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More on intangibles: Do stockholders benefit from brand values?☆

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ABSTRACT

This paper analyzes the relationship between brand value and short and long-run stock performance. An equally-weighted portfolio of the American non-financial companies recognized by Interbrand as part of the 100 most valuable global brands earned an eleven-day cumulative abnormal returns (CARs) of 0.54% (17.79% annually) and a three-day CARS of 0.31% (37.97% annually) from 2001 through 2012. The four-factor monthly alpha averaged 1.1428% (13.7136% annually) over the risk-free rate and 1.3317% (15.9804% annually) over the S&P 500 index. Regression results show that the companies' brand values and capitalization were significant contributors to CARS. In addition, the average buy-and-hold return for a portfolio with annual rebalancing to include the recognized companies the preceding year was 15.29%. The annually rebalanced portfolio outperformed the industry average by 3.45% and the S&P 500 by 8.99%. All the above mentioned returns were significant at the 1% level. However, the data shows that consumer reaction to brand ranking is positive but not significant.

1. Introduction

Intangibles are important contributors to the company's value and stockholders' wealth. One such intangible is brand value. The marketing literature has concentrated on brand value and how brand affects consumer's response, attitude, and behavior (Aaker, 1991; Alba, Hutchinson, & Lynch, 1991; Keller, 1993; Krishnan, 1996). Brand value is the valuation of a product's ability to sell at a premium without an increased benefits or quality when compared with others. For example, BMW and Ford who were recognized by the Interbrand Company as two of the 100 most valuable global brands for several years would be able to charge

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a higher price for their vehicles versus another manufacturer with the identical quality product. This price premium represents a benefit to the company's stockholders. Since brand value is an intangible, does the stock market value it? Edmans (2011) studied the effect of employee satisfaction on the firm's stock performance by analyzing the market reaction to firms that were recognized one of the 100 best companies to work for. Edmans found that the financial markets undervalue intangibles and that there is an opportunity for arbitrage.

There are firms that estimate and publish brand values for what they label as successful products. The Interbrand Company estimates and publishes an annual report of the 100 most valuable global brands. This brand evaluation has generated interests from both marketing and finance academics. In this study, we examined the impact of Interbrand's recognition of American companies as part of the 100 most valuable global brands on their short and long-run stock returns for 2001 through 2012. We found that companies experienced statistically significant cumulative abnormal returns (CARS) in response to their brand valuation published by the Interbrand Company. These (CARS) were positively correlated to the Interbrand change in estimated value. Regression analysis also showed that brand value was a significant contributor to the magnitude of the CARS. Our results confirm that there is a benefit to stockholders by measuring the buy-and-hold returns for a portfolio which was rebalanced every January to include the companies that were recognized by Interbrand. We found that the annually-rebalanced portfolios significantly outperformed the matched industry portfolio and the S&P 500 index.

The rest of this paper is organized as follows. Section 2 provides the literature review and discusses brand value, how it is measured, and its potential benefit to the shareholders. Section 3 provides a description and a summary of the sample and the data sources utilized for this study. Section 4 presents the findings of the paper by describing the financial market reaction to brand recognition and the determinants of the stock market reaction. Finally, the summary and conclusion are presented in section 5.

2. Discussion and literature review

Brand value is an intangible asset a firm enjoys. It is derived from discounting the future premiums the consumers are willing to pay for product with a recognizable brand. The marketing literature argues that increased brand value leads to increased brand capital or equity. In the marketing literature, researchers spent much time building relationships between brand value, firm performance and financial returns. The literature emphasizes two perspectives for the importance of brand equity. One perspective studies the consumers' point of view of brand equity, whereas the other concentrates on the financial market reaction to brand value. It is generally claimed that a brand is a corporate asset with economic value that creates wealth for a firm's shareholders. The research focuses on the financial performance of brands, such as firm accounting performance, shareholder's value and abnormal return within the certain event window. Thus, firms with strong brand value imply to benefit from a competitive advantage that yields higher profit margin (Aaker, 1991).

