

Brand Portfolio Strategy and Firm Performance

Most large firms operating in consumer markets own and market more than one brand (i.e., they have a brand portfolio). Although firms make corporate-level strategic decisions regarding their brand portfolio, little is known about whether and how a firm's brand portfolio strategy is linked to its business performance. Using data from the American Customer Satisfaction Index and other secondary sources, the authors examine the impact of the scope, competition, and positioning characteristics of brand portfolios on the marketing and financial performance of 72 large publicly traded firms operating in consumer markets over ten years (from 1994 to 2003). Controlling for several industry and firm characteristics, the authors analyze the relationship between five specific brand portfolio characteristics (number of brands owned, number of segments in which they are marketed, degree to which the brands in the firm's portfolio compete with one another, and consumer perceptions of the quality and price of the brands in the firm's portfolio) and firms' marketing effectiveness (consumer loyalty and market share), marketing efficiency (ratio of advertising spending to sales and ratio of selling, general, and administrative expenses to sales), and financial performance (Tobin's *q*, cash flow, and cash flow variability). They find that each of these five brand portfolio characteristics explains significant variance in five or more of the seven aspects of firms' marketing and financial performance examined.

Keywords: brand management, strategic marketing, marketing planning, customer satisfaction, market share

Managers and scholars are increasingly focused on linking resources deployed in developing marketing assets with firms' financial performance (e.g., Rust et al. 2004). From this perspective, the marketing literature provides a well-developed theoretical rationale (e.g., Keller 1993; Srivastava, Shervani, and Fahey 1998) and a growing body of empirical evidence (e.g., Barth et al. 1998; Madden, Fehle, and Fournier 2006; Rao, Agarwal, and Dahlhoff 2004) linking brands with competitive advantage for the firms that own them. As a result, it is widely accepted that brands are important intangible assets that can significantly contribute to firm performance (e.g., Ailawadi, Lehmann, and Neslin 2001; Capron and Hulland 1999; Sullivan 1998). However, in practice, most large firms operating in consumer markets own and market a set of different brands (i.e., they have a brand portfolio) and make firm-level strategic decisions about this intangible brand portfolio asset (Aaker 2004; Dacin and Smith 1994; Laforet and Saunders 1999). Yet little is known about how a firm's brand portfolio strategy affects its business performance (Anand and Shachar 2004; Carlotti, Coe, and Perry 2004; Kumar 2003).

In the literature, logical but opposing arguments have been advanced regarding the performance benefits of sev-

eral different brand portfolio strategy decisions. For example, some researchers have suggested that portfolios comprising a larger number of brands can enable a firm to achieve greater power than channel members and can deter the entry of brands from rivals (e.g., Bordley 2003; Shocker, Srivastava, and Ruekert 1994). Conversely, others have highlighted the greater manufacturing and distribution economies and relative advertising and administration efficiency of portfolios comprising a smaller number of brands (e.g., Aaker and Joachimsthaler 2000; Bayus and Putsis 1999; Kumar 2003). Similarly, while some researchers have advocated the scale and scope economy benefits of selling brands across different market segments (e.g., Lane and Jacobson 1995; Steenkamp, Batra, and Alden 2003), others have warned that doing so may dilute the value of a firm's brands (e.g., John, Loken, and Joiner 1998; Morrin 1999). Furthermore, some researchers have argued that firms should build portfolios in which their brands are complementary to one another to allow for stronger positioning of each brand in the minds of consumers and greater advertising and administration efficiency (e.g., Aaker and Joachimsthaler 2000; Bayus and Putsis 1999; Kumar 2003). However, others have argued that greater competition for the same consumers and channels among the brands in a firm's portfolio can deter the entry of rival firms and lead to greater efficiency in a firm's resource deployments (e.g., Lancaster 1990; Shocker, Srivastava, and Ruekert 1994).

Such divergent and often conflicting viewpoints in the academic literature are also reflected in business practice, in which firms that have similar resources and operate in the same categories often make radically different brand portfolio strategy decisions. For example, in the confectionary gum category, Wrigley markets a large number of different brands with multiple and often competing brands in each of the taste (Juicy Fruit, Wrigley's Spearmint, Doublemint,

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Extra), breath-freshening (Winterfresh, Big Red, Eclipse), oral care (Orbit, Freedent), and wellness (Alpine, Airwaves) segments. Its major competitor, Cadbury, markets only four brands (Bubbas, Hollywood, Dentyne, and Trident), each of which is aimed at different segments. Similarly, in the lodging industry, Ramada markets a single brand across multiple value and midmarket segments, while Marriot addresses the whole market, using a portfolio of ten major brands, several of which compete with one another (e.g., in the suites segment, Residence Inn, Springhill Suites, and TownePlace Suites).

Remarkably, despite these opposing theoretical viewpoints in the literature and evident divergence in “theories in use” among firms, there is little or no empirical evidence to guide managers’ brand portfolio strategy decisions (Hill, Ettenson, and Tyson 2005). Given the importance of brands to strategic marketing theory explanations of firm performance and the significant resources that firms expend on brand building, acquisition, and management, this is an important gap in marketing knowledge.

We address this knowledge gap by empirically examining the relationship between the brand portfolio strategy characteristics of 72 large firms operating in consumer markets and their marketing and financial performance over the 1994–2003 period. Collectively, these firms generate annual sales revenues of more than \$1 trillion from marketing approximately 1300 brands across 16 industries. We begin by examining the literature pertaining to important dimensions of firms’ brand portfolio strategy, identifying the major theoretical arguments associated with each brand strategy dimension, and providing relevant examples of current business practice. Next, we describe our research design in relation to the data set assembled and the analysis approach adopted. We then present and discuss the results of our analyses. Finally, we consider the theoretical and managerial implications of our results, note some limitations of our study, and highlight avenues for further research.

Dimensions of Brand Portfolio Strategy

The literature indicates that three key aspects of a firm’s brand portfolio strategy are (1) scope, which pertains to the number of brands the firm owns and markets and the number of market segments in which it competes with these brands; (2) competition, which pertains to the extent to which brands within the firm’s portfolio compete with one another by being positioned similarly and appealing to the same consumers; and (3) positioning, which pertains to the quality and price perceptions of the firm’s brands among consumers (e.g., Aaker 2004; Chintagunta 1994; Porter 1980). Together, these three characteristics provide a rich picture of a firm’s brand portfolio strategy. For example, Gap Inc. currently markets eight brands (Old Navy, Gap, BabyGap, GapBody, GapKids, Banana Republic, Piperlime, and Forth & Towne) across six North American Industry Classification System market segments in the retail apparel industry (men’s clothing stores, women’s clothing stores, family clothing stores, clothing accessories stores, shoe stores, and electronic shopping); has a relatively lim-

ited amount of competition between its brands (some competition between Old Navy and Gap, but little or no competition between the remaining brands); and maintains a medium quality–medium price overall positioning profile among consumers (lower price–lower quality positioning for Old Navy; medium price–medium quality for Gap, BabyGap, GapBody, GapKids, and Piperlime; and slightly higher price–higher quality for Banana Republic and Forth & Towne).

Next, we consider each of these dimensions of brand portfolio strategy in greater detail. We discuss each dimension separately in accordance with the literature on which we draw. Thus, most of the literature-based arguments have been framed in unidimensional *ceteris paribus* terms, even though brand portfolio strategy is widely viewed as a complex multidimensional phenomenon. Because both the theoretical literature and “theories in use” evident in business practice offer support for opposing arguments for most of the key dimensions of brand portfolio strategy we identify, we elaborate on these arguments but do not offer formal hypotheses. Rather, we adopt an exploratory approach and treat the performance outcomes associated with each brand portfolio strategy characteristic as an empirical question.

