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Are Financial Analysts “Good Marketers”? Implications for Marketing and Investor Relations

Thorsten Wiesel, Roman Kräussl, and Rajendra K. Srivastava

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Report Summary

One of the most important intangible assets a firm can possess is its brands, and prior research shows that brand management practices affect firm value. As financial analysts play an important role in influencing the consensus formation of the value of firms and, thus, how marketing affects firm value, it is of utmost important to examine whether and how analysts use value-added information on brand value.

However, only a few recent marketing studies examine the impact of key marketing instruments on analysts' forecasts and recommendations. Further, no research explicitly examines the association between brand value and errors in the earnings forecasts, dispersion in forecasts, level of stock recommendations, and changes in recommendations of financial analysts.

This study by Thorsten Wiesel, Roman Kräussl, and Raj Srivastava investigates the association between firm brand values and these key financial analysts' variables. They use a large-scale longitudinal dataset for 112 firms during 2000–2007 originating from Interbrand as well as financial sources such as COMPUSTAT, Institutional Broker Estimate System [I/B/E/S], Thomson ONE Banker, World Bank, and company financial reports.

The results reveal that financial analysts are, on average, not “good marketers”: they misevaluate and disagree on the impact of brand value on cash flows, as (changes in) brand value causes uncertainty in the information environment. While brand value information is publicly available to financial analysts, they do not necessarily include it in their decision making. Even when they do use this information, analysts make mistakes or do not know how to evaluate the impact of brand value on cash flows. This misevaluation affects both the focal firms (e.g., prevents securities from achieving a fair valuation) and financial analysts (i.e., harms their reputations and careers).

Overall, the findings have important implications for the marketing–investor relations (IR) interface. In particular, the authors argue that marketing and IR departments need to better communicate the information content of brand value as a key market-based intangible asset and systematically include brand values or other marketing constructs in their decision making. So doing will also help to avoid a negative and incorrect feedback loop of investor sentiment into managerial actions.

Furthermore, the financial community should use existing brand value information and should seek to acquire knowledge with respect to the link between market-based assets and firm performance. Marketing can be of great help because marketing has created an extensive knowledge base in this area.

Thorsten Wiesel is Professor of Marketing, Westfälische Wilhelms-Universität Münster, and Affiliate Researcher of Marketing, University of Groningen, Faculty of Business and Economics. Roman Kräussl is Associate Professor of Finance, VU University Amsterdam, Faculty of Economics and Business Administration. Rajendra K. Srivastava is Provost and Deputy President (Academic Affairs) and Professor of Marketing, Singapore Management University.

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Introduction

The value of a firm is based on its current cash flows as well as growth and risks associated with future cash flows (Srivastava, Shervani, & Fahey, 1998). The ultimate aim of any marketing expenditure should be to affect firm value positively, but determining that effect is not straightforward (Hanssens, Rust, & Srivastava, 2009). As such, firms are interested to know how marketing assets, capabilities, and actions influence firm value, and this interest has led to an increasing number of studies on the marketing-finance interface (e.g., O'Sullivan, Hutchinson, & O'Connell, 2009; Fornell, Mithas, & Morgeson, 2009 – and also see Srinivasan & Hanssens, 2009 for a review).

Investors trade firm shares because of their expectation about the future potential of firms, and the resulting market value represents the consensus valuation of these companies. New information (about a firm's strategy, activities, or environment) updates the expectations of investors and leads to adjustments in firm value. Because firms are complex and often intangible bundles of benefits, costs, and risks, financial information intermediaries (e.g., financial analysts) aid this process (Hanssens, Rust, & Srivastava, 2009). Financial analysts collect and handle public and private information about a firm and publish recommendations and forecasts to investors (e.g., Chen & Matsumoto, 2006). Analyst forecasts and recommendations can affect a firm's health (through stock price movements; e.g., Womack, 1996), budgeting decisions (i.e., cost of capital; e.g., Botosan & Plumlee, 2005), access to funds (e.g., Richardson et al., 2004), and manager performance evaluations and compensation (i.e., share price formation; e.g., Brennan & Hughes, 1991).

Although financial analysts play an important role in influencing the consensus formation of the financial health of firms (i.e., stock price) and, thus, how marketing affects firm value, marketing studies examining the impact of key marketing instruments on analysts are scarce and have been published only recently. Luo, Homburg, and Wieseke (2010) found that positive changes in customer satisfaction increase analyst recommendations and lower dispersion in those recommendations. In addition, they found that analyst recommendations at least partially mediate the effects of changes in satisfaction on components of firm value. Using the American Customer Satisfaction Index, Ngobo, Casta, and Ramond (2011) found that changes in customer satisfaction asymmetrically affect earnings forecast errors and deviation. Luo and de Jong (2011) showed that analyst activities partially mediate the impact of advertising expenditures on firm return and risk. Finally, Luo (2010) illustrated that positive changes in product competitiveness increase the firm's likelihood of beating analyst earnings targets, whereas negative changes account for missed earnings targets.

However, no published studies across the marketing, accounting, and finance disciplines have explicitly studied the association between the key marketing construct of brand value and errors in the earnings forecasts, dispersion in forecasts, level of stock recommendations, and changes in recommendations of financial analysts. This research gap is of high importance for at least two key reasons: First, branding has emerged as a top management priority over the last year, brands being one of the most important intangible, market-based assets possessed by firms (e.g., Keller & Lehmann, 2006). As opposed to advertising expenses, satisfaction, and product quality, brand value represents a cash flow-oriented output measure, including short- and long-term effects of brand building and maintenance. As such, brand value is in line with the financial community's view on valuation (e.g., Fischer, 2007; Shankar, Azar, & Fuller, 2008). For similar reasons, there is intense discussion about the admission of brands into financial accounts to decrease information asymmetries for the financial community (Lev & Sougiannis, 1996; Barth et al., 1998). Second, financial analysts do not always incorporate all publicly available information and can make mistakes in processing information, which results in dispersion among forecasts (disagreement), forecast errors, and/or biased recommendations (e.g., Abarbanell & Bernard, 1992; Abarbanell & Bushee 1997; Amir et al., 2003). In turn, disagreement or errors affect firm health, budgeting decisions, access to funds, and manager performance evaluations and compensation (e.g., Womack, 1996; Botosan & Plumlee, 2005; Richardson et al., 2004; Brennan & Hughes, 1991). As such, it is of major importance to senior executives and, in particular, marketing and sales managers. For example, individual executive compensation packages are often tied to stock price. More important, there is a feedback loop of investor sentiment into managerial actions (e.g., Markovitch, Steckel, & Yeung, 2005). Thus, it is important to understand whether financial analysts make errors or have higher disagreement due to the key marketing construct of brand value.

