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Exploring the impact of strategic emphasis on advertising versus R&D during stock market downturns and upturns

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ABSTRACT

A strategic emphasis on value appropriation to value creation framework has emerged as a growing area of research. However, whether such emphasis is effective in periods of different market trends remains an unexplored area of research. Among 287 firms in 17 industries listed on the New York Stock Exchange between 1980 and 2010, the authors found that strategic emphasis on advertising significantly decreases a firm's systematic risk when the stock market is experiencing a downturn (i.e., shielding stock returns in market downturns). Similarly, strategic emphasis on advertising significantly increases a firm's systematic risk when the market moves upwards (i.e., stimulating stock returns during market upturns). These results highlight that a strategic emphasis on value appropriation to value creation helps investor confidence recover during dark times and boosts it during good ones.

1. Introduction

Firms try to create sustainable competitive advantages by strategically allocating resources between two essential processes: (1) creating value from product innovation and (2) appropriating value from profit derivation (Mizik & Jacobson, 2003). We can label allocating a specific amount of support between these alternatives as a *strategic emphasis* (Edeling & Fischer, 2016; Mizik & Jacobson, 2003). To achieve a firm's current objectives, managers should adjust their strategic emphasis, given that internal and external environments are becoming more dynamic and hypercompetitive.

We often observe that firms fail to make profit only from value creation. For example, when TiVo innovated the digital video recorder (DVR), the company became a dinosaur almost overnight. DVRs were exclusive in 2006 (i.e., value creation), yet TiVo rarely made profit from the innovation and was unsuccessful in licensing its technology for wider appeal (i.e., value appropriation). Further, the inability to foresee competitive forces, such as streaming media, made TiVo obsolete in the marketplace. Investors saw the magnitude of future earnings when the TiVo launched the technology but when profit was not realized, investors left TiVo. Therefore, a change of strategic emphasis reflects how the firm will capture and lengthen the competitive advantage over time, which in turn, leads to superior financial performance.

Among the various strategic decisions, advertising expenditure has a greater connection with value appropriation, whereas research and development's (R&D) has greater association with value creation (Han, Mittal, & Zhang, 2017; Mizik & Jacobson, 2003). Investors can view an emphasis on advertising as facilitating a competitive structure for "lengthening" the acquired success, while relative emphasis on R&D can be interpreted by investors as "owning" potential earnings. This can be supported by the recent study (McAlister, Srinivasan, Jindal, & Cannella, 2016) that investigates how advertising influences firm value through brand equity for a differentiator because advertising can elaborate the firm's points of difference. However, advertising cannot build firm value for a cost leader because such a firm has no points of difference on which to build (McAlister et al., 2016).

The extensive marketing literature that has advocated the importance of marketing decisions in reducing financial risk can be used as a basis to confirm the "lengthening" role of acquired success through strategic emphasis on advertising over R&D. Accordingly, firm investments in advertising tend to be less risky than those in R&D. A marketing alliance represents an accessibility to new markets or a brand-equity-strengthening effect with risk-reducing effect (Thomaz & Swaminathan, 2015). For example, negative impact due to product recall diminishes when firms emphasize brand advertising (Liu, Shankar, & Yun, 2017). In contrast, the downside risk of value-creation activities is much stronger because a failure in R&D may trigger the loss of a potential customer and alienate current ones (Frohlich, 2014).

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Interestingly, Han et al. (2017) found that the risk-reducing effect of a strategic emphasis on advertising is weaker under large relative performance but stronger under demand instability. Taken together, these results indicate that firms can buffer themselves from broader financial market shocks and reduce the demand volatility by marketing investments. Following this argument, we next articulate how market trends may moderate the effect of strategic emphasis on financial risk.

Market trends can severely affect the financial performance of firms, as investors are sensitive to market conditions. Financial portfolio theory supports this idea by illustrating how investors can construct an optimal portfolio for maximizing returns under a given level of market change (Fama & French, 1992; Markowitz, 1999). Economic downturns have lowered investor confidence, prompting them to seek stability from risk-resistant stocks. A strong post-crisis growth often follows an economic crash, and firms successful in bringing back investor confidence become recipients of the growth. As such, a holistic understanding of a firm's capability and resilience must become a key aspect for investors across distinct market climates. Investors may highly value a firm's fundamental capability that facilitates a competitive structure under downturns and a capacity to build resilience that lengthens acquired success during upturns. As such, from investors' points of view, firms are required to play like a *libero*, a versatile sweeper in soccer. One role of this position is to play defensively to stop an opponent's attack (i.e., minimizing negative performance in market downturns), while the other is to play offensively in order to build a counter-attack (i.e., maximizing positive performance in market upturns). Thus, investors require constant attention not only to the fundamentals that how firms meet the consumers' evolving demands despite intense competition during downturns but also to the capacity to build resilience that quickens recovery, and furthers growth during upturns. Strategic emphasis is thus a key firm-level action that shows the relative importance of vulnerability assessment because it demonstrates the broad range of understandings pertaining to different market trends and the level of preparation for resilience to withstand each one.

This study examines the relationship between strategic emphasis on advertising over R&D and stock-return risk in the presence of market trends (i.e., market upturns versus market downturns). We summarize the contributions of this study as follows. First, although various financial performance metrics (e.g., profitability, growth, and risks) have been the subject of academic research in marketing (Hanssens, Rust, & Srivastava, 2009), this is the first study that explores how market trends are entwined with the impact of a strategic emphasis on firm risks. We examine how the climate of financial markets moderates the relationship between strategic emphasis and firm risk. Second, in contrast to the prior literature that only focuses on the effect of marketing actions on downside risk (i.e., the protective role of marketing investment under downturns), we explore whether there is a firm's specific behavior that accounts for not only protective stock returns in times of difficulty, but also highly receptive stock returns in times of prosperity.