Brand Portfolio Scope

Number of brands. The literature indicates several benefits associated with brand portfolios that comprise a large rather than small number of brands. In particular, it has been suggested that owning a larger number of brands enables a firm to attract and retain the best brand managers and enjoy synergies in the development and sharing of specialized brand management capabilities, such as brand equity tracking, market research, and media buying (e.g., Aaker and Joachimsthaler 2000; Kapferer 1994); to build greater market share by better satisfying heterogeneous consumer needs (e.g., Kekre and Srinivasan 1990; Lancaster 1990); to enjoy greater power than media owners and channel members (e.g., Capron and Hulland 1999; Putsis 1997); and to deter new market entrants (e.g., Bordley 2003; Lancaster 1990). Conversely, the literature also suggests that larger brand portfolios are inefficient because they lower manufacturing and distribution economies (e.g., Finskud et al. 1997; Hill, Ettinson, and Tyson 2005; Laforet and Saunders 1999) and dilute marketing expenditure (e.g., Ehrenberg, Goodhardt, and Barwise 1990; Hill and Lederer 2001; Kumar 2003). In addition, brand proliferation has been identified as a potential cause of weakened brand loyalty and increased price competition across many markets (Bawa, Landwehr, and Krishna 1989; Quelch and Kenny 1994), suggesting more potential costs associated with larger brand portfolios.

Mirroring these competing viewpoints in the literature, divergent brand portfolio strategies with respect to the number of brands owned by firms may also be observed in practice. In consumer packaged goods over the past five years, for example, seeking to enhance its profitability, Unilever has implemented a strategy of pruning its brand portfolio from 1200 to 400, and H.J. Heinz has also embarked on a portfolio rationalization strategy. During the same period, however, Nestlé has grown its brand portfolio aggressively

through its acquisition of Ralston Purina, Chef America, Dreyer's, Gerber, and Novartis Medical Nutrition. Similarly, increasing the number of brands in its portfolio to enhance the company's power relative to retailers and media owners has been proffered as the logic for Procter & Gamble's recent acquisition of Gillette.

Number of market segments. The number of different segments in which a firm markets its brands indicates the scope of its product-market coverage within an industry. Studies of firm diversification suggest that strong marketing links, such as common brands, among the different segments in which a firm operates may deliver economies-of-scope benefits in the firm's expenditures to create and maintain its brand portfolio (e.g., Grant and Jammie 1988; Palich, Cardinal, and Miller 2000). Conversely, the marketing literature indicates that extending a brand across multiple market segments can weaken the brand, depending on consumer perceptions of the "fit" among the different product-market segments (e.g., Aaker and Keller 1990; Broniarczyk and Alba 1994). Therefore, in marketing its brands across multiple segments, a firm runs the risk that it will dilute their strength, making them less valuable (e.g., John, Loken, and Joiner 1998; Morrin 1999). Because most large firms own multiple brands, to avoid this dilution risk, a firm may choose to market different brands in each market segment in which it operates. However, the marketing literature suggests that lowering the risk of entering new markets is an important benefit of owning a brand that a firm can leverage (e.g., Kapferer 1994). Therefore, failing to leverage a brand across more than one segment is likely to both raise the risks associated with a firm's decision to enter additional segments and limit the economies of scope available from a multisegment market coverage decision.

Reflecting these different viewpoints in the literature, in practice, we also note diverse brand portfolio strategy decisions in terms of the number of segments in which firms market their brands. For example, Sara Lee recently reduced the number of product-market segments in which it markets its food brands by disposing its coffee-related brands. At the same time, however, J.M. Smucker has recently expanded the number of categories in which its existing brands compete and has entered several additional new segments through its recently acquired Jif, Crisco, and Pillsbury brands. Similarly, in the apparel industry, Fruit of the Loom markets its brands to the midmarket adult and children's segment across a small number of product categories (underwear, T-shirts, sweatshirts), while VF Corporation markets its brands to a far greater number of consumer segments at different price points, selling a much wider range of products in the jeanswear, outdoorwear, sportswear, shoes, and intimate apparel categories.

Intraportfolio Competition

The literature offers different viewpoints regarding the performance effects of intraportfolio competition (i.e., the extent to which brands within the firm's portfolio are positioned similarly to one another and compete for the same consumers' spending). On the one hand, the literature suggests several performance downsides, including lower price premiums from channel members and consumers (e.g.,

Aaker and Joachimsthaler 2000), lower "bang for the buck" in advertising expenditures as a result of demand cannibalization among the firm's brands (e.g., Kapferer 1994; Park, Jaworski, and MacInnis 1986), and lower administrative efficiency as a result of duplication of effort (e.g., Laforet and Saunders 1994). However, the literature also indicates several benefits from intraportfolio competition, including competition for channel resources and consumer spending creating an "internal market," leading to greater efficiency and better resource allocations (Low and Fullerton 1994; Shocker, Srivastava, and Ruckert 1994); creating a barrier to entry for potential rivals (e.g., Scherer and Ross 1990; Schmalensee 1978); and mitigating the negative effects of variety-seeking consumers' brand-switching behavior on the firm's performance (e.g., Feinberg, Kahn, and McAlister 1992).

In practice, there also appear to be different "theories in use" with regard to the costs and benefits of intraportfolio competition. For example, Unilever, the second-largest player in the global home care category, markets two laundry detergent brands in the United States: Wisk, targeted at performance-oriented consumers and positioned as the most efficacious laundry detergent, and All, positioned as a value brand and targeted at price-sensitive consumers. Meanwhile, Procter & Gamble markets seven laundry detergent brands (Bold, Dreft, Era, Gain, Ivory Snow, Cheer, and Tide), some of which compete with one another for consumer spending and retail support. Similarly, in the blended scotch whiskey and gin categories, the largest player, Diageo, markets multiple brands that appeal to similar consumers of blended scotch (e.g., Bells, Black & White, Haig, J&B) and gin (Gordon's, Gilbey's, Tanqueray), while the second-largest supplier, Pernod Ricard, markets only two major blended scotch brands (Chivas Regal and Ballantine's), which are priced to appeal to different segments, and only one gin brand (Beefeater).

Brand Portfolio Positioning

Perceived quality. Perceived quality pertains to the strength of positive quality associations for the brands in the firm's portfolio in the minds of consumers (e.g., Gale 1992; Smith and Park 1992). Much of the value of a brand is related to its ability to reduce consumer risk, and brands that are perceived as high quality deliver greater consumer risk-reduction value (Aaker and Keller 1990; Smith and Park 1992) and superior financial returns to their owners (e.g., Aaker and Jacobson 1994). High-quality brands also enjoy greater price premiums (e.g., Sivakumar and Raj 1997), and the perceived quality of multiple products bearing the same brand name affects the overall value of the brand (e.g., Randall, Ulrich, and Reibstein 1998). As a result, marketing actions, such as price promotions, provide greater returns for high-quality than low-quality brands (e.g., Allenby and Rossi 1991; Blattberg and Wisniewski 1989; Kamakura and Russell 1989), and high-quality brands suffer less negative demand impact from price increases (Sivakumar and Raj 1997) and require less advertising expenditure and fewer price reductions (Agrawal 1996).

Perceived price. Perceived price pertains to consumer perceptions of the price of the brands in the firm's portfolio

(e.g., Dacin and Smith 1994; Gale 1994). Consumer price perceptions are widely believed to be fundamental determinants of consumer brand choice and postpurchase attitudes and behavior (e.g., Dodds, Monroe, and Grewal 1991; Zeithaml 1988). The extent to which consumers perceive the brands in the firm's portfolio as being lower in price, *ceteris paribus*, should result in greater customer satisfaction and loyalty (e.g., Chaudhuri and Holbrook 2001; Gale 1994) and thus lead to enhanced sales and market share, which in turn may lead to economies of scale and superior financial performance (e.g., Aaker 1991; Woodruff 1997).

Therefore, the literature suggests the potential performance benefits of achieving a brand portfolio positioning in which consumers perceive the firm's brands as being both high quality and low price, and there are examples of firms' brands that have achieved such a position (e.g., Target, Southwest Airlines). However, achieving both positions simultaneously for all the brands in a firm's portfolio may also be difficult and relatively rare in practice. For example, consumers often use price as a quality cue, making it difficult to achieve perceptions of both high quality and low price (e.g., Kirmani and Rao 2000). In addition, achieving strong quality perceptions among consumers is often expensive because it may involve using higher-quality raw materials or better-trained service operatives, superior manufacturing or operations technologies, and greater marketing communication expenditures (e.g., Rust, Zahorik, and Keiningham 1995). Such additional costs can make it difficult to sell the firm's brands at prices that consumers will perceive as low cost.