Our study addresses this important gap by empirically investigating the association between firm brand values and earnings forecasts errors, dispersion in forecasts, recommendations, and changes in recommendations by financial analysts. In doing so, the key contributions of this research are as follows: To our knowledge, we are the first to empirically test the reactions of financial analysts to the core marketing metric of brand value. Studies in accounting or finance have focused primarily on technology-related intangibles (e.g., Aboody & Lev, 1998; Barth et al., 2001; Barron et al., 2002; Thomas, 2002; Gu & Wang, 2005; Kimbrough, 2007) or intangibles in general (e.g., Barth et al., 2001; Barron et al., 2002; Thomas, 2002; Gu & Wang, 2005), although a few studies have also used

advertising expenditures (e.g., Barth et al., 2001; Barron et al., 2002; Gu & Wang, 2005). Overall, though, these studies did not focus on marketing concepts, decompose the effects of different intangibles, or use short-term-oriented proxies. Studies in marketing primarily focus on customer satisfaction or product quality (e.g., Luo, 2010; Luo, Homburg, & Wieseke, 2010; Ngobo, Casta, & Ramond, 2011). Thus, we contribute to the nascent research stream on the marketing–finance interface by showing the associations between brand value and financial analysts.

Using a large-scale longitudinal dataset for 112 firms during 2000–2007, we argue that financial analysts are, on average, not “good marketers” because they miscalculate and disagree on the impact of brand value on the cash flows, as (changes in) brand value causes uncertainty in the information environment. For our analyses, we used brand values published and promoted by a respected financial magazine. Hence, the information is publicly available for investors and financial analysts to potentially include in decision-making. However, while some analysts might include this information in their decisions, others might not. In addition, even when using this information, analysts make mistakes or do not know how to evaluate the impact of brand value on cash flows. Either way, this has important implications for marketing managers and investor relations (IR) professionals because disagreement and miscalculation affect both the focal firms (e.g., prevent securities from achieving a fair valuation) and financial analysts (i.e., harm their reputation and career – e.g., Hong & Kubik, 2003). Firms spend substantial resources dealing with capital markets through press releases, corporate advertising, and CEO appearances. For example, an IR program in a typical small or newly public firm requires 20–25% of the CEO’s time and approximately 50% of the chief financial officer’s (Hong & Huang, 2005). We argue that marketing and IR departments need to better communicate the information content of brand value as a key market-based intangible asset and systematically include that information in the financial community’s decision-making. So doing will also help to avoid a negative and incorrect feedback loop of investor sentiment into managerial actions, as well as contribute to the marketing accountability discussion.

Finally, our results are of importance for standards setters, such as the Financial Accounting Standards Board (FASB) and the International Accounting Standards Board (IASB). Further, professional societies, such as the Association of Certified International Investment Analysts (ACIIA), the European Federation of Financial Analysts Societies (EFFAS), or the National Investor Relations Institute (NIRI) in the United States, might be interested. Because firms are required to disclose non-financial information relevant to

investors to evaluate future cash receipts (Wiesel, Skiera, & Villanueva, 2008), our study makes an argument for disclosing marketing concepts, such as brand value, more systematically. Recent initiatives have already aimed to establish standards for effective financial communication of non-financial information (e.g., SEC, 2003; IASB, 2005; EFFAS, 2009).

The remainder of this article is organized as follows. In the next section, we present our theory on the association between brand values and financial analyst forecasts and recommendations. Then we discuss the data and model, followed by the empirical results. Finally, we conclude with a summary of the findings, limitations of our study, and discussion of the implications for the financial community, firms, and researchers.

Background and Hypotheses

Financial analysts' forecasts and recommendations

The task of financial analysts is to provide services to investors (e.g., Gu & Wu, 2003). Analysts serve as information intermediaries between firms and investors to assist in reducing information asymmetry. Analysts are experts, who analyze financial information, including financial communications from the firm, and private information to suggest appropriate actions for firm stakeholders. Financial analysts constitute an integral part of the financial community, providing earnings forecasts, buy/sell/hold recommendations, and other information to brokers, money managers, and institutional investors (e.g., Lang & Lundholm, 1996). Analysts commonly appear as representatives of the financial community (e.g., Revsine et al., 2008). Investors observe these services soon after their release and monitor them conscientiously (DellaVigna & Gentzkow, 2009). The forecasts and recommendations of analysts, thus, can affect firm health (through stock price movements; e.g., Womack, 1996), budgeting decisions (i.e., cost of capital; e.g., Botosan & Plumlee, 2005), access to funds (e.g., Richardson et al., 2004), and manager performance evaluations and compensation (i.e., share price formation; e.g., Brennan & Hughes, 1991).

However, accounting studies reveal that financial analysts do not always incorporate all publicly available information and can make mistakes in processing information, which results in dispersion among forecasts, forecast errors, and/or biased recommendations (e.g., Abarbanell & Bernard, 1992; Abarbanell & Bushee, 1997; Amir et al., 2003). In general, the complexity of the forecasting task relates to uncertainty in the information environment. This uncertainty stems from two sources: poor information about fundamentals and the volatility of the underlying (tangible and intangible) fundamentals (e.g., Zhang, 2006). Hirshleifer (2001)

argued that greater uncertainty and a lack of accurate feedback about firm fundamentals leaves more room for biases. Greater uncertainty about firm fundamentals, room for psychological biases, and disagreement and misevaluation with respect to earnings forecasts and recommendations affect both the focal firms (e.g., prevent securities from achieving a fair valuation) and the financial analysts (e.g., harm their reputation and career – e.g., Hong & Kubik, 2003). Disagreements and misevaluation about firms should be strongest for those firms marked by high volatility and greater uncertainty regarding their fundamentals, as might occur when firms possess a higher percentage of off-balance sheet assets.

Indeed, prior studies in accounting have shown the importance of intangible R&D information for analysts. For example, Barth et al. (2001) found that analysts devote more effort to following firms with higher intangible assets, and Barron et al. (2002) discovered that forecast dispersion is related to firm intangibles. Aboody and Lev (1998) found that analyst forecast errors have a positive association with the capitalized amount of software development costs, and Gu and Wang (2005) showed that analyst forecast errors are larger for firms with diverse and innovative technologies. Similarly, Dehning et al. (2006) found that IT investments are positively associated with dispersion and error in financial analyst forecasts. Adding to this line of research, we study the associations between brand values and analyst forecasts and recommendations.