We begin by reviewing the literature on the concept of strategic emphasis, the relationship between strategic emphasis and stock-return risk, and the moderating role of market trends. We then detail the rationale for linking strategic emphasis to stock-return risks and develop hypotheses. Next, we explain our empirical analysis by introducing the data used in this study, measurements of key variables, and a proposed model. Finally, we present the results of the study with discussion on academic and managerial implications followed by directions for future research.

2. Literature review

2.1. Strategic emphasis between value appropriation and value creation

The future earnings of a firm can be created and/or strengthened by key intangible assets that are contributed by advertising and R&D (Erickson & Jacobson, 1992). Advertising enables a firm to have a price premium, reduces its vulnerability to competition (Keller, 1998), and serves as a market entry barrier (Aaker, 1996; Keller, 1998). Investment in R&D contributes to increasing production efficiencies, improving existing products, and creating competitive advantages (Rubera & Kirca, 2012).

Although advertising and R&D spending have been widely employed as a firm's important strategic investments in previous literature (e.g., McAlister, Srinivasan, & Kim, 2007; Steenkamp & Fang, 2011), the return on advertising apparently differs from that on R&D in the context of the risk-reward window. The benefits of R&D typically materialize over the long run (Chan, Lakonishok, & Sougiannis, 2001), thus R&D investment represents a high-risk and long-term strategic decision (Doukas, Pantzalis, & Kim, 1999). Mizik and Jacobson (2003) defined *value creation* as the process of creating value in order to widen the value gap between a firm and its competitors, whereas *value appropriation* as the process of extracting the profits of created value in the market and protecting it from competitors. Both capabilities are required for firms to sustain competitive advantage, and these capabilities are mutually supportive. Firms may allocate more resources to either R&D as a value-creation activity or advertising as a value-appropriation activity, depending on an area of emphasis. In fact, Mizik and Jacobson (2003) found significant differences in advertising spending compared to R&D spending according to industry, company, and time. For example, they classified industries into high-, stable-, and low-technology subsamples from 566 different firms covering the period 1980–1998 given that investor response might vary with the type of environment. They exhibited that the estimated mean value of strategic emphasis on advertising was negative for the entire sample, the high-technology group, and the stable-technology group. This indicates that firms, in general, show greater relative reliance on value creation over value appropriation capabilities in high-technology and stable markets. However, the mean of strategic emphasis on advertising was positive for low-technology groups such as food, which indicates relative emphasis on value appropriation over value creation capabilities. From the plot of strategic emphasis indicator for the Intel Corporation for the period 1982–1998, they found changes in strategic emphases over time. Although Intel maintained relative emphasis on value creation, the measure showed a shift in emphasis toward value appropriation over time.

2.2. Effects of strategic emphasis on stock-return risk

Stock-return risk and stock returns are the most important factors in stock trading (Luo & Bhattacharya, 2009). Stock-return risk may be divided into systematic and idiosyncratic risk. Systematic risk explains the portion of stock-return risk driven by the volatility of market returns. It indicates the sensitivity of an individual stock to market movements. Idiosyncratic risk is the portion of a stock's return attributable to internal factors unrelated to market movements. Systematic risk explains nearly 20% of stock risk, with the remaining 80% being explicated by idiosyncratic risks (Srinivasan & Hanssens, 2009).

Both R&D and advertising investment affect a firm's stock-return risk, although there exist conflicting results. For example, McAlister et al. (2007) suggested that both advertising and R&D investment have significant negative effects on systematic risk. However, Chen, Peng, and Wei (2012) found significant positive effects of R&D investment on systematic and idiosyncratic risk for firms facing mid- or high-level risk. However, the same study revealed significant negative effects from advertising investment on idiosyncratic risk for firms with a high level of idiosyncratic risk. In the service innovation literature, e-commerce initiatives (Dewan & Ren, 2007) and service innovativeness (Dotzel, Shankar, & Berry, 2013) increase idiosyncratic risks. Since innovations import a high level of uncertainty, the literature tends to suggest that a positive relationship exists between innovation and firm risks.

In general, a firm prioritizes R&D and advertising investment given limited resources and a competitive context. The strategic emphasis on

value appropriation over value creation is one of the firm's risk-hedging decisions that can directly affect its risk. Strategic emphasis on advertising is highly related to the stability of a customer base, which in turn reduces the volatility of a firm's revenue stream, and thus affects the variability of its stock returns associated with macroeconomic events (i.e., systematic risk) and the variability of the stock itself (i.e., idiosyncratic risk). Accordingly, investor response to the firm's strategic emphasis would be significantly different. Our analysis points to a firm's strategic emphasis being a significant driver of its risk.

2.3. Market trends and stock-return risk

One of the key approaches in defining market trends is the division of downturns and upturns based on both market and risk-free returns (e.g., Ang, Chen, & Xing, 2006). In particular, the market is in a downturn when market returns are lower than the risk-free rate of return, with the opposite being true during an upturn.

According to Ang et al. (2006), investors pay a higher premium for downside risk than for upside risk because they are more sensitive to losses during market downturns than gains expected during market upturns (Roy, 1952). The systematic risks of individual firms during downturns are significantly different from those during upturns in the U.S. stock market (Price, Price, & Nantell, 1982). Further, Tikoo and Ebrahim (2010) also claimed a higher level of positive reactivity between advertising investment and earnings per share for firms that increased advertising investment but decreased R&D investment during an economic downturn, compared with those that invested more in R&D. When the economy is spiraling downward, firms should protect market share from competitors' better offers. Thus, a greater emphasis on advertising may enable a firm to maintain its loyal customer base as evidenced by the positive relationship between advertising and earnings persistence (Kessides, 1990; Mueller, 1990).

3. Hypothesis

This study investigates the effects of strategic emphasis on systematic risk and idiosyncratic risk under two conditions: (1) in time series as a whole and (2) in market downturns and upturns, respectively.