Aaker and Jacobson (1994a) examined the associations between measures of brand quality and security returns. They used the EquiTrend measure of brand quality, which is based on national survey study of a sample of consumers from 1991 to 1993 to evaluate the quality of 100 major brands. Their study explored whether returns in the twelve months before each annual survey reflect the unexpected change from one survey to the next in the brand's quality measure. Their results confirmed that the relation between brand quality and returns is significantly positive. Lane and Jacobson (1995) used event study methodology to examine whether the stock market return associated with a brand extension announcement depended on brand equity components, namely brand attitude and brand name familiarity. They found that stock market return responded positively to brand extension components. Barth, Clement, Foster, and Kasznik (1998) used a sample from 1991 to 1996 to estimate the relation between the brand value estimates and share prices and the relation between year-to-year changes in brand value estimates and annual share returns. They found evidence that the brand value estimates are significantly correlated to both share value and annual returns. Their findings indicated that brand value estimates reflect relevant information to investors and, therefore, are reflected in stock prices and returns. Additionally, studies found positive market reaction to brand value (Hsu, Wang, & Chen, 2013; Madden, Fehle, & Fournier, 2006).

Kerin and Sethuraman (1998) built a theoretical argument to support an empirically validated positive relationship between a firm's accumulated brand value and market-to-book ratio. Their study described a rationale for, and identified, the statistical strength and functional form of a brand value and shareholder value relationship for publicly consumer goods companies. Ailawadi, Lehmann, and Neslin (2003) proposed using

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the revenue premium as a measure of brand equity, discussed its theoretical underpinnings, and validated the measure. Their empirical results show that revenue premium is reliable and reflect real changes in brand equity over time.

Mizik and Jacobson (2008) explored a conditional multiplier framework that incorporates brand assets into a relative business valuation. Their use of brand metrics measure showed that brand assets not only influence accounting drivers of business valuation, but also influenced firm valuation through direct effects on sales multipliers. Krasnikov, Mishra, and Orozco (2009) classified trademarks into brand-identification and brand-association trademarks. They evaluated the chain of effects linking brand assets with metrics of firms' financial value. They found that branding increases firms' cash flow, Tobin's Q, return on assets, and stock returns and reduces their cash-flow variability in the following period.

The idea that shareholders may benefit from increased brand value is supported in the literature. Aaker and Jacobson (1994b) although not directly reporting a response to brand value increases, reported a positive relationship between perceived high quality and the company's stock value. Yeung and Ramasamy (2008) demonstrated that an increased brand value may lead to increased stock price for a firm.

Simon and Sullivan (1993) theoretically present a technique for estimating a firm's brand equity based on the financial market value of the firm. Empirically, tracing the brand equity of Coca-Cola and Pepsi over major events, they find that a substantial of the valuation of consumer goods companies is based on brand equity. Rao, Agarwal, and Dahlhoff (2004) investigated the relationship between branding strategies and intangible value of the firm and find that the branding strategy is associated with higher Tobin's Q, while as mixed branding strategy is associated with lower Tobin's Q. The results indicate that the impact of branding on firm valuation is moderated by type of branding strategy. Joshi and Hanssens (2010) investigate the long-run relationship between advertising spending and stock market valuation and find empirical evidence that advertising spending has a long-term positive impact on firms' stock market valuation. Aaker and Jacobson (2001) and Mizik and Jacobson (2008) further show that firms' brand assets impact on stock market performance, positively and significantly. They also found that high brand equity lowers the risk associated with the firm.

Rego, Billett, and Morgan (2009) adopt credit ratings to capture measure debt holder's risk and the stock standard deviation to measure stockholder's risk, and find that high consumer-based brand equity reduces volatility and risk. They also find that consumer-based brand equity is very strong in protecting stockholders from downside systematic risk and predicting unsystematic risk. On the other hand, Johansson, Dimofte, and Mazvancheryl (2012) investigate how the top global brands performed in the stock market downturn of 2008. Their results show that on average, the global brands have no advantage over other brands in a down market after controlling for fundamental financial factors and industry effects.

As the literature shows, a high brand value is beneficial to the company. However, does the stock market react brand value announcements? As mentioned in the introduction section of this paper, according to Edmans (2011), the stock market undervalues intangibles, namely employee satisfaction, and only reacted to the resulting earnings surprise. In this paper, we investigate whether the stock market values another intangible, being recognized as one of the 100 most valuable global brands by the Interbrand Company. Based on the literature, we developed the following hypotheses:

H_1. *The stock market will react positively to company being recognized by an independent analyst such as the Interbrand Company as one of the 100 most valuable global brands.*

H_2. *Brand value is a significant contributor to the stock market reaction.*

H1 can be confirmed by measuring the cumulative abnormal returns (CARs) and the Carhart four-factor model for the stock recognized by Interbrand around the announcement date. Based on our hypothesis, we expect significant abnormal returns. By-and-hold analysis is performed as robustness test for the CARs and Carhart results. H2 can be confirmed using regression results with brand value and control variables as determinants of CARs. Based on our hypothesis, we expect brand value to be a significant contributor to the CARs.