Brand value and analyst forecasts and stock recommendations

In Figure 1, we provide an overview of our theoretical framework. A central part of our logic for the associations between brand value and financial analyst forecasts and recommendations is that (1) brand value reflects the discounted incremental current and potential future cash flows accruing from branded product and services, compared with a (fictitious) situation of non-branded offerings (e.g., Ailawadi, Lehmann, & Neslin, 2003; Simon & Sullivan, 1993), (2) analysts make current fiscal year earnings forecasts based on the current fiscal year performance of firms (e.g., cash flows – Ramnath, Rock, & Shane, 2008), (3) analysts release stock recommendations based on the future cash flow potential of firms (e.g., Chen & Matsumoto, 2006), and (4) analysts are not necessarily marketing experts (and may evaluate the impact of market-based assets on firm performance improperly – Srinivasan & Hanssens, 2009) or are skeptical of the relevance of marketing information for evaluations of firm performance (e.g., Aksoy et al., 2008). (Figures and tables follow References.)

In particular, Srivastava, Shervani, and Fahey (1998) note the importance of brands for supporting faster market penetration (by faster trials, referrals, and adoption), price premiums, share premiums, brand extensions (see also Keller & Sood, 2004), reduced sales and service costs, and higher retention rates. As such, brands can increase shareholder value through (1) an acceleration of cash flows, (2) an increase in the level of cash flows, (3) a decrease in the volatility and vulnerability of cash flows, and (4) an enhancement on the residual value of cash flows. Prior studies have found significant relationships between brand value and firm value (Horsky & Swyngedouw, 1987; Chaney et al., 1991; Simon & Sullivan, 1993; Aaker & Jacobson, 1994; Lane & Jacobson, 1995; Barth et al. 1998; Aaker & Jacobson, 2001; Mizik & Jacobson, 2008). Strong brands can also reduce the volatility of cash flows because they are perceived as higher quality offerings (Aaker & Jacobson, 1994), which can lower price sensitivity among consumers and, in turn, protect cash flows (Sivakumar & Raj, 1997). The vulnerability of cash flows is also reduced because strong brands are less susceptible to the harmful effects of marketing crises and competitive marketing actions (Aaker, 1996). Changes in brand values indicate that consumer appreciation of the brand either decreases or increases compared with previous periods, which harms or benefits firm performance in the product market and, in turn, either increases or decreases firm performance. For example, decreasing brand value might decrease the willingness-to-pay of customers and, hence, decrease the price premium that highly branded firms can charge. In addition, customer likelihood to switch may increase so that decreasing brand value might harm customer loyalty. In summary, firms with a higher level of brand value (*ceteris paribus*) should have more positive current and future performance. Moreover, improvements (deterioration) in brand value (*ceteris paribus*) have a significant, positive (negative) impact on the current and future performance of firms.

However, knowledge regarding the impact of marketing on the current and future performance of firms is relatively new (see Srinivasan & Hanssens, 2009 for a review). Most analysts are usually trained in finance or accounting and so are not necessarily marketing experts. As a consequence, they might have difficulty interpreting the impact of (changes in) brand value on firm performance. Moreover, information about marketing constructs, such as brand value (e.g., Interbrand) and customer satisfaction (e.g., American Consumer Satisfaction Index), is publicly available for some firms. However, initiatives from professional societies, such as the European Federation of Financial Analysts Societies

(EFFAS), and prior studies indicate that non-financial information does not yet play a dominant role in the financial community's (quantitative) decision-making (e.g., EFFAS, 2009; Orlitzky et al., 2003; Jaworski, 2007; McKinsey, 2009; Lev & Thiagarajan, 1993). As such, analysts tend to have problems accounting for the impact of non-financial factors on firm performance because the information is limited or difficult to interpret (e.g., Easton & Jarrell, 1998) – uncertainty in the information environment (Zhang, 2006). This leads analysts to fall back on traditional financial indicators when making estimates (Dempsey et al., 1997). In addition, analysts use idiosyncratic methods and private information to adjust their estimates to account for brand-specific components (Blair & Wallman, 2000; Barron et al., 2002). This, in turn, leaves more room for psychological biases (e.g., Hirshleifer, 2001) and misleading analyst judgment heuristics, such as conservatism (Edwards, 1968) or overconfidence (Daniel et al., 1998).

Firms with a higher level of brand value and greater changes in the level of brand value have a greater magnitude of volatile brand-specific components. Consequently, there is more uncertainty in the information environment with respect to these components of firms' earnings. Some analysts might account for that uncertainty by increasing the use of idiosyncratic models. In these cases, analyst earnings forecasts for firms with higher levels of brand value and higher changes in brand value are more affected by idiosyncratic expectations and adjustments for brand-specific earnings components. Other analysts might account for uncertainty by using existing information. In any case, a higher level of uncertainty, and different ways of dealing with that uncertainty, leads to a lower degree of consensus among financial analysts about the effects on financial analysts' earnings forecasts (e.g., Barron et al., 2002). Thus, we hypothesize:

H1: The higher the level of a firm's brand value, the higher is the dispersion in financial analyst earnings forecasts.

H2: The greater the absolute change in the level of a firm's brand value, the higher is the dispersion in financial analyst earnings forecasts.

Besides expecting a higher disagreement among analysts, we anticipate that, on average, financial analysts underestimate the effect of changes in brand value on actual earnings. That is, if analysts have problems accounting for earnings increases or decreases that come from changes in the level of brand value, they likely underestimate the effects of both positive and negative changes on firm earnings. This underestimation means that analysts project earnings that are both too high (i.e., positive forecast error) and too low (i.e., negative forecast error)

with respect to the actual earnings, depending on whether the changes are negative or positive. Therefore, we propose the following:

H3: The greater the changes in the level of a firm's brand value, the more financial analysts underestimate the effect on a firm's actual earnings.

While issuing forecasts for the current performance of firms (i.e., earnings per share), financial analysts also publish recommendations about whether to buy, sell, or hold a particular stock. Analysts base their stock recommendations on the projection of future cash flows (Chen & Matsumoto, 2006; Womack, 1996). As such, the better the projection of future cash flows, the more favorable the recommendations are likely to be (Jegadeesh et al., 2004; Thomas, 2002). Brand value can be seen as a reservoir of unrealized cash flows (Ambler, 2008), and firms with high level of brand value exhibit greater growth potential. In addition, research shows that higher brand values reduce the riskiness of future cash flows (e.g., Madden, Fehle, & Fournier, 2006; Rao et al., 2004; Krasnikov, Mishra, & Orozco, 2009), which influences the value of firms. Therefore, firms with higher levels of brand value create greater shareholder value and do so with less risk, representing more appealing investments. Positive changes in brand value may increase firm product market performance (i.e., even faster trials, referral, and adoptions), likely positively affecting the future cash flow of firms. This, in turn, positively affects the value of firms (e.g., Srinivasan & Hanssens, 2009).