3.1. Relationship between strategic emphasis on advertising and stock-return risk

Relative emphasis on the application of resources portrays how a firm will address the market opportunities and reveals the firm's primary goals. Investors can interpret an emphasis on R&D as “owning” potential earnings since firms are required to create new advantages at a faster speed compared to old advantages eroded by competition (Grant, 1991). However, considering that R&D investment takes a longer time to produce results compared to advertising investment, it is hard to competitively respond on a timely basis by R&D activities. Since only partial information on related R&D projects are disclosed to the public (Chan et al., 2001), investors cannot assess the full value of the firms' R&D information.

In contrast, investors view an emphasis on advertising as “lengthening” the acquired success through facilitating competitive structure (MacDonald & Ryall, 2004). Incumbents continuously try to build a good corporate reputation in order to maintain the current favorable state (Roberts & Dowling, 2002) because advertising investment enables a firm to differentiate itself from competitors by establishing a market-based asset (McAlister et al., 2007). In addition, advertising is one of the drivers that can slow down the velocity of profit erosion (Mueller, 1990). As such, an emphasis in advertising compared to R&D extends the duration of a firm's competitive advantage, which generates a stable customer base. It advocates greater understanding of customer demand and reduces the volatility of revenues. This reality suggests that an emphasis on advertising stabilizes a firm's cash flow, thus allowing investors to interpret an emphasis on advertising as a risk-reducing tool, which may bring secured profits from its stable customer base. Consequently, a strategic emphasis on advertising is likely to lower the firm's stock-return risk in general.

Specifically, some firms with consistent cash flow can better buffer them from the effect of market vulnerability, while others with volatile cash flow are more susceptible to market fluctuations. As such, the stable customer base from a firm with strategic emphasis on advertising is expected to reduce a firm's vulnerability to market shocks.

H1-1. The higher strategic emphasis on advertising, the lower a firm's systematic risk.

Idiosyncratic risk refers to stock-return variability that is not explained entirely by market movements but rather is driven by firm-specific actions. We anticipate firms with strategic emphasis on advertising will have a risk-reducing effect on their idiosyncratic risk due to the lower volatility in costs with respect to R&D. The high out-of-pocket R&D costs often result from the use of new technologies to reduce delays and to increase success rates (Schuhmacher, Gassmann, & Hinder, 2016). If firms with strategic emphasis on R&D cannot be adequately positioned to take advantage of future markets, investors are less likely view these firms as owning the potential for future market. In contrast, more knowledge of the customer base through strategic emphasis on advertising can lower the variations of customer service cost (Anderson, Fornell, & Lehmann, 1994). Consequently, emphasizing more advertising over R&D would entail lower volatility in costs, which in turn, would lower the idiosyncratic risk a firm faces. Therefore, this study supposes that a strategic emphasis on advertising over R&D will reduce the variability of stock returns.

H1-2. The higher strategic emphasis on advertising, the lower a firm's idiosyncratic risk.

3.2. The role of market trends on the relationship between strategic emphasis and stock-return risk

The impact of strategic emphasis on the firm's risk can vary across market situations. During a market downturn, investors tend to have lower risk tolerance, pessimistic future projections, and a short-term orientation. However, in a market upturn, the positive future economic conditions significantly increase market confidence. Investors are less sensitive in increase of financial wealth in good times than they are to decrease it in bad times (Hanna, Fan, & Chang, 1995).

Downside systematic risk refers to the correlation between variations of an individual stock returns to the entire stock market when the market shrinks. Upside systematic risk, however, refers to the correlation between variations of an individual stock's return compared to the entire stock market when the market flourishes. We expect a systematic-cushion effect during downturns and systematic-receptiveness effect during upturns for the following reasons.

Market downturns shake consumers from their habitual decision-making processes so that they shift to firms with more attractive market offerings, while market upturns hold them within previous decision inertia so they are more likely to stick with previous decisions (Gijsenberg, van Heerde, Dekimpe, & Steenkamp, 2010). For example, consumers buy more private label brands during contractions due to increased benefits, and much of this habit persists during expansions since consumers update their quality perception from the product experience across market trends (Lamey, Deleersnyder, Steenkamp, & Dekimpe, 2012). Satisfied customers are also likely to continue purchasing—and even purchase much more—from a firm (Rust, Zahorik, & Keiningham, 1995). Taken together, during downturns, firms with strategic emphasis on R&D may lose some market share to firms with a strategic emphasis on advertising by the contraction-induced marketing adjustment, wherein the damage may remain even during in upturns,

generating a non-zero-sum game in the long run. In addition, given investors are biased with familiar stocks (Frieder & Subrahmanyam, 2005), firms with strategic emphasis on advertising are likely to be safer since major R&D innovations generally take a long time to become effective in the marketplace. More investors are likely to prefer a familiar stock during upturns because they can immediately acquire consumers' attention that will recoup losses more quickly.

Therefore, we propose that strategic emphasis be placed on advertising will help firms insulate themselves from risks during market downturns and will generate more cash flow during upturns. That is, we expect a *risk-reducing effect* of strategic emphasis on advertising during market downturns and a *high-receptiveness effect* of strategic emphasis on advertising during market upturns.

H2-1. A higher strategic emphasis on advertising results in (a) a negative change in a firm's downside systematic risk and (b) a positive change in a firm's upside systematic risk.

Downside idiosyncratic risk refers to the variation of a stock's price when the market shrinks and upside idiosyncratic risk when the market flourishes. We suggest that strategic emphasis on advertising facilitates a firm's capability to prolong profitability (1) by establishing barriers from competitors to imitation in downturn, and (2) by lowering customer cost during upturns, which lowers (increases) downside (upside) idiosyncratic risk. As the market goes down, a firm with an emphasis on advertising will still enjoy the high barriers from point of differentiation through advertising. As the market goes up, firms following this strategy retain customers by garnering a better understanding of customer requirements and increasing customer usage through knowledge of its customer base and lower average customer cost. Consequently, such firms suffer fewer losses during market downturns and higher benefits during upturns.