These trade-offs are widely reflected in business practice, with many examples of firms in the same category adopting different brand strategy portfolio positions. For example, in the wine and spirits category, LVMH markets a collection of high-quality, high-price brands (Moët & Chan-

don, Hennessy, Cloudy Bay, and Château d'Yquem), while Constellation Brands markets a portfolio of medium- and lower-quality brands that are sold at much lower price points (e.g., Banrock Station, Paul Masson, J. Roget, Fleischmann's). Similarly, in the hotel industry, Choice Hotel's brand portfolio (Sleep Inn, Econo Lodge, Quality Inn, Clarion, Comfort Inn, Comfort Suites, Rodeway Inn, MainStay Suites) has a different quality and price positioning than that of Starwood (Four Points, Sheraton, St. Regis, Westin, W).

Research Design

Data

To explore empirically the performance impact of brand portfolio strategy, we used the firms in the American Customer Satisfaction Index (ACSI) as our sampling frame. The ACSI collects annual data from more than 65,000 U.S. consumers of the products and services of more than 200 *Fortune* 500 companies (in 40 different industries whose sales account for approximately 42% of U.S. gross domestic product) to measure consumers' evaluations of their consumption experiences (for details, see Fornell et al. 1996). This is an appropriate sampling frame for two main reasons. First, the ACSI collects data on several consumer brand perceptions that are required to operationalize the constructs of interest in our study. Second, most ACSI firms are publicly traded, which enables us to collect performance data from secondary sources. As detailed subsequently, we also collected data on both brand portfolio characteristics and several industry- and firm-level control variables from other secondary sources, including Hoover's and COMPUSTAT. Table 1 provides descriptive statistics for each of the variables in our data set.

TABLE 1
Descriptive Statistics (N = 447)

Variable	M	SD	SE	Minimum	Mdn	Maximum
Firm Performance						
Tobin's q	1.620	1.121	.053	.097	1.317	8.829
Cash flow	2,655	4,746	.224	-1,150	886	33,764
Cash flow variability	3.340	.782	.037	.000	3.349	7.415
Advertising spending-to-sales ratio	.036	.041	.002	.000	.025	.216
SG&A-to-sales ratio	.233	.084	.004	.038	.236	.486
Customer loyalty	70.614	7.726	.365	54.500	70.466	90.301
Relative market share	.261	.218	.010	.009	.172	.905
Brand Portfolio Strategy						
Number of brands	18.031	20.640	.976	1.000	12.000	79.000
Number of segments	4.935	6.053	.286	1.000	2.000	35.000
Intraportfolio competition	18.032	14.016	.663	.000	14.786	69.803
Relative perceived quality	83.298	6.616	.313	56.888	84.563	93.827
Relative perceived price	60.189	2.829	.134	51.578	60.596	68.024
Firm and Industry Covariates						
Size (total assets)	28,190	57,035	2,698	372	8,070	370,782
HHI (market concentration)	.353	.168	.008	.155	.284	.828
Services dummy	.134	.341	.016	.000	.000	1.000
Long interpurchase dummy	.398	.490	.023	.000	.000	1.000

Notes: SG&A = selling, general, and administrative expenses, and HHI = Hirschman-Herfindahl index.

Brand portfolio strategy measures. Brand portfolio scope comprises two variables. First, we collected data on the number of brands owned by each firm in our data set from Hoover's, which provides company information based on 10-K Securities and Exchange Commission filings. To ensure data consistency, we only counted the brands owned by each firm that are marketed in the industries for which the ACSI collects data. As Table 1 shows, the mean number of brands owned by the firms in these industries in our data set was greater than 18, with a median of 12. Second, for each industry for which we had ACSI data for a firm in our data set, we collected data on the number of segments (number of separate North American Industry Classification System operating codes) in which the firm marketed its brands from the Hoover's database and validated this using COMPUSTAT data (correlation >.9). The mean number of market segments in which the firms competed was close to 5, with a median of 2.

Intraportfolio competition pertains to the extent to which a firm markets multiple brands that compete with one another for consumer spending. We operationalized this measure as the interaction of two latent factors, the first of which captures the extent to which the firm markets multiple brands that appeal to demographically similar consumers in the same market segment and the second of which indicates the extent to which consumers perceive the brands in the firm's portfolio as being positioned similarly. The intuition is that when a firm markets multiple brands that appeal to similar consumers and are perceived by these consumers as being positioned similarly, higher intraportfolio competition is likely to occur.

The first factor captures the extent to which the firm markets multiple brands to the same consumers using two indicators: (1) the number of brands marketed by the firm per market segment in which the firm competes (number of brands/number of segments served) and (2) a demographic dissimilarity score for the consumers of the firm's brands computed using consumer-level ACSI data on sex, age, income level, education, household size, and ethnicity. Using ACSI data, the second factor captures the similarity of the positioning of the brands in the firm's portfolio as the standard deviations of the perceived quality and perceived price reported by consumers for the brands the firm owns. Together, these two factors explain 82% of the variance in the four indicators and are clearly separable.¹ We scaled both factors to range from 0 to 10 and computed their interaction term to use as our measure of intraportfolio competition. To assess the face validity of our measure, we selected six pairs of firms operating in six different markets in which the relative degree of intraportfolio competition of each firm is well known and significantly different within each pair. In each case, our measure correctly indicated these known differences (see Appendix A).

Finally, we assessed brand portfolio positioning using two variables from the ACSI: perceived quality and perceived price. The perceived quality of the brands in the

firm's portfolio is a latent variable estimated using consumer responses to three questions as indicators; overall quality, reliability, and customization. This variable is scaled to range from 0 (low) to 100 (high); the mean level of perceived quality of the brand portfolios of the firms in our sample is greater than 83. We computed the perceived price of the brands in the firm's portfolio by regressing perceived quality onto the ACSI's consumer perceived value measure (a latent variable estimated from consumer responses to questions about quality given price and about price given quality) and estimating the residuals. These residuals represent the variance in customer perceived value that is not explained by perceived quality. Because perceived value is defined and measured in terms of customers' perceptions of the product/service quality obtained for the price paid (e.g., Zeithaml 1988), these residuals are an appropriate indicator of perceived price. We then rescaled the perceived price variable and inverted it to range from 0 (lower perceived price) to 100 (higher perceived price); in our sample, the average level is approximately 60. To assess the face validity of our measure, we selected five pairs of firms operating in five different markets in which the relative price of the brands in each firm's portfolio is well known and is different within each pair. In each case, our measure correctly indicated these known differences (see Appendix A).² In addition, the relative ordering of firms in the other industries in our data set on the perceived price variable aligned well with expectations based on known price information.

Marketing performance measures. We examine the efficiency of firms' marketing resource utilization using two indicators: the ratio of advertising spending to sales (COMPUSTAT items No. 45:No. 12) and the ratio of selling, general, and administrative (SG&A) spending to sales (COMPUSTAT items Nos. 189–45:No. 12). As Table 1 shows, the mean relative advertising expenditure among the firms in our sample was approximately 3.6% of sales revenue, and the mean SG&A expenditure was 23.3% of sales revenue.

To indicate the effectiveness of the firm's marketing efforts, we use two variables. First, we obtained consumer loyalty to the brands in the firm's brand portfolio from the ACSI database. This is a latent variable comprising consumer responses to one repurchase likelihood question ("How likely are you to repurchase this brand/company?") and one price sensitivity question ("How much could the price for this brand/company be raised and you would still purchase it?"). This measure is scaled between 0 (less loyal) and 100 (more loyal); in our sample, the average is greater than 70. Second, using ACSI industry definitions, we computed industry-level aggregate sales and divided this by each individual firm's sales in the industry to obtain relative market shares for the companies in our data set.³ We

²The relative closeness of the perceived price scores compared with those of intraportfolio competition in Appendix A is to be expected because our ACSI sampling frame primarily includes mass-market suppliers, which limits more extreme price differences.