Similarly, negative changes might negatively affect firm value. To the extent that higher level of brand value and changes in brand value leads to better projections of future cash flows, we expect financial analysts, on average, to issue more favorable recommendation of a firm's stock. Although analysts may rely on private information and idiosyncratic models in their decision-making, as suggested above, we do not expect to find the same biases as in the current performance of firms. Reasons for that expectation might be the perception that returns to marketing activities occur in the long run (Lehmann, 2004; Pauwels et al., 2004; Rust et al., 2004). Further, brands also function as signals for good future outlook without, at least in part, fundamental reasons. For example, studies have found that investors prefer stocks of well known firms because they are cognitively unable to apply the same level of expertise across all available stocks (Frieder & Subrahmanyam, 2005; Shiller, 2002). Similar, Grullon, Kanatas, and Weston (2004) showed that firms with high brand equity have a larger breadth of ownership of their stock. Taking it all together, we propose the following:

H4: The higher the level of a firm's brand value, the more favorable are financial analyst stock recommendations.

H5: The greater the changes in the level of a firm's brand value, the more favorable are the changes in financial analyst stock recommendations.

Research Methodology

Data

We used cross-sectional time series data about brand values, financial analyst stock recommendations and earnings forecasts, as well as a set of control variables, to investigate our hypotheses. As a starting point, we collected annual Interbrand data from 2000 to 2007, during which 133 international brands appeared at least once on the list. We matched the Interbrand values with secondary sources that provide financial information (e.g., COMPUSTAT; Institutional Broker Estimate System [I/B/E/S]; Thomson ONE Banker; World Bank; company financial reports). We obtained data on annual earnings forecasts for 2000–2007 from I/B/E/S; these summary files provide financial analyst consensus forecasts of annual earnings, the number of financial analysts following each firm, the standard deviation of the annual earnings forecasts, forecast period information, and the forecast date. For the earnings forecasts, we used data published the same month the firm's fiscal year ended to reduce the possibility of a fiscal year-end effect. If all forecasts come from the month when the fiscal year ends, differences in forecast performance cannot be attributed to such an effect (e.g., Kwon, 2002). Moreover, financial analysts adjust their forecasts consistently up to a few months before the release (e.g., Richardson et al., 2004), which is usually the end of the fiscal year, when more detailed information tends to be available about full-year earnings. See Figure 2 for more details.

We collected stock recommendations in the month after the announcement of the Interbrand values, which is the earliest point of time when new information can be incorporated into stock recommendations. We obtained other financial and economic data from sources such as Thomson ONE Banker, World Bank, and company financial reports if any of the secondary sources contained missing information. As a result, our unbalanced panel data set includes between 309 and 635 firm-year observations (from 112 international publicly traded companies), depending on the analysis, from 2000 to 2007.

Financial analyst forecasts and recommendations

Our analyses employ four dependent variables: (1) dispersion of forecasts, (2) error in the company's earnings per share forecasts, (3) financial analysts' recommendations about the company, and (4) changes in these recommendations. All of them are linked to the main service of financial analysts to investors: providing earnings forecasts and stock recommendations. Disagreement and misvaluation affect both the focal firms and the

financial analysts (e.g., Hong & Kubik, 2003). For current annual earnings per share forecasts, we used the mean annual earnings per share forecasts, across all analysts, for firm i in the current fiscal year t , as provided by I/B/E/S. For dispersion, we used the standard deviation of financial analysts' earnings per share forecasts for firm i in fiscal year t , again provided by I/B/E/S, divided by the absolute mean forecast; with this information, we can undertake a comparison across firms (i.e., coefficient of variation). Similar to other studies, we defined the forecast error of a company's earnings per share (EPS) as the difference between the actual EPS and the mean earnings forecasts made for firm i in the current fiscal year t , divided by the absolute actual EPS, which facilitates the comparison across firms:

$$FE_{it} = \frac{(FEPS_{it} - AEPS_{it})}{|AEPS_{it}|} \quad (1)$$

where

- FE_{it} : Forecast error for firm i in fiscal year t ,
 $FEPS_{it}$: Mean financial analysts' earnings per share forecast in the fiscal-year end month for firm i in year t , and
 $|AEPS_{it}|$: (Absolute) actual earnings per share for firm i in fiscal year t .

A positive forecast error indicates the forecast was overly optimistic and overestimated (i.e., above the actual EPS), whereas negative errors imply a pessimistic and underestimated forecast (i.e., below actual EPS).

We measured stock recommendations as the mean consensus of financial analysts in their buy/hold/sell recommendations for firm i in the current fiscal year t in the month after the Interbrand values were announced, as provided by I/B/E/S. This measure is a reversed scale (1 = strong buy, 2 = buy, 3 = hold, 4 = underperform, and 5 = sell). Changes in recommendations reflect the percentage change in the mean consensus recommendations of financial analysts for firm i in the current fiscal year t during the month after the brand values were announced.

Brand values

We used Interbrand's estimates as our measure for brand value. Interbrand publishes an annual list of the world's most valued brands in *BusinessWeek* every year. As such, this information is publicly available for investors and financial analysts to potentially include in decision-making. Barth et al. (1998) asserted that Interbrand's brand values are both relevant and reliable. The measure has become the most well-known and widely used brand valuation

method (Haigh & Perrier, 1997) and is widely accepted in academic research (e.g., Barth et al., 1998; Kerin & Sethuraman, 1998; Chu & Keh, 2006; Madden et al., 2006; Peterson & Jeong, 2010). Interbrand's measure combines multiple factors, such as the subjective consumer mindset of brand equity and objective brand performance in the product market (Interbrand, 2007). Because Interbrand also uses analyst reports to identify specific brand revenues and earnings, we estimated non-*FEPS* brand values that exclude all effects of Interbrand values due to financial analysts' earnings per share forecasts (*FEPS*). That is, we regressed Interbrand brand values for firm i in year t on the financial analysts' earnings per share forecasts for that firm i in year t ; the residuals are the non-*FEPS* brand values.

Controls

For the financial fundamentals, we used annual data from COMPUSTAT, Thomson ONE Banker, and company financial reports filed with the Securities and Exchange Commission (SEC). If financial information was missing from COMPUSTAT or Thomson ONE Banker, we collected it from the firm financial reports and other firm sources. Furthermore, we used I/B/E/S's Summary History tape to calculate changes or losses in earnings. Finally, World Bank data served as input for macroeconomic controls.