H2-2. A higher strategic emphasis on advertising results in (a) a negative change in a firm's downside idiosyncratic risk and (b) a positive change in a firm's upside idiosyncratic risk.

4. Empirical analysis

4.1. Data

In this study, we used the financial data of firms listed on the New York Stock Exchange between 1980 and 2010. We collected financial statement data from the COMPUSTAT North American database and monthly stock data from the Center for Research in Security Prices (CRSP) database.

Our sample contained public companies between 1980 and 2010 which included a few significant upturns (i.e., 1999–2000, 2005–2006), and downturns (i.e., 2000–2001, 2007–2008). We examined our hypotheses by calculating the annual differences in adjusted risk measures from 1980 to 2010 for the firms in our sample for which sufficient data were available. The main reason for doing so was that we needed firms that allocated investments over advertising and R&D sufficiently across market downturns and upturns. In addition, we needed to balance the periods of market downturns and upturns.

We selected firms based on the following criteria: (1) yearly financial data on advertising and R&D expenditures were available, (2) the range of systematic risk and idiosyncratic risk was consistent with that of the previous studies (i.e., firms with observations in the upper and lower 2.5% were removed), and (3) firms belonging to an industry in which more than three firms were listed. As a result, we gathered 2951 observations from 287 firms in 17 industries. An average of nearly 10 time-series data points were used for each firm to overcome the limitation afflicting previous studies that too few observations were used for the analysis. McAlister et al. (2007) gathered 3198 observed values from 644 firms and used an average of 5 observations per firm for time-series analysis. Tuli and Bharadwaj (2009) collected 806 observations from 129 firms and used an average of 6 observations per firm.

We estimated the dependent variables (e.g., systematic risk, idiosyncratic risk) and independent variables (e.g., strategic emphasis) using five-year moving windows between 1980 and 2010. We obtained dependent variables from the CRSP database by using monthly stock returns and the data for independent variables from COMPUSTAT, with yearly basis for each firm *i* for each five-year moving window, resulting in 27 windows.

4.2. Measurements

4.2.1. Dependent variables

We acquired systematic risk and idiosyncratic risk from Carhart's (1997) four-factor model such that market risk factor, size, book-to-market ratio, and momentum factors in order to explain expected stock returns such that:

$$(R_{it} - R_{ft}) = \alpha_i + \beta_i(R_{mt} - R_{ft}) + \delta_{1i}(SMB)_t + \delta_{2i}(HML)_t + \delta_{3i}(UMD)_t + \varepsilon_{it} \quad (1)$$

R_{it} is the stock return for firm *i* in month *t*, R_{ft} is the risk-free rate of return in month *t*, and R_{mt} is the average market rate of return in month *t*. SMB_t is the difference between return of small stocks and the return of large stocks. HML_t is the difference between return of high book-to-market stocks and low book-to-market stocks, and UMT_t is the difference between average return of the high-prior returns and low-prior ones. In Eq. (1), systematic risk (SR_i) for firm *i* at time *t* is measured by β_i, and idiosyncratic risk (IR_i) for firm *i* at time *t* is measured by the standard deviation of ε_{it}.

4.2.2. Independent variables

Strategic emphasis of firm *i* at time *t* (SE_{it}), a focal independent variable of this study, was measured based on yearly advertising and R&D expenditures and total revenue gathered from COMPUSTAT. We first obtained the five-year moving average of advertising and R&D expenditures for each firm to measure advertising intensity (ADV_t) and R&D intensity (RD_t), respectively. Then we expressed size-adjusted SE_{it} as:

$$SE_{it} = \frac{(ADV_{it} - RD_{it})}{Revenue_{it}}$$

Therefore, a positive value of SE_{it} means that the firm places strategic emphasis on advertising, and a negative value shows strategic emphasis on R&D.

4.2.3. Control variables

We added company- and industry-specific variables that might affect stock-return risk as control variables in reference to Tuli and Bharadwaj (2009). Five accounting variables were also included in the model in order to eliminate the potentially confounding effects: return on asset (ROA), asset size, leverage, dividend payout, and current ratio.[1] The inclusion of the Herfindahl concentration index controlled for competitive intensity in an industry. We also included lagged values of systematic risk and idiosyncratic risk as control variables to control the inertia of dependent variables (Mizik & Jacobson, 2004). We provide the operational definitions of these measures in Table 1 and descriptive statistics with correlation in Table 2.

4.2.4. Stock market trends

In this study, we defined two different market trends. First, short-

[1] All else being equal, firms with greater ROA should exhibit better creditworthiness. Firms with more valuable assets should be associated with greater return stability. Firms with higher leverage should be associated with higher risk because it indicates the uncertainty of future financial value.

Table 1
Measurement of control variables.

Variable	Measurement
Level of competition *HHI*	A 5-year moving average of the Herfindahl-Hirschman Index
ROA *ROA*	A 5-year moving average of $^{\text{Net Income}}/_{\text{Asset}}$
Total assets *Asset*	A 5-year moving average of log(Asset)
Leverage *Leverage*	A 5-year moving average of $\frac{\text{Total long-term debt}}{\text{Long-term debt + Market value of equity}}$
Div payout *Div Payout*	A 5-year moving average of $\frac{\text{Cash dividends}}{\text{Market capitalization}}$
Current ratio *Current Ratio*	A 5-year moving average of $\frac{\text{Current Assets}}{\text{Current Liabilities}}$

We defined a time window as a long-term downturn when the *t*-statistic of the coefficient of a deterministic trend variable (κ) is less than -1.036 and as a long-term upturn when the *t*-statistic of κ is higher than 1.036. Otherwise, we defined the time window as being in long-term stability.