3. Sample and summary statistics

The primary source of brand value data is the Interbrand Company's list of 100 most valuable global brands for 2001 through 2012. Interbrand publishes the list on its website, at www.interbrand.com. The stock

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returns, capitalization, S&P 500 index returns, and equally-weighted portfolio index were obtained from CRSP; the fundamental financial information was obtained from COMPUSTAT; the earnings data was obtained from I/BE/S[1]; and the data for the Carhart model and the industry matched portfolios was obtained from Kenneth French's website, http://mba.tuck.dartmouth.edu/pages/faculty/ken.french/. Kenneth French's website provides industry portfolio returns by grouping companies into 49 portfolios based on their SIC.

Interbrand distinguishes global brands from regional ones. For a brand to be recognized as a global one it meets the following criteria. Firstly, the brand must be sold globally; that is more that 30% of the sales revenue must come from outside its region. Secondly, according to Interbrand, the brand "must have a significant presence in Asia, Europe, and North America, as well as broad geographic coverage in emerging markets." Finally, the financial data needed for estimating brand value must be available and economic profits must be expected to persist in the future. These requirements have caused the exclusion of some well brands that might have been expected to be recognized. For example, Walmart, Disney, and Macy's are well known brands; they enjoy name recognition that may enable them to earn rent over other lesser known company's. However, they were not recognized because they are not global. Walmart started expanding its operation in China but not the rest of Asia and not in Europe.

We used the non-financial American firms from the list of 100 most valuable global brands for the years 2001 through 2012. The summary statistics and the brand value reports publication dates for these firms are presented in Table 1. Interbrand uses a proprietary methodology to calculate brand value for firms and publishes a list of the top 100 global brands in an annual report. The reports for the 100 most valuable global brands reports for 2001 through 2012 were obtained from the company's website. A description of the methodology used by Interbrand to calculate brand values is available on the company's website.

4. Analysis and results

In this section, we evaluated the financial markets and consumers' reaction to Interbrand's recognition of a product as one of the 100 most valuable global brands. We evaluated the immediate and short-term market reaction to Interbrand's recognition of the most valuable global brands by calculating the cumulative abnormal return around the announcement of the list of brands and the buy-and-hold returns. The abnormal returns were estimated using the standard market model in which the coefficients were estimated over a 256-day period that ended 46 days before the event for 2001 through 2012.

We measured the abnormal returns using the standard market model represented in:

$$AR_{it} = R_{it} - (\alpha + \beta_{it} X_{it} + \varepsilon_{it}) \tag{1}$$

where ARs_{it} is the abnormal returns for security i for period t, R_{it} is the actual return for security i for period t, α and β_{it} are regression coefficients, and ε_{it} is the error.

We measured the cumulative abnormal returns as:

$$CARs_{i(-1 \text{ through } 1)} = \sum_{t=-1}^{1} AR_{it} \tag{2}$$

where $CARs_{it}$ is the cumulative abnormal returns for the three-day period −1 through 1 were day 0 is the announcement day and AR_{it} is obtained from Eq. (1) regression.

Since the list of the most valuable global brands is developed by Interbrand and announced by Bloomberg Newsweek, there is a large number of individual who may be familiar with it and, therefore, it may not be secure. To ensure the robustness of the results against such issue, we also calculated the CARs for the eleven-day period for days −5 through 5 where day 0 is the announcement day.

$$CARs_{i(-5 \text{ through } 5)} = \sum_{t=-5}^{5} AR_{it} \tag{3}$$

where $CARs_{it}$ is the cumulative abnormal returns for the eleven-day period −5 through 5.

[1] I/B/E/S was accesses when the first listed author taught at California State Polytechnic University, Pomona, 3801 W Temple Avenue, Pomona, CA 91768.

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Table 1
Summary statistics for the non-financial American companies in the 100 most valuable global brands as recognized by Interbrand list by year (brand value in $m).