To control for additional components of the uncertainty in the information environment and, hence, complexity in the forecasting task, we used the (absolute) percentage change in earnings over the year (e.g., Lang & Lundholm, 1996). Moreover, Hwang et al. (1996) and Das et al. (1998) showed that forecasts are more complex for years with negative earnings because forecasting is more difficult for firms that report negative earnings. We controlled for this complexity by including a dummy variable that takes a value of 1 if the actual *EPS* to which a consensus forecast belongs is negative and 0 otherwise. Furthermore, we included a dummy variable for loss in the previous fiscal period, $LOSS_{t-1}$. If a firm's debt increases, the task of accurately evaluating its debt-paying ability becomes more challenging (Kwon, 2002), and analysts may factor in, at least, inflation rates, the cost of capital, current and future operating cash flows, and swap transactions (if any), among other factors, to avoid miscalculations. We incorporated the (absolute) change in the debt-to-assets ratio to account for firm leverage. The number of financial analysts following a company also may relate to forecast error because it represents a proxy for competition intensity (Lys & Soo, 1995) and, thus, incentives to forecast accurately (Hope, 2003). Consistent with prior research, we defined analyst coverage as the number of posted annual *EPS* forecasts for the current fiscal year in the month at the end of the fiscal year. As Higgins (2002) showed, the forecast errors

of financial analysts associate significantly with the macroeconomic environment; we therefore controlled for the macroeconomic environment by including the (absolute) percentage change in the MSCI World Index (a stock market index of 1,500 stocks around the world, often used as a common benchmark for global stock funds) as a control variable.

Anomalies may provide analysts with an incentive to recommend stocks with favorable characteristics; for example, one set of anomalous characteristics relates to momentum. Evidence suggests that stock prices are slow to assimilate earnings and price momentum (Stickel, 2007). Stickel (2007) and Finger and Landsman (2003) investigated whether analysts take advantage of previously documented market anomalies in making recommendations. Following this literature, we used firm earnings and price momentum to account for such anomalies. Earnings momentum equals the *EPS* growth over the year, up until the end of the calendar month immediately prior to the recommendation announcement date. Similarly, price momentum is the stock return over the course of the year until the end of the calendar month immediately prior to the recommendation announcement date.

Survey results summarized by Block (1999) and the content analysis in Bradshaw (2002) both suggested that analysts favor growth as a primary determinant of favorable recommendations. Therefore, we included the long-term growth projection of EPS by financial analysts as a measure of the growth potential of firms. Financial analysts often refer to “strong balance sheets”, as though companies with less debt are safer and better investments, despite evidence that higher debt-to-equity ratios produce higher returns, even after controlling for beta and firm size (Bhandari, 1988). In any case, we use the leverage of firms as a control in the recommendation equations. Finally, competition among analysts likely plays a role in stock recommendations because financial analysts are under pressure to stand out from their peers by generating business for their banks. Therefore, we include the number of financial analysts who provide stock recommendations for firm *i* as a control.

Econometric models

We estimated the dispersion in the forecasts of financial analysts with the following model:

$$\begin{aligned}
 DISP_{it} = & \alpha_D + \beta_{D1} \cdot BE_{it}^{NON-FEPS} + \beta_{D2} \cdot \Delta BE_{it}^{NON-FEPS} \\
 & + \beta_{D3} \cdot \Delta EPS_{it} + \beta_{D4} \cdot COV_{it} + \beta_{D5} \cdot \Delta COV_{it} \\
 & + \beta_{D6} \cdot \Delta MSCI_t + \beta_{D7} \cdot \Delta LEV_{it} \\
 & + \beta_{D8} \cdot \Delta LOSS_{it} + \beta_{D9} \cdot LOSS_{it-1} + \varepsilon_D
 \end{aligned} \tag{2}$$

where

$DISP_{it}$:	Dispersion in analysts' earnings per share forecasts for firm i in year t ,
$BE_{it}^{NON-FEPS}$:	Non-FEPS Interbrand brand value of firm i in year t ,
$\Delta BE_{it}^{NON-FEPS}$:	Absolute non-FEPS-percentage change in Interbrand brand value of firm i from year $t-1$ to t ,
ΔEPS_{it}	:	Absolute percentage change in earnings per share for firm i from year $t-1$ to t ,
COV_{it}	:	Number of forecasts for firm i in year t ,
ΔCOV_{it}	:	Absolute percentage change in number of forecasts for firm i from year $t-1$ to t ,
$\Delta MSCI_t$:	Absolute percentage change in the MSCI World Index from year $t-1$ to t ,
ΔLEV_{it}	:	Absolute percentage change in leverage factor for firm i from year $t-1$ to t ,
$LOSS_{it}$:	Dummy variable equal to 1 if the actual EPS to which a consensus forecast belongs is negative and 0 otherwise, and
$LOSS_{it-1}$:	Dummy variable equal to 1 if the previous fiscal period EPS is negative and 0 otherwise.

In addition, we estimated the following model for financial analyst forecast errors:

$$\begin{aligned}
FE_{it} = & \alpha_{FE} + \beta_{FE1} \cdot \Delta BE_{it}^{NON-FEPS} + \beta_{FE2} \cdot \Delta EPS_{it} \\
& + \beta_{FE3} \cdot \Delta COV_{it} + \beta_{FE4} \cdot \Delta MSCI_{it} \\
& + \beta_{FE5} \cdot \Delta LOSS_{it} + \beta_{FE6} \cdot LOSS_{it-1} + \varepsilon_{FE}
\end{aligned} \tag{3}$$

where

FE_{it}	:	Forecast error for firm i in year t ,
$\Delta BE_{it}^{NON-FEPS}$:	<i>Non-FEPS</i> percentage changes in Interbrand brand value of firm i from year $t-1$ to t ,
ΔEPS_{it}	:	Percentage change in EPS for firm i from year $t-1$ to t ,
$\Delta MSCI_t$:	Percentage change in the MSCI World Index from year $t-1$ to t , and
ΔCOV_{it}	:	Percentage change in number of forecasts for firm i from year $t-1$ to t .

The following model applies to financial analyst recommendations:

$$\begin{aligned}
REC_{it} = & \alpha_{REC} + \beta_{REC1} \cdot BE_{it}^{NON-FEPS} + \beta_{REC2} \cdot EM_{it} \\
& + \beta_{REC3} \cdot PM_{it} + \beta_{REC4} \cdot LTG_{it} + \beta_{REC5} \cdot LEV_{it} \\
& + \beta_{REC6} \cdot COV_{it} + \varepsilon_{REC}
\end{aligned} \tag{4}$$

where

REC_{it}	:	Mean financial analyst stock recommendation for firm i in year t ,
EM_{it}	:	Earnings momentum of firm i in year t ,
PM_{it}	:	Price momentum of firm i in year t , and
LTG_{it}	:	Financial analyst long-term growth rate estimate for firm i in year t .