³For every ACSI industry sector, data are collected for the largest (by sales revenue) firms, which collectively accounts for at least 70% of the total sales in that industry. Therefore, the market

¹All own-factor loadings are greater than .82, with cross-loadings all below .26, and a second-order factor analysis explains 53% of the variance in the two first-order factors.

assessed external validity for this measure by comparing it with the equivalent market share figures provided by Market Share Reporter for the 15% of the firms in our data set for which these data were available (correlation >.89). The mean relative market share in our sample was approximately 26%, with a median value of 17% (Table 1).

Financial performance measures. Because managers must balance both current and future financial performance and risks versus returns, we selected three measures of financial performance that are both commonly used by managers and investors and advocated by researchers in different disciplines: Tobin's q, cash flow, and cash flow variability.

Tobin's q compares a firm's market value with the replacement cost of its assets. This is a forward-looking measure of firm performance favored by economists because it represents investors' expectations about the risk-adjusted future cash flows of the firm (Anderson, Fornell, and Mazvancheryl 2004; Lewellen and Badrinath 1997). Along with COMPUSTAT data, we used Chung and Pruitt's (1994) method to compute Tobin's q as follows:

$$Q = \frac{MVCS + BVPS + BVLTD + BVINV + BVCL - BVCA}{BVTA},$$

where

MVCS = the market value of the firm's common stock shares,

BVPS = the book value of the firm's preferred stocks,

BVLTD = the book value of the firm's long-term debt,

BVINV = the book value of the firm's inventories,

BVCL = the book value of the firm's current liabilities,

BVCA = the book value of the firm's current assets, and

BVTA = the book value of the firm's total assets.

Tobin's q levels greater than 1.0 indicate a positive value for the firm's intangible assets. The mean Tobin's q value for the firms in our data set was greater than 1.6, with a median greater than 1.3. Because this variable had a non-normal distribution in our data set, we normalized it by applying a standard log-transformation.⁴

Cash flow has been advocated as an accrual accounting-based indicator of current shareholder value (Neill et al. 1991; Srivastava, Shervani, and Fahey 1998), which is more reliable than reported profits because it is less dependent on firms' accounting practices (e.g., Dechow, Kothari, and Watts 1998; Sloan 1996). We used COMPUSTAT data to compute net operating cash flow for each firm in our data set as EBIT + Depreciation - Taxes (e.g., Vorhies and Morgan 2003). The mean cash flows for the firms in our data set exceeded \$2.6 billion, and the median cash flows were approximately \$886 million. These cash flows were non-

normally distributed in our data set, and therefore we applied a log-transformation to normalize the data.⁵

Cash flow variability has been advocated as another important dimension of a firm's financial performance (Gruca and Rego 2005; Srivastava, Shervani, and Fahey 1998). This measure reflects stability (and, thus, risk level) of a firm's cash flows. We computed it as the coefficient of variation of the previous five years net operating cash flows. This measure is a ratio scale, with a lower bound of zero and no theoretical maximum. For our data set, the mean and median cash flow variability was approximately 3.3.

Control variables. To control for the effects of different circumstances facing firms and their customers in our data set, we include several firm- and industry-level covariates in our analyses. With regard to firm size, using COMPUSTAT data, we computed the natural log of the book value of each firm's assets to control for scale economies that may not be captured by market share. The mean asset value of the firms in our data set was greater than \$28 billion, with a median of \$8 billion.

The Hirschman-Herfindahl index (HHI), the sum of the square of all suppliers' market shares in an industry, is the most widely used market structure indicator and has been found to influence both firm conduct and performance (e.g., Montgomery and Wernerfelt 1991). We used COMPUSTAT data to compute HHI values for each of the industries in our data set. The HHI ranges between 0 (less concentrated and, therefore, more competitive) and 1 (more concentrated and, therefore, less competitive). As Table 1 shows, the mean HHI value of less than .36 and median below .29 suggest that the industries in our data set were competitive during this period.

To control for other industry effects, we included two dummy variables in our analyses: ACSI sector definitions to identify physical goods-focused versus service-focused (labeled "services") firms and the ASCI survey data collection protocol for each industry pertaining to the time frame over which consumers are asked to consider their product and service consumption to indicate firms that face shorter (three months or less) versus longer (more than three months) interpurchase cycles (labeled "long"). As Table 1 shows, approximately 13% of the firm-year observations in our sample are from service firms, and approximately 40% of the firm-year observations in our sample have long interpurchase cycles.

We removed utilities firms from our data set, because their largely monopoly position is atypical, and Internet-based firms, because we have limited data for these (the ACSI included Internet-based firms only in 2000). We also removed privately held firms in which financial data required for our analyses are not available. Finally, we removed 18 influential observations from our data set, based on studentized residuals, Cook's distance, and DFFITS scores (Kennedy 2003). The final data set contained 447 firm-year observations for which we had com-

shares we compute are relative to the major suppliers in each industry.

⁴Because the Tobin's q data included some small positive values, we applied the log-transformation to $q + 1$.

⁵The cash flow data contained some small positive values and some negative values. To preserve all observations and continuity of the transformed variable, we applied the log-transformation to (cash flows + 1) for positive values and to (cash flows - 1) for negative values.

plete data—at least three consecutive years of complete data for a firm for all variables across all seven equations, representing 72 different firms, over a ten-year period (1994–2003). Tables 1 and 2 provide descriptive statistics and correlations for the variables in our data set. (Appendix B lists the firms in our data set.)

Model Formulation

We use a system of simultaneous regressions to examine the associations between firms' brand portfolio characteristics and their business performance for three primary reasons. First, several variables (i.e., consumer loyalty, market share, advertising, and SG&A expenditures) are both independent and dependent variables in different regressions, which raises endogeneity concerns. Such concerns are alleviated when all regressions are simultaneously estimated as a system. Second, because the overlap between each regression equation is significant, the error terms of different regressions are likely to be correlated. Failure to account for this through a system of equations is likely to result in inefficient estimates. Third, a system of equations provides a statistically flexible but easy-to-interpret methodological framework. The system of equations estimated is as follows:

$$Q_t = \beta_{Q0} + \beta_{Q1}CF_t + \beta_{Q2}CV_t + \beta_{Q3}ADV_t + \beta_{Q4}SG\&A_t + \beta_{Q5}LOYAL_t + \beta_{Q6}SHARE_t + \beta_{Q7}BRANDS_t + \beta_{Q8}SEGMS_t + \beta_{Q9}COMP_t + \beta_{Q10}PRICE_t + \beta_{Q11}QUAL_t + \beta_{Q12}SIZE_t + \beta_{Q13}HHI_t + \beta_{Q14}SERVICES_t + \beta_{Q15}LONG_t + \varepsilon_{Qt}$$

$$CF_t = \beta_{CF0} + \beta_{CF1}ADV_t + \beta_{CF2}SG\&A_t + \beta_{CF3}LOYAL_t + \beta_{CF4}SHARE_t + \beta_{CF5}BRANDS_t + \beta_{CF6}SEGMS_t + \beta_{CF7}COMP_t + \beta_{CF8}PRICE_t + \beta_{CF9}QUAL_t + \beta_{CF10}SIZE_t + \beta_{CF11}HHI_t + \beta_{CF12}SERVICES_t + \beta_{CF13}LONG_t + \varepsilon_{CFt}$$

$$CV_t = \beta_{CV0} + \beta_{CV1}ADV_t + \beta_{CV2}SG\&A_t + \beta_{CV3}LOYAL_t + \beta_{CV4}SHARE_t + \beta_{CV5}BRANDS_t + \beta_{CV6}SEGMS_t + \beta_{CV7}COMP_t + \beta_{CV8}PRICE_t + \beta_{CV9}QUAL_t + \beta_{CV10}SIZE_t + \beta_{CV11}HHI_t + \beta_{CV12}SERVICES_t + \beta_{CV13}LONG_t + \varepsilon_{CVt}$$

