate valuation.