4.3. Model

As indicated in Eq. (4), we designed a research model to investigate the general relationship between strategic emphasis and stock-return risk, and the effects of market trends on the relationship between these two variables.

$$RISK_{it} = \gamma_1 RISK_{i(t-1)} + \gamma_2 SE_{i(t-1)} + \gamma_3 X_{i(t-1)} + \gamma_4 A_t + \varepsilon_{it} \quad (4)$$

where

Table 2
Descriptive statistics and correlation of variables.

Variable	N	M	SD	1	2	3	4	5	6	7	8	9	10	11	12	13
1. β	4593	1.00	0.52	1.00												
2. *IR*	4593	0.09	0.04	0.27*	1.00											
3. $\beta_{down}{}^{short}$	4594	0.99	1.27	0.35*	0.08*	1.00										
4. $IR_{downi}{}^{short}$	4594	0.08	0.04	0.22*	0.88*	0.08*	1.00									
5. $\beta_{up}{}^{short}$	4594	1.02	1.45	0.42*	0.15*	0.09*	0.12*	1.00								
6. $IR_{up}{}^{short}$	4594	0.08	0.04	0.27*	0.95*	0.06*	0.78*	0.14*	1.00							
7. *SE*	4594	−0.02	0.11	−0.10*	−0.10*	−0.06*	−0.08*	−0.01	−0.07*	1.00						
8. *ROA*	4594	0.05	0.07	−0.15*	−0.38*	−0.09*	−0.33*	−0.07*	−0.36*	0.14*	1.00					
9. *Asset*	4594	3.14	0.87	−0.11*	−0.40*	−0.05	−0.34*	−0.07*	−0.40*	0.06*	0.07*	1.00				
10. *Leverage*	4594	0.18	0.16	0.11*	0.23*	0.03*	0.20*	0.04*	0.21*	0.13*	−0.46*	0.04*	1.00			
11. *Div Payout*	3593	0.03	0.05	−0.07*	0.01	−0.01	0.01	−0.03*	0.02	0.07*	−0.05*	−0.07*	0.18*	1.00		
12.*Current Patio*	4510	2.22	1.66	0.03*	0.16*	0.02	0.14*	0.02	0.15*	−0.30*	0.03*	−0.37*	−0.17*	−0.01	1.00	
13. *HHI*	4594	0.28	0.19	−0.03*	−0.09*	0.04*	−0.07*	0.02	−0.10*	0.12*	−0.02	0.01	0.00	−0.01	−0.08*	1.00

Note. N = number of observations; M = mean; SD = standard deviation; β = systematic risk; IR = idiosyncratic risk; $\beta_{down}{}^{short}$ = systematic risk in a short-term downturn; $IR_{down}{}^{short}$ = idiosyncratic risk in a short-term downturn; $\beta_{up}{}^{short}$ = systematic risk in a short-term upturn; $IR_{upi}{}^{short}$ = idiosyncratic risk in a short-term upturn; SE = (advertising expenditure − R&D expenditure) / total revenue; ROA = return on assets; Asset = log(total assets); Leverage = leverage ratio; Div Payout = dividend payout; Current Ratio = current ratio; HHI = level of competition.
* $p < .10$

term shocks on market returns and risk-free returns were used to measure short-term downturns and upturns in the stock market congruent with Ang et al. (2006). Second, *t*-statistics were used to obtain long-term downturns and upturns in stock market trends referring to Pauwels and Hanssens (2007). Further explanation of each method is as follows:

- Short-term trends

The stock market is in a short-term downturn (upturn) when monthly market return (R_{mt}) is lower (higher) than the risk-free rate of return (R_{ft}). We categorized each month as either short-term downturn or short-term upturn, and systematic and idiosyncratic risks were measured using Carhart's (1997) four-factor model as in Eq. (2) such that:

$$(R_{it} - R_{ft}) = \alpha_{qi}^{short} + \beta_{qi}^{short}(R_{mt} - R_{ft}) + \delta_{1qi}^{short}(SMB)_t + \delta_{2qi}^{short}(HML)_t + \delta_{3qi}^{short}(UMD)_t + \varepsilon_{qit}^{short} \quad (2)$$

where $q \in [up, down]$,

- Long-term trends

Pauwels and Hanssens (2007) used *t*-statistics to define a firm's performance regimes of growth, stability, and decline while developing performance barometers for firms. Based on this approach, we obtain long-term downturns and upturns for the stock market from Eq. (3).

$$R_{mt} = \text{intercept} + \kappa \cdot \text{trend} + \varepsilon_{\text{trend}t} \quad (3)$$

$RISK_{it}$ = stock risk of firm *i* at time *t*
SE_{it} = strategic emphasis on advertising of firm *i* at time *t*
X_{it} = control variables for firm *i* at time *t*
A_t = firm-invariant control variables at time *t* (e.g., yearly dummies)
ε_{it} = errors.

In order to test H1, we used systematic risk (SR_{it}) and idiosyncratic risk (IR_{it}) obtained from Eq. (1) as stock-return risk ($RISK_{it}$) in Eq. (4). In order to test H2, we used short-term downside risk ($SR_{downi}{}^{short}$, $IR_{downi}{}^{short}$) and short-term upside risk ($SR_{upi}{}^{short}$, $IR_{upi}{}^{short}$), measured by Eq. (2) as stock-return risk ($RISK_{it}$).

Subsequently, we cross-validated H2 by investigating interaction effects between strategic emphasis (SE_{it}) and dummy variables associated with long-term downturn (D_1) and long-term stability (D_2). If the coefficient of the interaction between strategic emphasis and the long-term downturn dummy variable is significant, we can confirm that a long-term downturn market trend has moderating effects on the relationship between strategic emphasis on advertising and risks.