$$ADV_t = \beta_{ADV0} + \beta_{ADV1}BRANDS_t + \beta_{ADV2}SEGMS_t + \beta_{ADV3}COMP_t + \beta_{ADV4}PRICE_t + \beta_{ADV5}QUAL_t + \beta_{ADV6}SIZE_t + \beta_{ADV7}HHI_t + \beta_{ADV8}SERVICES_t + \beta_{ADV9}LONG_t + \varepsilon_{ADVt}$$

$$SG\&A_t = \beta_{SG\&A0} + \beta_{SG\&A1}BRANDS_t + \dots + \varepsilon_{SG\&At}$$

$$LOYAL_t = \beta_{LOY0} + \beta_{LOY1}BRANDS_t + \dots + \varepsilon_{LOYt}$$

$$SHARE_t = \beta_{MS0} + \beta_{MS1}BRANDS_t + \dots + \varepsilon_{MSt}$$

where Q is the firm's Tobin's q ; CF its net operating cash flows; CV is cash flow variability; ADV and $SG\&A$ are the firm's advertising and sales, general, and administrative costs, respectively, as a proportion of their sales revenue; $LOYAL$ is consumer loyalty to the brands in the firm's portfolio; and $SHARE$ is the firm's relative market share. Each firm's brand portfolio strategy is represented by $BRANDS$, the number of brands owned and marketed by the firm; $SEGMS$, the number of segments in which the firm markets its brands; $COMP$, the extent to which brands in the firm's portfolio compete with one another; $PRICE$, the average level of perceived price among consumers of brands in the firm's portfolio; and $QUAL$, the average level of perceived quality among consumers of brands in the firm's portfolio. Finally, $SIZE$ is the natural log of the firm's assets; HHI is the Hirschman–Herfindahl index measure of market concentration; and $SERVICES$ and $LONG$ are dummy variables that identify a firm as a service (versus goods) producer, with longer (versus shorter) interpurchase cycles.

In line with the efficient market hypothesis (Fama 1970; Samuelson 1965), the system of equations we outlined uses contemporaneous independent and dependent variables. Although this is particularly appropriate for our Tobin's q dependent, to allow for potential lagged effects, we also ran a second system of equations using one-year lagged performance dependents. We estimated both systems of equations using three-stage least squares and assumed that the seven dependent variables were endogenous to the model. Because time-series cross-sectional panel data sets also present the potential for estimation bias and efficiency problems associated with serial correlation (Kennedy 2003), we estimated our model using the robust Newey–West method (Cecchetti, Kashyap, and Wilcox 1997; Eckbo and Smith 1998). Subsequent analyses indicate that our results are robust. First, Hausman tests (Boulding and Staelin 1995; Greene 2003) indicated that fixed-effect corrections are necessary for our regressions. Because we already control for various firm and industry covariates in our model, we accomplished this with the additional introduction of year-specific dummies (Kennedy 2003). Second, Durbin–Watson and White's test (Kennedy 2003) statistics suggested that with the inclusion of the year dummies, serial correlation was not a significant problem in our regressions. Third, we calculated the mean absolute percent error (MAPE) by calibrating our model on two-thirds of the data and using the remaining one-third of the data to compute MAPE. Over 25 different random runs, the MAPE was never higher than 10%. Finally, we also ran individual year cross-sectional regressions, and the resultant estimates were similar in magnitude and direction to those obtained using the time-series data.

In addition, we tested for violations of standard regression assumptions regarding model misspecification using Ramsey's (1969) RESET test, normality using the Jarque–Bera test, and heteroskedasticity using the Breusch–Pagan test. None of these violations appear to be either generalized or problematic in our data. Variance inflation and condition index statistics that are well below standard cutoffs indicate no particular problems with multicollinearity in our regressions. We further tested the potential influence of

TABLE 2
Construct Correlations (N = 447)

	X1	X2	X3	X4	X5	X6	X7	X8	X9	X10	X11	X12	X13	X14	X15	X16
X1. Tobin's q	1.00															
X2. Cash flows	.100	1.00														
X3. Cash flow variability	-.344	-.176	1.00													
X4. Advertising-to-sales ratio	.400	-.063	-.203	1.00												
X5. SG&A-to-sales ratio	.310	-.077	-.103	.438	1.00											
X6. Customer loyalty	.435	.007	-.231	.305	.141	1.00										
X7. Relative market share	.201	.208	-.173	.023	.012	.004	1.00									
X8. Number of brands	.507	.067	-.238	.560	.348	.457	.093	1.00								
X9. Number of segments	.202	.003	-.044	.144	.057	.336	.098	.594	1.00							
X10. Intraportfolio competition	.338	.127	-.201	.437	.152	.327	.134	.633	.106	1.00						
X11. Perceived price	.283	.050	-.168	.321	.346	.442	.079	.536	.376	.498	1.00					
X12. Perceived quality	.313	.133	-.180	.356	.193	.522	.054	.569	.418	.649	.856	1.00				
X13. Size (total assets)	-.216	.655	-.049	-.256	-.129	-.111	.220	-.027	-.061	.077	.026	.075	1.00			
X14. HHI (market concentration)	.146	-.121	-.076	.379	.128	.066	.480	.059	.072	.189	.257	.241	-.230	1.00		
X15. Services	-.221	-.072	.106	-.239	-.044	-.225	-.054	-.319	-.255	-.466	-.351	-.475	-.055	-.203	1.00	
X16. Long interpurchase time	-.553	.164	.275	-.357	-.206	-.489	-.115	-.439	-.326	-.312	-.446	-.342	.430	-.331	.296	1.00

Notes: All correlations with absolute value greater than .11 are significant at the $p < .01$ level, and those greater than .09 are significant at the $p < .05$ level.

multicollinearity by reestimating our system of equations and removing each independent variable one at a time; the magnitude and significance of the remaining estimates showed no material changes. Finally, for the five most highly correlated variables, we orthogonalized cash flow and firm size and the intraportfolio competition, perceived quality, and perceived price brand portfolio strategy variables and then reestimated our system of equations. The pattern of results revealed no material differences from those we report in Table 3, Panels A and B.

Results and Discussion

Panels A and B in Table 3 contain the R-square values we obtained when entering the variables in each regression equation in five sets: the intercept + (1) year dummies, (2) firm and industry control variables, (3) current cash flow performance (for Tobin's *q* equation only), (4) marketing performance variables, and (5) brand strategy variables. The regression coefficients for each independent variable reported in Table 3 are for the final regression runs in which all the independent variables are entered simultaneously. As we expected, the coefficients for the firm and industry control variables and incremental R-square values (ranging from 4.8%–42%) indicate significant effects on all our performance dependents. In line with industrial organization theory, these results indicate that larger firms tend to have greater cash flows and higher market shares with lower Tobin's *q*, relative advertising and SG&A spending, and customer loyalty.⁶ Similarly, we find that market concentration (HHI) is associated negatively with firms' cash flows and consumer loyalty and positively with market share and relative advertising expenditures.⁷ Furthermore, our results indicate that service firms tend to have higher customer loyalty and market share, and those with long interpurchase cycles tend to have lower Tobin's *q*, cash flows, consumer loyalty, and market shares, along with higher cash flow variability.

From a financial performance perspective, our results indicate that firms' marketing effectiveness and efficiency explain significant additional variance. Panels A and B in Table 3 show that R-square increases when the marketing performance variables are added into the regressions of 9.9% and 12.1% in firms' contemporaneous and lagged Tobin's *q*, respectively; 9.7% and 12.3% in firms' contemporaneous and lagged cash flows, respectively; and 3.8% and 3.5% in contemporaneous and lagged cash flow variance, respectively. That these four marketing performance outcomes are significantly associated with contemporaneous and lagged cash flow returns and their associated risks and, in turn, with Tobin's *q* provides new evidence linking marketing with shareholder value (Rust et al. 2004).