Year	Mean	Median	Maximum	Minimum	Standard deviation	Number of companies
2001	15,212	7,005	68,945	1,757	17,640	37
2002	13,754	6,330	69,637	1,579	17,129	38
2003	13,761	6,177	70,453	1,873	17,234	38
2004	14,507	7,873	67,394	2,147	16,851	37
2005	15,844	9,115	67,525	2,576	17,157	34
2006	16,017	9,591	67,000	3,099	16,806	35
2007	16,451	9,341	65,324	3,046	17,096	35
2008	16,844	8,835	66,667	3,359	17,446	36
2009	16,880	9,598	68,734	3,081	17,277	37
2010	18,104	9,817	76,229	3,241	18,720	37
2011	19,293	11,372	77,465	3,512	19,773	37
2012	21,244	11,410	83,548	3,731	23,177	38
All years	16,497	8,453	83,548	1,579	18,040	439

Table 2 shows that as hypothesized, H1, the CARs for the eleven day period −5 through 5 and the three day period −1 through 1. The average CARs were 0.54% and 0.31% for the eleven and the three day periods respectively; these levels correspond to 17.79% and 37.97% annualized rates. The CARs were significantly different from zero at the 1% level.

4.1. Main results—brand value and CARs

In this part, we measured the brand value's impact on CARs. Since brand value is an intangible that benefits the stockholders, it would positively correlate with CARs. We used the percentage of a company's capitalization above its book value attributed to its brand as brand value. BRND_M was calculated as the aggregate brand value for a company divided by it capitalization minus its book value of equity. Although this variable was not used in published research, it is, however, consistent with the finding presented in the literature above.

We estimated the BRND_M contribution to CARs as

$$CARs_{it} = \alpha + \beta_{it} X_{it} + \varepsilon_{it} \tag{4}$$

where $CARs_{it}$ is the cumulative abnormal returns for the eleven day period from day −5 through 5 and X_{it} is a vector of BRND_M and control variables. These are as follows: M_B is the market to book ratio was calculated as the firm's capitalization divided by total equity and LN_SIZE is the natural log of capitalization.

Table 3 shows that as hypothesized, H2, the results for the determinants of CARs. The second column shows the regression results for brand value and both control variables. The coefficient of brand value was 0.0517 and significant at the 5% level. The third column shows the regression results for brand value and capitalization. The coefficient of brand was almost identical to the first regression at 0.0522 and also significant at the 5% level. The fourth column shows the regression results for brand value. When used as the sole

Table 2
Cumulative abnormal returns (CARS) for the eleven-day period for days −5 through 5 and the three-day period for days −1 through 1 where day 0 is the announcement day.

	CARS −5 to 5	CARS −1 to 1
Averages	0.54%***	0.31%
T-test	2.145**	2.195**
Annualized basis using 365 days per year	17.79%*	37.97%

***Note*:** The abnormal returns were estimated using the standard market model in which the coefficients were estimated over a 256-day period that ended 46 days before the event. The analysis period was for 2001 through 2012.
*** Significant under 1% level.
** Significant under 5% level.
* Significant under 10% level.

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explanatory variable, brand value was coefficient was 0.0438 and also significant at the 5% level. These results agree with the hypothesized relationship between a company's brand value and its CARs. The results also show that the company's capitalization significantly contributed to its CARs. By comparing columns 2 and 3 in Table 3, the results also shows that market to book is a determinant of CARs.

4.2. Robustness tests results

To support the above results, we evaluated the abnormal returns for the month of the event using the Carhart (1997) four-factor model. We tested the outperformance of the firms in the sample over the risk-free rate and the S&P 500 index.

$$R_t = \alpha + \beta_{MKT} MKT_t + \beta_{HML} HML_t + \beta_{SMB} SMB_t + \beta_{MOM} MOM_t + \varepsilon_{it} \quad (5)$$

where R_t is the return on the stock i in month t in excess of indices described above. MKT_t, HML_t, SMB_t, and MOM_t are the returns on the market, value, size, and momentum factors taken from Ken French's website.

The overall sample size was 439 observations. The sample contained a 17observations with a greater than 15% negative return for the month of the event. We tabulated the results with and without these firms. Table 4 shows the results for the Carhart model excluding the above mentioned firms while Table 5 shows the results for the entire sample. As Table 4 shows, the abnormal returns for the month of the event were on average 1.1428% (13.7136% annually) over the risk-free rate and 1.3317% (15.9804% annually) over the S&P 500 index and significant at the 1% level. However, including the high loss firms eliminated the significance of the positive abnormal returns.

The results of this paper show that the immediate market reaction to being recognized as one of the 100 most valuable global brands is positive and statistically significant. The financial markets reacted positively to Interbrand's valuation of the firms' brand value.