4.4. Estimation

As the lagged risks may be correlated with errors, a potential endogeneity problem exists. To solve this problem, we used two-stage least squares regression using SAS PROC SYSLIN. We used $\beta_{i(t-2)}$ as an instrument variable for $\beta_{i(t-1)}$, and $IR_{i(t-2)}$ as an instrument variable for $IR_{i(t-1)}$.

Table 3
Relationships among stock-return risk, advertising intensity as a share of total R&D, and stock market trends.

Dependent variable	General		Short term				Long term	
	Systematic risk	Idiosyncratic risk	Downturn systematic risk	Upturn systematic risk	Downturn idiosyncratic risk	Upturn idiosyncratic risk	Systematic risk	Idiosyncratic risk
Dependent variable $_{i(T-1)}$	0.66***	1.10***	0.41***	0.69***	0.57***	1.00***	0.66***	1.10***
$SE_{i(T-1)}$	−0.16	0.01	−1.82**	1.73***	0.00	0.01	−0.03	0.01
$SE_{i(T-1)} \cdot D_1$							−0.12	−0.00
$SE_{i(T-1)} \cdot D_2$							−0.22	−0.01**
$ROA_{i(T-1)}$	−0.89***	−0.02***	−1.38**	−1.49***	−0.02*	−0.04***	−0.89***	−0.02***
$Asset_{i(T-1)}$	−0.11***	−0.00	−0.17**	−0.11*	−0.00*	−0.00	−0.11***	0.00
$Leverage_{i(T-1)}$	−0.20**	0.00	0.15	−0.18	0.02***	0.01**	−0.20**	0.00
Div Payout$_{i(T-1)}$	−0.21	−0.01	0.26	−0.91**	0.00	−0.01	−0.20	−0.01
Current ratio$_{i(T-1)}$	−0.02*	−0.00*	−0.01	−0.05	−0.00**	−0.00	−0.02*	−0.00*
$HHI_{i(T-1)}$	−0.11	−0.01***	0.15	0.27	−0.01***	−0.01***	−0.12	−0.01***
R^2	0.72	0.92	0.36	0.59	0.77	0.88	0.72	0.92

Note. SE = advertising investment (share of total R&D) / total revenue; dummy variables associated with long-term downturn (D1) and long-term stability (D2) to analyze the moderating effect of stock market trend; ROA = return on assets; Asset = log(total assets); Leverage = leverage ratio; Div Payout = dividend payout; HHI = level of competition.

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

5. Results

5.1. Strategic emphasis and risks

Table 3 summarizes the results of the models. First, strategic emphasis on advertising at time *t*-1 does not exhibit a significant effect on systematic risk at time *t*, contrary to H1-1. Also, in contrast to H1-2, strategic emphasis on advertising at time *t*-1 does not have a significant effect on idiosyncratic risk at time *t*. These results stand in contrast to those of previous studies that reported a significant relationship between marketing investments measured by advertising and stock-return risk (e.g., McAlister et al., 2007). A return of marketing investments is unobtainable in an isolated single period, but rather materialized over a long horizon. For example, a marketing campaign tends to have a greater association with long-term financial implication. McAlister et al. (2007) suggested that advertising resulted in higher brand equity and receptiveness in a new product market, thus eventually providing signals to a firm's stockholders. Likewise, Rego, Billett, and Morgan (2009) found that customer-based brand equity reduced a firm's risk because it facilitated repeat purchasing by higher perceived quality and awareness.

However, we found that strategic emphasis did not provide significant incremental explanatory power in explaining the firms' long-term financial values, particularly firm risks. How might we explain these contrasting results? Although financial market does reflect the firms' efforts to stabilize its stock price, the positive effect of increasing advertising emphasis on stock-return risk during an economic upturn may neutralize the negative effects of the same efforts during a downturn. The offset between market upturns and downturns may result in the insignificant relationship between strategic emphasis and risk in general.

Second, we suspect that the influence of industry types on the relationship between strategic emphasis and risks may exist. Therefore, we added industry-specific dummy variables to the model and examined the effect of industry characteristics. As a result, we found a significant moderating effect on industry types. Strategic emphasis on advertising at time *t*-1 has significant negative effects on systematic risk at time *t* for the paper and allied products (SIC 26, −4.26, $p < .05$) and business services (SIC 73, −1.66, $p < .10$). Moreover, we found significant positive effects in miscellaneous manufacturing (SIC 39, 0.78, $p < .10$) and telecommunication industries (SIC 48, 2.20, $p < .10$). These findings suggest that the correlation between strategic emphasis and systematic risk varies among industries.

In particular, we found that investors interpret strategic emphasis on advertising as a risk protection tool in the paper and business service industries. In other words, strategic emphasis on advertising is helpful in protecting stock returns from market level shocks. In contrast, investors interpret the strategic emphasis on advertising as imposing greater risk in the manufacturing and telecommunication industries, and it is not helpful but rather increases the risk generated by an economy-level shock. Those two industries require specialized skills and value-creation capability compared to the paper and business service industries in general. Therefore, firms with high levels of R&D would receive more gains as firms' skills become more specialized (Lei, Hitt, & Bettis, 1996) because expertise gained from R&D may deter the possible entrants. Furthermore, a firm in these industries should constantly create new technologies as the market changes. Simply adopting a product or process is insufficient; indeed, innovation is critical to a firm's success. In contrast, competition in the paper and business service industries focuses on the improvement of existing products or process rather than new product development, which requires more marketing initiative. We show that strategic emphasis on advertising can affect firm's risk differently depending on where it competes.