⁶To ensure that using tangible asset value as our size control did not introduce collinearity problems in our Tobin's *q* equation, we reran the regression without the size control, which produced materially the same results.

⁷This relationship is intuitive because higher HHI levels indicate concentration of market share in the hands of a few large players and the firms in the ACSI are among the largest in their respective industries.

More specifically, consistent with marketing theory regarding the intangible asset value of customer relationships, we find that consumer loyalty is positively associated with firms' Tobin's *q*. However, this relationship appears not to be a result of the level or stability of firms' cash flows, because consumer loyalty is not significantly associated with either of these dependents in our regressions. The insignificant relationship to cash flow levels may be a result of the costs often associated with gaining customer loyalty (e.g., Reinartz and Kumar 2002; Shugan 2005). The variability result is consistent with the suggestion that attitudinal loyalty may not be enough to ensure customer retention and with evidence that consumers' stated repurchase intentions are not necessarily good indicators of their subsequent behaviors (e.g., Seiders et al. 2005).

Consistent with industrial organization market power arguments, we observe that relative market share is associated positively with firms' Tobin's *q* and cash flow levels and negatively with cash flow variability. We also find that firms that spend a greater proportion of their revenues on advertising have higher cash flows and lower cash flow variability, while those that spend relatively more on SG&A have higher Tobin's *q* performance. The effect of relative advertising expenditures on cash flow returns and risks but not directly on Tobin's *q* suggests that the financial market "value relevance" of advertising expenditures is captured through its observed effects on accounting indicators of financial performance. In contrast, the direct SG&A expenditure effects on Tobin's *q* suggest that the impact of these investments is not adequately captured in accounting measures of cash flow risks and returns.⁸ Overall, this indicates that advertising expenditures can be more than recouped through increases in the level and stability of demand and that nonadvertising expenditures associated with the marketing of firms' products and services increase the intangible asset value of the firm. This finding strengthens marketers' assertions that though marketing costs are typically treated as expenses, they can also generate significant paybacks and therefore can legitimately be viewed as investments (e.g., Ambler 2003).

Our regression results indicate that a firm's brand portfolio strategy also explains significant additional variance in each of the financial and marketing performance dependents. We observe significant R-square increases in the contemporaneous (lagged) financial performance regressions of 8% (7.5%) in Tobin's *q* and 20.7% (17.8%) and 2.3% (2.3%) in cash flow levels (variability) when we enter the brand portfolio strategy variables into the regression equations. With standard deviations of \$33.2 billion in market capitalization and \$4.7 billion in cash flows in our sample, these results indicate that a firm's brand portfolio characteristics have a nontrivial economic importance. Furthermore, these R-square increases should be viewed as somewhat conservative. Both Tobin's *q* and cash flows are corporate-level financial performance outcomes, and though many of the firms in our data set operate in more than one industry and across multiple countries, our brand strategy data cover

⁸Because we capture only two accounting indicators of financial performance, this does not necessarily imply stock market inefficiency with respect to firms' SG&A spending.

TABLE 3
Standardized Three-Stage Least Squares Regression Results

A: Contemporaneous Independent and Dependent Variables							
Independent Variables	Dependent Variables						
	Tobin's q_t	Cash Flows_t	Cash Flow Variability_t	Advertising Spending- to-Sales Ratio_t	SG&A- to-Sales Ratio_t	Customer Loyalty_t	Market Share_t
Financial performance							
Cash flows _t	.243**						
Cash flow variability _t	-.052*						
Marketing Performance							
Advertising spending-to-sales ratio _t	-.033	.059**	-.084*				
SG&A-to-sales ratio _t	.141**	.017	.004				
Customer loyalty _t	.246**	-.004	-.045				
Relative market share _t	.177**	.089**	-.162**				
Brand Portfolio Strategy							
Number of brands _t	.453**	.004	-.146*	.867**	.558**	.241**	-.111*
Number of segments _t	-.270**	-.049*	.145*	-.351**	-.238**	-.091*	.282**
Intraportfolio competition _t	-.156**	-.050	.057	-.279**	-.245**	-.273**	.220**
Relative perceived quality _t	.308**	.215**	-.147	.304**	-.398**	.628**	-.295**
Relative perceived price _t	-.356**	-.154**	.073	-.246**	.603**	-.147	-.056
Firm and Industry Controls							
Size (total assets) _t	-.244**	.720**	-.102	-.164**	-.164**	-.130**	.431**
HHI (market concentration) _t	-.070	-.065**	.101	.288**	.048	-.096**	.665**
Services dummy _t	-.046	.058	-.008	-.056	-.055	.074*	.110**
Long interpurchase time dummy _t	-.360**	-.185**	.286**	.035	.146	-.364**	-.161*
Incremental Adjusted R² Changes							
Intercept only	.0%	.0%	.0%	.0%	.0%	.0%	.0%
+ Year dummies	.5%	2.4%	1.8%	.4%	1.0%	2.4%	.4%
+ Industry controls	20.1%	23.7%	6.6%	38.9%	20.6%	44.4%	29.2%
+ Financial performance	37.4%	—	—	—	—	—	—
+ Marketing performance	47.3%	33.4%	10.4%	—	—	—	—
+ Brand portfolio strategy	55.3%	54.1%	12.7%	50.9%	29.0%	60.6%	36.9%

B: One-Year Lagged Dependent Variables

Independent Variables	Dependent Variables						
	Tobin's q_{t+1}	Cash Flows_{t+1}	Cash Flow Variability_{t+1}	Advertising Spending- to-Sales Ratio_{t+1}	SG&A- to-Sales Ratio_{t+1}	Customer Loyalty_{t+1}	Market Share_{t+1}
Financial Performance							
Cash flows _t	.242**						
Cash flow variability _t	-.038*						
Marketing Performance							
Advertising spending-to-sales ratio _t	-.043	.057**	-.094**				
SG&A-to-sales ratio _t	.145**	.021	.002				
Customer loyalty _t	.267**	-.006	-.032				
Relative market share _t	.185**	.090**	-.159**				
Brand Portfolio Strategy							
Number of brands _t	.469**	.001	-.131	.899**	.554**	.208**	-.119*
Number of segments _t	-.295**	-.050*	.167*	-.392**	-.285**	-.086*	.297**
Intraportfolio competition _t	-.174**	-.038	.091	-.274**	-.258**	-.256**	.248**

TABLE 3
Continued

Relative perceived quality _t	.317**	.210**	-.199	.297**	-.377**	.752**	-.283**
Relative perceived Price _t	-.372**	-.155**	.096	-.224**	.564**	-.258**	-.034
Firm and Industry Controls							
Size (total assets) _t	-.248**	.709**	-.115*	-.162**	-.151**	-.122**	.436**
HHI (market concentration) _t	-.058	-.064**	.087	.305**	.078	-.134**	.645**
Services dummy _t	-.058	.069*	-.007	-.059	-.057	.074**	.149**
Long interpurchase time dummy _t	-.353**	-.175**	.324**	.040	.122*	-.408**	-.159**
Incremental Adjusted R² Changes							
Intercept only	.0%	.0%	.0%	.0%	.0%	.0%	.0%
+ Year dummies	.4%	2.2%	1.8%	.3%	.9%	2.3%	.9%
+ Industry controls	20.2%	23.9%	6.7%	38.4%	20.3%	44.2%	28.6%
+ Financial performance	35.5%	—	—	—	—	—	—
+ Marketing performance	47.6%	36.2%	10.2%	—	—	—	—
+ Brand portfolio strategy	55.1%	54.0%	12.5%	50.7%	28.4%	60.1%	37.1%

* $p < .05$.

** $p < .01$.

Notes: All coefficients reported result from estimating the system of equations with all independent variables entered into the regressions simultaneously.

only the industries in which U.S. consumers of their brands are tracked within the ACSI.⁹ For the marketing performance dependents we examine, the increases in R-square resulting from entering the brand portfolio strategy variables range from 7.7% of market share to 16.2% of consumer loyalty. This indicates that brand portfolio characteristics are important predictors of firms' marketing performance and financial performance.