Similar to stock price changes, analysts are expected to change their recommendations only if new (i.e., unanticipated) information becomes available. Therefore, we considered the relationship between unanticipated changes in our explanatory variables and changes in the recommendations of financial analysts. For the brand values and each of the explanatory variables, we computed the unanticipated changes by taking the residuals of an AR(1) model, such that for changes in the recommendations of financial analysts, we estimated:

$$\begin{aligned} \Delta REC_{it} = & \alpha_{CR} + \beta_{CR1} \cdot U\Delta BE_{it}^{NON-FEPS} + \beta_{CR2} \cdot U\Delta EM_{it} \\ & + \beta_{CR3} \cdot U\Delta PM_{it} + \beta_{CR4} \cdot U\Delta COV_{it} \\ & + \beta_{CR5} \cdot U\Delta LTG_{it} + \beta_{CR6} \cdot U\Delta LEV_{it} + \varepsilon_{DR} \end{aligned} \quad (5),$$

where

ΔREC_{it}	:	Percentage change in mean financial analyst stock recommendation for firm i from year $t - 1$ to t ,
$U\Delta BE_{it}^{NON-FEPS}$:	Unanticipated non-FEPS percentage change in Interbrand brand value of firm i from year $t - 1$ to t ,
$U\Delta EM_{it}$:	Unanticipated percentage change in earnings momentum of firm i from year $t - 1$ to t ,
$U\Delta PM_{it}$:	Unanticipated percentage change in price momentum of firm i from year $t - 1$ to t ,
$U\Delta LTG_{it}$:	Unanticipated percentage change in financial analysts' long-term growth rate estimate of firm i from year $t - 1$ to t ,
$U\Delta COV_{it}$:	Unanticipated percentage change in number of forecasts for firm i from year $t - 1$ to t , and
$U\Delta LEV_{it}$:	Unanticipated percentage change in leverage factor for firm i from year $t - 1$ to t .

When estimating all these models, we include dummy variables for years in which the fiscal period of a company ends, which controls for time-specific effects; dummy variables for two-digit standard industrial classification codes to control for industry effects; and a dummy variable that indicates whether the firms are from the United States (because U.S. reporting requirements are often stricter than those in other countries). Simply for reasons of parsimony, we did not include the dummy variable terms in our equations. Finally, serial correlation might disturb our estimation results, but unit root tests suggested that serial

correlation did not affect our estimation results. In Table 1, we present descriptive statistics for the dependent and key independent variables of interest.

Empirical Results

Brand value and dispersion in forecasts

According to H1, the higher the level of firm brand value, the higher the dispersion in financial analyst earnings forecasts. In support of H1 (see Table 2, column A), firms with higher levels of brand value induce more dispersion in financial analysts' annual earnings forecasts ($b = .001, p < .01$). That is, financial analysts disagree more in their forecasts about firms with higher levels of brand value.

According to H2, the greater the absolute changes in the level of firm brand value, the higher the dispersion in financial analyst earnings forecasts should be. In support of H2 (see Table 2, column A), absolute changes in the level of brand value are also positively associated with dispersion in earnings forecasts ($b = .001, p < .05$); the greater the absolute changes in firm brand value, the higher is the dispersion in forecasted earnings. This finding confirms the commonly asserted link between forecast dispersion and information uncertainty (e.g., Johnson, 2004). That is, large absolute changes in brand value signal information uncertainty; even if it is clear that a change in brand value induces a change in earnings, it is not clear how large this change will be, so forecasts for companies that exhibit greater absolute brand value changes are more dispersed.

Brand value and forecast errors

We find support for H3, which posits that the greater the changes in the level of brand value, the more financial analysts underestimate the effect on actual earnings (see Table 3, column A). Changes in brand value have a negative, significant association ($b = -.001, p < .01$) with financial analyst forecast error. This means that positive changes lead to more negative forecast errors, whereas negative changes lead to more positive forecast errors. A more negative forecast error due to positive changes in brand value indicates that the earnings per share forecast is smaller than the actual earnings per share, which implies that (*ceteribus paribus*) the positive effect on actual earnings per share due to an increase in brand value is, on average, underestimated by financial analysts because their forecast is lower than the actual.

A more positive forecast error due to negative changes in brand value indicates that the earnings per share forecast is higher than the actual earnings per share, which implies that (*ceteribus paribus*) the negative effect on actual earnings per share due to an decrease in brand value is, on average, also underestimated by financial analysts, as their forecast is higher than the actual. Overall, the resulting association indicates that financial analysts, on average, tend to underestimate the effect of changes in the level of brand value.

Brand value and recommendations

Finally, in H4, we hypothesize that the higher the level of firm brand value, the more favorable the financial analyst stock recommendations. Firms with more brand value, indeed, are negatively associated with the level of financial analyst stock recommendations ($b = -.002, p < .01$), in support of H4 (see Table 4, column A). Stock recommendations are reversed (1 = strong buy to 5 = sell), so the negative parameters indicate more favorable recommendations, and financial analysts report more favorable stock recommendations for firms with greater brand value. In H5, we hypothesize that the greater the changes in the level of firm brand value, the more favorable the changes in stock recommendations by financial analysts. Also in support of H5 (see Table 5, column A), we find that unanticipated changes in brand value have a negative, significant association ($b = -.001, p < .01$) with changes in the financial analyst stock recommendations. Again, analysts reveal more favorable changes in stock recommendations for firms with higher unanticipated changes in brand value.

Robustness checks

To confirm the robustness of our results, we performed several additional analyses. First, in addition to mean annual earnings forecasts, we analyzed median earnings forecasts for the current fiscal year in the fiscal year-end month. The results in Table 3 (column B) are consistent with those reported for the mean, which suggests our substantive results are robust across different measures of analyst forecasts. Regarding the stock recommendations, we investigated the median in the month after Interbrand announced its brand values; in Table 4 (column B) and Table 5 (column B), we reveal that the substantial findings match those we outlined previously.

Second, because financial analysts can state their forecasts at different points in time, we analyzed the mean and median earnings forecasts properties (i.e., dispersion and error) in the preceding month closest to the annual earnings announcement (see column B in Table 2 and

columns C and D in Table 3). Again, our substantive results hold. However, we do not find a significant association of the absolute changes in brand values and dispersion in financial analyst earnings forecasts in the month closest to, but preceding, the annual earnings announcement ($b < .001, p > .10$). Whereas the level of brand value is still significant, we recommend caution in interpreting the association between changes in brand value and the amount of disagreement by financial analysts.

For the level of stock recommendation, we analyzed the fiscal year-end month and the month closest to, but preceding, the annual earnings announcement (columns C–F, Table 4) and find consistent results, such that our substantive results are robust for different timings of recommendations. The analysis of changes in financial analyst stock recommendations at the fiscal year-end month and in the month closest to, but preceding, the annual earnings announcement reveals that unanticipated changes in the level of brand value are not significantly associated with changes in stock recommendations at either time. Because Interbrand’s brand values are announced annually (usually near August), our results are not surprising but instead support our notion that, similar to stock prices, stock recommendations tend to change only in response to new information.

Third, we used different operationalizations of the variables. For example, to operationalize price momentum by the level and change in stock recommendation estimations, we used stock returns over the course of the year until the end of the calendar month immediately prior to the recommendation announcement date. Furthermore, we adjusted the stock returns by the value-weighted market index, with and without dividends. Overall, our substantive results do not change. We therefore have support for the robustness of our findings.