4.3. Buy-and-hold stock performance

We evaluate the buy-and-hold returns on investing in the stocks of the firms in the sample. We limit our horizon to the year after the publication of the most valuable global brands report. This assumes that the portfolio will be rebalanced at the end of each year by investing equally in each of the firms that were recognized as the most valuable global brands. We calculate the buy-and-hold for each year as follows:

$$R_i = \left(\prod_{Jan}^{Dec}\left(1 + R_{i,m}\right) - 1\right) - \left(\prod_{Jan}^{Dec}\left(1 + R_{index,m}\right) - 1\right) \quad (6)$$

where R_i is the buy-and-hold excess return on stock I over the chosen index for a year, $(\prod_{Jan}^{Dec}(1 + R_{i,m}) - 1)$ is the geometric compounded return from January through December for stock i, and $(\prod_{Jan}^{Dec}(1 + R_{index,m}) - 1)$ is

Table 3
Determinants of CARS.

Intercept	−7.6579	−7.8430	0.4063
	0.000***	0.000***	0.127
BRND_M	0.0517	0.0522	0.0438
	0.013**	0.012**	0.038**
LN_SIZE	0.8111	0.8180	
	0.000***	0.000***	
M_B	−0.0238		
	0.152*		
Adjusted R^2	0.0510	0.0485	0.0082
Number of observations	405	405	405

***Note*:** BRND_M was calculated as the aggregate brand value for a company divided by it capitalization minus its book value of equity, M_B is the market to book ratio was calculated as the firm's capitalization divided by total equity, and LN_SIZE is the natural log of capitalization. All the coefficients are multiplied by 100.

*** Significant under 1% level.
** Significant under 5% level.
* Significant under 10% level.

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Table 4
Summary statistics for the risk adjusted returns in response to the 100 most valuable brands from the Interbrand announcements using the Carhart (1997) four-factor model.
After dropping companies with one month losses more than 15%.

Stock outperformance over	Risk free	S&P 500
α	1.1428	1.3317
	0.009***	0.002***
β_{MKT}	0.4461	−0.5284
	0.000***	0.000***
β_{SMB}	0.9336	1.0228
	0.000***	0.000***
β_{HML}	−0.2620	−0.2328
	0.189	0.244
β_{MOM}	−0.2965	−0.2948
	0.029**	0.030**
Adjusted R^2	0.3314	0.0751*
Number of observations	422	422

Note: Monthly regressions of returns on stocks of the non-financial American companies that were recognized by Interbrand as part of the 100 most valuable global brand values on the four Carhart (1997) factors, MKT, SMB, HML, and MOM. The dependent variable is the monthly return after the month the of actual earnings announcement minus the risk-free rate in the second column and minus the S&P 500 index returns in the third column. The alpha is the stock's outperformance over the risk-free rate and the S&P 500 index. The t-test estimates are below the estimated coefficients. The analysis period was for 2001 through 2012.
*** Significant under 1% level.
** Significant under 5% level.
* Significant under 10% level.

the geometric compounded return from January through December for chosen index. The annual portfolio return is calculated as the aggregate of the returns of the individual stocks for that year.

As Table 6 shows, the average buy-and-hold portfolio return was 15.29% and was significantly different from zero at less than 1% level. To measure the buy-and-hold outperformance over the industry, we matched each company with its industry portfolio we obtained from the Kenneth French website. We calculated the outperformance by subtracting the industry portfolio return from the company's stock return for the same holding period. The buy-and-hold portfolios outperformed their industry average returns by 3.45%. The outperformance of the matched industry portfolio was significant at less than 1% level. In addition, the buy-

Table 5
Summary statistics for the risk adjusted returns in response to the 100 most valuable brands from the Interbrand announcements using the Carhart (1997) four-factor model.
Entire Sample.

Stock outperformance over	Risk free	S&P 500
α	0.4198	0.6064
	0.390	0.215
β_{MKT}	0.6542	−0.3194
	0.000***	0.005***
β_{SMB}	0.6067	0.6947
	0.005***	0.002***
β_{HML}	−0.2646	−0.2350
	0.241	0.298
β_{MOM}	−0.4609	−0.4594
	0.002***	0.003***
Adjusted R^2	0.3492**	0.0303*
Number of observations	439	439

Note: Monthly regressions of returns on stocks of the non-financial American companies that were recognized by Interbrand as part of the 100 most valuable global brand values on the four Carhart (1997) factors, MKT, SMB, HML, and MOM. The dependent variable is the monthly return after the month the of actual earnings announcement minus the risk-free rate in the second column and minus the S&P 500 index returns in the third column. The alpha is the stock's outperformance over the risk-free rate and the S&P 500 index. The t-test estimates are below the estimated coefficients. The analysis period was for 2001 through 2012.
*** Significant under 1% level.
** Significant under 5% level.
* Significant under 10% level.