In terms of the specific dimensions of brand portfolio strategy examined, from a brand portfolio scope perspective, we find that the number of brands owned and marketed by a firm is positively associated with the firm's Tobin's q and consumer loyalty performance as well as with lower contemporaneous cash flow variability. However, the number of brands in the firm's portfolio is also negatively associated with market share and is associated with higher relative advertising and SG&A spending. Because the three financial performance dependent regressions already incorporate firms' advertising and SG&A costs and market shares, larger brand portfolios would seem broadly desirable. From a short-term accounting perspective, our results indicate that though marketing a greater number of brands may not enhance cash flows, it reduces their variability, and from a forward-looking corporate finance perspective, larger brand portfolios may also increase the firm's relative (to its tangible assets) stock value.

Our results also indicate that marketing the firm's brands across a greater number of market segments is associated with lower relative advertising and SG&A expenditures and higher market shares, but it is also associated positively with cash flow variability and negatively with firms' Tobin's q , cash flow, and consumer loyalty performance. This suggests some economy-of-scope and -scale

benefits of selling the firm's brands across multiple segments in terms of lower marketing expenditures and greater market share. However, our results also indicate that brand equity dilution when marketing brands across different market segments can make this costly in terms of consumer loyalty and the level and stability of cash flows and that this is reflected in financial market valuations of the firm's brand assets.

From a brand portfolio competition perspective, our results indicate that competition among the brands in a firm's portfolio is unrelated to the firm's cash flow performance but is associated with lower Tobin's q values. However, the significant, negative relationships between intraportfolio competition and relative SG&A and advertising spending indicate some support for arguments that "internal market" competition among a firm's brands is a mechanism for efficiently deploying firm resources (e.g., Shocker, Srivastava, and Ruekert 1994). At the same time, the negative relationship observed to consumer loyalty indicates that in addition to the marketing expenditure efficiency benefits of "eating your own lunch," there is an associated "cannibalization" cost. However, because consumer loyalty is measured at the brand level in the ACSI but only reported at the firm (i.e., brand portfolio) level, a reduction in consumer loyalty does not necessarily mean that the firm will lose consumers. Indeed, if less loyal consumers switch, they are more likely to switch to another brand within the portfolio of a firm that has higher levels of competition among its brands. There is evidence of this in our data, with a positive relationship between intraportfolio competition and firms' relative market share, despite the significant, negative association with consumer loyalty.

From a positioning perspective, our results indicate that, in general, a higher-quality positioning of a firm's brand portfolio is associated with stronger financial and marketing performance, while a higher-price positioning is not. Perceived quality is positively associated with firms' Tobin's q

⁹For the firm-year observations in our data set, the mean proportion of total revenue not accounted for by U.S. sales in the industries covered by the ACSI is 20%.

and cash flow levels, as well as with consumer loyalty and lower relative SG&A spending. The only significant, negative associations with perceived quality in our results are higher levels of relative advertising spending and lower market shares. The negative association with market share is consistent with arguments about the “exclusivity” drivers of consumer quality perceptions (e.g., Hellefoss and Jacobson 1999) and may also reflect the difficulty of meeting consumers’ “ideal” quality expectations in firms with larger market shares that likely have a more heterogeneous customer base (e.g., Fornell 1995). The relationship between perceived quality and relative advertising spending is consistent with consumers’ use of advertising as a quality cue (e.g., Kirmani and Rao 2000). Such investments in perceived quality and advertising appear to make selling the firm’s brands easier, as reflected in the lower SG&A costs observed.

Our results indicate that higher-price perceptions of a firm’s brand portfolio among consumers are associated with lower Tobin’s *q* and cash flow performance and higher relative SG&A but lower advertising spending. We also observe a significant, negative relationship to lagged consumer loyalty. One interpretation of these findings is that because our perceived price measure is the result of a regression of value on quality (and therefore is inherently relative to perceived quality), consumers may “punish” firms they view as having prices that are higher than those that may be justified by the quality of their products and services. This would translate into higher selling costs being involved in overcoming value-based sales objections, lower cash flows, and lower investor expectations regarding future cash flow returns. In addition, if firms use simple percentage-of-sales heuristics to determine advertising spending, this may also account for the lower relative advertising spending observed.

Finally, the correlations in Table 2 provide some initial insights into how firms’ brand portfolio strategy may be driven in part by the characteristics of the industry in which they operate. Although we do not impute causality, the correlations in our data indicate that, in general, service-focused firms and those that have longer interpurchase cycles have fewer brands and sell these in fewer market segments, have lower levels of intraportfolio competition, and have lower perceived quality and price positioning in their brand portfolios. Firms operating in more concentrated markets also seem to have brand portfolios that exhibit greater intraportfolio competition and that are viewed by consumers as being generally higher in quality and price.

Implications

Our study has several important implications for researchers and managers. First, we provide new insights into the link between firms’ marketing effectiveness and efficiency and their financial performance. Our results suggest that two criteria often used to set marketing goals and evaluate marketing effectiveness are associated with firms’ financial performance. The positive, significant relationship between relative market share and firms’ Tobin’s *q* and cash flow performance (levels and variability) indicates that despite past controversies, market share can indeed be a

useful metric for assessing marketing effectiveness. Similarly, the positive relationship between consumer loyalty and Tobin’s *q* indicates that attitudinal loyalty metrics can be useful criteria for assessing the effectiveness of firms’ marketing efforts. However, our results also indicate that efficiency-enhancing efforts to reduce marketing expenditures can be counterproductive. We find that relative advertising spending is positively related to firms’ cash flow levels and negatively associated with cash flow variability (e.g., McAlister, Srinivasan, and Kim 2007), though it is unrelated to Tobin’s *q*. We also find that relative SG&A spending is significantly, positively related to Tobin’s *q*, but it is not significantly, negatively associated with either cash flow levels or variability. This suggests that in contrast to current accounting conventions, marketing spending appears to be an investment rather than an expense.

Second, although previous studies have identified brand equity as an important intangible asset, our research offers the first empirical insights into how a firm’s brand portfolio strategy affects its business performance. For managers, the most obvious implication of our study is that strategic decisions about a firm’s brand portfolio significantly affect the firm’s subsequent marketing and financial performance. Our results suggest that these brand strategy portfolio effects are not small, explaining 2%–21% of the variance in firms’ financial performance and 8%–16% of the variance in their marketing effectiveness and efficiency. From a financial performance perspective, the brand portfolio scope characteristics of numbers of brands and number of segments in which they are marketed appear to have directionally different effects on different aspects of performance. Larger brand portfolios are associated with higher Tobin’s *q* performance and lower contemporaneous cash flow variability, while marketing brands across greater numbers of segments is associated with reduced cash flow levels and Tobin’s *q* performance and higher cash flow variability. Consistent with some normative prescriptions and the “theories in use” evident in the actions of a growing number of firms, the negative association with Tobin’s *q* suggests that investors view intraportfolio competition as an indicator of likely lower future financial performance. However, this does not appear to be the result of a negative impact on cash flows. Finally, from a positioning perspective, brand portfolios with a high-quality positioning enjoy superior performance in terms of both Tobin’s *q* and cash flow levels, while those with a high-price positioning have lower Tobin’s *q* and cash flow performance.

From a marketing performance perspective, a greater number of brands marketed across a smaller number of segments, a low level of intraportfolio competition, and strong consumer perceptions of the quality of the firm’s brands appear to be the strongest brand portfolio strategy drivers of consumer loyalty. Conversely, from a market share maximization perspective, exactly the opposite appears to be true; smaller brand portfolios, marketed across a greater number of segments, with greater intraportfolio competition and lower perceived quality, are associated with greater market share. From an efficiency perspective, our data suggest that owning a greater number of brands requires higher relative advertising and SG&A expenditures but that mar-

keting these brands across a greater number of market segments and having greater competition among the firm's brands reduces these expenditures. Notably, however, our results also indicate that different portfolio positioning has directionally different effects on marketing efficiency, with perceived quality being associated with higher advertising expenditures but lower SG&A expenditures, while high price positioning is associated with lower advertising expenditures but higher SG&A spending.