Discussion

Financial analysts play an important role in influencing the consensus formation of firm value and, thus, how marketing affects firm value. Our study, based on a large-scale longitudinal dataset, reveals that financial analysts are, on average, not “good marketers” because they misevaluate and disagree on the impact of brand value on firm cash flows because (changes in) brand value causes uncertainty in the information environment. Although information about firm brand values is publicly available for investors and financial analysts to potentially include in decision-making, our empirical findings indicate that some analysts incorporate that information while others do not. But, even when using this

information, analysts might make mistakes or do not know how to evaluate the impact of brand value on firm cash flows.

As such, the question is whether it matters. Disagreement and misevaluation affect the focal firms (e.g., prevent securities from achieving a fair valuation) and, hence, are of major importance to senior executives and, in particular, marketing and sales managers. For example, individual executive compensation packages are often tied to stock price. More important, there seems to be a substantial feedback loop of investor sentiment into managerial actions (e.g., Markovitch, Steckel, & Yeung, 2005). But, this also has important implication for IR professionals and, hence, the interface between marketing and IR. Firms spend substantial resources dealing with capital markets through press releases, corporate advertising, and CEO appearances. For example, an IR program in a typical small or newly public firm requires 20–25% of the CEO's time and approximately 50% of the chief financial officer's (Hong & Huang, 2005).

Based on our results, we argue that marketing and IR departments need to better communicate the information content of brand value as a key market-based intangible asset. Communicating such information reduces uncertainty with respect to the brand-specific components of firms. Currently, if firms include marketing information in their financial communication at all, most of it appears in narrative form, without numbers or other quantitative data, which undermines the efficacy of marketing's contributions. To report brand values, many firms should begin measuring the value of their brand and its changes over time, which could encourage collaboration between their marketing and IR departments because the marketing department is usually the site of knowledge about brand values. These departments should collaborate to determine the value of the firm's brands and explore how to communicate this information to the financial community. This effort might represent a starting point for collaborations in communications to both product and financial markets. Knowledge about the superior presentation of information, the explanation of business models, relationship building, and perception management might expand marketing's influence within a firm.

Further, we argue that marketing and IR departments need to systematically include brand values or other marketing constructs in the financial community's decision making. The rise of intangible assets in size and contribution to the growth and value of firms has confronted financial analysts and investors with an interesting challenge. While this greater uncertainty implies incentives for financial analysts to provide value-added information to investors, our study shows that analysts are not necessarily tackling intangibles correctly. As

such, we encourage financial analysts and investors to use existing marketing information, especially with respect to brands, in decision-making and to acquire knowledge with respect to the link between market-based assets and firm performance. Marketing can be of great help because it has created an extensive knowledgebase in that area. Further research should find ways to market marketing knowledge to the financial community to increase the acceptance and use of that valuable information. One important factor might be a standard procedure to measure each marketing metric to enable analysts and investors to compare companies. Metrics, such as customer satisfaction and loyalty, tend to reflect each firm's own measurement method. Further research should investigate potential standards for brand value or marketing metrics in general (for a discussion of standards in marketing, see Stewart, 2008), which could lead to the practice of auditing non-financial metrics, just as auditing firms assess financial metrics.

Nevertheless, similar to other studies that use secondary financial data, this study suffers from some limitations. Our measure is based on Interbrand's brand values, which only include high value brands and the details of their computations are not public. Further research should use a broader spectrum of brand values, thereby offering, for example, more fine-grained analyses of high versus low value brands and the resulting associations with financial analyst earnings forecasts and stock recommendations. To our knowledge, such detailed data about the financial value of brands across the spectrum is not available. In addition, for purposes of convergent validity, further research might take several measures of brand equity and compare the outcomes. This way, one might also be able to address potential concerns about using one particular measurement as the "true" value of brand equity. This research does not examine why analysts make errors; additional research might consider whether more experienced analysts exhibit lower levels of errors in earnings forecasts. Moreover, because financial analysts who work for prestigious institutions likely have better access to firm information, it might be worthwhile to analyze whether such analysts are less biased. Financial analysts covering consumer packaged goods firms also might be more familiar with marketing and its importance, which may make them somewhat less biased when it comes to brand value or other marketing information. Finally, our research does not explicitly investigate whether or not financial analysts rely on marketing information in their decision making. Further research might explicitly examine which, if at all, particular marketing information analysts are using.

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Table 1
Descriptive Statistics

	Mean	Standard Deviation	Minimum	Maximum
Brand Value (in billions of USD)	11.61	12.88	1.00	72.54
Earnings (per share) Forecasts (USD)				
Fiscal Year-End Month				
Mean	2.7579	4.7081	-1.78	62.46
Median	2.7531	4.7046	-2.44	62.46
Previous Month				
Mean	2.6071	3.8348	-2.94	53.50
Median	2.6018	3.8213	-3.45	53.50
Dispersion in Forecasts				
Fiscal Year-End Month				
	.0697	.2011	.00	3.43
Previous Month				
	.0776	.0325	.00	7.00
Forecast Error				
Fiscal Year-End Month				
Mean	.0809	1.7842	-1.00	49.00
Median	.0776	1.7891	-1.05	49.28
Previous Month				
Mean	.0737	1.7206	-1.05	47.31
Median	.0697	1.6945	-1.10	46.35
Stock Recommendations				
Fiscal Year-End Month				
Mean	2.3569	.4348	1.33	4.13
Median	2.3881	.5470	1.00	4.00
Previous Month				
Mean	2.3625	.4399	1.15	4.13
Median	2.3910	.5462	1.00	4.00
Month after Brand Value Announcements				
Mean	2.3102	.4393	1.26	4.00
Median	2.3408	.5635	1.00	4.00

Table 2
Dispersion in Financial Analyst Earnings Forecasts

	A	B
	Dispersion in Financial Analyst Earnings Forecast Fiscal Year-End Month	Dispersion in Financial Analyst Earnings Forecast Preceding Month
Brand Value (level)	.001 (.000)	.001 (.000)
Brand Value (absolute % change)	.001 (.038)	<.001 (.263)
Earnings (absolute % change)	-.001 (.000)	-.002 (.000)
Coverage	-.003 (.000)	-.003 (0.000)
Coverage (absolute % change)	.005 (.000)	.006 (0.000)
MSCI (absolute % change)	-.730 (.000)	-.764 (0.000)
Leverage (absolute % change)	.001 (.175)	.001 (0.267)
Loss (<i>t</i>)	.526 (.000)	.647 (0.000)
Loss (<i>t-1</i>)	-.041 (.000)	-.112 (.000)
Constant	.312 (.000)	.320 (.000)
Adjusted R-squared	.2600	.2588
N	482	481

Notes: We estimated the model by including dummy variables (not shown) for year-specific effects, industry-specific effects, and whether the firm is U.S.-based. The *p* values are in parentheses.