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Table 6
Buy and hold result returns for investing in the non-financial American companies that were recognized by Interbrand as part of the 100 most valuable global brands for 2001 through 2012.

		Stock outperformance over	
	Annualized stock return	Industry	S&P 500
Average	0.1529	0.0345**	0.0899*
T-test	8.118***	2.370***	5.681***
Number of observations 439			

Note: These returns reflect the performance of portfolios that are rebalanced every January after the publication of the list of most valuable global brands. The portfolios represent equal investment in the non-financial American companies on the list. The second column shows the average returns on the portfolios; the second column shows the average portfolio outperformance over the matched industry portfolio we obtained from Kenneth French's website; and the third column shows the average portfolio outperformance over the S&P 500 index.

*** Significant under 1% level.
** Significant under 5% level.
* Significant under 10% level.

and-hold returns outperformance over the S&P 500 index by 8.99%. Both of these outperformance returns were significant at less than 1% level.

4.4. Consumers reaction

Financial markets are motivated by creating wealth while consumers' spending is motivated by a product's features. Brand valuations result from consumers' spending habits and brand loyalty. We posit that, unlike the financial markets, consumers may not follow or investigate brand value analysis. We confirmed this position by measuring the firms' earnings surprise. The earnings surprise was calculated as the actual earnings per share minus the I/B/E/S consensus earnings forecast for each firm. Table 7 shows the median and mean earnings per share surprises for the sample. The data shows that unlike financial markets, consumers did not react to Interbrand's recognition of the products. The earnings surprise measures, although positive, were not statistically significant. The median and average earnings per share surprises were 1.49% and 1.45% respectively. This result indicates that consumers either do not react to Interbrand's recognition of certain brands or may not be aware of the existence of the ranking.

5. Summary and conclusion

We obtained the list of the 100 most valuable global brands from Interbrand for 2001 through 2012. Several companies estimate the value of brands and publish their findings. One such company is Interbrand which annually publishes a list of the 100 most valuable global brands. The list excludes some well-known brands such as Walmart, Disney, and Macy's because they are not global; their operation and sales are mostly regional.

We analyzed the stock market reaction to the non-financial American brands that were recognized by Interbrand. To evaluate the immediate stock market reaction to the recognition of brands, we calculated the cumulative abnormal returns (CARs) for the analysis period, 2001 through 2012. The stocks in the sample earned eleven-day cumulative abnormal returns (CARs) of 0.54% (17.79% annually) and three-day CARs of 0.31% (37.97% annually) from 2001 through 2012. The CARs were significant at the 1% level. We further

Table 7
Summary of the median and mean of the stocks earnings per share (EPS) surprise for the non-financial American companies that were recognized by Interbrand as part of the 100 most valuable global brands for 2001 through 2012.

	Median EPS surprise	Mean EPS surprise
Average:	0.0146	0.0145
T-test	1.159	1.153

Note: The earnings per share surprise for each brand is measured as the actual EPS minus the consensus estimate of EPS.

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found that the variable BRND_M, a measure of the contribution of brand value to market value above capitalization, is a statistically significant determinant of the abnormal returns. Robustness tests using the Carhart model confirms the results obtained from measuring the CARs. The four-factor monthly alpha averaged 1.1428% (13.7136% annually) over the risk-free rate and 1.3317% (15.9804% annually) over the S&P 500 index. The empirical results show that both our hypotheses are supported and significant.

To analyze a longer term performance of the companies that own the recognized brands, we measured the buy-and-hold returns on an equally-weighted portfolio of these firms. The constructed portfolio is rebalanced every January to include only the companies from the previous year. We found that the portfolio returns were positive and significant and that the portfolios significantly outperformed the matched industry portfolios and the S&P 500 index. The matched industry portfolios were constructed using the 49 industry-portfolios published on Kenneth French website. We matched the portfolio to the company that owns the brands using its SIC.

Analysis of the consumer reaction to Interbrand's recognition of the products yielded different results from the financial markets. The median and average earnings per share surprises were 1.49% and 1.45% respectively; however, these earning surprise numbers were not statistically significant. We concluded that consumers either do not react to Interbrand's estimation of brand value or may not be aware of the ranking.

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