Overall, our results indicate that there is no one simple answer to the fundamental brand portfolio strategy question that senior managers and investors face—namely, What brand portfolio investments deliver the best return? Rather, our findings suggest that a firm's brand portfolio strategy has a complex relationship to firm performance, with several directionally different effects on different aspects of marketing and financial performance. For example, our regression results indicate that exactly the same portfolio strategy may have diametrically opposing results in terms of Tobin's q and market share. Importantly, this suggests that the appropriateness of any brand portfolio strategy is likely to be dependent on the particular performance outcomes desired.

Limitations and Further Research

In interpreting the results of our study, several limitations in our data set should be noted. First, because of data source limitations, our sample contains only large, publicly traded business-to-consumer companies in the United States. Thus, although our findings may be somewhat generalizable across consumer industries, they are not necessarily generalizable to smaller firms, privately held firms, or business-to-business firms. Second, although we include several different industry covariates in our regressions, it is not possible in our analyses to control completely for differences between industries. Third, we are not able to measure directly two of our brand portfolio variables for the firms in our data set (intraportfolio competition and perceived price) and, instead, rely on proxy indicators. Although our face validity tests suggest that these are appropriate proxies, finer-grained insights might be available in firms in which brands' demand cross-elasticities and prices can be directly observed. Fourth, although we examine a wide domain of brand portfolio characteristics, the availability of appropriate data means that we investigate only a relatively limited number of brand portfolio strategy variables. Although the brand portfolio characteristics we examine are significantly related to firms' business performance, we are unable to assess the impact of several other variables (e.g., the value or market shares of each of the brands in the firm's brand portfolio) that the literature indicates may further enhance the understanding of brand portfolio strategy and firm performance.

Beyond the need to address these limitations, our study suggests several worthwhile avenues for additional research. Three areas may be particularly productive for future theory development and testing. First, having demonstrated the magnitude of the effect of brand portfolio characteristics on different aspects of firms' business performance, we believe that it is important to investigate the

existence and impact of firm and industry boundary conditions on these relationships. This raises several questions. For example, do firms with smaller numbers of brands in their portfolio perform better when their brands have more abstract rather than concrete associations in the minds of consumers, thus enabling such firms to extend their brand portfolios more safely across a greater number of market segments? Does intraportfolio competition make more sense in markets in which a firm faces relatively homogeneous consumer preferences? Our data also indicate that managers may face important trade-offs in making brand portfolio strategy decisions (e.g., between high-quality and low-price positions) and in using these to drive different aspects of business performance (e.g., marketing the firm's brands across a greater number of segments increases marketing efficiency but also reduces cash flows and Tobin's q). Identifying the existence and impact of boundary conditions that affect the appropriateness and trade-offs involved in different brand strategy portfolio decisions and their impact on multiple aspects of business performance is an important next step in the development of brand portfolio theory.

Second, we focused on several different brand portfolio characteristics but did not explicitly theorize about or empirically examine their interactions, not least because the large number of possible interactions makes analyzing them impractical in our data set. Yet configuration theory indicates that bivariate interactions may offer only a limited viewpoint and suggests that there are likely to be more holistic sets of brand portfolio strategy decisions that could be mutually compatible and self-reinforcing (e.g., Vorhies and Morgan 2003). Our data provide some initial support for this viewpoint. For example, the correlations in Table 2 indicate that in our data set, larger brand portfolios are characterized by broader market coverage, higher levels of intraportfolio competition, and higher-quality and -price positions. Identifying the existence of commonly occurring configurations of brand portfolio strategy variables (i.e., brand portfolio strategy types) and their performance outcomes under different firm, market, and environmental conditions presents an exciting opportunity for theoretically important and managerially relevant research.

Third, robustness checks on our results using random coefficients indicated that the vast majority of variance in our models is cross-sectional and that the firms in our data set do not often significantly change their brand portfolio strategies. Therefore, our results should be interpreted in terms of the levels of the various brand portfolio characteristics of each firm we observe. However, firms can and do make significant changes to their brand portfolio strategies over time. Why and with what consequences are such brand portfolio strategy decisions made? These are critical decisions for senior managers. The ACSI source of much of our brand data means that it is not possible to tie any changes in our brand portfolio strategy variables to a specific date and, therefore, to conduct an event analysis. However, using different information sources, such an approach would allow for the study of changes in individual brand portfolio strategy decisions. This would provide valuable additional insights to senior managers who are considering different brand portfolio strategy decision alternatives.

Conclusions

Many firms own and market a portfolio of brands and make corporate-level strategic decisions about the scope, competition, and positioning characteristics of their brand portfolio. Our empirical examination of 72 *Fortune* 500 firms over the 1994–2003 period indicates that these brand portfolio strategy characteristics have a significant impact on several different aspects of firms' marketing and financial

performance. The brand portfolio strategy–business performance relationships we observe are more complex than may have previously been understood. The different effects of the different brand portfolio characteristics on the different aspects of firms' marketing and financial performance revealed in our study indicate that appropriate brand portfolio strategy decisions may depend crucially on the specific performance goals of the firm.

APPENDIX A

Face Validity Assessment for Intraportfolio Competition and Perceived Price Measures

Industry	Known Lower Intraportfolio Competition Player	Intraportfolio Competition Measure Score	Known Higher Intraportfolio Competition Player	Intraportfolio Competition Measure Score
Underwear	Jones Apparel	.0	Sara Lee	18.9
Shampoo	Dial	16.5	Unilever	30.5
Detergents	Unilever	22.3	Procter & Gamble	30.5
Autos	Honda	11.5	General Motors	37.4
Hotels	Ramada	.0	Hilton	5.8
Department stores	Target	5.1	Federated Department Stores	15.9

Industry	Known Lower Price Portfolio Player	Perceived Price Measure Score	Known Higher Price Portfolio Player	Perceived Price Measure Score
Airlines	Southwest	55.0	American	57.3
Cigarettes	R.J. Reynolds	63.7	Altria	66.5
Athletic shoes	Reebok	59.9	Nike	62.0
Personal computers	Dell	58.3	IBM	61.4
Department stores	J.C. Penney	58.2	Nordstrom	62.4

APPENDIX B

Companies and Industries Included in Complete Case Analysis Data Set

Companies

Albertson's	General Mills	Papa John's
Altria	General Motors	PepsiCo
American Airlines	General Atlantic & Pacific Tea Company	Procter & Gamble
Anheuser-Busch	Hershey	Reebok
Apple Inc.	Hewlett-Packard	Reynolds American
Burger King	Hilton Hotels	Safeway
Cadbury Schweppes	H.J. Heinz	Sara Lee
Campbell Soup	Honda	Sears Holdings
Clorox	IBM	Southwest Airlines
Coca-Cola	J.C. Penney	SuperValu
Colgate-Palmolive	Kellogg	Target
ConAgra Foods	Kraft Foods	Toyota
Continental Airlines	Kroger	Tyson Foods
Daimler-Chrysler	Liz Claiborne	Unilever
Dell Computer	Macy's	United Airlines
Delta Air Lines	Marriot	United Parcel Service
Dillard's	Maytag	US Airways
Dole Food	McDonald's	VF Corporation
Domino's Pizza	Molson Coors	Volkswagen
Federated Department Stores	Nestlé	Wal-Mart Stores
FedEx	Nike	Wendy's
Ford Motor	Nissan	Whirlpool
Fruit of the Loom	Nordstrom	Winn-Dixie
General Electric	Northwest Airlines	Yum Brands

Industries

Food processing	Personal care products	Department and discount stores
Beverages: beer	Personal computers and printers	Specialty retail stores
Beverages: soft drinks	Household appliances	Supermarkets
Tobacco: cigarettes	Automobiles	Fast food, pizza, carryout
Apparel	Parcel delivery/express mail	
Athletic shoes	Airlines: scheduled	

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