5.2. Moderating role of market trends

We first analyzed the impact of short-term stock market trends on the relationship between strategic emphasis and key risks. As a result, we found that the relationship between strategic emphasis and systematic risk varies during downturns and upturns as in H2-1. However, we could not find a significantly different role of downturns and upturns in the relationship between strategic emphasis and idiosyncratic risk as in H2-2. More specifically, strategic emphasis on advertising at time *t*–1 had a significant negative effect on the short-term downturn systematic risk at time *t* (−1.82, $p < .05$), but had a significant positive effect on short-term upturn systematic risk at time *t* (1.73, $p < .01$). We attribute this result to investors favoring firms with a strategic emphasis on advertising since it can smooth out the potential negative cash flow during market downturns and strengthen the positive cash flow opportunity during market upturns.

Strategic emphasis at time *t*–1 does not show a significant effect on short-term downturn and upturn idiosyncratic risks at time *t*, in contrast with H2-2. This result seems to stem from the characteristics of idiosyncratic risk. The regression analysis reveals that idiosyncratic risk at

time t–1 mostly explains idiosyncratic risk at time t. In large part, strategic emphasis cannot explain idiosyncratic risk since it is successive in nature. In other words, strategic emphasis does not help significantly reduce the stock-return variability due to firm-specific reasons. This provides an empirical rationale that strategic emphasis is likely to be more highly-valued by investors as an important risk signal only when market-level cash flows are trending downward or upward. These findings also support the notion that investors can change the course of a long-term investment plan due to short-term loss potential, derived from the overall economic climate (Benartzi & Thaler, 1995).

However, the equality test of coefficients shows that there is a significant difference between the coefficient of strategic emphasis associated with downside idiosyncratic risk and upside idiosyncratic risk (-11.52, $p < .01$). As a result, H2-2 partially supports the idea that the relationship between strategic emphasis and idiosyncratic risk varies in short-term downturns and upturns.

To cross-validate the results, we alternatively investigated the moderating role of long-term stock market trends. However, the results did not match those obtained from the former definition (i.e., short-term market trends). The effect of market trends on the relationship between strategic emphasis and stock-return risk was insignificant. The interaction term of strategic emphasis and long-term downturn dummy variable ($SE_{i(t-1)} \cdot D_1$) did not have a significant relationship with either systematic or idiosyncratic risk, or the two risks combined. These findings undermined the concept that the effects of market trends on the relationship between strategic emphasis and stock-return risk vary depending on how an analyst defines the market's trends. In further studies, the relationship between marketing investments and stock-return risk can be cross-tested using various definitions of market trend.

6. Discussions

Our findings show that strategic emphasis on advertising over R&D does not generally reduce risks, but rather the relationship varies with market trends; the strategic emphasis on advertising reduces systematic risk during market downturns, whereas it increases systematic risk during market upturns. The patterns are not symmetric across market downturns and upturns over a period of thirty years encompassing multiple downturns and upturns, and differ across industries.

6.1. Theoretical implications

Although there have been several studies in marketing–finance interface literature (Hanssens et al., 2009), this study is the first attempt that explores how market trends may moderate the effectiveness of strategic emphasis on firm risks. This is critical because investors seek firms that are castigated less in dark periods and rewarded more in good ones. We found that excelling strategic emphasis on advertising enables a firm to gain protection in downturns and higher receptiveness in upturns. Academic research in marketing has focused on the risk reducing potential of brand equity (Rego et al., 2009), customer satisfaction (Tuli & Bharadwaj, 2009), corporate social performance (Luo & Bhattacharya, 2009), and advertising (McAlister et al., 2007). The main path between marketing drivers and firm risk explains the impact of such drivers to the vulnerability of future cash flow. To our knowledge, we are the first to find that the strategic emphasis can be a missing determinant that explains firm risks under different market trends. It is because a firm's strategic emphasis can provide non-financial and value-relevant information to investors that can help them assess the uncertainty of future cash flows that will differ greatly according to the economic climate.

Second, no previous research in marketing has examined the proactive role of marketing actions during good times. Most research emphasizes the insurance role of marketing assets or marketing actions during market downturns (Rego et al., 2009; Tuli & Bharadwaj, 2009). It is because, in conditions of high uncertainty, customers tend to look for secured offerings with better utility and purchase more from suppliers with a greater commitment to the market (Noordewier, John, & Nevin, 1990; Soberman & Gatignon, 2005). We address a significant research gap by demonstrating an understated benefit of strategic emphasis during market booms. In this sense, our study unravels the multiple dimensions of risk. We suggest that the risk reduction benefits of strategic emphasis on advertising are greater in firms during market downturns. Furthermore, those firms benefit from the higher receptiveness that accompanies the strategic emphasis on advertising during upturns. We add to the literature by revealing this additional effect of marketing actions in the context of higher receptiveness during market booms.

Third, we contribute to the marketing literature with respect to cyclical adjustments in marketing conduct, which address how managers adjust their decisions with the business cycle resulting in temporary and/or permanent gains or losses (Srinivasan, Lilien, & Sridhar, 2011). Lamey et al. (2012) demonstrated that consumers buy more private-brand labels during contractions due to increased financial uncertainty and much of this gain persists during expansionary periods. As booms and boosts give signals for managers to adjust their marketing investment programs, this study answers how investors adjust their decisions from firm-level changes of actions in response to market trends. Therefore, by drawing attention to the double side of risks depending on market trends and uncovering the relationship between risks and strategic emphasis, we help expand the research agenda in the strategic marketing literature and marketing–finance interface.

6.2. Managerial implications

During the financial crisis of 2008–2009, the large swings in stock prices and various speculations about the future economic conditions increase market uncertainty; this pressures managers' resource allocation decisions since it shakes consumers' purchasing routines and decision making (Lamey et al., 2012). Yet, during expansionary periods, managers may try to recover losses by extracting themselves from price wars, given that consumers are less sensitive to competitive pricing and explore various alternatives. Our findings provide a guide for managers to build buffers in gloomy times and accelerators in good ones by adjusting the strategic emphasis toward more advertising over R&D.