Table 3
Financial Analyst Earnings Forecast Errors

	A	B	C	D
	Mean Financial Analyst Earnings Forecast Error Fiscal Year-End Month	Median Financial Analyst Earnings Forecast Error Fiscal Year-End Month	Mean Financial Analyst Earnings Forecast Error Preceding Month	Median Financial Analyst Earnings Forecast Error Preceding Month
Brand Value (% change)	-.001 (.000)	-.001 (.000)	-.001 (.000)	-.001 (.000)
Earnings (% change)	-.002 (.000)	-.001 (.000)	-.002 (.000)	-.001 (.000)
Coverage (% change)	-.003 (.000)	-.002 (.009)	-.008 (.000)	-.007 (.000)
MSCI (% change)	-.773 (.000)	-.761 (.000)	-.730 (.000)	-.741 (.000)
Loss (<i>t</i>)	.387 (.000)	.369 (.000)	.395 (.000)	.381 (.000)
Loss (<i>t</i> – 1)	.006 (.265)	-.002 (.681)	-.005 (.369)	-.013 (.030)
Constant	.158 (.000)	.149 (.000)	.147 (.000)	.148 (.000)
Adjusted R-squared	.1717	.1641	.1765	.1664
N	529	530	524	524

Notes: We estimated the model by including dummy variables (not shown) for year-specific effects, industry-specific effects, and whether the firm is U.S.-based. The *p* values are in parentheses.

Table 4
Financial Analyst Recommendations

	A	B	C	D	E	F
	Mean Financial Analyst Recommendations Month After BV Announcements	Median Financial Analyst Recommendations Month After BV Announcements	Mean Financial Analyst Recommendations Fiscal Year-End Month	Median Financial Analyst Recommendations Fiscal Year-End Month	Mean Financial Analyst Recommendations Preceding Month	Median Financial Analyst Recommendations Preceding Month
Brand Value	-.002 (.000)	-.002 (.000)	-.002 (.000)	-.003 (.000)	-.002 (.000)	-.004 (.000)
Earnings Momentum	-.022 (.000)	-.004 (.000)	-.011 (.000)	-.019 (.000)	-.017 (.000)	-.017 (.000)
Price Momentum	-.307 (.000)	-.369 (.000)	-.246 (.000)	-.276 (.000)	-.244 (.000)	-.325 (.000)
Analyst Future Forecasts	-.001 (.000)	-.002 (.000)	<-.001 (.756)	.001 (.144)	-.001 (.000)	-.006 (.000)
Leverage	.254 (.000)	.295 (.000)	.322 (.000)	.3236 (.000)	.349 (.000)	.412 (.000)
Coverage	-.002 (.000)	-.001 (.042)	-.003 (.000)	-.007 (.000)	-.002 (.000)	-.005 (.000)
Constant	2.232 (.000)	2.465 (.000)	2.479 (.000)	2.779 (.000)	2.445 (.000)	2.756 (.000)
Adjusted R-squared	.3126	.2515	.2443	.1797	.2595	.1917
N	596	607	609	613	596	599

Notes: The consensus of buy/hold/sell recommendations by financial analysts appears on a reversed scale (1 = strong buy to 5 = sell), so negative parameters indicate more favorable changes in recommendations. All changes are unanticipated changes in variables, measured by taking the residuals of an AR(1) model. We estimated the model by including dummy variables (not shown) for year-specific effects, industry-specific effects, and whether the firm is U.S.-based. The *p* values are in parentheses.

Table 5
Changes in Financial Analyst Recommendations

	A	B
	Mean, Month After BV Announcements	Median, Month After BV Announcements
Brand Value (% change)	-.001 (.000)	-.002 (.000)
Earnings Momentum (% change)	-.001 (.000)	<-.001 (.000)
Price Momentum (% change)	<-.001 (.000)	<-.001 (.000)
Analyst Future Forecasts (% change)	.006 (.000)	.003 (.000)
Leverage (% change)	-.011 (.000)	-.008 (.000)
Coverage (% change)	-.104 (.000)	-.145 (.000)
U.S. Firm	.027 (.000)	.060 (.000)
Constant	.125 (.000)	.086 (.000)
Adjusted R-squared	.2356	.1823
N	309	311

Notes: The consensus of buy/hold/sell recommendations by financial analysts appears on a reversed scale (1 = strong buy to 5 = sell), so negative parameters indicate more favorable changes in recommendations. All changes are unanticipated changes in variables, measured by taking the residuals of an AR(1) model. We estimated the model by including dummy variables (not shown) for year-specific effects, industry-specific effects, and whether the firm is U.S.-based. The *p* values are in parentheses.

Figure 1
Conceptual Framework

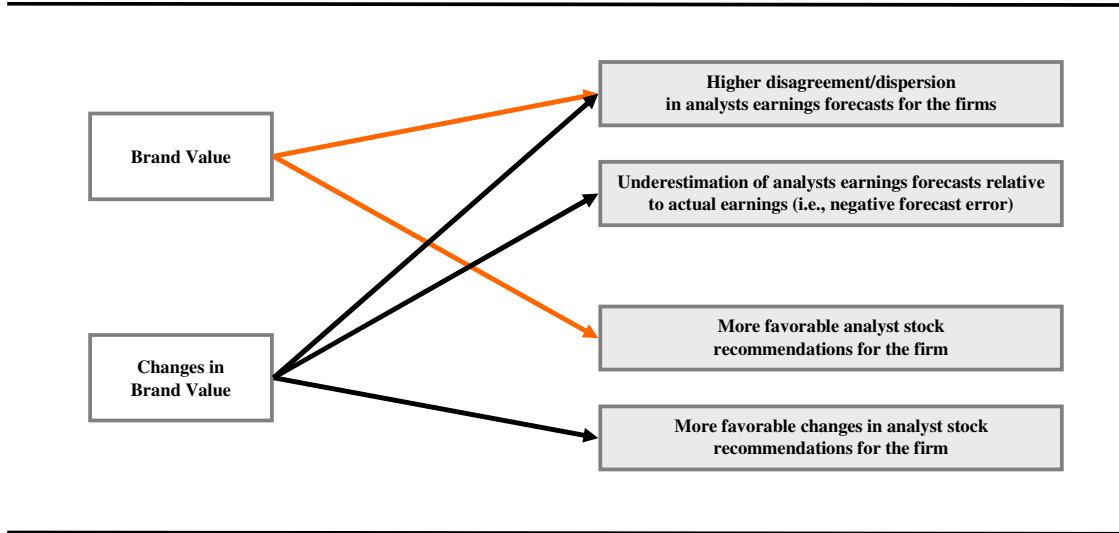


Figure 2
Data Timeline