Furthermore, our study has important implications for financial analysts. A variety of efforts has been made to restore confidence over the business cycle, but the literature has mostly focused on macroeconomic variables over expansion and recession phases (David & Veronesi, 2009; Engle & Rangel, 2008; Hamilton & Lin, 1996). However, only a small body of literature examines individual firms' strategic decisions that strengthen investor confidence over economic cycles. Our results show how stock market trends (i.e., upturns and downturns) moderate the relationship between strategic emphasis and stock-return risks. We explore strategic emphasis as a tactical tool to be applied within the context of varying market trends. Our findings indicate that the information pertaining to firms' strategic emphasis has risk relevance beyond accounting performance. Therefore, firms should view strategic emphasis as an additional tool for investors particularly when examining the stock-return risks under different market trends.

Our recommendation has several caveats. First, only the short-term market trend has a significant effect in the context of strategic emphasis. If investors translate a market trend over a long-term perspective, the effect of strategic emphasis on a firm's risk does not hold true, and there is less reason to invest in firms with a strategic emphasis on advertising. Second, there is a considerable statistical significance of strategic emphasis on firms' systematic risk, but not on idiosyncratic risk. Considering that systematic risk refers to how much a firm can cushion itself from the impact of macro-market movement whereas idiosyncratic risk reflects its own volatility of stock returns, interpretation of our results show that strategic emphasis plays a role as a buffer or an accelerator but not as an initiative that can drive the

stability in revenue streams.

7. Limitations and future research directions

Our study has several limitations. First, we only focused on the effect of strategic emphasis on the firm's risk, but the quality of the investment may influence a firm's risks over different market trends.[2] Even though a firm heavily emphasizes advertising in tough times, without quality advertising such as appropriate message, proper delivery, and timing, this stock will not be able to attract a sufficient number of investors. In addition, there is also firm-level heterogeneity across firms' positioning. For example, a firm positioned as "premium mass" will have different impact compared to one with "premium niche" because positioning can directly affect the level of price and advertising sensitivity. Furthermore, examining whether the effect of marketing investment in different instruments on financial risks varies over market trends is an interesting avenue for future research, especially given that advertising lowers price sensitivity (Ataman, Van Heerde, & Mela, 2010).

Second, there may exist industry-specific patterns regarding the relationship between strategic emphasis and stock-return risks. The primary metals industry (SIC 33), for example, exhibits a very strong negative relationship between strategic emphasis on advertising and systematic risk in short-term upturns. This finding is contrary to a significant positive relationship reported in H2-1. Consumers respond differently to advertising across industries (Van Heerde, Maarten, Dekimpe, & Steenkamp, 2013). Consumers' responses to advertising could possibly show weaker sensitivity in a relatively concentrated category (e.g., the base metals industry). While consumers follow stronger sensitivity in a relatively less concentrated category (e.g., consumer packaged goods). This implies that investors could possibly interpret a firm's strategic emphasis on advertising in the base metals industry as a source of stable customer base due to its low sensitivity, which in turn lowers systematic risk during market upturns.[3] Further study might focus its investigation on what industry characteristics have an effect on the relationship between strategic emphasis and stock-return risk, so the relationship between the two variables can be explained in a multidimensional way.

Third, the nature of advertising expenditures collected from COMPUSTAT varies among industries. For example, a certain industry includes promotion expenses in the category of advertising. Further investigation and analysis of the nature of advertising expenditure will better and more precisely detail the relationship between strategic emphasis on advertising and stock-return risk.

Fourth, research on stock risk has also used the matching technique model[4] instead of Carhart's (1997) four-factor model. Given there are substantive differences in the characteristics of firms that emphasize advertising over R&D versus those that emphasize the opposite, these differences may generate a bias when estimating the effect of strategic emphasis on a firm's risk. Ideally, one can construct a "similar" firm to the firm under analysis that follows a specific strategic emphasis, at least to the extent where the "similar" firm differs only in its choice to emphasize a specific field. An advantage of this paired group matching is that it eliminates firm-specific characteristics potentially explaining risk differentials.

However, we did not apply the matching-firm method in our paper due to following reasons. First, all firms in our observation are exposed to the focal moderating variable (i.e., market trends). Therefore, it is almost impossible to construct matching-firm groups that are similar in all other aspects but different in terms of market trends. To solve this problem, we separately estimated risk factors under different market trends and examined the relationship between strategic emphasis and risk factors (after controlling various firm-specific characteristics such as size and profitability) using multiple regression.

Second, one would apply a matching-firm research design where matching firms are "dissimilar" with respect to strategic emphasis but "similar" with respect to other characteristics (e.g., firm size). However, this design would introduce other types of bias in testing our hypotheses. If the focal treatment variable between matching-firm groups were a discrete one (e.g., gender, industry), it would be much easier and clearer to construct matching-firm groups. However, strategic emphasis is a continuous variable in our case, which requires an analyst's arbitrary decision in constructing high-strategic-emphasis firms versus low-strategic-emphasis ones. In other words, we have to define the meaning of "high" and "low" in this case. As a matter of fact, strategic emphasis (on advertising) in our observation is widely distributed with a minimum of −3.53 and a maximum of 0.28.

Third, we may over-adjust the real effect of a treatment on outcome if matching variables (e.g., firm size) play a mediating role between a treatment and outcome (Jager, Zoccali, Macleod, & Dekker, 2008; Lockwood, DeFrancesco, Elliot, Beresford, & Toobert, 2010). Suppose strategic emphasis affects risk factors via firm size, matching with respect to firm size systematically leads to under-estimation of the relationship between strategic emphasis and risk factors. Since it was not our main research focus to investigate the mechanism of the relationship between strategic emphasis and risk factors, we did not conduct a mediation test. Examining this mechanism will be also a fruitful area for further research.

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